

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

Data Report

For

May 2011

Prepared By:



June 23, 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:

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

Monitoring Location: Cold Lake
Data Period: May 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 – May 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO ₂ (PPB)	172	48	0	0	0.33	2	2, 31	VAR	VAR	VAR	0.8	VAR	100.0
TRS (PPB)	-	-	-	-	0.88	1	VAR	VAR	VAR	VAR	1.0	VAR	99.9
NO ₂ (PPB)	212	106	0	0	1.99	15	2	6	0.6	82(E)	3.9	20	99.9
NO (PPB)	-	-	-	-	0.19	18	2	6	0.6	82(E)	1.4	2	99.9
NO _x (PPB)	-	-	-	-	2.17	33	2	6	0.6	82(E)	5.2	2	99.9
O ₃ (PPB)	82	-	0	-	36.92	62	15, 31	VAR	VAR	VAR	50.8	15	100.0
THC (PPM)	-	-	-	-	2.07	3.3	20	6	0.4	286(WNW)	2.4	20	99.9
PM 2.5 (UG/M ³)	-	30	-	0	6.95	29.5	27	18	5	2(N)	18.8	31	99.7
TEMPERATURE (DEG C)	-	-	-	-	12.07	26.1	20	14	4.1	25(NNE)	18.3	20, 21	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	49.43	94	1, 19	3, 4	3.2, 0.1	243(WSW), 34(NE)	73.3	7	100.0
VECTOR WS (KPH)	-	-	-	-	6.87	25.2	15	16	-	134(SE)	15.3	15	100.0
VECTOR WD (DEGREES)	-	-	-	-	101(E)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – May 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#26	0.5	0.2
H ₂ S	#26	0.19	0.10
NO ₂	#28	1.7	0.4
O ₃	#32	42.0	34.4

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – May 3, 2011

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

Xontech Model 910A – May 9, 2011

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

Xontech Model 910A – May 15, 2011

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

Xontech Model 910A – May 21, 2011

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

Xontech Model 910A – May 27, 2011

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – May 3, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
NA	NA

No sample was collected on May 3rd as the PUF sampler was not received on time.

PUF cartridge – May 9, 2011

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

PUF cartridge – May 15, 2011

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

PUF cartridge – May 21, 2011

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

PUF cartridge – May 27, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.055	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 inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Ozone (PPB)

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

No operational issue 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. 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 monthly calibration was started. Data was corrected using daily zero information.

Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)

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

No operational issues observed during the month. A routine Teom audit was performed on May 4th. The Teom filter and the FDMS filter were replaced and the inlet was cleaned on May 4th. 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. 2 hours of data were invalidated as the data were below –3.0 $\mu\text{g}/\text{m}^3$.

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 May 4th.

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. 107 hours of AQI values recorded in May 2011 were in the Fair range, and they were all due to ozone. Others were within the Good range. The highest hourly concentration of Ozone was 62 ppb and an AQI value of 35 on May 15th and 31st, in various hours. The highest AQI value of PM2.5 was 22, hour 22 on May 31st.

Passive Network

No issue was noticed this month.

Volatile Organics (VOCs)

The volatile organics were sampled from May 3rd to May 27th. 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 May 3rd to May 27th. 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.

No sample was being collected on May 3rd, as the PUF sampler was not received on time.

The PUF + Hi-Vol calibration was performed on May 25th; the as found temperature was 19.6 degree Celsius, the measured temperature using Hg thermometer 96-9460 was 20.1 degree Celsius, the temperature was adjusted. The As found BP was 717 mmHg, and the measured BP using Bios DC-2 1193 was 718 mmHg, the BP sensor was adjusted. A flow calibration was also performed using automatic method on May 25th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	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	MAX.	AVG.			
DAY																												
1	0	0	0	0	0	0	0	0	1	1	IZS	1	0	0	0	0	1	1	1	0	0	0	0	0	1	0.3	24	
2	0	0	0	0	0	0	1	1	1	IZS	2	2	1	1	1	1	1	1	1	1	1	1	1	0	2	0.8	24	
3	0	0	0	0	0	0	0	0	IZS	0	0	1	1	1	1	0	0	0	0	1	1	0	0	0	1	0.3	24	
4	0	0	0	0	0	0	0	IZS	0	1	0	C	C	C	C	0	0	0	0	0	0	0	0	0	1	0.1	24	
5	0	0	0	0	0	0	IZS	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
6	0	0	0	0	0	IZS	0	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	1	0.3	24	
7	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	
8	0	0	0	IZS	0	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	IZS	0	0	0	0	0	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0.5	24	
10	0	IZS	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
11	IZS	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
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.2	24
14	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	0	0	IZS	1	1	1	0.6	24	
15	1	1	1	1	1	1	1	1	0	0	1	0	0	1	1	1	0	1	1	1	IZS	1	1	1	1	0.8	24	
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	IZS	0	0	0	0	0	0	1	0.7	24	
17	1	0	0	1	0	1	1	1	1	1	1	1	0	0	1	0	0	IZS	0	0	0	0	0	0	1	0.4	24	
18	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0.1	24	
19	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	IZS	1	0	1	0	0	0	0	0	1	0.3	24	
20	0	0	0	0	0	0	1	1	1	1	1	1	1	1	IZS	0	1	0	0	1	0	0	0	0	1	0.4	24	
21	0	0	0	0	0	0	0	0	0	1	1	0	0	IZS	0	1	0	0	0	0	0	0	0	0	1	0.1	24	
22	0	0	1	1	0	0	1	1	1	0	0	1	IZS	1	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
23	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	
24	0	0	0	0	0	1	1	1	1	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
25	0	0	0	0	0	0	0	0	0	IZS	1	0	1	1	1	1	1	1	1	1	1	0	0	0	1	0.3	24	
26	0	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0.4	24	
27	0	0	0	0	0	0	0	IZS	0	1	0	0	0	0	1	1	1	1	1	1	1	1	0	0	1	0.3	24	
28	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24	
29	0	0	0	0	0	IZS	0	0	0	0	0	1	0	0	1	1	1	0	0	0	0	1	1	1	1	0.3	24	
30	0	1	1	0	IZS	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	0.8	24	
31	0	0	0	IZS	0	0	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	2	0.8	24	
HOURLY MAX	1	1	1	1	1	1	1	2	2	1	2	2	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	0.3	0.4	0.6	0.6	0.5	0.5	0.6	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1				

STATUS FLAG CODES

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

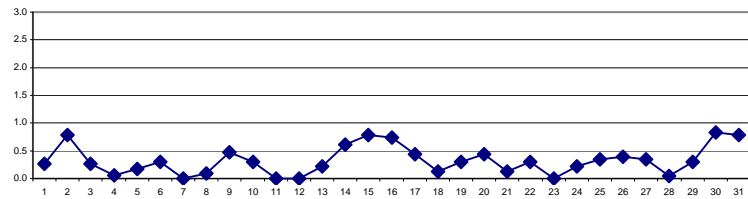
OBJECTIVE LIMIT:

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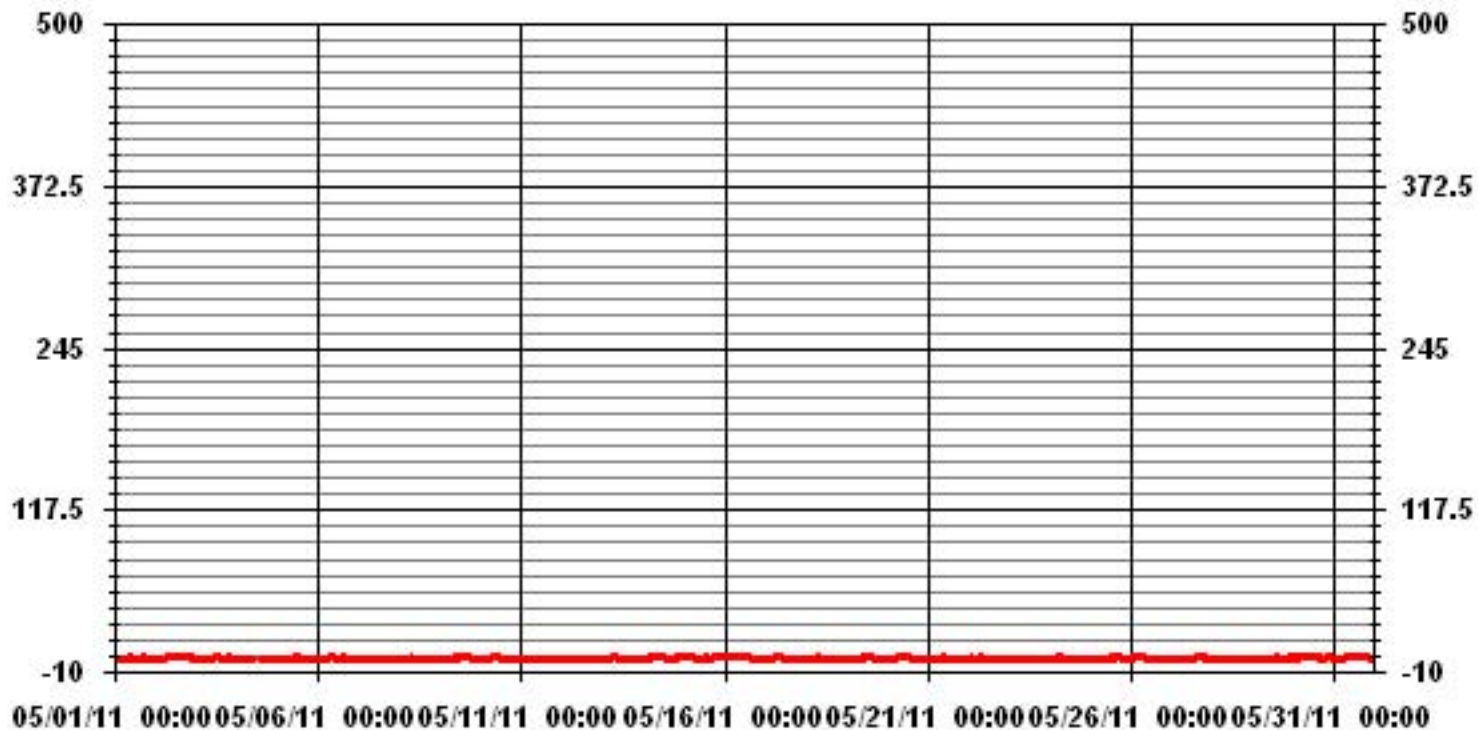
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	227					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	2, 31
MAXIMUM 24-HR AVERAGE:	0.8	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:	0.48		MONTHLY AVERAGE:	0.33	PPB	

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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		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	1.0	24	
2		1	1	1	1	1	1	1	1	2	IZS	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24
3		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
4		1	1	1	1	1	1	1	IZS	1	1	C	C	C	C	M	1	1	1	1	1	1	1	1	1	1	1	1.0	23
5		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
6		1	1	1	1	1	IZS	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
7		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
8		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
9		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
10		1	IZS	1	1	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
11		IZS	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
12		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
13		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
14		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
15		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
16		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	1.0	24
17		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	1.0	24
18		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
19		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
20		1	1	1	1	1	1	1	1	2	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	2	1.0	24
21		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
22		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
23		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
24		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	1.0	24
25		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
26		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
27		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
28		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
29		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
30		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
31		1	1	1	IZS	1	1	1	4	4	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.3	24
HOURLY MAX		1	1	1	1	1	1	1	4	4	2	2	2	2	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	1.1	1.2	1.1	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		

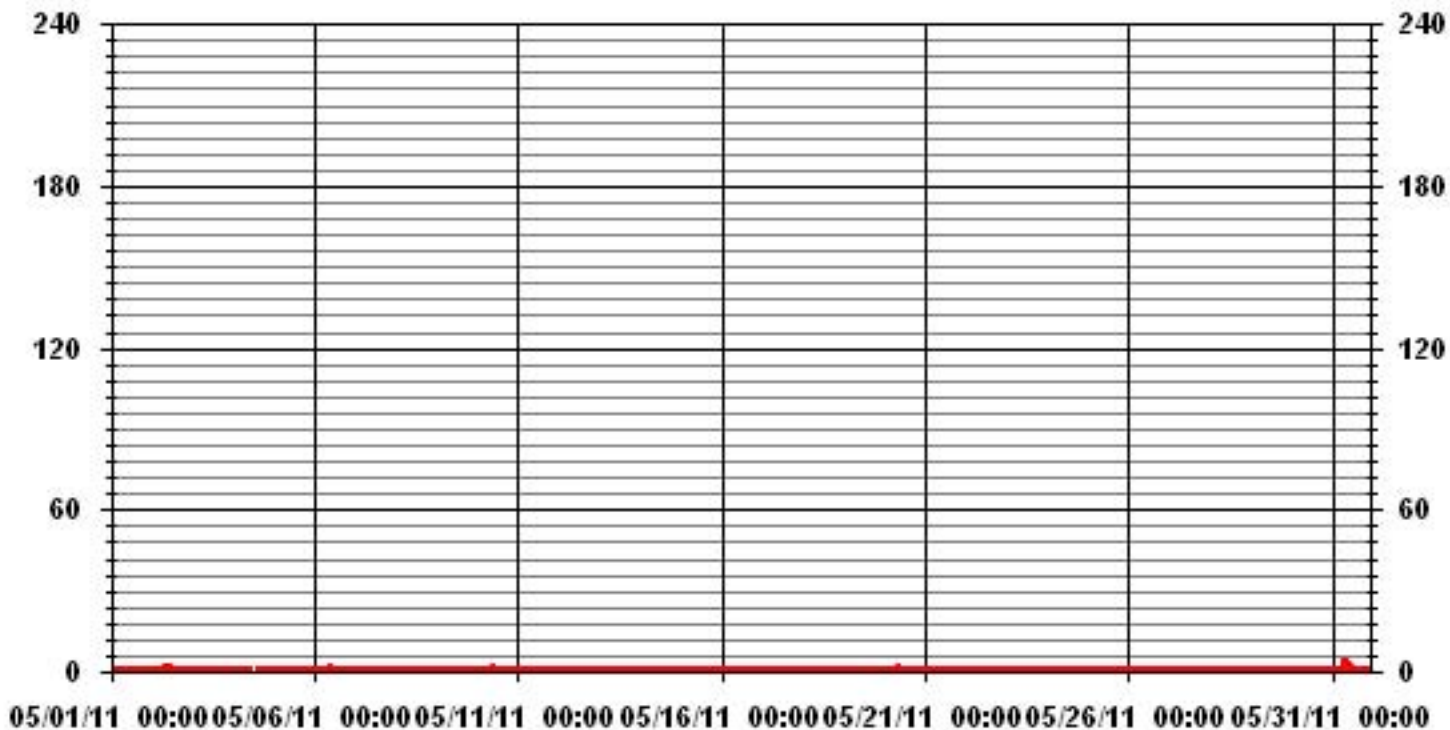
STATUS FLAG CODES

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:	4	PPB	@ HOUR(S)	7, 8	ON DAY(S)	31
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.19					

01 Hour Averages



LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

May 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	2.54	9.60	11.58	6.77	9.18	11.58	25.00	1.97	1.83	2.96	4.09	3.81	4.23	1.83	1.41	1.55	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	2.54	9.60	11.58	6.77	9.18	11.58	25.00	1.97	1.83	2.96	4.09	3.81	4.23	1.83	1.41	1.55	

Calm : .00 %

Total # Operational Hours : 708

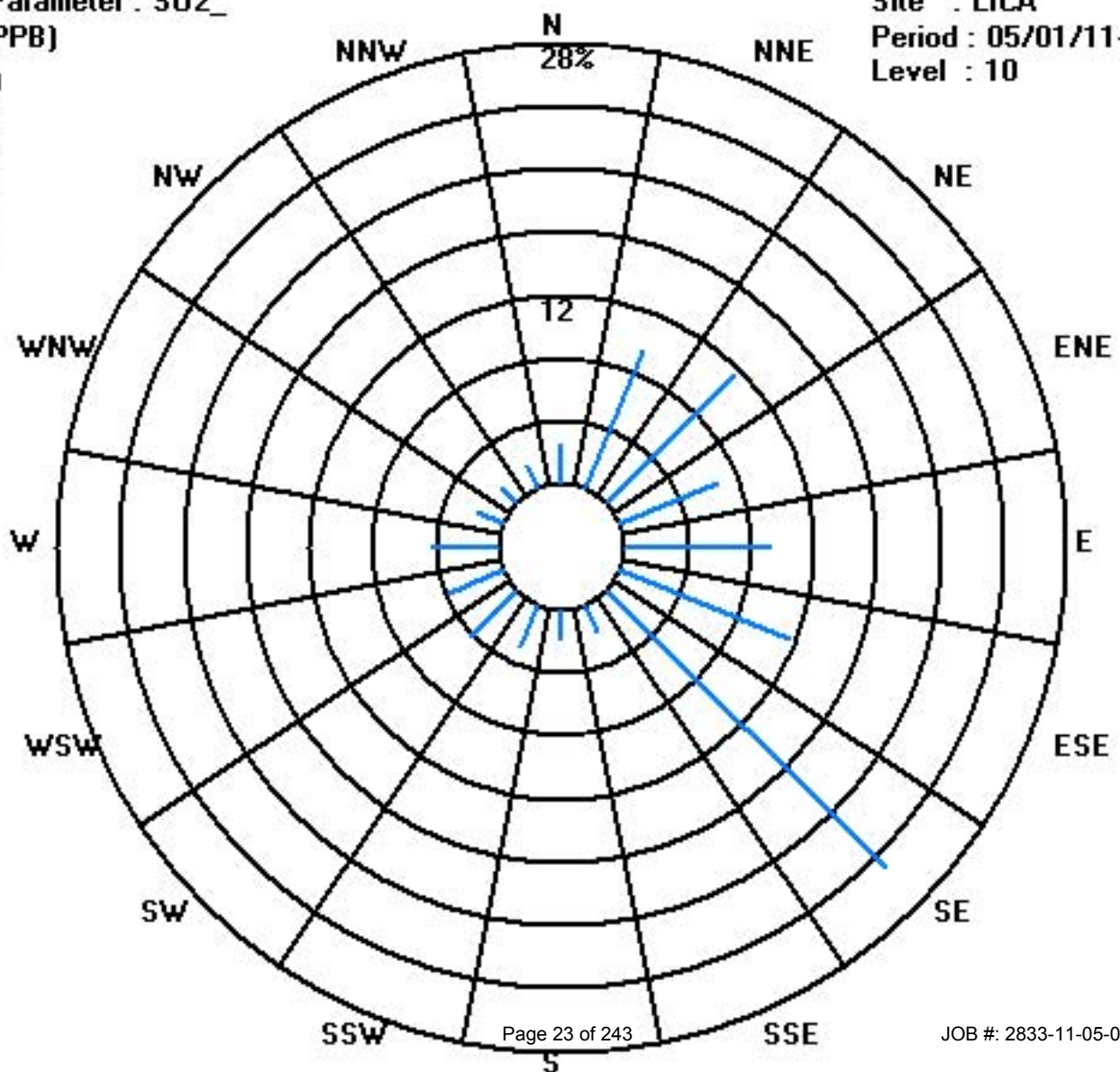
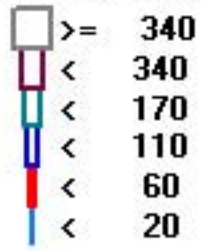
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	18	68	82	48	65	82	177	14	13	21	29	27	30	13	10	11	708
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	18	68	82	48	65	82	177	14	13	21	29	27	30	13	10	11	

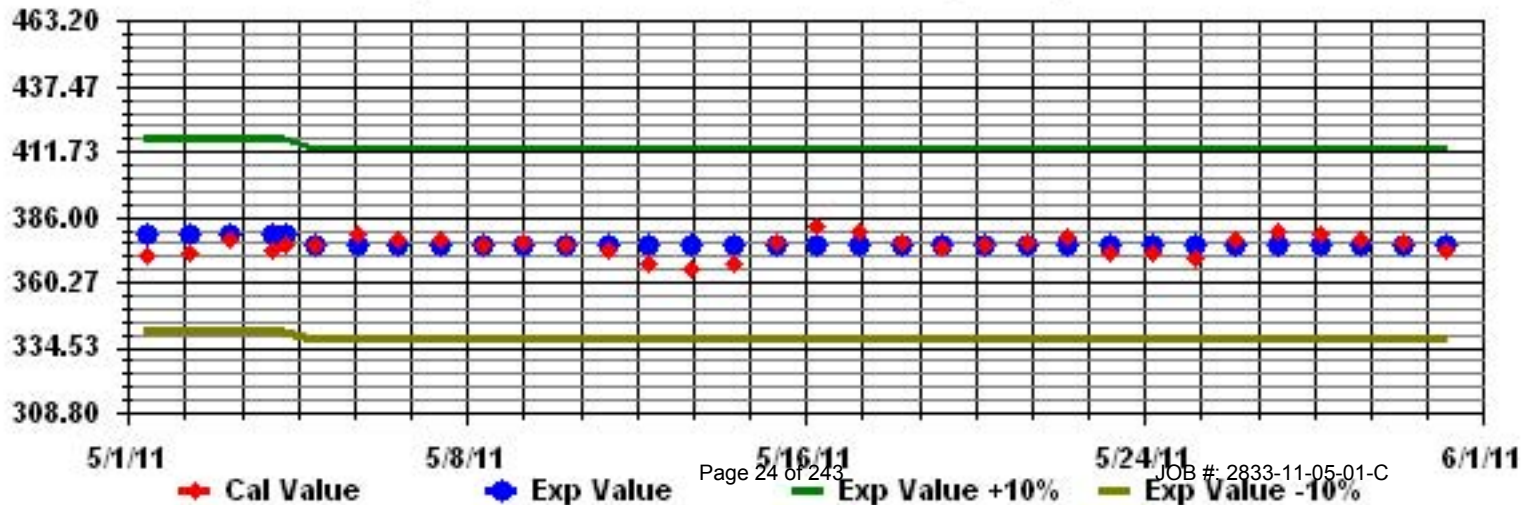
Calm : .00 %

Total # Operational Hours : 708

Class Limits (PPB)



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



Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	1	1	0	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
2	1	1	1	0	1	0	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
3	1	1	1	1	1	1	1	1	1	1	IZS	C	C	C	C	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
4	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	23	
5	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	
6	1	1	1	0	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	
7	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1.0	24	
8	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	
9	1	1	1	IZS	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
10	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	
11	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	
12	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	1.0	24
13	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	
14	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	
15	1	1	1	1	1	1	1	0	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	1	0	1	0	0	1	0	1	0	0	IZS	0	0	0	0	0	0	1	0.5	24
17	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	1	1	IZS	1	1	1	0	1	1	1	0.8	24	
18	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0	1	0	1	IZS	0	1	1	1	1	1	1	0.9	24	
19	1	1	1	1	0	0	1	1	1	0	1	0	0	1	1	1	IZS	1	1	1	1	1	1	1	1	1	0.8	24	
20	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	IZS	1	1	1	1	1	1	1	1	1	1	1.0	24	
21	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0.9	24	
22	1	1	1	0	1	0	0	0	1	1	1	1	1	IZS	1	1	1	0	0	1	0	0	0	0	0	0	1	0.5	24
23	1	0	0	0	0	1	1	1	1	1	1	1	1	IZS	1	0	1	1	1	1	1	1	0	0	0	0	1	0.7	24
24	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
25	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0.9	24	
26	1	1	1	1	1	1	1	1	1	1	IZS	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
27	1	1	1	1	0	1	1	1	1	IZS	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0.9	24	
28	1	1	1	1	1	1	1	IZS	1	1	0	1	1	0	1	1	1	0	1	1	0	1	0	1	1	1	0.8	24	
29	0	1	0	1	1	1	IZS	1	1	1	0	1	0	0	1	1	1	1	1	0	1	0	1	0	1	1	0.7	24	
30	0	0	0	0	1	IZS	0	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0.7	24	
31	1	1	1	1	IZS	0	1	1	1	1	1	1	1	1	0	1	1	1	1	1	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		0.9	0.9	0.8	0.8	0.8	0.9	0.9	0.9	1.0	0.8	1.0	0.8	0.9	0.9	0.9	1.0	0.8	0.9	1.0	0.8	0.9	0.8	0.8	0.8	0.9			

STATUS FLAG CODES

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

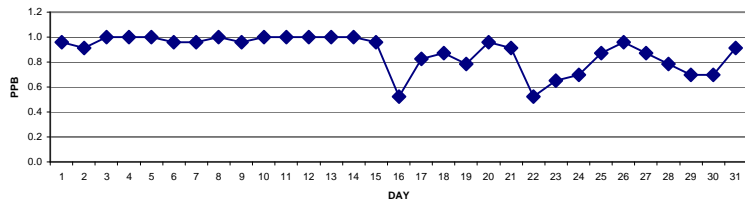
OBJECTIVE LIMIT:

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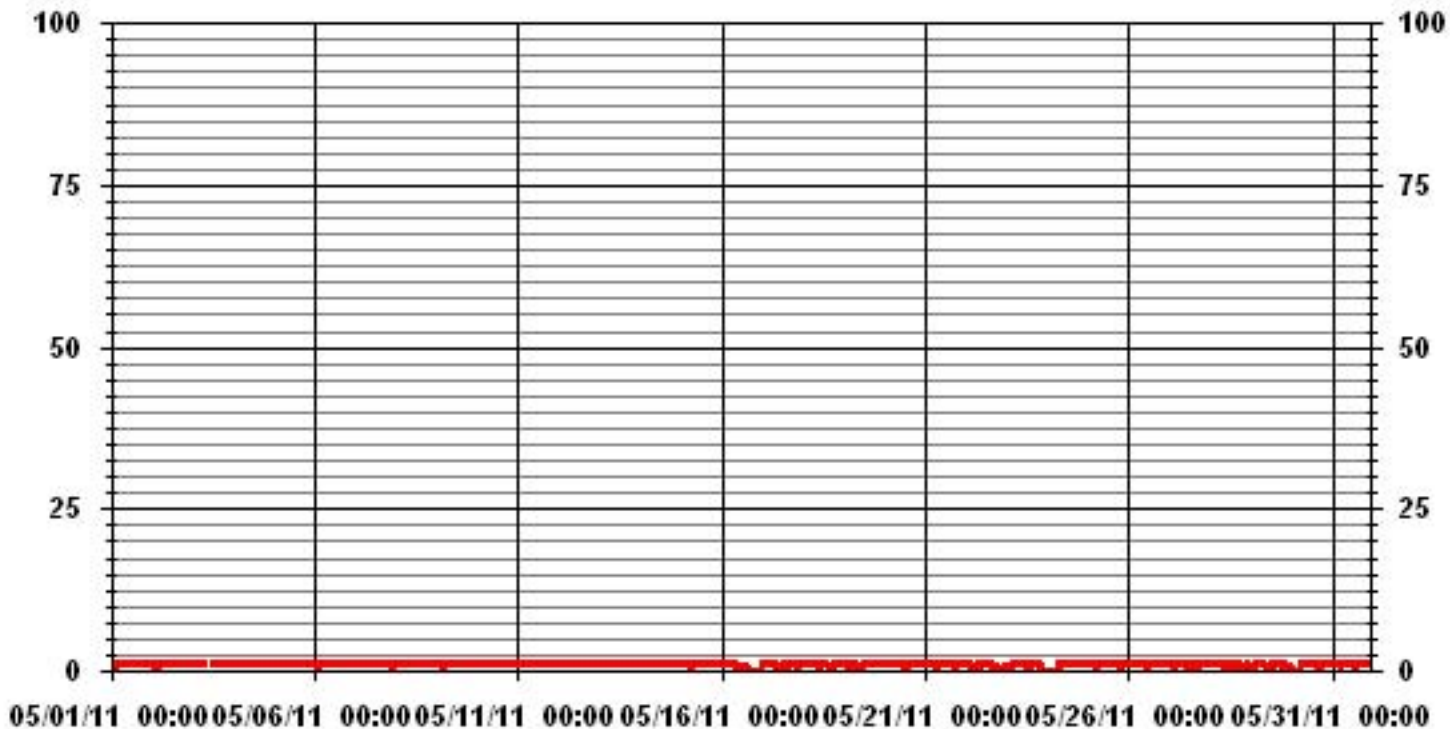
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	620					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	1.0	PPB			ON DAY(S)	VAR
				VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743 HRS		
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9 %		
STANDARD DEVIATION:	0.33		MONTHLY AVERAGE:	0.88 PPB		

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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			
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	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
4	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	22	
5	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	
6	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	
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	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	
9	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	
10	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	
11	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	
12	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	
13	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	
14	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	
15	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	
16	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	
17	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	
18	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	
19	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	
20	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	
21	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	
22	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	
23	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	
24	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	
25	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	
26	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	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	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	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	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	1	1	1	1	1	1	1.0	24	
HOURLY MAX	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
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		

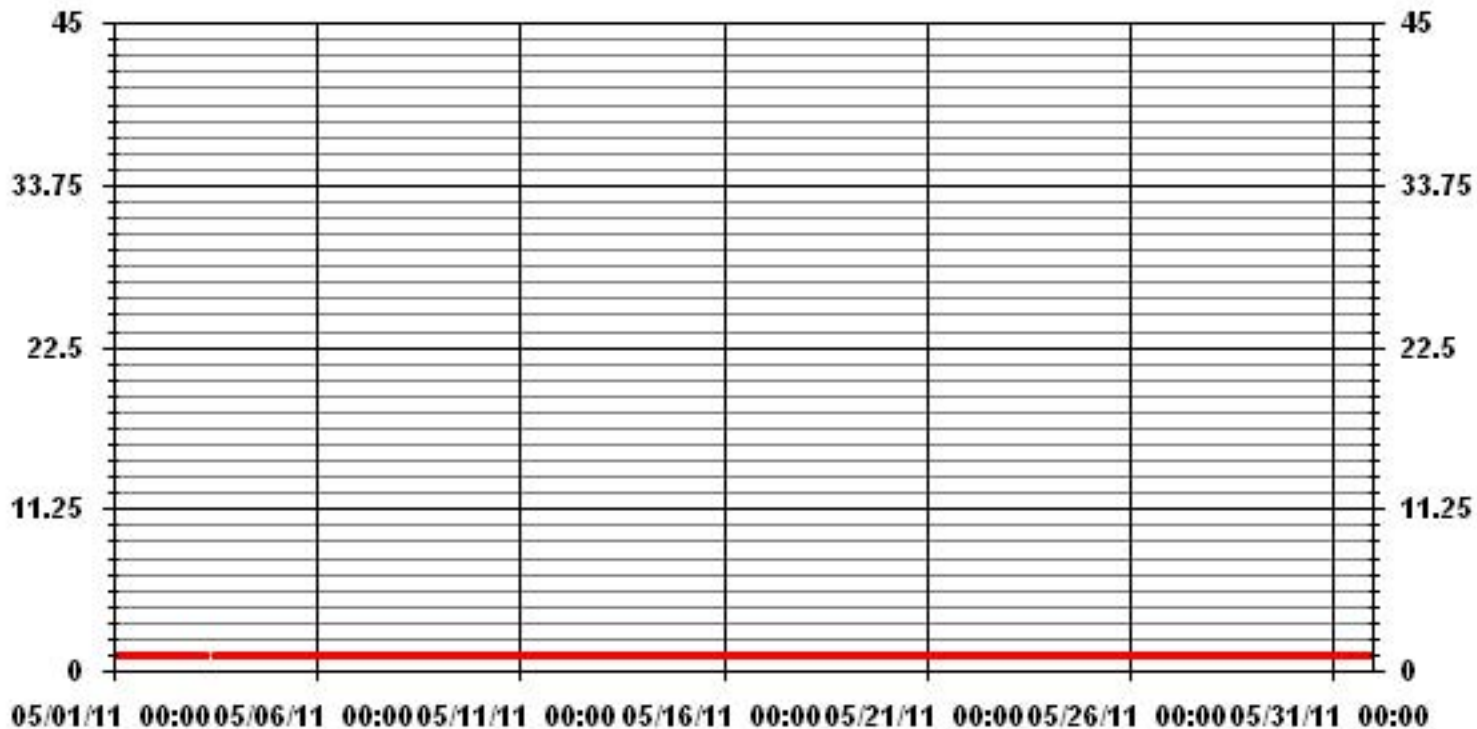
STATUS FLAG CODES

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:	706					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	ALL	ON DAY(S)	ALL
				VAR - VARIOUS		
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742 HRS		
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.00					

01 Hour Averages



LICA
 TRS_ / WD Joint Frequency Distribution (Percent)

May 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	2.54	9.33	11.45	6.78	9.19	11.59	25.03	1.98	1.83	2.97	4.10	3.81	4.24	1.98	1.69	1.41	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	2.54	9.33	11.45	6.78	9.19	11.59	25.03	1.98	1.83	2.97	4.10	3.81	4.24	1.98	1.69	1.41	

Calm : .00 %

Total # Operational Hours : 707

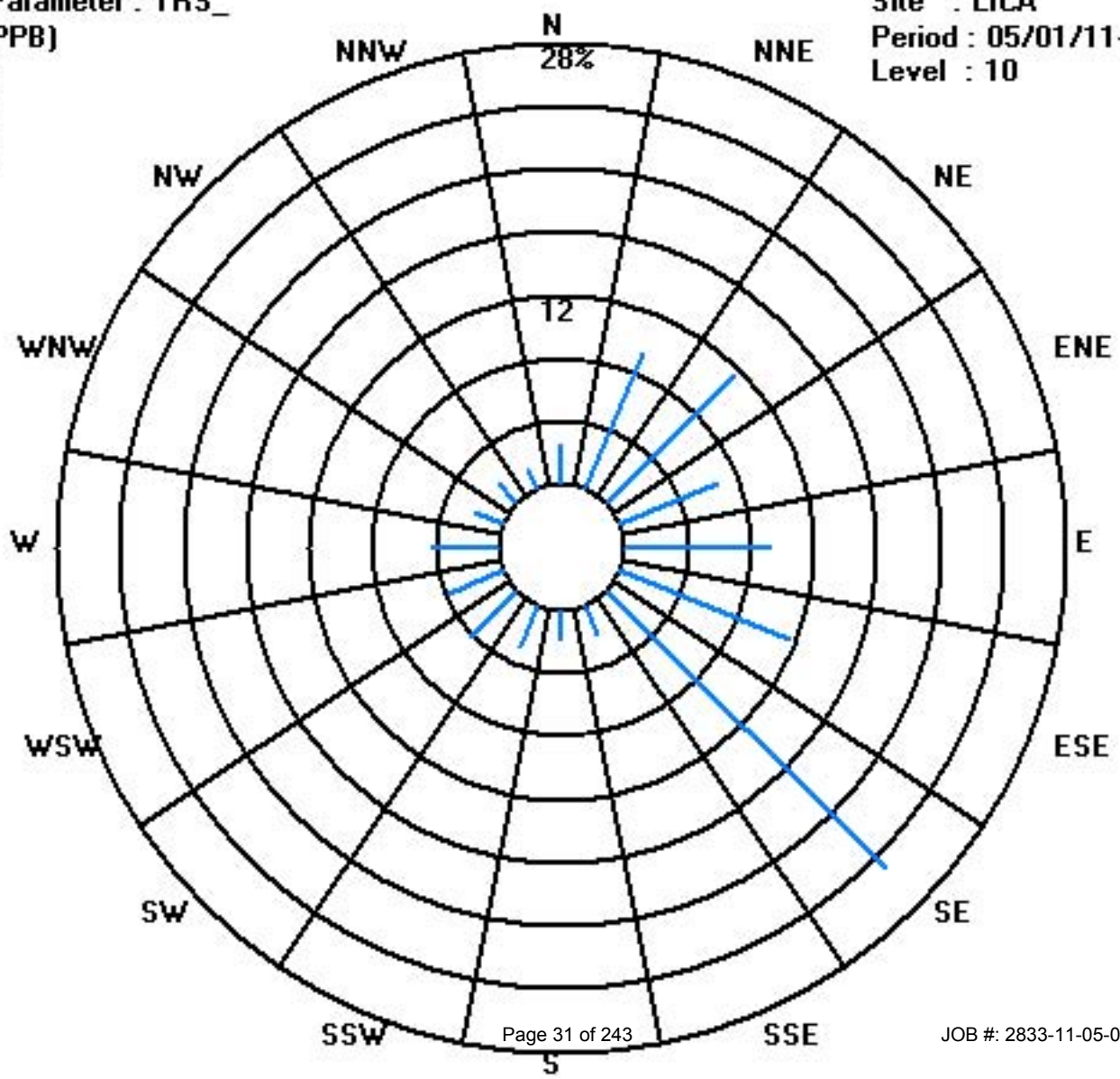
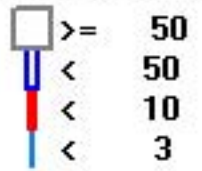
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	18	66	81	48	65	82	177	14	13	21	29	27	30	14	12	10	707
< 10																	
< 50																	
>= 50																	
Totals	18	66	81	48	65	82	177	14	13	21	29	27	30	14	12	10	

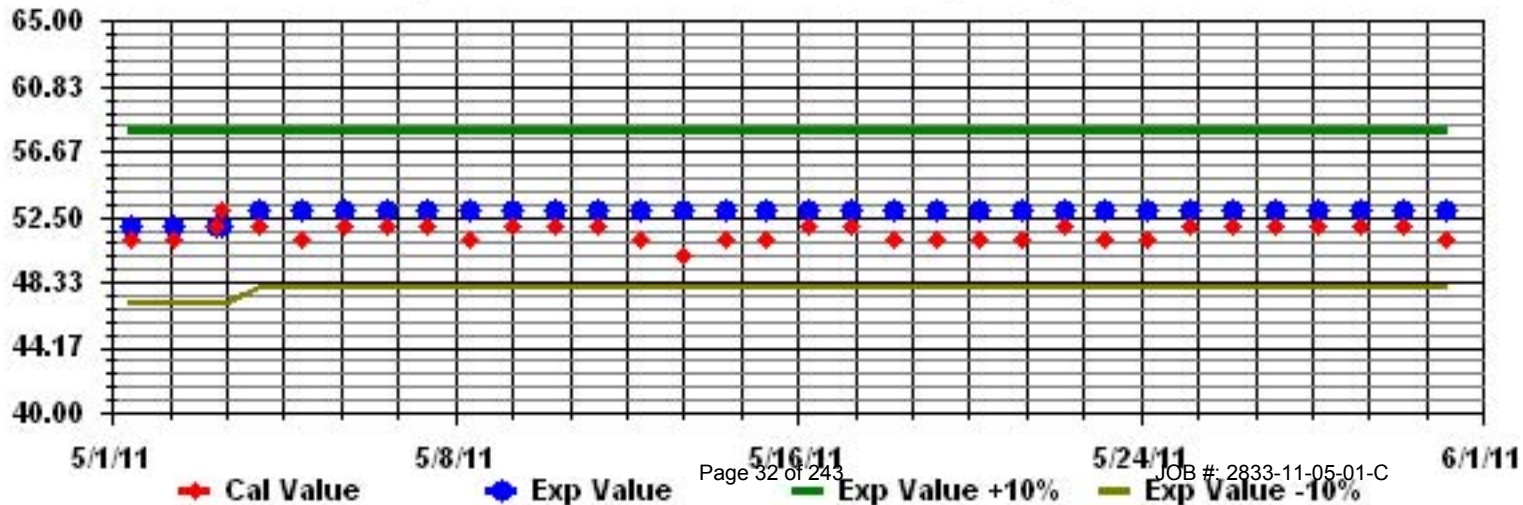
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

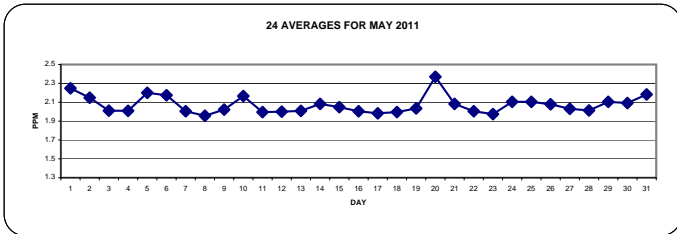
MAY 2011

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	2.2	2.3	2.3	2.8	2.9	3	3	2.8	2.3	2.1	IZS	2	1.9	2	1.9	1.9	2	2	2	2	2	2.1	2.1	2.1	3.0	2.2	24		
2	2.1	2.2	2.2	2.2	2.3	2.5	2.7	2.7	2.3	IZS	2.2	2.2	2	2	2	2	2	2	2	2	2	1.9	1.9	2	2.7	2.1	24		
3	2	2	2	2	2	1.9	1.9	1.9	IZS	2	2	C	C	C	C	2	2	2	2	2	2	2	2.1	2.1	2.3	2.3	2.0	24	
4	2.4	2.2	2.2	2.1	2.1	2.1	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	M	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.1	2.4	2.0	23		
5	2.3	2.7	2.5	2.7	2.7	2.5	IZS	2.4	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.7	2.2	24		
6	2.2	2.2	2.6	2.7	2.6	IZS	2.5	2.5	2.4	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.7	2.2	24		
7	2.1	2	2	2	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		
8	2	2	2.1	IZS	2	2	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.1	2.1	2.0	24		
9	2.1	2	IZS	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.0	24		
10	2.1	IZS	2.1	2.2	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	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	24	
11	IZS	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2.0	2.0	24
12	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	2.0	2.0	24
13	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	IZS	2	2.1	2.1	2.0	24	
14	2.1	2.1	2.1	2.1	2.1	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	2	2	2.2	2.1	24
15	2	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	1.9	IZS	2	2.1	2	2.1	2.2	2.0	24	
16	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	IZS	1.9	1.9	1.9	1.9	1.9	2.1	2.0	24	
17	2	2	2	2.1	2.1	2.2	2.2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.2	2.0	24	
18	1.9	2	2	2	2	2	2.1	2.1	2.1	2	2	1.9	1.9	1.9	1.9	IZS	1.9	1.9	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24	
19	2.1	2.1	2	2	2.1	2.1	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2.1	2.1	2.2	2.2	2.0	24	
20	2.3	2.5	2.6	2.7	2.8	3	3.3	3.2	2.6	2.5	2.3	2.1	2	2	IZS	2	2	2	2	2	2	2.1	2.1	2.2	2.2	3.3	2.4	24	
21	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2.1	2.2	2.2	2.3	2.2	2.3	2.1	24
22	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	24
23	1.9	1.9	1.9	2	2	2	2	2	2	2	2	IZS	1.9	1.9	1.9	2	1.9	1.9	2	2	2	2	2.1	2.1	2.1	2.1	2.0	24	
24	2.1	2.2	2.2	2.3	2.4	2.4	2.4	2.2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2	2.4	2.1	24		
25	2	2	2.1	2.1	2.1	2.1	2.1	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	2.3	2.3	2.3	2.1	24	
26	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.1	2.4	2.1	24	
27	2	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	2.1	2.1	2.0	24	
28	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.0	24	
29	2.1	2.1	2.2	2.3	2.4	IZS	2.4	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.4	2.1	24	
30	2.2	2.2	2.3	2.3	IZS	2.2	2.2	2.2	2.1	2	2	2	2	2	2	1.9	2	2	2	2	2	2	2.1	2.1	2.1	2.3	2.1	24	
31	2.1	2.2	2.3	IZS	2.5	2.7	2.8	2.7	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.3	2.3	2.8	2.2	24	
HOURLY MAX	2.4	2.7	2.6	2.8	2.9	3.0	3.3	3.2	2.6	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3				
HOURLY AVG	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1				

STATUS FLAG CODES

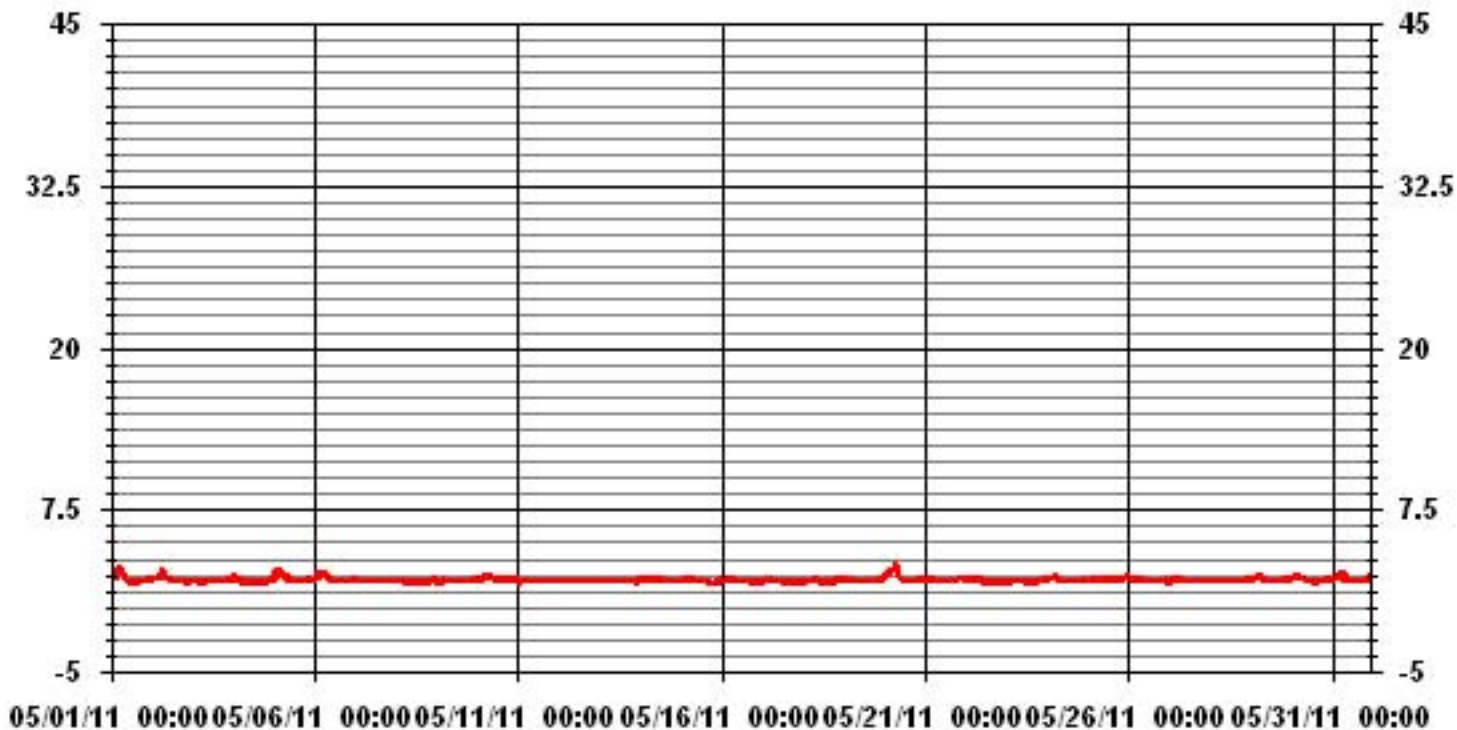
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707		
MAXIMUM 1-HR AVERAGE:	3.3 PPM	@ HOUR(S)	6 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.4 PPM		20 ON DAY(S)
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.18	MONTHLY AVERAGE:	2.07 PPM

01 Hour Averages



— LICA — THC — PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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		
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	2.3	2.4	2.5	3.3	3.2	3.2	3.2	3.2	2.5	2.2	IZS	2	2	2	2	2	2.1	2	2	2.1	2.1	2.2	2.2	2.3	3.3	2.4	24	
2	2	2.2	2.4	2.3	2.3	2.4	3	2.9	3.1	2.4	IZS	2.3	2.3	2.1	2	2.1	2	2	2.1	2	2	2	2	2	2	3.1	2.3	24	
3	3	2	2	2	2	2	2	2	2.1	IZS	2.1	2.1	C	C	C	C	2	2	2	2	2	2.1	2.1	2.3	2.6	2.6	2.1	24	
4	4	2.5	2.3	2.3	2.2	2.1	2.1	2.1	IZS	1.9	2	2	2	2	M	M	2	2	2	2	2	2.1	2.3	2.1	2.2	2.5	2.1	22	
5	5	2.7	2.8	2.6	2.9	2.9	2.8	IZS	2.6	2.3	2.2	2.2	2.1	2.1	2	2	2	2.1	2	2	2	2.2	2.2	2.3	2.2	2.9	2.3	24	
6	6	2.2	2.3	2.8	2.8	2.7	IZS	2.6	2.5	2.5	2.4	2	2.1	2.1	2.1	2	2	2	2.2	2.1	2	2.1	2.1	2.2	2.2	2.8	2.3	24	
7	7	2.2	2.1	2.1	2.1	IZS	2	2.1	2.1	2	2	2.1	2.2	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2	2.1	2	2.1	2.1	24	
8	8	2.1	2.1	2.1	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.0	24	
9	9	2.1	2.1	IZS	2.1	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2	2.1	2	2	2	2	2	2	2	2.1	2.2	2.3	2.3	2.1	24
10	10	2.3	IZS	2.1	2.3	2.3	2.3	2.4	2.4	2.3	2.3	3.4	2.2	2.1	2.1	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	3.4	2.3	24	
11	11	IZS	2	2	2	2	2	2	2.2	2.1	2	2.1	2	2	2	2.3	2	2	2	2	2	2	2	2.1	2	IZS	2.3	2.0	24
12	12	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2.2	2	2	2	2	2	2	2	IZS	2	2.2	24
13	13	2	2	2	2	2	2.1	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	2.1	2.1	2.1	IZS	2.1	2.1	24	
14	14	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.5	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	IZS	2.1	2	2.1	2.5	2.2	24
15	15	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	IZS	2.1	2.1	2.1	2.1	2.2	2.1	24
16	16	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2	2	2	2	2.1	2.1	2	2	IZS	2	2	2	1.9	2	2.2	2.1	24	
17	17	2	2	2.1	2.2	2.2	2.2	2.2	2.5	2.1	2	2.1	2	2	2	2.2	2	1.9	IZS	1.9	1.9	1.9	1.9	2	1.9	2	2.2	2.1	24
18	18	1.9	2	2	2	2	2.6	2.2	2.2	2.1	2.1	2	2	2	1.9	2	2	IZS	2.1	2	2.1	2.1	2.2	2.2	2.2	2.6	2.1	24	
19	19	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.3	2	2.1	2	2	2	2	2	IZS	2	2	2	2	2.1	2.1	2.3	2.2	2.3	2.3	2.1	24
20	20	2.5	2.6	2.7	2.9	3.1	3.2	3.5	3.4	2.9	2.7	2.4	2.2	2.1	2.1	IZS	2	2	2	2	2	2.1	2.2	2.3	2.4	2.3	3.5	2.5	24
21	21	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2	2.1	2.1	2.1	2.3	2	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.3	2.4	2.3	2.4	2.2	24
22	22	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	IZS	1.9	1.9	2	2	1.9	2	2	2	2	2	2	2	2.2	2.0	24
23	23	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2.1	2	2	2	2	2	2	2	2.1	2.1	2.2	2.2	2.0	24
24	24	2.2	2.3	2.3	2.4	2.5	2.5	2.5	2.3	2.1	2	IZS	2	2	2	2.2	2	2	2	2	2	2.1	2.1	2.2	2.3	2.1	2.5	2.2	24
25	25	2	2.1	2.1	2.1	2.1	2.2	2.3	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.2	24	
26	26	2.4	2.6	2.2	2.2	2.1	2.2	2.2	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	2.2	2.2	2.2	2.3	2.6	2.2	24
27	27	2.1	2.1	2.1	2.1	2.3	2.3	2.2	IZS	2.1	2.1	2	2	2	2	2	2	2.2	2.1	2.1	2.1	2	2	2.1	2.1	2.3	2.1	24	
28	28	2.1	2	2	2	2	2	IZS	2	2	2	2	2.1	2	2	2.1	2.1	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
29	29	2.2	2.2	2.2	2.3	2.5	IZS	2.4	2.4	2.2	2.2	2	2	2	2.1	2.1	2	2	2	2.1	2.1	2.2	2.2	2.2	2.2	2.5	2.2	24	
30	30	2.2	2.3	2.4	2.4	IZS	2.3	2.2	2.4	2.3	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.2	2.4	2.1	24
31	31	2.3	2.3	2.5	IZS	2.6	3	3.1	3.1	2.4	2.1	2.1	2	2	2	2	2	2	2	2	2.4	2	2.1	2.4	2.4	2.4	3.1	2.3	24
HOURLY MAX		3	3	3	3	3	3	4	3	3	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	3			
HOURLY AVG		2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	2.1	2.1	2.0	2.1	2.1	2.1	2.1	2.2	2.2			

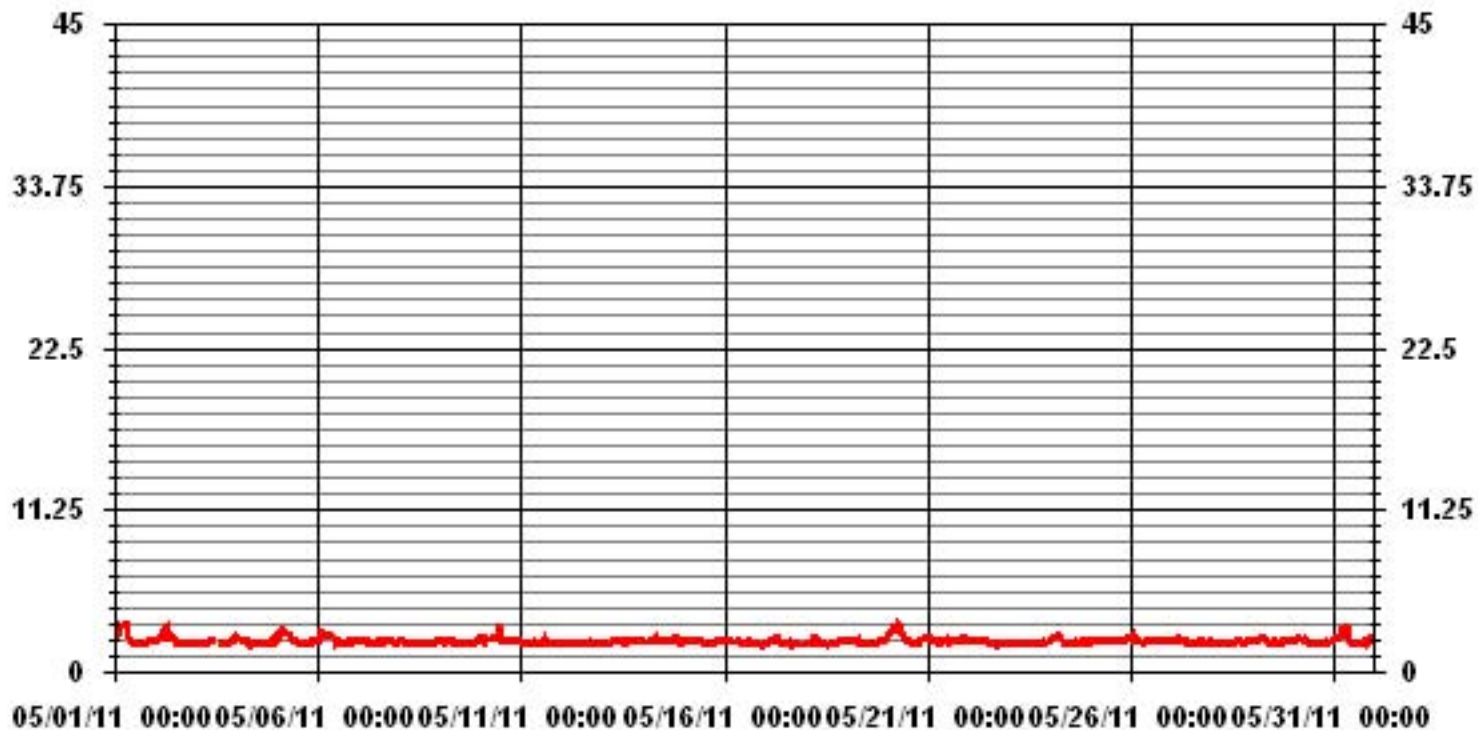
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM INSTANTANEOUS VALUE:	3.5	PPM	@ HOUR(S)	6	ON DAY(S)	20
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.23					

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

May 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	2.54	9.61	11.45	6.78	9.19	11.59	25.03	1.98	1.83	2.97	3.96	3.67	3.81	1.69	1.69	1.41	99.29
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.14	.28	.14	.00	.00	.70
< 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	2.54	9.61	11.45	6.78	9.19	11.59	25.03	1.98	1.83	2.97	4.10	3.81	4.10	1.83	1.69	1.41	

Calm : .00 %

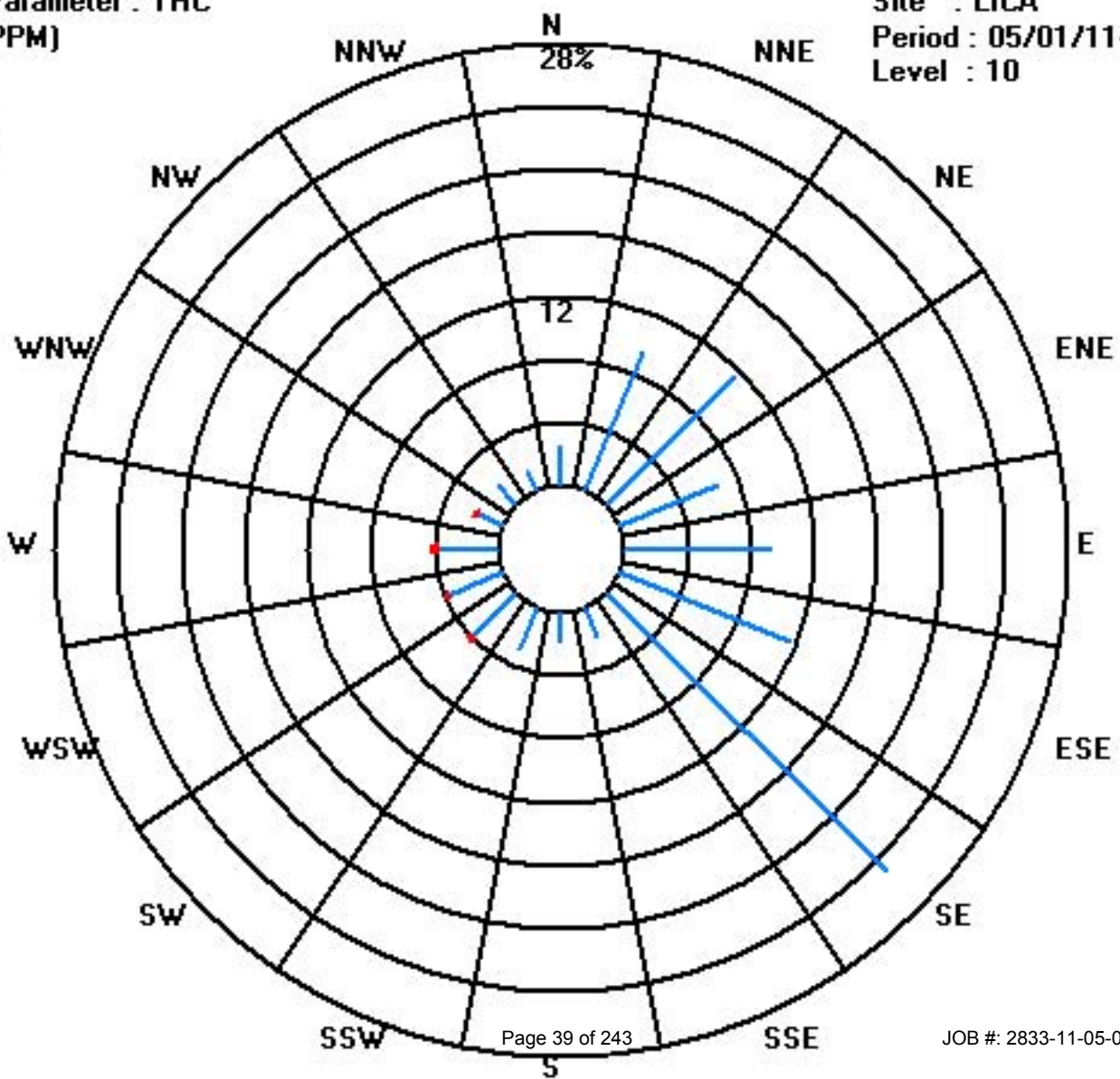
Total # Operational Hours : 707

Distribution By Samples

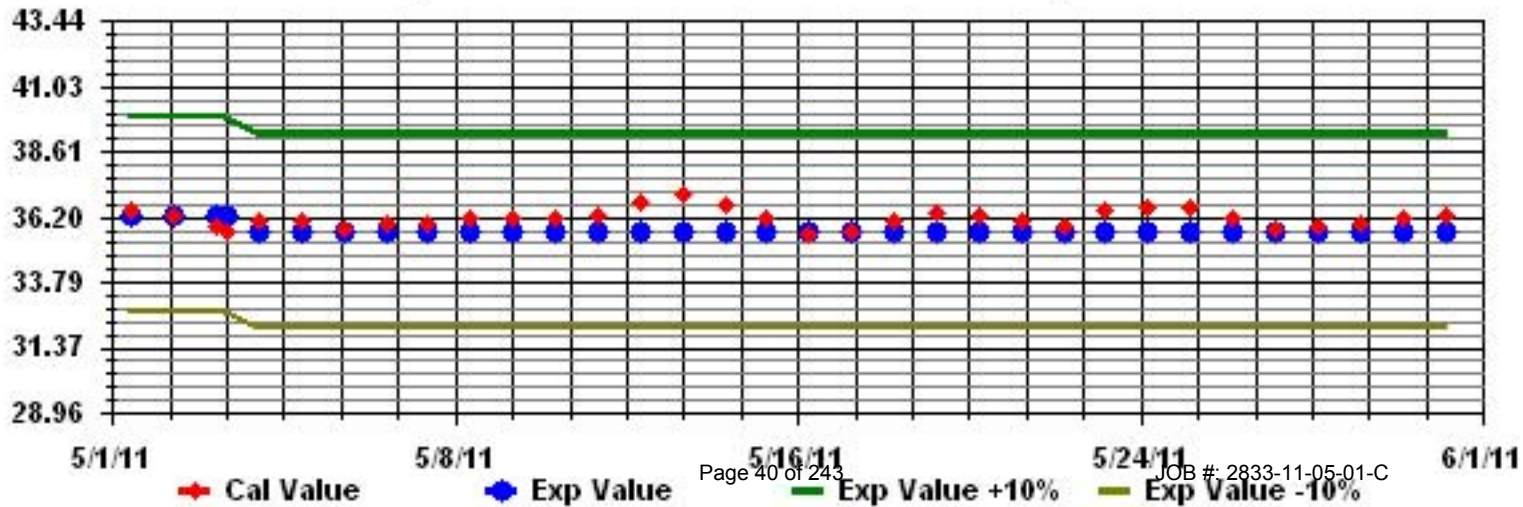
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	18	68	81	48	65	82	177	14	13	21	28	26	27	12	12	10	702
< 10.0											1	1	2	1			5
< 50.0																	
>= 50.0																	
Totals	18	68	81	48	65	82	177	14	13	21	29	27	29	13	12	10	

Calm : .00 %

Total # Operational Hours : 707



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 2011

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

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	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	5	N	0	5	0	2.5	1.9	0.4	1.4	4.4	4	2.5	6.4	1	0	4	5.5	2.5	3.4	3.4	3.4	7.9	1.9	6.4	7.9	3.2	23	
2	9	5	6	2.9	5.5	12.5	10.5	8.4	7.9	7.9	2.9	4.4	2.5	5.9	5	6.9	10.5	6.9	6.4	5	4.4	6.4	5.9	4.4	12.5	6.4	24	
3	6.9	0.4	0	5	5.5	5	9	5.5	5	0	4	3.4	9	2.9	0.4	4.4	4	0.4	0	0	2.9	0	4	9.0	3.2	24		
4	0	0	5.9	5.5	2.5	1.9	1.9	1.9	1	2.5	1.9	C	C	0	2.5	0	6.4	0.4	0.4	2.9	2.9	3.4	1.4	5.5	6.4	2.3	24	
5	0	0	0.4	0	0	1.4	1	2.5	1.4	2.5	0	1.4	1.4	2.5	1.9	3.4	3.4	1.4	4.4	4.4	5	6	13	10.5	13.0	2.8	24	
6	2.9	6	6.4	4.4	8.4	8.4	6.4	9	4	3.4	3.4	2.9	6.4	1.9	0	2.9	4.4	4	3.4	1.4	7.5	7.9	9.9	14	14.0	5.4	24	
7	6.4	2.9	0	0	0	0.4	6.4	0.4	1	0	0.4	2.9	4.4	1.4	1.9	0	4.4	2.5	1.4	7.5	0	0	1.4	0.4	7.5	1.9	24	
8	3.4	4.4	0	1.4	0	6	2.5	4	1.4	2.9	2.5	5	1	4.4	4	3.4	6.9	1.9	4.4	3.4	3.4	9	6.9	10.9	10.9	3.9	24	
9	6.9	0	4	5	4.4	6.4	1.9	6.4	1.4	1.4	3.4	2.9	5	6.9	6.4	4	5	5.5	5.5	5	23.5	16.5	12	7.9	23.5	6.1	24	
10	5.9	1.4	2.5	5	6	6.9	12	5.9	4.4	5.5	4	7.5	1.9	6	6	5	5.5	8.4	6	4.4	9.4	0	1	9.4	12.0	5.4	24	
11	0	3.4	0.4	1	4	1.9	4.4	5	5.9	7.5	7.5	2.9	8.4	7.5	6	2.5	4.4	2.5	4.4	3.4	6.4	9	5.5	2.9	9.0	4.5	24	
12	0.4	1.4	7.5	7.9	4.4	10.5	5.9	4	11.5	5.5	6.9	6	6	2.9	3.4	6	5.5	6	4.4	1.9	1.9	5.5	0	4	11.5	5.0	24	
13	1.4	0.4	3.4	5.5	6.4	4	1.9	9.4	4.4	2.9	4.4	7.5	0	2.9	3.4	5.5	3.4	5	4.4	6.9	4	3.4	5	2.5	9.4	4.1	24	
14	1.9	4.4	7.5	6.9	5.5	6	4.4	9.9	5.9	0	3.4	7.9	3.4	13.9	6	8.4	5	5.5	7.9	1.4	6.9	6.9	16.5	18.5	18.5	6.8	24	
15	10.5	14.9	16	17	7.5	10.9	1.9	5	13.9	3.4	0.4	6.9	5	4.4	4.4	4.4	8.4	7.9	5	1	4	2.9	2.5	4	17.0	6.8	24	
16	7.5	7.9	4.4	9.4	6.4	5.5	5.9	2.5	9.9	1	5.5	5.5	4.4	4.4	4	6	7.5	5.5	4	7.5	5.5	4.4	5.5	5.5	5.9	5.7	24	
17	18	12.9	5	9.9	8.4	5.9	7.9	1.4	1.4	8.4	4	6.4	6.4	5.5	7.9	6	5	0	5	5.9	4	5	3.4	7.9	18.0	6.3	24	
18	6.4	9.9	6.9	4.4	5.5	4	4	6.9	6	4	7.9	0	4.4	3.4	6.9	5	1.9	6.4	0	7.5	4	8.4	10.5	9.9	10.5	5.6	24	
19	7.5	6.9	7.9	5	2.5	7.5	6.9	14.5	1.4	6.9	9.4	5	7.5	6	9.9	5.5	12.9	12	9.4	10.5	17	17	18.5	17	18.5	9.4	24	
20	12	13	16	15	14.5	11.5	14.9	19.5	23.5	19.5	17	10.5	10.9	12	5	9.4	13.4	10.5	8.4	11.5	13.5	18	18	17	23.5	13.9	24	
21	15	17	17	13	14.5	10.5	6.9	12	15.5	9	17.5	14.5	12.9	10.9	10.5	9	8.4	5	12	14	15	12.5	16	13	17.5	12.6	24	
22	6	10.9	11.5	12	7.9	13.5	7.9	9.9	1.9	9.9	8.4	12.5	5.5	6.9	17	6.9	7.9	6.9	2.9	3.4	4.4	1.9	2.5	0.4	17.0	7.5	24	
23	2.5	2.5	4	1.4	1	1.9	1.9	1.9	3.4	0	0	6	7.9	5.5	13	6.9	6	12	4.4	5	2.9	1.9	4.4	13.0	4.1	24		
24	5	6.4	7.9	6.9	6.4	9	11.5	6.9	2.9	5.5	4.4	2.5	4	0.4	4.4	8.4	4.4	2.9	0	10.5	1.4	8.4	7.9	5.5	11.5	5.6	24	
25	9.9	10.9	9.9	12.5	13.5	10.5	12	7.5	8.4	8.4	10.9	17.5	12	12.5	10.5	16.5	15	16.5	7.5	9.9	7.5	6.9	6.9	12	17.5	11.1	24	
26	9.9	11	9	10.9	10.5	9.9	6	9.4	5.5	12	7.5	6.9	6.9	10.9	11	6.9	9.4	5.5	11.5	13.5	18.9	14	15	12.4	18.9	10.2	24	
27	13	15	12.4	12.9	12	17.5	22.5	24.5	9.9	16	9	12.5	9.4	9.9	11.5	19.5	24	26.4	29.5	17	5.5	9	9.9	9	29.5	14.9	24	
28	8.4	4	5	2.9	1.9	0.4	1.9	5	3.4	0.4	4	3.4	0	0	5	5	11.5	0	6.9	6.4	1.4	8.4	10.5	11.5	11.5	4.5	24	
29	6	6.4	7.5	5	7.9	2.5	6.4	5.5	0	5	2.5	15	1.9	1.9	N	7.9	0	0	6.9	8.4	13	12	18.5	18	18.5	6.9	23	
30	16	12	10.9	9	8.4	5	14	13	7.5	0	8.4	10.5	5.5	8.4	9.4	7.5	14	10.9	10	9.4	14	15.5	16	14	16.0	10.4	24	
31	19.5	16	11.5	15.5	13.4	16	17	13.4	7.5	12.9	17.5	21.5	23.5	12	23	20.5	29	20	22	22.5	24	22.5	26.4	24.5	29.0	18.8	24	
HOURLY MAX	20	17	17	17	15	18	23	25	24	20	18	22	24	14	23	21	29	26	30	23	24	23	26	25				
HOURLY AVG	7.2	6.9	6.7	7.0	6.3	7.0	7.1	7.5	5.7	5.6	5.9	6.9	6.1	5.7	6.4	6.9	8.2	6.3	6.8	6.9	7.6	8.2	8.7	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

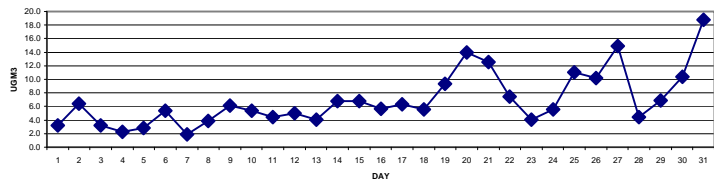
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:	1-HR	-	ug/m ³	24-HR	30	ug/m ³
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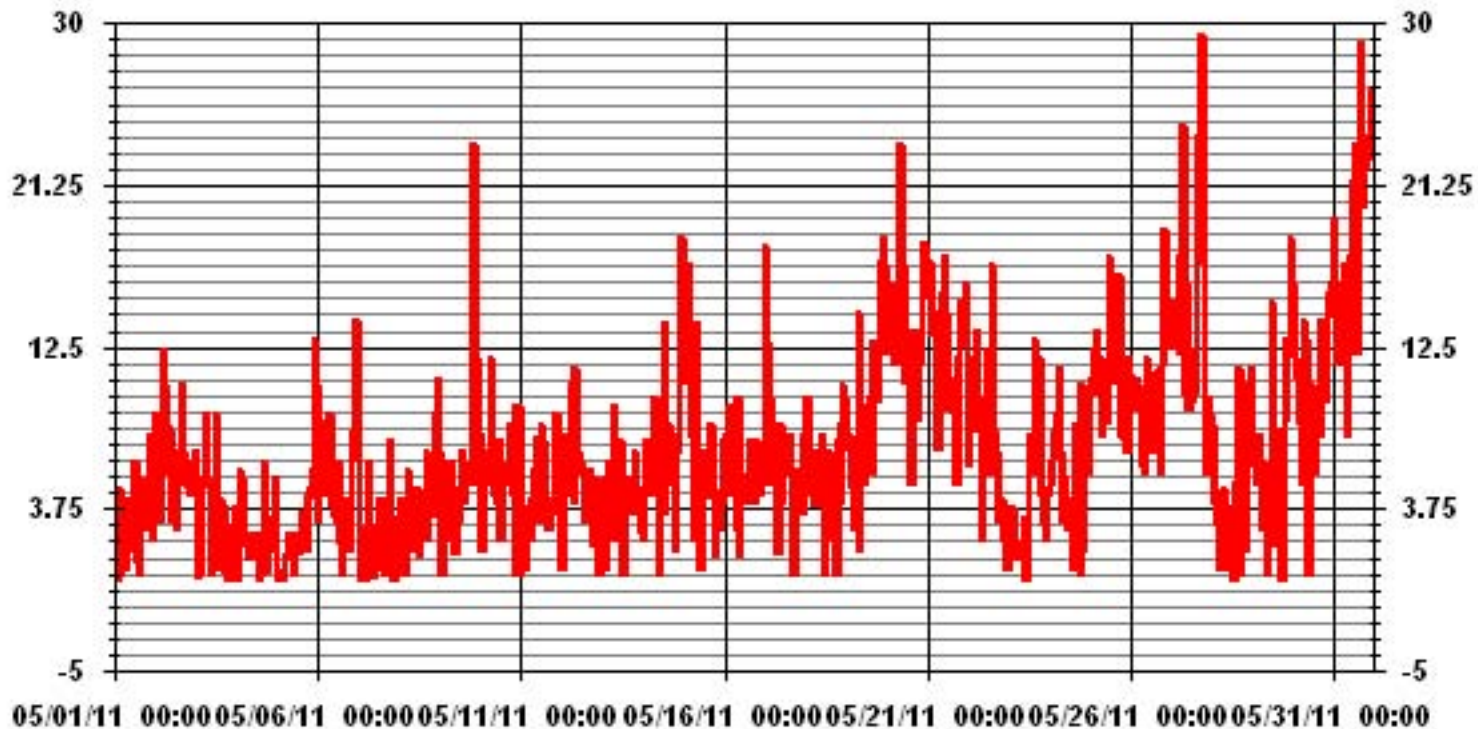
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-				
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE			
NUMBER OF NON-ZERO READINGS:	693				
MAXIMUM 1-HR AVERAGE:	29.5	UG/M ³	@ HOUR(S)	18	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	18.8	UG/M ³			ON DAY(S)
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742	HRS
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	5.30		MONTHLY AVERAGE:	6.95	UG/M ³

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA PM2 UG/M3

LICA
 PM2 / WD Joint Frequency Distribution (Percent)

May 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	2.56	10.00	11.21	7.02	8.91	11.89	24.72	1.89	1.75	2.97	4.05	3.64	4.18	2.16	1.48	1.48	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	2.56	10.00	11.21	7.02	8.91	11.89	24.72	1.89	1.75	2.97	4.05	3.64	4.18	2.16	1.48	1.48	

Calm : .00 %

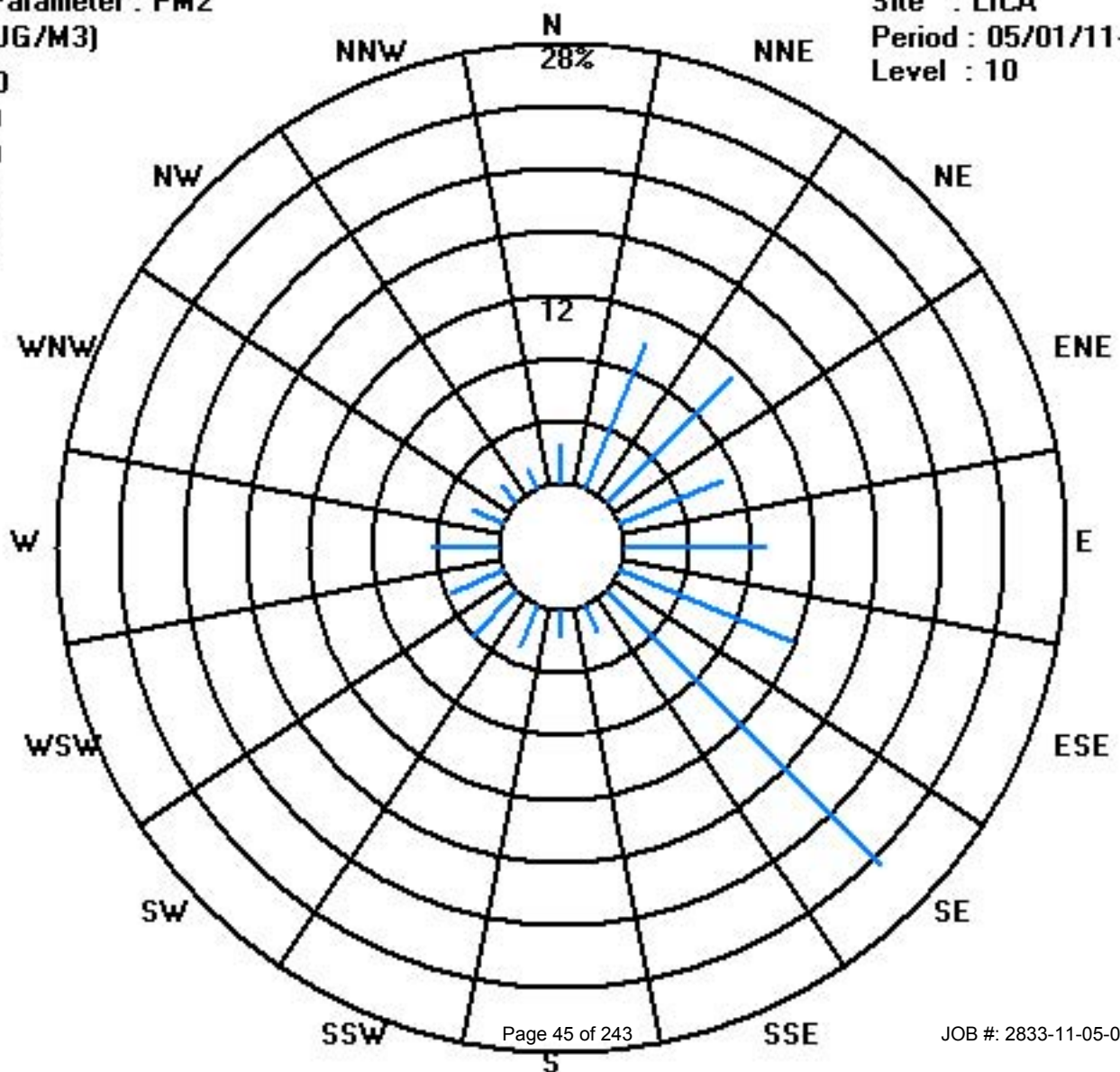
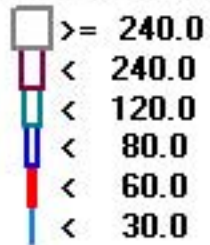
Total # Operational Hours : 740

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	19	74	83	52	66	88	183	14	13	22	30	27	31	16	11	11	740
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	19	74	83	52	66	88	183	14	13	22	30	27	31	16	11	11	

Calm : .00 %

Total # Operational Hours : 740



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 2011

NITROGEN DIOXIDE hourly averages in ppb

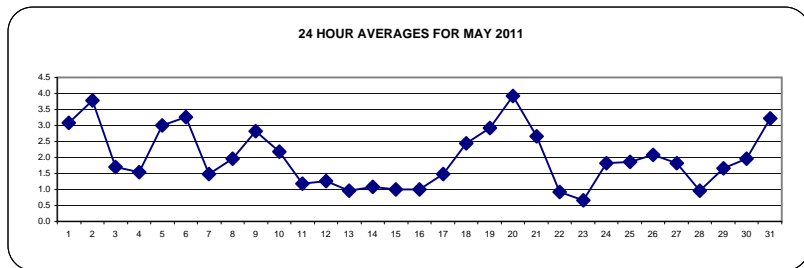
MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	0:00	MAX.	AVG.	RDGS.	
1	3	6	6	6	8	6	5	5	4	2	IZS	1	1	1	0	1	1	1	2	2	2	3	3	2	8	3.1	24	
2	3	3	4	4	6	13	15	7	5	IZS	4	4	2	1	1	2	3	2	2	2	2	1	1	1	15	3.8	24	
3	1	1	1	1	2	2	2	2	IZS	C	C	C	C	C	C	1	1	1	1	1	2	4	3	3	4	1.7	24	
4	3	3	2	2	1	1	1	IZS	1	1	1	1	1	1	M	0	0	0	0	1	3	5	3	3	5	1.5	23	
5	3	4	3	3	3	3	IZS	4	3	1	1	1	1	1	1	1	1	2	3	5	9	8	7	9	3.0	24		
6	5	5	4	3	7	IZS	7	5	5	3	1	1	1	1	1	1	1	1	2	2	4	3	7	5	7	3.3	24	
7	5	2	2	1	IZS	2	1	1	2	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	5	1.5	24	
8	1	2	2	IZS	5	3	1	2	1	1	1	1	1	0	0	1	1	1	2	2	5	6	5	6	2.0	24		
9	4	2	IZS	4	5	4	5	1	1	1	1	1	1	1	1	1	1	2	1	3	9	8	4	4	9	2.8	24	
10	5	IZS	1	2	4	8	6	2	2	2	1	1	1	1	1	2	3	2	1	1	1	1	1	1	8	2.2	24	
11	IZS	1	1	1	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	IZS	2	1.2	24
12	1	1	1	2	3	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3	24	
13	1	1	0	0	1	1	1	1	1	0	2	1	1	1	1	1	1	1	1	1	2	IZS	1	1	2	1.0	24	
14	1	1	1	1	1	2	2	2	1	1	1	1	1	0	1	1	1	1	1	1	IZS	1	1	1	2	1.1	24	
15	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	0	1	1	IZS	1	1	1	1	2	1.0	24	
16	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	
17	2	1	1	2	2	4	2	2	1	1	1	1	1	1	1	1	1	IZS	1	3	1	1	2	1	4	1.5	24	
18	1	1	2	2	3	5	3	2	2	1	2	1	1	1	1	2	IZS	1	2	3	5	7	5	3	7	2.4	24	
19	2	2	1	2	2	4	4	3	2	2	1	1	1	1	1	IZS	1	1	3	6	10	7	6	4	10	2.9	24	
20	4	4	4	4	5	4	7	6	4	5	4	1	1	1	IZS	1	1	1	1	3	8	8	7	6	8	3.9	24	
21	6	6	4	3	3	3	1	1	2	1	1	1	1	IZS	1	1	1	1	2	4	5	6	4	3	6	2.7	24	
22	2	2	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	0	0	0	0	2	0.9	24	
23	0	0	0	0	0	0	0	1	0	0	0	IZS	1	0	1	1	0	1	1	1	1	3	2	2	3	0.7	24	
24	2	1	1	2	2	3	3	3	2	1	IZS	1	0	0	1	1	1	1	2	2	4	5	3	1	5	1.8	24	
25	2	2	1	2	2	1	5	4	1	IZS	1	1	1	1	1	1	1	1	1	1	2	3	4	4	5	1.9	24	
26	4	3	2	2	3	2	2	IZS	1	1	1	2	1	1	2	1	1	2	3	4	5	2	1	5	2.1	24		
27	1	1	3	2	2	3	5	IZS	2	2	1	1	0	1	1	1	1	2	2	2	2	2	3	5	1.8	24		
28	1	0	0	0	0	0	IZS	0	0	0	0	0	1	1	0	1	1	1	1	1	2	4	4	4	4	1.0	24	
29	3	3	2	3	3	IZS	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	3	1.7	24		
30	1	2	2	3	IZS	3	2	3	2	2	1	1	1	1	1	1	1	1	1	1	2	5	4	4	5	2.0	24	
31	3	3	3	IZS	3	4	6	9	5	2	2	2	2	2	1	2	1	1	2	3	4	4	3	4	5	9	3.2	24
HOURLY MAX	6	6	6	6	8	13	15	9	5	5	4	4	2	1	2	2	3	3	3	6	10	9	8	7				
HOURLY AVG	2.4	2.2	1.9	2.1	2.8	3.1	3.2	2.6	1.9	1.4	1.3	1.1	1.1	0.9	0.9	1.1	1.0	1.2	1.4	2.0	3.0	3.6	3.1	2.7				

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:

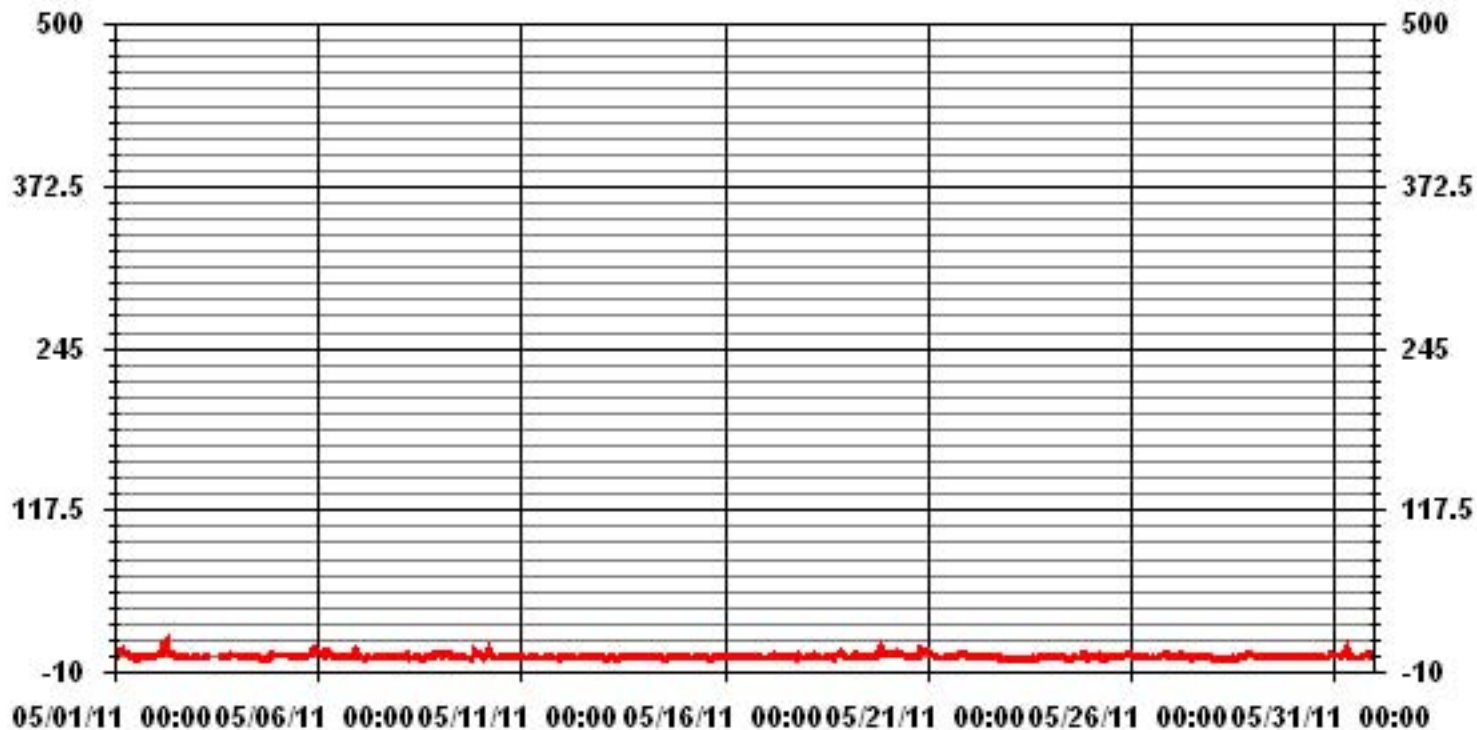
ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	663		
MAXIMUM 1-HR AVERAGE:	15 PPB @ HOUR(S) 6 ON DAY(S) 2		
MAXIMUM 24-HR AVERAGE:	3.9 PPB ON DAY(S) 20		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	6 HRS	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	1.78	MONTHLY AVERAGE:	1.99 PPB

01 Hour Averages



— LICA NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	5	9	9	9	15	10	7	6	5	3	IZS	2	1	2	1	7	3	6	3	2	4	5	4	3	15	5.3	24	
2	4	6	6	12	10	27	18	15	6	IZS	7	7	3	2	3	2	3	16	3	3	4	2	2	1	27	7.0	24	
3	1	2	2	2	5	3	2	3	IZS	C	C	C	C	C	C	2	1	1	2	3	4	5	4	4	5	2.7	24	
4	5	3	4	2	2	2	2	IZS	1	2	2	1	1	M	M	1	1	1	1	1	8	10	4	4	10	2.8	22	
5	6	5	4	5	4	4	IZS	6	6	2	4	2	2	3	5	4	16	1	3	6	13	15	11	13	16	6.1	24	
6	7	18	7	6	15	IZS	16	8	6	7	2	2	2	7	2	2	2	2	3	4	13	8	20	10	20	7.3	24	
7	8	4	4	4	IZS	3	3	3	20	20	1	1	2	2	2	2	2	16	3	2	7	3	3	20	5.1	24		
8	2	3	4	IZS	8	7	3	13	2	1	9	6	8	1	2	1	8	1	7	10	3	10	11	7	13	5.5	24	
9	5	5	IZS	9	7	6	10	4	2	1	1	3	2	1	8	3	2	23	2	6	35	11	9	6	35	7.0	24	
10	7	IZS	2	9	13	15	22	9	5	2	2	4	2	2	2	20	10	4	3	4	5	2	2	1	22	6.4	24	
11	IZS	1	1	1	3	4	2	4	2	3	2	2	17	6	3	2	2	4	4	4	2	9	1	IZS	17	3.6	24	
12	1	1	2	3	8	4	7	3	11	18	1	1	2	3	16	1	2	5	7	5	3	2	IZS	1	18	4.7	24	
13	1	1	1	1	1	3	6	4	7	8	15	1	7	6	3	1	3	2	2	5	2	IZS	3	2	15	3.7	24	
14	2	2	3	2	2	3	2	5	4	10	4	6	8	6	10	3	2	7	2	2	IZS	2	2	2	10	4.0	24	
15	2	2	2	2	2	2	2	5	1	1	5	2	7	3	2	2	1	1	1	IZS	1	2	2	1	7	2.2	24	
16	1	1	1	1	2	2	2	4	7	2	8	2	5	3	4	2	2	2	IZS	3	2	1	2	2	8	2.7	24	
17	2	5	2	2	4	7	4	6	7	2	2	2	2	2	4	2	2	IZS	2	5	3	2	3	2	7	3.2	24	
18	2	2	3	3	4	8	5	4	16	2	20	2	2	3	3	10	IZS	11	2	13	9	10	6	6	20	6.3	24	
19	3	3	2	3	4	8	11	14	3	3	2	3	4	3	2	IZS	4	2	5	18	18	11	9	6	18	6.1	24	
20	6	6	6	5	5	6	8	16	6	7	12	3	2	4	IZS	3	4	2	4	6	14	12	9	12	16	6.9	24	
21	9	9	5	5	4	4	2	6	5	8	3	4	3	IZS	3	12	8	4	6	15	8	10	7	5	15	6.3	24	
22	3	3	2	1	2	2	2	1	2	1	1	6	IZS	5	2	2	2	5	1	1	3	1	1	1	6	2.2	24	
23	1	0	1	0	1	2	1	1	1	2	1	IZS	1	1	12	5	1	1	1	2	3	5	3	4	12	2.2	24	
24	2	3	2	2	3	4	5	5	5	3	IZS	6	2	1	3	2	2	3	3	4	5	9	6	3	9	3.6	24	
25	3	4	3	3	3	2	10	21	3	IZS	2	2	3	2	4	4	10	3	13	3	2	5	7	5	21	5.1	24	
26	6	4	3	3	3	4	4	3	IZS	4	2	3	42	2	9	19	7	3	11	5	14	9	5	4	42	7.3	24	
27	2	2	4	4	4	5	7	IZS	6	6	4	1	1	6	2	4	8	6	4	4	3	7	3	5	8	4.3	24	
28	3	1	1	0	1	1	IZS	2	2	5	1	1	1	1	1	2	2	1	2	1	5	6	5	5	6	2.2	24	
29	5	5	3	5	6	IZS	3	2	2	3	2	7	1	1	3	1	1	2	2	2	18	3	6	2	18	3.7	24	
30	2	2	4	8	IZS	4	3	8	5	2	5	3	1	3	6	2	6	2	4	2	5	9	6	6	9	4.3	24	
31	3	4	4	IZS	5	8	9	12	9	2	2	2	9	7	7	4	2	5	7	5	6	4	5	7	12	5.6	24	
HOURLY MAX	9	18	9	12	15	27	22	21	20	20	7	42	7	16	20	16	23	16	18	35	15	20	13					
HOURLY AVG	3.6	3.9	3.2	3.9	5.0	5.5	6.1	6.7	5.4	4.6	4.4	3.0	4.9	3.1	4.4	4.2	4.0	4.3	4.2	4.9	7.2	6.5	5.4	4.4				

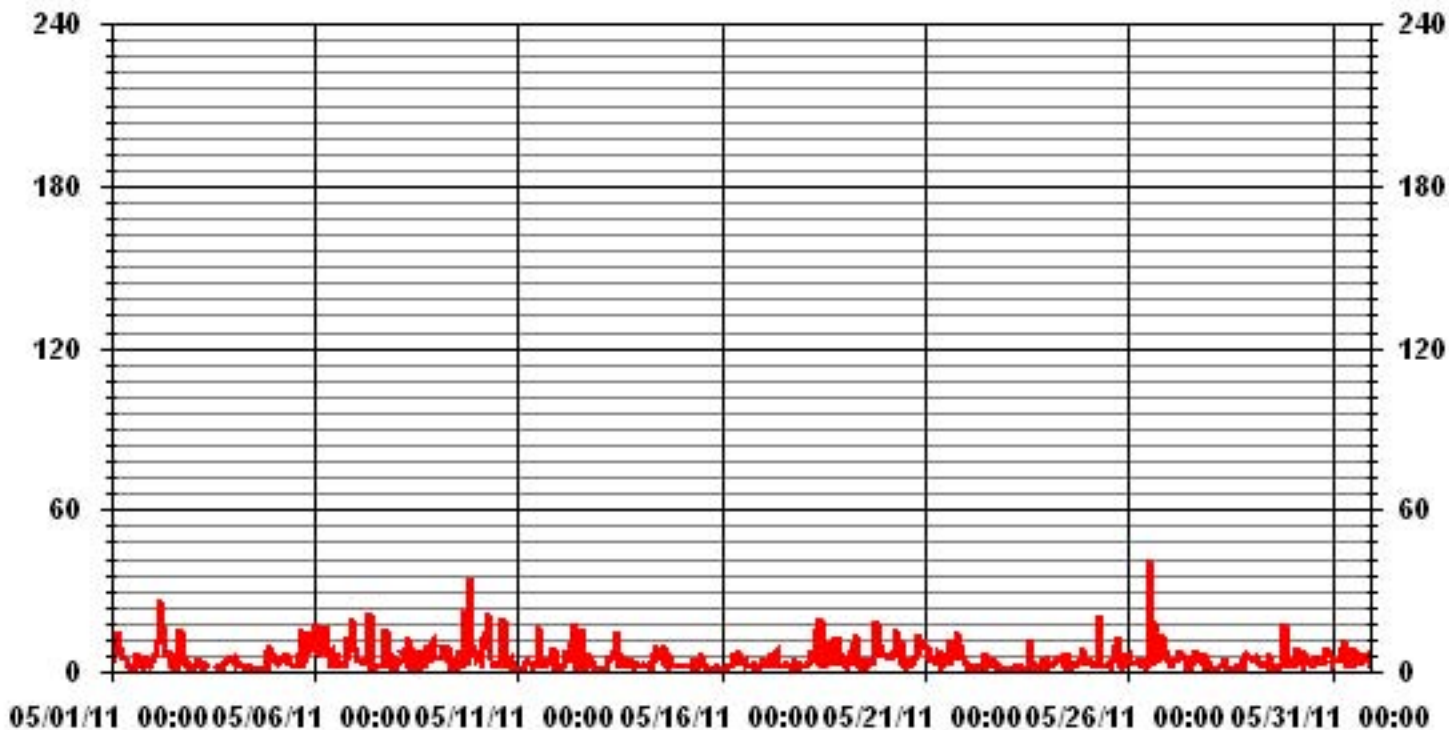
STATUS FLAG CODES

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:	701					
MAXIMUM INSTANTANEOUS VALUE:	42	PPB	@ HOUR(S)	12	ON DAY(S)	26
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION	4.40					

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

May 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	2.55	9.36	11.48	6.80	9.21	11.63	25.10	1.98	1.84	2.97	4.11	3.82	4.11	1.84	1.70	1.41	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	2.55	9.36	11.48	6.80	9.21	11.63	25.10	1.98	1.84	2.97	4.11	3.82	4.11	1.84	1.70	1.41	

Calm : .00 %

Total # Operational Hours : 705

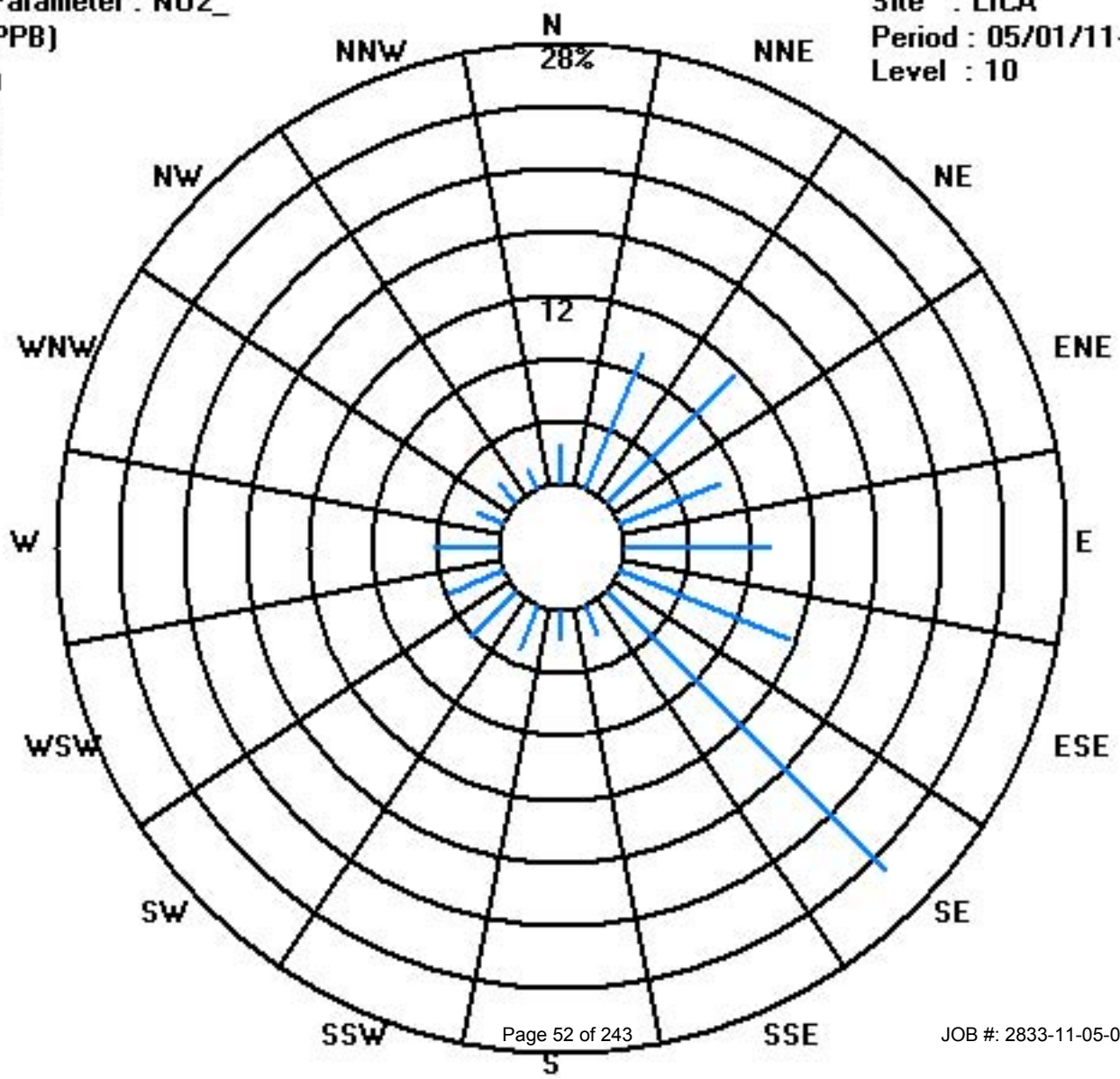
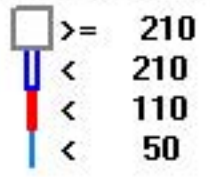
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	66	81	48	65	82	177	14	13	21	29	27	29	13	12	10	705
< 110																	
< 210																	
>= 210																	
Totals	18	66	81	48	65	82	177	14	13	21	29	27	29	13	12	10	

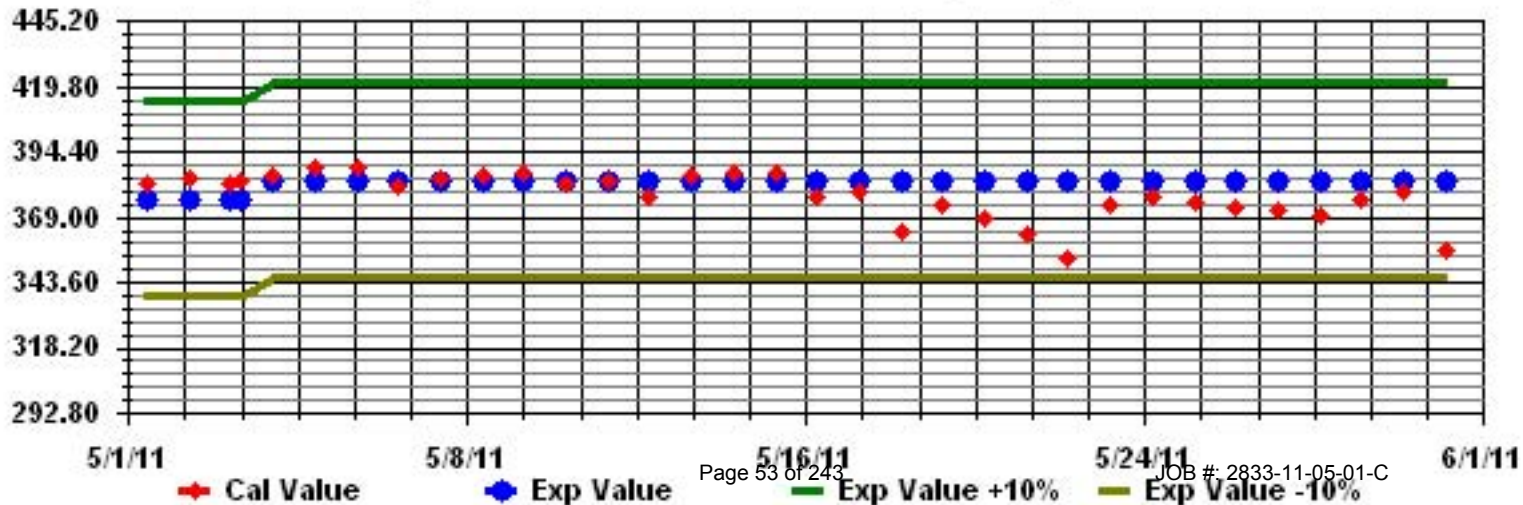
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	2	2	0	3	4	7	3	2	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1.0	24	
2	0	0	0	0	0	7	18	5	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	18	1.4	24	
3	0	0	0	0	0	0	0	1	IZS	C	C	C	C	C	C	0	0	0	0	0	0	0	0	0	1	0.1	24	
4	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0.0	23	
5	0	0	0	0	0	0	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
6	0	1	0	0	1	IZS	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0.4	24	
7	0	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
8	0	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.1	24	
9	0	0	IZS	0	1	2	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
10	0	IZS	0	0	0	2	2	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0.3	24	
11	IZS	0	0	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	1	0.2	24	
12	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0.1	24
13	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0.0	24	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	1	0.0	24	
15	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	
16	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	
17	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	
18	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	
19	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.1	24
20	0	0	0	0	0	1	3	3	1	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	3	0.4	24	
21	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0	0	0	0	1	0.0	24	
22	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	
23	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	
24	0	0	0	0	1	4	3	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.4	24	
25	0	0	0	0	0	0	1	1	0	IZS	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	IZS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24	
27	0	0	0	0	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
28	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	
29	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
30	0	0	0	0	IZS	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
31	0	0	0	IZS	0	2	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	24	
HOURLY MAX	0	2	2	0	3	7	18	5	2	1	1	1	1	1	0	1	1	0	0	1	0	0	1	0				
HOURLY AVG	0.0	0.1	0.1	0.0	0.2	0.8	1.7	0.9	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				

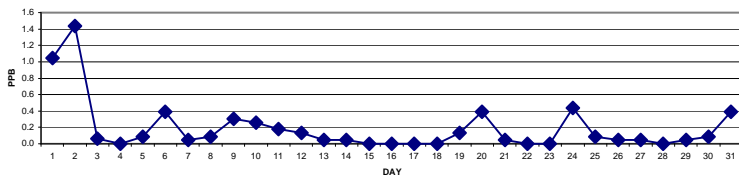
STATUS FLAG CODES

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

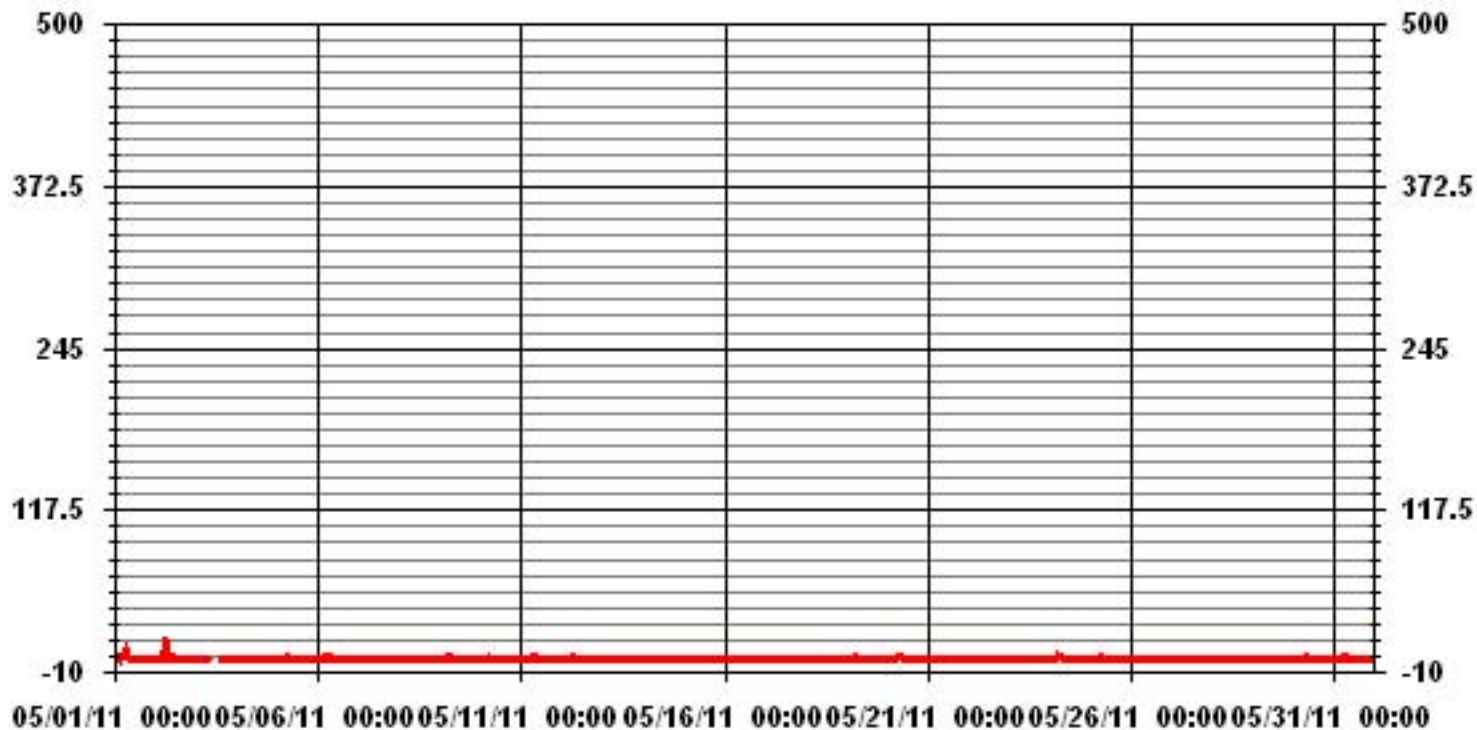
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	68
MAXIMUM 1-HR AVERAGE:	18 PPB @ HOUR(S) 6 ON DAY(S) 2
MAXIMUM 24-HR AVERAGE:	1.4 PPB ON DAY(S) 2
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	743 HRS
AMT OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.93
MONTHLY AVERAGE:	0.19 PPB

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	7	9	3	15	8	11	4	3	1	IZS	0	0	1	0	3	0	1	0	0	0	0	0	0	15	3.0	24
2	0	1	0	4	1	22	33	22	1	IZS	1	3	0	0	4	0	0	6	0	0	0	0	0	0	33	4.3	24
3	0	1	0	0	1	0	1	7	IZS	C	C	C	C	C	C	0	0	0	0	4	0	0	0	0	7	0.8	24
4	0	0	0	0	0	0	0	IZS	0	0	0	0	0	M	M	0	0	0	0	0	0	0	0	1	1	0.0	22
5	2	0	2	0	1	0	IZS	1	1	0	1	0	0	0	8	1	5	0	1	0	1	0	0	0	8	1.0	24
6	0	33	2	3	5	IZS	17	4	2	1	0	0	1	2	3	0	0	0	8	2	2	16	0	33	4.4	24	
7	1	1	0	1	IZS	1	1	1	8	8	0	1	1	1	1	5	1	2	0	0	1	1	0	8	1.6	24	
8	1	1	1	IZS	1	1	0	11	0	3	9	2	2	2	2	0	6	3	2	4	0	1	1	0	11	2.3	24
9	0	2	IZS	2	7	3	10	7	0	1	1	1	0	0	3	2	0	13	1	1	7	0	0	0	13	2.7	24
10	0	IZS	0	4	2	12	18	6	0	1	2	0	9	1	0	6	5	1	2	0	1	0	0	0	18	3.0	24
11	IZS	0	0	0	0	1	1	10	22	15	5	2	10	12	6	1	2	2	0	2	0	3	0	IZS	22	4.3	24
12	0	0	0	0	1	1	14	7	4	6	0	3	1	5	4	3	2	2	2	0	0	0	IZS	0	14	2.4	24
13	0	0	0	0	0	1	2	12	6	16	3	3	4	4	2	3	3	0	2	1	0	IZS	1	0	16	2.7	24
14	0	0	0	0	0	0	0	3	2	3	3	4	4	22	9	1	2	2	0	0	IZS	0	0	0	22	2.4	24
15	1	0	0	0	0	0	2	1	0	1	2	5	0	1	0	3	0	0	0	IZS	8	0	2	0	8	1.1	24
16	0	0	0	0	0	0	3	4	1	2	0	0	2	0	3	2	1	1	IZS	0	0	0	3	0	4	1.0	24
17	0	2	0	0	0	3	0	4	20	2	2	3	2	2	3	2	1	IZS	0	0	2	0	0	0	20	2.1	24
18	0	0	0	0	0	3	1	3	4	2	11	4	0	0	2	2	IZS	1	0	3	0	1	0	1	11	1.7	24
19	0	0	0	0	1	3	16	9	1	0	0	2	0	1	0	IZS	2	0	1	2	1	1	0	0	16	1.7	24
20	0	0	0	0	1	3	4	24	1	4	2	0	9	9	IZS	0	4	0	0	0	2	0	0	2	24	2.8	24
21	1	0	0	0	0	1	0	3	3	3	2	3	0	IZS	1	3	2	3	3	18	1	1	0	0	18	2.1	24
22	0	0	0	0	0	1	0	0	0	0	0	2	IZS	5	0	3	1	3	0	1	1	0	0	0	5	0.7	24
23	0	0	0	0	0	1	0	1	0	0	0	IZS	1	1	6	1	0	0	0	0	0	0	0	0	6	0.5	24
24	0	0	0	1	2	7	5	5	2	1	IZS	3	2	0	3	0	3	1	0	0	0	1	0	0	7	1.6	24
25	0	0	1	0	2	1	3	8	0	IZS	1	1	2	1	3	3	3	2	5	0	0	0	0	0	8	1.6	24
26	0	0	0	0	0	0	1	1	IZS	2	0	4	10	0	0	6	1	5	2	3	1	0	0	0	10	1.6	24
27	0	0	0	1	0	2	1	IZS	4	2	0	1	0	3	0	1	1	1	0	0	0	2	0	0	4	0.8	24
28	0	0	0	0	0	0	IZS	0	1	3	0	0	0	1	3	1	1	1	0	0	0	0	1	3	0.5	24	
29	0	1	0	2	3	IZS	2	0	0	0	0	1	0	1	2	0	1	2	2	2	7	0	2	0	7	1.2	24
30	0	0	0	1	IZS	1	0	8	1	0	2	2	0	4	1	2	1	1	1	0	0	0	0	0	8	1.1	24
31	0	0	0	IZS	2	3	4	7	3	0	0	0	1	0	1	1	0	1	1	0	0	0	0	0	7	1.0	24
HOURLY MAX	2	33	9	4	15	22	33	24	22	16	11	5	10	22	9	6	6	13	5	18	8	3	16	2			
HOURLY AVG	0.3	1.6	0.5	0.8	1.6	2.7	5.2	6.0	3.1	2.8	1.7	1.7	2.1	2.8	2.5	1.7	1.7	1.8	0.9	1.6	1.1	0.4	0.9	0.2			

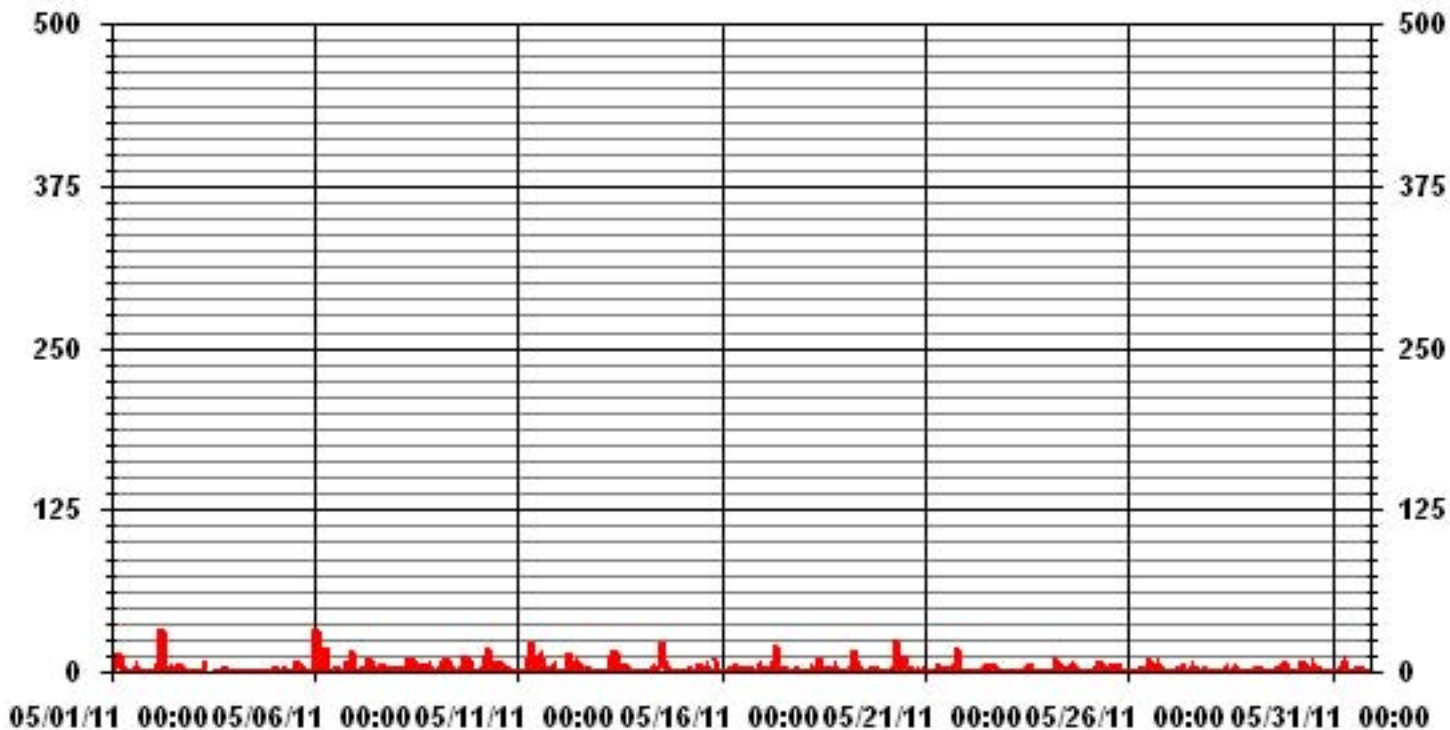
STATUS FLAG CODES

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:	367					
MAXIMUM INSTANTANEOUS VALUE:	33	PPB	@ HOUR(S)	6, 1	ON DAY(S)	2, 6
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION	3.73					

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

May 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	2.55	9.36	11.48	6.80	9.21	11.63	25.10	1.98	1.84	2.97	4.11	3.82	4.11	1.84	1.70	1.41	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	2.55	9.36	11.48	6.80	9.21	11.63	25.10	1.98	1.84	2.97	4.11	3.82	4.11	1.84	1.70	1.41	

Calm : .00 %

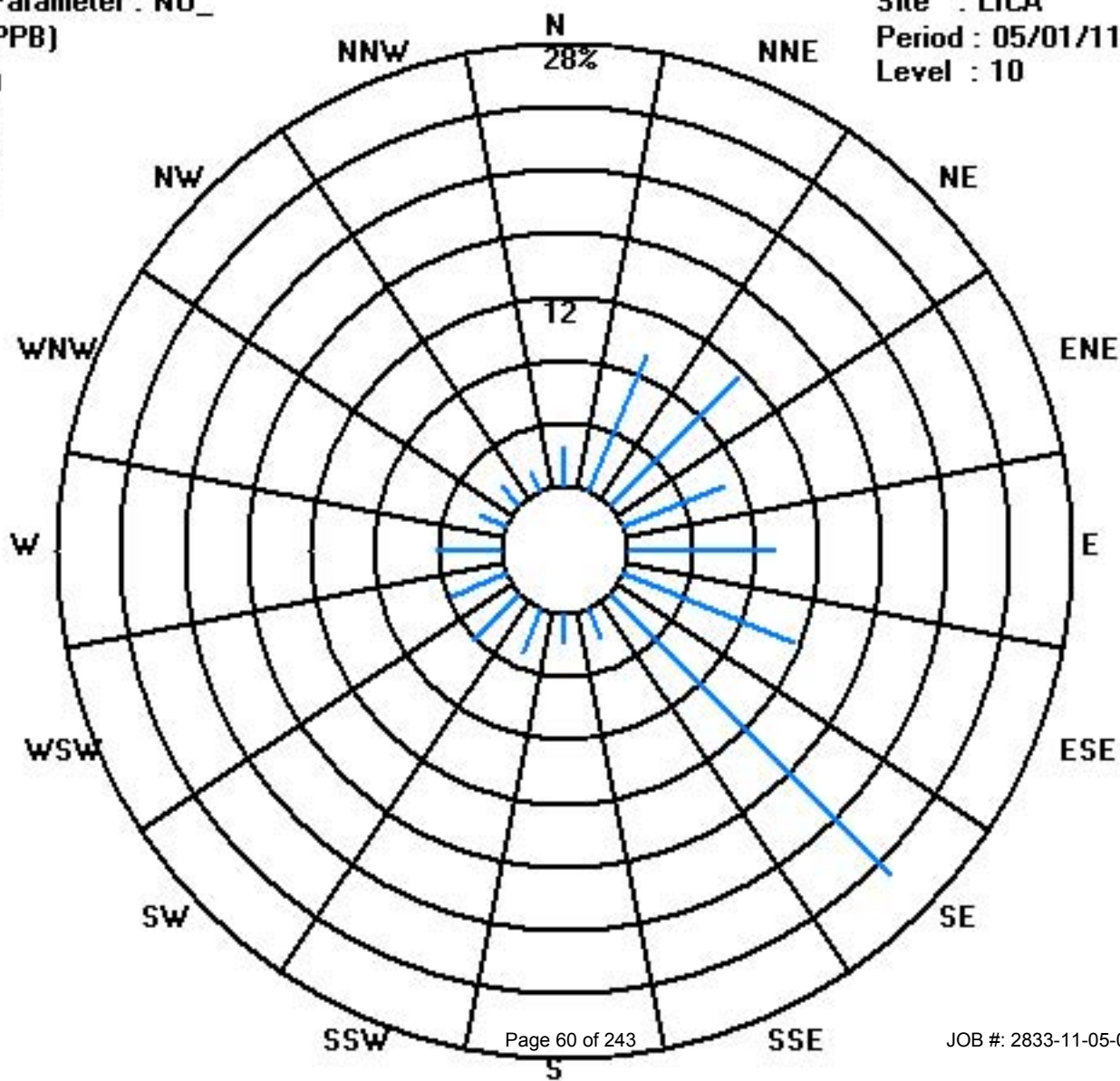
Total # Operational Hours : 705

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	66	81	48	65	82	177	14	13	21	29	27	29	13	12	10	705
< 110																	
< 210																	
>= 210																	
Totals	18	66	81	48	65	82	177	14	13	21	29	27	29	13	12	10	

Calm : .00 %

Total # Operational Hours : 705



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 2011

OXIDES OF NITROGEN hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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	3	8	8	6	11	10	12	8	6	3	IZS	1	1	1	0	1	1	1	2	1	2	2	2	2	12	4.0	24		
2	2	3	4	4	6	20	33	11	6	IZS	5	5	2	2	2	1	2	3	2	2	2	1	1	1	33	5.2	24		
3	1	1	1	1	2	2	2	3	IZS	C	C	C	C	C	C	1	1	1	1	1	2	4	3	3	4	1.8	24		
4	3	3	2	1	1	1	1	IZS	1	1	1	1	1	1	M	0	0	0	0	0	2	4	3	3	4	1.4	23		
5	3	4	3	3	3	3	IZS	5	4	1	1	1	1	1	1	1	1	1	2	3	5	8	8	7	8	3.0	24		
6	5	6	4	4	8	IZS	11	6	6	3	2	1	1	1	1	1	1	1	2	2	4	3	8	5	11	3.7	24		
7	5	2	2	2	IZS	2	1	2	3	1	1	1	1	1	1	1	1	1	2	2	2	1	2	1	5	1.7	24		
8	1	2	2	IZS	6	4	1	2	1	1	1	1	1	0	0	1	2	1	2	3	2	5	6	5	6	2.2	24		
9	4	2	IZS	4	5	6	8	2	1	1	1	1	1	1	1	1	1	2	1	3	9	8	4	4	9	3.1	24		
10	5	IZS	1	2	4	10	8	3	2	2	1	1	1	1	1	3	3	2	1	1	1	1	1	1	10	2.4	24		
11	IZS	1	0	1	2	2	1	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	2	1	IZS	2	1.3	24	
12	1	1	1	2	3	2	2	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	3	1.4	24
13	1	1	0	0	0	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	IZS	1	1	2	1.0	24	
14	1	1	1	1	1	2	2	2	2	1	1	1	2	1	1	1	1	1	1	1	1	IZS	1	1	1	2	1.2	24	
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	IZS	1	1	1	1	1	1	1	0.9	24	
16	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	1.0	24	
17	1	1	1	1	2	4	3	2	2	1	1	1	1	1	1	1	1	IZS	1	3	1	1	1	1	4	1.4	24		
18	1	1	2	2	3	5	3	2	2	1	2	1	1	1	2	2	IZS	1	1	3	5	7	5	3	7	2.4	24		
19	2	2	1	2	2	5	5	3	2	2	1	1	1	1	1	1	IZS	1	3	6	10	7	6	4	10	3.0	24		
20	4	4	4	4	5	5	9	8	5	6	4	1	1	1	IZS	1	2	1	1	3	8	8	7	6	9	4.3	24		
21	6	6	4	2	3	3	1	2	2	2	1	1	1	IZS	1	2	1	1	2	5	5	6	4	3	6	2.8	24		
22	2	2	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	0	0	0	2	0.9	24			
23	0	0	0	0	0	0	0	1	0	0	0	1	IZS	1	1	1	0	1	0	1	1	3	2	2	3	0.7	24		
24	2	2	1	2	3	7	6	4	2	1	IZS	1	0	0	1	0	1	1	2	2	4	5	3	1	7	2.2	24		
25	2	1	1	2	2	1	6	5	1	IZS	1	1	1	1	1	1	1	1	1	1	1	3	4	4	6	1.9	24		
26	4	3	2	2	2	3	2	2	IZS	1	1	1	3	1	1	3	1	1	2	3	4	5	2	1	5	2.2	24		
27	1	1	2	2	2	3	6	IZS	3	2	1	0	0	1	1	1	1	2	2	2	1	2	2	3	6	1.8	24		
28	1	0	0	0	0	0	IZS	0	0	1	0	0	1	1	1	1	1	1	1	1	1	4	4	3	4	1.0	24		
29	3	3	2	3	4	IZS	3	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	4	1.7	24			
30	1	1	2	3	IZS	3	3	4	3	2	1	1	1	1	1	1	1	1	1	1	2	5	4	4	5	2.0	24		
31	3	3	3	IZS	3	6	9	12	6	2	2	2	2	1	2	1	1	2	3	4	4	3	4	5	12	3.6	24		
HOURLY MAX	6	8	8	6	11	20	33	12	6	6	5	5	3	2	2	3	3	3	3	6	10	8	8	7					
HOURLY AVG	2.3	2.2	1.9	2.0	3.0	3.9	4.9	3.4	2.4	1.6	1.3	1.1	1.1	1.0	1.0	1.1	1.1	1.1	1.4	2.0	2.9	3.5	3.1	2.6					

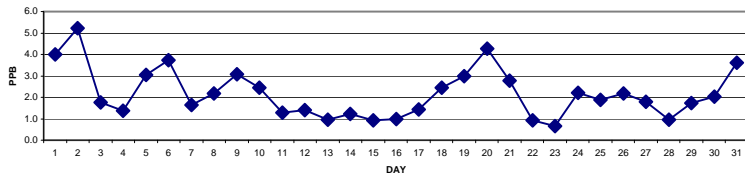
STATUS FLAG CODES

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

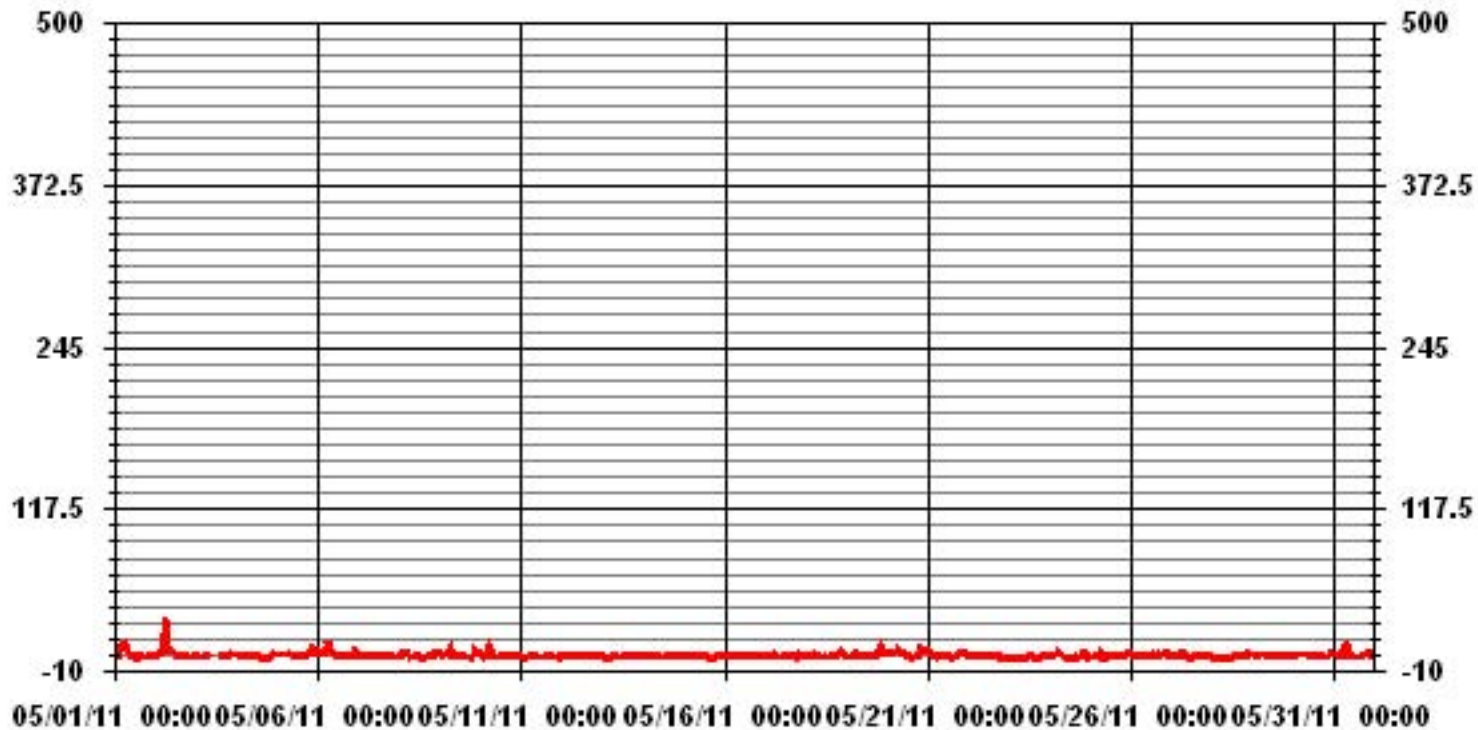
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	661
MAXIMUM 1-HR AVERAGE:	33 PPB @ HOUR(S) 6 ON DAY(S) 2
MAXIMUM 24-HR AVERAGE:	5.2 PPB ON DAY(S) 2
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	2.37
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	2.17 PPB

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	5	16	17	9	28	18	18	10	7	5	IZS	2	2	3	1	9	4	7	3	2	4	5	4	3	28	7.9	24	
2	4	7	6	16	11	47	51	37	7	IZS	9	9	3	3	3	2	3	23	4	3	4	2	2	1	51	11.2	24	
3	1	3	2	2	6	3	4	5	IZS	C	C	C	C	C	2	1	1	2	7	4	5	5	4	7	3.4	24		
4	5	3	4	2	2	2	2	IZS	2	2	2	1	1	M	M	1	1	1	1	1	8	10	4	5	10	2.9	22	
5	7	5	5	5	5	4	IZS	7	7	3	5	2	2	3	8	5	21	1	4	6	14	16	11	13	21	6.9	24	
6	7	47	8	10	17	IZS	33	12	7	7	2	2	3	9	3	2	2	3	3	12	14	11	32	11	47	11.2	24	
7	9	5	4	5	IZS	3	3	4	28	28	2	2	2	2	4	3	17	3	3	8	4	3	8	4	3	28	6.4	24
8	3	4	4	IZS	9	8	4	18	2	2	18	8	11	2	3	2	13	3	9	13	3	10	11	7	18	7.3	24	
9	6	8	IZS	12	14	10	18	7	2	2	2	4	2	2	11	4	2	35	3	7	42	11	9	6	42	9.5	24	
10	7	IZS	2	13	15	27	40	14	5	3	3	4	2	2	3	23	14	4	3	4	6	2	2	1	40	8.7	24	
11	IZS	1	1	1	3	5	4	9	4	10	6	4	24	10	6	3	3	6	4	5	2	11	1	IZS	24	5.6	24	
12	1	1	2	3	9	4	19	10	12	21	2	3	3	3	17	2	3	8	9	5	4	2	IZS	1	21	6.3	24	
13	1	1	1	1	1	3	8	5	8	8	16	2	10	9	3	2	3	2	4	5	2	IZS	3	2	16	4.3	24	
14	2	2	3	2	2	3	2	5	5	12	4	7	10	17	11	4	3	9	2	3	IZS	2	2	2	17	5.0	24	
15	2	2	2	3	2	2	3	6	1	2	7	4	8	4	3	3	1	1	1	IZS	2	2	4	1	8	2.9	24	
16	1	1	1	1	2	3	2	6	7	4	8	2	7	3	5	3	3	2	IZS	4	3	2	4	2	8	3.3	24	
17	2	6	2	2	4	8	4	7	17	3	4	5	2	3	4	4	4	IZS	2	5	5	2	3	2	17	4.3	24	
18	2	2	3	3	4	9	5	5	17	4	31	3	2	3	5	12	IZS	12	2	16	9	11	7	6	31	7.5	24	
19	3	3	3	3	5	11	23	24	4	3	2	3	5	3	2	IZS	5	2	6	19	18	11	10	6	24	7.6	24	
20	6	6	6	5	6	9	12	39	8	10	14	4	3	7	IZS	4	8	3	4	6	16	12	10	14	39	9.2	24	
21	11	9	6	6	5	4	2	9	8	11	5	5	3	IZS	4	14	10	6	9	29	8	11	7	5	29	8.1	24	
22	2	3	2	1	2	4	3	1	2	1	2	8	IZS	10	3	3	2	5	1	2	4	1	1	1	10	2.8	24	
23	0	0	0	0	1	2	1	2	1	2	1	IZS	1	2	15	6	1	1	1	2	3	6	3	4	15	2.4	24	
24	3	3	3	3	5	11	9	8	7	5	IZS	7	4	1	5	2	3	4	3	4	5	9	6	3	11	4.9	24	
25	3	4	3	4	4	3	13	23	4	IZS	3	3	4	3	5	5	13	4	14	3	2	5	7	6	23	6.0	24	
26	6	4	3	2	3	5	4	4	IZS	5	2	6	52	2	9	24	7	7	13	6	15	9	5	4	52	8.6	24	
27	2	2	4	4	4	7	9	IZS	10	8	4	1	1	10	2	5	9	8	4	4	4	9	3	5	10	5.2	24	
28	3	0	0	0	1	1	IZS	2	3	8	1	1	1	2	2	3	3	3	2	1	5	6	5	5	8	2.5	24	
29	5	5	4	7	9	IZS	5	2	2	3	2	9	1	2	4	1	2	4	2	5	24	3	9	3	24	4.9	24	
30	2	2	4	10	IZS	5	4	10	7	3	5	5	1	8	6	2	7	3	5	2	5	9	6	6	10	5.1	24	
31	3	4	4	IZS	7	11	13	17	12	3	3	3	10	7	7	5	2	5	8	5	6	4	5	8	17	6.6	24	
HOURLY MAX	11	47	17	16	28	47	51	39	28	28	31	9	52	17	17	24	21	35	17	29	42	16	32	14				
HOURLY AVG	3.8	5.3	3.6	4.7	6.4	8.0	11.0	10.6	7.1	6.4	5.9	4.1	6.2	4.8	5.5	5.3	5.2	5.9	4.8	6.3	8.1	6.9	6.2	4.7				

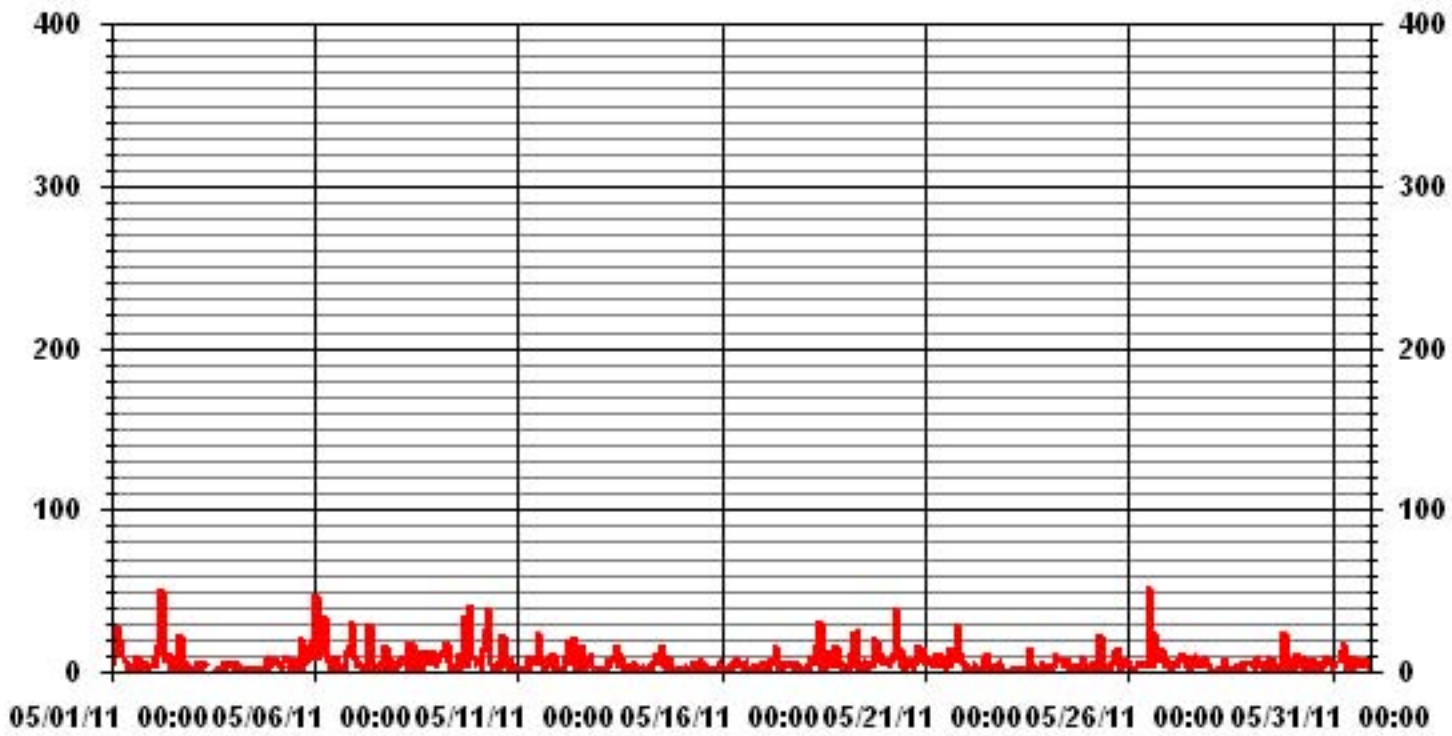
STATUS FLAG CODES

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:	52	PPB	@ HOUR(S)	12	ON DAY(S)	26
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	6	HRS				
STANDARD DEVIATION	6.63					

01 Hour Averages



— LICA NOXMAX PPB

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

May 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	2.55	9.36	11.48	6.80	9.21	11.63	25.10	1.98	1.84	2.97	4.11	3.82	4.11	1.84	1.70	1.41	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	2.55	9.36	11.48	6.80	9.21	11.63	25.10	1.98	1.84	2.97	4.11	3.82	4.11	1.84	1.70	1.41	

Calm : .00 %

Total # Operational Hours : 705

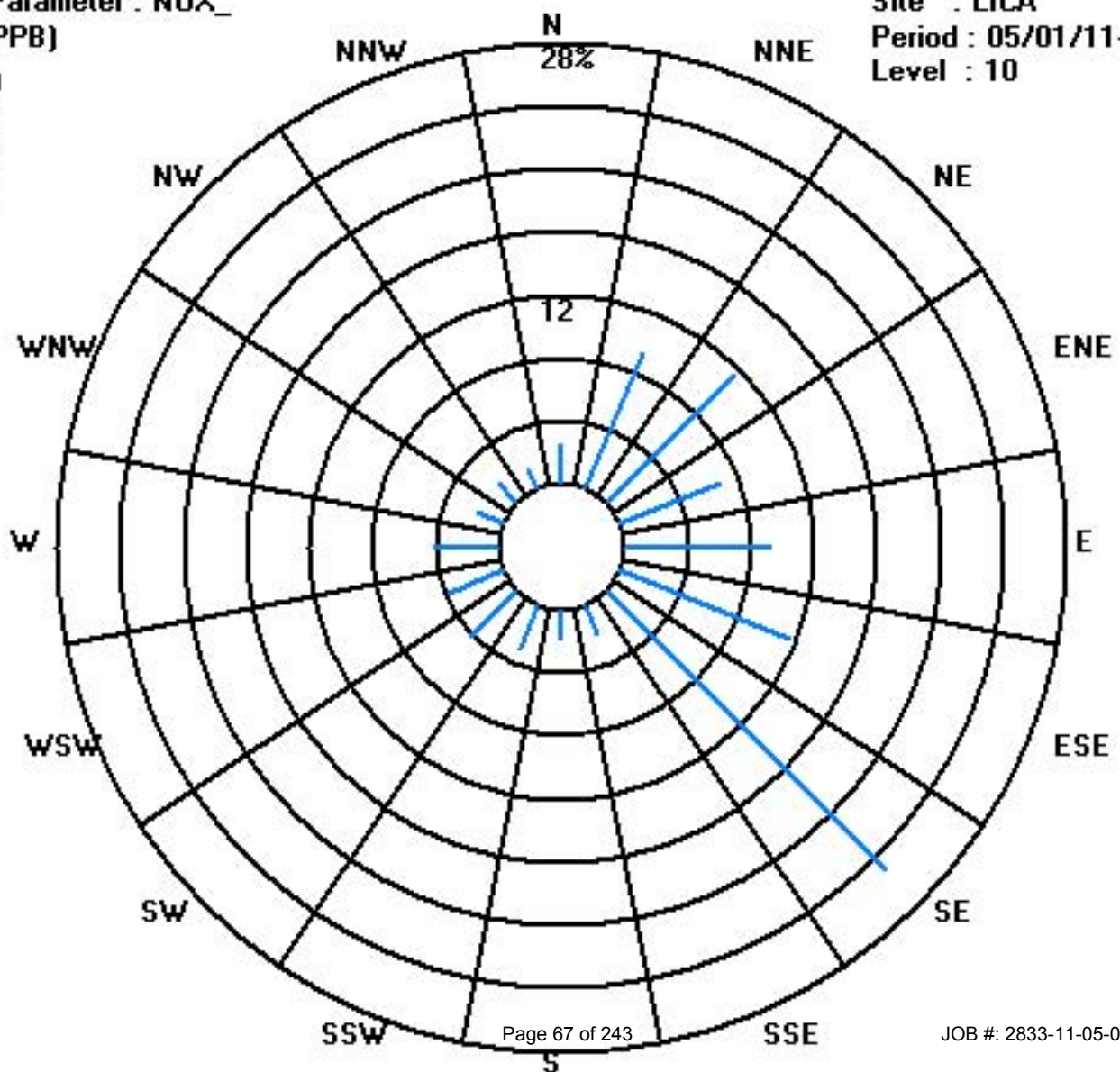
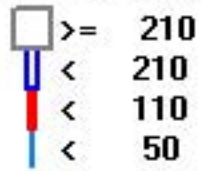
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	66	81	48	65	82	177	14	13	21	29	27	29	13	12	10	705
< 110																	
< 210																	
>= 210																	
Totals	18	66	81	48	65	82	177	14	13	21	29	27	29	13	12	10	

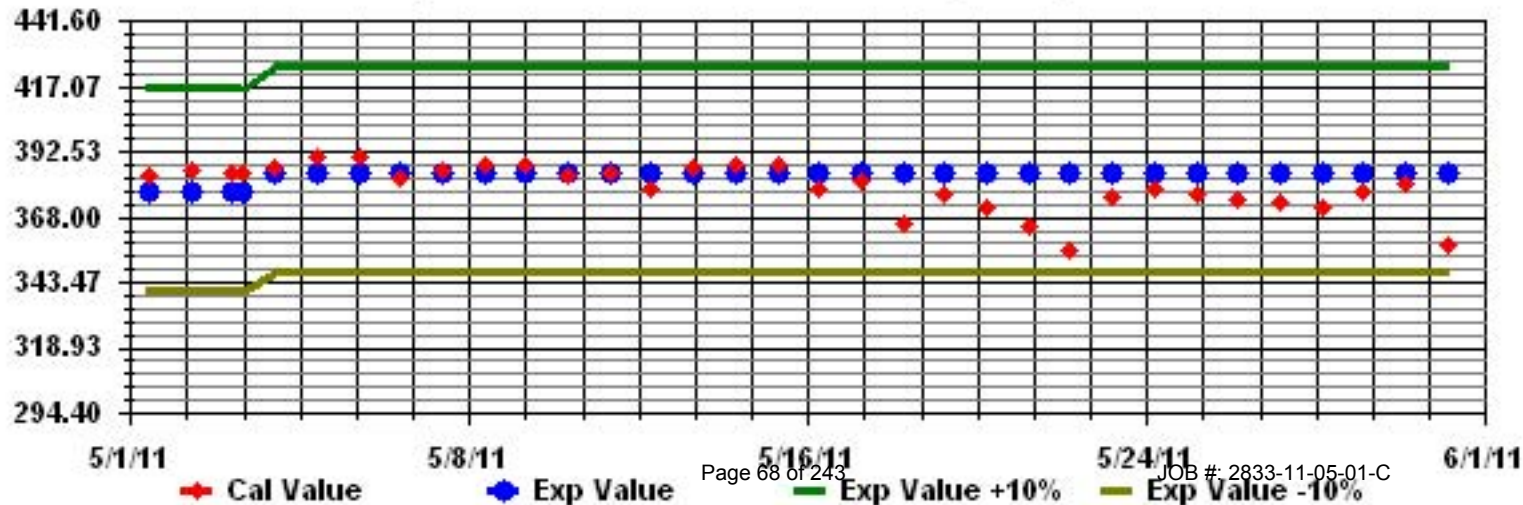
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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		7	3	2	9	4	3	5	20	26	35	IZS	44	45	46	47	47	46	47	47	45	36	27	27	22	47	27.8	24	
2		16	14	14	14	10	7	4	28	39	IZS	44	43	52	54	55	56	55	52	50	51	50	48	46	41	56	36.7	24	
3		38	36	35	33	32	32	32	32	IZS	IZS	36	37	38	40	40	40	38	37	39	38	34	24	20	20	40	34.4	24	
4		26	28	30	32	34	34	35	IZS	37	38	41	C	C	C	C	43	44	44	43	42	37	28	19	17	44	34.3	24	
5		16	23	24	21	16	26	IZS	33	39	45	47	50	52	53	53	54	54	55	53	50	39	28	22	16	55	37.8	24	
6		17	15	15	13	11	IZS	18	31	36	45	49	51	49	50	50	46	46	46	46	44	39	32	24	16	51	34.3	24	
7		18	23	22	23	IZS	22	24	26	27	28	29	30	30	30	31	31	29	29	28	26	25	27	29	29	31	26.8	24	
8		30	29	26	IZS	17	22	25	25	29	32	32	33	34	34	34	35	35	37	38	35	28	18	17	13	38	28.6	24	
9		12	13	IZS	7	5	8	18	25	27	31	34	38	43	44	44	45	45	45	45	41	27	20	25	22	45	28.9	24	
10		21	IZS	31	28	22	14	21	29	30	36	42	46	45	49	50	48	46	48	48	45	43	41	35	32	50	37.0	24	
11		IZS	31	29	28	26	25	25	25	27	29	30	35	40	40	42	44	45	45	48	48	46	42	42	IZS	48	36.0	24	
12		39	37	36	34	32	32	31	31	34	37	40	44	43	44	44	42	41	41	42	45	44	43	IZS	40	45	39.0	24	
13		39	38	43	45	44	42	43	45	46	46	47	48	50	53	55	56	56	57	55	53	51	IZS	48	46	57	48.1	24	
14		44	42	41	41	39	38	39	39	41	47	49	51	53	54	54	54	55	56	56	54	IZS	51	51	50	56	47.8	24	
15		48	46	43	42	40	41	41	43	48	53	54	57	58	60	62	61	60	58	57	IZS	52	50	48	46	62	50.8	24	
16		45	44	43	43	40	40	40	41	42	43	45	46	46	47	47	47	47	IZS	45	44	43	41	40	47	43.7	24		
17		39	36	36	34	30	28	35	39	41	42	43	44	47	50	53	55	55	IZS	57	52	53	52	49	45	57	44.1	24	
18		43	39	37	33	29	25	30	36	38	44	49	50	50	51	48	46	IZS	41	41	33	21	13	16	18	51	36.1	24	
19		16	19	20	14	8	7	26	35	36	45	55	60	62	61	61	IZS	61	60	56	41	29	27	23	23	62	36.7	24	
20		20	15	13	10	8	8	16	24	35	46	55	60	60	60	IZS	60	60	59	57	45	31	24	21	17	60	35.0	24	
21		15	18	17	16	15	19	29	31	32	33	34	40	45	IZS	47	47	46	42	38	30	21	18	16	23	47	29.2	24	
22		30	31	34	29	24	23	26	28	28	30	29	33	IZS	38	36	22	22	25	22	20	20	20	22	23	38	26.7	24	
23		27	32	35	35	36	37	38	38	37	37	38	IZS	38	38	39	40	42	43	41	37	27	17	15	12	43	33.9	24	
24		9	6	5	3	3	3	13	26	39	47	IZS	47	48	47	49	50	51	51	48	36	28	23	32	39	51	30.6	24	
25		31	26	22	18	15	15	26	41	43	IZS	45	46	50	50	50	50	50	50	48	43	45	38	30	30	50	37.5	24	
26		28	31	38	41	40	41	44	42	IZS	47	48	50	51	53	51	51	53	53	52	49	45	31	31	36	53	43.7	24	
27		39	36	27	22	21	19	29	IZS	42	51	56	55	54	57	57	58	59	56	53	52	51	48	37	31	59	43.9	24	
28		42	47	43	40	39	37	IZS	35	34	34	39	48	50	51	50	49	46	44	43	43	40	27	20	18	51	40.0	24	
29		16	15	13	10	8	IZS	18	27	30	35	41	43	46	48	48	50	50	46	47	45	43	43	45	41	50	35.1	24	
30		40	38	29	22	IZS	27	28	25	31	42	50	51	50	52	53	54	52	53	50	47	45	32	30	27	54	40.3	24	
31		25	19	15	IZS	7	7	15	25	41	53	60	60	60	60	60	62	62	61	56	43	34	33	25	19	62	39.2	24	
HOURLY MAX		48	47	43	45	44	42	44	45	48	53	60	60	62	61	62	62	62	61	57	54	53	52	51	50				
HOURLY AVG		27.9	27.7	27.3	25.5	22.6	23.5	26.7	31.9	35.7	40.2	43.5	46.2	48.0	48.8	48.6	48.1	48.4	47.6	46.8	42.6	37.6	32.3	30.2	28.4				

STATUS FLAG CODES

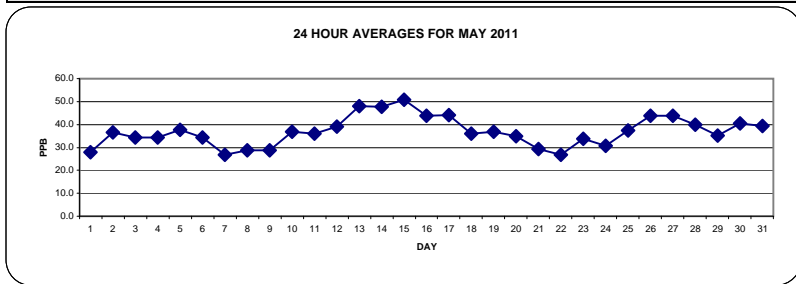
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

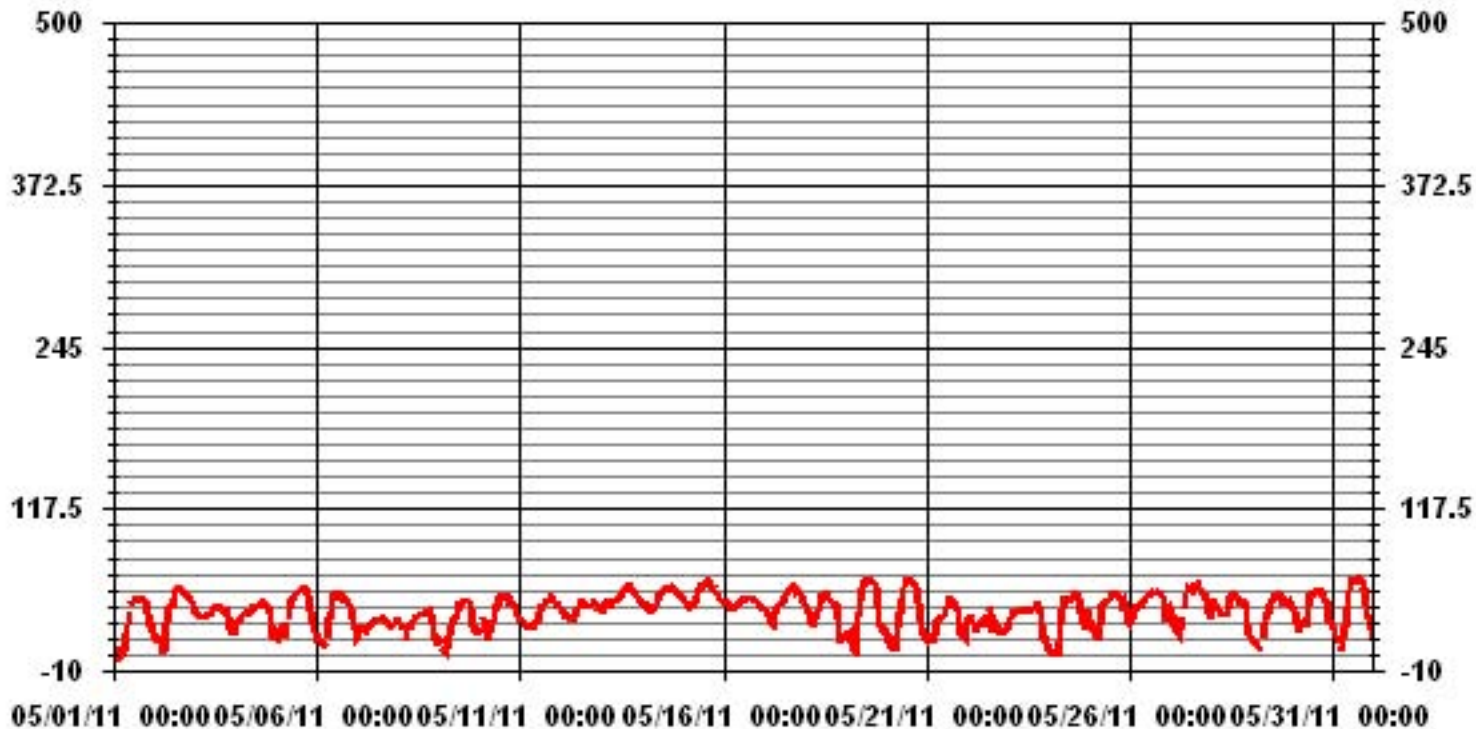
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	708				
MAXIMUM 1-HR AVERAGE:	62	PPB	@ HOUR(S)	VAR	ON DAY(S) 15, 31
MAXIMUM 24-HR AVERAGE:	50.8	PPB			ON DAY(S) 15
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION	13.46		MONTHLY AVERAGE	36.92	PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	9	7	4	13	10	5	14	24	30	39	IZS	46	46	47	48	48	48	49	48	49	42	41	35	28	49	31.7	24	
2	21	19	19	18	17	14	6	39	41	IZS	47	49	54	56	56	57	56	54	54	53	51	49	48	44	57	40.1	24	
3	39	37	36	35	33	33	33	34	IZS	37	39	40	41	40	42	41	40	40	40	40	38	31	25	26	42	36.5	24	
4	27	30	32	33	35	35	37	IZS	37	41	C	C	C	C	M	45	44	45	44	43	41	36	26	22	45	36.3	23	
5	21	27	29	27	24	30	IZS	37	44	48	52	52	54	54	55	55	56	56	56	53	46	36	30	21	56	41.9	24	
6	20	22	20	23	21	IZS	30	33	39	52	52	54	52	52	51	51	47	48	48	48	42	35	30	22	54	38.8	24	
7	26	25	23	24	IZS	23	25	27	28	30	30	33	31	32	32	32	31	31	30	27	26	30	30	30	33	28.5	24	
8	30	31	29	IZS	21	24	26	26	34	33	33	34	35	35	35	36	36	38	40	38	31	23	22	18	40	30.8	24	
9	18	16	IZS	9	7	13	26	26	30	33	36	44	45	46	45	46	46	47	47	45	37	25	33	28	47	32.5	24	
10	28	IZS	32	31	28	18	28	30	32	42	45	47	48	51	52	51	49	50	50	48	44	43	38	33	52	39.9	24	
11	IZS	33	30	29	27	26	26	26	28	31	34	36	43	43	45	46	46	47	51	50	48	45	43	IZS	51	37.9	24	
12	40	38	37	35	34	33	32	34	36	41	43	45	44	45	45	43	42	42	43	46	45	44	IZS	40	46	40.3	24	
13	39	39	45	46	45	43	44	46	47	47	48	49	52	54	57	58	58	58	57	55	53	IZS	50	47	58	49.4	24	
14	46	43	42	42	41	39	40	41	45	48	50	52	55	56	55	55	57	57	58	55	IZS	52	52	52	58	49.3	24	
15	50	47	44	43	41	42	42	45	52	55	56	59	60	62	64	63	61	60	59	IZS	54	52	49	47	64	52.5	24	
16	46	45	44	43	42	40	41	42	43	44	47	46	48	47	48	48	48	48	IZS	47	45	44	42	41	48	44.7	24	
17	40	38	36	36	34	32	38	42	42	43	44	47	48	53	55	56	55	IZS	59	55	55	53	53	47	59	46.1	24	
18	46	41	40	38	32	27	34	39	42	48	53	51	52	53	52	48	IZS	47	42	39	28	19	22	29	53	40.1	24	
19	28	23	25	23	13	14	33	38	38	53	58	62	63	62	63	IZS	63	62	59	52	38	36	33	30	63	42.1	24	
20	25	21	17	14	10	11	22	30	38	53	59	62	61	62	IZS	61	61	61	59	56	41	30	27	19	62	39.1	24	
21	18	22	24	19	19	26	32	32	34	35	38	43	49	IZS	50	48	47	45	41	37	27	23	20	33	50	33.1	24	
22	33	34	37	32	27	25	29	29	29	31	31	34	IZS	42	41	25	24	27	25	22	21	21	23	24	42	29.0	24	
23	30	33	36	36	37	38	39	39	38	38	39	IZS	39	39	40	42	43	44	44	39	35	23	18	16	44	35.9	24	
24	13	7	6	5	5	5	24	34	45	49	IZS	49	49	49	50	53	53	52	50	47	32	27	42	42	53	34.3	24	
25	35	32	27	24	20	18	33	43	44	IZS	51	50	51	51	51	51	51	52	50	48	46	44	33	35	52	40.9	24	
26	34	36	41	42	42	43	45	45	IZS	51	50	52	52	54	53	53	55	55	55	52	50	36	35	40	55	46.6	24	
27	40	40	34	27	27	28	35	IZS	48	56	58	57	56	59	58	59	60	58	56	53	53	51	46	38	60	47.7	24	
28	49	49	46	41	40	38	IZS	35	35	35	46	52	52	52	51	52	49	46	45	44	44	33	24	22	52	42.6	24	
29	19	17	15	11	10	IZS	24	30	31	40	42	45	48	50	50	51	53	48	48	46	45	44	46	44	53	37.3	24	
30	42	40	37	27	IZS	30	30	27	39	49	52	52	52	55	54	57	56	54	54	49	50	39	36	35	57	44.2	24	
31	32	25	18	IZS	10	12	21	31	51	59	62	62	63	62	62	64	64	64	60	55	39	41	38	23	64	44.3	24	
HOURLY MAX	50	49	46	46	45	43	45	46	52	59	62	62	63	62	64	64	64	64	60	56	55	53	53	52				
HOURLY AVG	31.5	30.6	30.2	28.5	25.9	26.4	30.7	34.6	38.6	43.5	46.3	48.4	49.8	50.4	50.3	49.8	50.0	49.5	49.1	46.4	41.6	36.9	35.0	32.5				

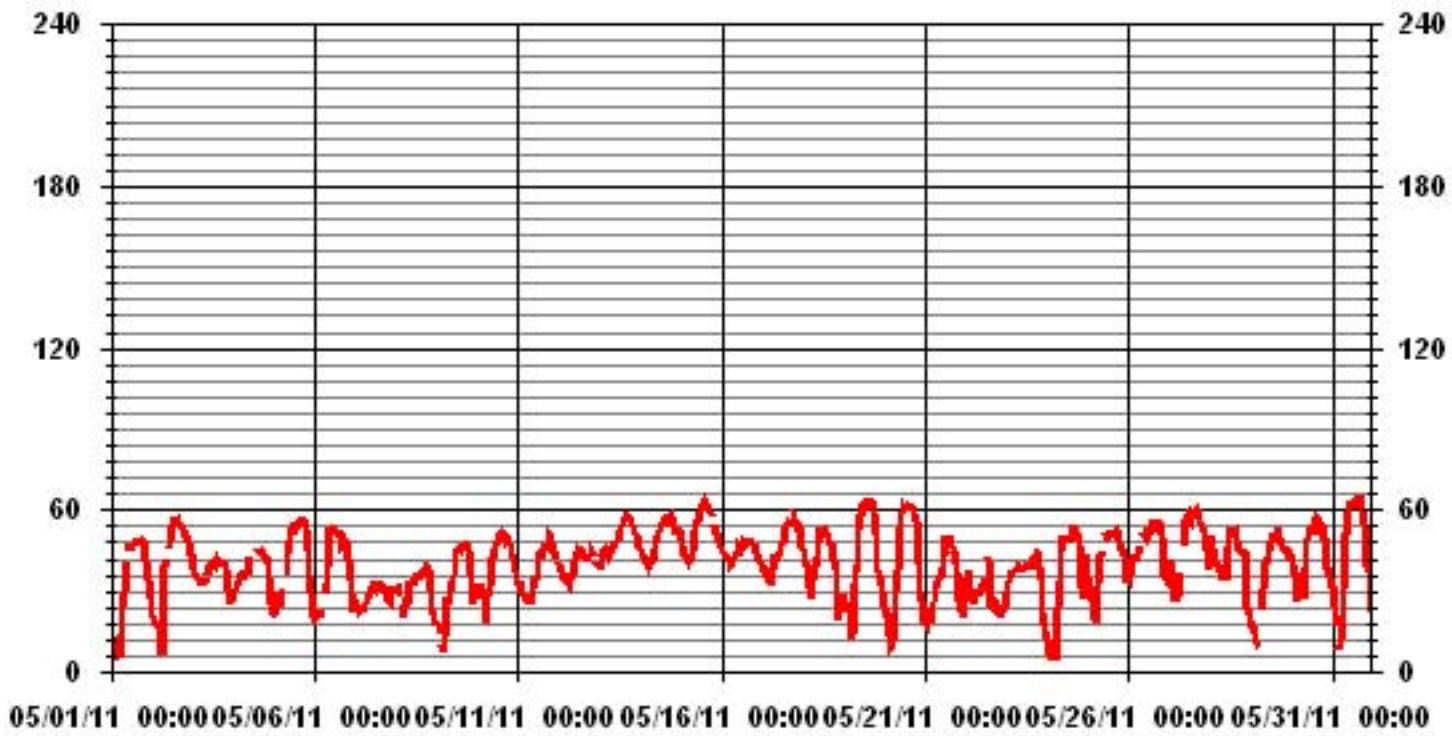
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM INSTANTANEOUS VALUE:	64	PPB	@ HOUR(S)	VAR	ON DAY(S)	15, 31
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION	12.69					

01 Hour Averages



LICA
O3_ / WD Joint Frequency Distribution (Percent)

May 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	1.55	7.06	9.74	6.35	7.48	9.32	18.50	1.41	1.83	2.82	3.67	3.53	3.81	1.83	1.12	.84	80.93
< 110	.98	2.54	1.83	.42	1.69	2.25	6.49	.56	.00	.14	.42	.28	.42	.00	.28	.70	19.06
< 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	2.54	9.60	11.58	6.77	9.18	11.58	25.00	1.97	1.83	2.96	4.09	3.81	4.23	1.83	1.41	1.55	

Calm : .00 %

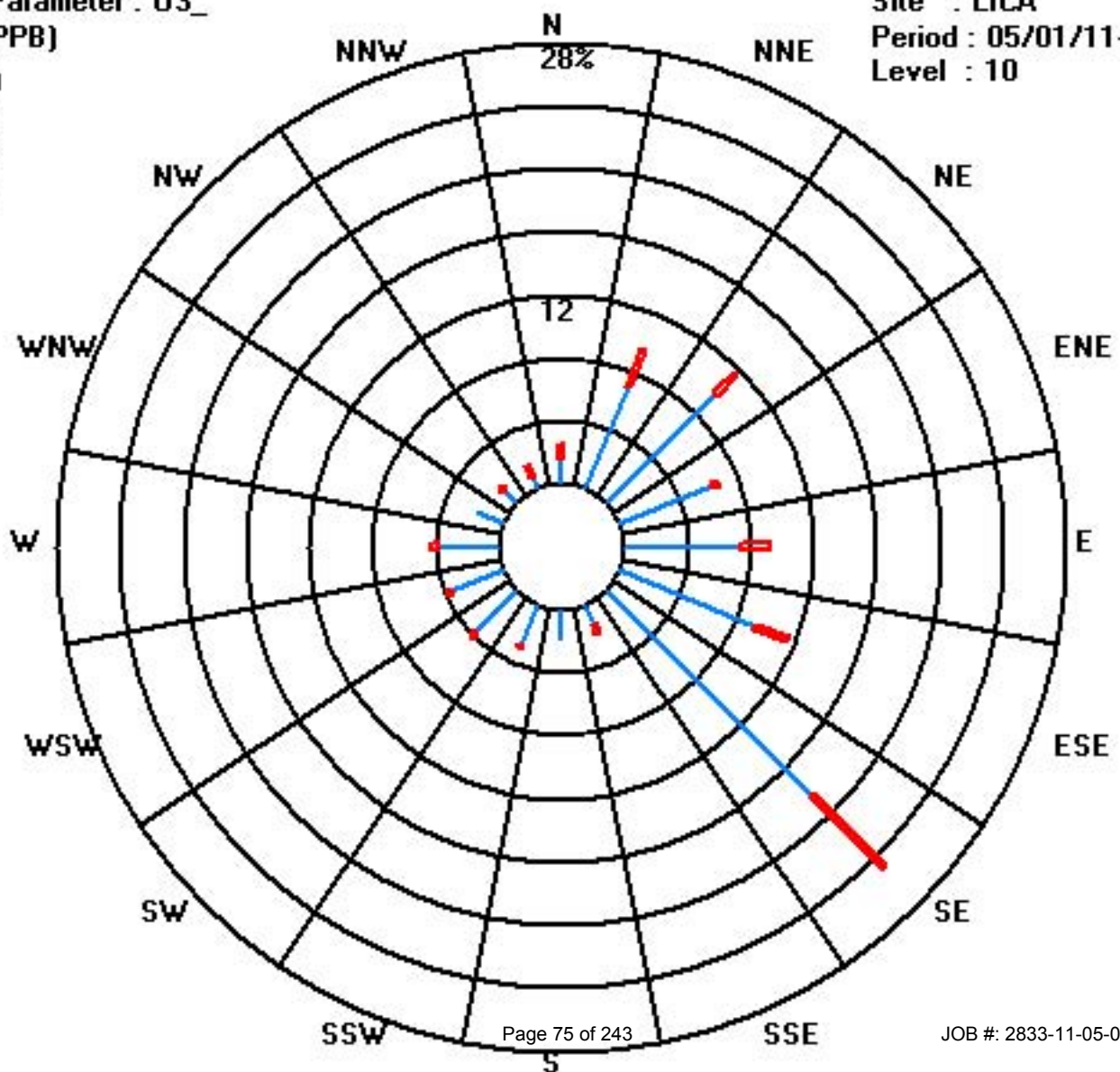
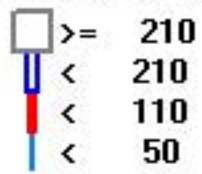
Total # Operational Hours : 708

Distribution By Samples

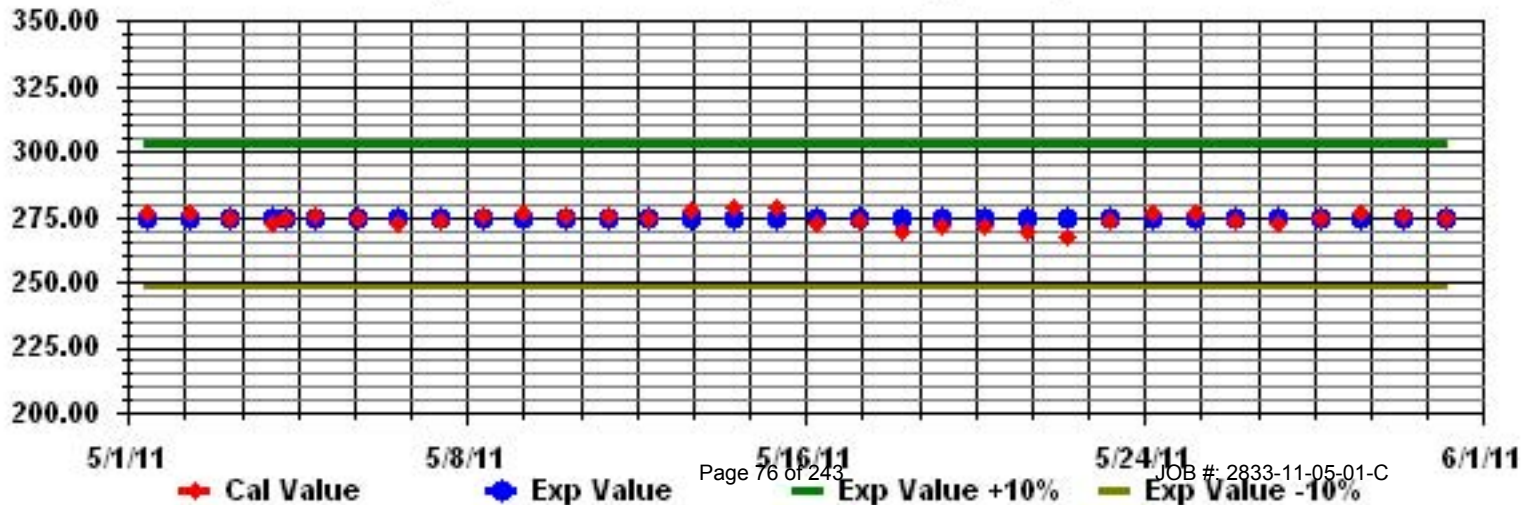
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	50	69	45	53	66	131	10	13	20	26	25	27	13	8	6	573
< 110	7	18	13	3	12	16	46	4		1	3	2	3		2	5	135
< 210																	
>= 210																	
Totals	18	68	82	48	65	82	177	14	13	21	29	27	30	13	10	11	

Calm : .00 %

Total # Operational Hours : 708



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



Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

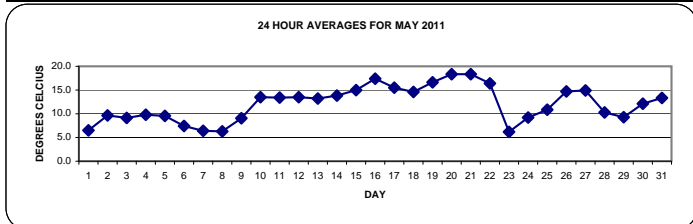
MAY 2011

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		-1.5	-2	-2.6	-2.6	-3.2	-3	-1.4	3.3	6.8	9.7	11.7	12.5	13.1	12.8	14.1	13.3	13.2	13.8	13.6	12.3	9.3	6.8	4.1	2.1	2.1	14.1	6.5	24
2		0.9	-0.2	-1	-1.6	-1.9	-0.2	2.3	7.5	10.4	13.1	14.9	14.7	16.2	16.3	15.9	16.4	15.9	15.2	14.5	14.4	13.7	12.3	11.3	10.6	10.6	16.4	9.7	24
3		9.6	8.7	7.9	7.1	6.3	6	6.5	8.2	10.2	11.8	12.3	13.4	14.4	15.2	14	11.4	8.8	7.6	7.8	7.7	7.3	6.4	5.5	5	5	15.2	9.1	24
4		5.6	4.9	4.6	5.1	5.4	5.3	6.7	7.7	9.9	11.8	12.7	13.7	14.2	14.1	14.8	14.5	15.2	15.4	14.3	13.9	11.1	7.3	4.3	2.5	15.4	9.8	24	
5		2.4	5.1	5.5	5.2	4.1	6.2	8.4	9.9	11.4	14.1	14.2	14.7	14.5	13.5	12.9	12.7	13	13.1	11.9	10.6	9	7.1	5.6	4.2	14.7	9.6	24	
6		2.3	1.2	1	1	1.7	2.8	5	7.1	10.1	10.1	11	12.3	9.5	11.9	13.7	12.4	11.7	12.2	11.7	10	7.5	4.8	4.3	2.8	13.7	7.4	24	
7		2.9	4.8	4.6	4.3	4.2	4	3.6	4.3	5.3	6.6	7.8	8	8.2	9	9.5	9.7	9.2	8.4	8.1	7.4	7	6	5.6	5.2	9.7	6.4	24	
8		4.8	3.6	2.2	0.8	0	1.2	2.3	2.9	4.5	5.6	7.1	8.4	9.1	10	10.8	11.2	11.9	12.3	12.3	11	7.3	4.6	4	3	12.3	6.3	24	
9		1.9	0.1	-0.9	-1.5	-1.9	0.4	4.5	7.4	10.1	12.1	13.6	14.3	15	15.7	16.1	16.3	16	16.5	16	15	10.7	7.5	6.6	5.8	16.5	9.1	24	
10		5.2	5	7	6.7	4.9	5.5	7.9	10.4	12.8	15.8	18	18.2	18.3	19.8	20.4	19.9	19	19.2	19.2	17.4	15.4	14.5	12.5	11	20.4	13.5	24	
11		9.7	8.2	7	6.1	5.4	5.7	6.8	8.9	11.4	14.4	16.1	17.7	18.7	19.3	19.9	20.1	19.8	19.3	18.6	17.1	15.2	13.1	12.2	11	20.1	13.4	24	
12		9.8	8.9	7.7	6.9	6.8	7.5	9.2	10.7	12.9	14.7	16.3	17.4	18.6	19.5	19.8	19.7	19	18.1	17	15.7	13.8	12.4	11.3	10.3	19.8	13.5	24	
13		9.6	9.1	8.7	8.6	8.4	8.9	10	10.8	11.9	12.7	14	15.1	16.3	17.6	18	18.2	18.6	18.4	17.6	15.9	13.6	12.2	11.7	11.2	18.6	13.2	24	
14		9.2	7.5	6.6	6	5.7	6.6	8.8	10.8	13.2	15.5	16.4	17.8	18.5	19.2	19.7	20	20.2	19.9	19.2	17.7	15.5	13.7	12.6	11.7	20.2	13.8	24	
15		11.2	10.2	8.9	7.6	6.9	8.2	9.9	12.2	14.9	16	16.7	17.9	18.9	19.6	20.4	20.4	20.3	19.9	19.4	18.6	17	15.7	14.5	14.3	20.4	15.0	24	
16		14	13.9	13.1	12.2	10.8	11.4	12.4	13.8	15.5	17.2	18.9	19.7	20.5	21.2	22.3	22.8	22.4	23	22.3	20.6	19.4	18.1	16.4	15.4	23.0	17.4	24	
17		13.7	12.4	11.8	11.1	9.5	9.7	11.3	13.5	14.1	15	16.2	17.6	19.1	20.6	21.5	21.7	20.7	19.8	17.6	16.5	16	15.6	14.5	12.4	21.7	15.5	24	
18		11.3	11	11	10.9	10.8	11	12.3	13.6	15.2	17	18.3	19.1	19.7	20.7	20.5	19.8	19.3	17.5	16.3	15.1	12.3	10.4	9.1	8.1	20.7	14.6	24	
19		7.7	7.7	7.5	6.9	5.8	8.2	12.8	15	17.3	20.4	22	23.2	23.7	24.1	24.3	24.5	24.6	23.9	23.1	20.8	17.3	14.5	12.6	11.3	24.6	16.6	24	
20		10.7	9.4	8.4	7.8	7.5	8.5	13.6	16.2	19.1	21.3	23.5	24.7	25	25.7	26.1	25.7	25.8	25.5	25.1	23.4	19.2	16.8	15.9	15.4	26.1	18.3	24	
21		13.6	11	9.7	8.8	8.6	11	14.6	16.6	19.2	21.3	21.2	22.4	23.7	25	25.4	25.6	25.4	24	23.2	21.6	19.1	16.9	16.1	16.3	25.6	18.3	24	
22		16.4	16.9	18	15.5	13.7	13.6	16.5	16.8	18.1	20.1	22.2	23.9	24.1	24.6	23	18.6	17	16	14	11.6	9.7	8.6	7.8	6.9	24.6	16.4	24	
23		5.9	4.9	4	3.6	3.2	3.2	3.3	3.8	4.3	5.2	5.9	6.8	7	7.8	9.3	10.8	11.5	11.9	11.6	10.4	7.4	4	2	0.5	11.9	6.2	24	
24		-0.5	-1.3	-1.8	-2.2	-2.1	1.1	5.4	8.9	10.9	11.7	12.8	13.9	14.7	15.6	16.1	16.6	17.1	17.1	16.4	13.9	11.1	8.7	8.7	8.2	17.1	9.2	24	
25		4.7	2.4	1.1	0	-0.4	2.7	8.3	11.2	12.6	14.3	15.6	15.9	16.5	16.5	17.2	16.9	16.9	17	16	14.7	12.6	10	8.9	9	17.2	10.9	24	
26		9.1	8.8	9	8.8	8.7	9.8	11.2	12.6	14.2	15.9	17	17.8	18.6	19.2	19.1	19.6	19.8	19.5	18.9	18.2	17.1	14.4	13.2	12.4	19.8	14.7	24	
27		11.7	10.2	8.9	7.9	6.5	8.5	12.5	14.1	15.1	17.4	19.3	19.9	20.5	20.9	21.4	21.3	21	19.7	18.4	17	15.8	13.8	9.3	6.8	21.4	14.9	24	
28		8.7	10.7	10	9.1	8.3	8.6	8.9	9.2	10.2	10.9	12	13.1	13.5	14	14.1	14.1	13.9	13.6	13	11.9	9.9	5.4	2.6	0.9	14.1	10.3	24	
29		-0.3	-1.1	-1.6	-2	-2.1	0.8	4.8	8.7	10.7	12	13.4	14.2	14.9	15.8	16.2	16.7	16.6	15.4	15.4	14.4	12.4	10.6	9.4	7.3	16.7	9.3	24	
30		6.2	5.5	3.5	1.8	2	5.8	7.1	8.2	11.9	14.5	16.7	17.8	18	19	19.1	19.1	18.8	18.7	18	15.6	13.2	11.4	10.9	8.1	19.1	12.1	24	
31		5.9	4.7	3.6	2.5	2	4.2	8.5	12.6	16	18	19.4	18.9	20	20.5	20.2	21.4	21.1	21.5	20.1	17.8	13.1	11.2	9.7	7.2	21.5	13.3	24	
HOURLY MAX		16.4	16.9	18.0	15.5	13.7	13.6	16.5	16.8	19.2	21.3	23.5	24.7	25.0	25.7	26.1	25.7	25.8	25.5	25.1	23.4	19.4	18.1	16.4	16.3				
HOURLY AVG		7.2	6.5	5.9	5.2	4.7	5.9	8.2	10.2	12.3	14.1	15.4	16.3	16.9	17.6	17.9	17.8	17.5	17.2	16.5	15.1	12.9	10.8	9.5	8.3				

STATUS FLAG CODES

S	- OUT OF SERVICE	OD	- OUTSIDE DETECTION LIMITS
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

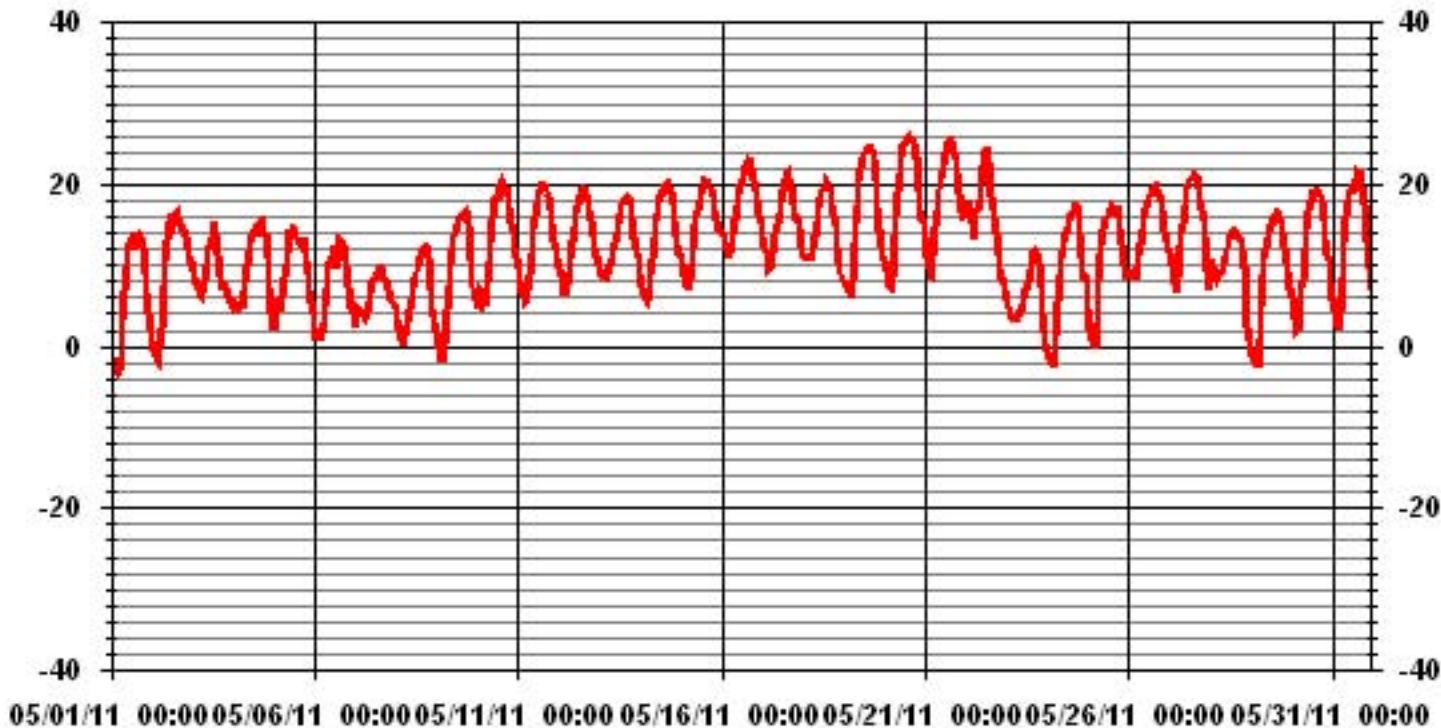


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-3.2 °C	@ HOUR(S)	4	ON DAY(S)	1
MAXIMUM 1-HR AVERAGE:	26.1 °C	@ HOUR(S)	14	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	18.3 °C			ON DAY(S)	20, 21
VAR-VARIOUS					
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
STANDARD DEVIATION:	6.26	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	12.07 °C		

* Outside detection limits of sensor.

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 2011

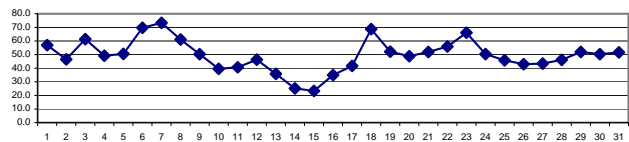
RELATIVE HUMIDITY hourly averages (%)

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	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	1	93	93	92	94	92	90	89	79	63	51	39	32	30	31	26	27	29	27	27	31	43	55	61	72	94	56.9	24	
2	74	79	80	83	84	78	76	52	39	34	30	31	26	25	26	24	26	28	31	30	33	38	42	47	84	46.5	24		
3	51	54	57	60	63	64	63	57	50	46	45	41	39	37	47	63	74	80	76	75	77	82	85	86	86	86	61.3	24	
4	76	70	70	68	72	81	75	68	57	49	42	31	29	29	28	28	24	24	26	27	34	46	60	66	81	49.2	24		
5	68	57	58	63	70	58	52	46	41	32	31	32	32	37	42	44	42	40	46	50	57	65	72	77	77	50.5	24		
6	83	85	87	89	88	86	85	76	62	65	62	53	63	50	44	50	52	51	53	61	72	83	85	88	89	69.7	24		
7	91	91	90	89	89	89	89	84	77	71	65	63	61	58	55	58	52	51	53	67	70	71	71	71	70	91	73.3	24	
8	72	77	82	86	87	84	80	77	68	61	55	51	48	45	44	42	40	36	34	39	55	65	67	71	87	61.1	24		
9	75	84	86	85	87	79	69	60	51	44	39	34	27	26	26	25	26	24	25	28	42	53	54	58	87	50.3	24		
10	61	63	56	59	66	66	60	49	42	33	27	25	26	21	20	22	24	22	23	27	32	36	42	47	66	39.5	24		
11	50	56	62	67	71	70	67	60	52	44	40	34	25	24	21	17	18	19	18	20	24	31	39	47	71	40.7	24		
12	54	59	64	68	70	67	62	57	48	41	34	29	29	27	28	32	35	36	36	34	39	47	56	59	70	46.3	24		
13	62	63	60	56	56	53	46	41	38	38	36	34	33	28	24	22	20	19	18	19	21	23	24	25	63	35.8	24		
14	32	36	40	42	44	43	39	36	30	21	20	18	16	15	13	13	12	12	13	14	19	22	25	29	44	25.2	24		
15	30	32	34	38	40	37	34	30	22	17	16	14	14	13	12	12	13	14	15	17	22	25	28	31	40	23.3	24		
16	34	36	39	42	48	47	44	40	37	35	32	31	29	28	27	26	26	26	30	33	36	42	45	48	48	35.0	24		
17	49	56	60	64	69	69	62	42	35	32	29	27	23	20	19	19	21	23	33	39	40	43	54	73	73	41.7	24		
18	84	87	90	92	93	92	83	73	66	57	49	46	42	37	42	44	47	56	62	69	81	84	86	87	93	68.7	24		
19	88	89	91	92	94	85	73	65	58	42	30	23	22	22	20	18	18	20	24	35	48	59	65	70	94	52.1	24		
20	73	78	82	84	86	84	66	60	51	43	33	24	23	22	21	21	21	23	32	46	55	60	63	86	48.8	24			
21	69	77	80	82	82	72	62	55	49	44	44	38	34	28	27	28	27	30	34	43	54	62	65	60	82	51.9	24		
22	57	54	46	60	66	69	60	57	53	47	44	38	37	33	37	54	57	56	59	67	70	74	74	73	74	55.9	24		
23	74	75	75	78	78	75	72	71	70	66	64	62	63	60	54	47	43	41	45	51	68	80	85	89	89	66.1	24		
24	89	90	90	89	89	79	73	62	47	35	31	29	28	26	23	20	18	17	21	39	51	57	52	54	90	50.4	24		
25	68	78	82	86	87	77	53	36	33	29	27	27	21	21	21	22	22	22	26	34	43	57	63	64	87	45.8	24		
26	66	69	67	66	69	67	59	52	43	31	25	24	25	25	25	25	24	25	27	29	34	47	51	56	69	43.0	24		
27	63	66	72	76	82	73	60	55	48	37	26	21	18	16	17	17	20	24	30	30	39	56	65	82	43.4	24			
28	51	52	57	60	62	61	59	58	54	50	40	29	25	23	23	23	27	29	31	34	41	63	75	80	80	46.1	24		
29	82	85	87	87	88	77	74	59	53	45	35	32	31	29	28	27	28	33	33	37	43	48	49	57	88	52.0	24		
30	59	63	74	80	81	71	70	70	57	44	31	29	27	25	25	24	27	26	31	41	51	61	64	76	81	50.3	24		
31	83	86	89	90	90	86	76	59	45	38	31	28	22	22	22	18	18	18	24	38	56	61	65	74	90	51.6	24		
HOURLY MAX		93	93	92	94	94	92	89	84	77	71	65	63	63	60	55	63	74	80	76	75	81	84	86	89				
HOURLY AVG		66.484	69.032	70.935	73.387	75.581	71.903	65.548	57.613	49.645	42.645	37.161	33.226	31.226	29.129	28.613	29.323	30.226	31.097	33.452	38.387	46.129	53.806	58.613	63.194				

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

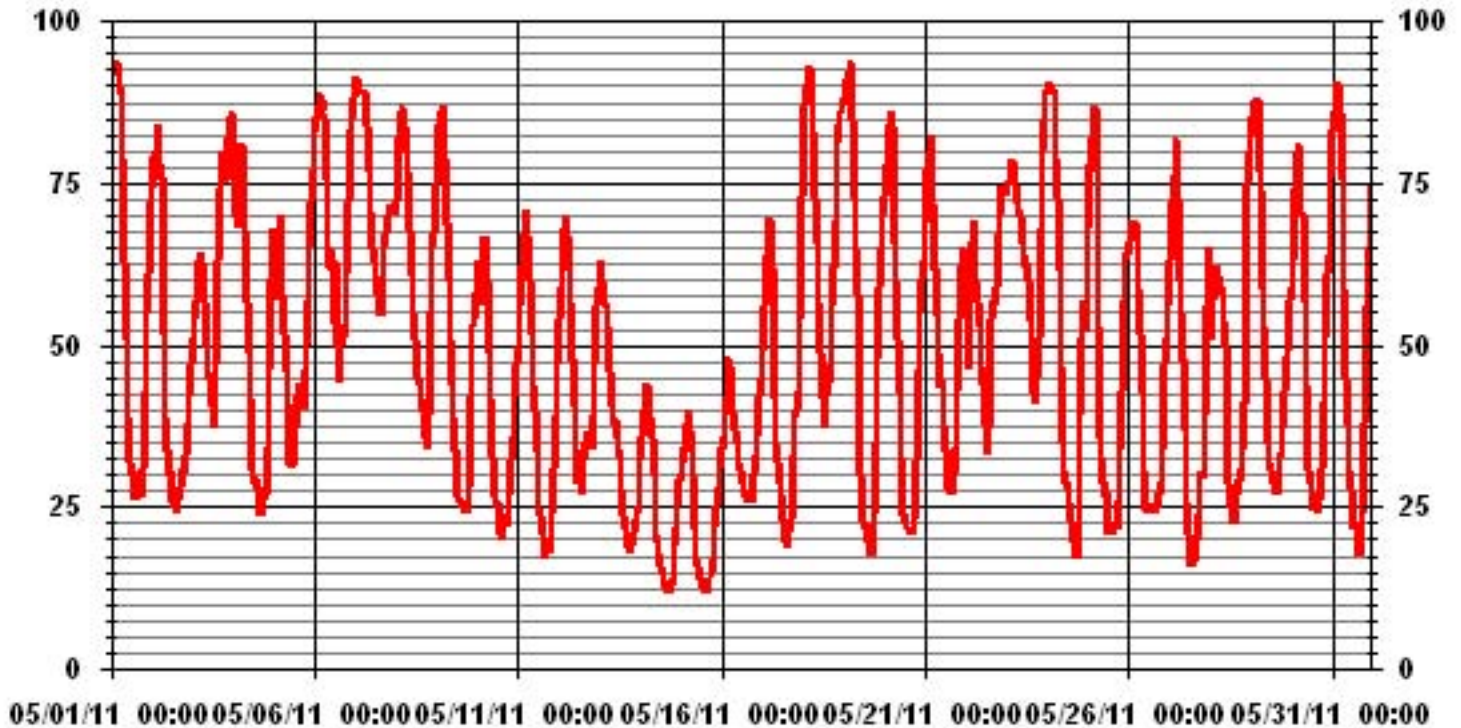
24 HOUR AVERAGES FOR MAY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	94	%	@ HOUR(S)	3, 4	ON DAY(S)	1,19
MAXIMUM 24-HR AVERAGE:	73.3	%			ON DAY(S)	7
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	22.08		MONTHLY AVERAGE:	49.43	%	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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		0.4	1.4	1.3	3.2	0.8	0.4	0.8	3	3.5	6	4	4.5	9.3	7.9	7.6	4.8	5.6	4.1	3.8	2.2	1	0.4	1.2	0.1	9.3	1.6	24
2		0.5	0.9	0.4	0.6	0.9	0.5	0.6	0.8	3.3	1	2.8	9	9.3	10.6	10.8	11.8	10.4	7.6	5.3	11.7	13	11.3	12.7	12.8	13	5.1	24
3		12.6	10.6	8.1	7.8	9	10	10	8.3	4.5	2.8	5.4	4.3	3.1	13.4	16	18.9	19.3	16.4	13.2	8.5	1.9	1.7	1.5	2.1	19.3	2.3	24
4		6.9	6.7	6.6	9.1	10.1	10.2	10.1	11.7	13	12.5	14.7	18.4	18.5	15.4	16.2	14.5	16.5	14.7	10.6	8.8	3.7	3.5	1.4	1.8	18.5	10.2	24
5		2.7	3.6	3	1.9	2	4.4	1.7	4.1	4.3	5.2	8.1	8.4	7.5	9.3	7	5	3.7	2.4	5.2	3.6	1	0.8	0.4	0.2	9.3	4.0	24
6		0.2	0.7	1.8	1.7	1.8	0.7	1.2	1.2	2.9	3.7	3.1	4.6	4.3	4.3	7.3	14.3	7.9	1.7	4.2	6.6	2.7	1.1	1.5	1.1	14.3	3.4	24
7		3.1	4.1	4.5	4.8	5.7	5.6	8.3	5.8	6.9	5.5	6.9	7.6	4.9	4.5	4.4	6.8	8.3	10.7	7.3	7.2	6	7.5	7.8	6.7	10.7	6.3	24
8		6.6	6.2	3.5	2	2.4	4.6	6.6	4.6	3.8	6	3.5	5.1	5.4	6.5	7.7	9.2	7.4	6.9	5.5	3.4	0.7	1.9	2.7	2.7	9.2	4.8	24
9		2.2	1.3	0.8	0.5	0.4	0.2	3.2	3.3	3.1	4.8	4.8	4.9	6	7.8	5.3	3.2	7	5	5.3	2.7	1.3	1.4	4.1	2.3	7.8	3.4	24
10		2.9	4.5	7.6	4.6	2.3	1.4	3.3	6.9	4.8	2.8	2.8	1.9	3.6	4	2.1	6.7	5.2	7.9	6.5	8.1	9	12.1	9.2	8.2	12.1	5.4	24
11		8.7	7.8	7.6	6.5	6.2	8.6	10.4	8.8	8.2	7.1	10.1	12.6	13.6	13.7	14.3	14.2	15.4	16.7	15.6	10.7	8.1	6.3	9.6	7.2	16.7	10.3	24
12		6.3	7.1	6.5	5.3	6.4	9.9	11.6	13.6	14.4	17.3	16.8	19.1	19.2	20.3	19.5	18.8	19.9	19.4	16.7	16.3	10.8	12.4	14.9	15.7	20.3	14.1	24
13		15.1	14.5	15.7	16.8	14.8	13.5	14.8	16.6	16.9	16.3	14.8	16.2	14.9	12.9	15.4	15.7	13	13.8	12.5	8.3	5.6	6.9	8.2	8.7	16.9	13.4	24
14		6.9	4.9	5.3	6.3	5.6	5.6	5.8	6.5	9.1	9.1	9.9	9.1	13.2	14.3	14.7	15.4	14.5	15.8	13.3	11.1	6.7	7.2	7.9	8.7	15.8	9.5	24
15		11.7	11.1	8.3	5.7	5.7	7.1	10	11	12.4	18.2	19.5	20.5	18.8	22.3	23	24.5	25.2	24.9	22.5	19.1	12.4	10.5	10.1	12.7	25.2	15.3	24
16		13.2	13.8	13.9	12	7.5	12.8	14.1	17.6	17.1	18.6	19.6	20.5	19.9	21.7	19	19.3	15.7	15.3	15	7.8	9.8	10.5	9.5	9.2	21.7	14.7	24
17		9	7.8	7	3.2	3.3	3.1	6.4	6.2	7.3	8.9	11.3	11.9	12.8	14.1	13.4	13.4	14.4	10.6	8.9	4.4	7	7.9	6.4	5	14.4	8.5	24
18		1.8	1.5	3.1	3.5	3.4	3.1	6.7	7.5	5.7	6.6	8.3	8.7	9.3	9.4	9.6	10.7	11.2	9.5	3.2	0.7	0.1	1.1	0.7	1.1	11.2	5.3	24
19		1.3	2	1.6	0.9	0.1	0.5	3.2	5.6	4.1	2.8	2	6.6	6.9	6.5	5.8	6.8	5.2	4.5	2.9	0.9	0.4	0.3	1.8	1	6.9	3.1	24
20		1.7	0.3	0.4	0.9	1.2	0.5	0.4	2.2	0.3	2.7	1.5	0.9	4.9	3.1	4.1	5.9	6.2	5.5	3.7	0.8	1.1	0.6	0.4	0.1	6.2	2.1	24
21		1.1	0.7	0.2	1	1.2	1.7	3.8	3.7	2.8	4.5	5.8	6.8	8.3	7.7	5.8	7.9	6.7	6.7	2.6	0.6	0.8	0.9	0.4	1.9	8.3	3.5	24
22		2.6	3.1	3.6	3.3	2	1.7	4	5.8	5.3	6.3	6.7	7.7	7.7	9.9	13.5	14.5	12.8	12.6	13.5	11.9	13.2	13.2	15	15.1	15.1	8.5	24
23		15.5	14.4	14.3	13.3	12.6	11.7	13.4	11	11	11.5	12.3	11.7	12.1	12.8	7.9	6.6	8.1	7	5	5.1	1	0.5	0.9	0.9	15.5	9.2	24
24		0.2	0.2	0.7	0.6	0.3	0.4	1.2	1.4	3.6	6.1	4.8	3.4	3.7	6.6	7.7	7.5	6.1	7.1	3.7	2.1	1.8	1.2	2.1	2	7.7	3.1	24
25		0.9	1.2	0.3	1	0.6	1	0.9	5.1	6.1	6.8	7.2	8.4	7.5	6.9	4	5	5	5.7	7.9	2.3	5.6	1.8	0.2	1.1	8.4	3.9	24
26		1.5	1.9	3.6	4.6	4.4	5.8	4.8	6.4	7.1	8.6	11.1	9.1	7.4	7.9	8.6	7.2	9.1	8.6	6.5	5.2	3.5	1.6	0.9	2	11.1	5.7	24
27		2.2	1.7	0.4	1	0.3	0.6	0.6	3.7	4.3	6.1	7.4	8.1	8.7	8.4	9.7	10.1	10.5	6.8	5	5.4	4.9	3.1	2.3	0.8	10.5	4.7	24
28		4	8.8	12.1	11	8.4	8.9	10.3	11	11.9	13.8	14.3	13.9	14.4	14.7	14.7	14.1	13.6	11.8	10.4	9.3	4.2	0.4	0.2	0.6	14.7	9.9	24
29		0.6	0.6	0.7	0.9	0.6	0.1	1.2	1.4	0.5	6.8	7.4	3.8	5.3	4	8	6.7	8.8	12.3	12.6	10.2	7.1	7.1	6.1	4.4	12.6	4.9	24
30		5.2	4.6	0.3	1	2.5	4.8	8.6	7.3	4.5	3.5	6.9	6	7.6	6.1	7.1	6.3	7.6	3.4	1.8	4.3	2.4	1	0.6	1.7	8.6	4.4	24
31		1.3	0.8	1.2	0.7	0.9	0.9	2.8	2.5	6.2	6.5	7.1	5.9	7.4	5.5	3.6	1.3	5.2	3	2.5	1.6	1.9	3	0.1	0.8	7.4	3.0	24
HOURLY MAX		15.5	14.5	15.7	16.8	14.8	13.5	14.8	17.6	17.1	18.6	19.6	20.5	19.9	22.3	23.0	24.5	25.2	24.9	22.5	19.1	13.2	13.2	15.0	15.7			
HOURLY AVG		4.8	4.8	4.7	4.4	4.0	4.5	5.8	6.6	6.7	7.7	8.4	9.0	9.5	10.1	10.1	10.6	10.5	9.6	8.2	6.5	4.8	4.5	4.5				

STATUS FLAG CODES

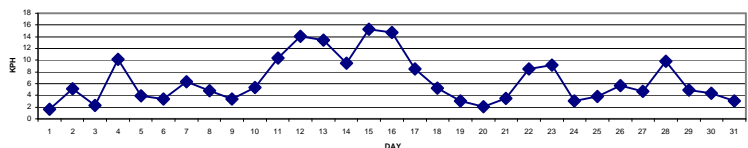
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: November 23, 2010

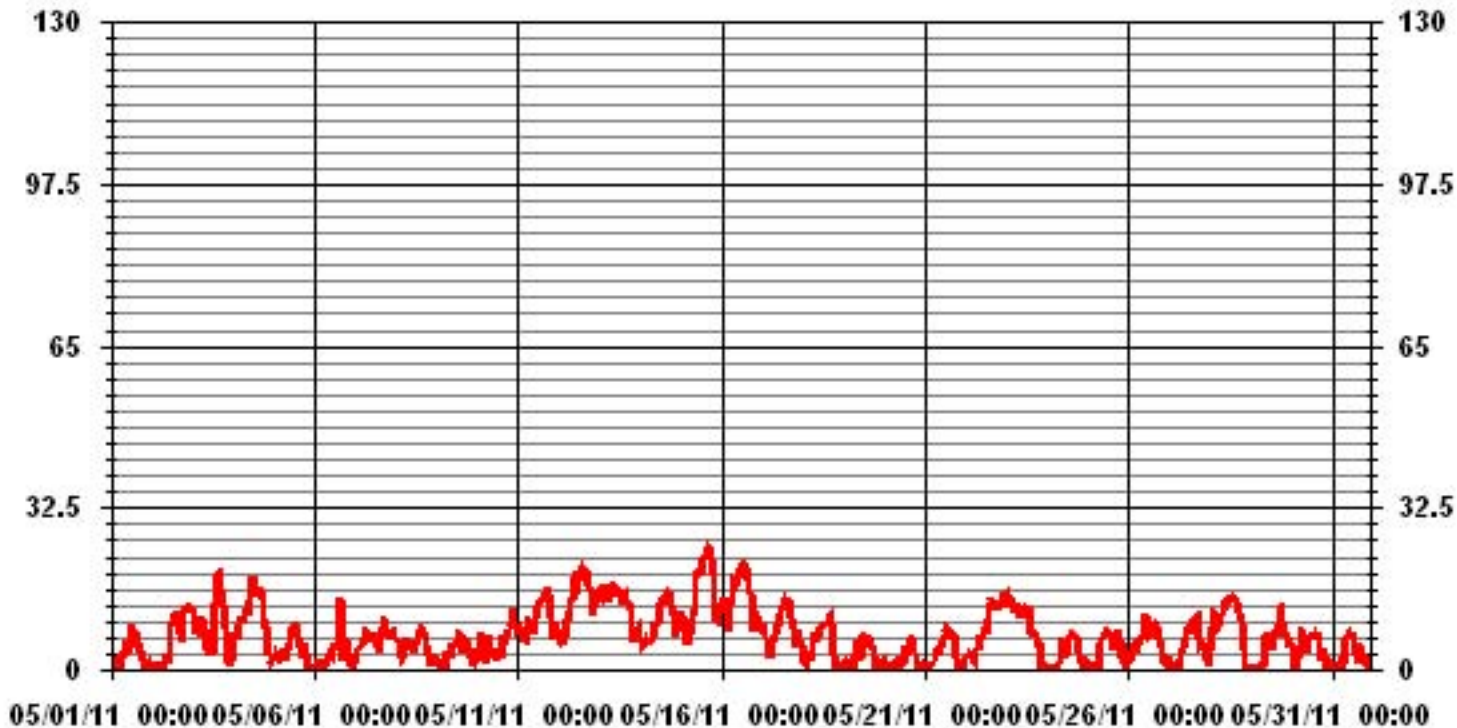
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	25.2 KPH	@ HOUR(S)	16	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	15.3 KPH			ON DAY(S)	15
CALMS (≤ 0 KPH)	2.82 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION:	5.22	MONTHLY AVERAGE	6.87	KPH	

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	2.3	4.1	4.6	7.4	3	2.3	3.6	7	7.5	10.7	14	12	17.6	22.9	17.6	13.2	14.3	9.9	7.1	6.7	2.5	2.8	3.7	2.4	22.9
2	2.2	2.8	2.2	1.9	2.4	2.4	2.5	5.1	7.3	8.2	9.5	13.8	17.8	15.7	14.6	15.5	14.2	13.7	11.3	24.1	19.2	19.7	20.2	21.6	24.1
3	21	17.7	14.5	12.1	14	14	14.9	12.6	11.3	12.2	12.3	9.7	14	20.6	27	28.8	27.1	23	22.1	17.5	4.1	3.1	2.9	6.7	28.8
4	11.4	10.1	12.7	12	14.3	14.5	16.3	19.5	20.7	20	25.2	29	25.6	23	24.5	24.8	24.3	21.7	19.6	15.4	6.5	4.8	3.5	4.3	29
5	6.7	6.1	7.8	5.3	5.6	6.7	6.3	9	9.3	13.4	20	18	16.5	18.8	15.9	9.7	9.5	8.6	10	6.7	2.2	5.4	1.9	1.6	20
6	1.6	2.2	3.4	3.6	4.6	3.2	5.7	4.7	7.2	12.5	10.6	21.5	17.9	13.5	16	24.3	15.7	10	8	11.7	6.7	4.7	3.2	3.9	24.3
7	6.5	6	8.5	10.6	10.6	10.8	16	8.8	11.6	10.2	15.6	14.1	14.1	11.3	9.8	15.1	12.6	16.4	12.2	12.9	11.3	11.9	13.4	10.5	16.4
8	10.2	10.5	7.9	3.9	4	7.9	12.6	8.5	10.1	12.4	9.9	12.4	12.4	13.1	14.4	13.2	12.6	11.2	8.6	6.5	2.3	4.3	4.4	4.8	14.4
9	3.3	3.5	1.7	1.9	1.9	3.5	7.8	8.2	8.9	11.7	13.4	13.1	13.2	14.1	11	10.4	13.5	8.7	11	5.8	2.8	4.2	6.6	4.3	14.1
10	7.9	10.5	9.6	8.4	7.7	5	7.6	11.6	11.7	12.3	10.4	12.4	10.1	15.3	12.5	14.9	11.1	13	12.7	11.8	14.9	16.4	15.3	12.3	16.4
11	15.5	11.8	11.6	9.3	9	13.6	17.6	13.8	13.7	11.8	15.8	20.2	24	25.8	28.8	25.3	28.7	24.2	22.8	17.6	11.1	11.4	13.6	9.9	28.8
12	10.4	10.2	10.1	8.9	9.3	15.5	18.6	20.7	22.7	27.9	28.7	30.2	27.6	30.5	32.4	27.7	31.5	30.1	24.3	27.2	17	20.8	24.2	23.1	32.4
13	19.9	21.8	20.9	21.4	23.8	19.3	20.3	21.2	23.5	23.4	26.5	28.5	21.6	24.9	23.8	22	19.8	16.4	12.4	8.1	9.4	10.1	13.4	28.5	28.5
14	10	6.7	7.4	8.7	7.8	8	9.8	15.1	16.5	21	20.2	19.4	24.5	25	24.7	23.7	23.8	22.3	21.2	15.3	9.7	11.5	11.3	13.5	25
15	16.4	15.8	12.5	9.6	7.4	9.7	15.6	15.6	20.3	29	27.8	34.1	27	33.7	33	33.8	36.2	36.5	33.2	26.9	17	14.4	12.3	19.1	36.5
16	18.5	19.9	18.5	19.4	12.1	18.2	19.8	22.6	26.5	26.8	27.4	29.7	28.4	32.5	27.8	29.7	26.3	23.3	22.1	12.4	24	14	13	12.6	32.5
17	12	9.9	10.1	6.2	5.2	6.4	9.4	13.6	13.4	16.4	17.5	21.7	22.7	24.5	24.4	25.5	21.1	23	19.2	9.2	10.2	11	11.6	8.7	25.5
18	9.3	9.8	5.7	6.4	6.1	5.2	12.7	12.1	10.4	12.9	16.1	16.9	19	18.8	16.2	18.7	20.5	18.1	6.6	3.1	2.2	3.2	1.9	2.5	20.5
19	3.3	3.6	6	5.1	4.3	2.3	7.4	8.1	8.9	6.9	11.1	15.5	14.6	16.5	13.4	15.8	11.5	7.1	5.8	3.2	1.2	2.6	11.3	5.2	16.5
20	7.5	2.5	3.4	4.3	3.4	3	2.4	5.2	5	6.8	8.2	11.2	13.8	13.7	11.6	11.4	11.2	10.6	5.6	4.4	6.5	4.8	2.3	4.7	13.8
21	4.9	2.6	2.2	2.3	2.1	3.3	6.6	6.4	9.1	9.6	9.4	13.9	14.4	15.1	13.4	12.9	13.4	12.2	5.1	3.4	3.3	7	4.7	4.6	15.1
22	5.2	5.3	10.1	9	4.8	3.6	8.4	8.3	8.6	13	11.6	12.6	16.5	17.5	23.6	26	20.1	20.1	19.8	15.9	20.8	20.3	21.7	21.4	26
23	21.4	20.4	21.8	22.1	18.9	17.7	19.8	18.2	18.1	17.8	18.9	17.6	16.9	17.7	15	11.7	14.6	12.8	10.5	7.9	3.3	1.3	3.4	3.3	22.1
24	2	3.3	2.7	2.6	2.4	1.1	3.3	5	9.1	10.7	11.5	10.9	9.6	15.5	15.9	17.2	11.5	10.5	9.1	3.7	3.2	4.1	5.7	4.9	17.2
25	3.2	3.8	2.3	3.3	3.4	3.4	5.4	10.5	11.3	12.2	12.9	15.1	13.3	14.4	13.6	12.2	11.3	10.8	11.8	9.8	10.7	4.2	2.2	2.8	15.1
26	2.9	5.1	4.9	7.1	6.3	8.8	9.7	10.2	11.5	17.8	20.9	20.4	16.5	16.8	16.9	12.8	19.2	18.2	11.6	10.3	8.5	2.7	2.2	3.3	20.9
27	3.7	3.4	1.8	2.2	3.4	2.8	3.7	8.2	7.3	9.6	15.5	17.2	15.8	15.2	17	17	15.4	10.7	8.3	8.4	8.4	6.7	3.8	3.7	17.2
28	9.3	15.3	16.8	15.9	13	14.6	17.2	18.8	20.6	20.9	20.9	21	22.5	21.6	21.6	21.5	21.2	17.4	17.1	14.7	8.7	1.3	1.2	2.1	22.5
29	3.1	1.7	2	2.1	1.8	1.5	3.8	5.5	7.1	12.6	15.3	13.6	16	12.8	16.2	14.6	19.8	16.8	18.1	13.4	10	9	9.3	6.6	19.8
30	7.2	7	4.9	3.4	5.2	8.1	15.5	11.9	9.3	13	14.3	17.1	15	15.5	15.2	13.7	19.9	11.2	5.6	9.8	5.2	3.3	2.9	6	19.9
31	6.1	5.6	4.1	3.7	3.5	4.7	5.5	6.7	10.5	12.8	16.9	15.1	16.3	12.4	9.9	9.9	11.6	10.8	6.2	5.6	5	6.2	3.9	2.4	16.9
PEAK	21.4	21.8	21.8	22.1	23.8	19.3	20.3	22.6	26.5	29.0	28.7	34.1	28.5	33.7	33.0	33.8	36.2	36.5	33.2	27.2	24.0	20.8	24.2	23.1	

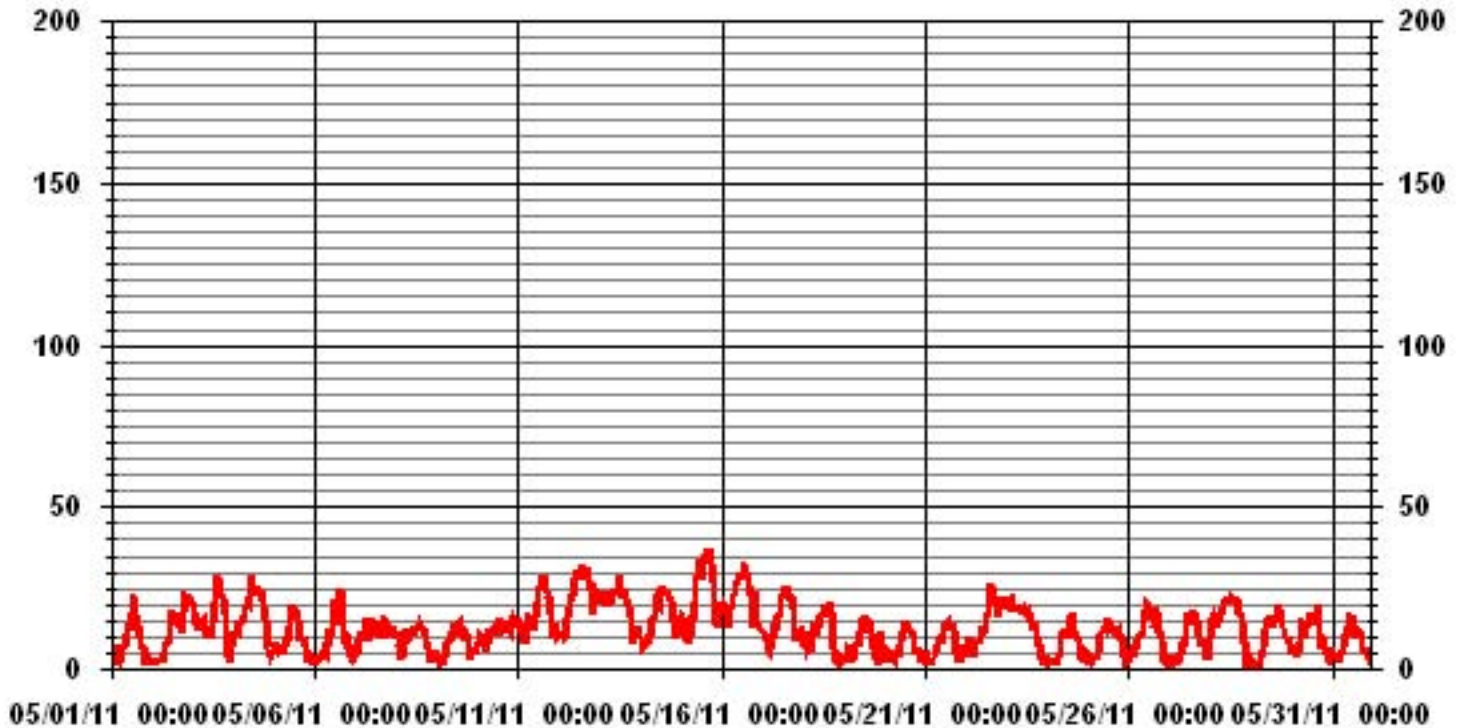
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	36.5	KPH	@ HOUR(S)	17
			ON DAY(S)	15

01 Hour Averages



LICA
WSP / WD Joint Frequency Distribution (Percent)

May 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	1.61	5.24	4.70	4.56	4.56	4.97	4.83	.94	1.20	2.82	3.49	3.22	1.74	.40	.53	1.07	45.96
< 12.0	.53	3.76	3.89	2.28	3.76	5.37	8.87	.67	.00	.00	.26	.26	1.61	.53	.40	.40	32.66
< 20.0	.26	.94	2.41	.00	.53	1.34	9.40	.00	.00	.00	.00	.00	.40	1.20	.67	.00	17.20
< 29.0	.00	.00	.00	.00	.00	.00	1.34	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.34
< 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	9.94	11.02	6.85	8.87	11.69	24.46	1.61	1.20	2.82	3.76	3.49	3.76	2.15	1.61	1.47	

Calm : 2.82 %

Total # Operational Hours : 744

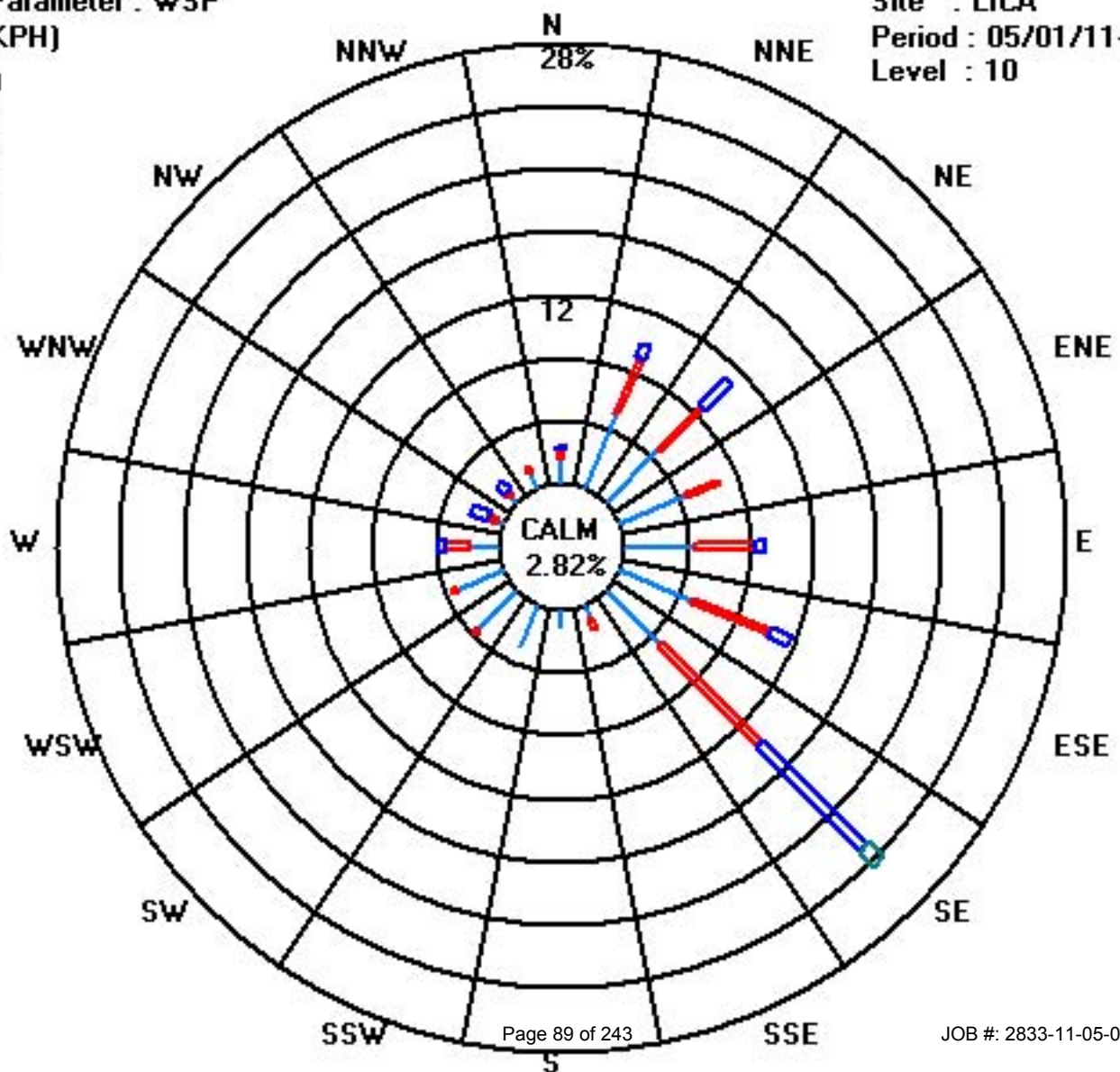
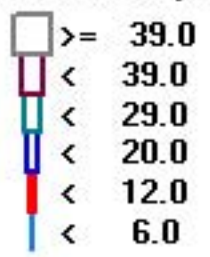
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	12	39	35	34	34	37	36	7	9	21	26	24	13	3	4	8	342
< 12.0	4	28	29	17	28	40	66	5			2	2	12	4	3	3	243
< 20.0	2	7	18		4	10	70						3	9	5		128
< 29.0							10										10
< 39.0																	
>= 39.0																	
Totals	18	74	82	51	66	87	182	12	9	21	28	26	28	16	12	11	

Calm : 2.82 %

Total # Operational Hours : 744

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	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	243	96	227	243	180	216	247	261	255	279	285	280	255	273	277	16	44	81	60	214	188	135	170	216	278	W	24	
2	130	134	228	212	121	78	82	146	315	30	31	24	22	38	35	28	32	34	32	85	85	81	92	101	57	ENE	24	
3	98	90	82	77	80	81	82	89	72	24	27	55	347	283	278	272	292	301	310	334	270	225	203	247	347	NNW	24	
4	267	277	260	270	272	274	283	286	297	276	297	316	299	304	290	304	298	292	297	304	273	245	240	225	290	WNW	24	
5	234	231	241	237	218	225	227	247	218	200	222	272	259	248	217	201	231	257	26	46	46	112	59	103	236	SW	24	
6	166	87	113	126	112	77	217	281	36	329	151	266	315	347	345	310	288	51	49	39	39	328	60	25	346	NNW	24	
7	91	81	86	109	95	82	90	96	87	91	72	73	117	108	65	67	34	41	51	85	74	67	77	91	78	ENE	24	
8	92	96	98	60	82	98	110	112	77	31	37	16	26	10	16	33	44	43	63	28	339	73	58	90	57	ENE	24	
9	81	285	76	59	127	267	106	133	133	126	114	89	61	44	50	125	33	41	105	108	106	102	131	126	86	E	24	
10	87	120	127	131	116	49	112	130	141	204	176	213	54	162	104	78	77	122	119	130	127	126	114	116	121	ESE	24	
11	121	115	112	110	113	122	123	118	118	100	116	117	124	121	127	136	132	134	133	136	137	120	127	126	124	ESE	24	
12	122	122	96	94	99	121	120	123	120	121	120	125	126	130	125	124	125	122	119	124	117	119	122	126	122	ESE	24	
13	125	130	132	134	135	134	132	133	132	135	133	130	136	143	134	134	130	131	133	132	133	135	137	135	137	133	SE	24
14	127	126	129	126	127	124	122	123	138	162	147	150	129	129	133	128	132	133	135	133	130	128	130	134	133	SE	24	
15	134	133	135	138	130	131	131	133	139	139	135	132	135	131	134	134	133	135	135	132	132	130	133	134	134	SE	24	
16	136	139	138	138	129	128	133	134	132	132	132	136	135	135	136	137	142	138	139	133	134	131	128	129	135	SE	24	
17	133	130	135	136	130	122	131	149	141	129	126	124	129	132	130	131	133	136	129	109	131	126	108	107	130	SE	24	
18	125	115	80	71	80	75	130	133	113	99	109	99	101	83	76	103	106	135	141	270	4	59	61	359	103	ESE	24	
19	72	31	106	107	256	68	34	41	27	70	81	115	119	37	84	80	69	16	4	106	141	297	175	251	70	ENE	24	
20	148	142	34	134	211	260	286	281	261	59	35	149	85	103	25	31	48	30	6	23	113	216	77	40	49	NE	24	
21	115	202	181	134	91	59	38	24	80	27	41	94	117	122	42	37	48	28	21	81	68	251	20	13	60	ENE	24	
22	49	63	98	15	27	32	44	19	18	29	39	59	26	62	15	20	23	37	31	35	36	42	48	49	37	NE	24	
23	48	46	48	48	50	49	53	52	46	47	42	28	27	30	35	71	57	67	107	141	196	143	203	217	49	NE	24	
24	210	174	203	254	186	280	255	21	34	44	21	64	45	25	29	27	54	59	76	240	265	90	33	20	38	NE	24	
25	269	211	137	231	225	263	50	84	112	104	68	49	113	126	113	119	114	116	136	171	250	248	81	82	112	ESE	24	
26	58	66	56	46	39	53	34	33	48	92	112	114	92	97	79	88	112	108	116	100	92	58	46	349	83	E	24	
27	22	37	38	119	215	5	3	1	7	24	35	25	19	15	12	19	9	11	2	21	23	18	315	307	16	NNE	24	
28	14	17	11	18	13	24	25	15	5	8	16	43	44	49	46	45	45	49	56	54	50	193	187	241	31	NNE	24	
29	186	198	181	235	245	268	203	217	199	132	128	160	216	202	140	159	142	129	130	130	133	133	132	128	144	SE	24	
30	127	131	75	94	125	125	131	132	164	213	124	134	125	117	120	134	138	156	216	349	336	128	28	225	133	SE	24	
31	221	205	248	192	220	218	256	239	279	305	304	358	342	2	339	64	332	31	48	170	196	249	162	114	314	NW	24	
HOURLY AVG	269	285	260	270	272	280	286	286	315	329	304	358	347	347	345	310	332	301	310	349	339	328	315	359				

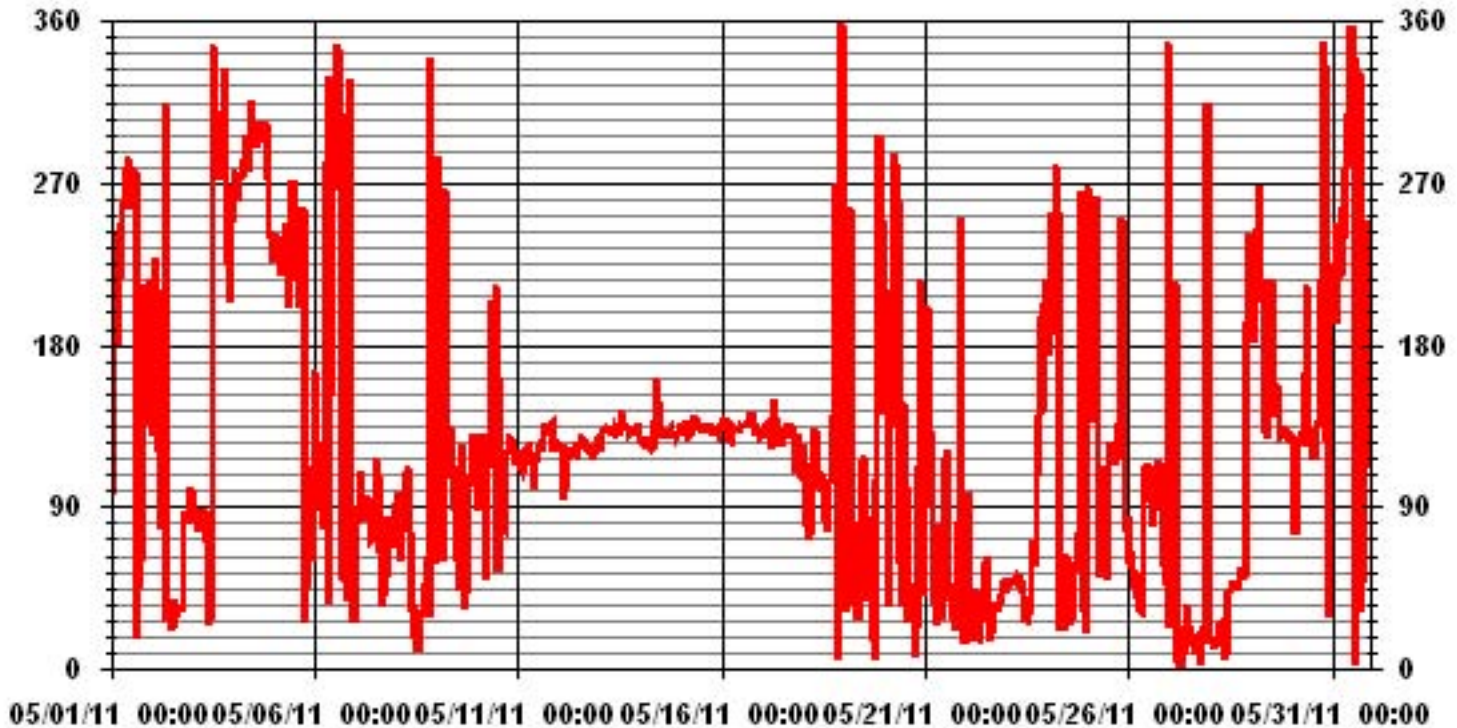
STATUS FLAG CODES

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	81.48		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	101	DEG

01 Hour Averages



— LICA WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

MAY 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	55	22	42	19	34	70	56	34	35	30	60	54	29	33	30	41	30	41	25	33	38	54	38	67
2	51	43	39	47	40	51	46	51	39	72	54	18	22	20	18	18	18	18	19	23	17	20	22	24
3	23	23	24	20	16	17	20	21	44	53	36	44	63	24	21	19	18	16	16	19	28	17	26	44
4	17	18	16	18	18	19	20	19	21	23	21	16	18	19	20	20	19	20	20	13	12	9	25	43
5	42	14	42	46	26	19	46	27	28	39	29	30	32	41	40	40	48	48	19	18	25	48	49	64
6	52	41	20	52	38	68	40	51	39	48	52	36	49	35	40	18	25	50	26	18	32	47	46	34
7	16	19	19	22	23	24	20	24	25	33	30	27	46	41	45	26	21	17	20	18	21	20	18	19
8	20	22	19	29	27	18	21	26	43	34	61	47	56	41	37	25	24	22	22	17	36	22	14	13
9	14	34	37	57	66	57	29	43	57	54	51	46	45	33	41	57	37	36	22	17	23	19	15	34
10	15	12	11	15	40	66	24	19	39	65	59	60	46	56	52	33	32	19	21	13	13	15	21	22
11	20	22	23	21	20	18	21	20	22	26	24	24	22	25	23	19	20	16	14	13	14	16	12	15
12	19	17	20	20	22	20	20	19	21	20	22	20	19	18	20	21	18	20	20	18	21	20	19	15
13	17	15	14	14	16	15	14	13	15	15	21	21	23	30	23	20	22	16	15	13	12	12	13	16
14	11	13	12	11	12	13	20	25	27	39	36	37	25	22	20	19	18	15	14	13	15	12	12	14
15	13	13	13	15	10	13	14	16	24	23	16	18	18	17	17	15	15	14	15	15	14	13	12	13
16	14	17	16	15	15	14	16	15	17	17	18	19	17	17	20	19	23	19	20	16	17	13	13	13
17	11	11	12	15	19	20	19	32	26	26	20	22	23	21	22	23	15	23	28	23	13	14	21	24
18	57	53	26	19	20	19	19	19	32	30	26	26	28	27	27	24	21	22	29	57	43	33	47	36
19	33	23	54	68	76	63	26	22	38	52	75	45	36	38	49	32	45	20	17	59	39	44	28	50
20	27	59	46	43	52	44	56	41	73	44	65	66	52	60	66	30	28	31	18	52	53	62	49	65
21	63	52	57	40	32	26	23	27	53	31	28	31	27	32	42	26	32	22	27	55	57	62	68	41
22	36	31	53	30	26	33	25	23	25	28	28	31	31	25	21	20	20	20	21	21	20	20	18	18
23	18	18	18	18	18	18	18	20	22	21	20	22	22	21	34	38	31	26	27	17	32	44	53	56
24	66	64	44	34	67	53	36	60	57	32	50	69	62	49	34	29	34	24	29	37	27	46	51	32
25	42	42	49	40	57	43	57	28	25	30	31	29	28	36	55	38	41	32	13	26	19	24	51	45
26	26	35	20	18	18	16	22	23	26	27	25	29	38	37	29	33	28	26	23	21	24	24	33	20
27	25	32	72	40	68	63	48	30	34	30	29	31	28	31	25	24	21	20	17	20	20	29	18	44
28	24	19	17	21	23	23	22	22	23	22	22	24	22	22	21	22	22	22	23	19	33	49	61	54
29	49	55	50	49	52	64	53	59	81	31	37	63	51	64	42	40	35	13	14	12	11	11	12	11
30	13	12	50	50	36	21	14	15	34	41	36	51	38	50	36	48	28	46	35	23	18	54	49	54
31	46	62	43	57	49	46	29	33	25	41	49	44	35	40	41	56	31	40	34	34	23	31	69	42

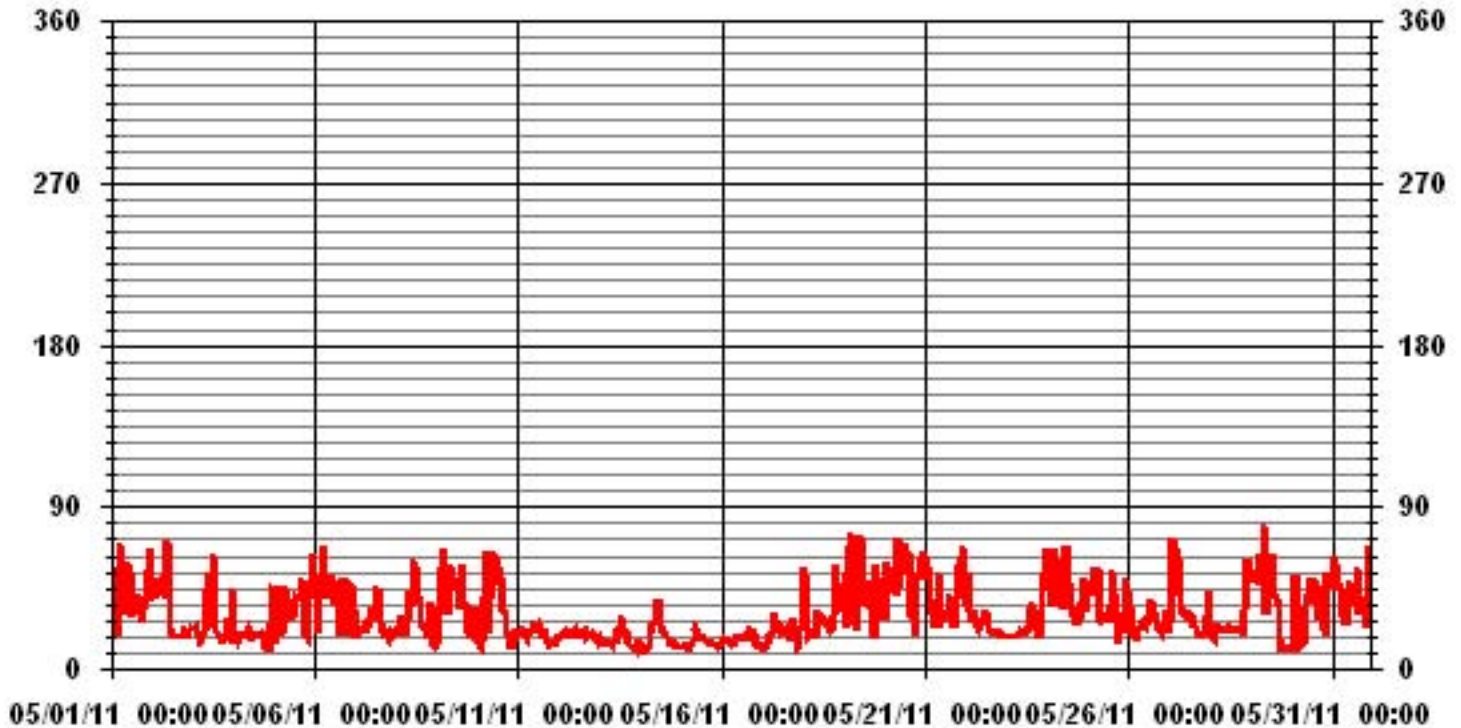
STATUS FLAG CODES

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

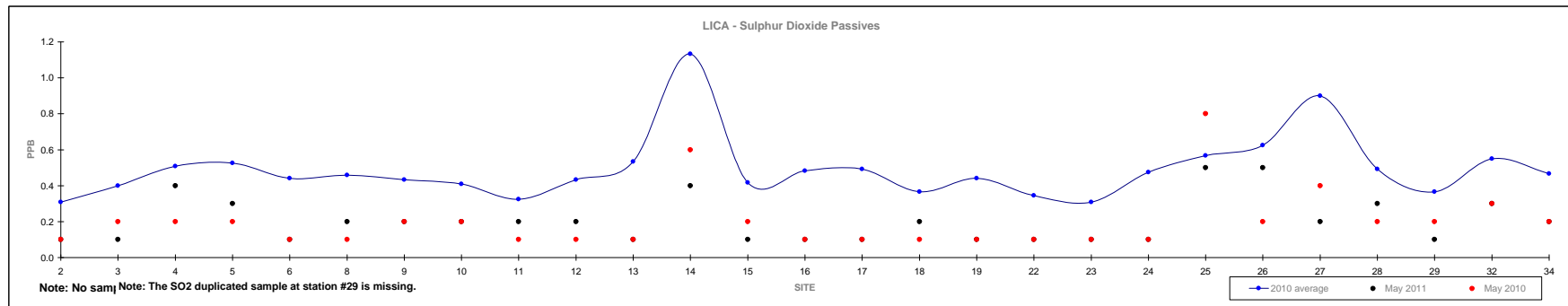


Non-Continuous Monitoring

Passive Summary Results for May 2011

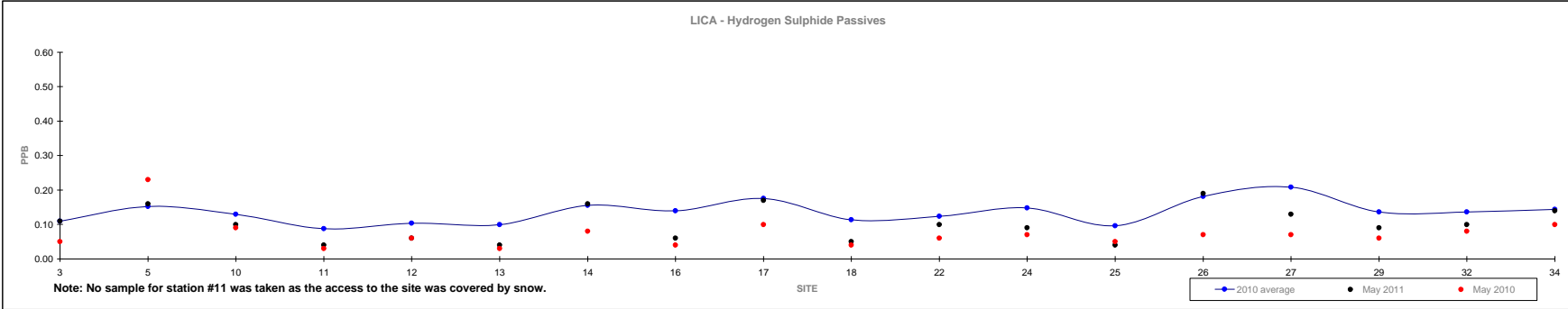
Lakeland Industry & Community Association

	Sulphur Dioxide ppb																												Reading	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			
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	0.2	-	
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	0.2	0.2	0.4	0.2	0.2	0.1	0.1	<0.1	VAR		
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	0.5	#26	



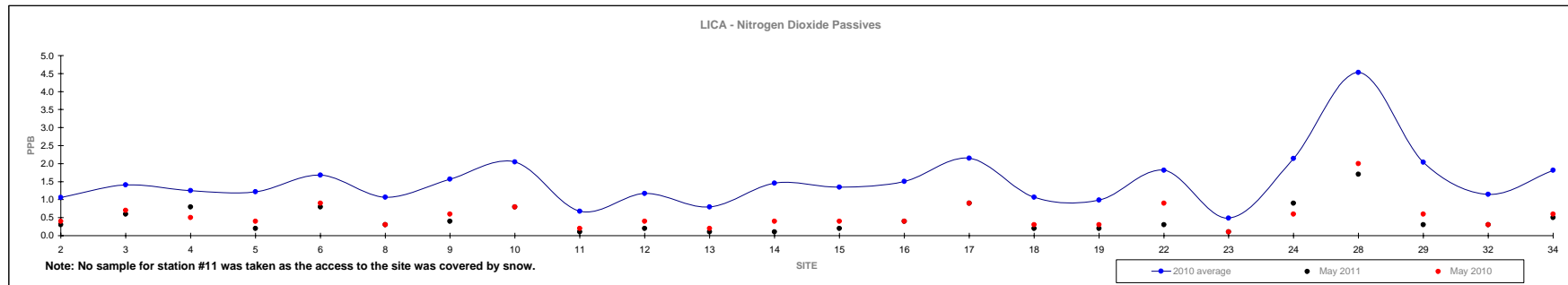
Passive Summary Results for May 2011 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																May 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	0.10	-
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	0.04	VAR
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	0.19	#26



Passive Summary Results for May 2011 Lakeland Industry & Community Association

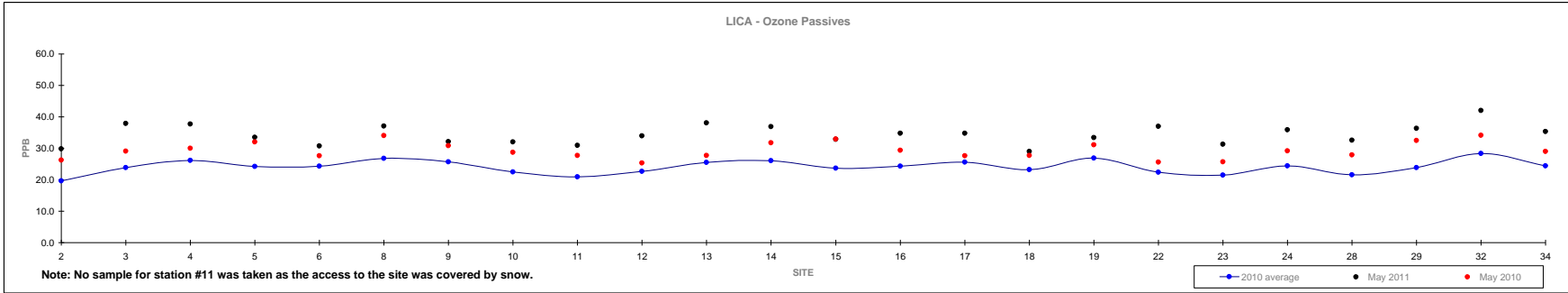
	Nitrogen Dioxide ppb																								May 2011	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	29	32	34	Reading	Site
Mean	1.1	1.4	1.3	1.2	1.7	1.1	1.6	2.1	0.7	1.2	0.8	1.5	1.3	1.5	2.2	1.1	1.0	1.8	0.5	2.1	4.5	2.0	1.2	1.8	0.4	-
Minimum	0.3	0.5	0.4	0.3	0.7	0.3	0.6	0.7	0.2	0.4	0.2	0.4	0.4	0.4	0.9	0.3	0.3	0.5	0.1	0.6	1.6	0.5	0.3	0.6	<0.1	VAR
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	1.7	#28



Passive Summary Results for May 2011

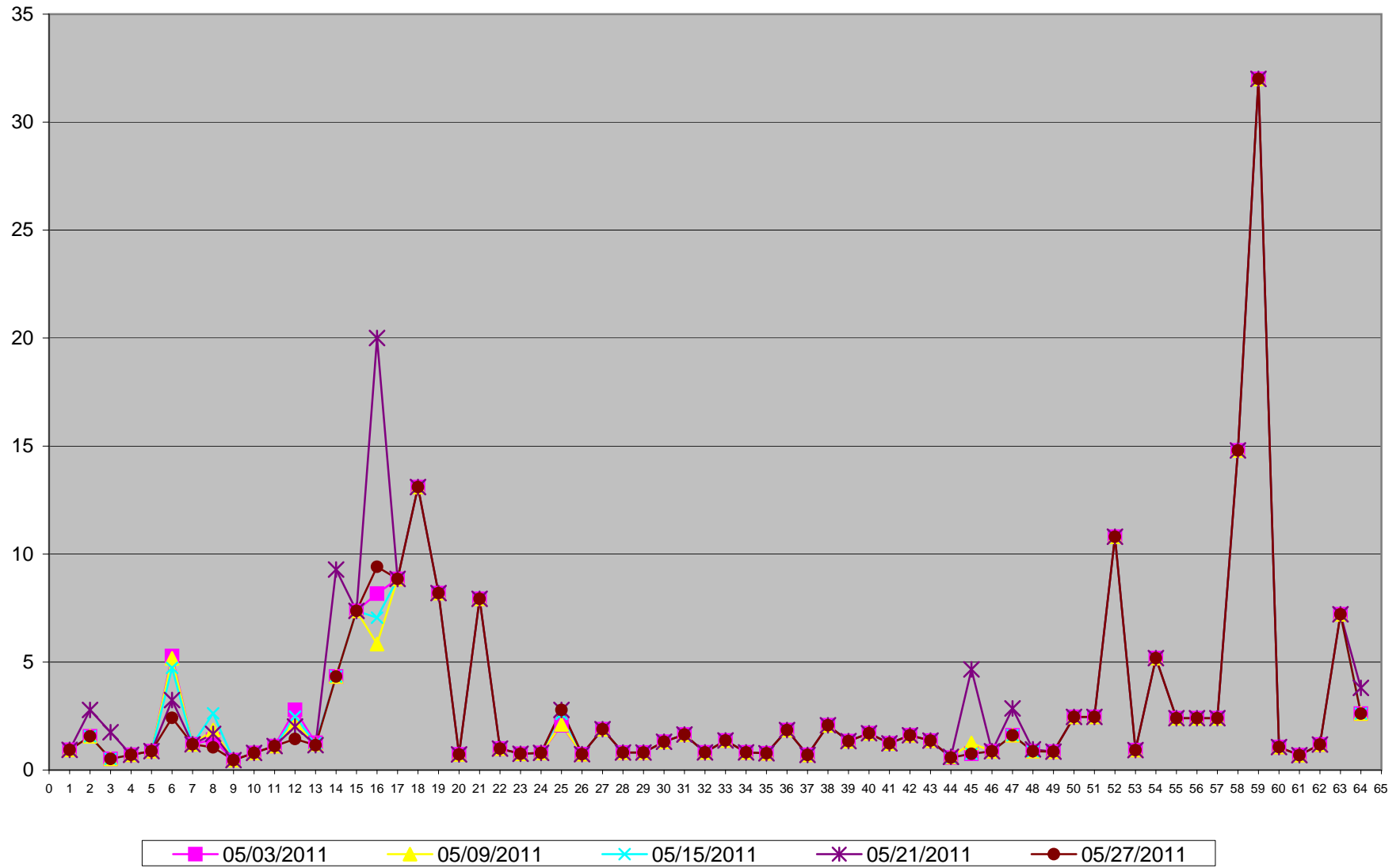
Lakeland Industry & Community Association

	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	May 2011	Site
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	34.4	-	-	
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	29.0	#18	-	
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	42.0	#32	-	



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)

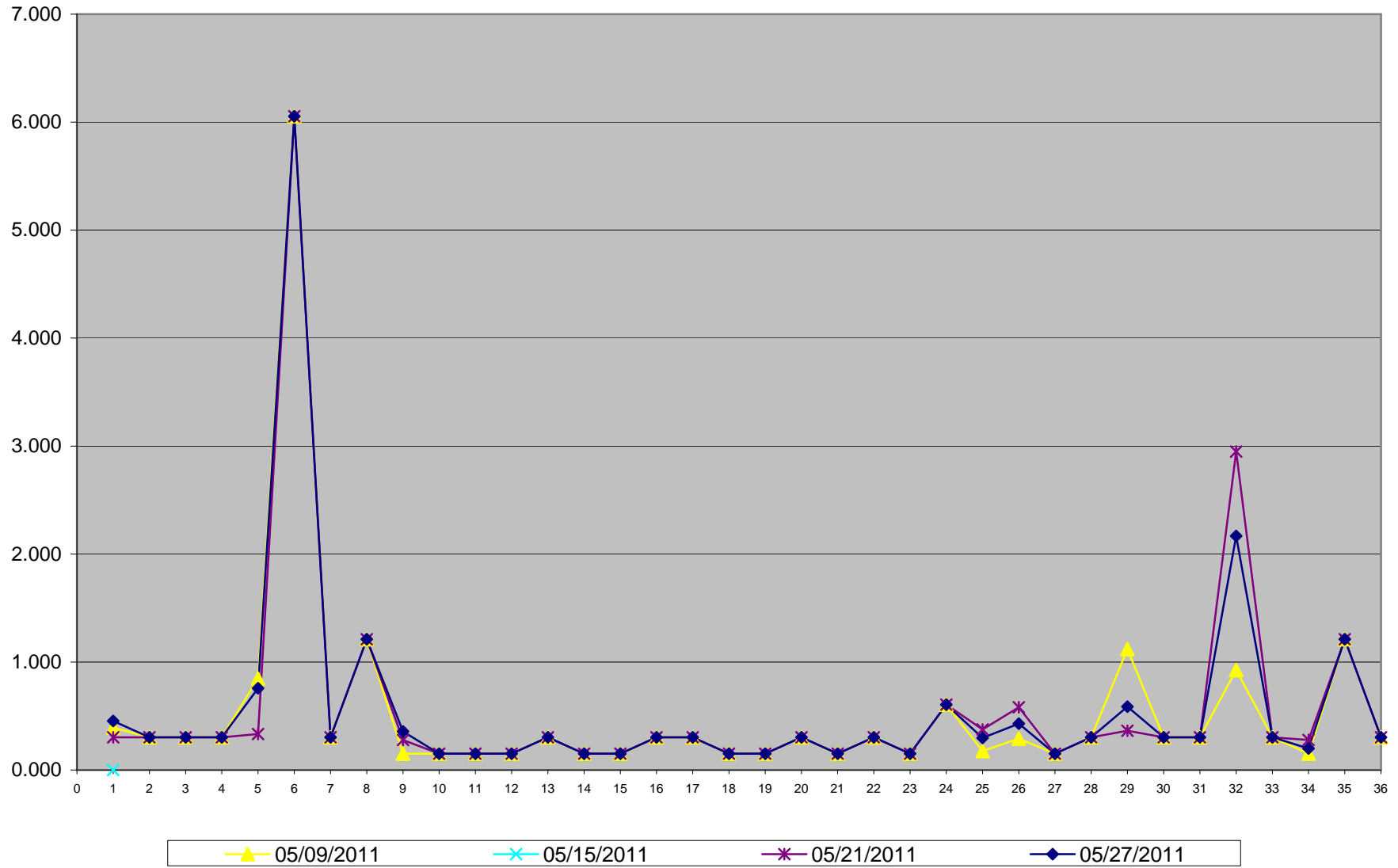
Polycyclic Aromatic Hydrocarbons

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

PAHs	05/03/2011	05/09/2011	05/15/2011	05/21/2011	05/27/2011
Sample Volume (unit: m3)	NA	330.36	330.36	330.33	330.33
1 1-Methylnaphthalene	NA	0.394	0.303	0.303	0.454
2 1-Methylphenanthrene	NA	0.303	0.303	0.303	0.303
3 2-Chloronaphthalene	NA	0.303	0.303	0.303	0.303
4 2-Methylantracene	NA	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	NA	0.848	0.303	0.333	0.757
6 3-Methylcholanthrene	NA	6.054	6.054	6.055	6.055
7 7,12-Dimethylbenzo(a)anthracene	NA	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	NA	1.211	1.211	1.211	1.211
9 Acenaphthene	NA	0.151	0.151	0.279	0.357
10 Acenaphthylene	NA	0.151	0.151	0.151	0.151
11 Anthracene	NA	0.151	0.151	0.151	0.151
12 Benzo(a)anthracene	NA	0.151	0.151	0.151	0.151
13 Benzo(a)fluorene	NA	0.303	0.303	0.303	0.303
14 Benzo(a)pyrene	NA	0.151	0.151	0.151	0.151
15 Benzo(b)fluoranthene	NA	0.151	0.151	0.151	0.151
16 Benzo(b)fluorene	NA	0.303	0.303	0.303	0.303
17 Benzo(e)pyrene	NA	0.303	0.303	0.303	0.303
18 Benzo(g,h,i)perylene	NA	0.151	0.151	0.151	0.151
19 Benzo(k)fluoranthene	NA	0.151	0.151	0.151	0.151
20 Biphenyl	NA	0.303	0.303	0.303	0.303
21 Chrysene	NA	0.151	0.151	0.151	0.151
22 Coronene	NA	0.303	0.303	0.303	0.303
23 Dibenz(a,h)anthracene	NA	0.151	0.151	0.151	0.151
24 Dibenzo(a,e)pyrene	NA	0.605	0.605	0.605	0.605
25 Fluoranthene	NA	0.176	0.151	0.375	0.297
26 Fluorene	NA	0.291	0.151	0.581	0.430
27 Indeno(1,2,3-cd)pyrene	NA	0.151	0.151	0.151	0.151
28 m-Terphenyl	NA	0.303	0.303	0.303	0.303
29 Naphthalene	NA	1.120	0.478	0.363	0.587
30 o-Terphenyl	NA	0.303	0.303	0.303	0.303
31 Perylene	NA	0.303	0.303	0.303	0.303
32 Phenanthrene	NA	0.926	0.648	2.949	2.168
33 p-Terphenyl	NA	0.303	0.303	0.303	0.303
34 Pyrene	NA	0.151	0.151	0.279	0.200
35 Quinoline	NA	1.211	1.211	1.211	1.211
36 Tetralin	NA	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	May 4, 2011	Previous Calibration	April 5, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	10:59	End Time (MST)	14:35
Reason:	Monthly Calibration		
Barometric Pressure	0.938 atm	Station Temperature	24 Deg C
Cal Gas	49 ppm	Cal Gas Expiry date	4/2/2013
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	446 ccm, 30.3 Deg C	449 ccm, 30.8 Deg C	
HVPS / Lamp Setting	-632, 750	-632, 749	
PMT / RxCell Temp	OK Deg C, 45.2 Deg C	OK Deg C, 45.1 Deg C	
Converter / IZS Temp	NA Deg C, 45.0 Deg C	NA Deg C, 45.0 Deg C	
Offset / Slope	5.4, 1.011	5.3, 1.015	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4959	40.8	400	396	1.0097
4959	40.8	400	400	0.9996
4980	20.4	200	202	0.9896
4981	15.3	150	152	0.9872
4996	0	0	0	N/A
Sum of Least Squares				0.9966
New Correction Factor				0.9996

Before Calibration

After Calibration

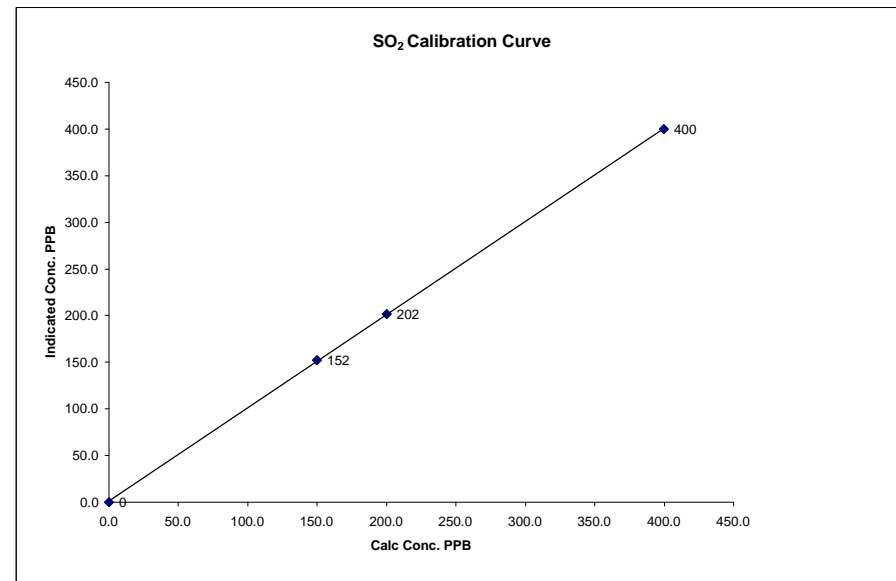
Auto Zero	0.4	0.4
Auto Span	374	375
Sample Lines Connected	YES	
Percent Change from Previous Calibration	-1.0%	

Calibration Performed by: Ting Xyu

SO₂ Calibration Curve

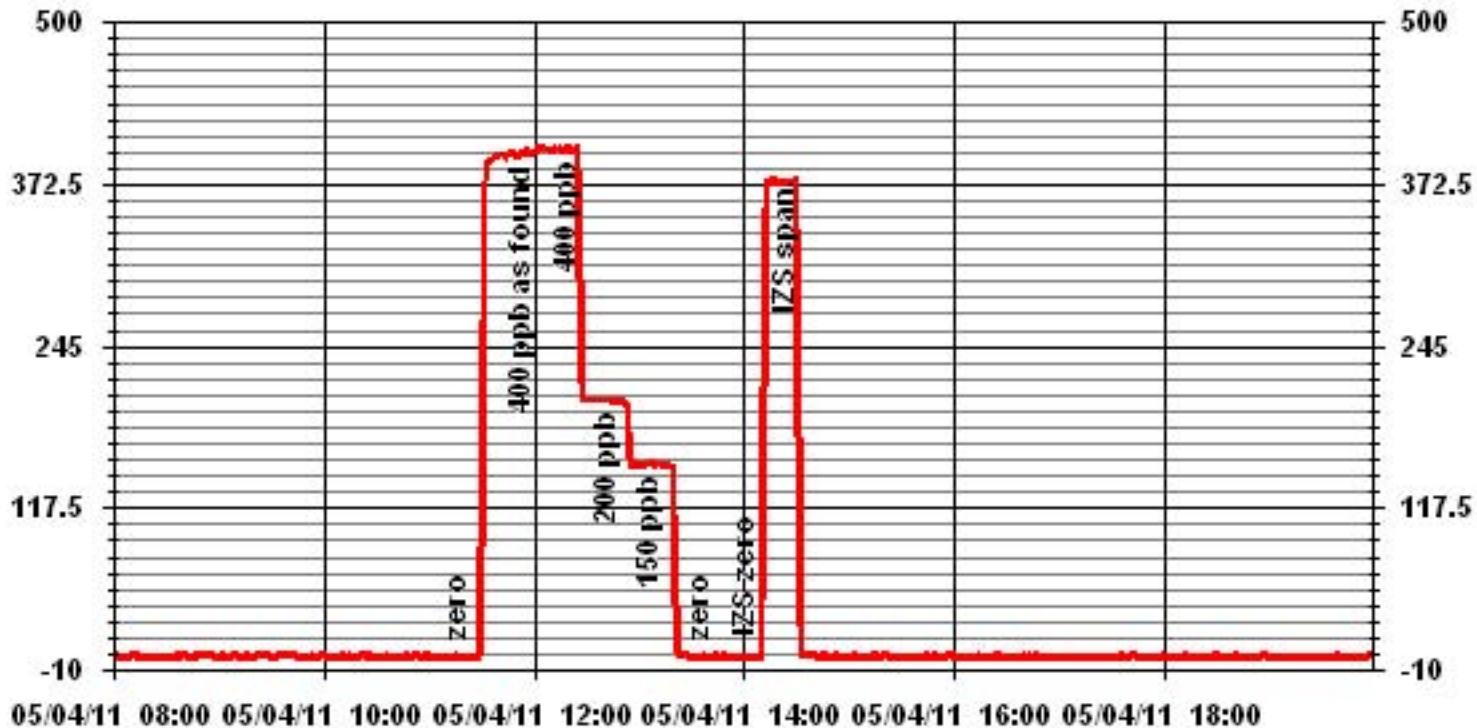
Calibration Date	May 4, 2011
Company	Lakeland Community and Industry Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	10:59
End Time (MST)	14:35

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)
0	0	n/a	0.999953	0.999802
150	152	0.9872		1.084382
200	202	0.9896		
400	400	0.9996		



Notes:

01 Minute Averages



Total Reduced Sulphur

**TRS Calibration Report
Station Information**

Calibration Date	May 3, 2011	Previous Calibration	April 5, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:52	End Time (MST)	12:19
Reason:	Monthly Calibration		
Barometric Pressure	0.932 atm	Station Temperature	25 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	353 ccm	32.7 Deg C		354 ccm	31.5 Deg C		
HVPS / Lamp Setting	-623.1	756		-622.7	757		
PMT / RxCell Temp	OK Deg C	45.0 Deg C		OK Deg C	44.9 Deg C		
Converter / IZS Temp	850 Deg C	45.0 Deg C		850 Deg C	45.0 Deg C		
Offset / Slope	11.9	1.236		11.9	1.236		

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
4959	39.2	80	80	1.0000
4980	19.6	40	40	0.9997
4986	11.2	23	23	0.9939
4996	0	0	0	N/A
Sum of Least Squares				0.9995
New Correction Factor				1.0000

Before Calibration

After Calibration

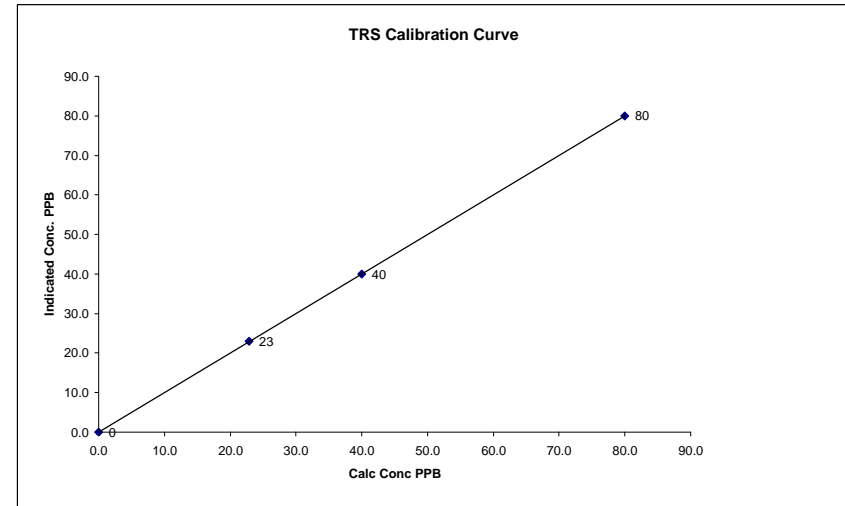
Auto Zero	0.4	0.4
Auto Span	52	53
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.0%

Calibration Performed by: Ting Xu

TRS Calibration Curve

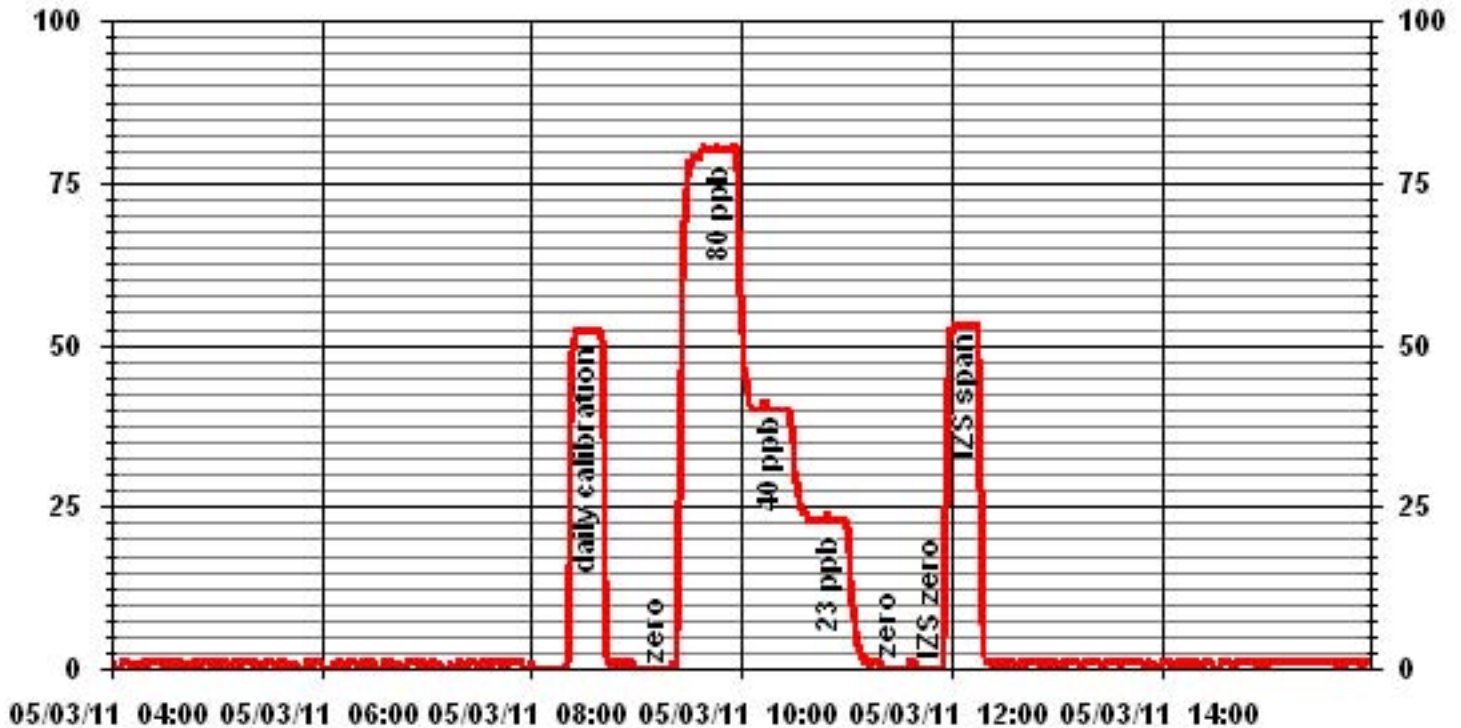
Calibration Date	May 3, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	8:52
End Time (MST)	12:19

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.)	0.999534
23	23	0.9939			
40	40	0.9997			
80	80	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	May 3, 2011	Previous Calibration:	April 5, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST):	11:41	End Time (MST):	14:35
Reason:	Monthly Calibration		
Barometric Pressure:	0.933 atm	Station Temperature:	23 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
--------------	-------------	-------	------------------	--------	------------------

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	39.9	0.9931
1999	35	20.1	19.8	1.0150
1998	20	11.6	11.4	1.0182
2000	0	0.0	0.0	N/A
Correction Factor:				0.9931

Percent Change

Previous Calibration Correction Factor:	0.9956
Current Correction Factor Before Span Adjust:	0.9931
Percent Change:	0.3%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	35.9	35.7
Sample Lines Connected		YES

Cylinder Pressures

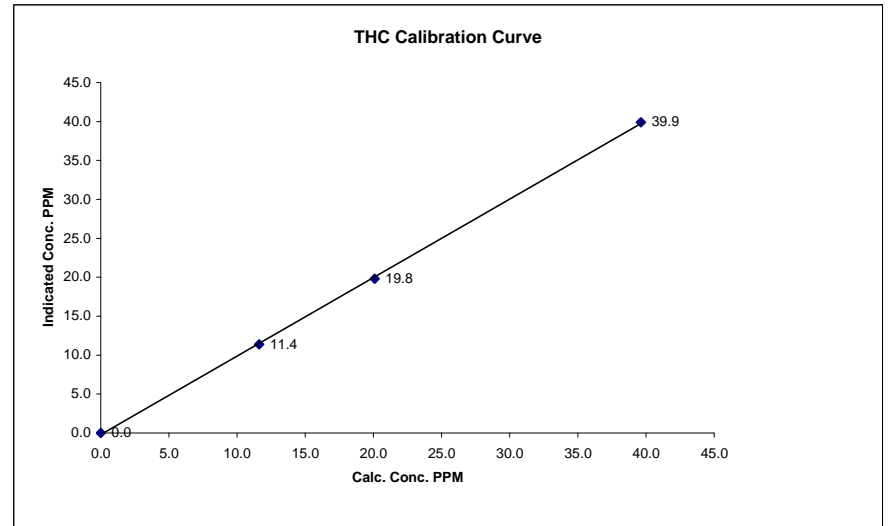
Span	1250 psi
Hydrogen	800 psi
Zero Air	32 psi Maxxam-owned API 701 zero air supply with catalytic oxidizer

Calibration Performed by: Ting Xu

THC Calibration Curve

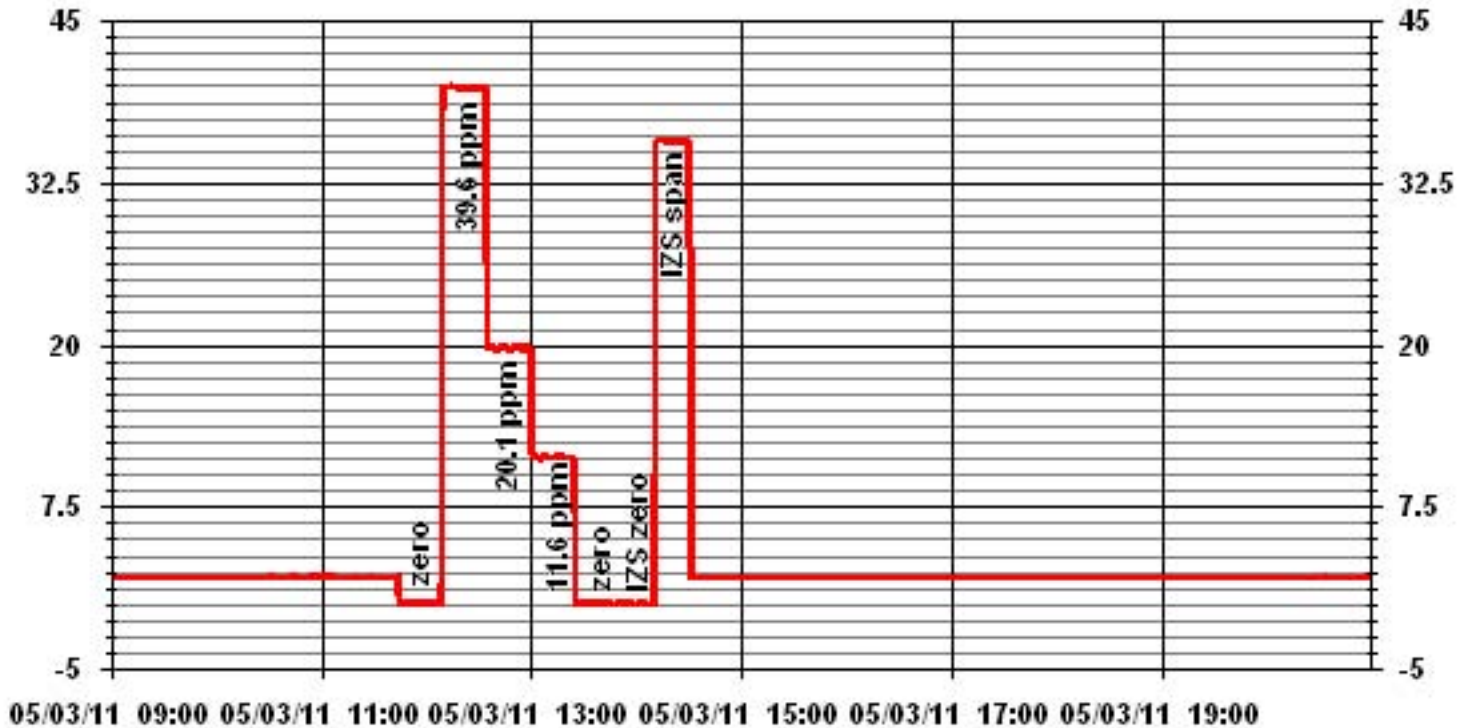
Calibration Date	May 3, 2011
Company	Lakeland Industry and Community Association
Plant / Location	LICA1/Cold Lake
Start Time (MST)	11:41
End Time (MST)	14:35

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999834
0.0	0.0		Intercept	(± 3% F.S.)	-0.198266
11.6	11.4	1.0182			
20.1	19.8	1.0150			
39.6	39.9	0.9931			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	May 4, 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 (%)	29.4%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	14.1
		Press (ATM)	0.938

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	0.007	Warnings	None
Pump Vacuum <0.40atm	0.34		
Temperature/Pressure			
Measured Temp (± 2 °C)	13.9	D °C	0.3
Measured Press (± 0.01atm)	0.923	DATM	0.015
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	0.75%
Measured Main Flow (l/min)	3.02	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	2.10%
Measured Bypass Flow (l/min)	13.70	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: 11:10 **Finish Time:** 13:31

Sample Inlet Cleaned: Yes **New Filters Installed:** YES
New Filter Loading %: 23.3%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	May 3, 2011	Previous Calibration	April 5, 2011
Company	LICA	Plant/Location	LICA 1 - Cold Lake South
Start Time (MST)	8:52	End Time (MST)	14:26
Reason:	Monthly Calibration	Other	
Barometric Pressure	0.932 atm	Station Temperature	25 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date 04-Feb-13
DAS Output Voltage	0 - 10	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	706	ccm	317	Deg C	700	ccm	317.0
Ozone Flow / Vacuum	OK	ccm	182.7	"Hg-A	OK	ccm	182.3
HVPS / A ZERO	-821	Volts	NA	MV	-821	Volts	NA
Rx/ Temp / PMT Temp	49.6	Deg C	-2.4	Deg C	49.9	Deg C	-2.5
Box Temp / IZS Temp	27.9	Deg C	OK	Deg C	27.3	Deg C	OK
Offset	3.9	NOx	3.6	NO	4	NOx	3.6
Slope	1.024	NOx	0.920	NO	1.024	NOx	0.937
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	----	----
4954	39.6	----	410	400	----	402	393	9	1.0199	1.0170
4954	39.6	----	410	400	----	409	400	9	1.0024	0.9992
4973	19.8	----	205	200	----	206	201	5	0.9953	0.9944
4984	9.9	----	102	100	----	104	102	2	0.9855	0.9795
4995	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		
4954	39.6	----	410	400	----	409	400	9	----	----
4954	39.6	350	410	----	343	409	66	343	1.0269	100.00%
4954	39.6	150	410	----	153	409	256	153	1.0625	100.00%
4954	39.6	75	410	----	82	409	327	82	1.1233	100.00%

Linearity	Sum of Least Squares	NOx= 1.000	NO= 0.997	NO2= 1.000
OK?	Yes No	Correction Factors:	NOx= 1.0024	NO= 0.9992
			Average Converter Efficiency= 100.00%	

Before Calibration				After Calibration			
Auto Zero	0.0	NOx	0.1	NO2	0.1	NOx	0.1
Auto Span	385	NOx	382	NO2	385	NOx	383
		Sample Lines Connected		YES			
Percent Change from Previous Calibration		NOx	-2.0%	NO	-1.8%	NO2	-1.7%

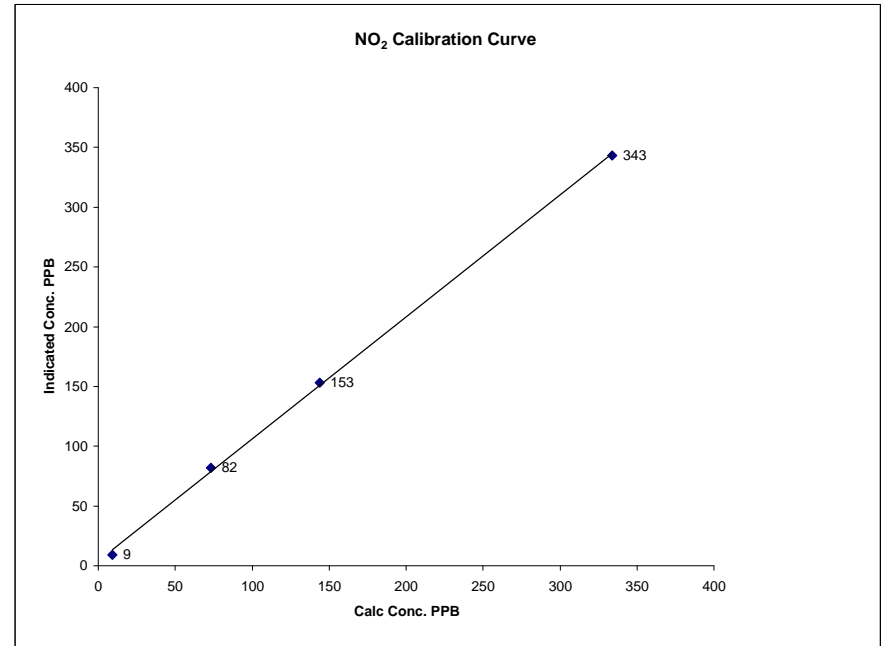
Notes

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	May 3, 2011	LICA	
Company		LICA 1 - Cold Lake South	
Plant / Location		LICA 1 - Cold Lake South	
Start Time (MST)	8:52	End Time (MST)	14:26

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999396
ppb	ppb		Slope	(0.85 to 1.15)	1.019881
9	9	N/A	Intercept	(± 3% F.S.)	3.96662
73	82	0.8902			
144	153	0.9412			
334	343	0.9738			

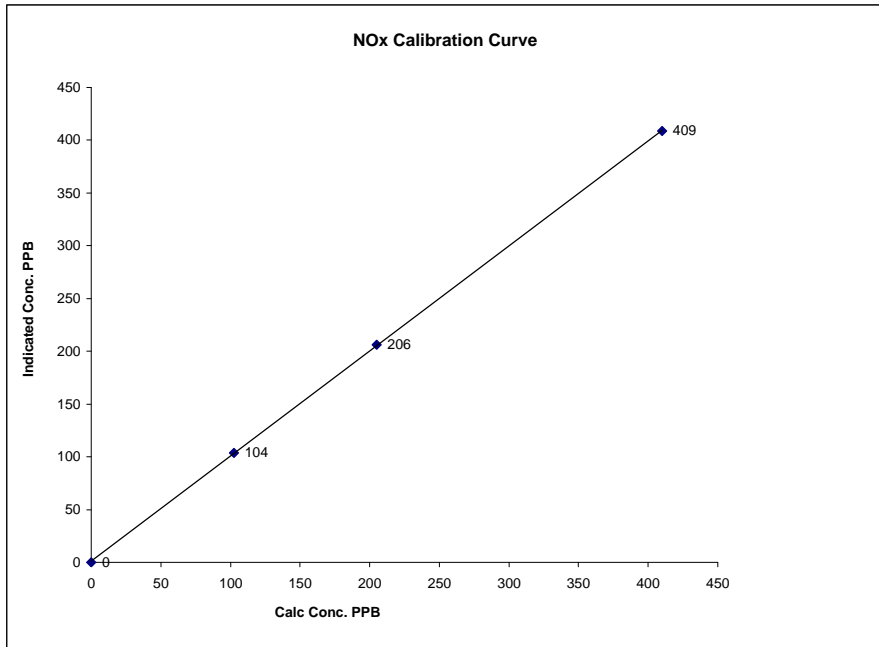


Notes:

NOx Calibration Curve

Calibration Date May 3, 2011
 Company LICA
 Plant / Location LICA 1 - Cold Lake South
 Start Time (MST) 8:52 End Time (MST) 14:26

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999972
0	0	N/A	Slope	(0.85 to 1.15)	0.996529
102	104	0.9855	Intercept	(± 3% F.S.)	0.99587
205	206	0.9953			
410	409	1.0024			

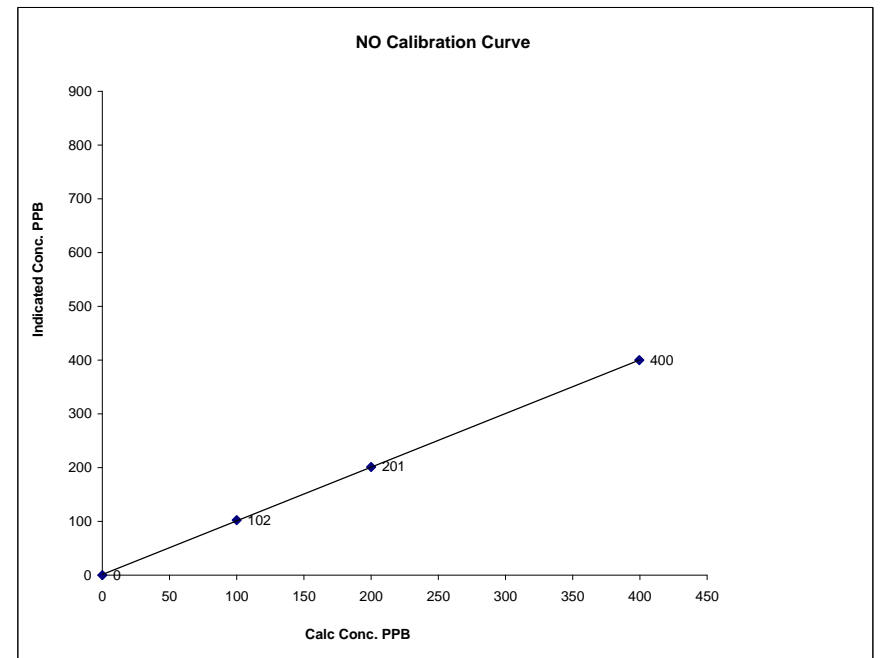


Notes:

NO Calibration Curve

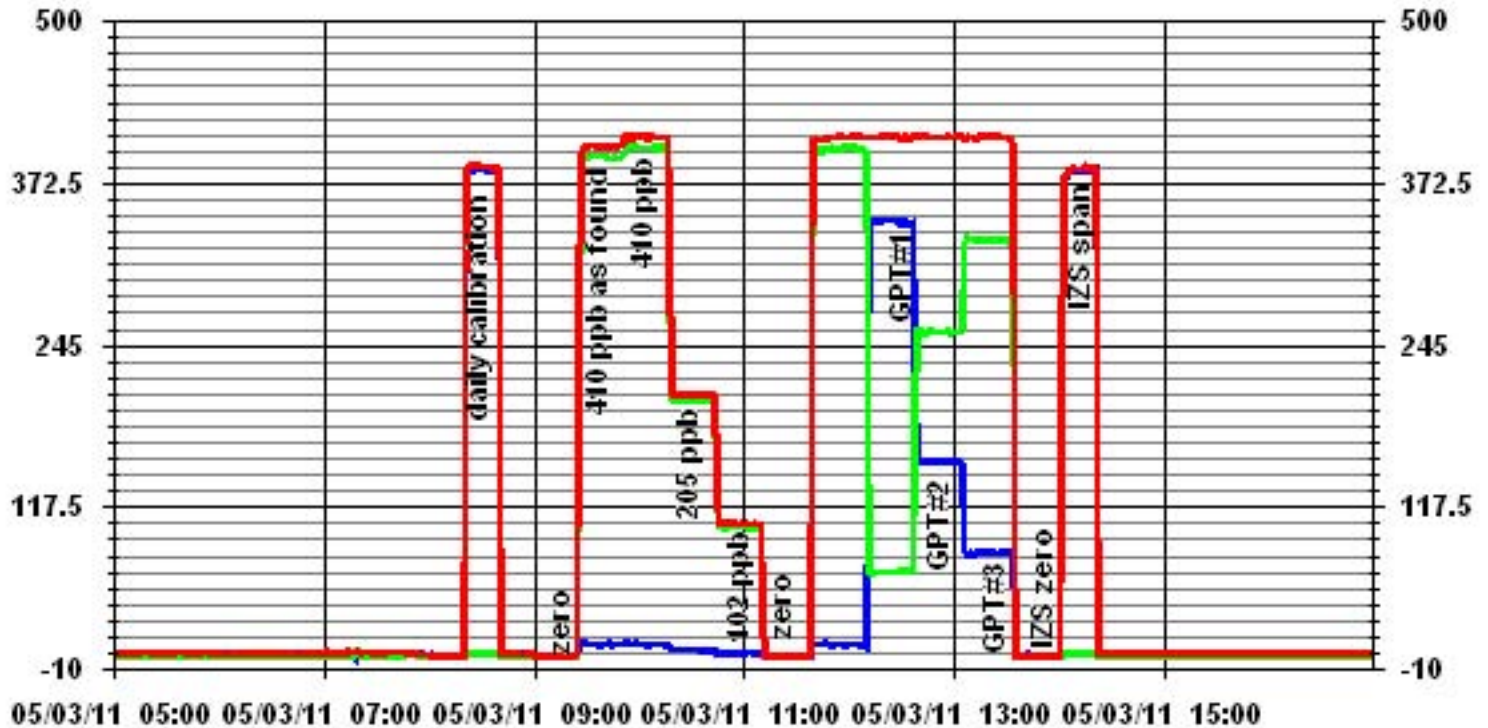
Calibration Date May 3, 2011
 Company LICA
 Plant / Location LICA 1 - Cold Lake South
 Start Time (MST) 8:52 End Time (MST) 14:26

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999971
0	0	N/A	Slope	(0.85 to 1.15)	0.994373
100	102	0.9795	Intercept	(± 3% F.S.)	1.9362
200	201	0.9944			
400	400	0.9992			



Notes:

01 Minute Averages



— LICA

NOX_

PPB

— LICA

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NO_

PPB

— LICA

JOB #: 2833-11-05-01-C

NO2_

PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	May 4, 2011	Previous Calibration	April 5, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	10:59	End Time (MST)	14:18
Reason:	Monthly Calibration		
Barometric Pressure	0.938 atm	Station Temperature	24 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			
Cell A Flow/ Cell B Flow	696 ccm	736 ccm	709 ccm	751 ccm
Pressure	680 mmHg		704 mmHg	
Bench Lamp Temp	53.5 Deg C		53.5 Deg C	
O ₃ Lamp/Box Temp	67.6 Deg C	28.9 Deg C	67.6 Deg C	29 Deg C
Offset / Slope	0.1	1.006	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	334	333	1.0030
4996	150	144	144	1.0000
4996	75	73	72	1.0139
4996	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0030

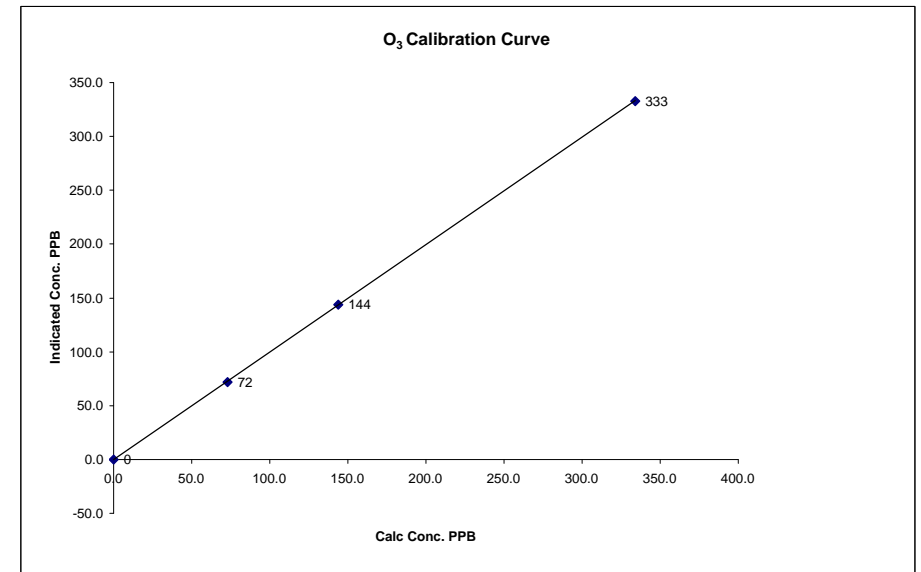
	Before Calibration	After Calibration
Auto Zero	-0.2	-0.2
Auto Span	273	275
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.0%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

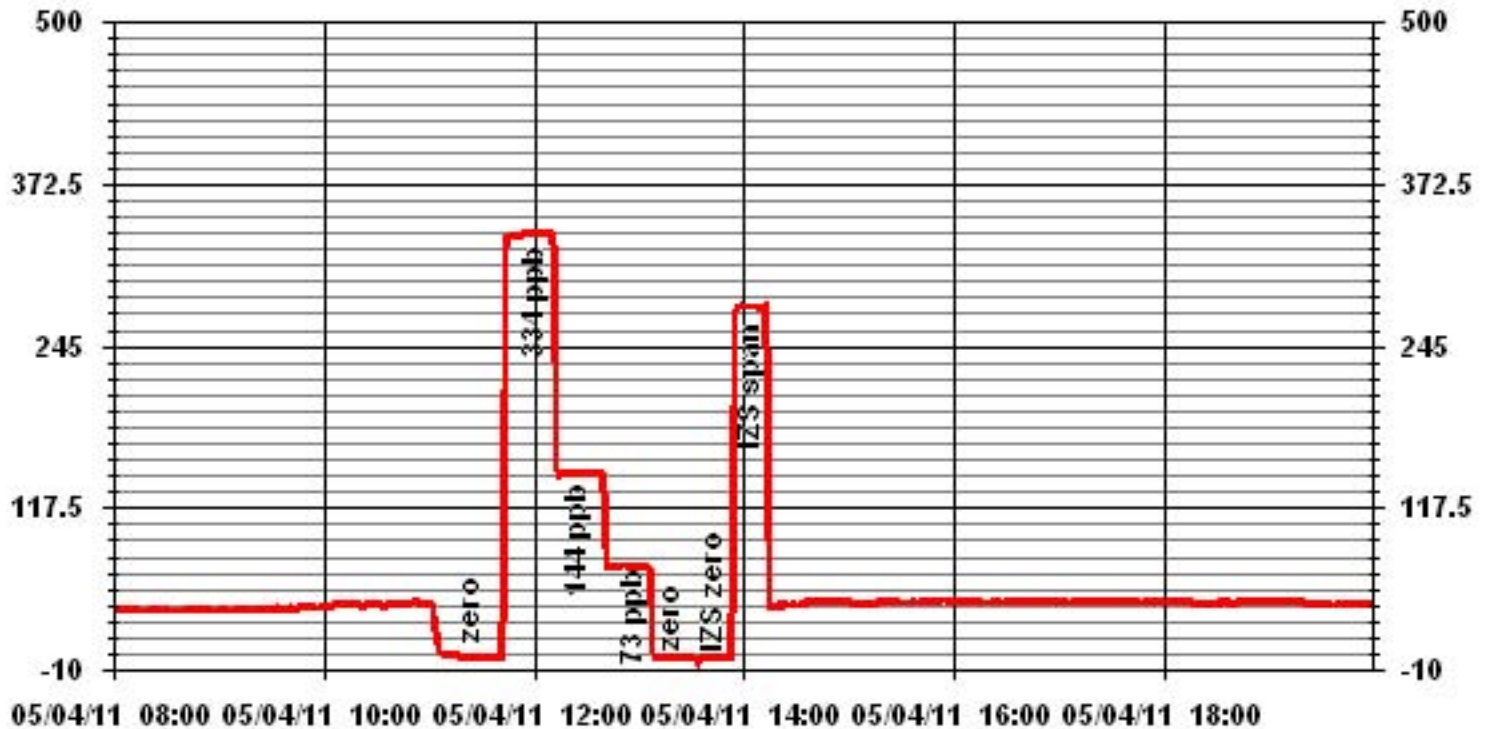
Calibration Date	May 4, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	10:59
End Time (MST)	14:18

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999988
0	0	n/a	Intercept	(± 3% F.S.)	-0.206515
73	72	1.0139			
144	144	1.0000			
334	333	1.0030			



Notes:

01 Minute Averages



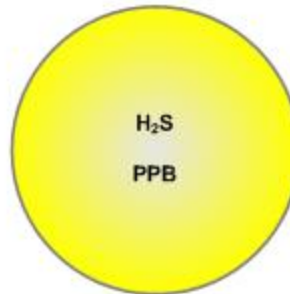
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

MAY 2011

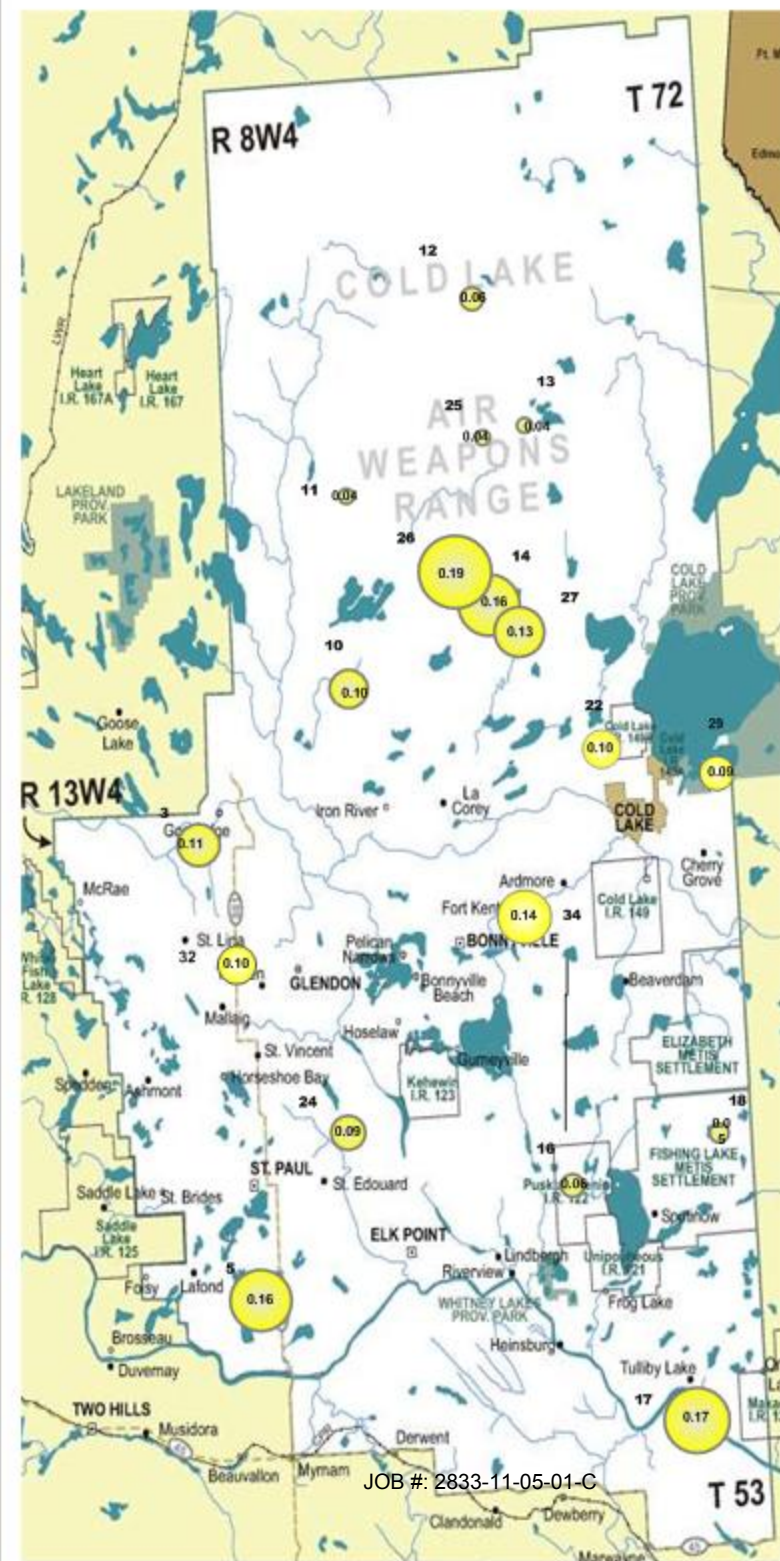
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.11 PPB	NA
5 – Lake Eliza	0.15 PPB	0.16 PPB
10 – La Corey	0.10 PPB	0.09 PPB
11 – Wolf Lake	0.04 PPB	0.12 PPB
12 – Foster Creek	0.05 PPB	0.06 PPB
13 – Primrose	0.04 PPB	NA
14 – Maskwa	0.16 PPB	0.16 PPB
16 – Frog Lake	0.06 PPB	NA
17 – Clear Range	0.19 PPB	0.15 PPB
18 – Fishing Lake	0.05 PPB	NA
22 – Cold Lake South	0.10 PPB	NA
24 – Fort George	0.08 PPB	0.10 PPB
25 – Burnt Lake	0.04 PPB	NA
26 – Mahihkan	0.20 PPB	0.17 PPB
27 – Mahkeses	0.13 PPB	NA
29 – Cold Lake South 2	0.09 PPB	0.09 PPB
32 – St. Lina	0.10 PPB	NA
34 – Portable	0.14 PPB	NA



Summary

Minimum : 0.04 PPB – Various Stations
Maximum: 0.19 PPB – Mahihkan
Average: 0.10 PPB *Includes Duplicates

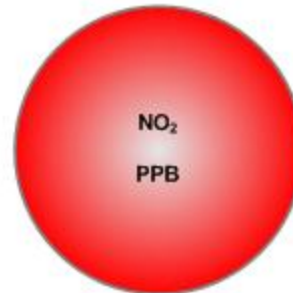


Lakeland Industry & Community Association NO₂ Passive Bubble Map

MAY 2011

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	0.3 PPB	NA
3 – Therien	0.6 PPB	0.6 PPB
4 – Flat Lake	0.8 PPB	NA
5 – Lake Eliza	0.2 PPB	0.2 PPB
6 – Telegraph Creek	0.8 PPB	NA
8 – Muriel-Kehewin	0.1 PPB	0.4 PPB
9 – Dupre	0.4 PPB	NA
10 – La Corey	0.9 PPB	0.7 PPB
11 – Wolf Lake	<0.1 PPB	NA
12 – Foster Creek	0.3 PPB	0.1 PPB
13 – Primrose	<0.1 PPB	NA
14 – Maskwa	<0.1 PPB	NA
15 – Ardmore	0.2 PPB	NA
16 – Frog Lake	0.3 PPB	0.5 PPB
17 – Clear Range	0.9 PPB	NA
18 – Fishing Lake	0.2 PPB	0.1 PPB
19 – Beaverdam	0.2 PPB	NA
22 – Cold Lake South	0.3 PPB	NA
23 – Medley-Martineau	<0.1 PPB	<0.1 PPB
24 – Fort George	0.9 PPB	NA
28 – Town of Bonnyville	1.7 PPB	1.6 PPB
29 – Cold Lake South 2	0.3 PPB	NA
32 – St. Lina	0.3 PPB	NA
34 – Portable	0.5 PPB	NA



Summary

Minimum : <0.1 PPB – Various Stations
Maximum: 1.7 PPB – Town of Bonnyville
Average: 0.4 PPB *Includes Duplicates

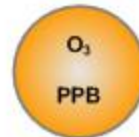


Lakeland Industry & Community Association O₃ Passive Bubble Map

MAY 2011

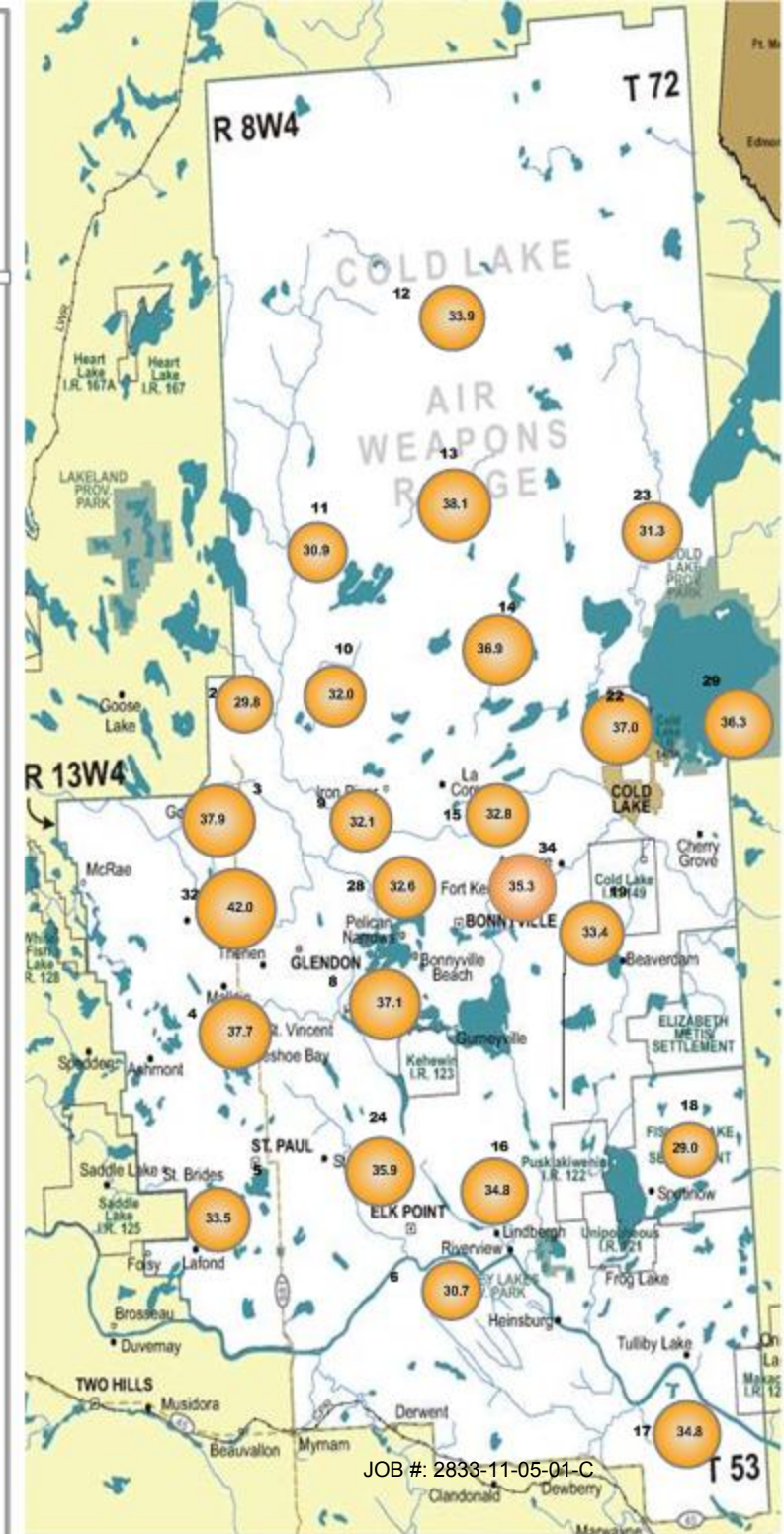
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	29.8 PPB	NA
3 – Therien	37.1 PPB	38.6 PPB
4 – Flat Lake	37.7 PPB	NA
5 – Lake Eliza	32.6 PPB	34.3 PPB
6 – Telegraph Creek	30.7 PPB	NA
8 – Muriel-Kehewin	38.2 PPB	35.9 PPB
9 – Dupre	32.1 PPB	NA
10 – La Corey	31.8 PPB	32.2 PPB
11 – Wolf Lake	30.9 PPB	NA
12 – Foster Creek	36.0 PPB	31.8 PPB
13 – Primrose	38.1 PPB	NA
14 – Maskwa	38.6 PPB	35.1 PPB
15 – Ardmore	32.8 PPB	NA
16 – Frog Lake	35.0 PPB	34.6 PPB
17 – Clear Range	34.8 PPB	NA
18 – Fishing Lake	30.0 PPB	28.0 PPB
19 – Beaverdam	33.4 PPB	NA
22 – Cold Lake South	37.0 PPB	NA
23 – Medley-Martineau	29.4 PPB	33.1 PPB
24 – Fort George	35.9 PPB	NA
28 – Town of Bonnyville	33.9 PPB	31.3 PPB
29 – Cold Lake South 2	36.3 PPB	NA
32 – St. Lina	42.0 PPB	NA
34 – Portable	35.3 PPB	NA



Summary

Minimum : 29.0 PPB –Fishing Lake
 Maximum: 42.0 PPB –St. Lina
 Average: 34.4 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

MAY 2011

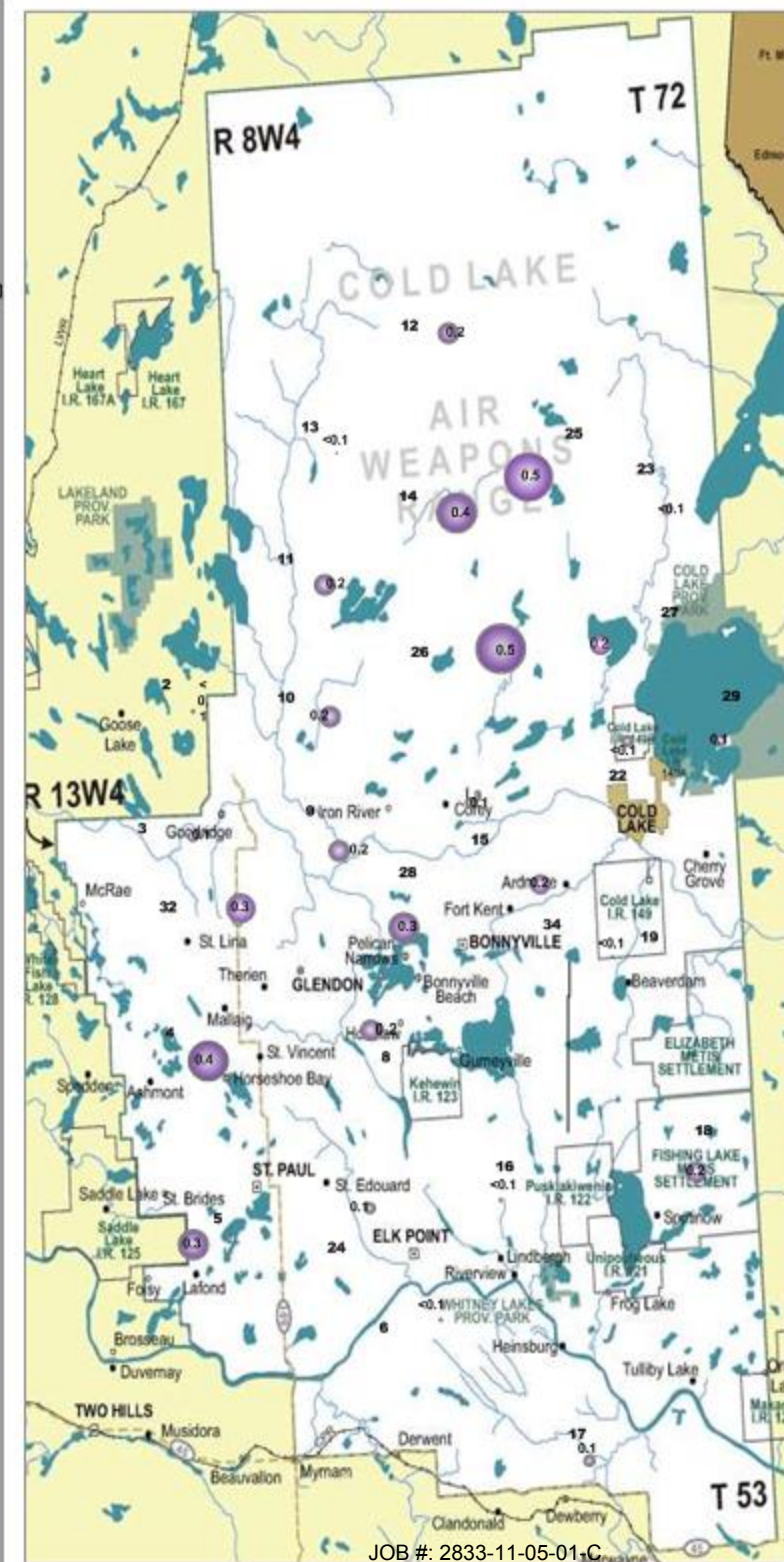
PASSIVE STATIONS

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



Summary

Minimum : <0.1PPB –Various Stations
Maximum: 0.5 PPB –Burnt Lake and Mahikan
Average: 0.20 PPB *Includes Duplicates



Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	04/27/11	10:32	05/31/11	10:39	
2A (Dup)	NA	NA	NA	NA	NA	
3	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	09:45	05/31/11	09:41	
3A (Dup)	SO ₂ /NO ₂ /O ₃	04/27/11	09:45	05/31/11	09:41	
4	SO ₂ /NO ₂ /O ₃	04/29/11	14:20	06/02/11	14:10	
4A (Dup)	NA	NA	NA	NA	NA	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	13:40	06/02/11	13:18	
5A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	13:40	06/02/11	13:18	
6	SO ₂ /NO ₂ /O ₃	04/29/11	12:09	06/02/11	11:45	
6A (Dup)	NA	NA	NA	NA	NA	
8	SO ₂ /NO ₂ /O ₃	04/29/11	15:19	06/02/11	15:13	
8A (Dup)	SO ₂ /NO ₂ /O ₃	04/29/11	15:19	06/02/11	15:13	
9	SO ₂ /NO ₂ /O ₃	04/28/11	14:40	05/31/11	07:38	
9A (Dup)	NA	NA	NA	NA	NA	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	11:22	05/31/11	11:45	
10A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	11:22	05/31/11	11:45	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	11:59	05/31/11	12:22	
11A (Dup)	NA	NA	NA	NA	NA	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	13:28	05/31/11	13:54	
12A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	13:28	05/31/11	13:54	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	15:03	06/01/11	11:45	
13A (Dup)	NA	NA	NA	NA	NA	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	15:48	06/01/11	12:40	
14A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	15:48	06/01/11	12:40	
15	SO ₂ /NO ₂ /O ₃	04/28/11	09:38	06/01/11	10:59	
15A (Dup)	NA	NA	NA	NA	NA	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	10:14	06/02/11	09:54	
16A (Dup)	SO ₂ /NO ₂ /O ₃	04/29/11	10:14	06/02/11	09:54	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	11:17	06/02/11	10:50	
17A (Dup)	H ₂ S	04/29/11	11:17	06/02/11	10:50	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	09:18	06/02/11	09:05	
18A (Dup)	SO ₂ /NO ₂ /O ₃	04/29/11	09:18	06/02/11	09:05	
19	SO ₂ /NO ₂ /O ₃	04/29/11	08:13	06/02/11	07:59	
19A (Dup)	NA	NA	NA	NA	NA	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	04/28/11	08:38	06/01/11	08:24	
22A (Dup)	NA	NA	NA	NA	NA	
23	SO ₂ /NO ₂ /O ₃	04/27/11	17:16	06/01/11	14:02	
23A (Dup)	SO ₂ /NO ₂ /O ₃	04/27/11	17:16	06/01/11	14:02	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	04/29/11	12:40	06/02/11	12:17	
24A (Dup)	H ₂ S	04/29/11	12:40	06/02/11	12:7	
25	H ₂ S/SO ₂	04/27/11	14:46	05/31/11	15:29	
25A (Dup)	SO ₂	04/27/11	14:46	05/31/11	15:29	
26	H ₂ S/SO ₂	04/27/11	15:36	06/01/11	12:25	
26A (Dup)	H ₂ S	04/27/11	15:36	06/01/11	12:25	
27	H ₂ S/SO ₂	04/27/11	16:10	06/01/11	12:59	
27A (Dup)	SO ₂	04/27/11	16:10	06/01/11	12:59	
28	SO ₂ /NO ₂ /O ₃	04/28/11	14:19	05/31/11	07:57	
28A (Dup)	NO ₂ /O ₃	04/28/11	14:19	05/31/11	07:57	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	04/28/11	08:22	06/01/11	08:10	
29A (Dup)	H ₂ S/SO ₂	04/28/11	08:22	06/01/11	08:10	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	04/27/11	09:02	05/31/11	09:01	
32A (Dup)	NA	NA	NA	NA	NA	
34	H ₂ S/SO ₂ /NO ₂ /O ₃	04/28/11	15:02	06/01/11	10:01	
34A (Dup)	NA	NA	NA	NA	NA	

Passive Network Laboratory Analysis



Your Project #: 2011/04/27 - 2011/05/31
Site:LICA

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

Report Date: 2011/06/13

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B148964
Received: 2011/06/09, 11:30

Sample Matrix: Air
Samples Received: 43

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis (l)	26	2011/06/13	2011/06/13	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (l)	34	2011/06/13	2011/06/13	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (l)	34	2011/06/13	2011/06/13	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (l)	39	2011/06/13	2011/06/13	EINDSOP-00149	Tang Passive SO2 in

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

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

Encryption Key

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

Levi Manchak, Customer Service
Email: LManchak@maxxam.ca
Phone# (780) 378-8500

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Total cover pages: 1



Maxxam Job #: B148964
 Report Date: 2011/06/13

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/04/27 - 2011/05/31
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AS2378	AS2380	AS2381	AS2382	AS2383		
Sampling Date		2011/04/27 10:32	2011/04/27 09:45	2011/04/27 09:45	2011/04/29 14:40	2011/04/29 13:40		
	Units	2	3	3A (DUP)	4	5	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.11			0.15	0.02	4923922
Calculated NO2	ppb	0.3	0.6	0.6	0.8	0.2	0.1	4925739
Calculated O3	ppb	29.8	37.1	38.6	37.7	32.6	0.1	4924148
Calculated SO2	ppb	<0.1	0.1	0.1	0.4	0.3	0.1	4925783
RDL = Reportable Detection Limit								

Maxxam ID		AS2384	AS2385	AS2386	AS2387	AS2388		
Sampling Date		2011/04/29 13:40	2011/04/29 12:09	2011/04/29 15:19	2011/04/29 15:19	2011/04/28 14:40		
	Units	5A (DUP)	6	8	8A (DUP)	9	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.16					0.02	4923922
Calculated NO2	ppb	0.2	0.8	0.1	0.4	0.4	0.1	4925739
Calculated O3	ppb	34.3	30.7	38.2	35.9	32.1	0.1	4924148
Calculated SO2	ppb	0.2	<0.1	0.2	0.2	0.2	0.1	4925783
RDL = Reportable Detection Limit								

Maxxam ID		AS2389	AS2390	AS2391	AS2392	AS2393		
Sampling Date		2011/04/27 11:22	2011/04/27 11:22	2011/04/27 11:59	2011/04/27 13:28	2011/04/27 13:28		
	Units	10	10A (DUP)	11	12	12A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.10	0.09	0.04	0.05	0.06	0.02	4923922
Calculated NO2	ppb	0.9	0.7	<0.1	0.3	0.1	0.1	4925739
Calculated O3	ppb	31.8	32.2	30.9	36.0	31.8	0.1	4924148
Calculated SO2	ppb	0.2	0.1	0.2	0.2	<0.1	0.1	4925783
RDL = Reportable Detection Limit								



Maxxam Job #: B148964
Report Date: 2011/06/13

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/04/27 - 2011/05/31
Site Reference: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AS2394		AS2395	AS2396	AS2397		
Sampling Date		2011/04/27 15:03		2011/04/27 15:48	2011/04/27 15:48	2011/04/28 09:38		
	Units	13	QC Batch	14	14A (DUP)	15	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.04	4923922	0.16	0.16		0.02	4923922
Calculated NO2	ppb	<0.1	4925739	<0.1	<0.1	0.2	0.1	4925740
Calculated O3	ppb	38.1	4924148	38.6	35.1	32.8	0.1	4924151
Calculated SO2	ppb	<0.1	4925783	0.3	0.4	0.1	0.1	4925783
RDL = Reportable Detection Limit								

Maxxam ID		AS2398	AS2399	AS2400	AS2401	AS2402		
Sampling Date		2011/04/29 10:14	2011/04/29 10:14	2011/04/29 11:17	2011/04/29 11:17	2011/04/28 09:18		
	Units	16	16A (DUP)	17	17A (DUP)	18	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.06		0.19	0.15	0.05	0.02	4923922
Calculated NO2	ppb	0.3	0.5	0.9		0.2	0.1	4925740
Calculated O3	ppb	35.0	34.6	34.8		30.0	0.1	4924151
Calculated SO2	ppb	<0.1	<0.1	0.1		0.3	0.1	4925798
RDL = Reportable Detection Limit								

Maxxam ID		AS2403	AS2404	AS2405	AS2406	AS2407		
Sampling Date		2011/04/28 09:18	2011/04/28 09:13	2011/04/28 08:38	2011/04/27 17:16	2011/04/27 17:16		
	Units	18A (DUP)	19	22	23	23A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			0.10			0.02	4923922
Calculated NO2	ppb	0.1	0.2	0.3	<0.1	<0.1	0.1	4925740
Calculated O3	ppb	28.0	33.4	37.0	29.4	33.1	0.1	4924151
Calculated SO2	ppb	0.1	<0.1	<0.1	<0.1	<0.1	0.1	4925798
RDL = Reportable Detection Limit								



Maxxam Job #: B148964
 Report Date: 2011/06/13

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/04/27 - 2011/05/31
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		AS2408	AS2409	AS2410	AS2411	AS2412		
Sampling Date		2011/04/29 12:40	2011/04/29 12:40	2011/04/27 14:46	2011/04/27 14:46	2011/04/27 15:36		
	Units	24	24A (DUP)	25	25A (DUP)	26	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.08	0.10	0.04		0.20	0.02	4923922
Calculated NO2	ppb	0.9					0.1	4925740
Calculated O3	ppb	35.9					0.1	4924151
Calculated SO2	ppb	0.1		0.5	0.4	0.5	0.1	4925798
RDL = Reportable Detection Limit								

Maxxam ID		AS2413	AS2414	AS2415	AS2416	AS2418		
Sampling Date		2011/04/27 15:36	2011/04/27 16:10	2011/04/27 16:10	2011/04/28 14:19	2011/04/28 14:19		
	Units	26A (DUP)	27	27A (DUP)	28	28A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.17	0.13				0.02	4923922
Calculated NO2	ppb				1.7	1.6	0.1	4925740
Calculated O3	ppb				33.9	31.3	0.1	4924151
Calculated SO2	ppb		0.2	0.2	0.3		0.1	4925798
RDL = Reportable Detection Limit								

Maxxam ID		AS2419	AS2420	AS2421	AS2422		
Sampling Date		2011/04/28 08:22	2011/04/28 08:22	2011/04/27 09:02	2011/04/28 15:02		
	Units	29	29A (DUP)	32	34	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.09	0.09	0.10	0.14	0.02	4923922	
Calculated NO2	ppb	0.3		0.3	0.5	0.1	4925740	
Calculated O3	ppb	36.3		42.0	35.3	0.1	4924151	
Calculated SO2	ppb	0.1	<0.1	0.3	0.2	0.1	4925798	
RDL = Reportable Detection Limit								



Maxxam Job #: B148964
Report Date: 2011/06/13

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/04/27 - 2011/05/31
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 #: 2011/04/27 - 2011/05/31
 P.O. #:
 Site Reference: LICA

Quality Assurance Report
 Maxxam Job Number: PB148964

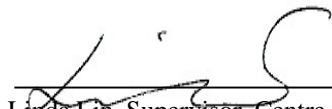
QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4923922 TM5	Calibration Check	Calculated H2S	2011/06/13		99	%	80 - 120
	Spiked Blank	Calculated H2S	2011/06/13		99	%	N/A
4924148 OZ	Calibration Check	Calculated O3	2011/06/13		100	%	91 - 107
	Spiked Blank	Calculated O3	2011/06/13		100	%	N/A
	Method Blank	Calculated O3	2011/06/13	<0.1		ppb	
4924151 OZ	Calibration Check	Calculated O3	2011/06/13		102	%	91 - 107
	Spiked Blank	Calculated O3	2011/06/13		98	%	N/A
	Method Blank	Calculated O3	2011/06/13	<0.1		ppb	
4925739 DF4	Calibration Check	Calculated NO2	2011/06/13		101	%	76 - 118
	Spiked Blank	Calculated NO2	2011/06/13		102	%	N/A
	Method Blank	Calculated NO2	2011/06/13	<0.1		ppb	
4925740 DF4	Calibration Check	Calculated NO2	2011/06/13		100	%	76 - 118
	Spiked Blank	Calculated NO2	2011/06/13		104	%	N/A
	Method Blank	Calculated NO2	2011/06/13	<0.1		ppb	
4925783 DF4	Calibration Check	Calculated SO2	2011/06/13		102	%	95 - 105
	Spiked Blank	Calculated SO2	2011/06/13		102	%	N/A
	Method Blank	Calculated SO2	2011/06/13	<0.1		ppb	
4925798 DF4	Calibration Check	Calculated SO2	2011/06/13		101	%	95 - 105
	Spiked Blank	Calculated SO2	2011/06/13		103	%	N/A
	Method Blank	Calculated SO2	2011/06/13	<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 #: B148964

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 be "Linda Lin". The signature is written in a cursive style with a large, sweeping 'S' at the end.

Linda Lin, Supervisor, Centre for Passive Sampling Technology

=====

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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: 7860
Station ID: Lica 1 Canister Installation Date/Time: May 02, 2011 @ 11:51 mst
Field Sample ID: LICA VOC/ CLS /May 03, 11 Canister Removal Date/Time: May 04, 2011 @ 7:52 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
03-May-11	05/03/2011 0:00	05/04/2011 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 #07625

Technician Signiture: Ting Xu

Your C.O.C. #: 07625

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

Report Date: 2011/05/16

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B163170****Received: 2011/05/06, 10:35**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/05/10	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/05/10	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

=====

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Total cover pages: 1

Page 1 of 10

Maxxam Job #: B163170
 Report Date: 2011/05/16

RESULTS OF ANALYSES OF AIR

Maxxam ID		JK6401	JK6402	
Sampling Date		2011/05/03	2011/05/03	
COC Number		07625	07625	
	Units	LICA VOC/CLS/MAY 03,11 - 7860	LICA VOC/PORT/MAY 03,11 - 7805	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	22	2483796

QC Batch = Quality Control Batch

Maxxam Job #: B163170
 Report Date: 2011/05/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JK6401			JK6402				
Sampling Date		2011/05/03			2011/05/03				
COC Number		07625			07625				
	Units	LICA VOC/CLS/MAY 03,11 - 7860	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAY 03,11 - 7805	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	2483802
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	1.14	0.50	3.56	1.56	2483802
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2483802
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2483802
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2483802
Dichlorodifluoromethane (FREON 12)	ppbv	1.07	5.28	0.989	1.09	0.20	5.40	0.989	2483802
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2483802
Chloromethane	ppbv	0.68	1.41	0.620	0.77	0.30	1.60	0.620	2483802
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2483802
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2483802
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2483802
Trichlorofluoromethane (FREON 11)	ppbv	0.50	2.79	1.12	0.49	0.20	2.73	1.12	2483802
Trichlorotrifluoroethane	ppbv	0.16	1.26	1.15	0.16	0.15	1.25	1.15	2483802
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2483802
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2483802
2-Propanone	ppbv	3.44	8.17	1.90	3.08	0.80	7.31	1.90	2483802
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2483802
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2483802
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2483802
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2483802
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2483802
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2483802
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2483802
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2483802
Methylene Chloride(Dichloromethane)	ppbv	0.60	2.07	1.04	0.60	0.30	2.08	1.04	2483802
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2483802
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2483802
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2483802
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2483802
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2483802
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2483802

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B163170
 Report Date: 2011/05/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JK6401			JK6402				
Sampling Date		2011/05/03			2011/05/03				
COC Number		07625			07625				
	Units	LICA VOC/CLS/MAY 03,11 - 7860	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAY 03,11 - 7805	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	2483802
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2483802
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2483802
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2483802
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2483802
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2483802
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2483802
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2483802
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2483802
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2483802
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2483802
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2483802
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2483802
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2483802
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2483802
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2483802
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2483802
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2483802
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2483802
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2483802
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2483802
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2483802
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2483802
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2483802
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2483802
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2483802
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2483802
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2483802
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2483802
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2483802
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2483802
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2483802
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2483802
QC Batch = Quality Control Batch									

Maxxam Job #: B163170
 Report Date: 2011/05/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JK6401			JK6402				
Sampling Date		2011/05/03			2011/05/03				
COC Number		07625			07625				
	Units	LICA VOC/CLS/MAY 03,11 - 7860	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAY 03,11 - 7805	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	92	N/A	N/A	90		N/A	N/A	2483802
D5-Chlorobenzene	%	96	N/A	N/A	93		N/A	N/A	2483802
Difluorobenzene	%	96	N/A	N/A	93		N/A	N/A	2483802

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

Maxxam Job #: B163170
 Report Date: 2011/05/16

Test Summary

Maxxam ID JK6401 **Collected** 2011/05/03
Sample ID LICA VOC/CLS/MAY 03,11 - 7860 **Shipped**
Matrix AIR **Received** 2011/05/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2483796	N/A	2011/05/10	JIE WU
Volatile Organics in Air (TO-15)	GC/MS	2483802	N/A	2011/05/10	JIE WU

Maxxam ID JK6402 **Collected** 2011/05/03
Sample ID LICA VOC/PORT/MAY 03,11 - 7805 **Shipped**
Matrix AIR **Received** 2011/05/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2483796	N/A	2011/05/10	JIE WU
Volatile Organics in Air (TO-15)	GC/MS	2483802	N/A	2011/05/10	JIE WU

Maxxam Job #: B163170
Report Date: 2011/05/16

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: GB163170

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2483802 JIW	Spiked Blank	Bromochloromethane	2011/05/10		102	%	60 - 140
		D5-Chlorobenzene	2011/05/10		105	%	60 - 140
		Difluorobenzene	2011/05/10		106	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/10		83	%	70 - 130
		Carbon Disulfide	2011/05/10		85	%	70 - 130
		Propene	2011/05/10		77	%	70 - 130
		Vinyl Acetate	2011/05/10		83	%	70 - 130
		Vinyl Bromide	2011/05/10		96	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/05/10		101	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/05/10		112	%	70 - 130
		Chloromethane	2011/05/10		101	%	70 - 130
		Vinyl Chloride	2011/05/10		97	%	70 - 130
		Chloroethane	2011/05/10		89	%	70 - 130
		1,3-Butadiene	2011/05/10		91	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/05/10		109	%	70 - 130
		Trichlorotrifluoroethane	2011/05/10		97	%	70 - 130
		Ethanol	2011/05/10		81	%	70 - 130
		2-propanol	2011/05/10		97	%	70 - 130
		2-Propanone	2011/05/10		95	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/05/10		85	%	70 - 130
		Methyl Isobutyl Ketone	2011/05/10		81	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/05/10		84	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/05/10		95	%	70 - 130
		Ethyl Acetate	2011/05/10		86	%	70 - 130
		1,1-Dichloroethylene	2011/05/10		96	%	70 - 130
		cis-1,2-Dichloroethylene	2011/05/10		94	%	70 - 130
		trans-1,2-Dichloroethylene	2011/05/10		85	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/05/10		82	%	70 - 130
		Chloroform	2011/05/10		102	%	70 - 130
		Carbon Tetrachloride	2011/05/10		111	%	70 - 130
		1,1-Dichloroethane	2011/05/10		86	%	70 - 130
		1,2-Dichloroethane	2011/05/10		107	%	70 - 130
		Ethylene Dibromide	2011/05/10		95	%	70 - 130
		1,1,1-Trichloroethane	2011/05/10		107	%	70 - 130
		1,1,2-Trichloroethane	2011/05/10		93	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/05/10		87	%	70 - 130
		cis-1,3-Dichloropropene	2011/05/10		94	%	70 - 130
		trans-1,3-Dichloropropene	2011/05/10		99	%	70 - 130
		1,2-Dichloropropane	2011/05/10		86	%	70 - 130
		Bromomethane	2011/05/10		96	%	70 - 130
		Bromoform	2011/05/10		106	%	70 - 130
		Bromodichloromethane	2011/05/10		99	%	70 - 130
		Dibromochloromethane	2011/05/10		106	%	70 - 130
		Heptane	2011/05/10		77	%	70 - 130
		Trichloroethylene	2011/05/10		93	%	70 - 130
		Tetrachloroethylene	2011/05/10		93	%	70 - 130
		Benzene	2011/05/10		88	%	70 - 130
		Toluene	2011/05/10		89	%	70 - 130
		Ethylbenzene	2011/05/10		92	%	70 - 130
		p+m-Xylene	2011/05/10		90	%	70 - 130
		o-Xylene	2011/05/10		89	%	70 - 130
		Styrene	2011/05/10		87	%	70 - 130
		1,3,5-Trimethylbenzene	2011/05/10		92	%	70 - 130
		1,2,4-Trimethylbenzene	2011/05/10		92	%	70 - 130
		4-ethyltoluene	2011/05/10		89	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB163170

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2483802 JIW	Spiked Blank	Chlorobenzene	2011/05/10		90	%	70 - 130	
		Benzyl chloride	2011/05/10		96	%	70 - 130	
1,3-Dichlorobenzene		2011/05/10		92	%	70 - 130		
1,4-Dichlorobenzene		2011/05/10		90	%	70 - 130		
1,2-Dichlorobenzene		2011/05/10		91	%	70 - 130		
1,2,4-Trichlorobenzene		2011/05/10		97	%	70 - 130		
Hexachlorobutadiene		2011/05/10		99	%	70 - 130		
Hexane		2011/05/10		77	%	70 - 130		
Cyclohexane		2011/05/10		85	%	70 - 130		
Tetrahydrofuran		2011/05/10		85	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/05/10		83	%	70 - 130	
		Bromochloromethane	2011/05/10		104	%	60 - 140	
		D5-Chlorobenzene	2011/05/10		109	%	60 - 140	
		Difluorobenzene	2011/05/10		108	%	60 - 140	
		2,2,4-Trimethylpentane	2011/05/10	<0.20			ppbv	
		Carbon Disulfide	2011/05/10	<0.50			ppbv	
		Propene	2011/05/10	<0.30			ppbv	
		Vinyl Acetate	2011/05/10	<0.20			ppbv	
		Vinyl Bromide	2011/05/10	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/05/10	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/05/10	<0.17			ppbv	
		Chloromethane	2011/05/10	<0.30			ppbv	
		Vinyl Chloride	2011/05/10	<0.18			ppbv	
		Chloroethane	2011/05/10	<0.30			ppbv	
		1,3-Butadiene	2011/05/10	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/05/10	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/05/10	<0.15			ppbv	
		Ethanol	2011/05/10	<2.3			ppbv	
		2-propanol	2011/05/10	<3.0			ppbv	
		2-Propanone	2011/05/10	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/05/10	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/05/10	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/05/10	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/05/10	<0.20			ppbv	
		Ethyl Acetate	2011/05/10	<2.2			ppbv	
		1,1-Dichloroethylene	2011/05/10	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/05/10	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/05/10	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/05/10	0.46, RDL=0.30			ppbv	
		Chloroform	2011/05/10	<0.15			ppbv	
		Carbon Tetrachloride	2011/05/10	<0.30			ppbv	
		1,1-Dichloroethane	2011/05/10	<0.20			ppbv	
		1,2-Dichloroethane	2011/05/10	<0.20			ppbv	
		Ethylene Dibromide	2011/05/10	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/05/10	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/05/10	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/05/10	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/05/10	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/05/10	<0.17			ppbv			
1,2-Dichloropropane	2011/05/10	<0.40			ppbv			
Bromomethane	2011/05/10	<0.18			ppbv			
Bromoform	2011/05/10	<0.20			ppbv			
Bromodichloromethane	2011/05/10	<0.20			ppbv			
Dibromochloromethane	2011/05/10	<0.20			ppbv			
Heptane	2011/05/10	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB163170

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2483802 JIW	Method Blank	Trichloroethylene	2011/05/10	<0.30		ppbv	
		Tetrachloroethylene	2011/05/10	<0.20		ppbv	
		Benzene	2011/05/10	<0.18		ppbv	
		Toluene	2011/05/10	<0.20		ppbv	
		Ethylbenzene	2011/05/10	<0.20		ppbv	
		p+m-Xylene	2011/05/10	<0.37		ppbv	
		o-Xylene	2011/05/10	<0.20		ppbv	
		Styrene	2011/05/10	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/05/10	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/05/10	<0.50		ppbv	
		4-ethyltoluene	2011/05/10	<2.2		ppbv	
		Chlorobenzene	2011/05/10	<0.20		ppbv	
		Benzyl chloride	2011/05/10	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/05/10	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/05/10	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/05/10	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/05/10	<2.0		ppbv	
		Hexachlorobutadiene	2011/05/10	<3.0		ppbv	
		Hexane	2011/05/10	<0.30		ppbv	
		Cyclohexane	2011/05/10	<0.20		ppbv	
		Tetrahydrofuran	2011/05/10	<0.40		ppbv	
		1,4-Dioxane	2011/05/10	<2.0		ppbv	
		Xylene (Total)	2011/05/10	<0.60		ppbv	
	RPD - Sample/Sample Dup	Vinyl Chloride	2011/05/10	NC		%	25
		1,1-Dichloroethylene	2011/05/10	NC		%	25
		cis-1,2-Dichloroethylene	2011/05/10	6.4		%	25
		trans-1,2-Dichloroethylene	2011/05/10	5.2		%	25
		Methylene Chloride(Dichloromethane)	2011/05/10	NC		%	25
		Chloroform	2011/05/10	NC		%	25
		Carbon Tetrachloride	2011/05/10	NC		%	25
		1,2-Dichloroethane	2011/05/10	6.1		%	25
		1,1,1-Trichloroethane	2011/05/10	NC		%	25
		Trichloroethylene	2011/05/10	9.1		%	25
		Tetrachloroethylene	2011/05/10	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: 6167
Location: Cold Lake South Canister ID: 7867
Station ID: Lica 1 Canister Installation Date/Time: May 06, 2011 @ 13:00 mst
Field Sample ID: LICA VOC/ CLS /May 09, 11 Canister Removal Date/Time: May 10, 2011 @ 8:01 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
09-May-11	05/09/2011 0:00	05/10/2011 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	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 # 07153

Technician Signiture: Ting Xu

Your C.O.C. #: 07153

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

Report Date: 2011/05/20

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B166056****Received: 2011/05/12, 09:40**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/05/18	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/05/18	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

=====

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

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Total cover pages: 1

Maxxam Job #: B166056
 Report Date: 2011/05/20

RESULTS OF ANALYSES OF AIR

Maxxam ID		JL9566	JL9567	
Sampling Date		2011/05/09	2011/05/09	
COC Number		07153	07153	
	Units	LICA VOC\CLS\ MAY09,11 - 7867	LICA VOC\PORT\ MAY09,11 - 7830	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	22	2492540
QC Batch = Quality Control Batch				

Maxxam Job #: B166056
 Report Date: 2011/05/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JL9566			JL9567				
Sampling Date		2011/05/09			2011/05/09				
COC Number		07153			07153				
	Units	LICA VOC\CLS\ MAY09,11 - 7867	ug/m3	DL (ug/m3)	LICA VOC\PORT\ MAY09,11 - 7830	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	2492862
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2492862
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2492862
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2492862
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2492862
Dichlorodifluoromethane (FREON 12)	ppbv	1.04	5.17	0.989	1.08	0.20	5.36	0.989	2492862
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2492862
Chloromethane	ppbv	0.89	1.85	0.620	0.91	0.30	1.87	0.620	2492862
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2492862
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2492862
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2492862
Trichlorofluoromethane (FREON 11)	ppbv	0.39	2.19	1.12	0.44	0.20	2.48	1.12	2492862
Trichlorotrifluoroethane	ppbv	0.16	1.20	1.15	0.17	0.15	1.28	1.15	2492862
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2492862
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2492862
2-Propanone	ppbv	2.46	5.83	1.90	1.77	0.80	4.21	1.90	2492862
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2492862
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2492862
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2492862
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2492862
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2492862
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2492862
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2492862
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2492862
Methylene Chloride(Dichloromethane)	ppbv	0.61	2.11	1.04	0.56	0.30	1.95	1.04	2492862
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2492862
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2492862
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2492862
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2492862
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2492862

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B166056
 Report Date: 2011/05/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JL9566			JL9567				
Sampling Date		2011/05/09			2011/05/09				
COC Number		07153			07153				
	Units	LICA VOC\CLS\ MAY09,11 - 7867	ug/m3	DL (ug/m3)	LICA VOC\PORT\ MAY09,11 - 7830	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2492862
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2492862
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2492862
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2492862
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2492862
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2492862
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2492862
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2492862
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2492862
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2492862
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2492862
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2492862
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2492862
Benzene	ppbv	0.19	0.606	0.575	<0.18	0.18	<0.575	0.575	2492862
Toluene	ppbv	0.33	1.25	0.753	<0.20	0.20	<0.753	0.753	2492862
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2492862
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2492862
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2492862
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2492862
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2492862
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2492862
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2492862
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2492862
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2492862
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2492862
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2492862
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2492862
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2492862
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2492862
Hexane	ppbv	<0.30	<1.06	1.06	0.41	0.30	1.43	1.06	2492862
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2492862
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2492862
QC Batch = Quality Control Batch									

Maxxam Job #: B166056
 Report Date: 2011/05/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JL9566			JL9567				
Sampling Date		2011/05/09			2011/05/09				
COC Number		07153			07153				
	Units	LICA VOC\CLS\ MAY09,11 - 7867	ug/m3	DL (ug/m3)	LICA VOC\PORT\ MAY09,11 - 7830	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2492862
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2492862
Surrogate Recovery (%)									
Bromochloromethane	%	76	N/A	N/A	72		N/A	N/A	2492862
D5-Chlorobenzene	%	75	N/A	N/A	72		N/A	N/A	2492862
Difluorobenzene	%	73	N/A	N/A	70		N/A	N/A	2492862
N/A = Not Applicable QC Batch = Quality Control Batch									

Maxxam Job #: B166056
 Report Date: 2011/05/20

Test Summary

Maxxam ID JL9566 **Collected** 2011/05/09
Sample ID LICA VOC\CLS\ MAY09,11 - 7867 **Shipped**
Matrix AIR **Received** 2011/05/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2492540	N/A	2011/05/18	JIE WU
Volatile Organics in Air (TO-15)	GC/MS	2492862	N/A	2011/05/18	JIE WU

Maxxam ID JL9567 **Collected** 2011/05/09
Sample ID LICA VOC\PORT\ MAY09,11 - 7830 **Shipped**
Matrix AIR **Received** 2011/05/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2492540	N/A	2011/05/18	JIE WU
Volatile Organics in Air (TO-15)	GC/MS	2492862	N/A	2011/05/18	JIE WU

Maxxam Job #: B166056
Report Date: 2011/05/20

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: GB166056

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2492862 JIW	Spiked Blank	Bromochloromethane	2011/05/18		102	%	60 - 140
		D5-Chlorobenzene	2011/05/18		103	%	60 - 140
		Difluorobenzene	2011/05/18		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/18		88	%	70 - 130
		Carbon Disulfide	2011/05/18		90	%	70 - 130
		Propene	2011/05/18		88	%	70 - 130
		Vinyl Acetate	2011/05/18		97	%	70 - 130
		Vinyl Bromide	2011/05/18		100	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/05/18		94	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/05/18		102	%	70 - 130
		Chloromethane	2011/05/18		99	%	70 - 130
		Vinyl Chloride	2011/05/18		98	%	70 - 130
		Chloroethane	2011/05/18		100	%	70 - 130
		1,3-Butadiene	2011/05/18		94	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/05/18		85	%	70 - 130
		Trichlorotrifluoroethane	2011/05/18		97	%	70 - 130
		Ethanol	2011/05/18		101	%	70 - 130
		2-propanol	2011/05/18		75	%	70 - 130
		2-Propanone	2011/05/18		65 (1)	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/05/18		91	%	70 - 130
		Methyl Isobutyl Ketone	2011/05/18		91	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/05/18		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/05/18		92	%	70 - 130
		Ethyl Acetate	2011/05/18		95	%	70 - 130
		1,1-Dichloroethylene	2011/05/18		99	%	70 - 130
		cis-1,2-Dichloroethylene	2011/05/18		98	%	70 - 130
		trans-1,2-Dichloroethylene	2011/05/18		88	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/05/18		84	%	70 - 130
		Chloroform	2011/05/18		96	%	70 - 130
		Carbon Tetrachloride	2011/05/18		99	%	70 - 130
		1,1-Dichloroethane	2011/05/18		88	%	70 - 130
		1,2-Dichloroethane	2011/05/18		98	%	70 - 130
		Ethylene Dibromide	2011/05/18		91	%	70 - 130
		1,1,1-Trichloroethane	2011/05/18		95	%	70 - 130
		1,1,2-Trichloroethane	2011/05/18		91	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/05/18		84	%	70 - 130
		cis-1,3-Dichloropropene	2011/05/18		98	%	70 - 130
		trans-1,3-Dichloropropene	2011/05/18		99	%	70 - 130
		1,2-Dichloropropane	2011/05/18		93	%	70 - 130
		Bromomethane	2011/05/18		95	%	70 - 130
		Bromoform	2011/05/18		102	%	70 - 130
		Bromodichloromethane	2011/05/18		93	%	70 - 130
		Dibromochloromethane	2011/05/18		99	%	70 - 130
		Heptane	2011/05/18		85	%	70 - 130
		Trichloroethylene	2011/05/18		93	%	70 - 130
		Tetrachloroethylene	2011/05/18		90	%	70 - 130
		Benzene	2011/05/18		92	%	70 - 130
		Toluene	2011/05/18		91	%	70 - 130
		Ethylbenzene	2011/05/18		91	%	70 - 130
		p+m-Xylene	2011/05/18		90	%	70 - 130
		o-Xylene	2011/05/18		87	%	70 - 130
		Styrene	2011/05/18		100	%	70 - 130
		1,3,5-Trimethylbenzene	2011/05/18		90	%	70 - 130
		1,2,4-Trimethylbenzene	2011/05/18		92	%	70 - 130
		4-ethyltoluene	2011/05/18		88	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB166056

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2492862 JIW	Spiked Blank	Chlorobenzene	2011/05/18		91	%	70 - 130
		Benzyl chloride	2011/05/18		110	%	70 - 130
		1,3-Dichlorobenzene	2011/05/18		96	%	70 - 130
		1,4-Dichlorobenzene	2011/05/18		96	%	70 - 130
		1,2-Dichlorobenzene	2011/05/18		92	%	70 - 130
		1,2,4-Trichlorobenzene	2011/05/18		105	%	70 - 130
		Hexachlorobutadiene	2011/05/18		88	%	70 - 130
		Hexane	2011/05/18		84	%	70 - 130
		Cyclohexane	2011/05/18		87	%	70 - 130
		Tetrahydrofuran	2011/05/18		90	%	70 - 130
		1,4-Dioxane	2011/05/18		92	%	70 - 130
	Method Blank	Bromochloromethane	2011/05/18		106	%	60 - 140
		D5-Chlorobenzene	2011/05/18		105	%	60 - 140
		Difluorobenzene	2011/05/18		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/18	<0.20		ppbv	
		Carbon Disulfide	2011/05/18	<0.50		ppbv	
		Propene	2011/05/18	<0.30		ppbv	
		Vinyl Acetate	2011/05/18	<0.20		ppbv	
		Vinyl Bromide	2011/05/18	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/05/18	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/05/18	<0.17		ppbv	
		Chloromethane	2011/05/18	<0.30		ppbv	
		Vinyl Chloride	2011/05/18	<0.18		ppbv	
		Chloroethane	2011/05/18	<0.30		ppbv	
		1,3-Butadiene	2011/05/18	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/05/18	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/05/18	<0.15		ppbv	
		Ethanol	2011/05/18	<2.3		ppbv	
		2-propanol	2011/05/18	<3.0		ppbv	
		2-Propanone	2011/05/18	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/05/18	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/05/18	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/05/18	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/05/18	<0.20		ppbv	
		Ethyl Acetate	2011/05/18	<2.2		ppbv	
		1,1-Dichloroethylene	2011/05/18	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/05/18	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/05/18	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/05/18	0.43, RDL=0.30		ppbv	
		Chloroform	2011/05/18	<0.15		ppbv	
		Carbon Tetrachloride	2011/05/18	<0.30		ppbv	
		1,1-Dichloroethane	2011/05/18	<0.20		ppbv	
		1,2-Dichloroethane	2011/05/18	<0.20		ppbv	
		Ethylene Dibromide	2011/05/18	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/05/18	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/05/18	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/05/18	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/05/18	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/05/18	<0.17		ppbv	
		1,2-Dichloropropane	2011/05/18	<0.40		ppbv	
		Bromomethane	2011/05/18	<0.18		ppbv	
		Bromoform	2011/05/18	<0.20		ppbv	
		Bromodichloromethane	2011/05/18	<0.20		ppbv	
		Dibromochloromethane	2011/05/18	<0.20		ppbv	
		Heptane	2011/05/18	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB166056

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2492862 JIW	Method Blank	Trichloroethylene	2011/05/18	<0.30		ppbv	
		Tetrachloroethylene	2011/05/18	<0.20		ppbv	
		Benzene	2011/05/18	<0.18		ppbv	
		Toluene	2011/05/18	<0.20		ppbv	
		Ethylbenzene	2011/05/18	<0.20		ppbv	
		p+m-Xylene	2011/05/18	<0.37		ppbv	
		o-Xylene	2011/05/18	<0.20		ppbv	
		Styrene	2011/05/18	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/05/18	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/05/18	<0.50		ppbv	
		4-ethyltoluene	2011/05/18	<2.2		ppbv	
		Chlorobenzene	2011/05/18	<0.20		ppbv	
		Benzyl chloride	2011/05/18	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/05/18	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/05/18	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/05/18	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/05/18	<2.0		ppbv	
		Hexachlorobutadiene	2011/05/18	<3.0		ppbv	
		Hexane	2011/05/18	<0.30		ppbv	
		Cyclohexane	2011/05/18	<0.20		ppbv	
		Tetrahydrofuran	2011/05/18	<0.40		ppbv	
		1,4-Dioxane	2011/05/18	<2.0		ppbv	
		Xylene (Total)	2011/05/18	<0.60		ppbv	
	RPD - Sample/Sample Dup	Vinyl Chloride		TBA		%	25
		1,1-Dichloroethylene		TBA		%	25
		cis-1,2-Dichloroethylene		TBA		%	25
		trans-1,2-Dichloroethylene		TBA		%	25
		Trichloroethylene		TBA		%	25
		Tetrachloroethylene		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: 7849
Station ID: Lica 1 Canister Installation Date/Time: May 13, 2011 @ 7:04 mst
Field Sample ID: LICA VOC/ CLS /May 15, 11 Canister Removal Date/Time: May 16, 2011 @ 9:27 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
15-May-11	05/15/2011 0:00	05/16/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	620	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	24

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

Comments: System leak check prior to sampling. COC # 07229

Technician Signiture: Ting Xu



Your C.O.C. #: 07229

Attention: Michael Bisaga

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

Report Date: 2011/05/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B169895

Received: 2011/05/18, 10:00

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/05/19	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/05/19	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 #: B169895
 Report Date: 2011/05/27

RESULTS OF ANALYSES OF AIR

Maxxam ID		JN6666	JN6667	
Sampling Date		2011/05/15 00:00	2011/05/15 00:00	
COC Number		07229	07229	
	Units	LICA VOC/CLS/MAY 15,11 - 7849	LICA VOC/PORT/MAY 15,11 - 7855	QC Batch

Volatile Organics				
Pressure on Receipt	psig	23	20	2496552
QC Batch = Quality Control Batch				

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN666				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/CLS/MAY 15,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2496572
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2496572
Propene	ppbv	<0.30	0.30	<0.516	0.516	2496572
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2496572
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2496572
Dichlorodifluoromethane (FREON 12)	ppbv	0.96	0.20	4.73	0.989	2496572
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2496572
Chloromethane	ppbv	1.27	0.30	2.62	0.620	2496572
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2496572
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2496572
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2496572
Trichlorofluoromethane (FREON 11)	ppbv	0.44	0.20	2.47	1.12	2496572
Trichlorotrifluoroethane	ppbv	0.16	0.15	1.24	1.15	2496572
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2496572
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2496572
2-Propanone	ppbv	2.97	0.80	7.05	1.90	2496572
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2496572
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2496572
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2496572
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2496572
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2496572
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2496572
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2496572
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2496572
Methylene Chloride(Dichloromethane)	ppbv	0.75	0.30	2.60	1.04	2496572
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2496572
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2496572
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2496572
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2496572
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2496572
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6666				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/CLS/MAY 15,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2496572
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2496572
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2496572
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2496572
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2496572
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2496572
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2496572
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2496572
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2496572
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2496572
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2496572
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2496572
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2496572
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2496572
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2496572
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2496572
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2496572
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2496572
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2496572
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2496572
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2496572
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2496572
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2496572
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2496572
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2496572
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2496572
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2496572
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2496572
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2496572
QC Batch = Quality Control Batch						

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6666				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/CLS/MAY 15,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2496572
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2496572
Surrogate Recovery (%)						
Bromochloromethane	%	115		N/A	N/A	2496572
D5-Chlorobenzene	%	119		N/A	N/A	2496572
Difluorobenzene	%	117		N/A	N/A	2496572
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6667				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/PORT/MAY 15,11 - 7855	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2496572
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2496572
Propene	ppbv	<0.30	0.30	<0.516	0.516	2496572
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2496572
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2496572
Dichlorodifluoromethane (FREON 12)	ppbv	0.94	0.20	4.63	0.989	2496572
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2496572
Chloromethane	ppbv	1.46	0.30	3.01	0.620	2496572
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2496572
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2496572
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2496572
Trichlorofluoromethane (FREON 11)	ppbv	0.44	0.20	2.48	1.12	2496572
Trichlorotrifluoroethane	ppbv	0.16	0.15	1.19	1.15	2496572
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2496572
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2496572
2-Propanone	ppbv	3.16	0.80	7.52	1.90	2496572
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2496572
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2496572
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2496572
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2496572
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2496572
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2496572
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2496572
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2496572
Methylene Chloride(Dichloromethane)	ppbv	0.60	0.30	2.09	1.04	2496572
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2496572
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2496572
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2496572
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2496572
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2496572
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6667				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/PORT/MAY 15,11 - 7855	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2496572
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2496572
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2496572
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2496572
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2496572
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2496572
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2496572
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2496572
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2496572
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2496572
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2496572
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2496572
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2496572
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2496572
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2496572
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2496572
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2496572
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2496572
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2496572
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2496572
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2496572
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2496572
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2496572
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2496572
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2496572
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2496572
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2496572
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2496572
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2496572
QC Batch = Quality Control Batch						

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6667				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/PORT/MAY 15,11 - 7855	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2496572
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2496572
Surrogate Recovery (%)						
Bromochloromethane	%	111		N/A	N/A	2496572
D5-Chlorobenzene	%	112		N/A	N/A	2496572
Difluorobenzene	%	112		N/A	N/A	2496572
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B169895
Report Date: 2011/05/27

Test Summary

Maxxam ID JN6666 **Collected** 2011/05/15
Sample ID LICA VOC/CLS/MAY 15,11 - 7849 **Shipped**
Matrix AIR **Received** 2011/05/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2496552	N/A	2011/05/19	JIE WU
Volatile Organics in Air (TO-15)	GC/MS	2496572	N/A	2011/05/19	JIE WU

Maxxam ID JN6666 Dup **Collected** 2011/05/15
Sample ID LICA VOC/CLS/MAY 15,11 - 7849 **Shipped**
Matrix AIR **Received** 2011/05/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2496572	N/A	2011/05/19	JIE WU

Maxxam ID JN6667 **Collected** 2011/05/15
Sample ID LICA VOC/PORT/MAY 15,11 - 7855 **Shipped**
Matrix AIR **Received** 2011/05/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2496552	N/A	2011/05/19	JIE WU
Volatile Organics in Air (TO-15)	GC/MS	2496572	N/A	2011/05/19	JIE WU

Maxxam Job #: B169895
Report Date: 2011/05/27

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: GB169895

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2496572 JIW	Spiked Blank	Bromochloromethane	2011/05/19		102	%	60 - 140
		D5-Chlorobenzene	2011/05/19		104	%	60 - 140
		Difluorobenzene	2011/05/19		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/19		84	%	70 - 130
		Carbon Disulfide	2011/05/19		86	%	70 - 130
		Propene	2011/05/19		79	%	70 - 130
		Vinyl Acetate	2011/05/19		93	%	70 - 130
		Vinyl Bromide	2011/05/19		95	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/05/19		110	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/05/19		110	%	70 - 130
		Chloromethane	2011/05/19		102	%	70 - 130
		Vinyl Chloride	2011/05/19		92	%	70 - 130
		Chloroethane	2011/05/19		89	%	70 - 130
		1,3-Butadiene	2011/05/19		85	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/05/19		100	%	70 - 130
		Trichlorotrifluoroethane	2011/05/19		100	%	70 - 130
		Ethanol	2011/05/19		88	%	70 - 130
		2-propanol	2011/05/19		95	%	70 - 130
		2-Propanone	2011/05/19		79	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/05/19		86	%	70 - 130
		Methyl Isobutyl Ketone	2011/05/19		90	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/05/19		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/05/19		99	%	70 - 130
		Ethyl Acetate	2011/05/19		90	%	70 - 130
		1,1-Dichloroethylene	2011/05/19		98	%	70 - 130
		cis-1,2-Dichloroethylene	2011/05/19		101	%	70 - 130
		trans-1,2-Dichloroethylene	2011/05/19		85	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/05/19		80	%	70 - 130
		Chloroform	2011/05/19		107	%	70 - 130
		Carbon Tetrachloride	2011/05/19		118	%	70 - 130
		1,1-Dichloroethane	2011/05/19		87	%	70 - 130
		1,2-Dichloroethane	2011/05/19		114	%	70 - 130
		Ethylene Dibromide	2011/05/19		99	%	70 - 130
		1,1,1-Trichloroethane	2011/05/19		112	%	70 - 130
		1,1,2-Trichloroethane	2011/05/19		93	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/05/19		89	%	70 - 130
		cis-1,3-Dichloropropene	2011/05/19		101	%	70 - 130
		trans-1,3-Dichloropropene	2011/05/19		107	%	70 - 130
		1,2-Dichloropropane	2011/05/19		89	%	70 - 130
		Bromomethane	2011/05/19		92	%	70 - 130
		Bromoform	2011/05/19		115	%	70 - 130
		Bromodichloromethane	2011/05/19		104	%	70 - 130
		Dibromochloromethane	2011/05/19		112	%	70 - 130
		Heptane	2011/05/19		80	%	70 - 130
		Trichloroethylene	2011/05/19		95	%	70 - 130
		Tetrachloroethylene	2011/05/19		94	%	70 - 130
		Benzene	2011/05/19		87	%	70 - 130
		Toluene	2011/05/19		91	%	70 - 130
		Ethylbenzene	2011/05/19		95	%	70 - 130
		p+m-Xylene	2011/05/19		94	%	70 - 130
		o-Xylene	2011/05/19		92	%	70 - 130
		Styrene	2011/05/19		98	%	70 - 130
		1,3,5-Trimethylbenzene	2011/05/19		97	%	70 - 130
		1,2,4-Trimethylbenzene	2011/05/19		102	%	70 - 130
		4-ethyltoluene	2011/05/19		95	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB169895

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2496572 JIW	Spiked Blank	Chlorobenzene	2011/05/19		93	%	70 - 130
		Benzyl chloride	2011/05/19		119	%	70 - 130
		1,3-Dichlorobenzene	2011/05/19		102	%	70 - 130
		1,4-Dichlorobenzene	2011/05/19		99	%	70 - 130
		1,2-Dichlorobenzene	2011/05/19		100	%	70 - 130
		1,2,4-Trichlorobenzene	2011/05/19		114	%	70 - 130
		Hexachlorobutadiene	2011/05/19		101	%	70 - 130
		Hexane	2011/05/19		76	%	70 - 130
		Cyclohexane	2011/05/19		86	%	70 - 130
		Tetrahydrofuran	2011/05/19		86	%	70 - 130
		1,4-Dioxane	2011/05/19		98	%	70 - 130
	Method Blank	Bromochloromethane	2011/05/19		107	%	60 - 140
		D5-Chlorobenzene	2011/05/19		107	%	60 - 140
		Difluorobenzene	2011/05/19		106	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/19	<0.20		ppbv	
		Carbon Disulfide	2011/05/19	<0.50		ppbv	
		Propene	2011/05/19	<0.30		ppbv	
		Vinyl Acetate	2011/05/19	<0.20		ppbv	
		Vinyl Bromide	2011/05/19	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/05/19	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/05/19	<0.17		ppbv	
		Chloromethane	2011/05/19	<0.30		ppbv	
		Vinyl Chloride	2011/05/19	<0.18		ppbv	
		Chloroethane	2011/05/19	<0.30		ppbv	
		1,3-Butadiene	2011/05/19	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/05/19	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/05/19	<0.15		ppbv	
		Ethanol	2011/05/19	<2.3		ppbv	
		2-propanol	2011/05/19	<3.0		ppbv	
		2-Propanone	2011/05/19	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/05/19	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/05/19	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/05/19	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/05/19	<0.20		ppbv	
		Ethyl Acetate	2011/05/19	<2.2		ppbv	
		1,1-Dichloroethylene	2011/05/19	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/05/19	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/05/19	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/05/19	0.49, RDL=0.30		ppbv	
		Chloroform	2011/05/19	<0.15		ppbv	
		Carbon Tetrachloride	2011/05/19	<0.30		ppbv	
		1,1-Dichloroethane	2011/05/19	<0.20		ppbv	
		1,2-Dichloroethane	2011/05/19	<0.20		ppbv	
		Ethylene Dibromide	2011/05/19	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/05/19	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/05/19	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/05/19	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/05/19	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/05/19	<0.17		ppbv	
		1,2-Dichloropropane	2011/05/19	<0.40		ppbv	
		Bromomethane	2011/05/19	<0.18		ppbv	
		Bromoform	2011/05/19	<0.20		ppbv	
		Bromodichloromethane	2011/05/19	<0.20		ppbv	
		Dibromochloromethane	2011/05/19	<0.20		ppbv	
		Heptane	2011/05/19	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB169895

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2496572	JIW	Method Blank					
		Trichloroethylene	2011/05/19	<0.30		ppbv	
		Tetrachloroethylene	2011/05/19	<0.20		ppbv	
		Benzene	2011/05/19	<0.18		ppbv	
		Toluene	2011/05/19	<0.20		ppbv	
		Ethylbenzene	2011/05/19	<0.20		ppbv	
		p+m-Xylene	2011/05/19	<0.37		ppbv	
		o-Xylene	2011/05/19	<0.20		ppbv	
		Styrene	2011/05/19	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/05/19	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/05/19	<0.50		ppbv	
		4-ethyltoluene	2011/05/19	<2.2		ppbv	
		Chlorobenzene	2011/05/19	<0.20		ppbv	
		Benzyl chloride	2011/05/19	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/05/19	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/05/19	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/05/19	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/05/19	<2.0		ppbv	
		Hexachlorobutadiene	2011/05/19	<3.0		ppbv	
		Hexane	2011/05/19	<0.30		ppbv	
		Cyclohexane	2011/05/19	<0.20		ppbv	
		Tetrahydrofuran	2011/05/19	<0.40		ppbv	
		1,4-Dioxane	2011/05/19	<2.0		ppbv	
		Xylene (Total)	2011/05/19	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/05/19	NC		%	25
		Carbon Disulfide	2011/05/19	NC		%	25
		Propene	2011/05/19	NC		%	25
		Vinyl Acetate	2011/05/19	NC		%	25
		Vinyl Bromide	2011/05/19	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/05/19	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/05/19	NC		%	25
		Chloromethane	2011/05/19	NC		%	25
		Vinyl Chloride	2011/05/19	NC		%	25
		Chloroethane	2011/05/19	NC		%	25
		1,3-Butadiene	2011/05/19	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/05/19	NC		%	25
		Trichlorotrifluoroethane	2011/05/19	NC		%	25
		Ethanol	2011/05/19	NC		%	25
		2-propanol	2011/05/19	NC		%	25
		2-Propanone	2011/05/19	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/05/19	NC		%	25
		Methyl Isobutyl Ketone	2011/05/19	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/05/19	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/05/19	NC		%	25
		Ethyl Acetate	2011/05/19	NC		%	25
		1,1-Dichloroethylene	2011/05/19	NC		%	25
		cis-1,2-Dichloroethylene	2011/05/19	NC		%	25
		trans-1,2-Dichloroethylene	2011/05/19	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/05/19	NC		%	25
		Chloroform	2011/05/19	NC		%	25
		Carbon Tetrachloride	2011/05/19	NC		%	25
		1,1-Dichloroethane	2011/05/19	NC		%	25
		1,2-Dichloroethane	2011/05/19	NC		%	25
		Ethylene Dibromide	2011/05/19	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB169895

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2496572 JIW	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/05/19	NC		%	25
		1,1,2-Trichloroethane	2011/05/19	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/05/19	NC		%	25
		cis-1,3-Dichloropropene	2011/05/19	NC		%	25
		trans-1,3-Dichloropropene	2011/05/19	NC		%	25
		1,2-Dichloropropane	2011/05/19	NC		%	25
		Bromomethane	2011/05/19	NC		%	25
		Bromoform	2011/05/19	NC		%	25
		Bromodichloromethane	2011/05/19	NC		%	25
		Dibromochloromethane	2011/05/19	NC		%	25
		Heptane	2011/05/19	NC		%	25
		Trichloroethylene	2011/05/19	NC		%	25
		Tetrachloroethylene	2011/05/19	NC		%	25
		Benzene	2011/05/19	NC		%	25
		Toluene	2011/05/19	NC		%	25
		Ethylbenzene	2011/05/19	NC		%	25
		p+m-Xylene	2011/05/19	NC		%	25
		o-Xylene	2011/05/19	NC		%	25
		Styrene	2011/05/19	NC		%	25
		1,3,5-Trimethylbenzene	2011/05/19	NC		%	25
		1,2,4-Trimethylbenzene	2011/05/19	NC		%	25
		4-ethyltoluene	2011/05/19	NC		%	25
		Chlorobenzene	2011/05/19	NC		%	25
		Benzyl chloride	2011/05/19	NC		%	25
		1,3-Dichlorobenzene	2011/05/19	NC		%	25
		1,4-Dichlorobenzene	2011/05/19	NC		%	25
		1,2-Dichlorobenzene	2011/05/19	NC		%	25
		1,2,4-Trichlorobenzene	2011/05/19	NC		%	25
		Hexachlorobutadiene	2011/05/19	NC		%	25
		Hexane	2011/05/19	NC		%	25
		Cyclohexane	2011/05/19	NC		%	25
		Tetrahydrofuran	2011/05/19	NC		%	25
		1,4-Dioxane	2011/05/19	NC		%	25
		Xylene (Total)	2011/05/19	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: 6167
Location: Cold Lake South Canister ID: 7869
Station ID: Lica 1 Canister Installation Date/Time: May 19, 2011 @ 7:34 mst
Field Sample ID: LICA VOC/ CLS /May 21, 11 Canister Removal Date/Time: May 24, 2011 @ 7:21 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
21-May-11	05/21/2011 0:00	05/22/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	619	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	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 # 2569

Technician Signiture: Ting Xu

Your C.O.C. #: 2569

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

Report Date: 2011/06/03

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B175046****Received: 2011/05/26, 10:00**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/05/31	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/05/31	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

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Maxxam Job #: B175046
 Report Date: 2011/06/03

RESULTS OF ANALYSES OF AIR

Maxxam ID		JQ0471	JQ0472	
Sampling Date		2011/05/21	2011/05/21	
COC Number		2569	2569	
	Units	LICA VOC / CLS/ MAY 21,11 - 7869	LICA VOC / PORT/ MAY 21,11 - 7782	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2506604

QC Batch = Quality Control Batch

Maxxam Job #: B175046
 Report Date: 2011/06/03

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JQ0471			JQ0472				
Sampling Date		2011/05/21			2011/05/21				
COC Number		2569			2569				
	Units	LICA VOC / CLS/ MAY 21,11 - 7869	ug/m3	DL (ug/m3)	LICA VOC / PORT/ MAY 21,11 - 7782	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	2506074
Carbon Disulfide	ppbv	0.89	2.78	1.56	0.88	0.50	2.74	1.56	2506074
Propene	ppbv	1.01	1.75	0.516	<0.30	0.30	<0.516	0.516	2506074
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2506074
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2506074
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	3.24	0.989	0.63	0.20	3.13	0.989	2506074
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2506074
Chloromethane	ppbv	0.81	1.67	0.620	0.76	0.30	1.57	0.620	2506074
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2506074
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2506074
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2506074
Trichlorofluoromethane (FREON 11)	ppbv	0.36	2.01	1.12	0.35	0.20	1.94	1.12	2506074
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2506074
Ethanol	ppbv	4.9	9.28	4.33	<2.3	2.3	<4.33	4.33	2506074
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2506074
2-Propanone	ppbv	8.41	20.0	1.90	8.80	0.80	20.9	1.90	2506074
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2506074
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2506074
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2506074
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2506074
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2506074
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2506074
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2506074
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2506074
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2506074
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2506074
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2506074
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2506074
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2506074
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2506074
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2506074

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B175046
 Report Date: 2011/06/03

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JQ0471			JQ0472				
Sampling Date		2011/05/21			2011/05/21				
COC Number		2569			2569				
	Units	LICA VOC / CLS/ MAY 21,11 - 7869	ug/m3	DL (ug/m3)	LICA VOC / PORT/ MAY 21,11 - 7782	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	2506074
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2506074
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2506074
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2506074
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2506074
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2506074
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2506074
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2506074
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2506074
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2506074
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2506074
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2506074
Benzene	ppbv	0.19	0.611	0.575	<0.18	0.18	<0.575	0.575	2506074
Toluene	ppbv	1.24	4.66	0.753	0.23	0.20	0.879	0.753	2506074
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2506074
p+m-Xylene	ppbv	0.66	2.85	1.61	<0.37	0.37	<1.61	1.61	2506074
o-Xylene	ppbv	0.22	0.954	0.868	<0.20	0.20	<0.868	0.868	2506074
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2506074
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2506074
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2506074
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2506074
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2506074
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2506074
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2506074
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2506074
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2506074
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2506074
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2506074
Hexane	ppbv	<0.30	<1.06	1.06	0.55	0.30	1.94	1.06	2506074
Cyclohexane	ppbv	<0.20	<0.688	0.688	1.01	0.20	3.46	0.688	2506074
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2506074
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2506074
Xylene (Total)	ppbv	0.88	3.80	2.61	<0.60	0.60	<2.61	2.61	2506074
QC Batch = Quality Control Batch									

Maxxam Job #: B175046
 Report Date: 2011/06/03

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JQ0471			JQ0472				
Sampling Date		2011/05/21			2011/05/21				
COC Number		2569			2569				
	Units	LICA VOC / CLS/ MAY 21,11 - 7869	ug/m3	DL (ug/m3)	LICA VOC / PORT/ MAY 21,11 - 7782	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	87	N/A	N/A	85		N/A	N/A	2506074
D5-Chlorobenzene	%	73	N/A	N/A	71		N/A	N/A	2506074
Difluorobenzene	%	91	N/A	N/A	87		N/A	N/A	2506074

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

Maxxam Job #: B175046
 Report Date: 2011/06/03

Test Summary

Maxxam ID JQ0471 **Collected** 2011/05/21
Sample ID LICA VOC / CLS/ MAY 21,11 - 7869 **Shipped**
Matrix AIR **Received** 2011/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2506604	N/A	2011/05/31	DIANE VOYER
Volatile Organics in Air (TO-15)	GC/MS	2506074	N/A	2011/05/31	DIANE VOYER

Maxxam ID JQ0472 **Collected** 2011/05/21
Sample ID LICA VOC / PORT/ MAY 21,11 - 7782 **Shipped**
Matrix AIR **Received** 2011/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2506604	N/A	2011/05/31	DIANE VOYER
Volatile Organics in Air (TO-15)	GC/MS	2506074	N/A	2011/05/31	DIANE VOYER

Maxxam Job #: B175046
Report Date: 2011/06/03

GENERAL COMMENTS

Sample JQ0471-01: 2-Propanone exceeds 40%RSD in the continuing calibration and may be biased high.

Sample JQ0472-01: 2-Propanone exceeds 40%RSD in the continuing calibration and may be biased high.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB175046

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2506074	DVO	Spiked Blank					
		Bromochloromethane	2011/05/31		132	%	60 - 140
		D5-Chlorobenzene	2011/05/31		133	%	60 - 140
		Difluorobenzene	2011/05/31		138	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/31		110	%	70 - 130
		Carbon Disulfide	2011/05/31		94	%	70 - 130
		Propene	2011/05/31		105	%	70 - 130
		Vinyl Acetate	2011/05/31		123	%	70 - 130
		Vinyl Bromide	2011/05/31		110	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/05/31		114	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/05/31		128	%	70 - 130
		Chloromethane	2011/05/31		112	%	70 - 130
		Vinyl Chloride	2011/05/31		113	%	70 - 130
		Chloroethane	2011/05/31		113	%	70 - 130
		1,3-Butadiene	2011/05/31		124	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/05/31		114	%	70 - 130
		Trichlorotrifluoroethane	2011/05/31		102	%	70 - 130
		Ethanol	2011/05/31		119	%	70 - 130
		2-propanol	2011/05/31		123	%	70 - 130
		2-Propanone	2011/05/31		134 (1)	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/05/31		131 (1)	%	70 - 130
		Methyl Isobutyl Ketone	2011/05/31		122	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/05/31		124	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/05/31		112	%	70 - 130
		Ethyl Acetate	2011/05/31		123	%	70 - 130
		1,1-Dichloroethylene	2011/05/31		124	%	70 - 130
		cis-1,2-Dichloroethylene	2011/05/31		105	%	70 - 130
		trans-1,2-Dichloroethylene	2011/05/31		105	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/05/31		97	%	70 - 130
		Chloroform	2011/05/31		114	%	70 - 130
		Carbon Tetrachloride	2011/05/31		110	%	70 - 130
		1,1-Dichloroethane	2011/05/31		114	%	70 - 130
		1,2-Dichloroethane	2011/05/31		113	%	70 - 130
		Ethylene Dibromide	2011/05/31		117	%	70 - 130
		1,1,1-Trichloroethane	2011/05/31		107	%	70 - 130
		1,1,2-Trichloroethane	2011/05/31		116	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/05/31		109	%	70 - 130
		cis-1,3-Dichloropropene	2011/05/31		122	%	70 - 130
		trans-1,3-Dichloropropene	2011/05/31		113	%	70 - 130
		1,2-Dichloropropane	2011/05/31		110	%	70 - 130
		Bromomethane	2011/05/31		118	%	70 - 130
		Bromoform	2011/05/31		125	%	70 - 130
		Bromodichloromethane	2011/05/31		125	%	70 - 130
		Dibromochloromethane	2011/05/31		129	%	70 - 130
		Heptane	2011/05/31		116	%	70 - 130
		Trichloroethylene	2011/05/31		102	%	70 - 130
		Tetrachloroethylene	2011/05/31		115	%	70 - 130
		Benzene	2011/05/31		116	%	70 - 130
		Toluene	2011/05/31		120	%	70 - 130
		Ethylbenzene	2011/05/31		111	%	70 - 130
		p+m-Xylene	2011/05/31		117	%	70 - 130
		o-Xylene	2011/05/31		113	%	70 - 130
		Styrene	2011/05/31		107	%	70 - 130
		1,3,5-Trimethylbenzene	2011/05/31		105	%	70 - 130
		1,2,4-Trimethylbenzene	2011/05/31		97	%	70 - 130
		4-ethyltoluene	2011/05/31		113	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB175046

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2506074 DVO	Spiked Blank	Chlorobenzene	2011/05/31		106	%	70 - 130
		Benzyl chloride	2011/05/31		93	%	70 - 130
		1,3-Dichlorobenzene	2011/05/31		91	%	70 - 130
		1,4-Dichlorobenzene	2011/05/31		95	%	70 - 130
		1,2-Dichlorobenzene	2011/05/31		89	%	70 - 130
		1,2,4-Trichlorobenzene	2011/05/31		77	%	70 - 130
		Hexachlorobutadiene	2011/05/31		87	%	70 - 130
		Hexane	2011/05/31		123	%	70 - 130
		Cyclohexane	2011/05/31		117	%	70 - 130
		Tetrahydrofuran	2011/05/31		120	%	70 - 130
		1,4-Dioxane	2011/05/31		122	%	70 - 130
	Method Blank	Bromochloromethane	2011/05/31		89	%	60 - 140
		D5-Chlorobenzene	2011/05/31		76	%	60 - 140
		Difluorobenzene	2011/05/31		93	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/31	<0.20		ppbv	
		Carbon Disulfide	2011/05/31	0.89, RDL=0.50		ppbv	
		Propene	2011/05/31	<0.30		ppbv	
		Vinyl Acetate	2011/05/31	<0.20		ppbv	
		Vinyl Bromide	2011/05/31	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/05/31	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/05/31	<0.17		ppbv	
		Chloromethane	2011/05/31	<0.30		ppbv	
		Vinyl Chloride	2011/05/31	<0.18		ppbv	
		Chloroethane	2011/05/31	<0.30		ppbv	
		1,3-Butadiene	2011/05/31	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/05/31	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/05/31	<0.15		ppbv	
		Ethanol	2011/05/31	<2.3		ppbv	
		2-propanol	2011/05/31	<3.0		ppbv	
		2-Propanone	2011/05/31	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/05/31	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/05/31	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/05/31	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/05/31	<0.20		ppbv	
		Ethyl Acetate	2011/05/31	<2.2		ppbv	
		1,1-Dichloroethylene	2011/05/31	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/05/31	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/05/31	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/05/31	<0.80		ppbv	
		Chloroform	2011/05/31	<0.15		ppbv	
		Carbon Tetrachloride	2011/05/31	<0.30		ppbv	
		1,1-Dichloroethane	2011/05/31	<0.20		ppbv	
		1,2-Dichloroethane	2011/05/31	<0.20		ppbv	
		Ethylene Dibromide	2011/05/31	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/05/31	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/05/31	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/05/31	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/05/31	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/05/31	<0.17		ppbv	
		1,2-Dichloropropane	2011/05/31	<0.40		ppbv	
		Bromomethane	2011/05/31	<0.18		ppbv	
		Bromoform	2011/05/31	<0.20		ppbv	
		Bromodichloromethane	2011/05/31	<0.20		ppbv	
		Dibromochloromethane	2011/05/31	<0.20		ppbv	
		Heptane	2011/05/31	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB175046

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2506074	DVO	Method Blank					
		Trichloroethylene	2011/05/31	<0.30		ppbv	
		Tetrachloroethylene	2011/05/31	<0.20		ppbv	
		Benzene	2011/05/31	<0.18		ppbv	
		Toluene	2011/05/31	<0.20		ppbv	
		Ethylbenzene	2011/05/31	<0.20		ppbv	
		p+m-Xylene	2011/05/31	<0.37		ppbv	
		o-Xylene	2011/05/31	<0.20		ppbv	
		Styrene	2011/05/31	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/05/31	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/05/31	<0.50		ppbv	
		4-ethyltoluene	2011/05/31	<2.2		ppbv	
		Chlorobenzene	2011/05/31	<0.20		ppbv	
		Benzyl chloride	2011/05/31	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/05/31	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/05/31	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/05/31	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/05/31	<2.0		ppbv	
		Hexachlorobutadiene	2011/05/31	<3.0		ppbv	
		Hexane	2011/05/31	<0.30		ppbv	
		Cyclohexane	2011/05/31	<0.20		ppbv	
		Tetrahydrofuran	2011/05/31	<0.40		ppbv	
		1,4-Dioxane	2011/05/31	<2.0		ppbv	
		Xylene (Total)	2011/05/31	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/05/31	NC		%	25
		Carbon Disulfide	2011/05/31	NC		%	25
		Propene	2011/05/31	NC		%	25
		Vinyl Acetate	2011/05/31	NC		%	25
		Vinyl Bromide	2011/05/31	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/05/31	3.5		%	25
		1,2-Dichlorotetrafluoroethane	2011/05/31	NC		%	25
		Chloromethane	2011/05/31	NC		%	25
		Vinyl Chloride	2011/05/31	NC		%	25
		Chloroethane	2011/05/31	NC		%	25
		1,3-Butadiene	2011/05/31	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/05/31	NC		%	25
		Trichlorotrifluoroethane	2011/05/31	NC		%	25
		Ethanol	2011/05/31	NC		%	25
		2-propanol	2011/05/31	NC		%	25
		2-Propanone	2011/05/31	4.1		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/05/31	NC		%	25
		Methyl Isobutyl Ketone	2011/05/31	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/05/31	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/05/31	NC		%	25
		Ethyl Acetate	2011/05/31	NC		%	25
		1,1-Dichloroethylene	2011/05/31	NC		%	25
		cis-1,2-Dichloroethylene	2011/05/31	NC		%	25
		trans-1,2-Dichloroethylene	2011/05/31	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/05/31	NC		%	25
		Chloroform	2011/05/31	NC		%	25
		Carbon Tetrachloride	2011/05/31	NC		%	25
		1,1-Dichloroethane	2011/05/31	NC		%	25
		1,2-Dichloroethane	2011/05/31	NC		%	25
		Ethylene Dibromide	2011/05/31	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB175046

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2506074 DVO	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/05/31	NC		%	25
		1,1,2-Trichloroethane	2011/05/31	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/05/31	NC		%	25
		cis-1,3-Dichloropropene	2011/05/31	NC		%	25
		trans-1,3-Dichloropropene	2011/05/31	NC		%	25
		1,2-Dichloropropane	2011/05/31	NC		%	25
		Bromomethane	2011/05/31	NC		%	25
		Bromoform	2011/05/31	NC		%	25
		Bromodichloromethane	2011/05/31	NC		%	25
		Dibromochloromethane	2011/05/31	NC		%	25
		Heptane	2011/05/31	NC		%	25
		Trichloroethylene	2011/05/31	NC		%	25
		Tetrachloroethylene	2011/05/31	NC		%	25
		Benzene	2011/05/31	NC		%	25
		Toluene	2011/05/31	NC		%	25
		Ethylbenzene	2011/05/31	NC		%	25
		p+m-Xylene	2011/05/31	NC		%	25
		o-Xylene	2011/05/31	NC		%	25
		Styrene	2011/05/31	NC		%	25
		1,3,5-Trimethylbenzene	2011/05/31	NC		%	25
		1,2,4-Trimethylbenzene	2011/05/31	NC		%	25
		4-ethyltoluene	2011/05/31	NC		%	25
		Chlorobenzene	2011/05/31	NC		%	25
		Benzyl chloride	2011/05/31	NC		%	25
		1,3-Dichlorobenzene	2011/05/31	NC		%	25
		1,4-Dichlorobenzene	2011/05/31	NC		%	25
		1,2-Dichlorobenzene	2011/05/31	NC		%	25
		1,2,4-Trichlorobenzene	2011/05/31	NC		%	25
		Hexachlorobutadiene	2011/05/31	NC		%	25
		Hexane	2011/05/31	NC		%	25
		Cyclohexane	2011/05/31	NC		%	25
		Tetrahydrofuran	2011/05/31	10.9		%	25
		1,4-Dioxane	2011/05/31	NC		%	25
		Xylene (Total)	2011/05/31	NC		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7824
Station ID: Lica 1 Canister Installation Date/Time: May 26, 2011 @ 14:15 mst
Field Sample ID: LICA VOC/ CLS /May 27, 11 Canister Removal Date/Time: May 30, 2011 @ 7:50 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
27-May-11	05/27/2011 0:00	05/28/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	619	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	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 # 06124

Technician Signiture: Ting Xu_____



Your C.O.C. #: 06124

Attention: Michael Bisaga

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

Report Date: 2011/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B177992

Received: 2011/06/01, 10:30

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2011/06/02	BRL SOP-00304	EPA TO-15
Canister Pressure (TO-15)	1	N/A	2011/06/03	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	1	N/A	2011/06/02	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	1	N/A	2011/06/03	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 #: B177992
 Report Date: 2011/06/08

RESULTS OF ANALYSES OF AIR

Maxxam ID		JR4262		JR4263	
Sampling Date		2011/05/27		2011/05/27	
COC Number		06124		06124	
	Units	LICA VOC/CLS/MAY 27,11 - 7824	QC Batch	LICA VOC/PORT/MAY 27,11 - 7838	QC Batch

Volatile Organics					
Pressure on Receipt	psig	21	2510429	21	2507471

QC Batch = Quality Control Batch

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4262				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/CLS/MAY 27,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2510474
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2510474
Propene	ppbv	<0.30	0.30	<0.516	0.516	2510474
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2510474
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2510474
Dichlorodifluoromethane (FREON 12)	ppbv	0.49	0.20	2.42	0.989	2510474
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2510474
Chloromethane	ppbv	0.51	0.30	1.05	0.620	2510474
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2510474
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2510474
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2510474
Trichlorofluoromethane (FREON 11)	ppbv	0.26	0.20	1.44	1.12	2510474
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2510474
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2510474
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2510474
2-Propanone	ppbv	3.96	0.80	9.41	1.90	2510474
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2510474
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2510474
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2510474
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2510474
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2510474
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2510474
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2510474
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2510474
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2510474
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2510474
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2510474
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2510474
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2510474
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2510474
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2510474

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4262				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/CLS/MAY 27,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2510474
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2510474
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2510474
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2510474
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2510474
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2510474
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2510474
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2510474
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2510474
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2510474
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2510474
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2510474
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2510474
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2510474
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2510474
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2510474
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2510474
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2510474
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2510474
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2510474
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2510474
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2510474
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2510474
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2510474
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2510474
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2510474
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2510474
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2510474
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2510474
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2510474
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2510474
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2510474
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2510474
QC Batch = Quality Control Batch						

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4262				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/CLS/MAY 27,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	103		N/A	N/A	2510474
D5-Chlorobenzene	%	104		N/A	N/A	2510474
Difluorobenzene	%	105		N/A	N/A	2510474

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

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4263				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/PORT/MAY 27,11 - 7838	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2507525
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2507525
Propene	ppbv	<0.30	0.30	<0.516	0.516	2507525
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2507525
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2507525
Dichlorodifluoromethane (FREON 12)	ppbv	0.54	0.20	2.66	0.989	2507525
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2507525
Chloromethane	ppbv	0.52	0.30	1.07	0.620	2507525
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2507525
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2507525
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2507525
Trichlorofluoromethane (FREON 11)	ppbv	0.27	0.20	1.52	1.12	2507525
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2507525
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2507525
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2507525
2-Propanone	ppbv	4.98	0.80	11.8	1.90	2507525
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2507525
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2507525
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2507525
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2507525
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2507525
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2507525
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2507525
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2507525
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2507525
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2507525
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2507525
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2507525
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2507525
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2507525
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2507525
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4263				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/PORT/MAY 27,11 - 7838	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2507525
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2507525
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2507525
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2507525
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2507525
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2507525
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2507525
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2507525
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2507525
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2507525
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2507525
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2507525
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2507525
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2507525
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2507525
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2507525
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2507525
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2507525
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2507525
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2507525
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2507525
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2507525
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2507525
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2507525
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2507525
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2507525
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2507525
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2507525
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2507525
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2507525
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2507525
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2507525
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2507525
QC Batch = Quality Control Batch						

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4263				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/MAY				
		27,11 - 7838				

Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2507525
D5-Chlorobenzene	%	75		N/A	N/A	2507525
Difluorobenzene	%	88		N/A	N/A	2507525

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

Maxxam Job #: B177992
 Report Date: 2011/06/08

Test Summary

Maxxam ID JR4262 **Collected** 2011/05/27
Sample ID LICA VOC/CLS/MAY 27,11 - 7824 **Shipped**
Matrix AIR **Received** 2011/06/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2510429	N/A	2011/06/03	SPOMENKA SMILJANIC
Volatile Organics in Air (TO-15)	GC/MS	2510474	N/A	2011/06/03	SPOMENKA SMILJANIC

Maxxam ID JR4262 Dup **Collected** 2011/05/27
Sample ID LICA VOC/CLS/MAY 27,11 - 7824 **Shipped**
Matrix AIR **Received** 2011/06/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2510474	N/A	2011/06/03	SPOMENKA SMILJANIC

Maxxam ID JR4263 **Collected** 2011/05/27
Sample ID LICA VOC/PORT/MAY 27,11 - 7838 **Shipped**
Matrix AIR **Received** 2011/06/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2507471	N/A	2011/06/02	SPOMENKA SMILJANIC
Volatile Organics in Air (TO-15)	GC/MS	2507525	N/A	2011/06/02	SPOMENKA SMILJANIC

Maxxam Job #: B177992
Report Date: 2011/06/08

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: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507525 S_S	Spiked Blank	Bromochloromethane	2011/06/02		102	%	60 - 140
		D5-Chlorobenzene	2011/06/02		96	%	60 - 140
		Difluorobenzene	2011/06/02		106	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/02		107	%	70 - 130
		Carbon Disulfide	2011/06/02		90	%	70 - 130
		Propene	2011/06/02		72	%	70 - 130
		Vinyl Acetate	2011/06/02		115	%	70 - 130
		Vinyl Bromide	2011/06/02		89	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/02		79	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/02		92	%	70 - 130
		Chloromethane	2011/06/02		82	%	70 - 130
		Vinyl Chloride	2011/06/02		83	%	70 - 130
		Chloroethane	2011/06/02		86	%	70 - 130
		1,3-Butadiene	2011/06/02		91	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/02		88	%	70 - 130
		Trichlorotrifluoroethane	2011/06/02		94	%	70 - 130
		Ethanol	2011/06/02		87	%	70 - 130
		2-propanol	2011/06/02		89	%	70 - 130
		2-Propanone	2011/06/02		121	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/02		113	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/02		103	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/02		102	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/02		103	%	70 - 130
		Ethyl Acetate	2011/06/02		114	%	70 - 130
		1,1-Dichloroethylene	2011/06/02		104	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/02		105	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/02		104	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/02		93	%	70 - 130
		Chloroform	2011/06/02		95	%	70 - 130
		Carbon Tetrachloride	2011/06/02		90	%	70 - 130
		1,1-Dichloroethane	2011/06/02		98	%	70 - 130
		1,2-Dichloroethane	2011/06/02		98	%	70 - 130
		Ethylene Dibromide	2011/06/02		88	%	70 - 130
		1,1,1-Trichloroethane	2011/06/02		92	%	70 - 130
		1,1,2-Trichloroethane	2011/06/02		91	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/02		87	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/02		99	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/02		100	%	70 - 130
		1,2-Dichloropropane	2011/06/02		99	%	70 - 130
		Bromomethane	2011/06/02		84	%	70 - 130
		Bromoform	2011/06/02		97	%	70 - 130
		Bromodichloromethane	2011/06/02		94	%	70 - 130
		Dibromochloromethane	2011/06/02		96	%	70 - 130
		Heptane	2011/06/02		113	%	70 - 130
		Trichloroethylene	2011/06/02		93	%	70 - 130
		Tetrachloroethylene	2011/06/02		89	%	70 - 130
		Benzene	2011/06/02		103	%	70 - 130
		Toluene	2011/06/02		102	%	70 - 130
		Ethylbenzene	2011/06/02		105	%	70 - 130
		p+m-Xylene	2011/06/02		109	%	70 - 130
		o-Xylene	2011/06/02		104	%	70 - 130
		Styrene	2011/06/02		101	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/02		99	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/02		98	%	70 - 130
		4-ethyltoluene	2011/06/02		104	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507525 S_S	Spiked Blank	Chlorobenzene	2011/06/02		92	%	70 - 130
		Benzyl chloride	2011/06/02		89	%	70 - 130
		1,3-Dichlorobenzene	2011/06/02		82	%	70 - 130
		1,4-Dichlorobenzene	2011/06/02		78	%	70 - 130
		1,2-Dichlorobenzene	2011/06/02		79	%	70 - 130
		1,2,4-Trichlorobenzene	2011/06/02		75	%	70 - 130
		Hexachlorobutadiene	2011/06/02		75	%	70 - 130
		Hexane	2011/06/02		110	%	70 - 130
		Cyclohexane	2011/06/02		113	%	70 - 130
		Tetrahydrofuran	2011/06/02		117	%	70 - 130
		1,4-Dioxane	2011/06/02		105	%	70 - 130
	Method Blank	Bromochloromethane	2011/06/02		99	%	60 - 140
		D5-Chlorobenzene	2011/06/02		84	%	60 - 140
		Difluorobenzene	2011/06/02		101	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/02	<0.20		ppbv	
		Carbon Disulfide	2011/06/02	<0.50		ppbv	
		Propene	2011/06/02	<0.30		ppbv	
		Vinyl Acetate	2011/06/02	<0.20		ppbv	
		Vinyl Bromide	2011/06/02	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/02	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/02	<0.17		ppbv	
		Chloromethane	2011/06/02	<0.30		ppbv	
		Vinyl Chloride	2011/06/02	<0.18		ppbv	
		Chloroethane	2011/06/02	<0.30		ppbv	
		1,3-Butadiene	2011/06/02	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/02	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/06/02	<0.15		ppbv	
		Ethanol	2011/06/02	<2.3		ppbv	
		2-propanol	2011/06/02	<3.0		ppbv	
		2-Propanone	2011/06/02	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/02	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/06/02	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/02	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/02	<0.20		ppbv	
		Ethyl Acetate	2011/06/02	<2.2		ppbv	
		1,1-Dichloroethylene	2011/06/02	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/06/02	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/06/02	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/02	<0.80		ppbv	
		Chloroform	2011/06/02	<0.15		ppbv	
		Carbon Tetrachloride	2011/06/02	<0.30		ppbv	
		1,1-Dichloroethane	2011/06/02	<0.20		ppbv	
		1,2-Dichloroethane	2011/06/02	<0.20		ppbv	
		Ethylene Dibromide	2011/06/02	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/06/02	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/06/02	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/02	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/06/02	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/06/02	<0.17		ppbv	
		1,2-Dichloropropane	2011/06/02	<0.40		ppbv	
		Bromomethane	2011/06/02	<0.18		ppbv	
		Bromoform	2011/06/02	<0.20		ppbv	
		Bromodichloromethane	2011/06/02	<0.20		ppbv	
		Dibromochloromethane	2011/06/02	<0.20		ppbv	
		Heptane	2011/06/02	<0.30		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
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Quality Assurance Report (Continued)

Maxxam Job Number: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507525 S_S	Method Blank	Trichloroethylene	2011/06/02	<0.30		ppbv	
		Tetrachloroethylene	2011/06/02	<0.20		ppbv	
		Benzene	2011/06/02	<0.18		ppbv	
		Toluene	2011/06/02	<0.20		ppbv	
		Ethylbenzene	2011/06/02	<0.20		ppbv	
		p+m-Xylene	2011/06/02	<0.37		ppbv	
		o-Xylene	2011/06/02	<0.20		ppbv	
		Styrene	2011/06/02	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/02	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/02	<0.50		ppbv	
		4-ethyltoluene	2011/06/02	<2.2		ppbv	
		Chlorobenzene	2011/06/02	<0.20		ppbv	
		Benzyl chloride	2011/06/02	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/02	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/02	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/02	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/02	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/02	<3.0		ppbv	
		Hexane	2011/06/02	<0.30		ppbv	
		Cyclohexane	2011/06/02	<0.20		ppbv	
Tetrahydrofuran	2011/06/02	<0.40		ppbv			
1,4-Dioxane	2011/06/02	<2.0		ppbv			
Xylene (Total)	2011/06/02	<0.60		ppbv			
2510474 S_S	Spiked Blank	Bromochloromethane	2011/06/03		110	%	60 - 140
		D5-Chlorobenzene	2011/06/03		110	%	60 - 140
		Difluorobenzene	2011/06/03		116	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/03		113	%	70 - 130
		Carbon Disulfide	2011/06/03		98	%	70 - 130
		Propene	2011/06/03		80	%	70 - 130
		Vinyl Acetate	2011/06/03		124	%	70 - 130
		Vinyl Bromide	2011/06/03		99	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/03		88	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/03		103	%	70 - 130
		Chloromethane	2011/06/03		94	%	70 - 130
		Vinyl Chloride	2011/06/03		95	%	70 - 130
		Chloroethane	2011/06/03		98	%	70 - 130
		1,3-Butadiene	2011/06/03		102	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/03		99	%	70 - 130
		Trichlorotrifluoroethane	2011/06/03		104	%	70 - 130
		Ethanol	2011/06/03		101	%	70 - 130
		2-propanol	2011/06/03		101	%	70 - 130
		2-Propanone	2011/06/03		123	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/03		118	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/03		114	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/03		116	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/03		113	%	70 - 130
		Ethyl Acetate	2011/06/03		122	%	70 - 130
		1,1-Dichloroethylene	2011/06/03		115	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/03		115	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/03		111	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/03		100	%	70 - 130
		Chloroform	2011/06/03		104	%	70 - 130
		Carbon Tetrachloride	2011/06/03		102	%	70 - 130
1,1-Dichloroethane	2011/06/03		106	%	70 - 130		
1,2-Dichloroethane	2011/06/03		107	%	70 - 130		

Maxxam Analytics
 Attention: Michael Bisaga
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Quality Assurance Report (Continued)

Maxxam Job Number: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2510474 S_S	Spiked Blank	Ethylene Dibromide	2011/06/03		95	%	70 - 130
		1,1,1-Trichloroethane	2011/06/03		101	%	70 - 130
		1,1,2-Trichloroethane	2011/06/03		98	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/03		93	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/03		106	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/03		106	%	70 - 130
		1,2-Dichloropropane	2011/06/03		106	%	70 - 130
		Bromomethane	2011/06/03		96	%	70 - 130
		Bromoform	2011/06/03		103	%	70 - 130
		Bromodichloromethane	2011/06/03		101	%	70 - 130
		Dibromochloromethane	2011/06/03		102	%	70 - 130
		Heptane	2011/06/03		117	%	70 - 130
		Trichloroethylene	2011/06/03		101	%	70 - 130
		Tetrachloroethylene	2011/06/03		97	%	70 - 130
		Benzene	2011/06/03		112	%	70 - 130
		Toluene	2011/06/03		112	%	70 - 130
		Ethylbenzene	2011/06/03		117	%	70 - 130
		p+m-Xylene	2011/06/03		117	%	70 - 130
		o-Xylene	2011/06/03		114	%	70 - 130
		Styrene	2011/06/03		116	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/03		110	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/03		109	%	70 - 130
		4-ethyltoluene	2011/06/03		112	%	70 - 130
		Chlorobenzene	2011/06/03		100	%	70 - 130
		Benzyl chloride	2011/06/03		97	%	70 - 130
		1,3-Dichlorobenzene	2011/06/03		89	%	70 - 130
		1,4-Dichlorobenzene	2011/06/03		83	%	70 - 130
		1,2-Dichlorobenzene	2011/06/03		85	%	70 - 130
		1,2,4-Trichlorobenzene	2011/06/03		83	%	70 - 130
		Hexachlorobutadiene	2011/06/03		82	%	70 - 130
		Hexane	2011/06/03		116	%	70 - 130
		Cyclohexane	2011/06/03		118	%	70 - 130
		Tetrahydrofuran	2011/06/03		125	%	70 - 130
		1,4-Dioxane	2011/06/03		115	%	70 - 130
	Method Blank	Bromochloromethane	2011/06/03		100	%	60 - 140
		D5-Chlorobenzene	2011/06/03		90	%	60 - 140
		Difluorobenzene	2011/06/03		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/03	<0.20		ppbv	
		Carbon Disulfide	2011/06/03	<0.50		ppbv	
		Propene	2011/06/03	<0.30		ppbv	
		Vinyl Acetate	2011/06/03	<0.20		ppbv	
		Vinyl Bromide	2011/06/03	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/03	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/03	<0.17		ppbv	
		Chloromethane	2011/06/03	<0.30		ppbv	
		Vinyl Chloride	2011/06/03	<0.18		ppbv	
		Chloroethane	2011/06/03	<0.30		ppbv	
		1,3-Butadiene	2011/06/03	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/03	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/06/03	<0.15		ppbv	
		Ethanol	2011/06/03	<2.3		ppbv	
		2-propanol	2011/06/03	<3.0		ppbv	
		2-Propanone	2011/06/03	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/03	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/06/03	<3.2		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
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Quality Assurance Report (Continued)

Maxxam Job Number: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2510474 S_S	Method Blank	Methyl Butyl Ketone (2-Hexanone)	2011/06/03	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/03	<0.20		ppbv	
		Ethyl Acetate	2011/06/03	<2.2		ppbv	
		1,1-Dichloroethylene	2011/06/03	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/06/03	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/06/03	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/03	<0.80		ppbv	
		Chloroform	2011/06/03	<0.15		ppbv	
		Carbon Tetrachloride	2011/06/03	<0.30		ppbv	
		1,1-Dichloroethane	2011/06/03	<0.20		ppbv	
		1,2-Dichloroethane	2011/06/03	<0.20		ppbv	
		Ethylene Dibromide	2011/06/03	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/06/03	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/06/03	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/03	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/06/03	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/06/03	<0.17		ppbv	
		1,2-Dichloropropane	2011/06/03	<0.40		ppbv	
		Bromomethane	2011/06/03	<0.18		ppbv	
		Bromoform	2011/06/03	<0.20		ppbv	
		Bromodichloromethane	2011/06/03	<0.20		ppbv	
		Dibromochloromethane	2011/06/03	<0.20		ppbv	
		Heptane	2011/06/03	<0.30		ppbv	
		Trichloroethylene	2011/06/03	<0.30		ppbv	
		Tetrachloroethylene	2011/06/03	<0.20		ppbv	
		Benzene	2011/06/03	<0.18		ppbv	
		Toluene	2011/06/03	<0.20		ppbv	
		Ethylbenzene	2011/06/03	<0.20		ppbv	
		p+m-Xylene	2011/06/03	<0.37		ppbv	
		o-Xylene	2011/06/03	<0.20		ppbv	
		Styrene	2011/06/03	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/03	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/03	<0.50		ppbv	
		4-ethyltoluene	2011/06/03	<2.2		ppbv	
		Chlorobenzene	2011/06/03	<0.20		ppbv	
		Benzyl chloride	2011/06/03	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/03	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/03	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/03	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/03	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/03	<3.0		ppbv	
		Hexane	2011/06/03	<0.30		ppbv	
		Cyclohexane	2011/06/03	<0.20		ppbv	
		Tetrahydrofuran	2011/06/03	<0.40		ppbv	
		1,4-Dioxane	2011/06/03	<2.0		ppbv	
		Xylene (Total)	2011/06/03	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/06/03	NC		%	25
		Carbon Disulfide	2011/06/03	NC		%	25
		Propene	2011/06/03	NC		%	25
		Vinyl Acetate	2011/06/03	NC		%	25
		Vinyl Bromide	2011/06/03	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/06/03	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/06/03	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
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Quality Assurance Report (Continued)

Maxxam Job Number: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2510474 S_S	RPD - Sample/Sample Dup	Chloromethane	2011/06/03	NC		%	25
		Vinyl Chloride	2011/06/03	NC		%	25
		Chloroethane	2011/06/03	NC		%	25
		1,3-Butadiene	2011/06/03	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/06/03	NC		%	25
		Trichlorotrifluoroethane	2011/06/03	NC		%	25
		Ethanol	2011/06/03	NC		%	25
		2-propanol	2011/06/03	NC		%	25
		2-Propanone	2011/06/03	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/06/03	NC		%	25
		Methyl Isobutyl Ketone	2011/06/03	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/06/03	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/06/03	NC		%	25
		Ethyl Acetate	2011/06/03	NC		%	25
		1,1-Dichloroethylene	2011/06/03	NC		%	25
		cis-1,2-Dichloroethylene	2011/06/03	NC		%	25
		trans-1,2-Dichloroethylene	2011/06/03	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/06/03	NC		%	25
		Chloroform	2011/06/03	NC		%	25
		Carbon Tetrachloride	2011/06/03	NC		%	25
		1,1-Dichloroethane	2011/06/03	NC		%	25
		1,2-Dichloroethane	2011/06/03	NC		%	25
		Ethylene Dibromide	2011/06/03	NC		%	25
		1,1,1-Trichloroethane	2011/06/03	NC		%	25
		1,1,2-Trichloroethane	2011/06/03	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/06/03	NC		%	25
		cis-1,3-Dichloropropene	2011/06/03	NC		%	25
		trans-1,3-Dichloropropene	2011/06/03	NC		%	25
		1,2-Dichloropropane	2011/06/03	NC		%	25
		Bromomethane	2011/06/03	NC		%	25
		Bromoform	2011/06/03	NC		%	25
		Bromodichloromethane	2011/06/03	NC		%	25
		Dibromochloromethane	2011/06/03	NC		%	25
		Heptane	2011/06/03	NC		%	25
		Trichloroethylene	2011/06/03	NC		%	25
		Tetrachloroethylene	2011/06/03	NC		%	25
		Benzene	2011/06/03	NC		%	25
		Toluene	2011/06/03	NC		%	25
		Ethylbenzene	2011/06/03	NC		%	25
		p+m-Xylene	2011/06/03	NC		%	25
		o-Xylene	2011/06/03	NC		%	25
		Styrene	2011/06/03	NC		%	25
		1,3,5-Trimethylbenzene	2011/06/03	NC		%	25
		1,2,4-Trimethylbenzene	2011/06/03	NC		%	25
		4-ethyltoluene	2011/06/03	NC		%	25
		Chlorobenzene	2011/06/03	NC		%	25
		Benzyl chloride	2011/06/03	NC		%	25
		1,3-Dichlorobenzene	2011/06/03	NC		%	25
		1,4-Dichlorobenzene	2011/06/03	NC		%	25
		1,2-Dichlorobenzene	2011/06/03	NC		%	25
		1,2,4-Trichlorobenzene	2011/06/03	NC		%	25
		Hexachlorobutadiene	2011/06/03	NC		%	25
		Hexane	2011/06/03	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
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 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2510474 S_S	RPD - Sample/Sample Dup	Cyclohexane	2011/06/03	NC		%	25
		Tetrahydrofuran	2011/06/03	NC		%	25
		1,4-Dioxane	2011/06/03	NC		%	25
		Xylene (Total)	2011/06/03	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 Analytics International Corporation o/a Maxxam Analytics Air Toxics/Ultra-Trace : 6740 Campobello Road L5N 2L8 Telephone(905) 817-5700 FAX(905) 817-5777

Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/May 09,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: May 06, 2011 @ 13:05 mst
 Removal Date/Time: May 10, 2011 @ 7:09 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
09-May-11	05/09/2011 0:00	05/10/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
03-May-11	10-May-11	16-May-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)
712	229	10.0	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# 07154
GB157127 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/May 09, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07154

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

Report Date: 2011/05/25

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B166207****Received: 2011/05/12, 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	2011/05/14	2011/05/19	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 #: B166207
 Report Date: 2011/05/25

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

Maxxam ID		JM0377	JM0378		
Sampling Date		2011/05/09	2011/05/09		
COC Number		07154	07154		
	Units	LICA PUFF+QFF/CLS/MAY 09,11	LICA PUFF+QFF/PORT/MAY 09,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.13	<0.10	0.10	2488919
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2488919
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2488919
2-Methylantracene	ug	<0.10	<0.10	0.10	2488919
2-Methylnaphthalene	ug	0.28	<0.10	0.10	2488919
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2488919
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2488919
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2488919
Acenaphthene	ug	<0.050	<0.050	0.050	2488919
Acenaphthylene	ug	<0.050	<0.050	0.050	2488919
Anthracene	ug	<0.050	<0.050	0.050	2488919
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2488919
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2488919
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2488919
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2488919
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2488919
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2488919
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2488919
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2488919
Biphenyl	ug	<0.10	<0.10	0.10	2488919
Chrysene	ug	<0.050	<0.050	0.050	2488919
Coronene	ug	<0.10	<0.10	0.10	2488919
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2488919
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2488919
Fluoranthene	ug	0.058	<0.050	0.050	2488919
Fluorene	ug	0.096	<0.050	0.050	2488919
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2488919
m-Terphenyl	ug	<0.10	<0.10	0.10	2488919
Naphthalene	ug	0.370	0.152	0.072	2488919
o-Terphenyl	ug	<0.10	<0.10	0.10	2488919
Perylene	ug	<0.10	<0.10	0.10	2488919

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B166207
 Report Date: 2011/05/25

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

Maxxam ID		JM0377	JM0378		
Sampling Date		2011/05/09	2011/05/09		
COC Number		07154	07154		
	Units	LICA PUFF+QFF/CLS/MAY 09,11	LICA PUFF+QFF/PORT/MAY 09,11	RDL	QC Batch

Phenanthrene	ug	0.306	0.114	0.050	2488919
p-Terphenyl	ug	<0.10	<0.10	0.10	2488919
Pyrene	ug	<0.050	<0.050	0.050	2488919
Quinoline	ug	<0.40	<0.40	0.40	2488919
Tetralin	ug	<0.10	<0.10	0.10	2488919
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	62		2488919
D10-Fluoranthene	%	96	88		2488919
D10-Fluorene (FS)	%	18 (1)	12 (1)		2488919
D10-Phenanthrene	%	88	80		2488919
D12-Benzo(a)anthracene	%	102	104		2488919
D12-Benzo(a)pyrene	%	92	98		2488919
D12-Benzo(b)fluoranthene	%	92	94		2488919
D12-Benzo(ghi)perylene	%	98	100		2488919
D12-Benzo(k)fluoranthene	%	86	88		2488919
D12-Chrysene	%	82	84		2488919
D12-Indeno(1,2,3-cd)pyrene	%	94	96		2488919
D12-Perylene	%	90	94		2488919
D14-Dibenzo(a,h)anthracene	%	94	94		2488919
D14-Terphenyl (FS)	%	90	83		2488919
D8-Acenaphthylene	%	80	74		2488919
D8-Naphthalene	%	64	60		2488919

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 #: B166207
 Report Date: 2011/05/25

Test Summary

Maxxam ID	JM0377	Collected	2011/05/09
Sample ID	LICA PUFF+QFF/CLS/MAY 09,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/05/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2488919	2011/05/14	2011/05/19	WENDY ZHAO

Maxxam ID	JM0378	Collected	2011/05/09
Sample ID	LICA PUFF+QFF/PORT/MAY 09,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/05/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2488919	2011/05/14	2011/05/19	WENDY ZHAO

Maxxam Job #: B166207
Report Date: 2011/05/25

GENERAL COMMENTS

PAHMS-F

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

Chrysene is statistically out of control at 76.3% recovery in the spike:dup. Spike recovery is in control. Acceptance criteria met for both spike and dup. Data reported and flagged.

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 JM0377-01: PAHMS-F

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

Sample JM0378-01: 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: GB166207

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2488919 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/05/19		74	%	50 - 150	
		D10-Fluoranthene	2011/05/19		90	%	50 - 150	
		D10-Phenanthrene	2011/05/19		80	%	50 - 150	
		D12-Benzo(a)anthracene	2011/05/19		102	%	50 - 150	
		D12-Benzo(a)pyrene	2011/05/19		100	%	50 - 150	
		D12-Benzo(b)fluoranthene	2011/05/19		94	%	50 - 150	
		D12-Benzo(ghi)perylene	2011/05/19		100	%	50 - 150	
		D12-Benzo(k)fluoranthene	2011/05/19		88	%	50 - 150	
		D12-Chrysene	2011/05/19		82	%	50 - 150	
		D12-Indeno(1,2,3-cd)pyrene	2011/05/19		96	%	50 - 150	
		D12-Perylene	2011/05/19		94	%	50 - 150	
		D14-Dibenzo(a,h)anthracene	2011/05/19		96	%	50 - 150	
		D8-Acenaphthylene	2011/05/19		76	%	50 - 150	
		D8-Naphthalene	2011/05/19		72	%	50 - 150	
	RPD	Acenaphthene	2011/05/19		6.3	%	60 - 130	
		Acenaphthene	2011/05/19				50	
		Acenaphthylene	2011/05/19			72	%	60 - 130
		Acenaphthylene	2011/05/19		3.2	%	50	
		Anthracene	2011/05/19			68	%	60 - 130
		Anthracene	2011/05/19		2.2	%	50	
		Benzo(a)anthracene	2011/05/19			86	%	60 - 130
		Benzo(a)anthracene	2011/05/19		0	%	50	
		Benzo(a)pyrene	2011/05/19			77	%	60 - 130
		Benzo(a)pyrene	2011/05/19		3.5	%	50	
		Benzo(b)fluoranthene	2011/05/19			83	%	60 - 130
		Benzo(b)fluoranthene	2011/05/19		2.4	%	50	
		Benzo(g,h,i)perylene	2011/05/19			87	%	60 - 130
		Benzo(g,h,i)perylene	2011/05/19		2.6	%	50	
Benzo(k)fluoranthene	2011/05/19			83	%	60 - 130		
Benzo(k)fluoranthene	2011/05/19		4.1	%	50			
Chrysene	2011/05/19			78	%	60 - 130		
Chrysene	2011/05/19		2.6	%	50			
Dibenz(a,h)anthracene	2011/05/19			82	%	60 - 130		
Dibenz(a,h)anthracene	2011/05/19		3.3	%	50			
Fluoranthene	2011/05/19			83	%	60 - 130		
Fluoranthene	2011/05/19		3.8	%	50			
Fluorene	2011/05/19			70	%	60 - 130		
Fluorene	2011/05/19		1.8	%	50			
Indeno(1,2,3-cd)pyrene	2011/05/19			83	%	60 - 130		
Indeno(1,2,3-cd)pyrene	2011/05/19		2.1	%	50			
Naphthalene	2011/05/19			71	%	60 - 130		
Naphthalene	2011/05/19		9.6	%	50			
Phenanthrene	2011/05/19			73	%	60 - 130		
Phenanthrene	2011/05/19		0.7	%	50			
Pyrene	2011/05/19			77	%	60 - 130		
Pyrene	2011/05/19		3.8	%	50			
Method Blank	D10-2-Methylnaphthalene	2011/05/19			74	%	50 - 150	
	D10-Fluoranthene	2011/05/19			94	%	50 - 150	
	D10-Phenanthrene	2011/05/19			82	%	50 - 150	
	D12-Benzo(a)anthracene	2011/05/19			100	%	50 - 150	
	D12-Benzo(a)pyrene	2011/05/19			100	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/05/19			94	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/05/19			98	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/05/19			88	%	50 - 150	
D12-Chrysene	2011/05/19			80	%	50 - 150		

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB166207

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2488919 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/05/19		96	%	50 - 150
		D12-Perylene	2011/05/19		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/05/19		94	%	50 - 150
		D8-Acenaphthylene	2011/05/19		80	%	50 - 150
		D8-Naphthalene	2011/05/19		74	%	50 - 150
		1-Methylnaphthalene	2011/05/19	<0.10		ug	
		1-Methylphenanthrene	2011/05/19	<0.10		ug	
		2-Chloronaphthalene	2011/05/19	<0.10		ug	
		2-Methylantracene	2011/05/19	<0.10		ug	
		2-Methylnaphthalene	2011/05/19	<0.10		ug	
		3-Methylcholanthrene	2011/05/19	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/05/19	<0.10		ug	
		9,10-Dimethylantracene	2011/05/19	<0.40		ug	
		Acenaphthene	2011/05/19	<0.050		ug	
		Acenaphthylene	2011/05/19	<0.050		ug	
		Anthracene	2011/05/19	<0.050		ug	
		Benzo(a)anthracene	2011/05/19	<0.050		ug	
		Benzo(a)fluorene	2011/05/19	<0.10		ug	
		Benzo(a)pyrene	2011/05/19	<0.050		ug	
		Benzo(b)fluoranthene	2011/05/19	<0.050		ug	
		Benzo(b)fluorene	2011/05/19	<0.10		ug	
		Benzo(e)pyrene	2011/05/19	<0.10		ug	
		Benzo(g,h,i)perylene	2011/05/19	<0.050		ug	
		Benzo(k)fluoranthene	2011/05/19	<0.050		ug	
		Biphenyl	2011/05/19	<0.10		ug	
		Chrysene	2011/05/19	<0.050		ug	
		Coronene	2011/05/19	<0.10		ug	
		Dibenz(a,h)anthracene	2011/05/19	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/05/19	<0.20		ug	
		Fluoranthene	2011/05/19	<0.050		ug	
		Fluorene	2011/05/19	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/05/19	<0.050		ug	
		m-Terphenyl	2011/05/19	<0.10		ug	
		Naphthalene	2011/05/19	<0.072		ug	
		o-Terphenyl	2011/05/19	<0.10		ug	
		Perylene	2011/05/19	<0.10		ug	
		Phenanthrene	2011/05/19	<0.050		ug	
		p-Terphenyl	2011/05/19	<0.10		ug	
		Pyrene	2011/05/19	<0.050		ug	
		Quinoline	2011/05/19	<0.40		ug	
		Tetralin	2011/05/19	<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/May 15,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: May 13, 2011 @ 7:21 mst
 Removal Date/Time: May 16, 2011 @ 9:31 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
15-May-11	05/15/2011 0:00	05/16/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
10-May-11	16-May-11	23-May-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	13.8	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# 07230
GB160431 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/May 15, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07230

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

Report Date: 2011/06/01

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B170106****Received: 2011/05/18, 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	2011/05/20	2011/05/30	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 #: B170106
 Report Date: 2011/06/01

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

Maxxam ID		JN7551	JN7552		
Sampling Date		2011/05/15	2011/05/15		
COC Number		07230	07230		
	Units	LICA PUFF+QFF/CLS/MAY 15,11	LICA PUFF+QFF/PORT/MAY 15,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2494004
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2494004
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2494004
2-Methylantracene	ug	<0.10	<0.10	0.10	2494004
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2494004
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2494004
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2494004
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2494004
Acenaphthene	ug	<0.050	<0.050	0.050	2494004
Acenaphthylene	ug	<0.050	<0.050	0.050	2494004
Anthracene	ug	<0.050	<0.050	0.050	2494004
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2494004
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2494004
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2494004
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2494004
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2494004
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2494004
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2494004
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2494004
Biphenyl	ug	<0.10	<0.10	0.10	2494004
Chrysene	ug	<0.050	<0.050	0.050	2494004
Coronene	ug	<0.10	<0.10	0.10	2494004
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2494004
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2494004
Fluoranthene	ug	<0.050	<0.050	0.050	2494004
Fluorene	ug	<0.050	<0.050	0.050	2494004
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2494004
m-Terphenyl	ug	<0.10	<0.10	0.10	2494004
Naphthalene	ug	0.158	0.126	0.072	2494004
o-Terphenyl	ug	<0.10	<0.10	0.10	2494004
Perylene	ug	<0.10	<0.10	0.10	2494004

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B170106
 Report Date: 2011/06/01

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

Maxxam ID		JN7551	JN7552		
Sampling Date		2011/05/15	2011/05/15		
COC Number		07230	07230		
	Units	LICA PUFF+QFF/CLS/MAY 15,11	LICA PUFF+QFF/PORT/MAY 15,11	RDL	QC Batch

Phenanthrene	ug	0.214	0.062	0.050	2494004
p-Terphenyl	ug	<0.10	<0.10	0.10	2494004
Pyrene	ug	<0.050	<0.050	0.050	2494004
Quinoline	ug	<0.40	<0.40	0.40	2494004
Tetralin	ug	<0.10	<0.10	0.10	2494004
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	50	54		2494004
D10-Fluoranthene	%	104	94		2494004
D10-Fluorene (FS)	%	14 (1)	18 (1)		2494004
D10-Phenanthrene	%	88	80		2494004
D12-Benzo(a)anthracene	%	100	104		2494004
D12-Benzo(a)pyrene	%	80	96		2494004
D12-Benzo(b)fluoranthene	%	94	94		2494004
D12-Benzo(ghi)perylene	%	108	108		2494004
D12-Benzo(k)fluoranthene	%	88	88		2494004
D12-Chrysene	%	82	82		2494004
D12-Indeno(1,2,3-cd)pyrene	%	102	100		2494004
D12-Perylene	%	84	92		2494004
D14-Dibenzo(a,h)anthracene	%	100	98		2494004
D14-Terphenyl (FS)	%	97	86		2494004
D8-Acenaphthylene	%	68	76		2494004
D8-Naphthalene	%	48 (1)	52		2494004

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 #: B170106
 Report Date: 2011/06/01

Test Summary

Maxxam ID	JN7551	Collected	2011/05/15
Sample ID	LICA PUFF+QFF/CLS/MAY 15,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/05/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2494004	2011/05/20	2011/05/30	WENDY ZHAO

Maxxam ID	JN7552	Collected	2011/05/15
Sample ID	LICA PUFF+QFF/PORT/MAY 15,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/05/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2494004	2011/05/20	2011/05/30	WENDY ZHAO

Maxxam Job #: B170106
Report Date: 2011/06/01

GENERAL COMMENTS

PAHMS-F

7,12-Dimethylbenzo(a)anthracene is above 25% RSD in initial calibration and Coronene Dibenzo(a,e)pyrene and Tetralin are above 25% RSD in continuing calibration. No positives found for these compounds.

Pyrene is statistically out of control at 91.3% recovery in the spike and spike:dup is OK . Chrysene is statistically out of control at 76.0% and 77.3%recovery in the spike and spike:dup .Acceptance criteria met for both spike and dup. Data reported and flagged.

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 JN7551-01: PAHMS-F

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

Low Surrogate d8-Naphthalene recovery in sample.

Sample JN7552-01: 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: GB170106

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2494004 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/05/30		68	%	50 - 150
		D10-Fluoranthene	2011/05/30		104	%	50 - 150
		D10-Phenanthrene	2011/05/30		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/05/30		100	%	50 - 150
		D12-Benzo(a)pyrene	2011/05/30		106	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/05/30		96	%	50 - 150
		D12-Benzo(ghi)perylene	2011/05/30		110	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/05/30		90	%	50 - 150
		D12-Chrysene	2011/05/30		78	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/05/30		102	%	50 - 150
		D12-Perylene	2011/05/30		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/05/30		100	%	50 - 150
		D8-Acenaphthylene	2011/05/30		88	%	50 - 150
		D8-Naphthalene	2011/05/30		68	%	50 - 150
		RPD	Acenaphthene	2011/05/30	0.7		%
	Spiked Blank	Acenaphthene	2011/05/30			%	50
	RPD	Acenaphthylene	2011/05/30		83	%	60 - 130
	RPD	Acenaphthylene	2011/05/30	1.2		%	50
	Spiked Blank	Anthracene	2011/05/30		73	%	60 - 130
	RPD	Anthracene	2011/05/30	13.5		%	50
	Spiked Blank	Benzo(a)anthracene	2011/05/30		83	%	60 - 130
	RPD	Benzo(a)anthracene	2011/05/30	1.8		%	50
	Spiked Blank	Benzo(a)pyrene	2011/05/30		80	%	60 - 130
	RPD	Benzo(a)pyrene	2011/05/30	12.9		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/05/30		77	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/05/30	7.5		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/05/30		97	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/05/30	8.6		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/05/30		92	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/05/30	7.4		%	50
	Spiked Blank	Chrysene	2011/05/30		76	%	60 - 130
	RPD	Chrysene	2011/05/30	1.6		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/05/30		87	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/05/30	10.6		%	50
	Spiked Blank	Fluoranthene	2011/05/30		99	%	60 - 130
	RPD	Fluoranthene	2011/05/30	14.1		%	50
	Spiked Blank	Fluorene	2011/05/30		71	%	60 - 130
	RPD	Fluorene	2011/05/30	0.4		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/05/30		89	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/05/30	9.2		%	50
Spiked Blank	Naphthalene	2011/05/30		62	%	60 - 130	
RPD	Naphthalene	2011/05/30	4.8		%	50	
Spiked Blank	Phenanthrene	2011/05/30		79	%	60 - 130	
RPD	Phenanthrene	2011/05/30	7.3		%	50	
Spiked Blank	Pyrene	2011/05/30		91	%	60 - 130	
RPD	Pyrene	2011/05/30	14.4		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/05/30				%	50 - 150
	D10-Fluoranthene	2011/05/30				%	50 - 150
	D10-Phenanthrene	2011/05/30				%	50 - 150
	D12-Benzo(a)anthracene	2011/05/30				%	50 - 150
	D12-Benzo(a)pyrene	2011/05/30				%	50 - 150
	D12-Benzo(b)fluoranthene	2011/05/30				%	50 - 150
	D12-Benzo(ghi)perylene	2011/05/30				%	50 - 150
	D12-Benzo(k)fluoranthene	2011/05/30				%	50 - 150
	D12-Chrysene	2011/05/30				%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB170106

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2494004 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/05/30		88	%	50 - 150
		D12-Perylene	2011/05/30		88	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/05/30		84	%	50 - 150
		D8-Acenaphthylene	2011/05/30		78	%	50 - 150
		D8-Naphthalene	2011/05/30		60	%	50 - 150
		1-Methylnaphthalene	2011/05/30	<0.10		ug	
		1-Methylphenanthrene	2011/05/30	<0.10		ug	
		2-Chloronaphthalene	2011/05/30	<0.10		ug	
		2-Methylantracene	2011/05/30	<0.10		ug	
		2-Methylnaphthalene	2011/05/30	<0.10		ug	
		3-Methylcholanthrene	2011/05/30	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/05/30	<0.10		ug	
		9,10-Dimethylantracene	2011/05/30	<0.40		ug	
		Acenaphthene	2011/05/30	<0.050		ug	
		Acenaphthylene	2011/05/30	<0.050		ug	
		Anthracene	2011/05/30	<0.050		ug	
		Benzo(a)anthracene	2011/05/30	<0.050		ug	
		Benzo(a)fluorene	2011/05/30	<0.10		ug	
		Benzo(a)pyrene	2011/05/30	<0.050		ug	
		Benzo(b)fluoranthene	2011/05/30	<0.050		ug	
		Benzo(b)fluorene	2011/05/30	<0.10		ug	
		Benzo(e)pyrene	2011/05/30	<0.10		ug	
		Benzo(g,h,i)perylene	2011/05/30	<0.050		ug	
		Benzo(k)fluoranthene	2011/05/30	<0.050		ug	
		Biphenyl	2011/05/30	<0.10		ug	
		Chrysene	2011/05/30	<0.050		ug	
		Coronene	2011/05/30	<0.10		ug	
		Dibenz(a,h)anthracene	2011/05/30	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/05/30	<0.20		ug	
		Fluoranthene	2011/05/30	<0.050		ug	
		Fluorene	2011/05/30	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/05/30	<0.050		ug	
		m-Terphenyl	2011/05/30	<0.10		ug	
		Naphthalene	2011/05/30	<0.072		ug	
		o-Terphenyl	2011/05/30	<0.10		ug	
		Perylene	2011/05/30	<0.10		ug	
		Phenanthrene	2011/05/30	<0.050		ug	
		p-Terphenyl	2011/05/30	<0.10		ug	
		Pyrene	2011/05/30	<0.050		ug	
		Quinoline	2011/05/30	<0.40		ug	
		Tetralin	2011/05/30	<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/May 21,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: May 19, 2011 @ 7:45 mst
 Removal Date/Time: May 24, 2011 @ 7:28 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
21-May-11	05/21/2011 0:00	05/22/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
17-May-11	24-May-11	30-May-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)
709	229	19.6	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# 2570
GB160438 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/May 21, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 2570

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

Report Date: 2011/06/10

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B174348****Received: 2011/05/26, 08:45**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/05/28	2011/06/08	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

Maxxam Job #: B174348
 Report Date: 2011/06/10

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

Maxxam ID		JP7422	JP7423		
Sampling Date		2011/05/21	2011/05/21		
COC Number		2570	2570		
	Units	LICA PUFF+QFF/CLS/MAY 21, 11	LICA PUFF+QFF/PORT/MAY 21, 11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2501906
1-Methylphenanthrene	ug	0.10	<0.10	0.10	2501906
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2501906
2-Methylantracene	ug	<0.10	<0.10	0.10	2501906
2-Methylnaphthalene	ug	0.11	<0.10	0.10	2501906
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2501906
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2501906
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2501906
Acenaphthene	ug	0.092	<0.050	0.050	2501906
Acenaphthylene	ug	<0.050	<0.050	0.050	2501906
Anthracene	ug	<0.050	<0.050	0.050	2501906
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2501906
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2501906
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2501906
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2501906
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2501906
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2501906
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2501906
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2501906
Biphenyl	ug	<0.10	<0.10	0.10	2501906
Chrysene	ug	<0.050	<0.050	0.050	2501906
Coronene	ug	<0.10	<0.10	0.10	2501906
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2501906
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2501906
Fluoranthene	ug	0.124	<0.050	0.050	2501906
Fluorene	ug	0.192	<0.050	0.050	2501906
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2501906
m-Terphenyl	ug	<0.10	<0.10	0.10	2501906
Naphthalene	ug	0.120	<0.072	0.072	2501906
o-Terphenyl	ug	<0.10	<0.10	0.10	2501906
Perylene	ug	<0.10	<0.10	0.10	2501906

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B174348
 Report Date: 2011/06/10

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

Maxxam ID		JP7422	JP7423		
Sampling Date		2011/05/21	2011/05/21		
COC Number		2570	2570		
	Units	LICA PUFF+QFF/CLS/MAY 21, 11	LICA PUFF+QFF/PORT/MAY 21, 11	RDL	QC Batch

Phenanthrene	ug	0.974	0.250	0.050	2501906
p-Terphenyl	ug	<0.10	<0.10	0.10	2501906
Pyrene	ug	0.092	<0.050	0.050	2501906
Quinoline	ug	<0.40	<0.40	0.40	2501906
Tetralin	ug	<0.10	<0.10	0.10	2501906
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	56		2501906
D10-Fluoranthene	%	114	110		2501906
D10-Fluorene (FS)	%	9.8 (1)	8.2 (1)		2501906
D10-Phenanthrene	%	92	90		2501906
D12-Benzo(a)anthracene	%	106	98		2501906
D12-Benzo(a)pyrene	%	96	86		2501906
D12-Benzo(b)fluoranthene	%	96	90		2501906
D12-Benzo(ghi)perylene	%	96	94		2501906
D12-Benzo(k)fluoranthene	%	84	82		2501906
D12-Chrysene	%	74	72		2501906
D12-Indeno(1,2,3-cd)pyrene	%	110	104		2501906
D12-Perylene	%	92	82		2501906
D14-Dibenzo(a,h)anthracene	%	110	106		2501906
D14-Terphenyl (FS)	%	114	112		2501906
D8-Acenaphthylene	%	84	66		2501906
D8-Naphthalene	%	56	52		2501906

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 #: B174348
Report Date: 2011/06/10

GENERAL COMMENTS

Sample JP7422-01: PAHMS-F
Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JP7423-01: 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: GB174348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2501906 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/06/07		74	%	50 - 150
		D10-Fluoranthene	2011/06/07		124	%	50 - 150
		D10-Phenanthrene	2011/06/07		98	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/07		104	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/07		110	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/07		100	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/07		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/07		88	%	50 - 150
		D12-Chrysene	2011/06/07		76	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/07		112	%	50 - 150
		D12-Perylene	2011/06/07		104	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/07		112	%	50 - 150
		D8-Acenaphthylene	2011/06/07		84	%	50 - 150
		D8-Naphthalene	2011/06/07		70	%	50 - 150
		RPD	Acenaphthene	2011/06/07		77	%
	Spiked Blank	Acenaphthene	2011/06/07	3.6		%	50
	RPD	Acenaphthylene	2011/06/07		81	%	60 - 130
	Spiked Blank	Acenaphthylene	2011/06/07	0		%	50
	RPD	Anthracene	2011/06/07		84	%	60 - 130
	Spiked Blank	Anthracene	2011/06/07	0.3		%	50
	RPD	Anthracene	2011/06/07		0.3	%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/07		79	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/07	1		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/07		84	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/07	0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/07		73	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/07	6.3		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/07		82	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/07	1.5		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/07		92	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/07	13.7		%	50
	Spiked Blank	Chrysene	2011/06/07		68	%	60 - 130
	RPD	Chrysene	2011/06/07	3.0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/07		87	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/07	0.9		%	50
	Spiked Blank	Fluoranthene	2011/06/07		105	%	60 - 130
	RPD	Fluoranthene	2011/06/07	4.1		%	50
	Spiked Blank	Fluorene	2011/06/07		81	%	60 - 130
	RPD	Fluorene	2011/06/07	2.5		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/07		91	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/07	0.5		%	50
	Spiked Blank	Naphthalene	2011/06/07		71	%	60 - 130
	RPD	Naphthalene	2011/06/07	2.5		%	50
	Spiked Blank	Phenanthrene	2011/06/07		85	%	60 - 130
	RPD	Phenanthrene	2011/06/07	1.8		%	50
Spiked Blank	Pyrene	2011/06/07		101	%	60 - 130	
RPD	Pyrene	2011/06/07	3.8		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/06/07		70	%	50 - 150	
	D10-Fluoranthene	2011/06/07		120	%	50 - 150	
	D10-Phenanthrene	2011/06/07		94	%	50 - 150	
	D12-Benzo(a)anthracene	2011/06/07		114	%	50 - 150	
	D12-Benzo(a)pyrene	2011/06/07		114	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/06/07		98	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/06/07		98	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/06/07		92	%	50 - 150	
	D12-Chrysene	2011/06/07		62	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB174348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2501906 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/07		116	%	50 - 150
		D12-Perylene	2011/06/07		106	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/07		114	%	50 - 150
		D8-Acenaphthylene	2011/06/07		84	%	50 - 150
		D8-Naphthalene	2011/06/07		64	%	50 - 150
		1-Methylnaphthalene	2011/06/07	<0.10		ug	
		1-Methylphenanthrene	2011/06/07	<0.10		ug	
		2-Chloronaphthalene	2011/06/07	<0.10		ug	
		2-Methylantracene	2011/06/07	<0.10		ug	
		2-Methylnaphthalene	2011/06/07	<0.10		ug	
		3-Methylcholanthrene	2011/06/07	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/07	<0.10		ug	
		9,10-Dimethylantracene	2011/06/07	<0.40		ug	
		Acenaphthene	2011/06/07	<0.050		ug	
		Acenaphthylene	2011/06/07	<0.050		ug	
		Anthracene	2011/06/07	<0.050		ug	
		Benzo(a)anthracene	2011/06/07	<0.050		ug	
		Benzo(a)fluorene	2011/06/07	<0.10		ug	
		Benzo(a)pyrene	2011/06/07	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/07	<0.050		ug	
		Benzo(b)fluorene	2011/06/07	<0.10		ug	
		Benzo(e)pyrene	2011/06/07	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/07	0.066, RDL=0.050		ug	
		Benzo(k)fluoranthene	2011/06/07	<0.050		ug	
		Biphenyl	2011/06/07	<0.10		ug	
		Chrysene	2011/06/07	<0.050		ug	
		Coronene	2011/06/07	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/07	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/07	<0.20		ug	
		Fluoranthene	2011/06/07	<0.050		ug	
		Fluorene	2011/06/07	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/07	0.054, RDL=0.050		ug	
		m-Terphenyl	2011/06/07	<0.10		ug	
		Naphthalene	2011/06/07	<0.072		ug	
		o-Terphenyl	2011/06/07	<0.10		ug	
		Perylene	2011/06/07	<0.10		ug	
		Phenanthrene	2011/06/07	<0.050		ug	
		p-Terphenyl	2011/06/07	<0.10		ug	
		Pyrene	2011/06/07	<0.050		ug	
		Quinoline	2011/06/07	<0.40		ug	
		Tetralin	2011/06/07	<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/May 27,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: May 26, 2011 @ 14:29 mst
Removal Date/Time: May 30, 2011 @ 7:56 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
27-May-11	05/27/2011 0:00	05/28/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
24-May-11	30-May-11	02-Jun-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	16.2	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# 06125

GB160447 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/May 27, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06125

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

Report Date: 2011/06/09

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B178051****Received: 2011/06/01, 08:57**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/02	2011/06/07	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

Maxxam Job #: B178051
 Report Date: 2011/06/09

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

Maxxam ID		JR4488	JR4489		
Sampling Date		2011/05/27	2011/05/27		
COC Number		06125	06125		
	Units	LICA PUFF+QFF/CLS/MAY 27,11	LICA PUFF+QFF/PORT/MAY 27,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.15	<0.10	0.10	2507304
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2507304
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2507304
2-Methylantracene	ug	<0.10	<0.10	0.10	2507304
2-Methylnaphthalene	ug	0.25	<0.10	0.10	2507304
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2507304
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2507304
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2507304
Acenaphthene	ug	0.118	<0.050	0.050	2507304
Acenaphthylene	ug	<0.050	<0.050	0.050	2507304
Anthracene	ug	<0.050	<0.050	0.050	2507304
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2507304
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2507304
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2507304
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2507304
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2507304
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2507304
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2507304
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2507304
Biphenyl	ug	<0.10	<0.10	0.10	2507304
Chrysene	ug	<0.050	<0.050	0.050	2507304
Coronene	ug	<0.10	<0.10	0.10	2507304
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2507304
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2507304
Fluoranthene	ug	0.098	<0.050	0.050	2507304
Fluorene	ug	0.142	<0.050	0.050	2507304
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2507304
m-Terphenyl	ug	<0.10	<0.10	0.10	2507304
Naphthalene	ug	0.194	0.094	0.072	2507304
o-Terphenyl	ug	<0.10	<0.10	0.10	2507304
Perylene	ug	<0.10	<0.10	0.10	2507304
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B178051
 Report Date: 2011/06/09

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

Maxxam ID		JR4488	JR4489		
Sampling Date		2011/05/27	2011/05/27		
COC Number		06125	06125		
	Units	LICA PUFF+QFF/CLS/MAY 27,11	LICA PUFF+QFF/PORT/MAY 27,11	RDL	QC Batch

Phenanthrene	ug	0.716	0.148	0.050	2507304
p-Terphenyl	ug	<0.10	<0.10	0.10	2507304
Pyrene	ug	0.066	<0.050	0.050	2507304
Quinoline	ug	<0.40	<0.40	0.40	2507304
Tetralin	ug	<0.10	<0.10	0.10	2507304
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	60		2507304
D10-Fluoranthene	%	124	110		2507304
D10-Fluorene (FS)	%	9.6 (1)	9.4 (1)		2507304
D10-Phenanthrene	%	98	90		2507304
D12-Benzo(a)anthracene	%	110	104		2507304
D12-Benzo(a)pyrene	%	108	104		2507304
D12-Benzo(b)fluoranthene	%	104	100		2507304
D12-Benzo(ghi)perylene	%	98	90		2507304
D12-Benzo(k)fluoranthene	%	86	84		2507304
D12-Chrysene	%	78	76		2507304
D12-Indeno(1,2,3-cd)pyrene	%	114	106		2507304
D12-Perylene	%	102	98		2507304
D14-Dibenzo(a,h)anthracene	%	114	106		2507304
D14-Terphenyl (FS)	%	119	110		2507304
D8-Acenaphthylene	%	86	76		2507304
D8-Naphthalene	%	58	56		2507304

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 #: B178051
 Report Date: 2011/06/09

Test Summary

Maxxam ID	JR4488	Collected	2011/05/27
Sample ID	LICA PUFF+QFF/CLS/MAY 27,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/06/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2507304	2011/06/02	2011/06/07	WENDY ZHAO

Maxxam ID	JR4489	Collected	2011/05/27
Sample ID	LICA PUFF+QFF/PORT/MAY 27,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/06/01

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2507304	2011/06/02	2011/06/07	WENDY ZHAO

Maxxam Job #: B178051
Report Date: 2011/06/09

GENERAL COMMENTS

PAHMS-F

9.10-Dimethylanthracene is above 25% RSD in initial calibration and Benzo(a)fluorene is above 25% RSD in continuing 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 JR4488-01: PAHMS-F

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

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

Sample JR4489-01: 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: GB178051

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507304 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/06/07		68	%	50 - 150
		D10-Fluoranthene	2011/06/07		106	%	50 - 150
		D10-Phenanthrene	2011/06/07		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/07		108	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/07		106	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/07		100	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/07		90	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/07		88	%	50 - 150
		D12-Chrysene	2011/06/07		82	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/07		102	%	50 - 150
		D12-Perylene	2011/06/07		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/07		100	%	50 - 150
		RPD	D8-Acenaphthylene	2011/06/07		68	%
	D8-Naphthalene		2011/06/07		68	%	50 - 150
	Spiked Blank	Acenaphthene	2011/06/07		68	%	60 - 130
		Acenaphthene	2011/06/07	5.7		%	50
	RPD	Acenaphthylene	2011/06/07		67	%	60 - 130
		Acenaphthylene	2011/06/07	9.3		%	50
	Spiked Blank	Anthracene	2011/06/07		78	%	60 - 130
		Anthracene	2011/06/07	5.2		%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/07		80	%	60 - 130
		Benzo(a)anthracene	2011/06/07	0		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/07		77	%	60 - 130
		Benzo(a)pyrene	2011/06/07	0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/07		72	%	60 - 130
		Benzo(b)fluoranthene	2011/06/07	6.1		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/07		77	%	60 - 130
		Benzo(g,h,i)perylene	2011/06/07	7.8		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/07		89	%	60 - 130
		Benzo(k)fluoranthene	2011/06/07	4.9		%	50
	Spiked Blank	Chrysene	2011/06/07		73	%	60 - 130
		Chrysene	2011/06/07	8.6		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/07		79	%	60 - 130
		Dibenz(a,h)anthracene	2011/06/07	2.5		%	50
	Spiked Blank	Fluoranthene	2011/06/07		90	%	60 - 130
		Fluoranthene	2011/06/07	1.4		%	50
	Spiked Blank	Fluorene	2011/06/07		70	%	60 - 130
		Fluorene	2011/06/07	6.5		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/07		81	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/06/07	2.1		%	50
Spiked Blank	Naphthalene	2011/06/07		68	%	60 - 130	
	Naphthalene	2011/06/07	3.0		%	50	
Spiked Blank	Phenanthrene	2011/06/07		74	%	60 - 130	
	Phenanthrene	2011/06/07	5.3		%	50	
Spiked Blank	Pyrene	2011/06/07		87	%	60 - 130	
	Pyrene	2011/06/07	3.1		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/06/07		66	%	50 - 150	
	D10-Fluoranthene	2011/06/07		110	%	50 - 150	
	D10-Phenanthrene	2011/06/07		86	%	50 - 150	
	D12-Benzo(a)anthracene	2011/06/07		102	%	50 - 150	
	D12-Benzo(a)pyrene	2011/06/07		108	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/06/07		102	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/06/07		96	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/06/07		84	%	50 - 150	
	D12-Chrysene	2011/06/07		78	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB178051

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507304 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/07		108	%	50 - 150
		D12-Perylene	2011/06/07		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/07		108	%	50 - 150
		D8-Acenaphthylene	2011/06/07		76	%	50 - 150
		D8-Naphthalene	2011/06/07		64	%	50 - 150
		1-Methylnaphthalene	2011/06/07	<0.10		ug	
		1-Methylphenanthrene	2011/06/07	<0.10		ug	
		2-Chloronaphthalene	2011/06/07	<0.10		ug	
		2-Methylanthracene	2011/06/07	<0.10		ug	
		2-Methylnaphthalene	2011/06/07	<0.10		ug	
		3-Methylcholanthrene	2011/06/07	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/07	<0.10		ug	
		9,10-Dimethylanthracene	2011/06/07	<0.40		ug	
		Acenaphthene	2011/06/07	<0.050		ug	
		Acenaphthylene	2011/06/07	<0.050		ug	
		Anthracene	2011/06/07	<0.050		ug	
		Benzo(a)anthracene	2011/06/07	<0.050		ug	
		Benzo(a)fluorene	2011/06/07	<0.10		ug	
		Benzo(a)pyrene	2011/06/07	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/07	<0.050		ug	
		Benzo(b)fluorene	2011/06/07	<0.10		ug	
		Benzo(e)pyrene	2011/06/07	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/07	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/07	<0.050		ug	
		Biphenyl	2011/06/07	<0.10		ug	
		Chrysene	2011/06/07	<0.050		ug	
		Coronene	2011/06/07	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/07	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/07	<0.20		ug	
		Fluoranthene	2011/06/07	<0.050		ug	
		Fluorene	2011/06/07	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/07	<0.050		ug	
		m-Terphenyl	2011/06/07	<0.10		ug	
		Naphthalene	2011/06/07	<0.072		ug	
		o-Terphenyl	2011/06/07	<0.10		ug	
		Perylene	2011/06/07	<0.10		ug	
		Phenanthrene	2011/06/07	<0.050		ug	
		p-Terphenyl	2011/06/07	<0.10		ug	
		Pyrene	2011/06/07	<0.050		ug	
		Quinoline	2011/06/07	<0.40		ug	
		Tetralin	2011/06/07	<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
May 2011

Prepared By:



June 21, 2011

Lakeland Industry & Community Association Ambient Air Monitoring Maskwa

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

Monitoring Location: Maskwa
Data Period: May 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 – May 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	0.27	17	31	7	NA	NA	2.4	4	99.9
H2S (PPB)	10	3	2	0	0.22	12	26, 27	23, 0	NA	NA	1.9	26	99.9
THC (PPM)	-	-	-	-	2.09	3.2	26, 27	23, 0	NA	NA	2.2	26	99.7
NOx (PPB)	-	-	-	-	1.48	26	31	7	NA	NA	5.7	4	99.9
NO (PPB)	-	-	-	-	0.27	9	31	7	NA	NA	1.3	4	99.9
NO ₂ (PPB)	212	106	0	0	1.60	17	31	7	NA	NA	4.5	4	99.9
VECTOR WS (KPH)	-	-	-	-	5.57	16.2	12	10	-	117(ESE)	10.5	12	37.0
VECTOR WD (DEGREES)	-	-	-	-	91(E)	-	-	-	-	-	-	-	37.0
RELATIVE HUMIDITY (%)	-	-	-	-	48.61	91	VAR	VAR	VAR	VAR	73.3	7	100.0
TEMPERATURE (DEG C)	-	-	-	-	12.10	27.6	20	13, 15	NA	NA	19.0	20	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	943	962	14	VAR	VAR	VAR	959	13, 14	100.0
PRECIPITATION (MM)	-	-	-	-	0.02	4.5	22	14	NA	NA	8.2	22	99.9

NA-NOT APPLICABLE VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – 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. There were two 1-Hour contraventions this month; reading of 12ppb on March 26th, hour of 23, reference # 247635, and reading of 12ppb on March 27th, hour of 0, reference # 247636. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

- Analyzer make / model –TECO 51C-LT, S/N: 436609738

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started on May 05th. The span gas cylinder was replaced on May 18th. 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 - RM Young 5103VK, S/N: 46553

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

The RM Young wind system was removed and the recently factory calibrated MetOne 50.5 was installed on May 12th. When the MetOne was installed, the span test was performed at the site, and the result was good. The zero test was unable to be performed as it was too windy during the installation. On June 13th, it was noticed that the wind speed seemed to be reading high (20-26KHP), but the observed wind conditions were low (3-8KPH). The zero and span checks as per manual instructions. The span check result was OK, but the zero check failed; the measured voltage was 0.0-0.14vdc, should be 0.0vdc steady. Contacted manufacturer and was advised to return the wind system to them for service. A replacement RM Young 5103 VK wind system was installed following an installation calibration on June 15th. As a result, 467 hours of data between May 12th and May 31st were invalidated.

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. The tipping bucket was checked and cleaned on May 12th. The screens were installed after cleaning. The sensor was checked for level on the same day.

General Monthly Summary

AQM STATION – LICA – Maskwa

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issue was observed during the month. The BP sensor was checked and compared to Bios DC-2, S/N: 1193, on May 12th. The Bios reading was 950.6mBar; the DAS reading was 951.3 mBar.

Ambient Temperature (DEGC)

- System make / model - Met One 060

No operational issue was observed during the month. The temperature sensor was checked against Maxxam Hg thermometer, ID 4274, S/N: 96-3470, on May 12th. The thermometer reading was 18.9 degree Celsius; the DAS reading was 19.4 degree Celsius.

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 May 06th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
MAY 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		
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	0	0	0	0	0	0	1	0	4	1	0	0	0	0	0	1	0	1	0	IZS	0	0	0	0	4	0.3	24	
2	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	2	0.1	24	
3	3	0	0	0	0	0	0	0	0	0	1	3	3	4	2	4	4	2	6	IZS	3	1	1	0	1	6	1.5	24	
4	4	2	8	2	2	1	1	2	4	3	5	3	5	4	4	1	1	2	IZS	2	3	0	0	0	0	8	2.4	24	
5	5	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	
6	6	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
7	7	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	
8	8	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	
9	9	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	
10	10	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	
11	11	0	0	0	0	0	0	0	0	1	1	IZS	1	1	0	0	1	1	0	0	0	0	0	0	0	1	0.3	24	
12	12	0	0	0	0	1	1	1	2	0	IZS	1	1	M	2	1	2	2	0	1	2	4	2	1	0	4	1.1	23	
13	13	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	
14	14	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	
15	15	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.0	24	
16	16	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
17	17	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	
18	18	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.1	24	
19	19	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	6	0.3	24
20	20	2	IZS	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
21	21	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	1	0.0	24
22	22	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	
23	23	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	
24	24	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	
25	25	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	
26	26	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	2	IZS	0	0	0	0	0	2	0.2	24	
27	27	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	IZS	0	0	0	0	0	0	1	0.0	24	
28	28	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	
29	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	1	0.0	24	
30	30	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	
31	31	0	0	0	0	0	0	3	17	2	4	2	1	0	IZS	0	0	0	2	0	0	0	0	0	0	17	1.3	24	
HOURLY MAX		2	8	2	2	1	1	3	17	4	5	3	5	4	4	4	4	2	6	2	3	4	2	6	2				
HOURLY AVG		0.2	0.3	0.1	0.1	0.1	0.1	0.2	0.8	0.4	0.6	0.4	0.4	0.3	0.3	0.2	0.4	0.3	0.3	0.1	0.3	0.2	0.1	0.2	0.1				

STATUS FLAG CODES

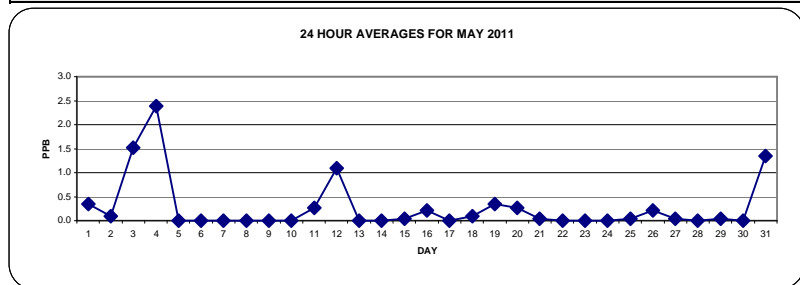
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

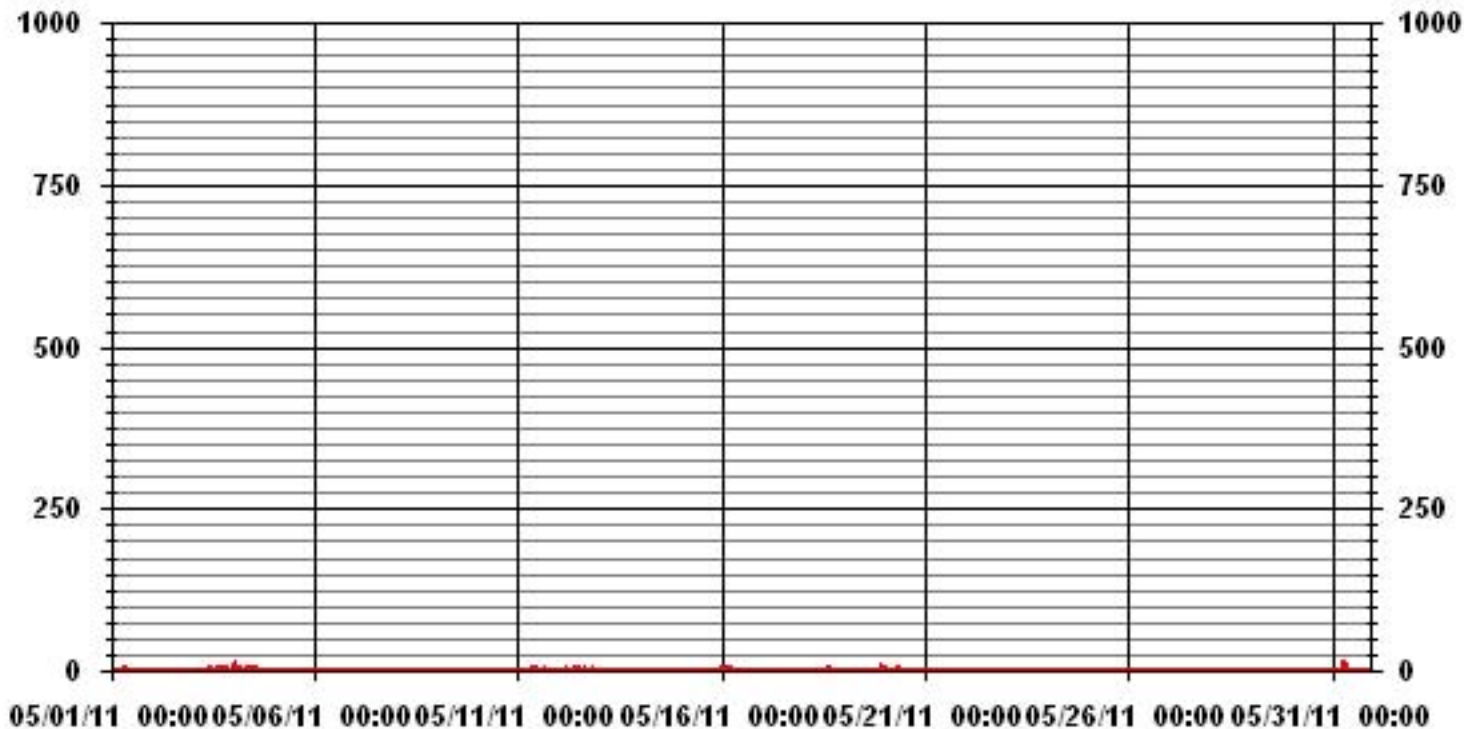
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	87					
MAXIMUM 1-HR AVERAGE:	17	PPB	@ HOUR(S)	7	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	2.4	PPB			ON DAY(S)	4
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	1.04		MONTHLY AVERAGE:	0.27	PPB	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

MAY 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		
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		6	0	0	0	0	0	4	6	13	3	4	3	0	1	0	5	9	3	3	0	IZS	0	0	0	13	2.6	24	
2		0	0	0	0	0	0	0	0	0	0	6	3	0	0	1	1	0	0	0	IZS	1	1	1	1	6	0.7	24	
3		1	1	1	1	1	1	1	1	1	5	8	9	9	8	12	24	3	10	IZS	13	3	1	1	2	24	5.1	24	
4		4	31	4	2	2	3	3	10	9	16	11	15	9	11	6	6	12	IZS	6	13	1	0	0	0	31	7.6	24	
5		0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.1	24	
6		0	0	0	0	0	0	0	4	C	C	C	C	0	2	3	IZS	3	0	0	0	0	0	0	0	4	0.6	24	
7		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	
8		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	
9		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	
10		0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	1	0	0	2	1	2	0.2	24
11		0	2	1	1	0	0	1	2	4	2	IZS	2	7	3	0	4	7	0	0	0	1	1	1	0	7	1.7	24	
12		0	0	1	1	2	2	3	4	4	IZS	2	2	M	10	3	5	5	2	3	4	11	2	2	1	11	3.1	23	
13		0	1	1	0	0	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
14		0	0	0	0	0	0	0	IZS	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0.2	24
15		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
16		1	1	1	2	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
17		0	0	0	0	IZS	0	1	0	0	0	0	2	2	0	0	0	0	0	0	3	1	0	1	2	3	0.5	24	
18		0	0	0	IZS	0	0	0	0	1	2	1	1	2	1	1	4	5	2	0	0	0	0	0	0	5	0.9	24	
19		0	0	IZS	0	0	0	0	0	0	2	1	0	4	2	3	0	2	1	0	0	0	3	17	3	17	1.7	24	
20		4	IZS	0	0	0	0	0	7	5	2	2	2	1	1	2	1	1	0	0	0	0	0	0	0	7	1.2	24	
21		IZS	0	0	0	0	0	0	0	0	0	3	3	1	2	7	1	0	0	0	0	1	0	1	IZS	7	0.9	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	0.1	24	
23		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	
24		0	0	0	0	0	0	0	0	0	2	1	1	0	2	0	1	4	3	0	0	IZS	0	0	0	4	0.6	24	
25		0	0	0	0	0	0	0	1	1	5	3	2	3	2	2	1	0	0	IZS	0	0	0	0	0	5	0.9	24	
26		0	0	0	0	0	0	0	0	4	5	4	3	2	2	3	2	4	IZS	1	0	1	0	0	5	1.3	24		
27		0	0	0	0	0	0	1	2	1	1	2	2	5	0	0	0	IZS	0	0	0	0	1	0	5	0.7	24		
28		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		
29		0	0	0	0	0	0	1	0	0	0	0	0	0	1	IZS	5	1	0	0	0	1	1	0	5	0.4	24		
30		1	1	1	0	0	0	1	0	0	2	1	0	0	IZS	2	2	0	1	1	0	0	0	0	2	0.6	24		
31		0	0	0	0	0	0	28	37	10	14	5	6	4	IZS	1	0	1	7	1	0	0	0	0	37	5.0	24		
HOURLY MAX		6	31	4	2	2	3	28	37	13	16	11	15	9	11	12	24	12	10	6	13	11	3	17	3				
HOURLY AVG		0.6	1.3	0.4	0.3	0.2	0.3	1.4	2.3	1.8	2.2	1.9	2.0	1.7	2.0	1.5	2.1	2.2	1.2	0.5	1.3	0.7	0.4	1.0	0.4				

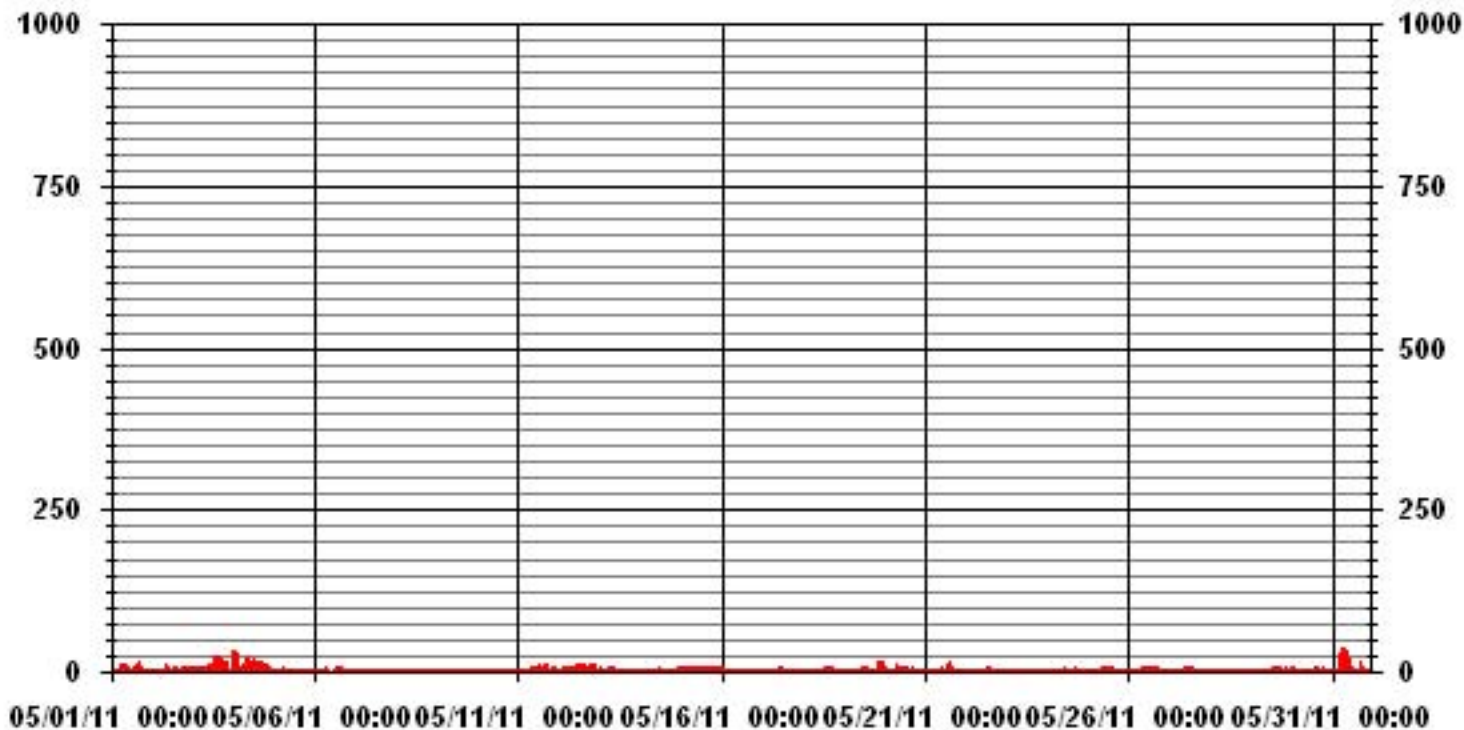
STATUS FLAG CODES

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:	255					
MAXIMUM INSTANTANEOUS VALUE:	37	PPB	@ HOUR(S)	7	ON DAY(S)	31
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	3.21					

01 Hour Averages



— LICA30 SO2MAX PPB

LICA30
 SO2_ / WDR Joint Frequency Distribution (Percent)

May 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	1.15	2.31	6.94	20.46	6.56	13.89	5.79	3.86	1.54	9.65	5.79	1.93	1.54	8.88	7.72	1.93	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	1.15	2.31	6.94	20.46	6.56	13.89	5.79	3.86	1.54	9.65	5.79	1.93	1.54	8.88	7.72	1.93	

Calm : .00 %

Total # Operational Hours : 259

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	3	6	18	53	17	36	15	10	4	25	15	5	4	23	20	5	259
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	3	6	18	53	17	36	15	10	4	25	15	5	4	23	20	5	

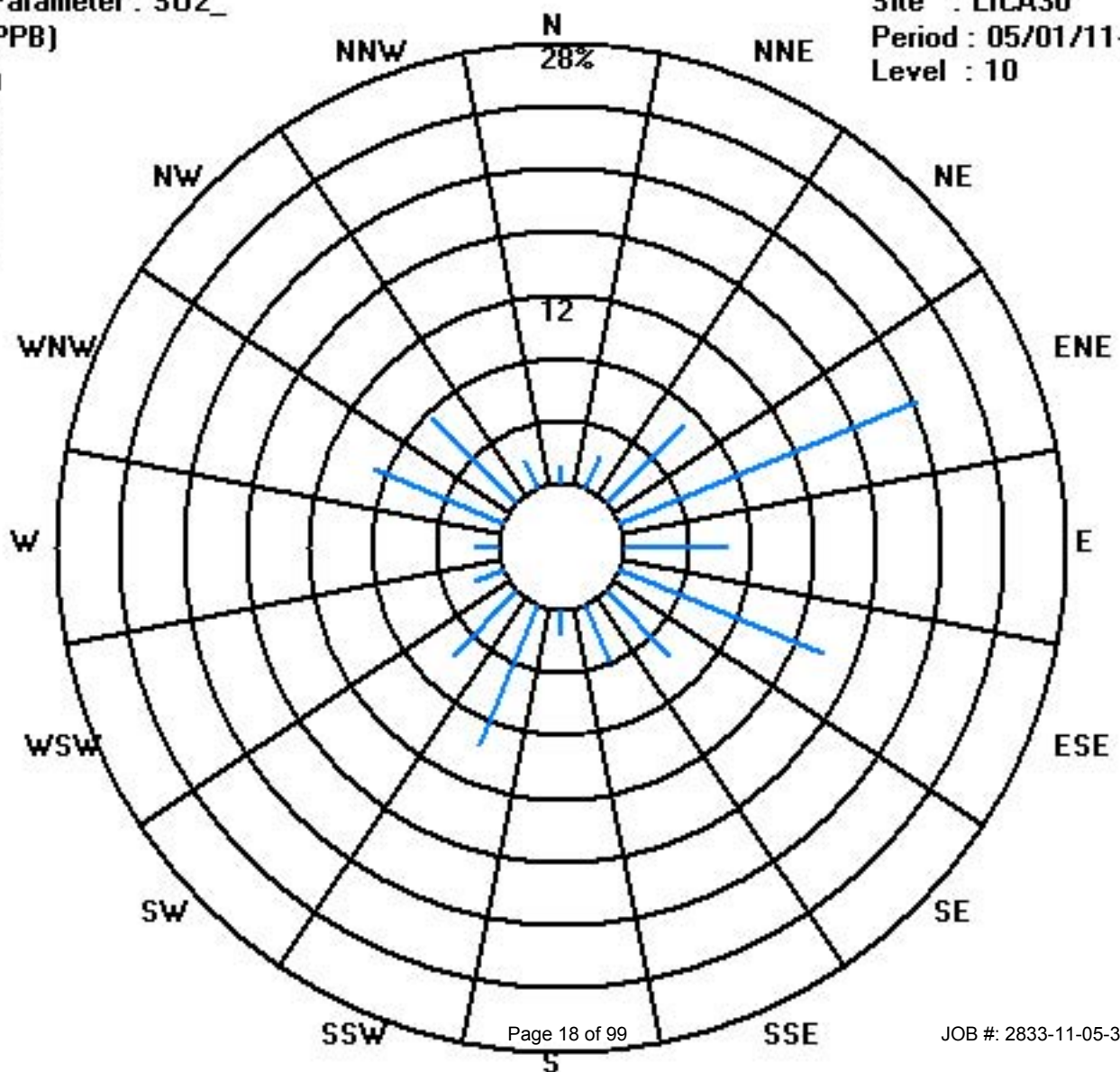
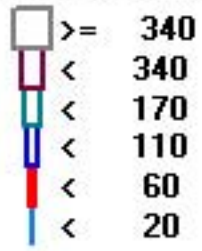
Calm : .00 %

Total # Operational Hours : 259

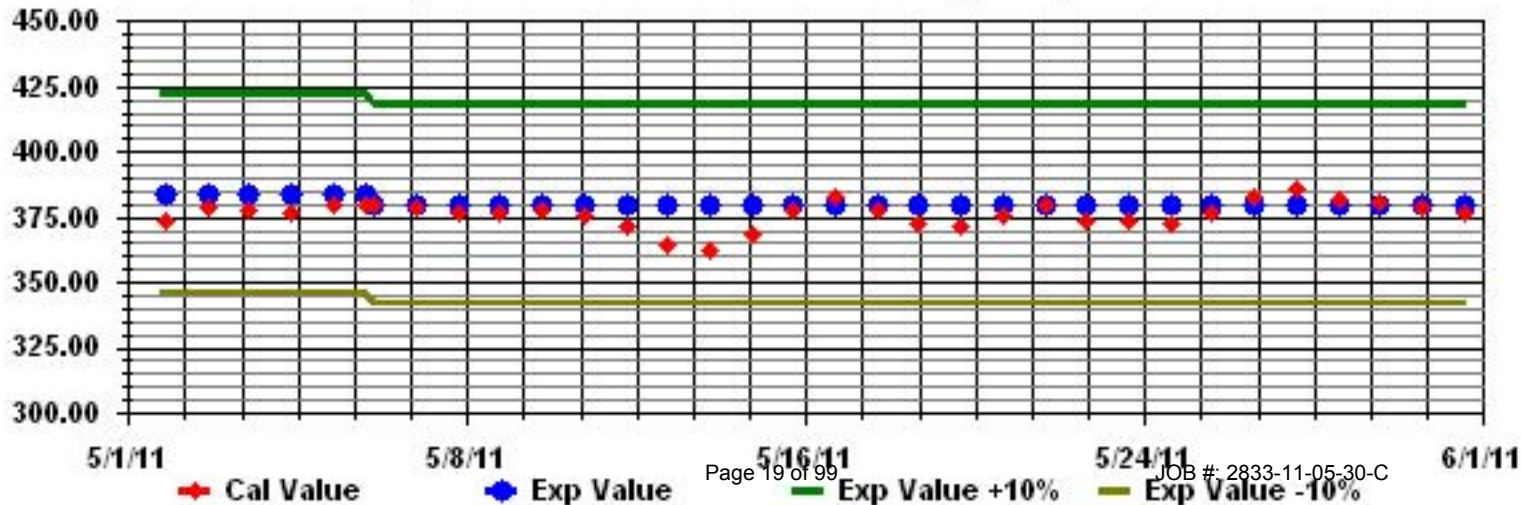
Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



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



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	24:00	DAILY 24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
5		0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	1	0	0	0	0	0	0	0	0	1	0.1	24	
6		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
7		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	24	
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	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	1	2	0.2	24	
11		1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0.3	24	
12		0	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	3	0.5	23	
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
15		0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
16		1	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	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	1	1	0.1	24	
18		0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
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	1	0.0	24
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
24		0	0	1	1	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		1	1	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24	
26		0	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1.9	24	
27		12	3	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	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	24	
29		0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1.0	24	
31		0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
HOURLY MAX		12	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12			
HOURLY AVG		0.5	0.2	0.3	0.3	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.6	0.5				

STATUS FLAG CODES

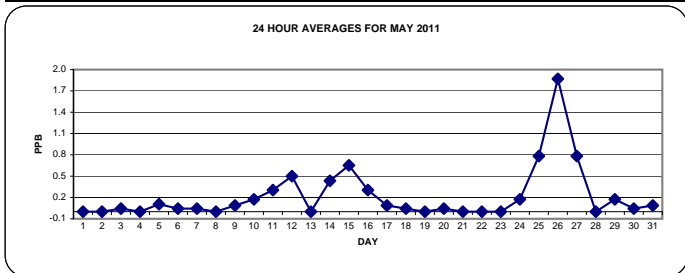
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

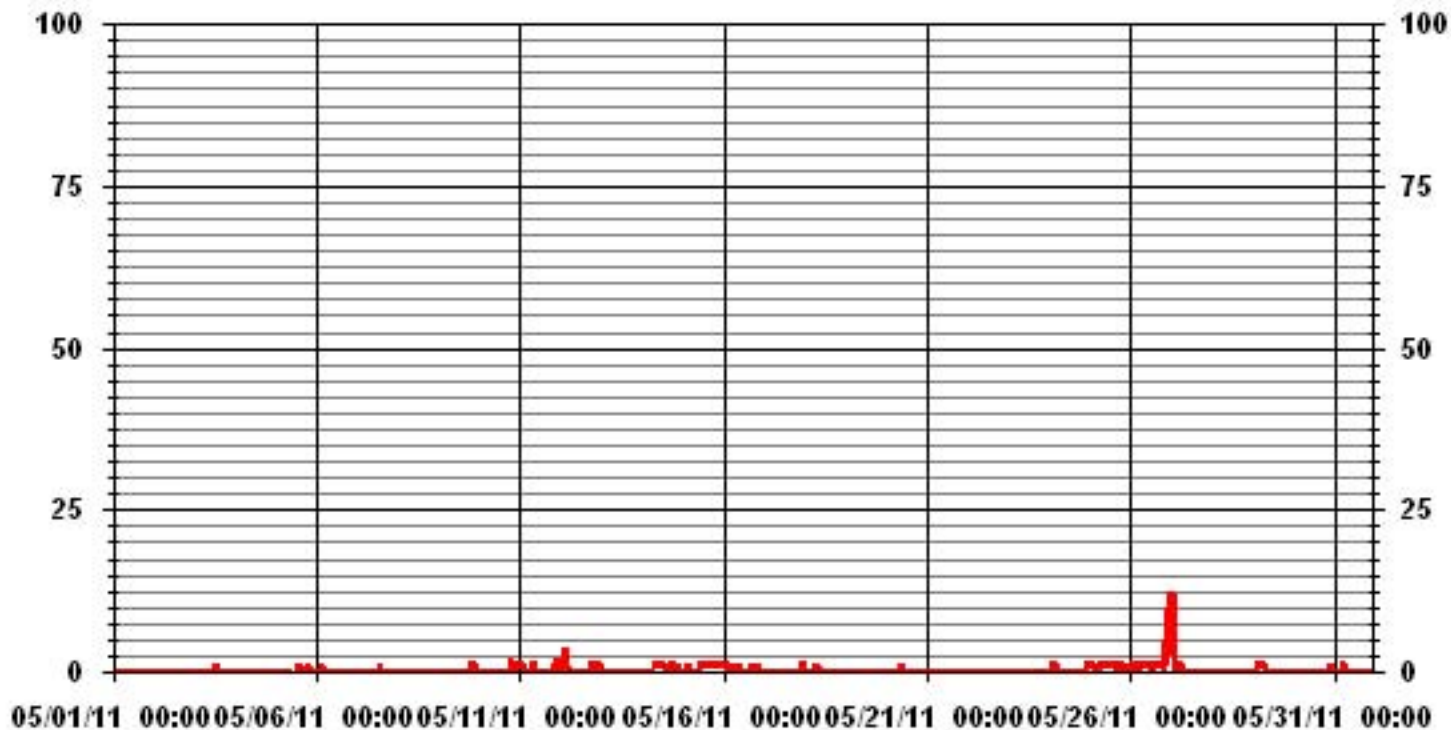
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	2
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	112
MAXIMUM 1-HR AVERAGE:	12 PPB @ HOUR(S) 23, 0 ON DAY(S) 26, 27
MAXIMUM 24-HR AVERAGE:	1.9 PPB ON DAY(S) 26
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	0.86
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	0.22 PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

MAY 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	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
2		0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	1	0.2	24	
3		0	1	1	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24	
4		0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.2	24	
5		0	0	0	0	0	0	0	0	C	C	C	C	0	1	1	0	0	0	1	1	1	0	0	0	1	0.3	24	
6		0	0	1	1	1	0	0	1	1	0	M	M	1	1	0	IZS	0	0	0	1	1	0	0	0	1	0.4	22	
7		1	1	1	1	0	0	0	0	0	0	1	0	1	1	IZS	0	0	0	1	1	0	1	0	1	0	0.5	24	
8		0	0	0	1	0	0	1	1	0	0	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
9		0	0	0	0	0	0	0	0	0	0	1	1	IZS	0	0	1	1	0	0	1	3	3	0	1	3	0.5	24	
10		1	0	0	0	0	0	1	1	0	0	0	IZS	0	1	1	1	1	0	2	4	2	1	3	2	4	0.9	24	
11		3	4	1	1	0	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	3	3	1	4	0.9	24	
12		1	3	4	4	4	1	0	1	1	IZS	1	1	M	0	0	0	1	1	2	2	3	2	1	0	4	1.5	23	
13		1	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
14		0	0	0	0	0	0	0	0	IZS	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	0.7	24
15		0	1	1	1	1	1	IZS	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
16		2	2	2	1	1	IZS	0	1	1	1	1	0	0	0	1	1	0	1	1	1	1	0	1	1	1	2	0.9	24
17		1	1	0	0	IZS	1	0	1	0	3	1	1	0	1	1	0	0	1	1	0	1	0	2	3	3	0.8	24	
18		1	1	1	IZS	1	1	1	2	1	1	1	1	0	0	1	1	0	1	0	0	1	0	0	0	2	0.7	24	
19		0	0	IZS	1	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0.3	24	
20		0	IZS	1	1	1	1	0	0	1	2	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	2	0.5	24
21		IZS	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
22		1	1	1	1	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	1	0.4	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	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
25		1	1	1	1	1	1	1	1	2	2	1	1	1	2	1	1	1	1	2	IZS	1	1	1	1	2	1.2	24	
26		1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1	1	IZS	0	1	12	15	30	30	3.4	24	
27		24	13	6	0	0	5	4	3	1	1	1	1	1	1	0	1	0	IZS	0	1	1	0	0	0	24	2.8	24	
28		0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	IZS	0	0	0	0	0	0	1	0.2	24	
29		1	0	1	1	1	2	2	1	0	1	1	1	0	0	1	IZS	0	1	0	0	0	0	0	0	2	0.6	24	
30		0	0	0	0	1	0	0	0	0	0	1	1	1	0	IZS	1	1	0	0	0	1	1	1	1	1	0.4	24	
31		1	0	0	0	1	1	1	1	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
HOURLY MAX		24	13	6	4	4	5	4	3	2	3	2	1	2	2	1	2	1	1	2	4	3	12	15	30				
HOURLY AVG		1.4	1.1	0.8	0.6	0.5	0.6	0.6	0.6	0.4	0.6	0.6	0.5	0.5	0.4	0.4	0.5	0.3	0.4	0.4	0.5	0.7	0.9	1.0	1.5				

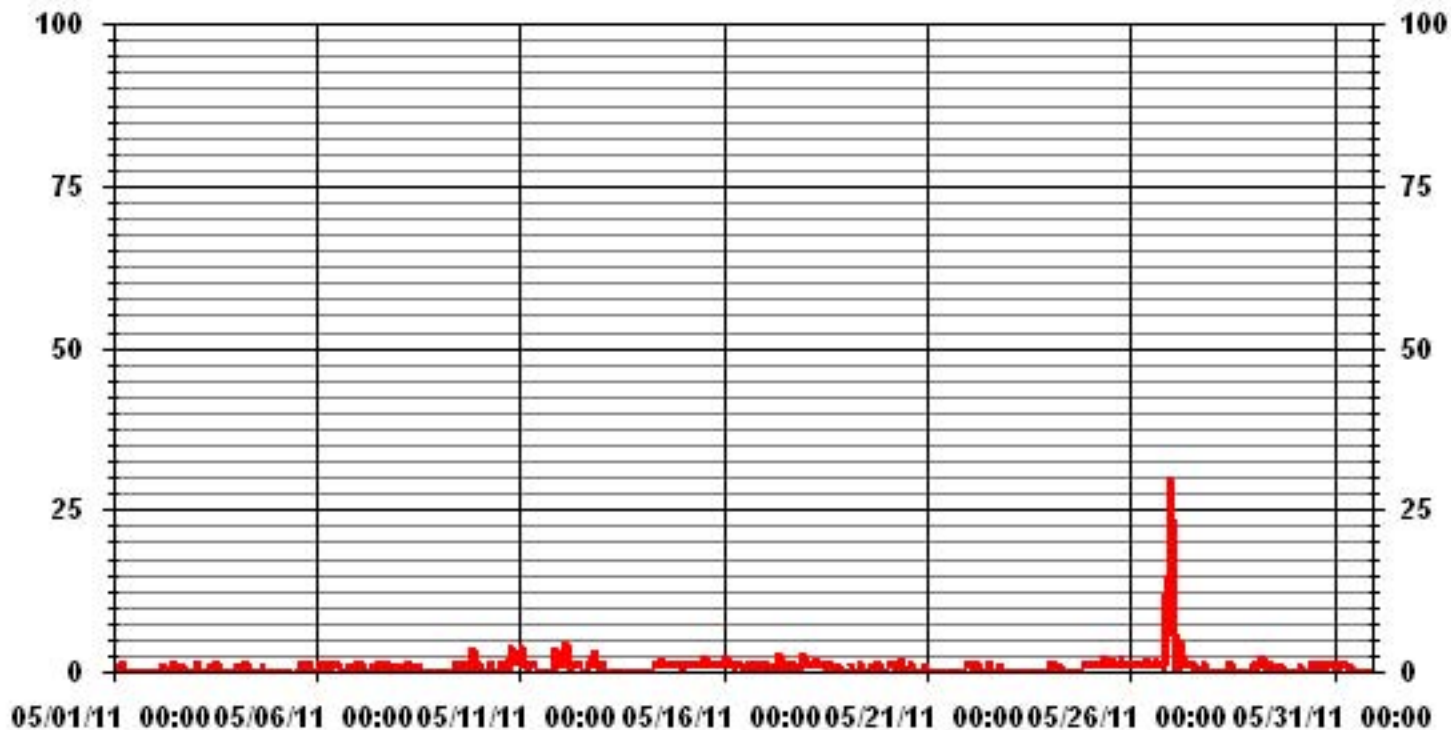
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	304					
MAXIMUM INSTANTANEOUS VALUE:	30	PPB	@ HOUR(S)	23	ON DAY(S)	26
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	1.81					

01 Hour Averages



LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

May 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	1.93	2.31	6.94	20.46	6.56	13.12	5.79	4.24	1.54	8.88	5.40	1.54	1.54	8.88	7.72	2.31	99.22
< 10	.00	.00	.00	.00	.00	.77	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.77
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.93	2.31	6.94	20.46	6.56	13.89	5.79	4.24	1.54	8.88	5.40	1.54	1.54	8.88	7.72	2.31	

Calm : .00 %

Total # Operational Hours : 259

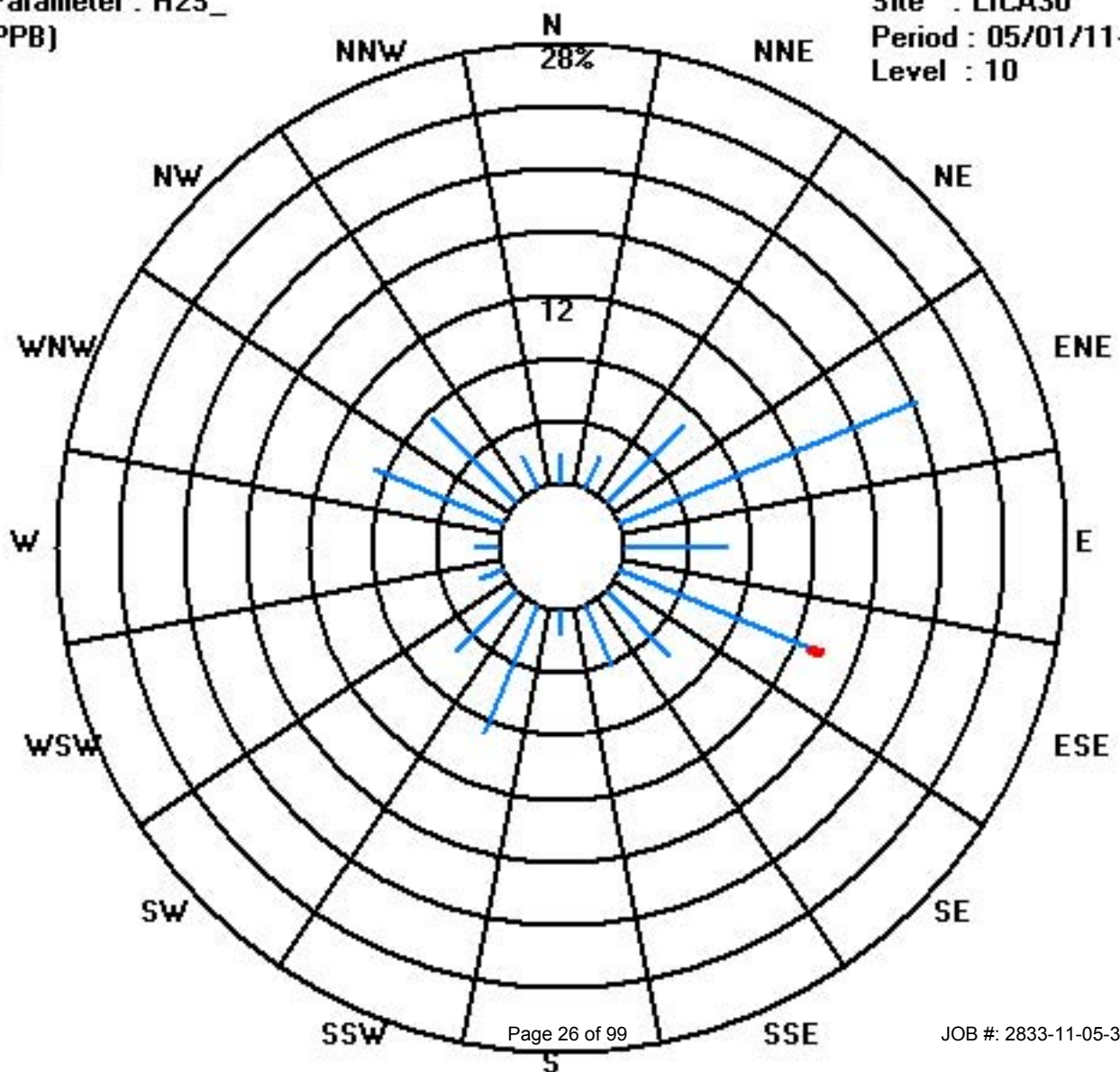
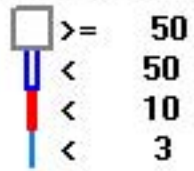
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	5	6	18	53	17	34	15	11	4	23	14	4	4	23	20	6	257
< 10						2											2
< 50																	
>= 50																	
Totals	5	6	18	53	17	36	15	11	4	23	14	4	4	23	20	6	

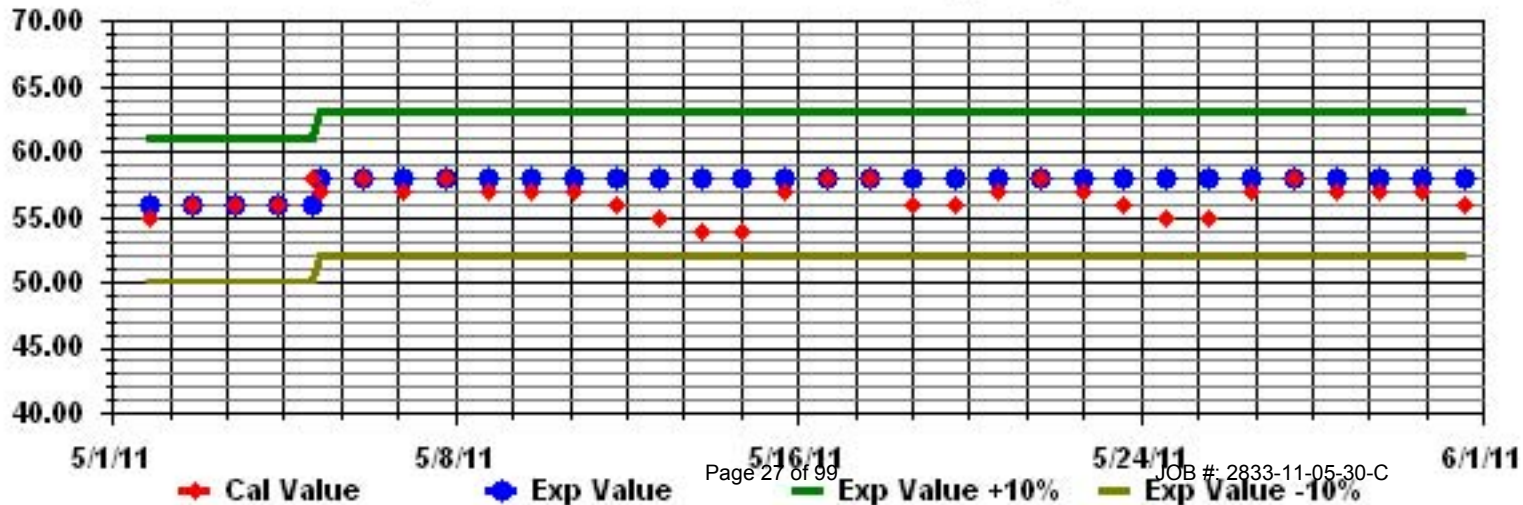
Calm : .00 %

Total # Operational Hours : 259

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

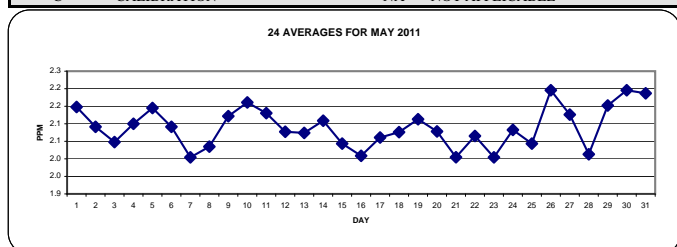
MAY 2011

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

STATUS FLAG CODES

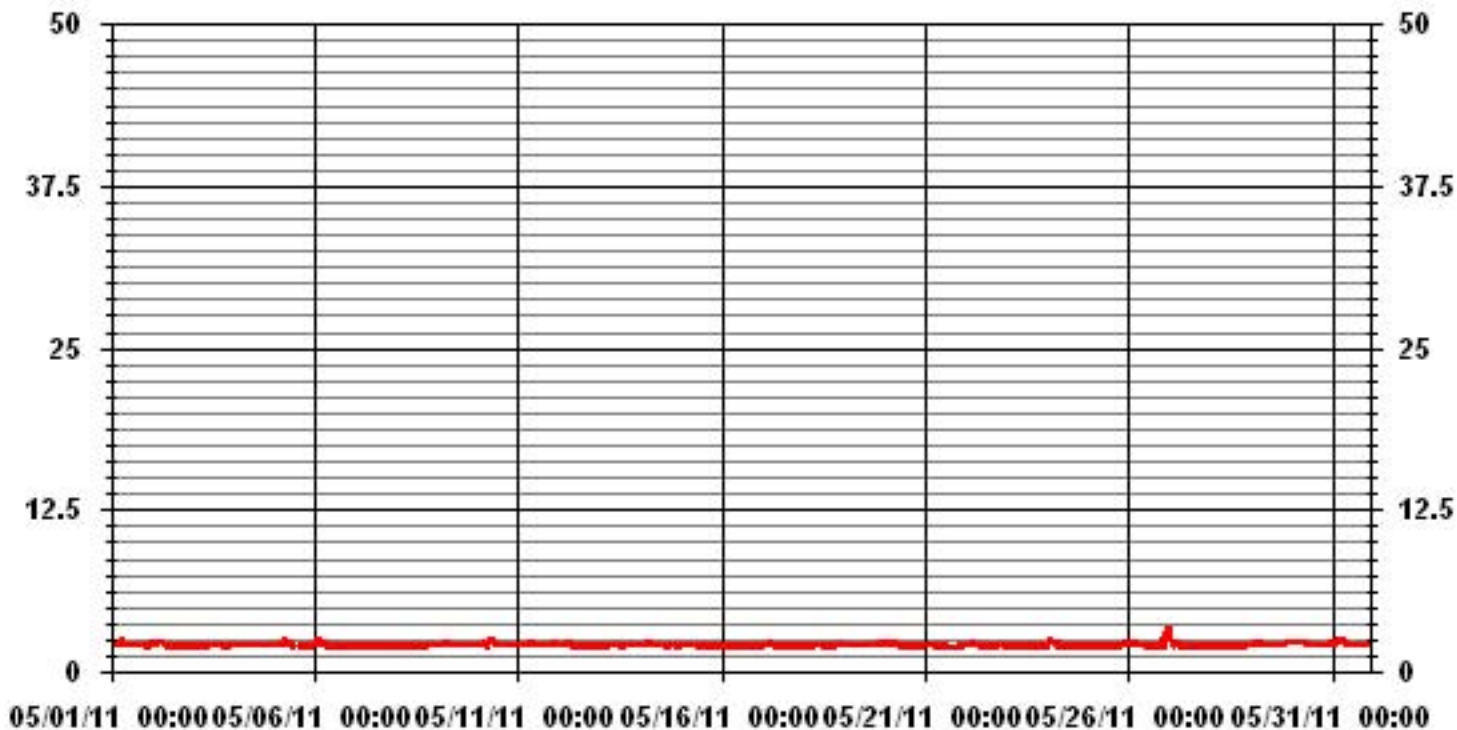
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM 1-HR AVERAGE:	3.2	PPM	@ HOUR(S)	23, 0	ON DAY(S)	26, 27
MAXIMUM 24-HR AVERAGE:	2.2	PPM			ON DAY(S)	26
					VAR- VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	0.12		MONTHLY AVERAGE:	2.09	PPM	

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	2.4	2.5	3.5	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	2.3	2.1	2.3	3.5	2.3	24	
2	2.3	2.3	2.2	2.3	2.3	2.4	2.4	2.3	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.4	2.1	24
3	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.3	2.3	2.2	2.4	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.4	2.2	24	
4	2.1	2.2	2.1	2.1	2.1	2.2	2.2	3.1	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	3.1	2.2	24	
5	2.1	2.2	2.2	2.2	2.3	2.3	3	2.9	2.4	2.4	2.3	C	C	C	C	2	IZS	2	2	2	2	2.1	2	2.2	2.2	3	2.3	24	
6	2.2	2.3	2.4	2.6	2.4	2.3	2.2	2.2	2.1	2.1	M	M	2.1	2	2	IZS	2	2	2	2	2	2	2	2	2.1	2	2.6	2.1	22
7	2	2.1	2.1	2.1	2	2	2	2.1	2.1	2.1	2.1	2	2.1	2	2	IZS	2	2	2	2	2	2	2	2	2	2.1	2.0	24	
8	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	IZS	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	24	
9	2.2	2.1	2.2	2.2	2.2	2.2	2.4	2.4	2.1	2.3	2.1	2.4	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.3	2.3	2.4	2.2	24	
10	2.2	2.1	2.2	2.2	2.2	2.1	2.5	2.5	2.4	2.4	2.3	IZS	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	24	
11	2.1	2.2	2.2	2.2	2.1	2.1	2.4	2.4	2.4	2.7	IZS	2.2	2.4	2.2	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.4	2.8	2.7	2.1	2.8	2.3	24	
12	2.1	2.1	2.2	2.1	2.5	2.3	2.4	2.5	2.3	IZS	2.1	3.6	M	2.2	2.2	2.3	2.3	2	2.2	2.1	2.4	2	2.1	2	3.6	2.3	23		
13	2	2	2	2	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	24		
14	2.2	2.2	2.2	2.2	2.2	2.3	2.3	IZS	2.2	2.2	2.1	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	2.3	2.2	24	
15	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.0	24	
16	2	2	2	2	2	IZS	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.0	24	
17	2.1	2.1	2.1	2.2	IZS	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2	2	2	2	2.1	2	2	2	2.4	2.4	2.1	24	
18	2.1	2	2	IZS	2	2.1	2.1	2.2	2.3	M	C	2.2	2.2	2.1	2.1	2.2	2.3	2.3	2.1	2.1	2.2	2.2	2.3	2.3	2.3	2.2	2.3	23	
19	2.2	2.2	IZS	2.2	2.1	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.3	2.2	2.1	2.3	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.4		
20	2.2	IZS	2.3	2.3	2.3	2.5	2.6	2.1	2.3	2.2	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	2.2	2.6	2.2	24	
21	IZS	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2	2	2.1	2.1	2	2.1	2.1	2	2	1.9	1.9	2	2	2	2	2.2	IZS	2.2	2.1	24	
22	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2	2	2	2.1	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
23	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	2.1	2.0	24	
24	2.2	2.3	2.5	2.5	2.4	2.3	2.2	2.1	2	2	2	2	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2.5	2.1	24	
25	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.2	2.2	2.1	24	
26	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	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	3.5	3.7	5.9	5.9	2.4	24	
27	5.6	4.1	3.1	2.2	2.2	3.2	3	2.5	2.1	2.1	2	2.1	2.1	2.1	2	2	2	2	IZS	2	2	2	2	2	2.1	5.6	2.5	24	
28	2.1	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	2.1	2.1	2.0	24	
29	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.2	24	
30	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.3	2.3	2.3	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	2.4	2.2	24	
31	2.2	2.2	2.3	2.4	2.5	2.6	2.5	2.9	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	2.1	2.2	2.3	2.4	2.9	2.3	24	
HOURLY MAX	6	4	3	3	3	3	4	3	2	3	2	4	2	2	2	2	2	2	2	2	2	2	4	4	6				
HOURLY AVG	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	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	2.2	2.3			

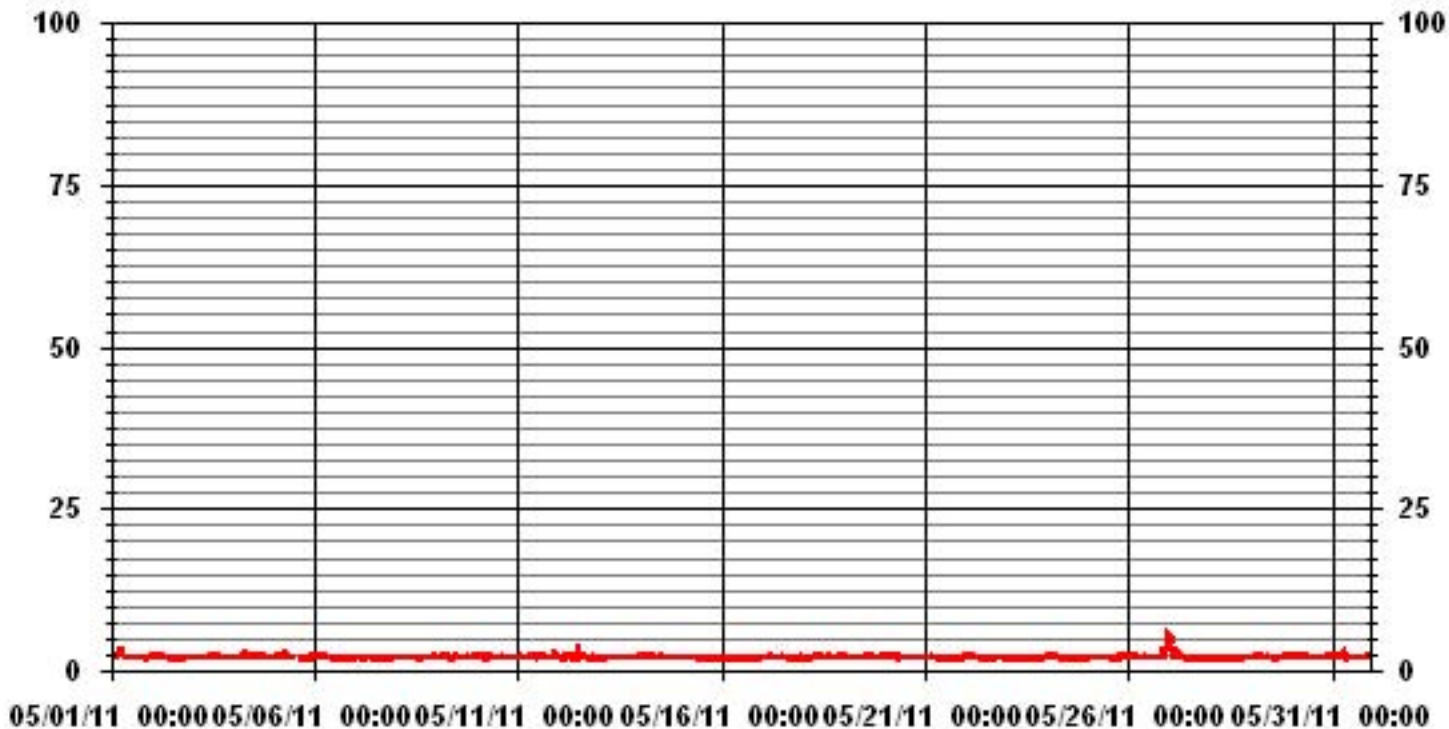
STATUS FLAG CODES

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:	703					
MAXIMUM INSTANTANEOUS VALUE:	5.9	PPM	@ HOUR(S)	23	ON DAY(S)	26
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.28					

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

May 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	1.92	2.30	6.92	20.38	6.53	13.84	5.76	4.23	1.53	9.61	5.38	1.53	1.53	8.84	7.30	2.30	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.92	2.30	6.92	20.38	6.53	13.84	5.76	4.23	1.53	9.61	5.38	1.53	1.53	8.84	7.30	2.30	

Calm : .00 %

Total # Operational Hours : 260

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	5	6	18	53	17	36	15	11	4	25	14	4	4	23	19	6	260
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	5	6	18	53	17	36	15	11	4	25	14	4	4	23	19	6	

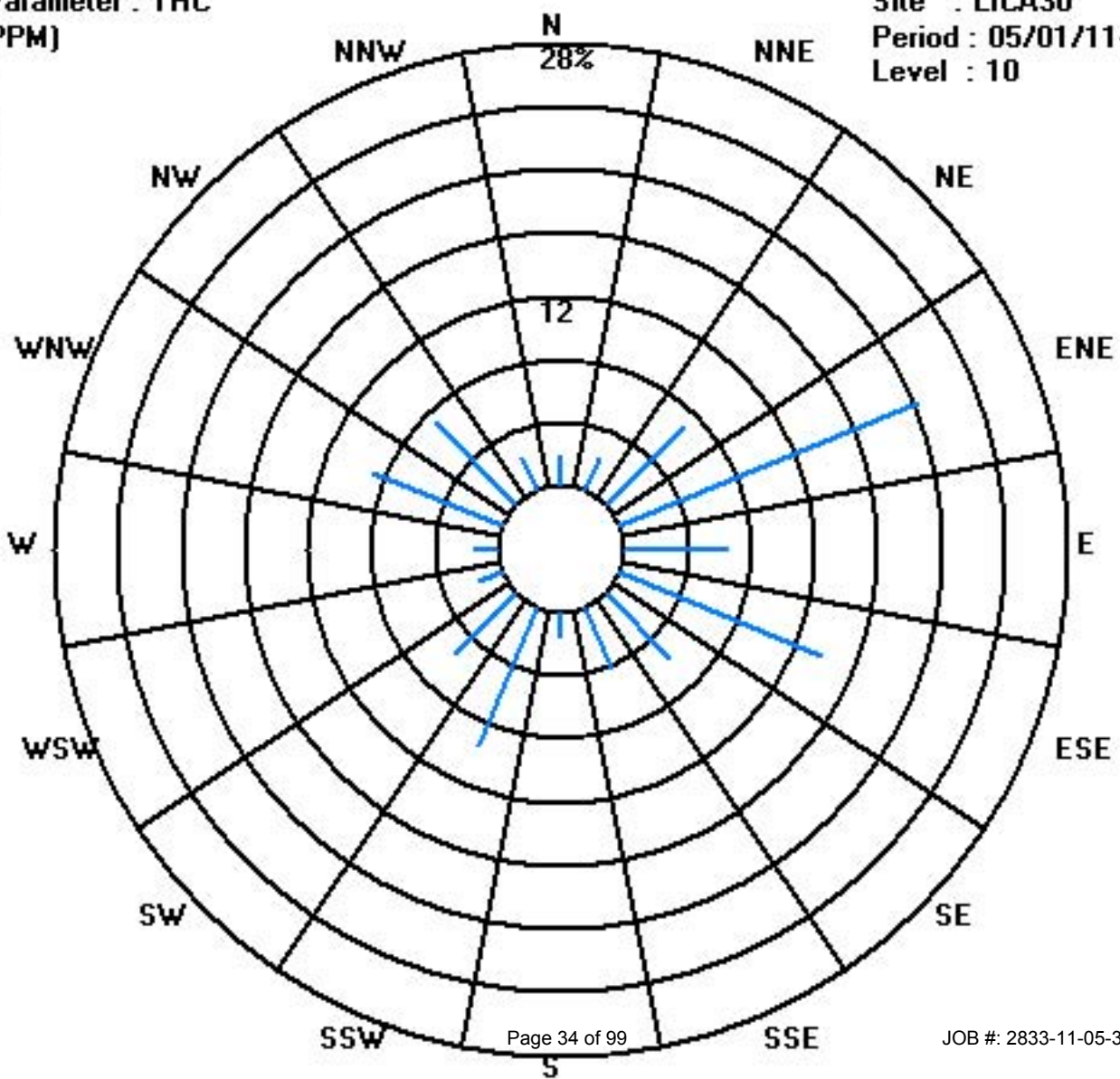
Calm : .00 %

Total # Operational Hours : 260

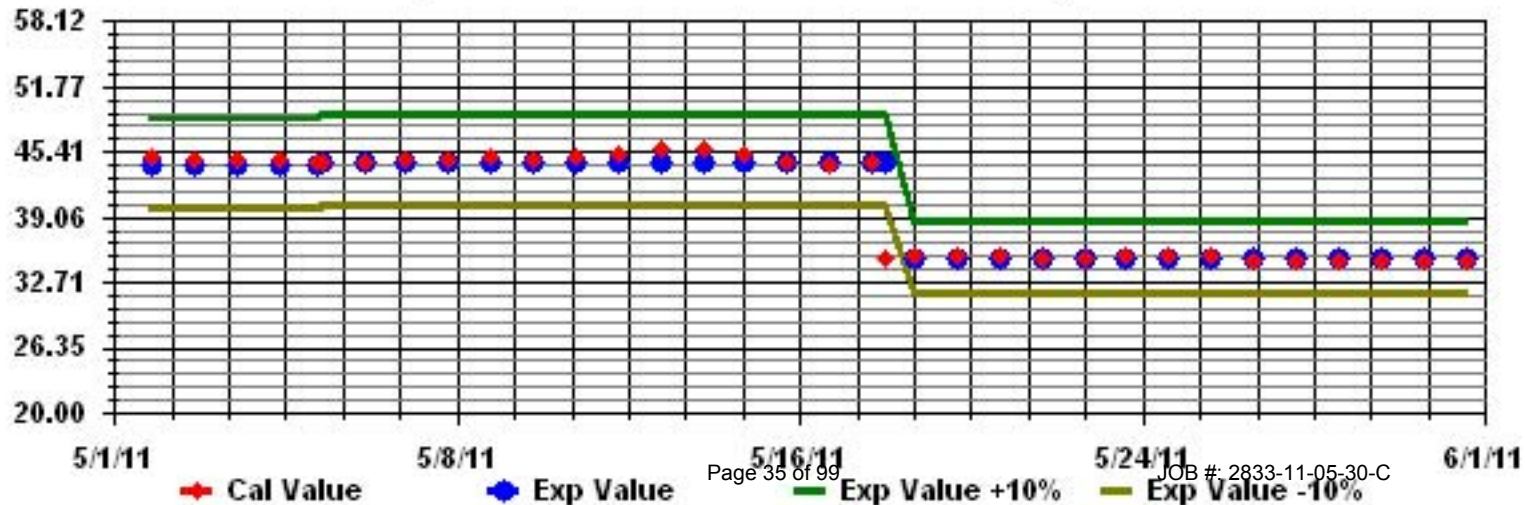
Class Limits (PPM)

Period : 05/01/11-05/31/11

Level : 10



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 2011

NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	7	3	2	2	4	12	11	2	6	3	2	2	0	0	0	1	2	2	3	1	IZS	1	1	2	12	3.0	24	
2	3	4	3	3	5	4	5	5	3	5	3	1	1	1	1	1	1	1	1	IZS	1	1	1	1	5	2.4	24	
3	0	1	1	1	1	1	1	1	1	2	4	3	4	3	5	5	7	14	IZS	3	1	1	0	2	14	2.7	24	
4	11	14	6	5	1	5	9	8	2	4	3	5	4	4	1	1	2	IZS	6	7	3	1	1	1	14	4.5	24	
5	1	1	3	3	4	6	9	7	5	C	C	C	C	C	C	3	IZS	2	2	2	3	3	2	2	9	3.4	24	
6	2	3	3	2	2	2	3	5	4	3	4	4	6	3	2	IZS	1	1	0	1	1	0	0	0	6	2.3	24	
7	1	1	1	1	0	0	0	1	1	0	0	0	0	1	IZS	0	0	0	0	0	0	0	1	0	1	0.3	24	
8	0	0	0	1	0	0	1	0	0	0	1	0	0	IZS	0	0	0	0	1	1	1	1	1	1	1	1	0.4	24
9	1	1	1	1	1	1	1	1	2	3	2	1	IZS	1	1	1	1	0	1	1	1	1	1	1	1	3	1.1	24
10	1	1	1	1	1	1	2	3	2	2	1	IZS	0	0	0	1	1	0	0	0	0	0	2	0	3	0.9	24	
11	0	4	5	1	0	0	3	2	3	3	IZS	3	2	1	1	2	1	0	0	1	1	2	3	1	5	1.7	24	
12	1	1	3	5	9	6	5	5	2	IZS	2	2	M	1	1	3	3	1	3	4	8	4	3	1	9	3.3	23	
13	1	1	1	1	1	1	1	1	IZS	2	2	0	2	2	2	2	0	0	0	2	2	3	3	3	3	3	1.4	24
14	3	2	2	3	3	3	3	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.2	24
15	2	2	2	2	3	3	IZS	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	3	2.0	24	
16	2	3	3	3	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.1	24	
17	2	3	3	3	IZS	2	2	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	2	5	5	1.7	24	
18	3	1	1	IZS	1	1	1	2	2	2	2	2	2	1	1	3	2	2	1	1	1	1	1	1	3	1.5	24	
19	1	1	IZS	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	10	6	10	1.0	24	
20	8	IZS	3	1	1	4	3	0	4	3	1	0	0	0	0	1	0	0	0	0	0	0	0	0	8	1.3	24	
21	IZS	0	0	0	0	0	0	0	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0	IZS	2	0.2	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	IZS	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	IZS	0	0.0	24		
24	0	0	1	1	4	2	2	1	0	0	0	1	0	0	0	0	0	1	0	0	IZS	0	0	0	4	0.6	24	
25	0	0	0	0	0	0	0	0	1	1	2	1	0	1	2	1	0	0	0	IZS	2	2	2	2	2	0.7	24	
26	2	1	1	1	1	1	1	1	1	2	2	2	2	1	1	2	2	3	IZS	2	1	1	1	1	3	1.4	24	
27	1	1	0	1	1	1	1	1	2	1	1	0	1	2	1	1	1	IZS	1	1	0	0	1	1	2	0.9	24	
28	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	IZS	0	0	0	0	0	1	1	1	0.3	24	
29	0	0	0	0	1	1	1	2	2	1	1	1	1	1	1	IZS	3	2	1	1	1	3	4	3	4	1.3	24	
30	3	4	3	3	3	2	3	3	2	2	1	1	1	1	IZS	1	2	1	1	2	1	2	2	2	4	2.0	24	
31	2	1	1	2	2	5	10	17	4	5	4	3	2	IZS	1	1	1	4	1	1	1	2	1	2	17	3.2	24	
HOURLY MAX	11	14	6	5	9	12	11	17	6	5	4	5	6	4	5	5	7	14	6	7	8	4	10	6				
HOURLY AVG	2.0	1.8	1.7	1.6	1.7	2.1	2.7	2.5	1.9	1.8	1.6	1.4	1.4	1.2	1.0	1.3	1.3	1.4	1.0	1.3	1.2	1.2	1.7	1.5				

STATUS FLAG CODES

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

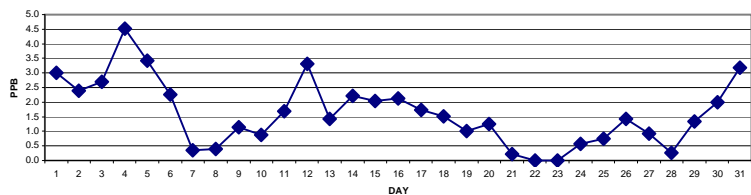
OBJECTIVE LIMIT:

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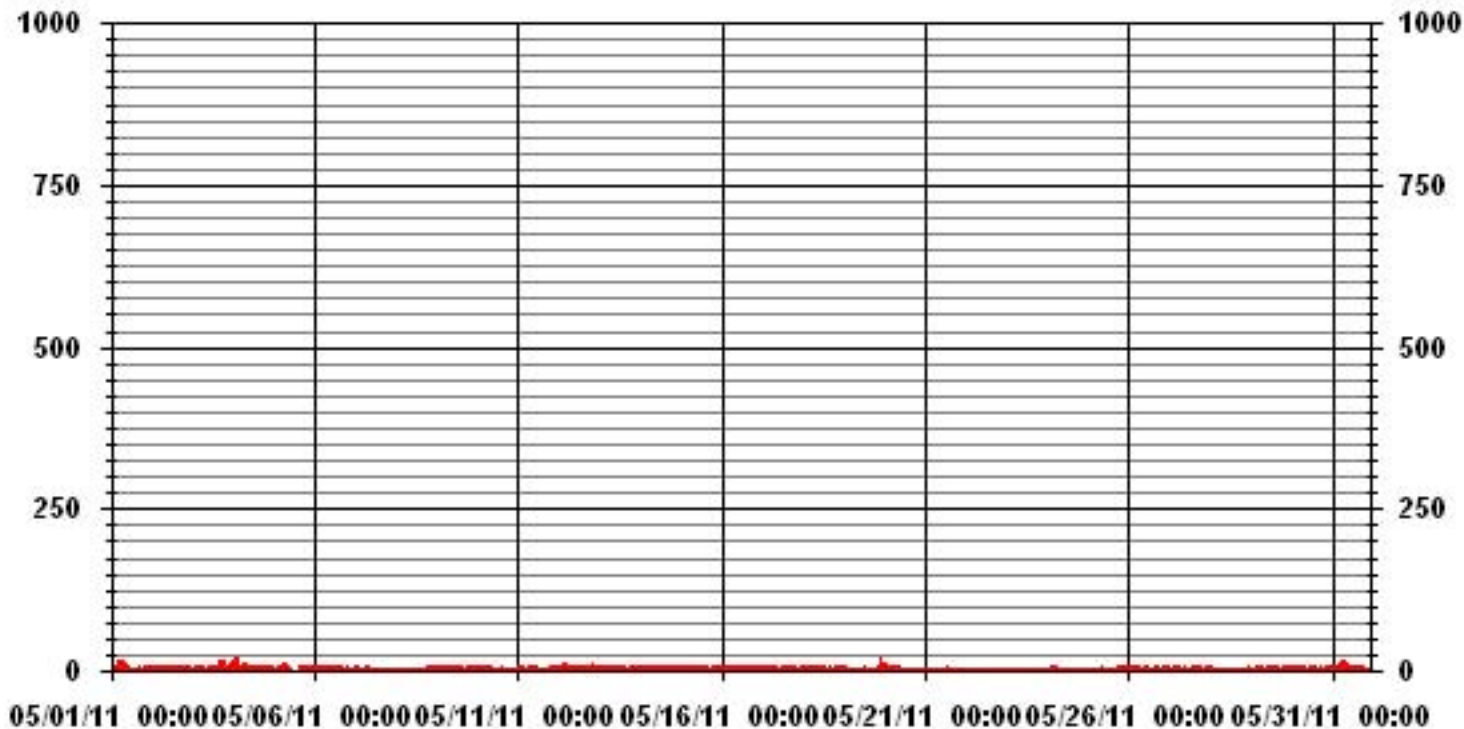
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	505
MAXIMUM 1-HR AVERAGE:	17 PPB @ HOUR(S) 7 ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	4.5 PPB ON DAY(S) 4
IZS CALIBRATION TIME:	32 HRS
OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	6 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	1.92
MONTHLY AVERAGE:	1.60 PPB

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA30 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	22	4	6	5	6	20	14	8	11	10	5	5	7	2	0	6	10	7	6	2	IZS	1	1	3	22	7.0	24	
2	4	5	4	5	10	5	8	8	5	9	7	2	2	3	2	2	1	1	1	IZS	1	1	1	1	10	3.8	24	
3	1	1	1	1	1	2	1	2	1	5	8	10	9	8	13	24	12	21	IZS	15	4	2	1	5	24	6.4	24	
4	20	26	15	8	6	12	20	20	9	14	10	14	10	12	7	8	11	IZS	12	15	6	3	2	2	26	11.4	24	
5	1	3	3	8	9	15	13	14	C	C	C	C	C	C	C	20	IZS	3	3	3	4	3	3	3	20	6.8	24	
6	3	4	4	4	3	3	5	17	6	16	M	M	25	7	6	IZS	3	2	2	1	1	1	1	1	25	5.5	22	
7	1	1	2	2	1	1	2	1	1	1	1	1	2	2	2	IZS	1	1	1	1	1	1	1	1	2	1.2	24	
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	2	2	3	2	1	1	3	1.2	24
9	1	2	1	2	1	2	1	2	3	16	25	2	IZS	2	2	1	2	1	2	4	1	3	2	2	25	3.5	24	
10	1	1	2	2	2	2	3	3	3	3	2	IZS	0	0	1	3	3	1	3	1	0	1	7	2	7	2.0	24	
11	1	9	11	9	0	1	5	5	6	5	IZS	5	3	3	4	3	1	1	1	1	5	6	5	2	11	4.1	24	
12	2	3	6	7	12	9	8	8	4	IZS	3	3	M	3	2	4	5	3	6	6	13	6	6	2	13	5.5	23	
13	2	1	1	1	2	2	2	2	IZS	2	2	2	2	2	3	2	2	2	2	2	2	4	4	3	4	2.1	24	
14	4	3	3	3	4	3	4	IZS	3	3	2	2	3	2	2	2	2	2	2	2	2	3	3	3	4	2.7	24	
15	3	3	3	3	3	3	IZS	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2.3	24	
16	3	4	4	4	3	IZS	3	3	3	3	2	3	2	2	2	2	3	2	2	3	3	3	3	3	4	2.9	24	
17	3	4	3	4	IZS	2	3	3	2	2	2	5	4	1	1	2	2	1	1	5	2	1	5	8	8	2.9	24	
18	5	1	2	IZS	1	2	2	3	4	4	4	3	4	3	3	7	7	5	2	2	2	1	1	1	7	3.0	24	
19	1	2	IZS	3	1	1	15	0	0	4	2	1	4	3	3	2	4	2	1	0	0	5	21	8	21	3.6	24	
20	9	IZS	5	2	2	10	9	1	11	6	10	2	2	2	3	2	3	1	0	1	0	1	0	11	3.7	24		
21	IZS	0	0	0	0	0	0	0	0	0	2	5	4	4	7	1	1	0	0	0	1	0	2	IZS	7	1.2	24	
22	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	IZS	0	3	0.2	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	IZS	1	0	0.0	24
24	0	1	2	2	6	4	3	2	18	2	2	2	1	2	0	1	2	4	0	0	IZS	0	0	0	18	2.3	24	
25	0	0	0	0	0	0	0	1	3	3	5	3	3	3	6	3	3	0	1	IZS	5	2	2	3	6	2.0	24	
26	2	2	2	2	2	2	2	2	1	6	8	5	4	3	3	5	3	6	IZS	6	2	2	1	2	8	3.2	24	
27	1	1	1	1	2	1	1	2	3	2	2	2	3	5	2	1	2	IZS	1	1	1	2	2	2	5	1.8	24	
28	2	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	IZS	1	1	1	1	1	2	1	2	1.2	24	
29	1	1	1	1	1	2	2	4	3	2	2	1	1	2	2	IZS	5	3	1	2	2	5	6	3	6	2.3	24	
30	4	5	4	4	4	3	4	4	4	3	2	2	1	2	IZS	3	5	2	3	3	2	3	3	3	5	3.2	24	
31	3	2	2	2	3	10	26	28	7	17	7	9	6	IZS	3	2	3	11	3	2	2	2	2	3	28	6.7	24	
HOURLY MAX	22	26	15	9	12	20	26	28	18	17	25	14	25	12	13	24	12	21	12	15	13	6	21	8				
HOURLY AVG	3.4	3.0	3.0	2.9	2.9	4.0	5.3	5.0	4.0	4.9	4.3	3.3	3.8	3.0	2.8	3.9	3.4	3.0	2.1	2.8	2.4	2.2	3.1	2.3				

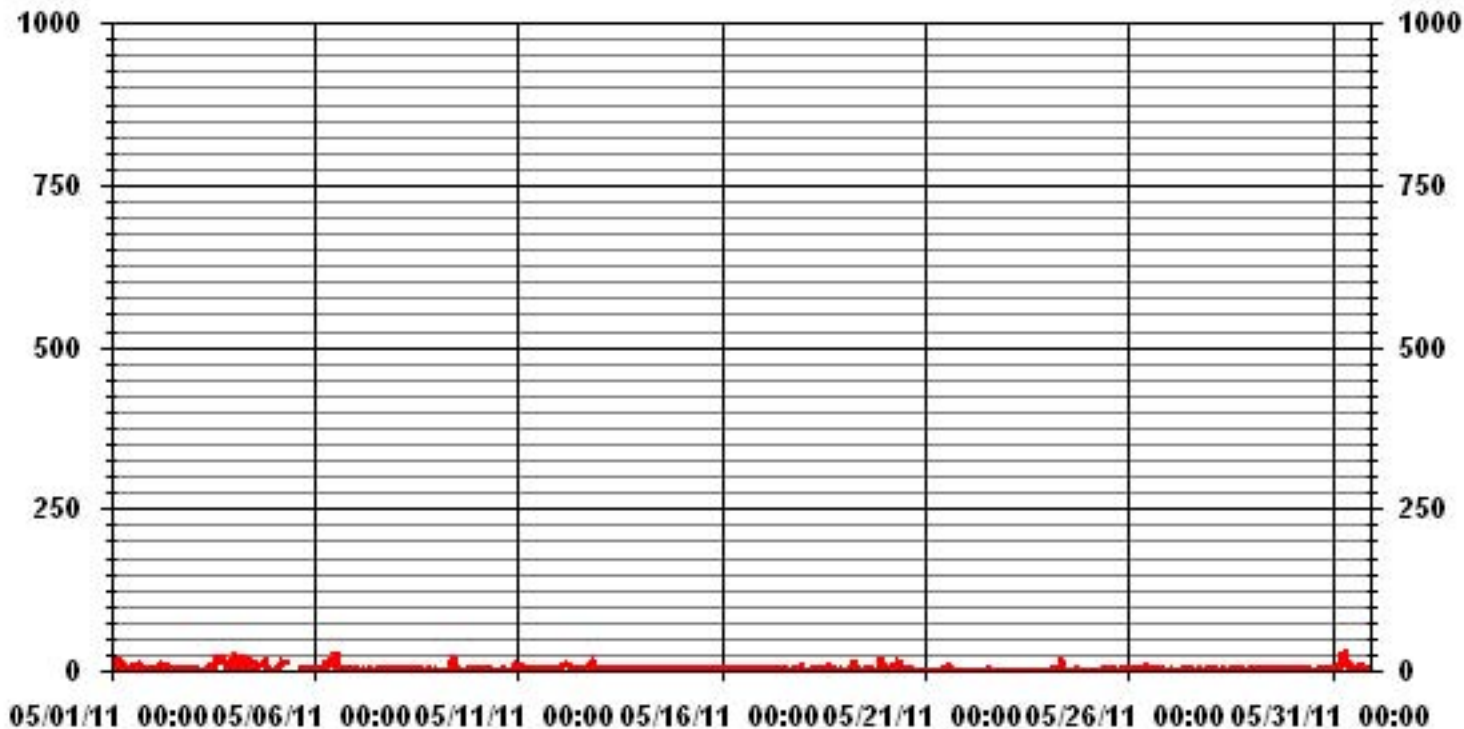
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	619					
MAXIMUM INSTANTANEOUS VALUE:	28	PPB	@ HOUR(S)	7	ON DAY(S)	31
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	4.11					

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

May 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	1.94	2.33	7.00	20.62	6.61	14.00	5.83	4.28	1.55	8.94	5.05	1.55	1.55	8.94	7.39	2.33	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	1.94	2.33	7.00	20.62	6.61	14.00	5.83	4.28	1.55	8.94	5.05	1.55	1.55	8.94	7.39	2.33	

Calm : .00 %

Total # Operational Hours : 257

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5	6	18	53	17	36	15	11	4	23	13	4	4	23	19	6	257
< 110																	
< 210																	
>= 210																	
Totals	5	6	18	53	17	36	15	11	4	23	13	4	4	23	19	6	

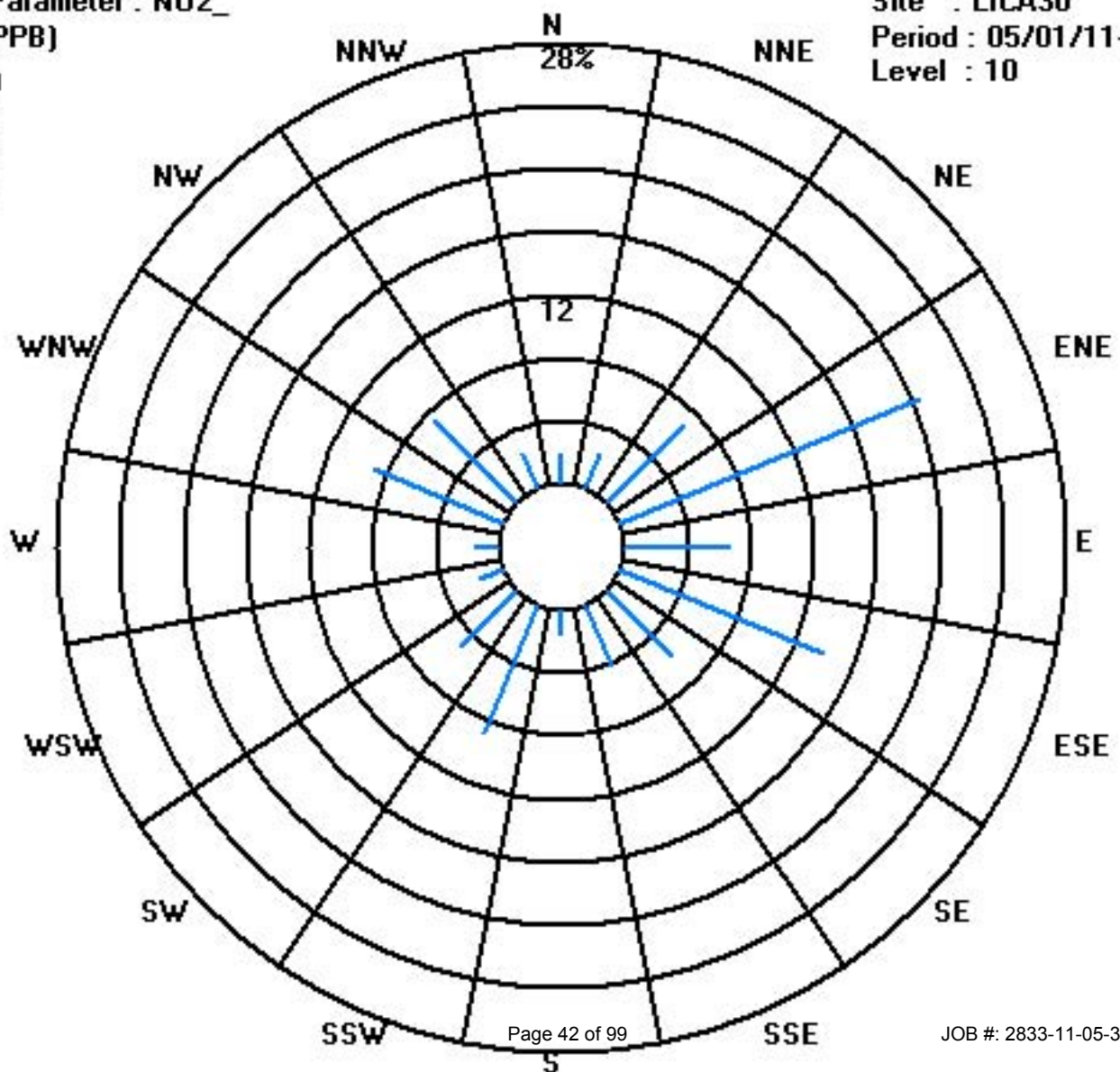
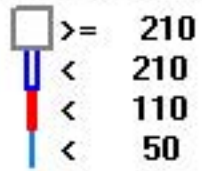
Calm : .00 %

Total # Operational Hours : 257

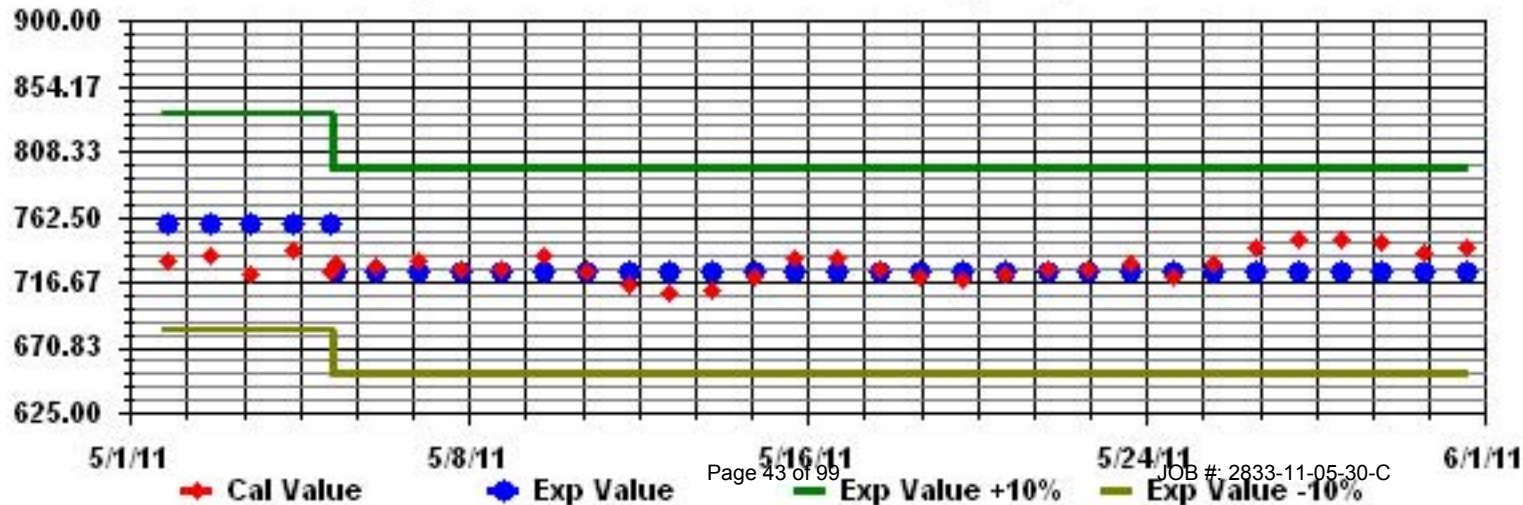
Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

MAY 2011

NITRIC OXIDE 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	0:00	DAILY 24-HOUR			
DAY																									MAX.	AVG.	RDGS.		
1	0	0	0	0	0	4	6	1	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0.8	24
2	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
3	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	2	1	4	IZS	1	0	0	0	0	0	0	4	0.6	24
4	0	4	0	0	0	1	3	4	1	3	2	3	1	1	0	0	0	IZS	1	1	1	1	1	1	1	4	1.3	24	
5	1	1	1	1	1	2	2	2	4	C	C	C	C	C	C	0	IZS	0	0	0	0	0	0	0	0	4	0.9	24	
6	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	IZS	0	0	0	0	0	0	0	0	2	0.2	24	
7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24	
9	0	1	1	0	0	0	1	1	1	3	2	0	IZS	0	0	0	0	0	0	0	0	0	0	1	1	3	0.5	24	
10	0	0	1	0	0	1	1	1	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
11	0	1	1	0	0	0	2	2	2	2	IZS	2	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0.6	24	
12	0	0	0	1	1	1	2	3	1	IZS	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	23	
13	0	0	0	0	0	0	0	0	IZS	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
14	0	2	0	2	0	0	0	IZS	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
15	0	0	2	2	0	0	IZS	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
16	0	0	0	0	0	IZS	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	24	
17	0	0	0	0	IZS	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
18	0	0	0	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	
19	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
20	0	IZS	0	0	0	2	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
21	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	
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	IZS	1	1	0.0	24
23	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
24	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
25	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	0.1	24	
26	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.0	24	
27	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.0	24	
28	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	
29	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.1	24	
30	0	0	0	0	0	0	1	1	1	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
31	0	0	0	0	0	2	4	9	1	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	9	0.8	24	
HOURLY MAX	1	4	2	2	1	4	6	9	4	3	2	3	2	1	1	2	1	4	1	1	1	1	1	1	1				
HOURLY AVG	0.0	0.3	0.2	0.2	0.1	0.5	1.0	1.1	0.8	0.8	0.4	0.3	0.2	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1				

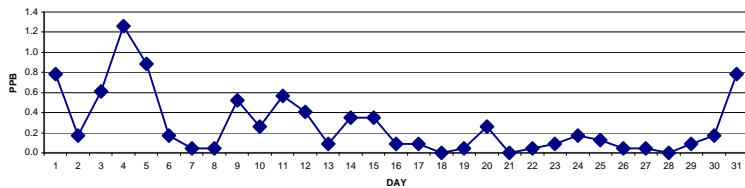
STATUS FLAG CODES

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

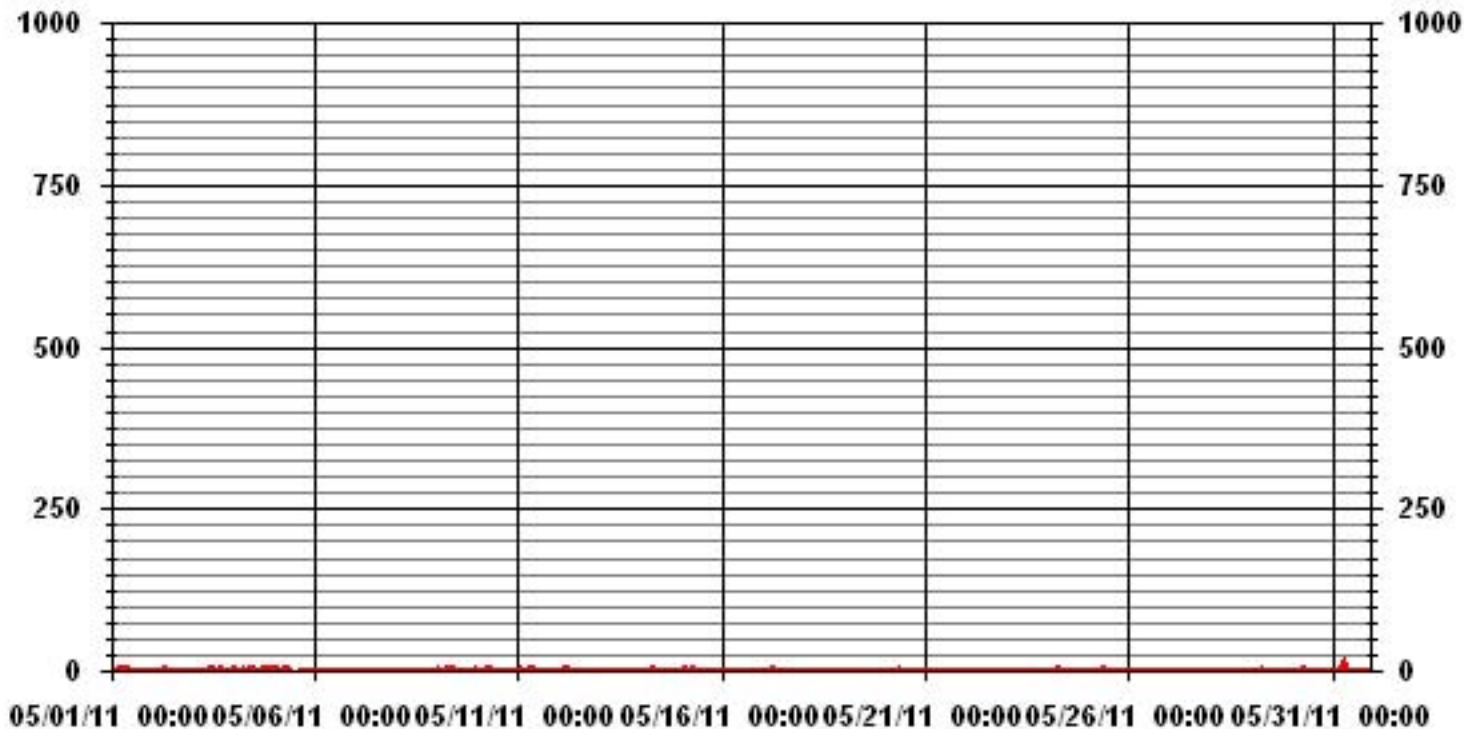
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	122		
MAXIMUM 1-HR AVERAGE:	9	PPB @ HOUR(S)	7 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	1.3	PPB	4 ON DAY(S)
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME: 743 HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME: 99.9 %
STANDARD DEVIATION:	0.75		MONTHLY AVERAGE: 0.27 PPB

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	0	1	1	1	10	8	4	7	7	3	2	9	1	0	1	2	1	1	0	IZS	1	1	1	10	2.8	24	
2	1	1	1	1	1	1	2	3	1	3	2	1	0	1	1	0	0	0	0	IZS	1	0	0	0	3	0.9	24	
3	1	1	1	1	1	1	1	1	1	2	4	5	5	4	6	14	3	8	IZS	2	1	1	1	1	14	2.9	24	
4	1	17	1	1	0	2	15	8	6	10	7	9	4	5	2	2	4	IZS	3	3	1	2	2	2	17	4.7	24	
5	1	2	2	2	3	4	3	4	C	C	C	C	C	C	C	13	IZS	0	0	0	0	0	0	0	13	2.1	24	
6	0	0	0	0	0	0	1	14	2	15	M	M	18	2	1	IZS	1	1	1	1	1	1	1	1	18	2.9	22	
7	1	1	1	1	1	1	1	1	1	1	1	1	1	2	IZS	1	0	0	0	0	0	0	0	0	2	0.7	24	
8	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	0.5	24
9	1	1	1	1	1	1	1	2	3	15	22	1	IZS	1	1	1	1	1	1	1	1	1	1	1	22	2.7	24	
10	1	1	1	1	1	1	2	2	2	2	2	1	IZS	1	1	0	1	1	1	1	1	0	1	1	2	1.1	24	
11	1	1	1	1	1	1	3	4	5	4	IZS	4	2	1	1	2	1	1	1	1	1	1	1	1	5	1.7	24	
12	1	1	1	1	2	2	4	4	2	IZS	1	1	M	0	1	1	1	0	0	0	0	0	0	0	4	1.0	23	
13	0	0	0	0	0	0	0	0	IZS	2	2	2	2	2	2	2	0	0	0	2	2	2	2	2	2	2	1.0	24
14	2	2	2	2	2	2	2	IZS	3	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	3	2.0	24	
15	2	2	2	2	2	2	IZS	3	2	2	2	2	2	0	2	0	2	2	2	2	2	2	2	2	3	1.9	24	
16	2	2	2	2	2	IZS	3	2	2	2	2	2	0	0	2	2	0	0	2	0	0	2	0	0	3	1.3	24	
17	2	2	2	2	IZS	1	1	1	1	1	1	2	1	1	1	0	1	1	0	1	1	1	1	1	2	1.1	24	
18	1	1	1	IZS	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0.3	24	
19	0	0	IZS	1	1	1	22	1	1	2	1	1	1	1	1	1	1	0	1	1	1	0	1	1	22	1.8	24	
20	1	IZS	1	1	1	4	3	1	4	2	9	1	1	1	1	1	1	1	0	1	0	0	1	1	9	1.6	24	
21	IZS	1	1	1	1	1	1	1	0	1	1	1	1	2	3	1	1	1	1	0	1	0	1	IZS	3	1.0	24	
22	1	1	1	1	0	1	1	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	IZS	1	1	0.9	24
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	IZS	1	1	1	1	0.9	24	
24	1	0	1	1	1	2	2	2	15	1	1	1	1	2	1	0	0	1	0	0	IZS	1	1	1	15	1.6	24	
25	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	0	0	1	0	IZS	2	1	1	1	2	1.0	24	
26	1	1	1	1	1	1	1	1	1	2	3	1	1	1	1	2	1	1	IZS	1	1	1	1	1	3	1.2	24	
27	1	1	1	0	1	1	1	2	1	1	0	0	0	2	0	0	0	IZS	0	0	0	1	1	1	2	0.7	24	
28	1	1	1	1	1	1	1	1	1	2	1	1	0	0	0	0	IZS	1	1	1	1	1	1	1	2	0.9	24	
29	1	1	1	1	1	1	1	2	2	1	1	1	1	13	1	IZS	1	1	1	0	1	1	1	1	13	1.6	24	
30	1	1	1	1	1	1	2	2	2	1	1	0	1	0	IZS	1	1	0	1	0	0	1	1	1	2	0.9	24	
31	1	1	1	1	1	4	25	29	2	6	2	2	1	IZS	1	0	1	2	1	0	1	1	1	29	3.7	24		
HOURLY MAX	2	17	2	2	3	10	25	29	15	15	22	9	18	13	6	14	4	8	3	3	2	2	2	2				
HOURLY AVG	1.0	1.5	1.1	1.0	1.0	1.6	3.6	3.3	2.4	3.1	2.6	1.6	2.1	1.7	1.3	1.7	1.0	1.0	0.8	0.8	0.8	0.9	0.9	1.0				

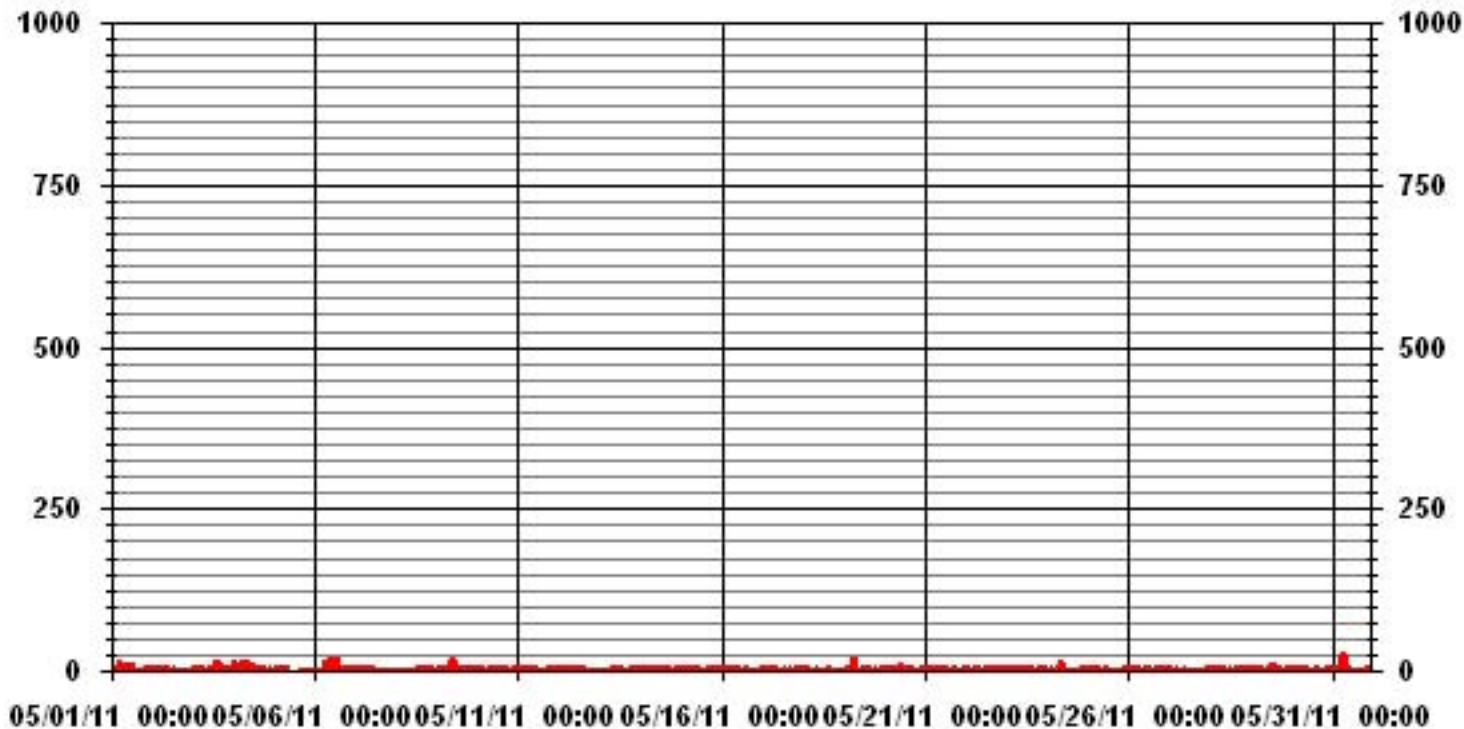
STATUS FLAG CODES

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:	563					
MAXIMUM INSTANTANEOUS VALUE:	29	PPB	@ HOUR(S)	7	ON DAY(S)	31
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	2.71					

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

May 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	1.94	2.33	7.00	20.62	6.61	14.00	5.83	4.28	1.55	8.94	5.05	1.55	1.55	8.94	7.39	2.33	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	1.94	2.33	7.00	20.62	6.61	14.00	5.83	4.28	1.55	8.94	5.05	1.55	1.55	8.94	7.39	2.33	

Calm : .00 %

Total # Operational Hours : 257

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5	6	18	53	17	36	15	11	4	23	13	4	4	23	19	6	257
< 110																	
< 210																	
>= 210																	
Totals	5	6	18	53	17	36	15	11	4	23	13	4	4	23	19	6	

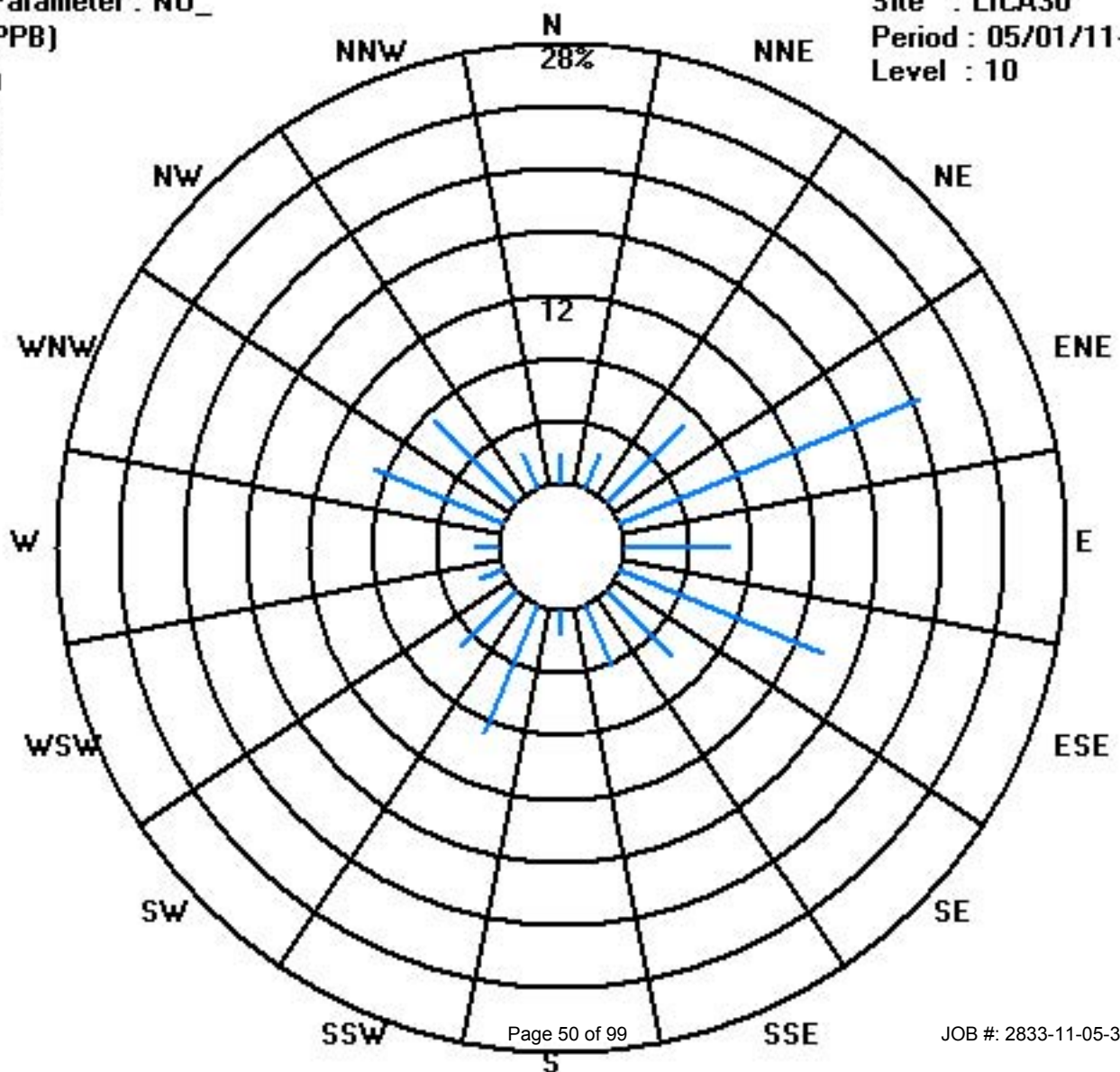
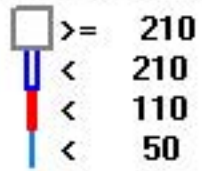
Calm : .00 %

Total # Operational Hours : 257

Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 2011

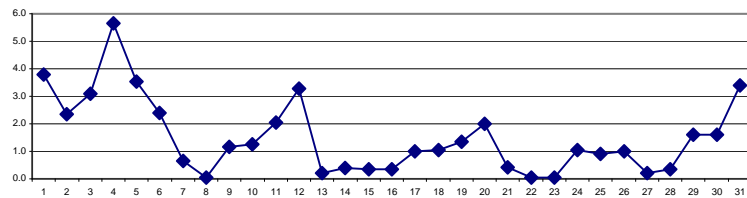
OXIDES OF NITROGEN hourly averages in ppb

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	8	2	3	2	4	16	17	3	9	5	3	2	0	0	0	1	3	2	3	1	IZS	1	0	2	17	3.8	24	
2	3	4	3	3	5	4	5	6	4	6	3	1	1	1	1	1	0	1	1	IZS	0	0	1	0	6	2.3	24	
3	0	0	0	1	1	0	0	1	1	3	5	5	5	4	6	7	8	18	IZS	3	1	1	0	1	18	3.1	24	
4	12	18	6	5	1	6	11	12	3	7	5	8	5	5	1	2	2	IZS	7	8	3	1	1	1	18	5.7	24	
5	0	1	3	3	4	7	10	8	8	C	C	C	C	C	C	4	IZS	1	2	1	2	2	2	2	10	3.5	24	
6	1	2	3	1	1	1	3	6	4	4	4	4	8	3	2	IZS	1	1	1	1	1	1	1	1	8	2.4	24	
7	1	1	1	1	1	1	1	1	1	1	1	1	1	2	IZS	0	0	0	0	0	0	0	0	0	2	0.7	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0	0	1	0.0	24
9	0	0	0	0	0	0	0	1	2	6	3	0	IZS	1	2	1	1	1	1	2	1	2	1	2	6	1.2	24	
10	1	1	1	1	2	1	3	4	3	3	2	IZS	0	0	0	1	1	0	1	1	0	0	3	0	4	1.3	24	
11	0	5	6	1	0	0	5	4	5	5	IZS	4	2	1	1	2	1	0	0	0	0	2	3	0	6	2.0	24	
12	0	0	3	4	9	6	6	7	2	IZS	2	2	M	1	1	3	3	1	3	4	8	4	3	0	9	3.3	23	
13	0	0	0	0	0	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	2	0.2	24
14	1	1	0	1	1	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.4	24	
15	1	1	1	1	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
16	0	1	1	1	1	IZS	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
17	1	1	1	2	IZS	1	2	2	1	0	1	2	1	0	0	0	0	0	0	1	1	0	2	4	4	1.0	24	
18	2	0	0	IZS	IZS	1	1	2	2	2	1	1	2	1	1	3	3	2	0	0	0	0	0	0	0	3	1.0	24
19	0	0	IZS	1	0	1	3	0	0	1	1	1	1	1	1	0	2	1	0	0	0	1	10	6	10	1.3	24	
20	8	IZS	3	2	1	6	4	1	6	5	3	1	1	1	1	1	1	1	0	0	0	0	0	0	8	2.0	24	
21	IZS	0	0	0	0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	1	IZS	2	0.4	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	0	1	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	IZS	1	0	1	0.0	24	
24	0	1	2	2	4	3	4	2	1	1	0	1	1	1	0	0	0	1	0	0	IZS	0	0	0	4	1.0	24	
25	0	0	0	0	0	0	0	0	2	2	3	2	1	1	3	1	1	0	0	IZS	2	1	1	1	1	3	0.9	24
26	1	1	1	1	1	1	0	0	0	1	2	1	2	1	1	2	1	3	IZS	2	0	1	0	0	3	1.0	24	
27	0	0	0	0	0	0	0	1	2	1	0	0	0	1	0	0	0	IZS	0	0	0	0	0	0	2	0.2	24	
28	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	0.3	24	
29	1	1	1	1	1	1	2	4	3	1	1	1	1	2	1	IZS	3	2	0	0	1	3	4	2	4	1.6	24	
30	2	3	3	3	2	2	3	3	2	2	1	0	0	0	IZS	1	2	0	1	1	1	2	2	1	3	1.6	24	
31	1	1	1	1	1	6	13	26	4	6	4	2	2	IZS	1	1	1	3	1	0	0	1	1	1	26	3.4	24	
HOURLY MAX	12	18	6	5	9	16	17	26	9	7	5	8	8	5	6	7	8	18	7	8	8	8	4	10	6			
HOURLY AVG	1.5	1.5	1.4	1.3	1.4	2.2	3.2	3.2	2.3	2.2	1.6	1.4	1.3	1.1	0.9	1.1	1.2	1.3	0.8	0.9	0.8	0.9	1.4	0.9				

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

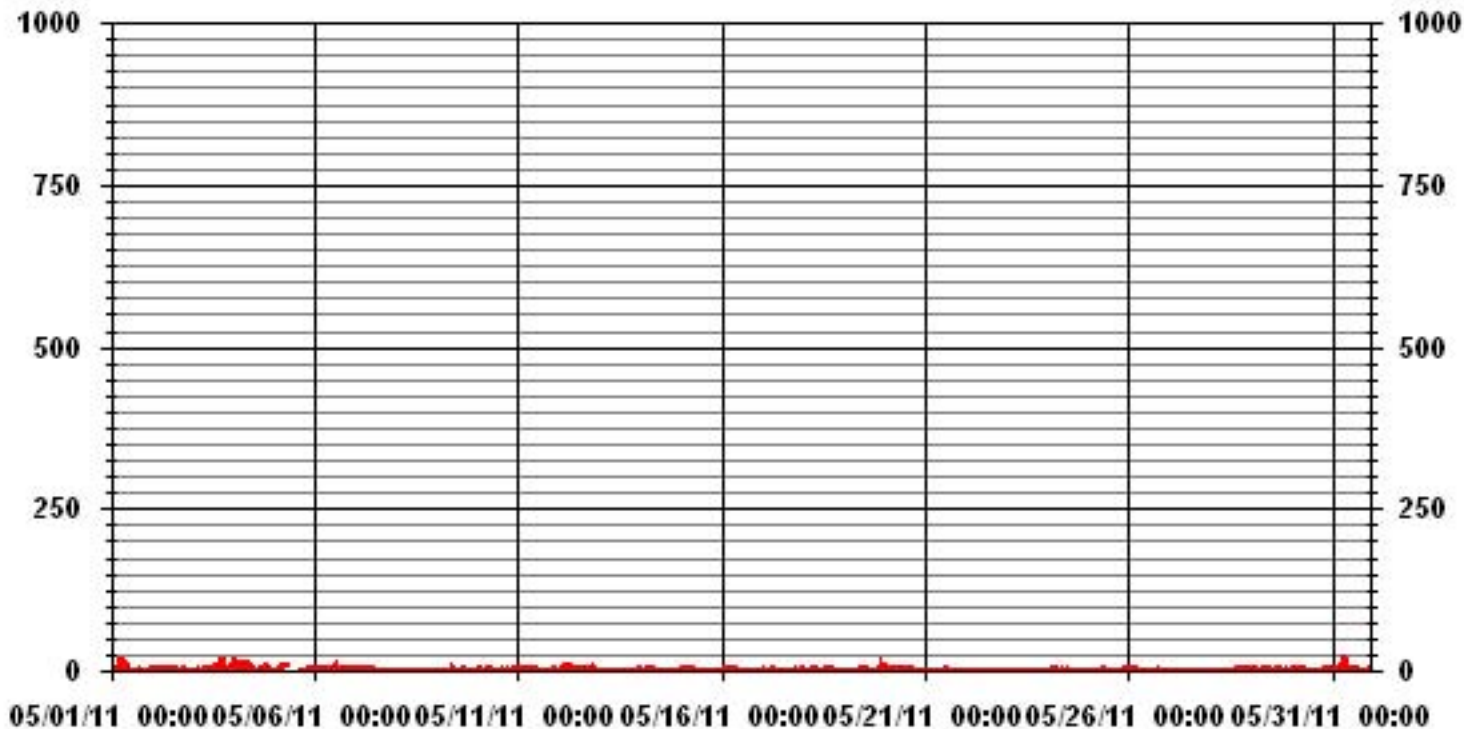
24 HOUR AVERAGES FOR MAY 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	409					
MAXIMUM 1-HR AVERAGE:	26	PPB	@ HOUR(S)	7	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	5.7	PPB			ON DAY(S)	4
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	2.47		MONTHLY AVERAGE:	1.48	PPB	

01 Hour Averages



— LICA30 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	25	4	6	5	6	30	21	12	18	17	8	7	15	2	0	8	12	8	6	2	IZS	1	1	3	30	9.4	24	
2	4	5	4	5	10	6	10	10	5	11	9	3	2	3	2	2	1	1	1	IZS	1	1	1	1	11	4.3	24	
3	1	1	1	2	1	1	1	2	2	7	12	15	14	12	18	38	14	28	IZS	17	4	1	1	5	38	8.6	24	
4	21	43	15	8	6	15	27	28	15	23	17	23	14	16	10	14	IZS	12	17	7	3	1	1	43	15.0	24		
5	1	3	3	9	11	17	15	16	C	C	C	C	C	C	C	28	IZS	3	2	2	3	3	2	2	28	7.5	24	
6	3	3	4	3	2	2	5	26	8	31	M	M	42	8	6	IZS	5	2	2	1	2	2	1	2	42	7.6	22	
7	1	2	2	2	1	2	2	2	2	2	2	2	3	3	IZS	1	1	1	1	1	0	1	1	1	3	1.6	24	
8	0	0	1	1	1	1	1	0	0	1	1	1	1	IZS	0	1	0	0	1	1	2	2	1	1	2	0.8	24	
9	1	1	1	1	1	2	1	2	4	25	39	2	IZS	3	3	2	3	2	2	5	2	3	3	2	39	4.8	24	
10	2	2	2	2	3	2	5	5	4	4	3	IZS	1	1	2	4	4	1	4	1	0	2	7	2	7	2.7	24	
11	1	10	12	10	0	2	8	8	11	8	IZS	8	4	4	4	5	3	0	0	0	5	5	4	1	12	4.9	24	
12	1	3	5	7	12	10	11	11	5	IZS	4	4	M	4	3	5	6	3	6	5	13	6	6	1	13	6.0	23	
13	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	0	1	1	0	1	1	2	3	2	3	1.1	24	
14	2	2	1	2	2	2	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3	24	
15	1	1	2	2	2	2	IZS	2	2	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1	2	1.2	24	
16	1	3	2	2	1	IZS	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3	24	
17	2	2	2	2	IZS	2	3	3	2	1	2	6	4	1	1	1	1	1	1	5	2	1	4	8	8	2.5	24	
18	5	1	1	IZS	1	1	1	4	4	5	4	4	5	2	2	8	8	5	1	1	1	1	1	1	8	2.9	24	
19	1	1	IZS	4	1	1	34	1	1	5	3	1	5	4	4	3	5	2	1	1	1	6	22	8	34	5.0	24	
20	10	IZS	6	2	3	14	12	2	16	8	17	3	3	3	3	4	3	4	2	0	1	1	1	1	17	5.2	24	
21	IZS	0	1	1	1	1	1	0	1	3	7	5	5	10	2	1	1	1	1	1	1	1	2	IZS	10	2.1	24	
22	2	1	1	1	0	1	1	0	1	0	0	0	1	4	1	1	0	0	0	1	0	0	IZS	1	4	0.7	24	
23	1	0	0	1	0	1	0	1	1	1	1	1	0	1	1	0	0	0	0	0	0	IZS	2	1	2	0.6	24	
24	1	2	3	3	7	5	5	4	29	3	3	3	2	4	0	1	3	5	0	0	IZS	1	1	1	29	3.7	24	
25	1	1	1	1	1	1	1	1	4	5	7	5	4	4	9	4	3	1	1	IZS	5	2	2	2	9	2.9	24	
26	2	2	2	2	2	2	1	1	1	7	10	5	4	3	3	6	3	6	IZS	5	1	2	1	1	10	3.1	24	
27	1	1	1	0	1	1	1	2	3	2	1	2	2	6	1	1	1	IZS	1	1	0	1	1	1	6	1.4	24	
28	2	1	0	0	0	0	1	0	0	1	3	1	1	0	0	0	IZS	1	1	1	1	2	2	2	3	0.9	24	
29	2	1	1	2	2	2	2	6	4	3	3	2	2	13	3	IZS	5	3	1	1	1	5	5	3	13	3.1	24	
30	4	4	4	4	3	3	4	4	4	3	2	1	1	1	IZS	4	5	1	3	2	1	2	3	2	5	2.8	24	
31	2	2	2	2	3	13	50	55	9	22	9	10	7	IZS	3	1	2	13	2	1	1	2	2	2	55	9.3	24	
HOURLY MAX	25	43	15	10	12	30	50	55	29	31	39	23	42	16	18	38	14	28	12	17	13	6	22	8				
HOURLY AVG	3.4	3.4	2.9	2.9	2.8	4.8	7.6	7.1	5.4	6.9	6.0	4.3	5.3	3.9	3.3	5.0	3.7	3.3	1.9	2.6	2.1	2.1	2.8	2.0				

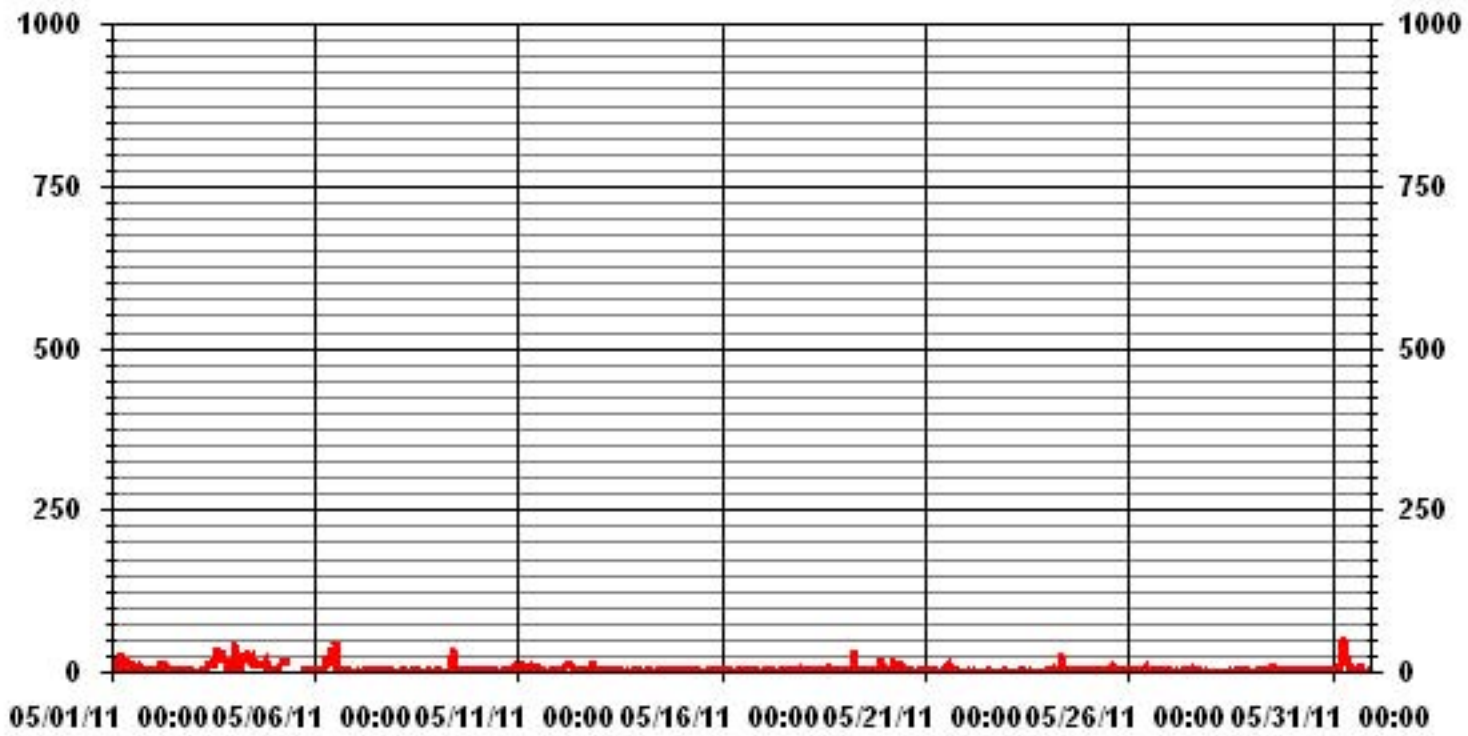
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	647					
MAXIMUM INSTANTANEOUS VALUE:	55	PPB	@ HOUR(S)	7	ON DAY(S)	31
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	6.25					

01 Hour Averages



LICA30
NOX_ / WDR Joint Frequency Distribution (Percent)

May 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.94	2.33	7.00	20.62	6.61	14.00	5.83	4.28	1.55	8.94	5.05	1.55	1.55	8.94	7.39	2.33	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	1.94	2.33	7.00	20.62	6.61	14.00	5.83	4.28	1.55	8.94	5.05	1.55	1.55	8.94	7.39	2.33	

Calm : .00 %

Total # Operational Hours : 257

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	5	6	18	53	17	36	15	11	4	23	13	4	4	23	19	6	257
< 110																	
< 210																	
>= 210																	
Totals	5	6	18	53	17	36	15	11	4	23	13	4	4	23	19	6	

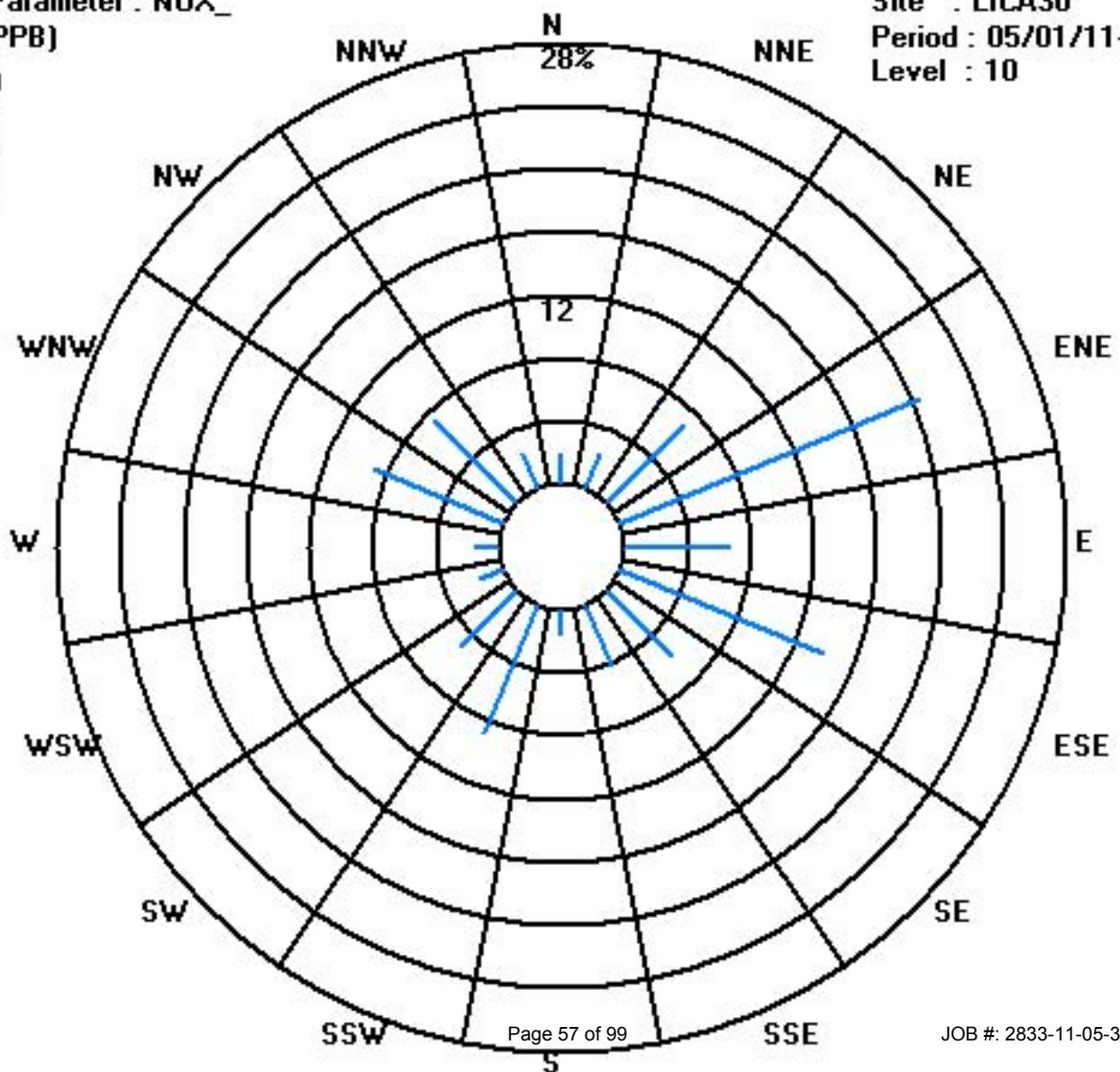
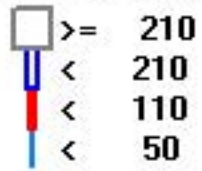
Calm : .00 %

Total # Operational Hours : 257

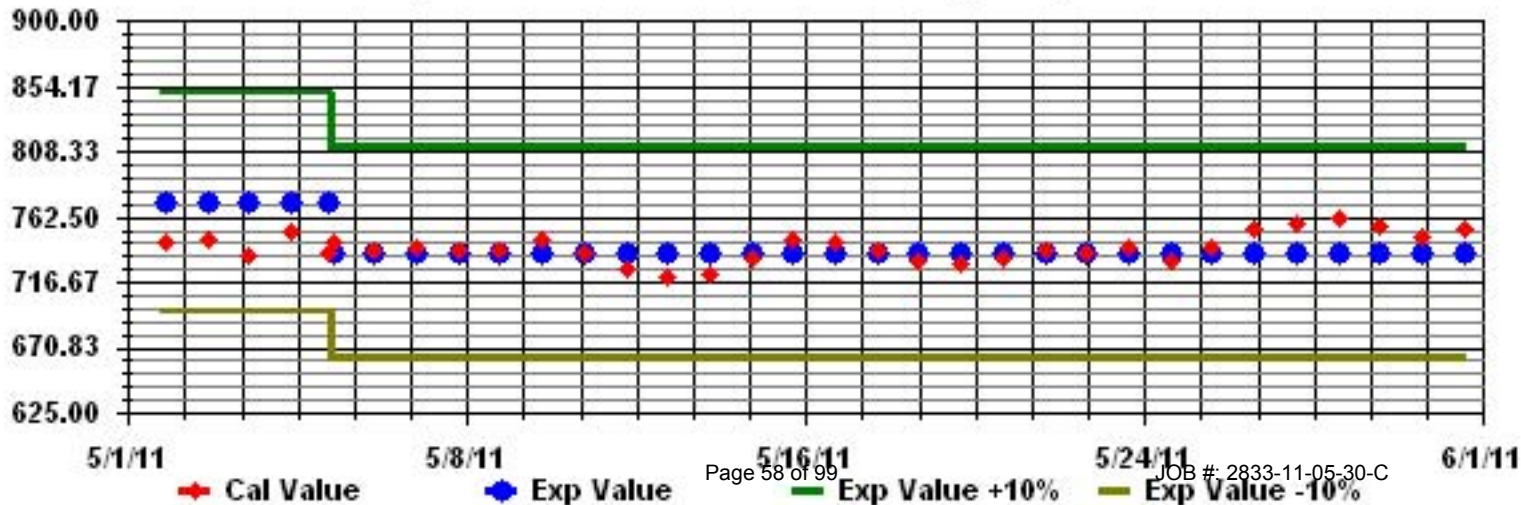
Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



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



Temperature

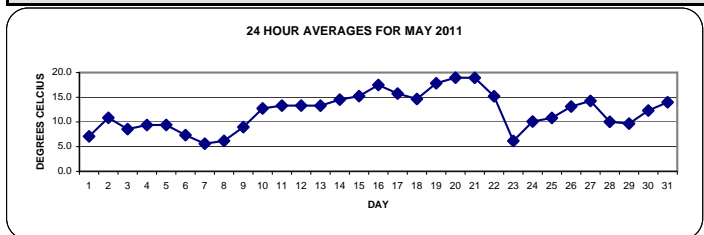
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
MAY 2011

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	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.	
1			-0.8	-2	-2.7	-2.9	-3.2	-2.4	2.2	6.8	10	12.3	13.4	12.5	12.8	14.8	13.7	13.6	13.3	13.8	12.7	10.7	8.2	5.3	3.1	4.8	14.8	7.1	24
2			5.1	4	3.4	3	2.7	3	4.7	8.6	12.1	14.9	16.2	16.5	17.2	16.5	16.8	17.8	16.9	15.1	13.2	11.8	9.9	10.7	10.3	9.6	17.8	10.8	24
3			9	8.2	6.3	5.3	3.8	3.5	5.2	7.6	9.1	12.2	14.1	15.9	15.8	14.9	13.7	10.9	7.7	6.8	6.7	6.7	6.1	5.6	5	5.2	15.9	8.6	24
4			4.9	4.6	4.3	4.3	4	4.2	5.4	7.5	10.9	12.8	13.8	14.3	14.2	14.1	14.4	14.3	15.5	14.7	13	11.3	7.9	5.6	4.8	4.3	15.5	9.4	24
5			5.1	6.2	6.2	5.8	5.4	5.3	7	8.9	11.1	13.7	13.5	14	14.9	13.9	13.7	13.1	12.3	12.6	12.4	9.8	7.2	5.6	4.7	2.9	14.9	9.4	24
6			2.6	2.8	1.6	1	0.5	2	4.1	8.7	10.8	14.1	11	10.2	8.5	13.1	11.5	11	13.5	12.2	11.5	8.3	6.8	4.6	3.1	2.7	14.1	7.3	24
7			2.3	3.1	3.6	3.2	2.7	3.2	3.8	4.3	5.2	6.7	7.8	8.7	9.6	9.5	9.1	8.6	8.6	8.2	7.2	5.7	4.9	4.1	2.6	1.7	9.6	5.6	24
8			0.4	-0.5	-0.2	0.8	1.1	1.6	2.5	3.3	4.4	6.7	8.1	9.9	10.9	12.3	13.1	13.3	13.7	13.2	12.4	9.5	5.5	2.7	2.5	0.9	13.7	6.2	24
9			-0.4	-1.5	-2.2	-2.4	-3.1	-0.7	3.6	8.8	11.8	13.9	15.5	16.4	16.8	14.7	16.8	16.6	17.2	16.7	16.1	13.2	9.8	7.4	5.4	4.7	17.2	9.0	24
10			2.5	1.1	2.3	4.1	2.2	2.7	8.9	12.2	13.9	15.9	18.1	19.2	19.8	20.8	20.3	20.4	19.6	19.4	17.8	15	14.2	13.7	11.5	10.1	20.8	12.7	24
11			9.2	6.9	5.5	4.4	2.7	4.3	8.1	10.6	13.3	16.4	18.2	18.5	19.9	19.9	20.1	20.7	20.9	20	18.7	16.5	13.3	10.9	10.3	10.1	20.9	13.3	24
12			8.9	7.7	7.2	6.8	5.9	6.8	8.8	10.6	13.4	15.6	16.7	18.6	19.6	20.1	19.9	19.5	19.4	18.6	17.2	14.8	12.4	11.4	10.2	9.5	20.1	13.3	24
13			8.8	8.1	7.8	7.7	7.7	9	9.8	10.9	13	14.3	15.7	16.2	17.4	18.6	19.3	19.2	19.3	18.9	17.5	15	12.9	11.6	10.7	9.7	19.3	13.3	24
14			8.2	7.4	7.8	8	7	8	10.7	12.4	13.7	15.5	17.3	18.5	19.9	20.8	21.3	21.4	21.2	20.5	19.4	17.1	14.4	13.1	12.5	12.4	21.4	14.5	24
15			11.4	10.1	9.1	7.2	5.5	8.3	11.3	13.4	15.4	17.1	18	19.3	19.9	20.9	21.4	21.2	20.9	20.3	19.4	17.8	16	14.7	13.8	13.1	21.4	15.2	24
16			12.8	12.5	11.7	10.8	10.5	11.3	12.7	14.5	16.4	18.5	20	21.1	21.8	22.5	23.1	23.5	23.6	22.3	22.7	20.3	18	17.6	16.1	15.2	23.6	17.5	24
17			14	12.7	11.8	11.1	8.6	8.4	11.3	14.4	14.6	16.5	16.6	19.2	20.7	22.2	22.7	22.7	21.7	19.8	18	16.2	14.7	15.4	13.5	11.1	22.7	15.7	24
18			9.8	9.2	9.2	9	9	9.3	10.7	13.1	16.6	18.4	19.4	20.3	21.5	22.5	22.4	21.8	21.4	18.3	16.6	15.5	12	9.8	8.1	7.7	22.5	14.7	24
19			7.3	7.1	7.7	8.8	8.5	9	13.6	16.6	19.7	21.8	24.2	25.3	26.1	26	25.9	25.9	25.3	25.7	22.7	20.1	17.1	15.9	15.1	12.6	26.1	17.8	24
20			11	9.3	8.2	8.2	7.6	10.1	14.1	17.9	21.4	23.8	26.2	27.2	27.4	27.6	27.5	27.6	27.1	26.3	24.6	21.2	17.2	15.5	14	14	27.6	19.0	24
21			12.9	11.7	10.6	8.8	9.1	11	14.1	17	21.3	23.6	24.6	24.6	25.9	26.3	26.4	25.3	25.2	24.4	24.1	20.8	18.4	16.9	16.2	15.1	26.4	18.9	24
22			15.8	14	11.7	10.8	10.6	11.7	14.7	17.3	20.4	23.7	25	26.1	26.5	25	17.4	14.3	14.3	14.7	13	9.5	8.1	7.5	7	5.7	26.5	15.2	24
23			4.8	4.1	3.5	2.9	2.2	2.3	2.8	3.5	4.3	5	6.1	6.8	8.6	10.5	11.5	12.8	12.9	12.9	12	10	5.8	2.5	0.6	-0.5	12.9	6.2	24
24			-1.1	-1.4	-2.2	-2.2	-2	1.9	7.1	10.9	12.8	14.5	15	16.1	16.9	18.2	18.3	18.6	18.8	17.2	16.7	14.3	10.7	8.1	8.2	6.6	18.8	10.1	24
25			4.4	2.7	1.5	0.6	-0.7	3.4	7.4	11.1	13.6	17	17.2	18	18	17.4	17.5	17.8	17.5	16.1	15	14.1	11.5	8.1	6	4.5	18.0	10.8	24
26			3.9	5	5.3	5.5	5.5	7.3	9.5	12	14.2	16.3	18.6	19.4	20.1	20.4	20.6	20.8	20.6	20	19.3	16.3	11.9	8.4	6.7	7.2	20.8	13.1	24
27			6.6	6.2	4.7	3.3	2.7	6.4	10.2	14.4	18	21.2	21.7	22.2	22.2	22.7	20.9	20.5	19.7	20.4	19.8	17.7	15.2	10.8	7.7	7	22.7	14.3	24
28			7.3	7.2	7.1	6.8	6.2	7.3	7.9	9.4	11.6	12.9	13.7	14.4	15.1	15.6	15.3	15.6	15	14.3	13.3	11.3	8.1	4.1	1.5	-0.2	15.6	10.0	24
29			-1.2	-1.7	-2.4	-3.1	-3	0.2	5.1	10	12.1	13	13.8	16.1	16.6	16.8	18	18.2	17.6	17.2	16.1	13.5	11.1	10.2	9.3	8.3	18.2	9.7	24
30			7.5	6.7	5.8	2.6	1.5	6.2	9.5	11.5	13	15.1	17.5	18.8	19.9	21.1	20.1	19.9	18.7	15.8	16.4	14	11.5	9.7	6.9	5.9	21.1	12.3	24
31			4.3	3.5	2.6	2.4	2.6	5.8	10.9	15.5	17.9	20	21.1	21.5	21.4	22.2	22.4	20.9	22.4	22	20.1	17.8	13.2	10.4	8.2	6.5	22.4	14.0	24
HOURLY MAX			15.8	14.0	11.8	11.1	10.6	11.7	14.7	17.9	21.4	23.8	26.2	27.2	27.4	27.6	27.5	27.6	27.1	26.3	24.6	21.2	18.4	17.6	16.2	15.2			
HOURLY AVG			6.4	5.6	5.1	4.6	4.0	5.5	8.3	11.1	13.4	15.6	16.7	17.6	18.3	18.8	18.6	18.3	18.1	17.4	16.3	14.1	11.4	9.6	8.2	7.4			

STATUS FLAG CODES

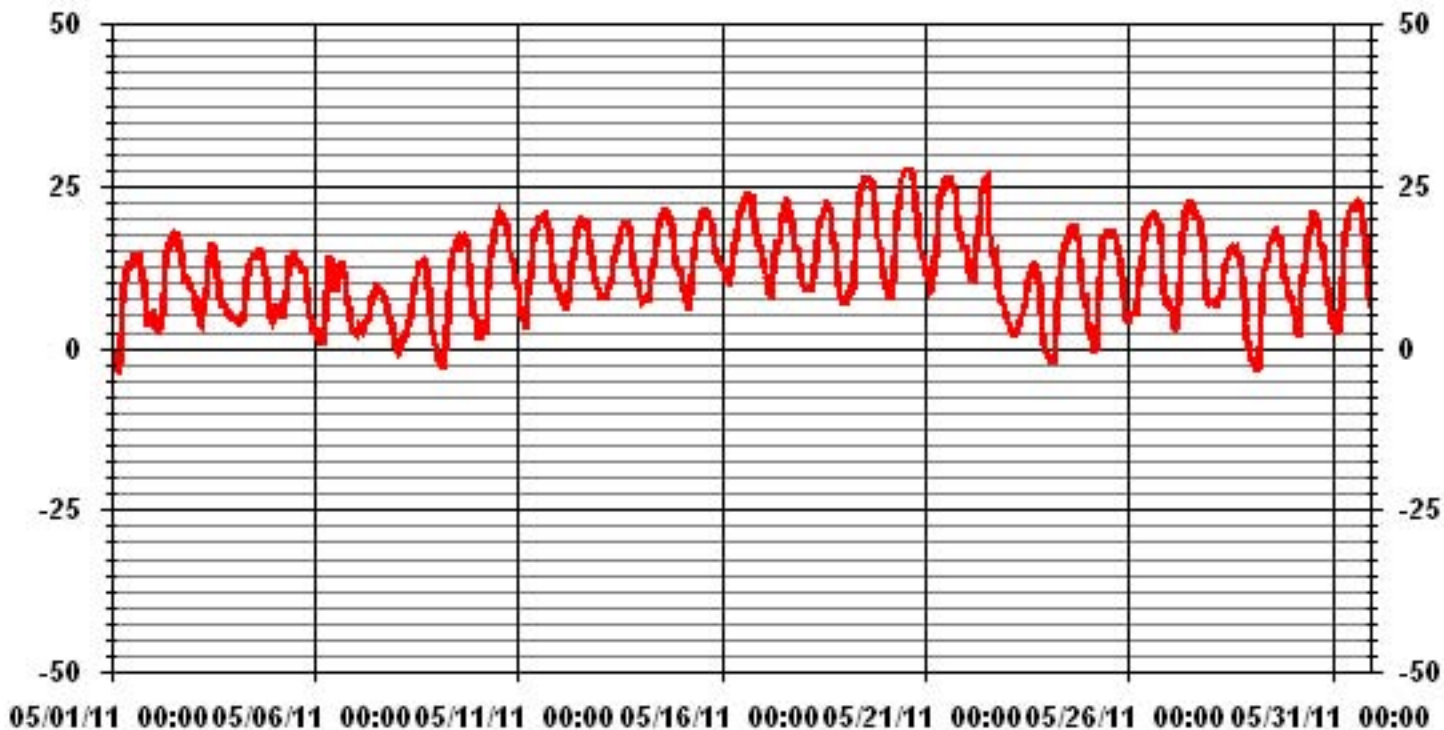
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-3.2 °C	@ HOUR(S)	4	ON DAY(S)	1	
MAXIMUM 1-HR AVERAGE:	27.6 °C	@ HOUR(S)	13, 15	ON DAY(S)	20	
MAXIMUM 24-HR AVERAGE:	19.0 °C			ON DAY(S)	20	
CALIBRATION TIME:	0	HRS		OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	6.80			AMD OPERATION UPTIME:	100.0	%
				MONTHLY AVERAGE:	12.10	°C

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	
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.	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	0	0	0	0	0	0	0	0.0	0.0	24
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0.1	0	0	0	0	0	0.5	0.6	24
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
5		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
6		0	0	0	0	0	0	0	0	0	0	0.4	0	1.7	0	0	0	0	0	0	0	0	0.1	0	0	1.7	2.2	24
7		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
8		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
10		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
11		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
12		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	0.0	23
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
15		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.4	0.4	0.5	24
18		0.6	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.7	24
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.5	3.5	0.1	0	0	0.1	0	0	0	0	4.5	8.2	24
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
27		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
28		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
29		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
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	24

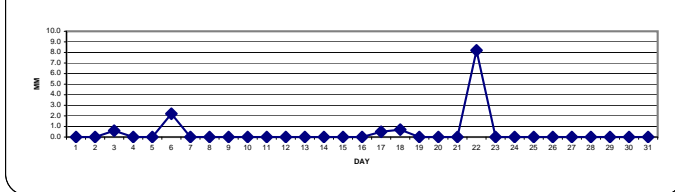
STATUS FLAG CODES

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

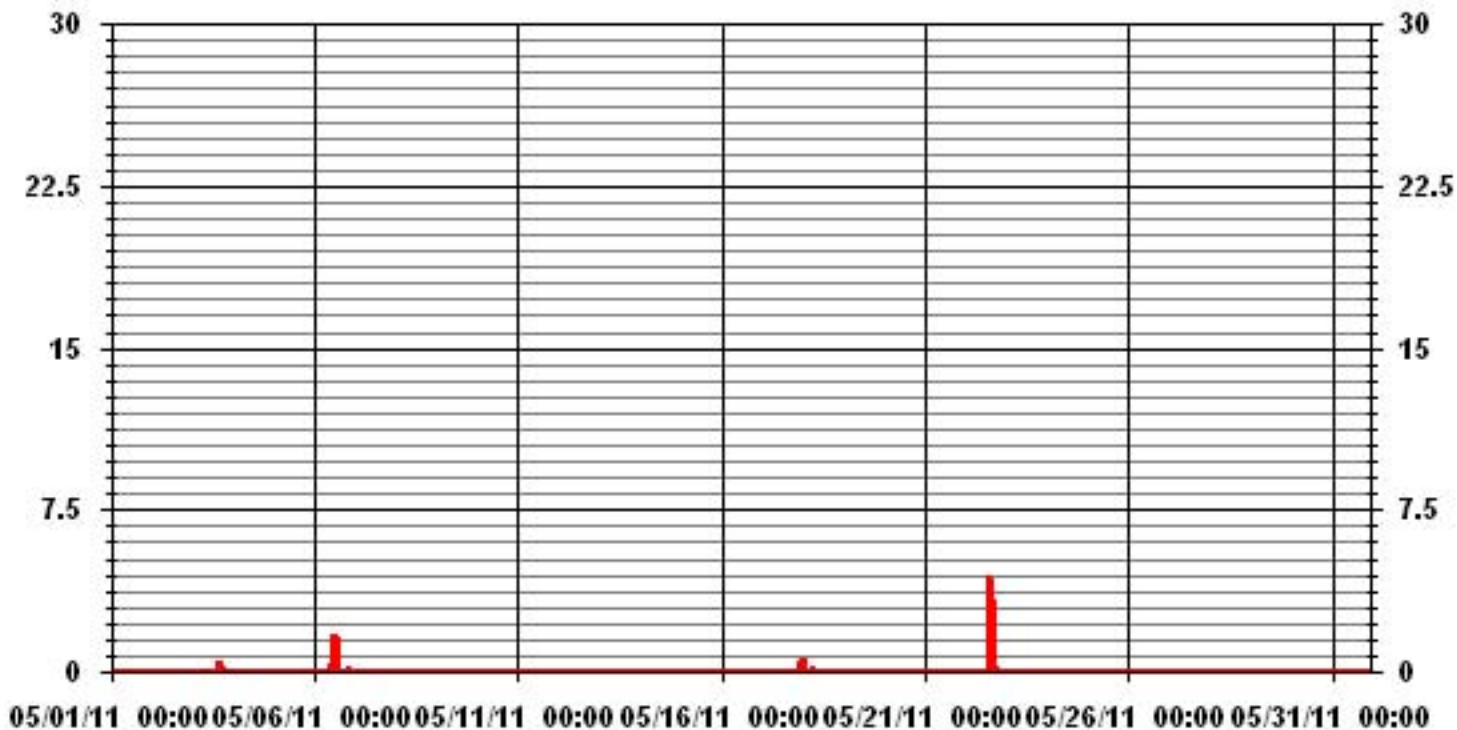
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	4.5	MM	HOUR(S)	14	ON DAY(S)	22
MAXIMUM DAILY TOTAL	8.2	MM			ON DAY(S)	22
MONTHLY TOTAL	12.2	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	743	HRS	
STANDARD DEVIATION:	0.22		AMD OPERATION UPTIME:	99.9	%	
			MONTHLY AVERAGE:	0.02	MM	

DAILY TOTALS FOR MAY 2011



01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 2011

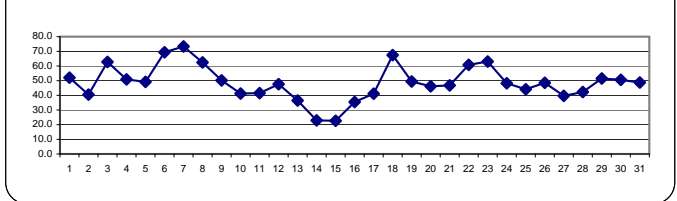
RELATIVE HUMIDITY hourly averages (%)

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	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	85	88	89	89	88	86	73	57	48	39	33	33	33	25	27	29	28	27	29	36	43	51	60	53	89	52.0	24
2	2	50	53	55	56	58	63	61	45	37	30	26	25	23	25	24	24	32	37	41	48	43	44	47	63	40.5	24	
3	3	50	52	59	63	69	71	66	59	54	45	40	37	37	40	47	63	79	83	82	80	82	85	87	77	87	62.8	24
4	4	70	74	75	74	80	83	77	69	56	46	36	32	30	30	31	29	26	28	32	36	45	51	54	57	83	50.9	24
5	5	57	49	50	51	53	61	56	49	43	38	37	34	31	35	36	38	43	42	42	51	63	68	73	80	80	49.2	24
6	6	80	80	84	84	86	82	76	62	56	45	60	64	75	56	57	57	45	48	55	70	78	86	89	90	90	69.4	24
7	7	91	91	90	89	89	88	85	82	75	68	64	62	58	56	57	59	60	62	62	67	71	74	79	81	91	73.3	24
8	8	85	88	88	86	86	85	79	73	67	57	53	48	45	42	39	38	37	38	39	46	61	72	71	76	88	62.5	24
9	9	82	86	87	88	89	84	70	55	45	39	33	29	29	31	27	26	24	25	26	31	39	47	54	58	89	50.2	24
10	10	65	72	72	68	73	72	53	42	39	35	29	23	21	19	20	21	22	22	25	31	34	37	45	49	73	41.2	24
11	11	51	58	65	70	76	72	62	54	46	38	34	35	31	26	22	23	18	17	20	21	29	37	44	47	76	41.5	24
12	12	53	60	64	66	70	67	63	58	49	41	36	30	26	29	33	35	35	35	37	39	45	51	59	61	70	47.6	24
13	13	63	66	65	60	58	53	49	43	36	34	33	32	31	29	25	21	18	17	20	22	22	24	26	28	66	36.5	24
14	14	32	34	35	36	39	38	34	30	28	22	19	17	14	12	11	11	11	11	12	14	19	21	24	26	39	22.9	24
15	15	29	33	34	39	42	36	31	28	23	16	14	13	12	11	9	9	11	13	14	17	22	26	29	33	42	22.7	24
16	16	36	39	42	46	47	47	44	40	37	34	31	29	29	27	26	25	25	28	27	30	36	38	42	46	47	35.5	24
17	17	50	55	59	62	69	72	60	42	36	29	29	26	22	19	17	18	19	22	29	38	44	41	55	74	74	41.1	24
18	18	86	90	91	91	91	91	89	79	63	55	49	46	42	32	33	40	39	52	58	62	76	84	89	90	91	67.4	24
19	19	90	89	87	83	85	84	72	61	51	43	27	18	17	18	18	18	18	18	25	36	47	53	59	69	90	49.4	24
20	20	75	81	86	85	86	77	61	49	38	31	24	19	18	18	18	18	18	20	23	36	51	55	60	61	86	46.2	24
21	21	62	66	70	78	76	71	63	57	41	34	32	32	28	28	25	25	27	27	28	37	46	53	58	59	78	46.8	24
22	22	55	63	73	76	77	72	63	57	48	39	31	26	26	34	66	79	74	64	64	71	75	75	75	76	79	60.8	24
23	23	77	77	78	78	77	75	72	72	70	67	64	63	58	52	47	41	41	38	36	38	53	71	81	87	87	63.0	24
24	24	89	90	90	90	91	87	69	53	40	28	29	27	25	21	17	17	17	21	22	33	48	54	47	52	91	48.2	24
25	25	58	66	65	72	81	62	55	43	34	22	19	19	20	20	20	19	21	24	30	33	52	66	76	82	82	44.1	24
26	26	84	79	78	79	77	72	68	56	45	35	25	23	22	23	23	23	23	24	26	33	48	62	71	66	84	48.5	24
27	27	63	63	70	78	82	70	59	48	39	25	20	18	17	17	19	21	22	21	18	21	28	38	46	48	82	39.6	24
28	28	47	52	55	56	58	56	55	52	45	39	28	23	22	19	17	18	24	27	29	34	44	61	73	80	80	42.3	24
29	29	82	85	86	88	88	79	65	55	49	41	38	31	29	29	27	28	29	31	34	41	50	49	51	51	88	51.5	24
30	30	52	57	61	75	79	67	59	54	51	47	34	30	26	24	27	25	30	38	39	48	61	69	79	82	82	50.6	24
31	31	88	89	90	91	91	83	63	50	39	33	26	20	21	18	16	19	17	18	25	32	47	56	65	73	91	48.8	24
HOURLY MAX		91	91	91	91	91	91	89	82	75	68	64	64	75	56	66	79	79	83	82	80	82	86	89	90			
HOURLY AVG		65.7	68.5	70.7	72.5	74.5	71.2	63.0	54.0	46.1	38.5	34.0	31.1	29.6	27.9	28.5	29.6	29.8	31.4	33.7	39.5	48.6	54.8	60.2	63.2			

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

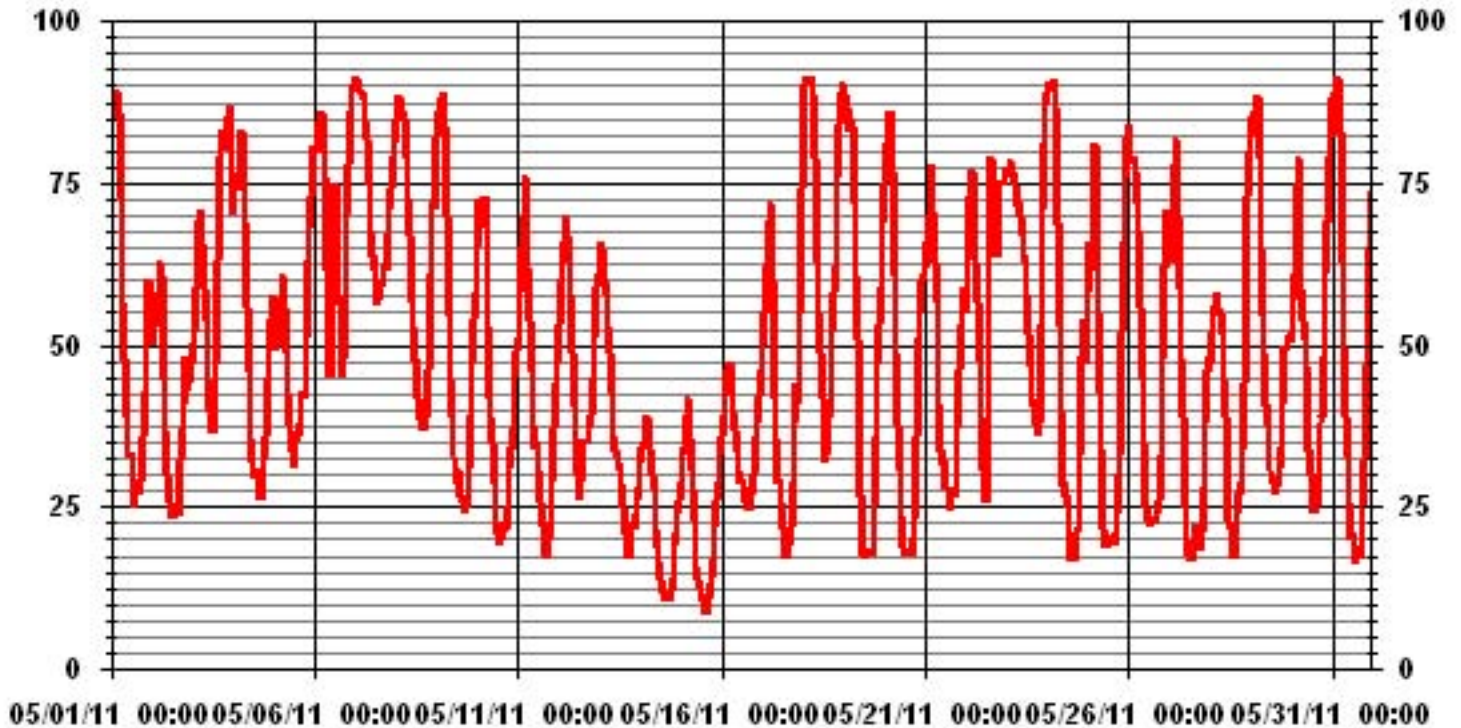
24 HOUR AVERAGES FOR MAY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	91	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	73.3	%			ON DAY(S)	7
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	22.42		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	48.61	%	

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 2011

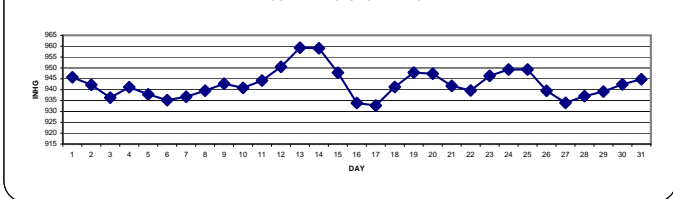
BAROMETRIC PRESSURE hourly averages (millibar)

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	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	945	944	944	945	945	945	946	947	947	947	947	947	947	947	946	946	946	946	946	946	945	945	944	944	944	947	946	24		
2	944	944	944	944	944	944	944	944	944	945	944	944	944	944	943	943	942	942	941	940	940	939	939	939	939	938	938	945	942	24
3	937	937	936	935	935	934	934	935	935	935	935	935	936	936	936	936	937	937	938	938	938	938	938	938	938	938	938	938	936	24
4	938	938	939	939	939	940	940	941	942	942	942	942	942	942	943	942	943	942	943	943	942	942	942	942	941	941	938	941	24	
5	941	941	941	940	940	940	940	939	939	939	939	939	938	938	938	937	937	936	936	936	936	935	935	935	935	934	941	938	24	
6	934	934	934	934	934	934	934	935	935	936	935	935	935	935	936	936	936	936	936	936	936	936	936	936	936	936	936	935	24	
7	935	936	936	936	936	936	936	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	937	938	937	24	
8	937	937	937	937	938	938	939	939	940	940	940	940	940	940	940	940	940	940	941	941	941	941	941	941	941	941	941	940	24	
9	942	942	942	942	942	943	944	944	945	945	945	944	944	944	943	943	942	942	942	942	942	942	942	941	941	940	945	943	24	
10	940	940	940	941	941	941	942	942	942	942	942	942	941	941	941	940	940	940	940	940	940	940	940	940	941	941	942	941	24	
11	942	942	942	942	942	942	943	944	944	945	945	945	945	946	945	945	945	945	945	945	945	945	945	945	946	946	946	944	24	
12	947	947	947	947	948	948	949	950	950	951	951	951	951	951	951	951	951	951	952	952	953	953	953	954	954	954	951	24		
13	954	955	956	956	957	958	959	959	960	960	961	961	961	961	961	961	960	960	960	960	961	961	960	961	961	961	961	959	24	
14	961	961	961	961	961	961	962	962	962	962	961	961	960	959	959	958	957	957	956	956	955	955	955	955	954	962	959	24		
15	954	954	953	953	952	952	952	952	951	951	950	949	948	946	945	944	943	943	942	941	941	940	940	940	940	940	954	948	24	
16	939	939	938	938	937	937	936	936	935	935	934	934	933	933	933	932	932	931	931	931	931	931	931	930	930	930	939	934	24	
17	929	929	930	930	930	931	931	932	933	933	933	933	933	933	933	934	934	934	935	935	935	935	935	935	936	936	933	24		
18	936	936	936	936	937	937	938	939	940	941	941	942	942	943	943	943	944	945	945	945	945	945	945	946	946	946	941	24		
19	946	946	946	946	947	947	948	948	949	949	949	949	949	949	948	948	948	948	948	949	948	948	948	948	948	948	949	948	24	
20	948	947	947	947	947	948	949	949	949	949	949	949	948	948	948	947	947	947	946	946	946	945	945	945	945	949	947	24		
21	944	944	944	943	943	943	943	943	944	943	943	943	942	942	941	941	940	940	940	939	939	939	939	939	944	942	24			
22	938	938	938	938	938	938	938	939	939	939	939	939	938	938	939	940	940	940	941	942	942	943	943	944	944	940	24			
23	944	944	945	945	945	946	946	946	947	947	947	948	948	947	947	947	947	947	947	947	947	947	947	947	947	948	946	24		
24	947	947	947	947	948	948	949	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	949	24		
25	950	950	950	950	950	951	951	952	952	952	952	951	951	950	950	949	949	948	947	947	946	946	945	944	952	949	24			
26	944	943	943	943	942	942	942	942	941	941	940	940	939	938	938	937	937	937	936	936	935	935	935	935	944	940	24			
27	934	934	934	934	933	934	935	935	935	935	935	935	934	934	934	934	934	933	933	933	933	934	934	934	933	933	935	934	24	
28	933	934	934	934	935	935	936	936	937	937	937	937	938	938	938	938	938	938	939	939	939	939	939	939	939	939	939	937	24	
29	938	938	938	938	938	939	940	940	940	941	940	940	940	940	939	939	939	939	939	939	939	939	939	939	939	939	941	939	24	
30	939	939	940	940	940	941	941	942	943	943	943	943	943	943	943	944	944	944	944	944	944	944	944	944	944	944	942	24		
31	943	944	944	944	944	945	945	946	946	946	946	945	945	945	945	945	945	945	945	945	945	945	944	944	944	946	945	24		
HOURLY MAX	961.0	961.0	961.0	961.0	961.0	961.0	962.0	962.0	962.0	962.0	961.0	961.0	961.0	961.0	960.0	960.0	960.0	960.0	960.0	961.0	960.0	960.0	961.0	961.0	961.0	961.0	961.0			
HOURLY AVG	942.0	942.1	942.1	942.1	942.2	942.5	943.0	943.4	943.7	943.8	943.7	943.5	943.3	943.2	942.9	942.8	942.6	942.7	942.6	942.6	942.4	942.4	942.3	942.2	942.2	942.2	946	945	24	

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

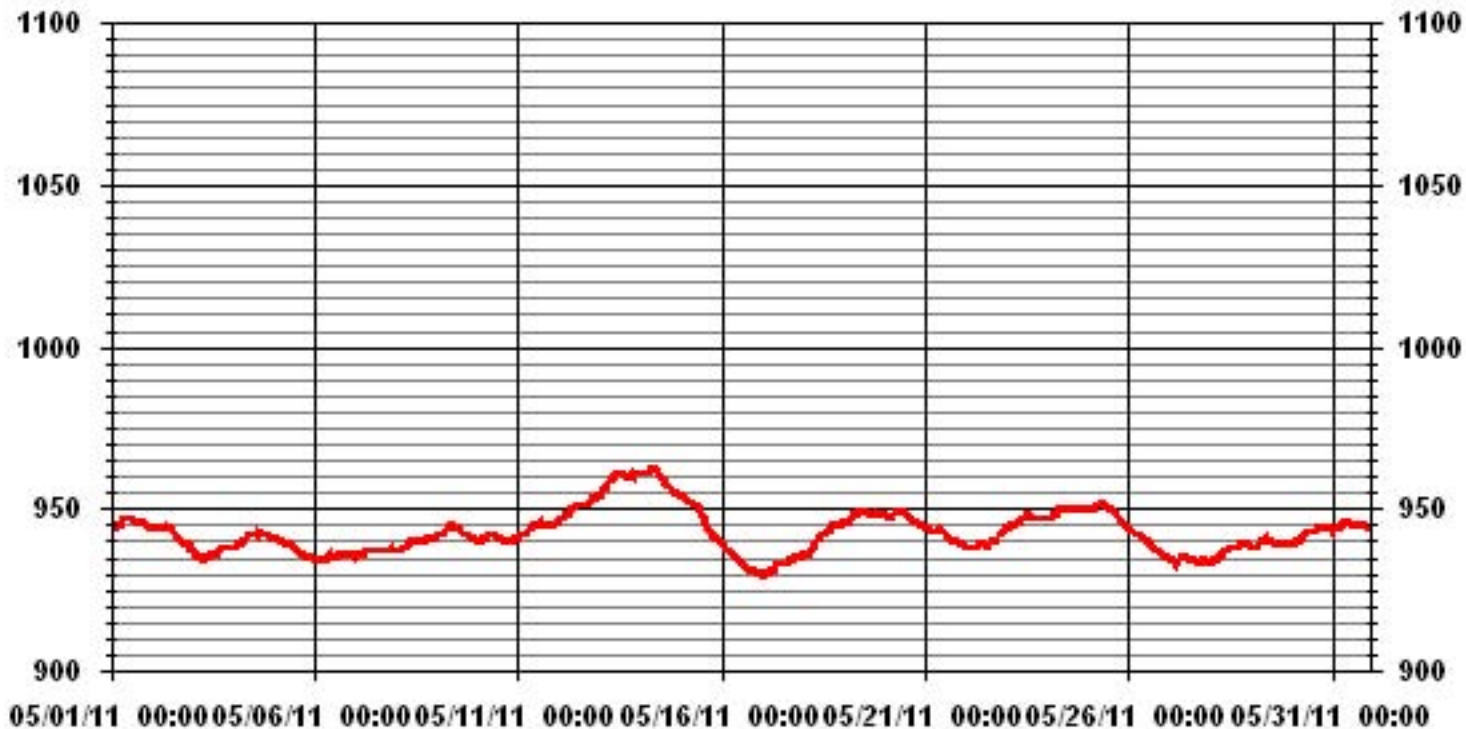
24 HOUR AVERAGES FOR MAY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	962	MB	@ HOUR(S)	VAR	ON DAY(S)	14
MAXIMUM 24-HR AVERAGE:	959	MB			ON DAY(S)	13, 14
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	6.74		MONTHLY AVERAGE:	943	MB	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	0.6	1.3	0.8	1.4	1.3	1.5	1.4	3.8	4.2	4.1	5.1	4.5	6.3	6.2	3.8	2.7	6.3	5.4	3.4	1.8	3.1	3.3	2.4	5.1	6.3	2.4	24
2	5.8	4.4	5.2	5.8	4	2.6	1.7	4.1	4.5	1.6	2.7	3.2	4.5	5.8	6.3	6.6	8.3	10.2	8.6	6.2	4.8	8.8	8.2	9.5	10.2	2.1	24
3	9.8	9.3	8	7.2	6	6	6.9	6.2	6.5	3.4	5.2	5.5	8.9	10.7	10.1	15.1	13.8	9.4	6.7	4.2	1.6	2.7	2.7	6.4	15.1	3.6	24
4	7.9	6	7.6	8.5	9.7	9.8	10.2	8.7	8.3	10.6	11.9	11.5	11.8	11.3	11.1	13.9	11	9.7	5.6	3.9	1.3	2.1	2.5	2.3	13.9	7.8	24
5	2.1	3.1	3.2	3.4	3.1	1	4.1	4.2	5.9	5.5	7.6	9.4	6.7	7.2	4.3	5.8	4.4	6.4	3.2	2.1	1.8	0.9	0.3	0.3	9.4	2.1	24
6	0.9	0.6	1.3	1.6	0.4	1.3	0.9	3.6	3.7	3.5	2.8	5.9	3.7	1.6	8.7	6	4.8	3.7	6.9	6.2	2.8	3.1	2.6	3.6	8.7	1.8	24
7	3.2	3.6	2.6	2.8	3.4	4.6	5.5	5.3	7	5.9	7.7	6.6	4	5.3	6.2	6.7	7.2	9.9	7.7	7.4	6.7	6.1	4.6	5.1	9.9	5.4	24
8	3.7	3.4	3.3	3.7	3	3.1	4.4	4.4	4.5	5.5	5.3	4.1	5.1	4.5	4.9	4.4	5.5	6.8	5.3	3.9	1.6	3.2	4.6	3.2	6.8	4	24
9	2.6	0.5	1.5	2.3	1.5	2.3	3.4	2.8	3.4	3.9	4.6	4.8	6.3	3.5	5.5	5.3	4.1	7	6.4	4.9	4.2	3.3	2.6	2.8	7	2.5	24
10	3.8	2.2	1.1	1.6	2.3	1.5	3.6	4.9	6.1	7.9	7.8	6.7	5	6.5	3.6	6.5	9.2	7.4	6	5.4	8.3	9.4	9.6	9.4	9.6	4.4	24
11	8.6	4.5	4.5	4	3.2	3.4	5	6.2	6.8	5.3	8.6	10.4	11.3	13.9	14.1	12.4	10.8	13	12.8	10.2	5.4	5.3	5.9	7.8	14.1	7.5	24
12	7.1	6.4	7.8	7.6	9.8	11.1	11.5	11.6	13.1	14.6	16.2	M	M	N	N	N	N	N	N	N	N	N	N	N	16.2	10.5	11
13	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
14	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
15	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
16	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
17	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
18	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
19	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
20	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
21	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
22	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
23	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
25	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
HOURLY MAX	9.8	9.3	8.0	8.5	9.8	11.1	11.5	11.6	13.1	14.6	16.2	11.5	11.8	13.9	14.1	15.1	13.8	13.0	12.8	10.2	8.3	9.4	9.6	9.5			
HOURLY AVG	4.7	3.8	3.9	4.2	4.0	4.0	4.9	5.5	6.2	6.0	7.1	6.6	6.7	7.0	7.1	7.8	7.8	8.1	6.6	5.1	3.8	4.4	4.2	5.0			

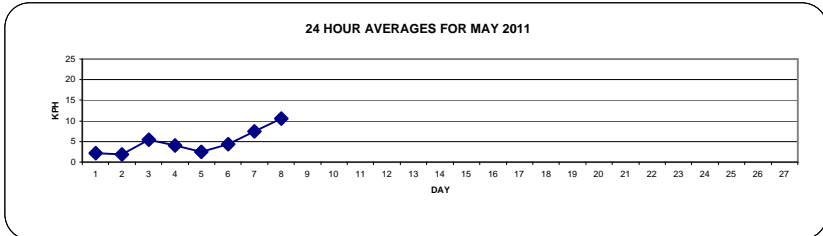
STATUS FLAG CODES

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

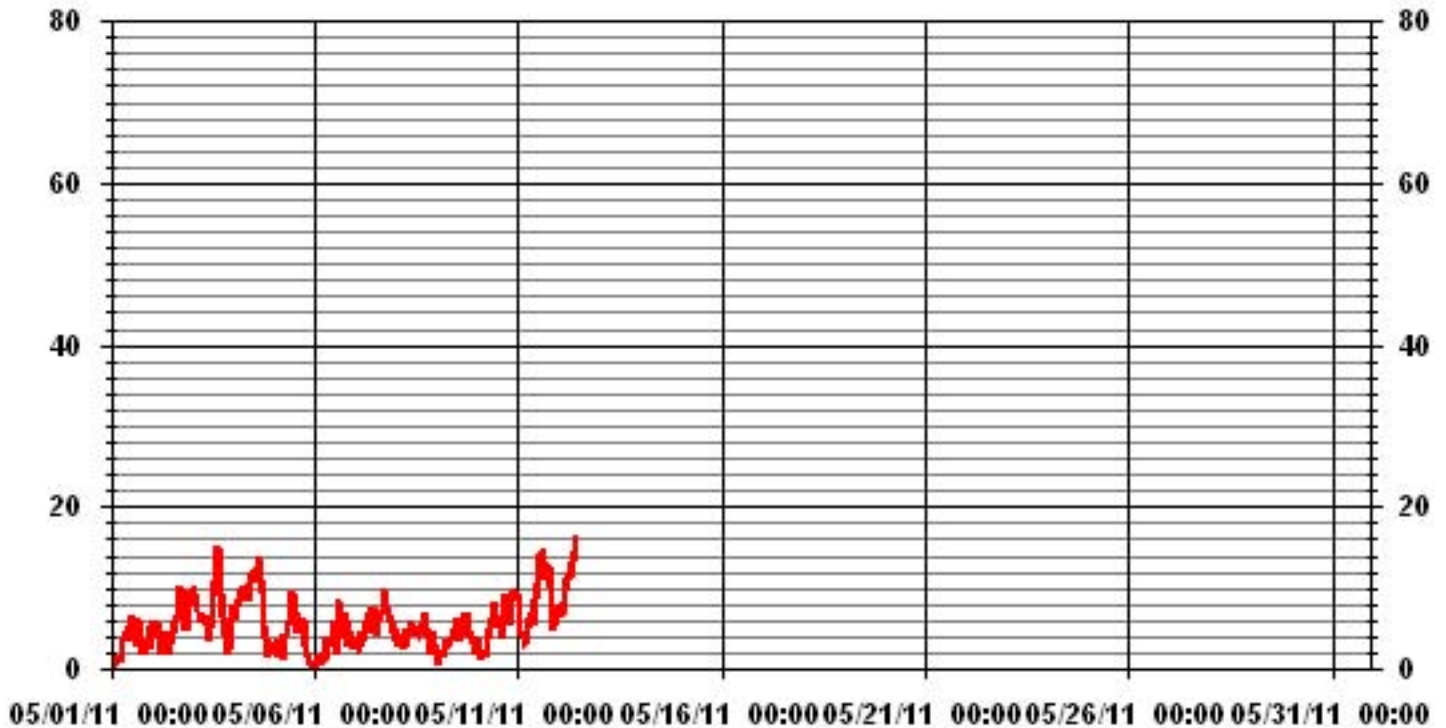
LAST CALIBRATION: March 10, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	16.2	KPH	@ HOUR(S)	10	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	10.5	KPH			ON DAY(S)	12
CALMS (≤ 1 KPH)	0.94	%	OPERATIONAL TIME:	275	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	37.0	%	
STANDARD DEVIATION	3.20		MONTHLY AVERAGE	5.57	KPH	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	MAX.	
HOUR END		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00		
DAY																											
1		8	6.8	6.4	5.1	4.4	7.1	6.8	12.9	14.9	17.6	20.1	19.2	27.9	23.7	21.8	19.3	32	23.5	13.8	6.8	7.4	7.7	7.2	9.2	32	
2		9.9	10	12	10.6	9.2	9.2	8.1	9.7	15.5	11.7	12.2	28.8	18.9	24.2	19.2	22.2	22.1	26.4	22.7	14.5	13	30.1	27.6	29.4	30.1	
3		29.4	32.8	22.7	23.4	14.8	16	18.4	15.9	14.7	14	18.6	23.5	29.7	31.8	33.5	43.5	38.8	30.6	23.9	18.2	10	7.3	8.4	20.5	43.5	
4		25.6	24.8	23	23.3	27.8	24.9	29.5	28.9	29	33.5	38.2	41	37.2	39.5	36.1	44.4	38.2	37	18.6	15.4	7.4	8.3	6.3	5.6	44.4	
5		6.5	8.9	8.4	6.9	7	5.1	12.6	10.5	14.4	17	21.2	21.8	29.2	24.3	23.1	22.2	15.9	18.6	9.7	7.6	4.4	3.1	2.6	2.3	29.2	
6		3.4	3.3	3.6	4.8	3.7	4.5	4.6	15	14.6	17.6	20.9	17.2	17.6	15.4	38.4	23.6	19.5	12.7	21.1	16.9	9.6	6.5	6.5	8.7	38.4	
7		8.8	11.7	9.4	8.3	9.4	12.8	14.6	14.8	17.8	18	20	20.8	20.1	16.2	17.4	18.7	26.3	25.5	22.5	19.2	17.6	15.6	11.5	12.7	26.3	
8		8	8.3	8.1	7.3	7.5	9.9	13.4	13.2	15	18.8	20.6	18.6	24.2	23.7	18.1	22.7	18.6	17.7	15.6	13.4	4.4	7.7	9.8	7.2	24.2	
9		8.5	2.9	5	6.6	5.7	6.4	5.7	11.2	14.4	13.9	20.3	17.5	22.8	18.9	19.9	19.6	13.5	22	17.7	11.8	7.8	7.6	7.4	10.9	22.8	
10		11.6	6.5	9.5	13.7	7.9	6.2	11.8	13.1	18.1	19.5	21.1	27.1	31.2	24.1	22.2	25.4	26.8	22.7	15.7	12.2	17.7	25.3	26.6	28.2	31.2	
11		24.8	19	16.3	11.2	7.6	10.6	19.2	15.9	16.2	16.9	28.9	28.2	33.5	37.1	41.3	36.3	39.2	36.9	37.5	27.8	26.3	16.6	18.2	19.7	41.3	
12		18.2	18.2	25.1	23.7	25.6	29.1	30.2	35.1	39.1	44.7	45	M	M	N	N	N	N	N	N	N	N	N	N	N	45	
13		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
14		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
15		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
16		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
17		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
18		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
19		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
20		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
21		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
22		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
23		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
24		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
25		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
26		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
27		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
28		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
29		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
30		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
31		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0
PEAK		29.4	32.8	25.1	23.7	27.8	29.1	30.2	35.1	39.1	44.7	45.0	41.0	37.2	39.5	41.3	44.4	39.2	37.0	37.5	27.8	26.3	30.1	27.6	29.4		

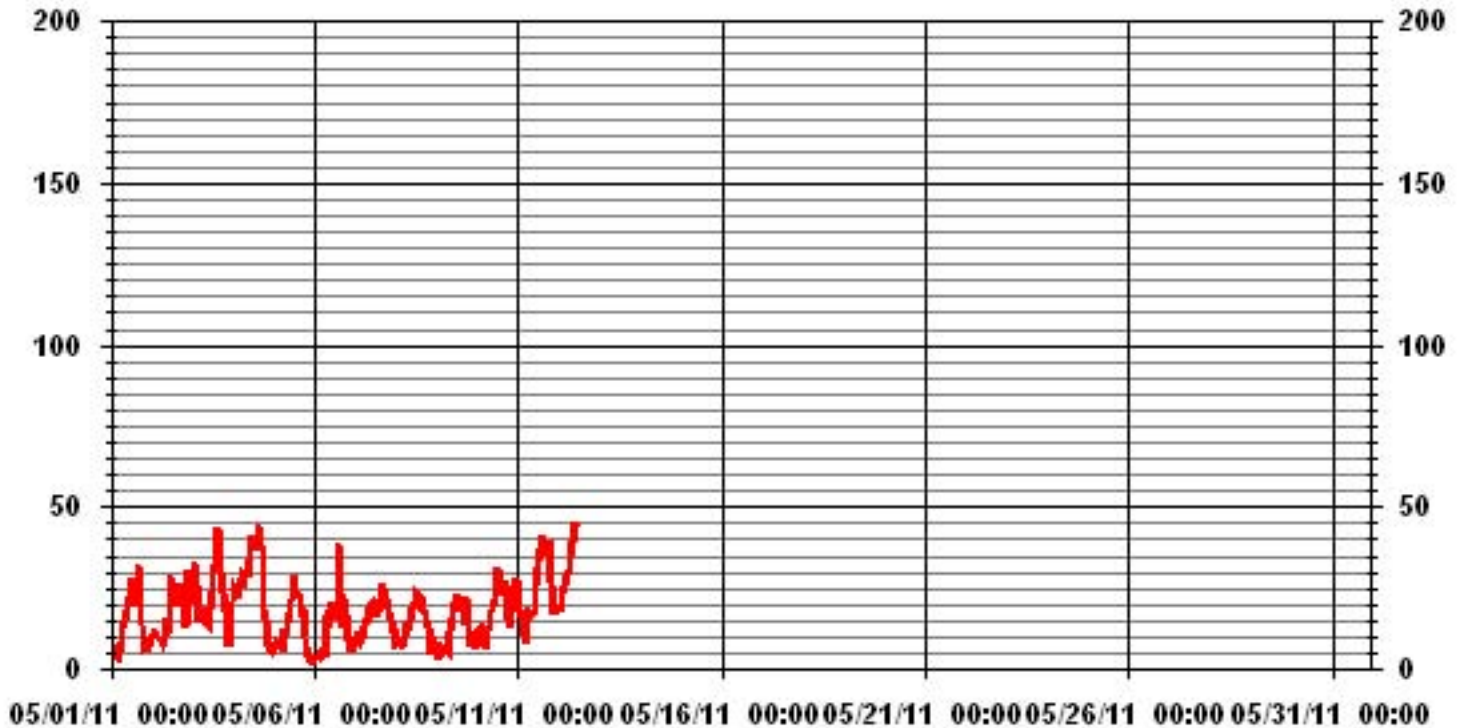
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	45	KPH	@ HOUR(S)	10
			ON DAY(S)	12

01 Hour Averages



LICA30
WSP / WDR Joint Frequency Distribution (Percent)

May 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	1.81	1.81	4.00	12.00	5.45	6.18	1.81	2.90	1.09	7.63	5.45	1.09	1.09	2.90	3.27	1.81	60.36
< 12.0	.36	.72	2.90	7.63	.72	6.18	3.27	.72	.36	2.18	.00	.72	.36	4.72	4.00	.72	35.63
< 20.0	.00	.00	.00	.00	.36	1.09	1.09	.36	.00	.00	.00	.00	.00	1.09	.00	.00	4.00
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.18	2.54	6.90	19.63	6.54	13.45	6.18	4.00	1.45	9.81	5.45	1.81	1.45	8.72	7.27	2.54	

Calm : .00 %

Total # Operational Hours : 275

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	5	5	11	33	15	17	5	8	3	21	15	3	3	8	9	5	166
< 12.0	1	2	8	21	2	17	9	2	1	6		2	1	13	11	2	98
< 20.0					1	3	3	1						3			11
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	6	7	19	54	18	37	17	11	4	27	15	5	4	24	20	7	

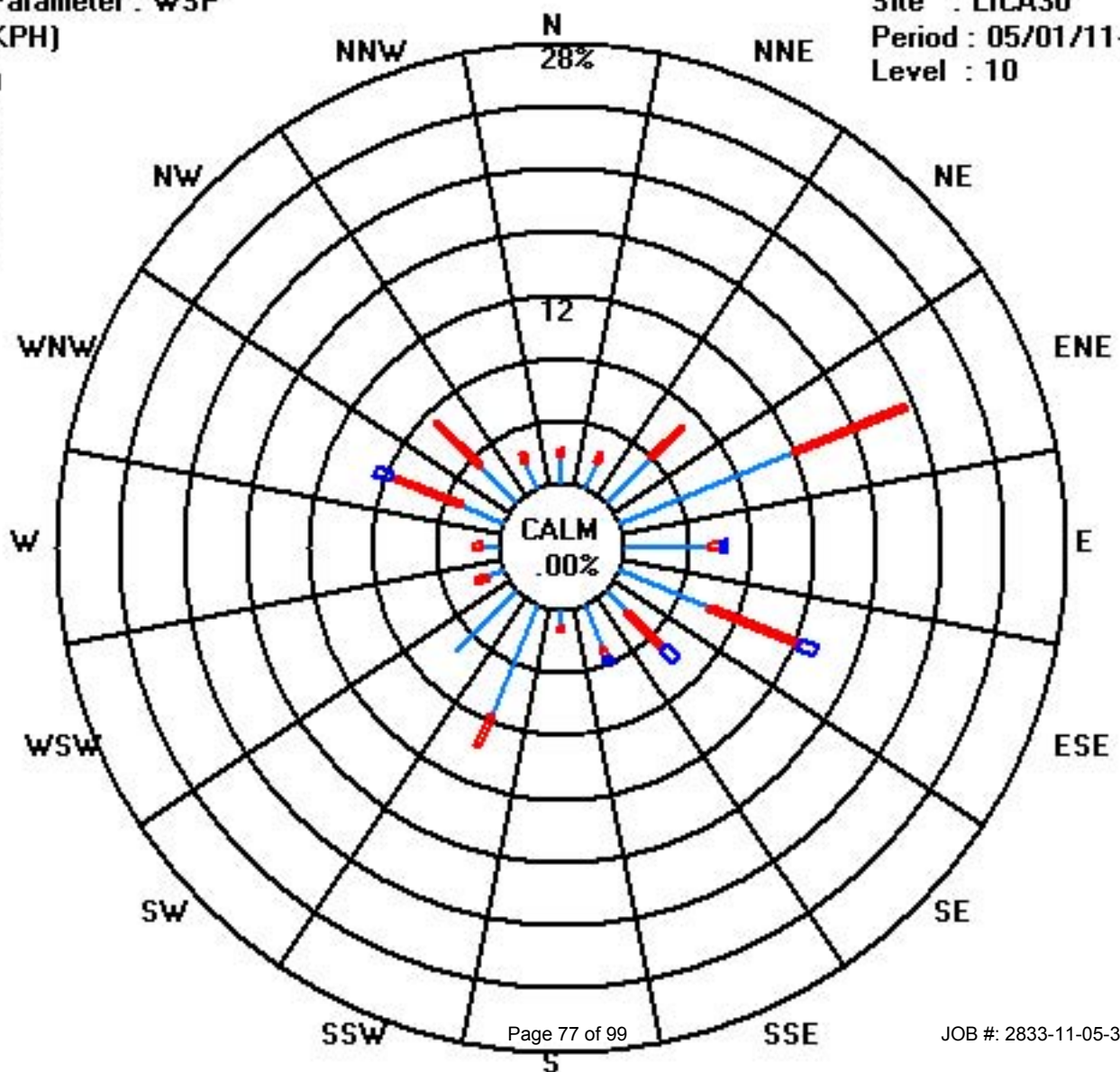
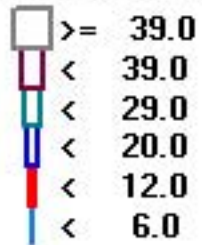
Calm : .00 %

Total # Operational Hours : 275

Class Limits (KPH)

Period : 05/01/11-05/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	295	118	275	206	249	254	300	324	307	298	316	278	256	287	345	314	305	303	303	235	196	198	209	204	282	W	24	
2	204	208	209	208	210	206	223	230	216	317	320	225	167	103	68	61	69	50	51	51	56	82	77	78	95	E	24	
3	79	71	67	58	62	73	67	53	19	359	308	321	322	317	298	291	297	309	329	323	278	225	223	280	343	NNW	24	
4	286	292	283	283	286	291	293	302	322	318	316	315	314	308	290	294	300	291	292	291	282	243	221	212	298	WNW	24	
5	217	211	214	215	226	200	211	183	208	224	210	207	242	305	229	172	19	30	44	90	119	43	73	161	215	SSW	24	
6	142	118	120	25	31	71	357	332	358	337	351	167	192	341	334	359	360	330	56	65	57	66	55	72	21	NNE	24	
7	61	74	98	80	65	67	60	91	74	78	44	78	68	114	64	57	58	47	62	49	67	62	47	53	65	ENE	24	
8	69	68	72	71	58	81	73	95	70	77	92	50	34	82	81	70	76	78	113	126	122	80	74	53	77	ENE	24	
9	63	94	59	73	58	47	29	198	203	214	159	94	137	79	147	206	200	148	115	115	121	130	123	163	134	SE	24	
10	57	31	62	108	72	75	124	164	196	191	201	200	172	207	150	138	112	144	124	123	138	133	119	122	145	SE	24	
11	121	84	92	73	53	63	110	117	111	107	112	115	110	97	102	104	137	146	149	148	127	117	116	133	116	ESE	24	
12	126	121	112	118	107	109	111	107	126	126	117	M	M	N	N	N	N	N	N	N	N	N	N	N	116	ESE	11	
13	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
14	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
15	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
16	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
17	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
18	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
19	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
20	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
21	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
22	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
23	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
25	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0
HOURLY AVG	295	292	283	283	286	291	357	332	358	359	351	321	322	341	345	359	360	330	329	323	282	243	223	280				

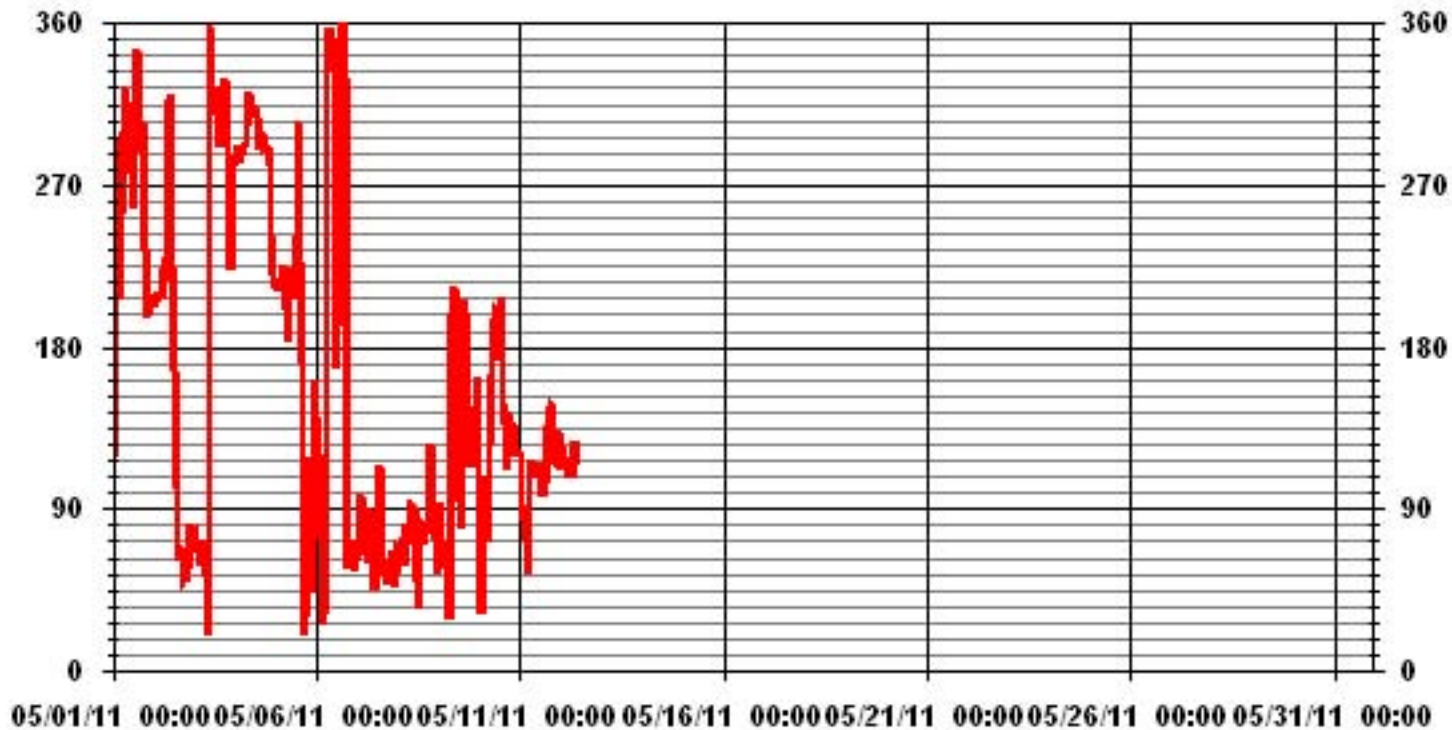
STATUS FLAG CODES

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:	0 HRS	OPERATIONAL TIME:	275 HRS
STANDARD DEVIATION	96.75	AMD OPERATION UPTIME	37.0 %
		MONTHLY AVERAGE	91 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

MAY 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	24	37	25	47	21	23	34	25	30	41	47	46	38	44	57	55	35	38	40	27	14	10	32	10
2	10	12	13	12	15	20	38	28	34	56	49	72	55	49	34	38	30	24	22	21	21	26	25	26
3	25	27	22	20	20	19	23	25	24	60	44	44	38	34	30	25	24	30	30	35	38	11	18	30
4	22	29	25	23	23	24	24	28	34	33	35	37	35	33	31	26	31	29	30	32	45	25	17	16
5	17	13	15	12	12	28	20	21	25	35	28	24	33	30	47	42	39	24	32	12	7	11	19	23
6	11	26	31	8	20	34	33	33	37	57	40	21	33	75	53	32	38	35	28	22	39	12	18	18
7	17	21	25	24	22	23	25	26	28	36	31	35	53	38	31	24	25	23	23	22	23	22	17	19
8	17	15	13	14	17	23	26	33	40	46	54	55	61	58	51	56	35	30	30	19	23	12	15	14
9	14	15	23	16	16	15	9	48	42	43	60	45	41	48	43	48	46	30	22	17	13	9	19	45
10	21	17	40	59	27	19	27	29	38	30	32	51	56	41	59	42	25	26	21	18	19	22	23	24
11	23	26	21	20	17	19	28	28	27	37	32	29	31	29	26	28	31	26	23	21	22	19	19	22
12	21	22	24	24	21	23	24	25	26	28	26	M	M	N	N	N	N	N	N	N	N	N	N	N
13	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
14	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
15	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
16	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
17	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
18	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
19	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
21	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
22	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
23	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
25	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
27	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
28	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
29	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
30	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
31	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

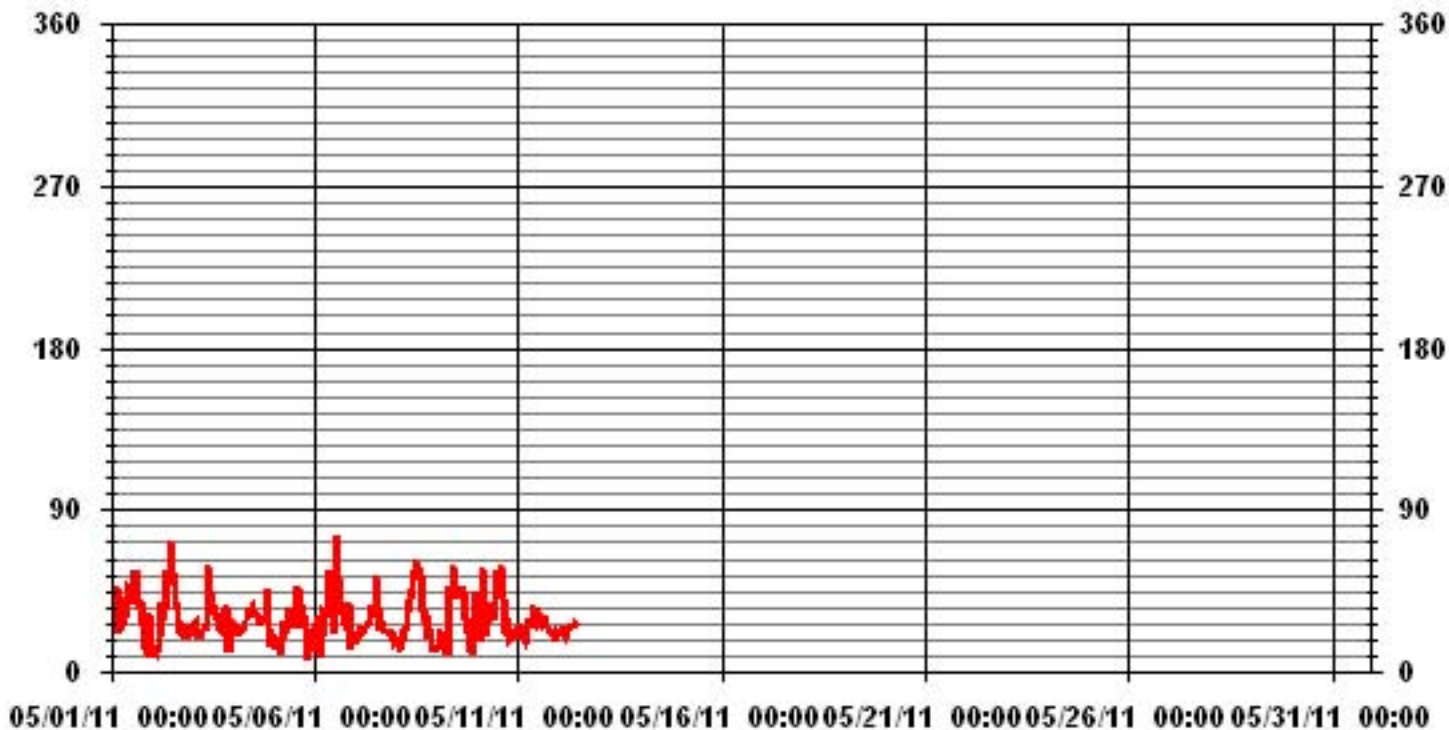
STATUS FLAG CODES

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: March 10, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 275 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	May 6, 2011	Previous Calibration	April 25, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:09	End Time (MST)	11:17
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	ppb	
Sample Flow / Box Temp	590 ccm 30 Deg C	591 ccm 30.5 Deg C	
HVPS / Lamp Setting	494 2973	494 2970	
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	35.3 1.118	35.3 1.118	

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	749	1.0012
4960	40.8	400	395	1.0121
4981	17.3	170	169	1.0035
4996	0	0	0	N/A
Sum of Least Squares				1.0036
New Correction Factor				1.0012

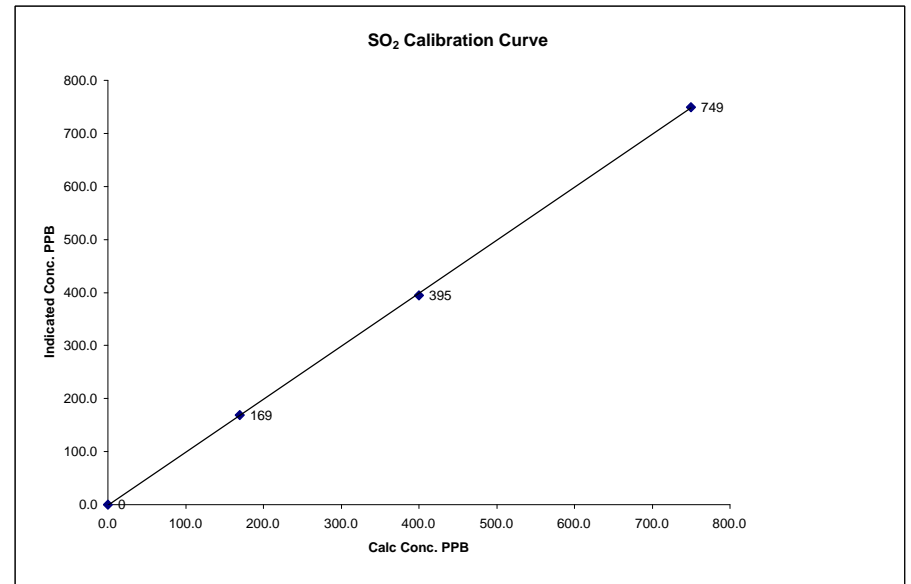
	Before Calibration	After Calibration
Auto Zero	0.6	0.6
Auto Span	381	380
Sample Lines Connected		YES
Percent Change from Previous Calibration		-0.3%

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

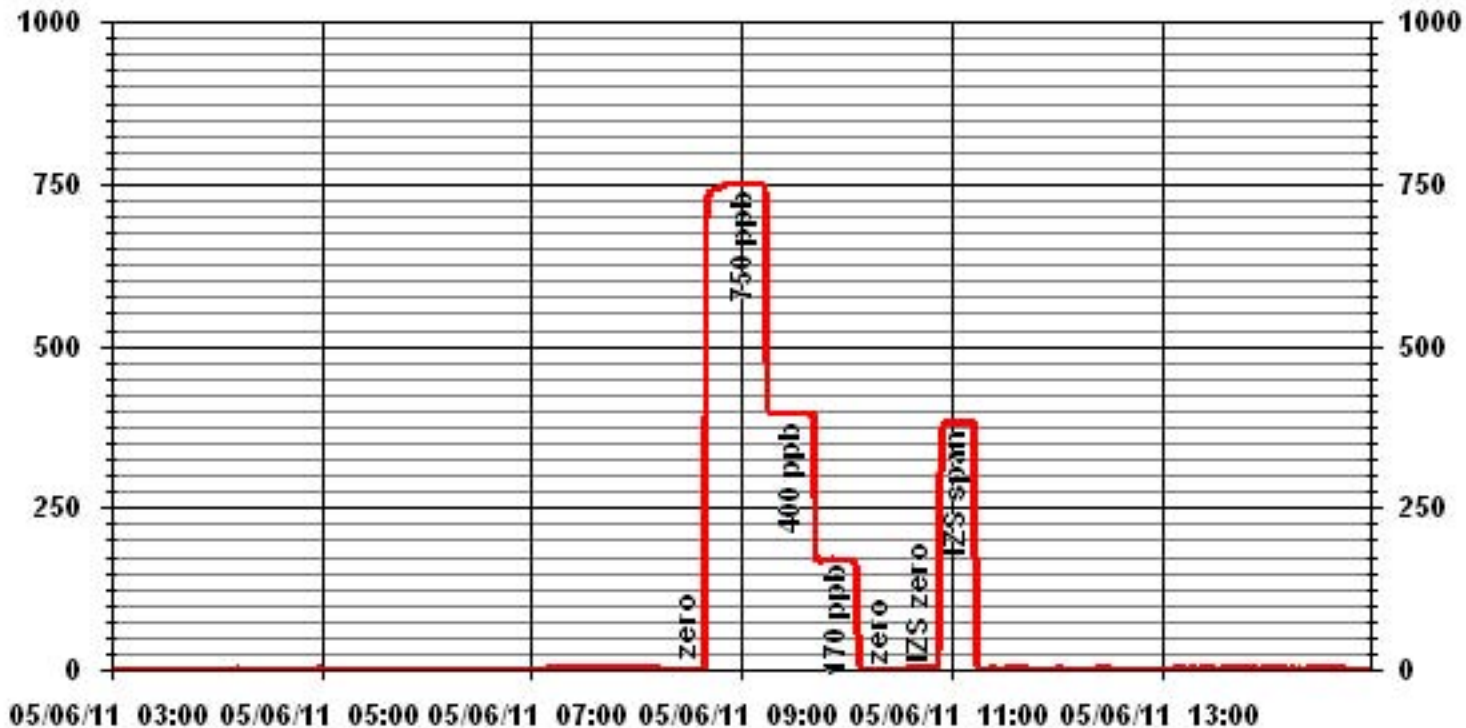
Calibration Date	May 6, 2011
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	8:09
End Time (MST)	11:17

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999959
0	0	n/a	Intercept	(± 3% F.S.)	-0.919988
170	169	1.0035			
400	395	1.0121			
750	749	1.0012			



Notes:

01 Minute Averages



Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	May 5, 2011	Previous Calibration	April 6, 2011
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:58	End Time (MST)	12:31
Reason:	Monthly Calibration		
Barometric Pressure	929 mBar	Station Temperature	22 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	522 ccm, 37.4 Deg C	518 ccm, 39.4 Deg C	
HVPS / Lamp Setting	522, 2134	552, 2129	
PMT / RxCell Temp	7.9 Deg C, 50 Deg C	7.9 Deg C, 50 Deg C	
Converter / IZS Temp	315.6 Deg C, 45 Deg C	314.6 Deg C, 45 Deg C	
Offset / Slope	30, 0.991	30, 1.016	

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	78	1.0256
4959	39.2	80	80	1.0000
4979	19.6	40	40	0.9999
4986	11.2	23	23	0.9939
4996	0	0	0	N/A
Sum of Least Squares				0.9996
New Correction Factor				1.0000

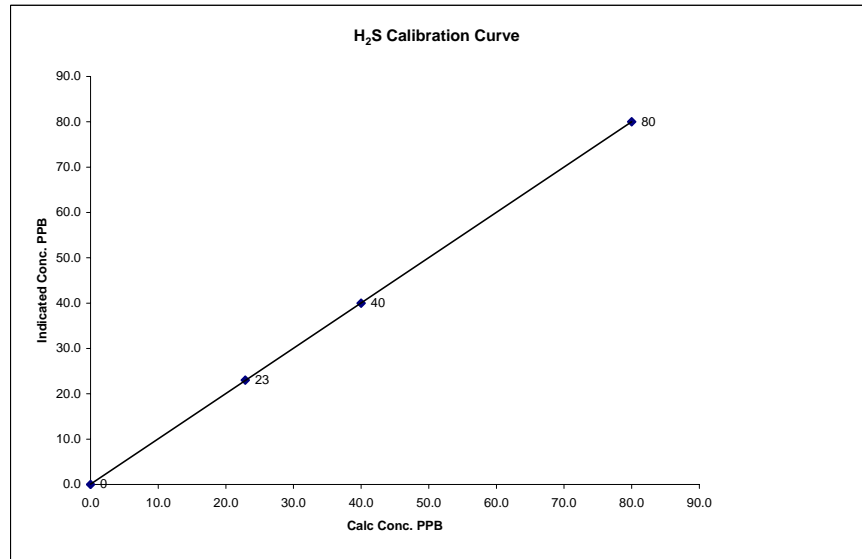
Before Calibration		After Calibration	
Auto Zero	0.4	0.1	
Auto Span	56	58	
Sample Lines Connected		YES	
Percent Change from Previous Calibration		-2.5%	

Calibration Performed by: Ting Xu

H₂S Calibration Curve

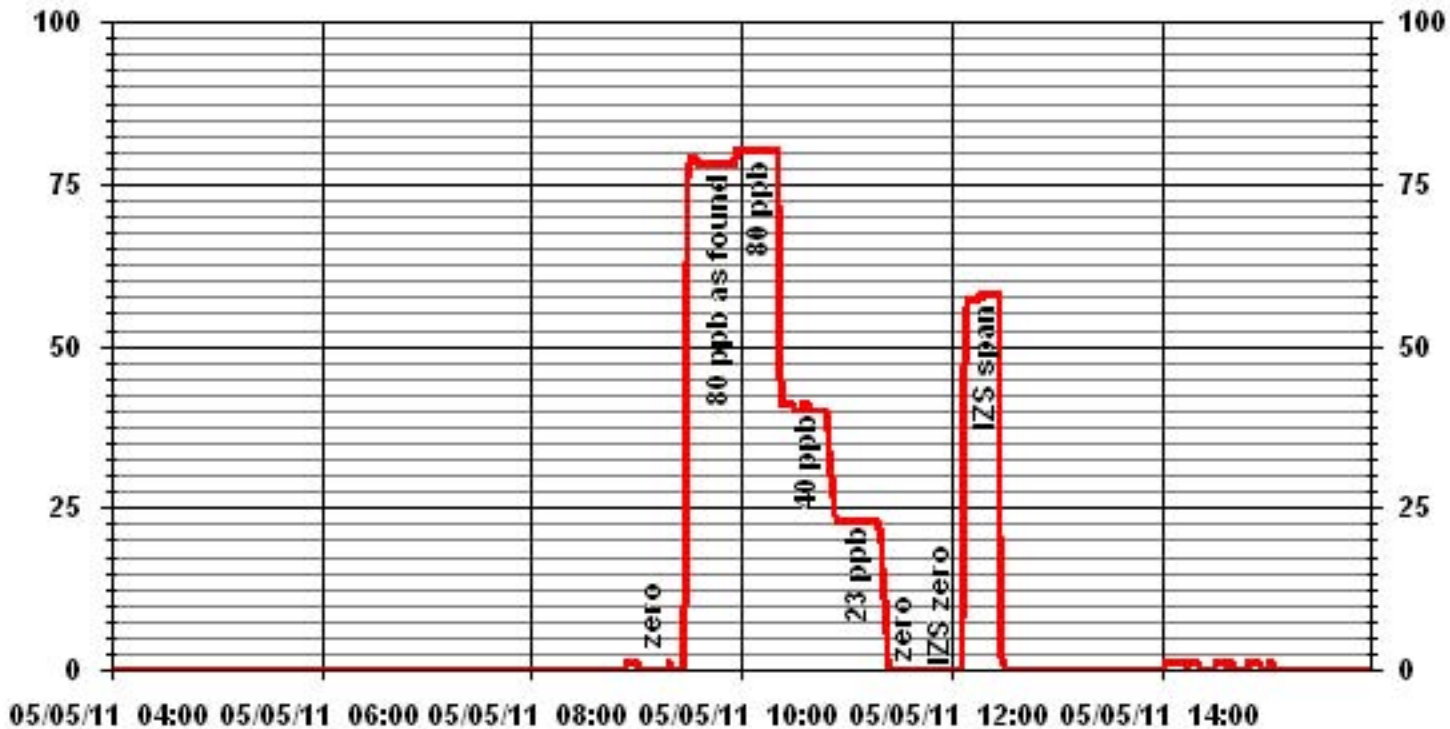
Calibration Date	May 5, 2011
Company	Lakelnad Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	8:58
End Time (MST)	12:31

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.)	0.053787
23	23	0.9939			
40	40	0.9999			
80	80	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	May 5, 2011	Previous Calibration	April 6, 2011
Company:	Lakeland Industry & Community Association		
Plant / Location:	Cold Lake - Maskwa		
:	(MST) 11:53	End Time	(MST) 14:54
Reason:	Monthly Calibration		
Barometric Pressure:	938 mBar	Station Temperature:	23 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	207 Prop/ 602 Meth/1171.25THC	ppm	Cal Gas Expiry Date: June 11, 2012
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
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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
1998	0.0	0.0	0.0	N/A
1998	70.0	39.6	40.0	0.9911
1998	34.9	20.1	20.1	1.0004
1998	20.0	11.6	11.6	1.0007
1998	0	0.0	0.0	N/A
Correction Factor:				0.9911

Previous Calibration Correction Factor:	0.9931
Current Correction Factor Before Span Adjust:	0.9911
Percent Change:	0.20%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	44.6	44.5
Sample Lines Connected		YES

Cylinder Pressures

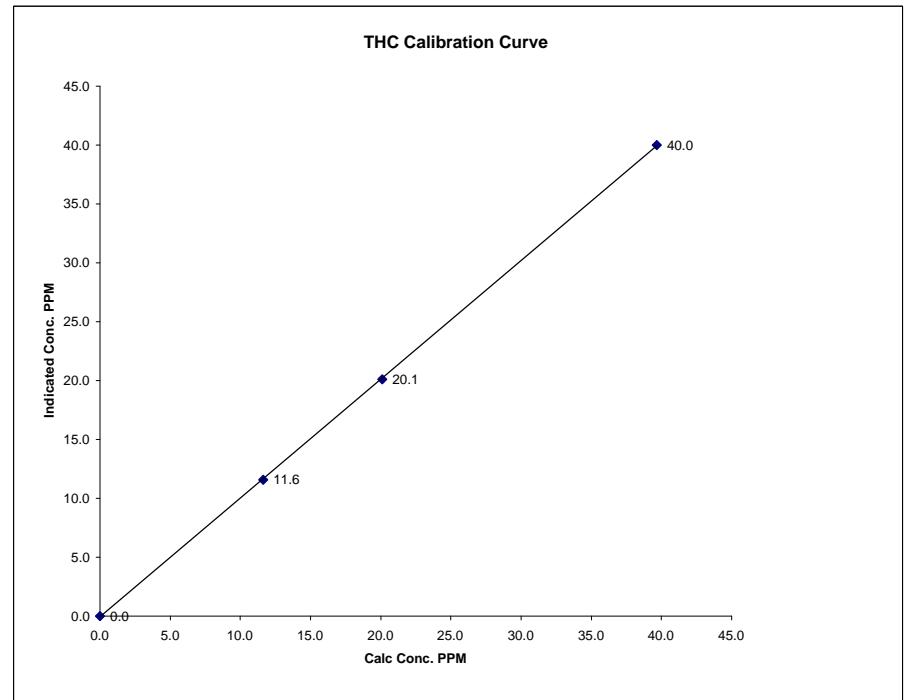
Span	400	psi
Hydrogen	900	psi
Zero Air	32	psi

Calibration Performed by: Ting Xu

THC Calibration Curve

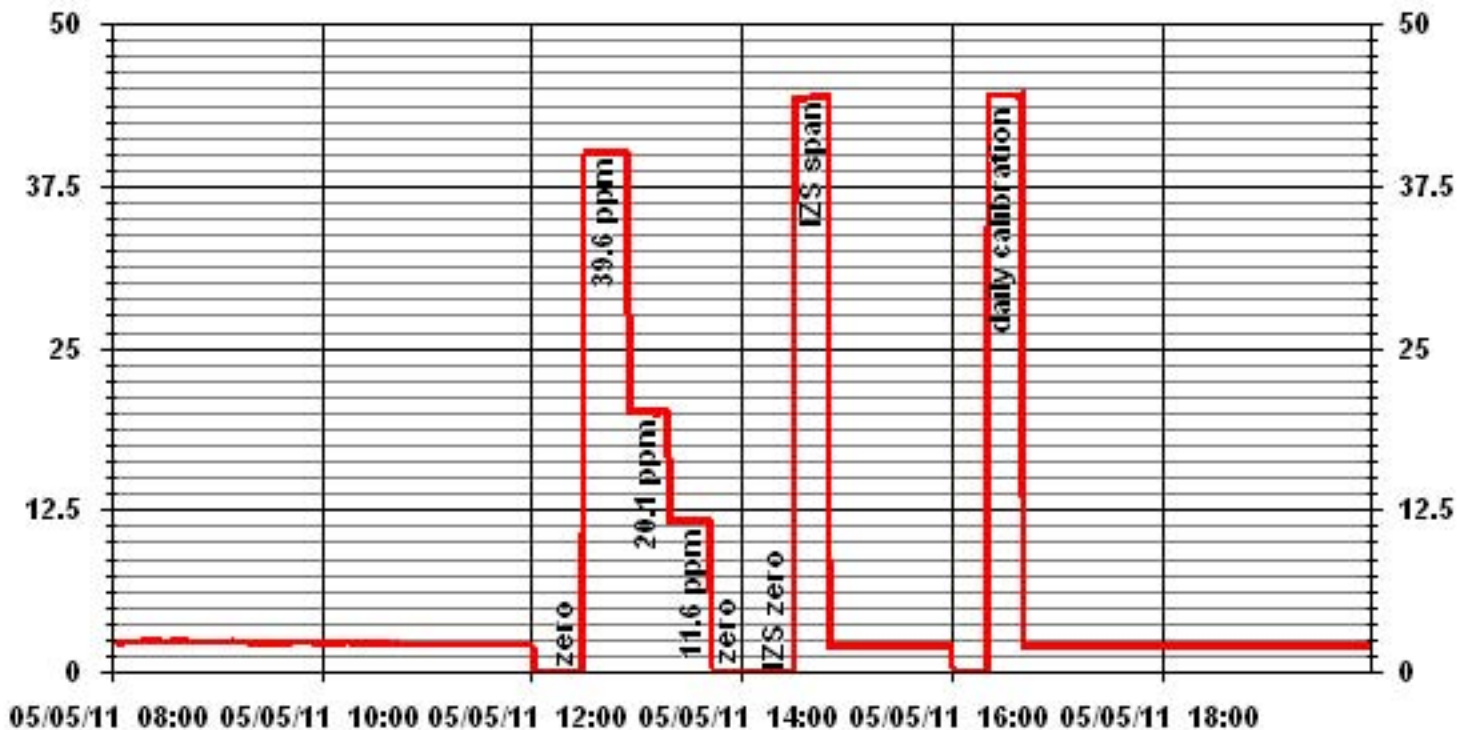
Calibration Date	May 5, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	11:53	End Time (MST)	14:54

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		0.999971	1.009259	-0.080524
11.6	11.6	1.0007			
20.1	20.1	1.0004			
39.6	40.0	0.9911			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	May 5, 2011	Previous Calibration	April 6, 2011
Company	LICA	Plant/Location	Maskwa
Start Time (MST)	8:58	End Time (MST)	14:54
Reason:	Monthly Calibration		Other
Barometric Pressure	939 mmHg	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 :	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	454 ccm	315.5 Deg C		455 ccm	316.6 Deg C		
Ozone Flow / Vacuum	79 ccm	5.9 "Hg-A		78 ccm	6 "Hg-A		
HVPS / A ZERO	767 Volts	16.2 MV		767 Volts	17.1 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.5 Deg C		50.0 Deg C	6.6 Deg C		
Box Temp / IZS Temp	29.6 Deg C	45.0 Deg C		33.2 Deg C	45 Deg C		
Offset	1.5 NOx	0.5 NO		2.2 NOx	1.2 NO		
Slope	1.151 NOx	1.128 NO		1.134 NOx	1.122 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	1	1	1	----	----
4995	0.0	----	0	0	0	0	0	0	----	----
4921	74.2	----	768	749	----	779	751	28	0.9858	0.9969
4921	74.2	----	768	749	----	768	751	17	1.0000	0.9969
4960	34.6	----	358	349	----	359	351	8	0.9976	-0.8729
4973	19.8	----	205	200	----	206	202	4	0.9953	-0.3641
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			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.2	----	768	749	----	770	757	13	----	----
4921	74.2	600	768	----	577	771	193	578	0.9983	100.18%
4921	74.2	250	768	----	246	772	524	248	0.9919	100.86%
4921	74.2	140	768	----	141	771	629	142	0.9930	100.78%

Linearity	Sum of Least Squares	NOx= 0.999	NO= 0.996	NO2= 0.997
OK?	Correction Factors:	NOx= 1.0000	NO= 0.9969	NO2= 0.9983
Average Converter Efficiency= 100.61%				

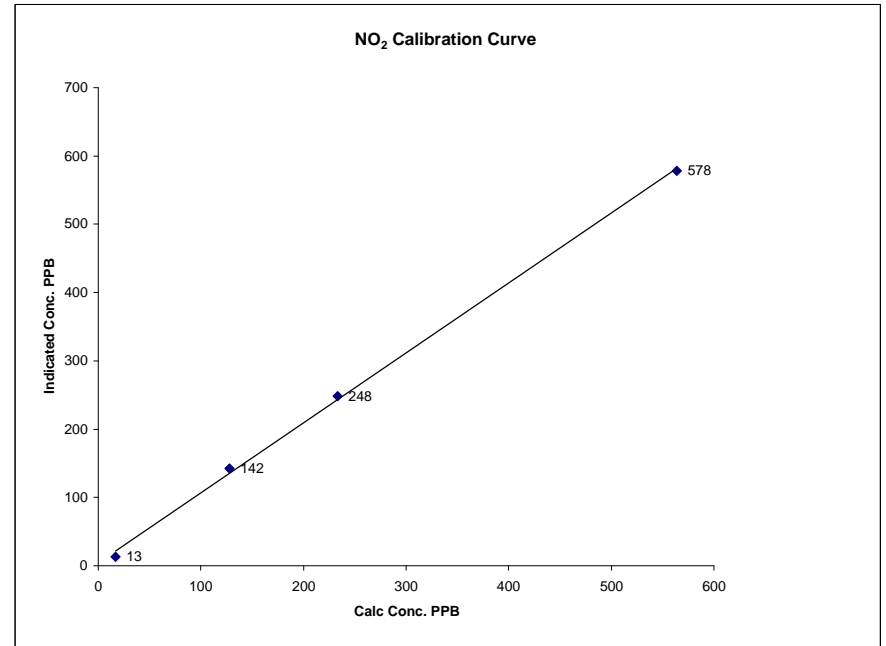
Before Calibration				After Calibration			
Auto Zero	-0.3 NOx	0.1 NO2		-0.8 NOx	-0.9 NO2		
Auto Span	752 NOx	740 NO2		737 NOx	724 NO2		
Sample Lines Connected				YES			
Percent Change from Previous Calibration		NOx 1.3%	NO 0.3%	NO2 0.2%			

Notes

NO2 Calibration Curve

Calibration Date	May 5, 2011	LICA	
Company		Maskwa	
Plant / Location		End Time (MST)	14:54
Start Time (MST)	8:58		

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999085
ppb	ppb		Slope	(0.85 to 1.15)	1.023505
17	13	N/A	Intercept	(± 3% F.S.)	4.21448
128	142	0.9014			
233	248	0.9395			
564	578	0.9758			



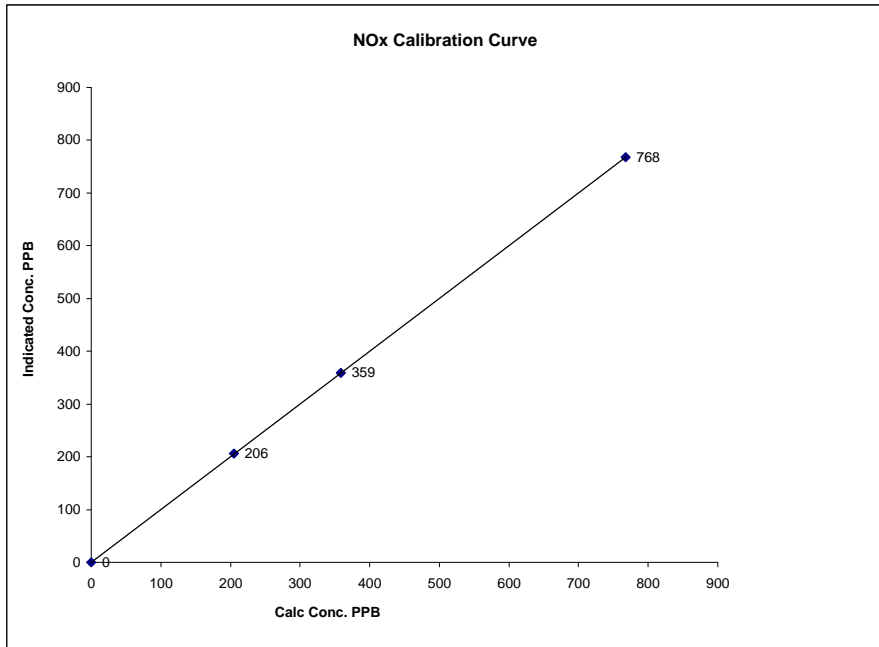
Notes:

Calibration Performed by: Ting Xu

NOx Calibration Curve

Calibration Date May 5, 2011
 Company LICA
 Plant / Location Maskwa
 Start Time (MST) 8:58 End Time (MST) 14:54

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999998
0	0	N/A	Slope (0.85 to 1.15)	0.999724
205	206	0.9953	Intercept (± 3% F.S.)	0.55613
358	359	0.9976		
768	768	1.0000		

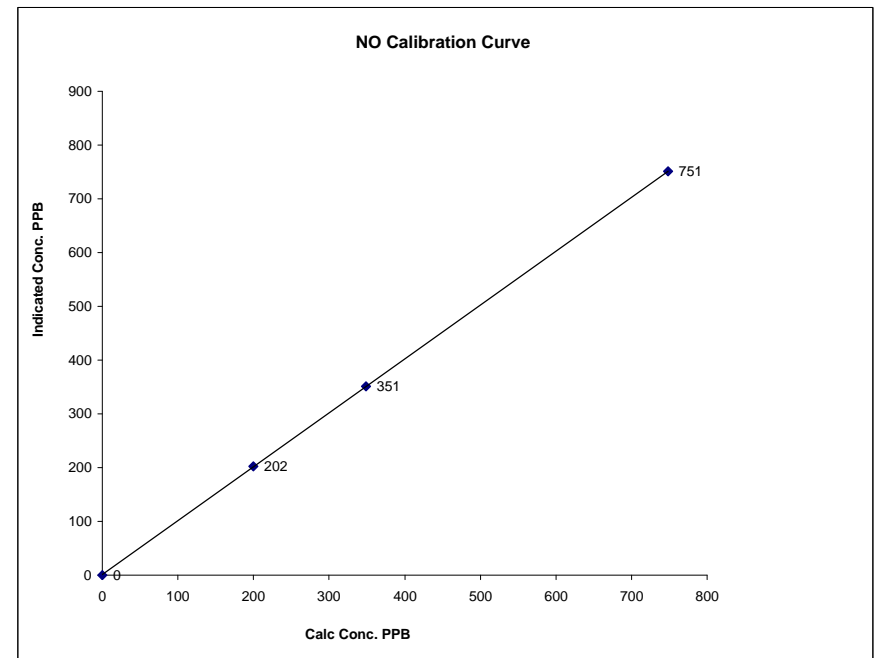


Notes:

NO Calibration Curve

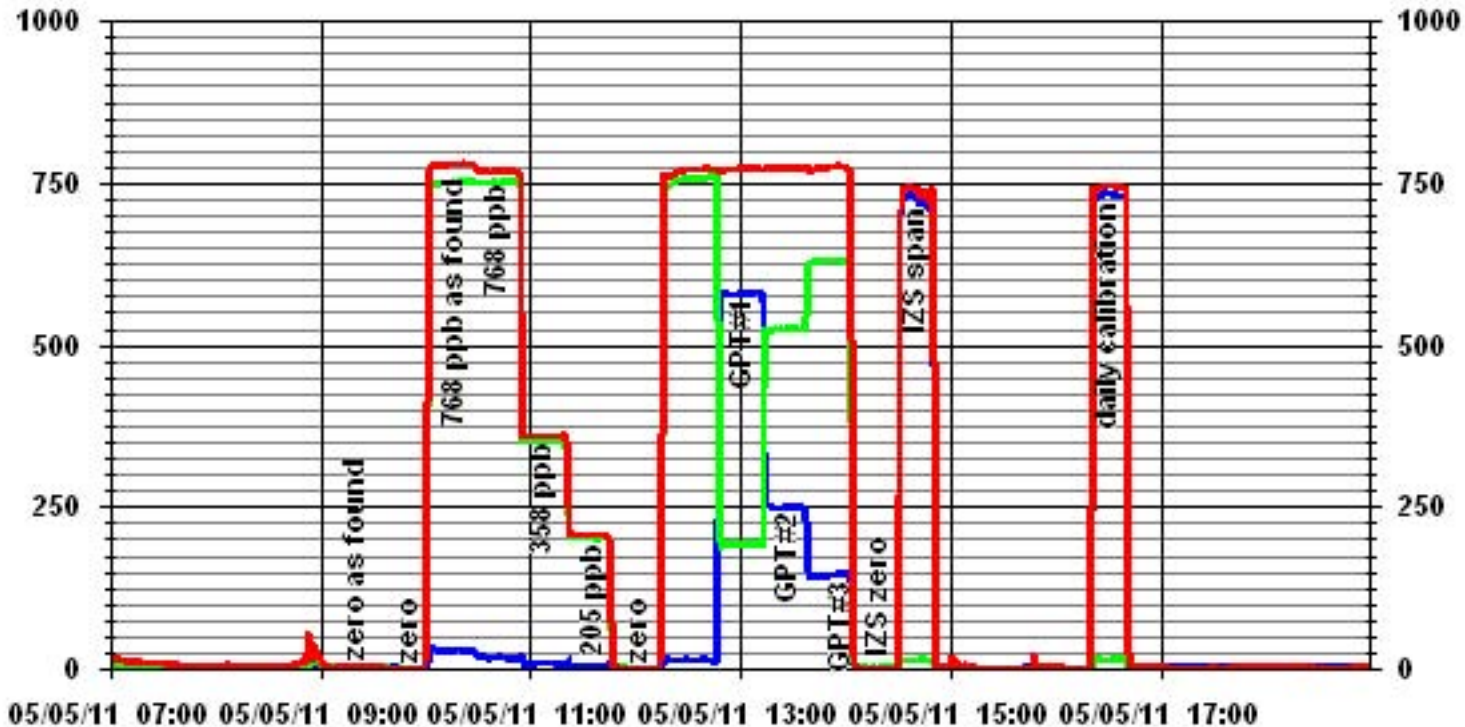
Calibration Date May 5, 2011
 Company LICA
 Plant / Location Maskwa
 Start Time (MST) 8:58 End Time (MST) 14:54

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999995
0	0	N/A	Slope (0.85 to 1.15)	1.000568
200	202	0.9895	Intercept (± 3% F.S.)	1.4264
349	351	0.9947		
749	751	0.9969		



Notes:

01 Minute Averages



— LICA30 HNOX_ PPB

— LICA30 HNO_ PPB

— LICA30 HNO2_ PPB

Sonic Wind Sensor Certificate of Calibration



Met One Instruments
1600 NW Washington Blvd.
Grants Pass, Oregon 97526
Telephone 541-471-7111
Facsimile 541-541-7116

Regional Service
3206 Main St. Suite 106
Rowlett, Texas 75088
Telephone 972-412-4715
Facsimile 972-412-4716

Sonic Wind Sensor Certificate of Calibration

Sensor Model No: 50.5H Sonic Sensor Serial No: H10703
Customer: MAXXAM ANALYTICS P.O. No: _____ Sales Order: RA 31168
Final Calibration By: Kevin Ricks Calibration Date: 04-28-11
Quality Control Inspected By: Kevin Ricks Inspection Date: 4-28-11

New Unit Repair/Adjust Re-Calibration As Found
Unit Within Tolerance as Found Unit Within Tolerance as Left

Calibration Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Due
Digital Multimeter 1	HP	34401A	US36094551	7/06/2011
Digital Multimeter 2	HP	34401A	US36094688	9/17/2011
Frequency Counter	HP	53131A	KR91201739	7/07/2011
Standard Sensor	Climet	011-1	2551	7/11/2011
Standard Cup Set	Climet	014	0008	7/11/2011
Temperature Probe	MOI	920005/PC8340	E3402	8/31/2011

Test 1: Average Wind Tunnel Speed: 3.07 Meters per Second Firmware Version: 3194-01 R2.62

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .20 m/s)	Output Type:
30	.084	30.3	.3	3.07	.059	2.97	-.1	0 to 1 volt <input checked="" type="checkbox"/>
60	.165	59.5	-.5	3.06	.059	2.96	-.1	0 to 2.5 volt <input type="checkbox"/>
120	.336	120.9	.9	3.06	.06	3	-.06	0 to 5 volt <input type="checkbox"/>
150	.416	149.7	-.3	3.05	.06	3	-.05	RS-232 <input checked="" type="checkbox"/>
210	.585	210.7	.7	3.08	.059	2.95	-.14	SDI-12 <input type="checkbox"/>
240	.665	239.5	-.5	3.09	.06	2.99	-.1	RS-422 <input type="checkbox"/>
300	.836	300.8	.8	3.06	.06	3	-.07	RS-485 <input type="checkbox"/>
330	.916	329.9	-.1	3.08	.059	2.96	-.12	<input type="checkbox"/>

Test 2: Average Wind Tunnel Speed: 11.65 Meters per Second Output Range: 0-50 m/s

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .24 m/s)	Test Items:
30	.084	30.1	.1	11.65	.232	11.61	-.03	Array Alignment <input type="checkbox"/>
60	.163	58.8	-1.2	11.63	.235	11.75	.13	Jumper Config <input type="checkbox"/>
120	.334	120.3	.3	11.62	.234	11.69	.07	Firmware Config <input type="checkbox"/>
150	.416	149.7	-.3	11.66	.234	11.72	.06	Zero Calibration <input type="checkbox"/>
210	.582	209.6	-.4	11.69	.232	11.58	-.1	Low Speed Test OK <input checked="" type="checkbox"/>
240	.665	239.3	-.7	11.67	.235	11.76	.09	High Speed Test OK <input checked="" type="checkbox"/>
300	.835	300.5	.5	11.64	.234	11.71	.07	Sensor Function <input checked="" type="checkbox"/>
330	.916	329.7	-.3	11.63	.233	11.63	0	Physical Inspection <input checked="" type="checkbox"/>

The standards used for this calibration have accuracies equal to or greater than the instruments tested. These standards are on record and traceable to NIST to the extent allowed by the institute's calibration facility. Unless otherwise stated hereon, all instruments are calibrated to meet the manufacturer's published specifications. The calibration system complies with MIL-STD-45662A. Calibration performed by direct comparison to the above standard following test procedure: 50.5-6100 Rev E

Lakeland Industry & Community Association

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

Ambient Air Monitoring Data Report

For

May 2011

Prepared By:



June 22, 2011

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

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○ Total Hydrocarbons	68		
○ Vector Wind Speed	76		
○ Vector Wind Direction	83		
○ Standard Deviation Wind Direction	86		

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: May 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 – May 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABEL / DEVON WELLSITE 13-16-62-5 W4M SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES					1-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO ₂ (PPB)	172	48	0	0	0.01	1	VAR	VAR	VAR	VAR	0.2	2	99.9
H ₂ S (PPB)	10	3	-	-	0.04	3	29	6	2.7	119(ESE)	0.3	30	99.9
THC (PPM)	-	-	-	-	2.36	8.5	19	1	4.9	356(N)	3.4	19	99.6
NO ₂ (PPB)	212	106	0	0	2.69	20	21	0	3.1	286(WNW)	6.9	20	99.9
NO (PPB)	-	-	-	-	0.36	9	31	5	3.8	291(WNW)	1.4	19, 24	99.9
NO _x (PPB)	-	-	-	-	3.12	24	21	2	2.8	24(NNE)	7.7	20	99.9
O ₃ (PPB)	82	-	0	-	35.89	59	20	16	7	138(SE)	45.6	15	99.9
PM 2.5 (UG/M ³)	-	30	-	0	6.62	41.1	31	22	2.7	234(SW)	22.9	31	98.4
VECTOR WS (KPH)	-	-	-	-	12.15	38.7	15	16	-	154(SSE)	27.6	12	100.0
VECTOR WD (DEGREES)	-	-	-	-	110(ESE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

Xontech Model 910A – May 3, 2011

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

Xontech Model 910A – May 9, 2011

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

Xontech Model 910A – May 15, 2011

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

Xontech Model 910A – May 21, 2011

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

Xontech Model 910A – May 27, 2011

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

PUF cartridge – May 3, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
NA	NA

No sample was collected this time as the PUF sampler was not received on time.

PUF cartridge – May 9, 2011

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

PUF cartridge – May 15, 2011

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

PUF cartridge – May 21, 2011

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

PUF cartridge – May 27, 2011

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. The inlet filter was replaced before the monthly calibration was performed on May 12th. One hour of the maximum reading was invalidated due to a small power outage on May 23rd at 04:00. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

No operational issue observed during this month. The inlet filter was replaced before the monthly calibration was performed on May 11th. One hour of the maximum reading was invalidated due to a small power outage on May 23rd at 04:00. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

No operational issue observed during this month. The inlet filter was replaced before the monthly calibration was performed on May 11th. One hour of the maximum reading was invalidated due to a small power outage on May 23rd at 04:00. 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 on May 12th. One hour of the maximum reading was invalidated due to a small power outage on May 23rd at 04:00. 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. The inside pump was rebuilt following the as found point on May 11th. Both the H2 and CH4 gas cylinders were replaced on May 11th. A post-repair calibration was performed on May 12th. The inlet filter was replaced before the monthly calibration was performed. One hour of the maximum reading was invalidated due to a small power outage on May 23rd at 04:00. Three hours of THC maximum reading were recorded as 54.1 ppm, which were above the full scale. The actual concentrations for these three hours may be higher than they were recorded. 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 was performed on May 12th. The Teom filter and FDMS filter were replaced on May 12th. 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. 12 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. One hour of the WS maximum reading was invalidated due to a small power outage on May 23rd at 04:00.

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 May 12th.

The H2 sensor calibration was performed on May 25th; the sensor responded at 705ppm while it was targeted at 732 ppm. The sensor than was adjusted.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Eighty-three hours of AQI values recorded in May 2011 were in the Fair range, and 81 were due to ozone, and 2 were due to PM2.5. Others were within the Good range. The highest hourly concentration of PM2.5 was 41.1ug/m3 and an AQI value of 31, hour 22on May 31st. The highest hourly concentration of Ozone was 59 ppb and an AQI value of 33 on May 20th hour of 16.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Volatile Organics (VOCs)

The volatile organics were sampled from May 3rd to May 27th. 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 May 9th to May 27th. 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.

No sample was being collected on May 3rd, as the PUF sampler was not received on time.

The PUF + Hi-Vol calibration was performed on May 25th; the as found temperature was 17.3 degree Celsius, the measured temperature using Hg thermometer 96-9460 was 17.8 degree Celsius, the temperature was adjusted. The As found BP was 714 mmHg, and the measured BP using Bios DC-2 1193 was 716 mmHg, the BP sensor was adjusted. A flow calibration was also performed using automatic method on May 25th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLESITE

MAY 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	HOURLY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX			
1	11	11	-	12	12	12	12	14	16	18	21	22	23	-	24	24	24	23	22	20	18	20	16	17	24				
	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3			
2	15	14	16	14	11	11	11	17	19	21	23	25	-	27	27	28	28	27	25	24	23	23	21	21	28				
	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			
3	19	17	17	16	15	15	16	16	17	18	19	-	19	20	19	18	18	-	18	-	13	10	11	14	20				
	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	NA	O3	NA	O3	O3	O3	O3	O3	O3			
4	15	-	16	17	17	17	16	16	17	19	-	21	21	22	22	22	22	21	21	20	18	16	15	14	15				
	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3			
5	14	12	13	13	13	12	12	17	20	-	21	25	27	27	28	28	28	28	27	23	21	20	18	14	19				
	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			
6	12	15	18	17	15	10	10	14	-	20	22	22	24	23	23	23	24	23	23	19	18	16	16	13	24				
	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			
7	13	12	11	9	-	11	12	-	12	14	16	17	16	16	17	16	17	16	15	14	13	12	13	13	10	17			
	O3	O3	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		
8	9	7	9	9	10	10	-	12	13	16	17	17	17	17	18	18	18	18	18	18	16	13	14	12	18				
	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		
9	8	9	9	7	9	-	10	12	14	16	19	21	21	22	22	23	23	23	22	17	15	15	14	12	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		
10	13	11	9	9	-	7	9	13	16	20	22	-	24	24	25	24	24	24	23	18	18	17	17	15	25				
	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3		
11	14	13	12	-	11	-	12	12	14	-	-	-	-	-	-	-	22	22	23	22	21	18	18	19	18	23			
	O3	O3	O3	NA	O3	NA	O3	O3	O3	NA	NA	NA	NA	NA	NA	NA	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3		
12	18	17	-	15	14	15	15	17	-	-	-	-	-	-	-	-	21	22	-	21	22	21	20	21	20	18	22		
	O3	O3	NA	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3		
13	17	-	19	19	19	20	21	21	22	23	23	24	24	24	24	24	26	27	27	28	25	22	18	19	18	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		
14	-	14	13	13	15	17	19	20	22	23	24	25	28	28	28	27	25	25	24	22	17	18	-	18	-	28			
	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		
15	16	18	19	18	17	17	18	21	22	24	25	27	28	29	32	31	30	28	28	26	25	23	-	21	32				
	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	O3		
16	20	20	20	19	18	19	20	20	21	21	-	22	22	22	22	22	22	23	22	20	19	-	18	16	23				
	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3		
17	14	14	18	16	16	15	17	19	20	22	23	24	25	27	28	28	-	26	25	-	18	20	21	28					
	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	NA	O3	O3	O3	O3		
18	21	21	19	17	15	13	14	19	22	24	25	26	25	25	25	24	23	20	18	-	10	7	5	9	26				
	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	PM2	PM2	PM2	PM2	O3		
19	9	10	8	5	9	8	10	16	20	24	30	32	32	32	31	29	32	29	-	20	15	20	20	16	32				
	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3		
20	10	10	10	14	15	16	18	17	21	26	32	32	32	32	32	31	33	-	-	21	21	17	14	16	33				
	O3	O3	O3	PM2	PM2	PM2	PM2	PM2	O3	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	NA	O3	PM2	O3	PM2	PM2	O3		
21	16	14	23	14	13	13	14	15	17	18	20	20	22	23	23	-	24	21	23	24	15	13	14	24					
	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3		
22	8	8	12	20	11	16	12	12	11	15	17	17	19	22	19	-	11	12	11	10	9	10	10	11	22				
	O3	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3		
23	12	14	15	16	17	17	18	18	18	18	18	18	19	-	20	21	21	22	18	14	13	12	7	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		
24	5	4	6	9	5	7	7	14	20	21	22	23	25	-	24	25	25	25	25	21	15	15	10	17	25				
	PM2	PM2	PM2	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3		
25	19	14	12	16	8	14	18	20	20	22	24	24	-	25	25	25	24	24	23	22	20	18	15	12	25				
	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		
26	11	15	14	16	16	18	19	20	21	23	24	-	26	26	26	25	25	25	25	22	20	18	19	17	26				
	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	O3		
27	16	17	17	14	11	13	14	16	20	24	-	29	29	28	28	28	28	27	27	28	23	20	19	18	29				
	O3	O3	O3	O3	PM2	PM2	PM2	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	PM2	O3	O3	O3	O3	O3	O3	O3	O3		
28	18	17	19	18	17	17	17	17	17	-	20	23	24	24	25	25	-	23	21	20	17	14	10	8	25				
	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	O3		
29	5	5	7	6	5	9	11	14	-	19	20	22	23	24	25	28	29	28	26	22	21	21	21	21	29				
	O3	O3	PM2	PM2	PM2	PM2	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3		
30	20	18	18	17	16	15	18	-	18	20	24	25	26	27	27	25	25	26	27	27	22	13	15	14	27				
	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		
31	15	27	13	15	12	11	-	14	21	23	30	32	30	31	31	31	31	31	31	30	24	22	21	31	28	32			
	PM2	PM2	PM2	PM2	PM2	PM2	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3	
PEAK	21	27	23	20	19	20	21	21	22	24	30	32	32	32	32	31	33	31	30	28	25	23	31	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	O3	O3	O3		

STATUS FLAG CODES

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
2	0	0	0	0	0	0	0	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
3	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	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	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	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	24
8	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
9	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
10	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
11	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
12	0	0	IZS	0	0	0	0	0	C	C	C	C	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0.0	23
13	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
14	IZS	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
15	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
16	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	
17	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	0.0	24
18	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
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	1	1	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	1	0.1	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	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	IZS	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	IZS	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	IZS	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	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	1	1	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
29	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
30	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
31	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
HOURLY MAX	0	1	1	1	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0			
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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			

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

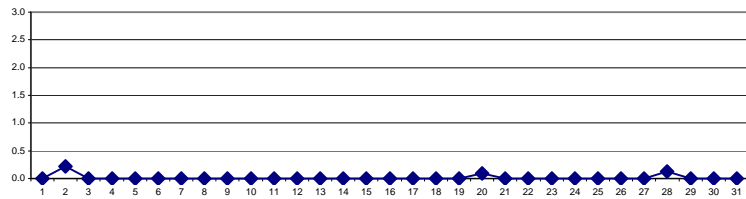
OBJECTIVE LIMIT:

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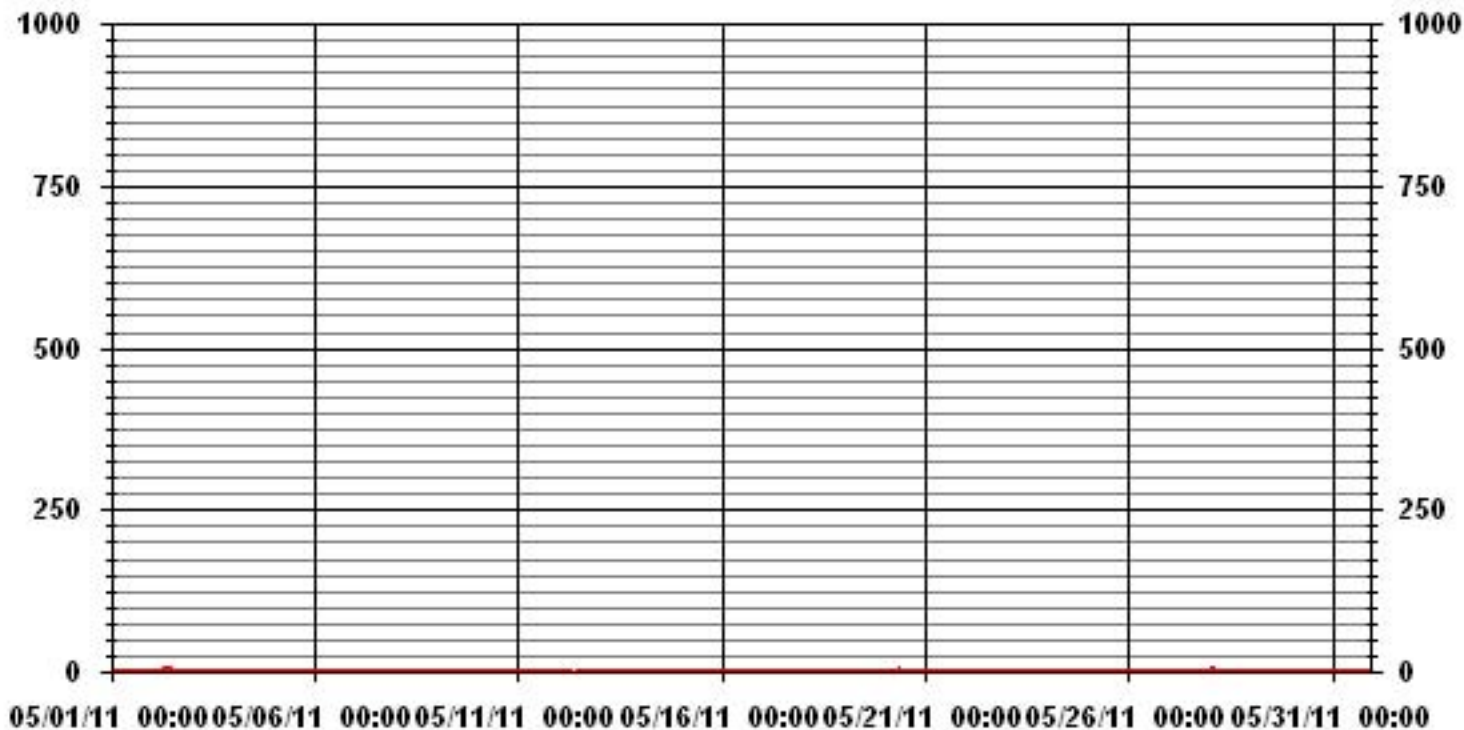
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	10					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.2	PPB			ON DAY(S)	2
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.12		MONTHLY AVERAGE:	0.01	PPB	

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA33 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLE SITE

MAY 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	IZS	1	1	1	1	1	1	1	1	1	1	1	1	0.4	24
2		1	1	1	1	1	1	2	2	2	2	2	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.3	24
3		1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	0	1	1	0	0	0	0	0	1	0.8	24	
4		0	1	1	1	1	1	0	0	1	0	IZS	1	1	0	0	1	0	1	1	0	0	0	0	0	1	0.5	24	
5		0	0	1	0	1	0	0	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	3	1	3	0.9	24	
6		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
7		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
8		1	1	1	1	1	1	IZS	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	0	1	3	1.0	24	
9		0	1	1	1	1	IZS	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24
10		1	1	1	1	IZS	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1	1	2	1.1	24	
11		1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0.9	24	
12		0	0	IZS	0	1	0	1	0	C	C	C	C	1	1	M	1	1	1	1	1	1	1	1	1	1	0.7	23	
13		1	IZS	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	24
14		IZS	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
15		1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.6	24	
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	IZS	1	1	1	0.2	24	
17		1	1	2	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	IZS	1	1	1	2	1.1	24
18		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	1	1.0	24
19		1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	0.9	24
20		1	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	1.1	24
21		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	1	0.7	24	
22		0	0	0	0	0	1	1	2	3	1	1	0	1	0	1	IZS	0	0	0	0	0	0	0	0	3	0.5	24	
23		0	0	0	0	P	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	0.4	23	
24		3	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24
25		1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	3	3	1.1	24	
26		1	1	2	1	2	2	2	1	2	1	1	IZS	1	1	0	2	1	1	1	0	1	1	1	1	2	1.2	24	
27		1	1	1	1	1	1	1	1	1	1	IZS	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1.0	24	
28		1	2	2	2	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
29		0	1	1	1	1	1	1	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
30		1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1.0	24	
31		1	1	0	0	0	1	IZS	0	0	1	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	0.7	24	
HOURLY MAX		3	2	2	2	2	2	2	2	3	2	2	3	2	2	1	2	1	1	1	1	2	1	1	3	3			
HOURLY AVG		0.8	0.8	0.9	0.8	0.9	0.9	0.8	0.8	1.0	0.9	0.9	0.9	0.9	0.9	0.9	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.9	0.8			

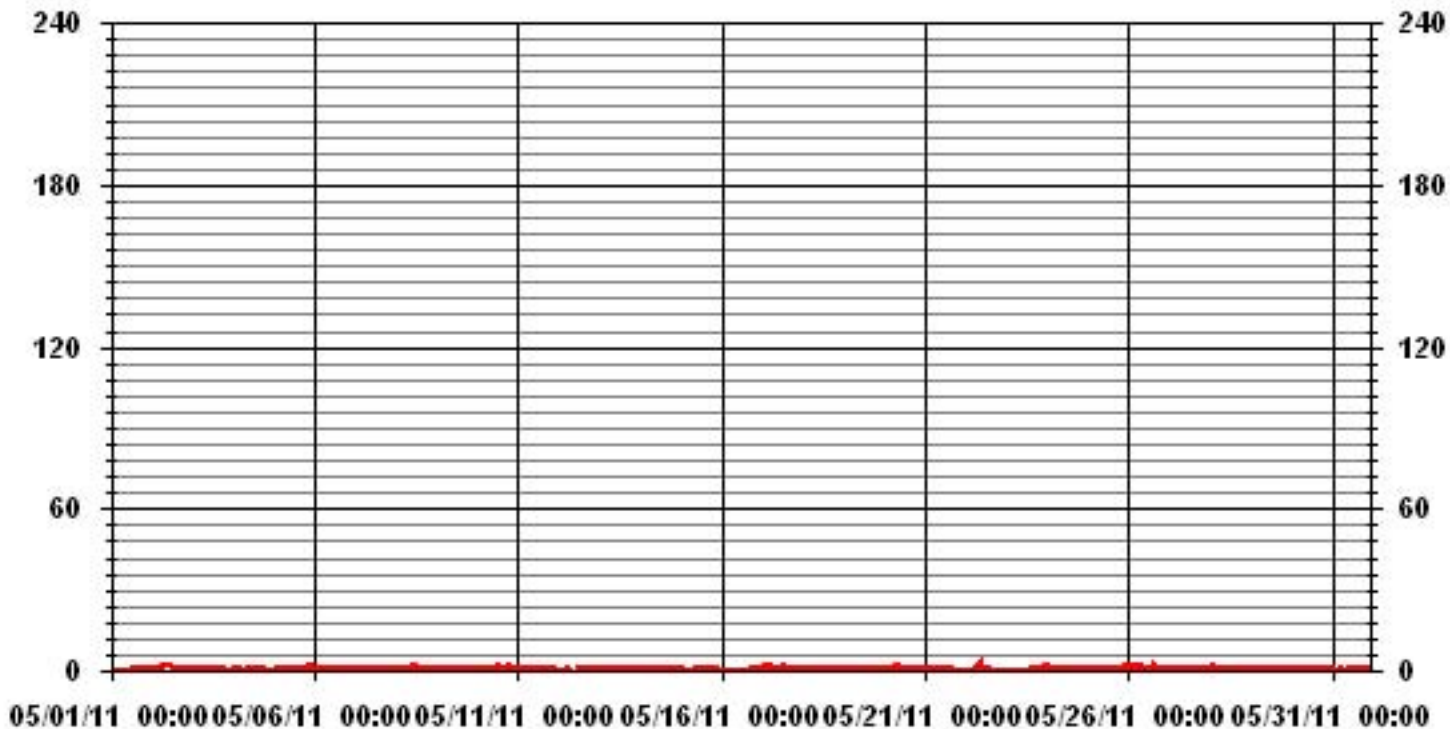
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	580					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	32	HRS		OPERATIONAL TIME:	742	HRS
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.47					

01 Hour Averages



— LICA33 SO2MAX PPB

LICA33
 SO2_ / WDR Joint Frequency Distribution (Percent)

May 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	2.54	5.09	7.49	11.73	14.99	8.06	13.43	10.18	3.25	1.83	2.82	2.97	2.68	8.06	4.24	.56	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	2.54	5.09	7.49	11.73	14.99	8.06	13.43	10.18	3.25	1.83	2.82	2.97	2.68	8.06	4.24	.56	

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	18	36	53	83	106	57	95	72	23	13	20	21	19	57	30	4	707
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	18	36	53	83	106	57	95	72	23	13	20	21	19	57	30	4	

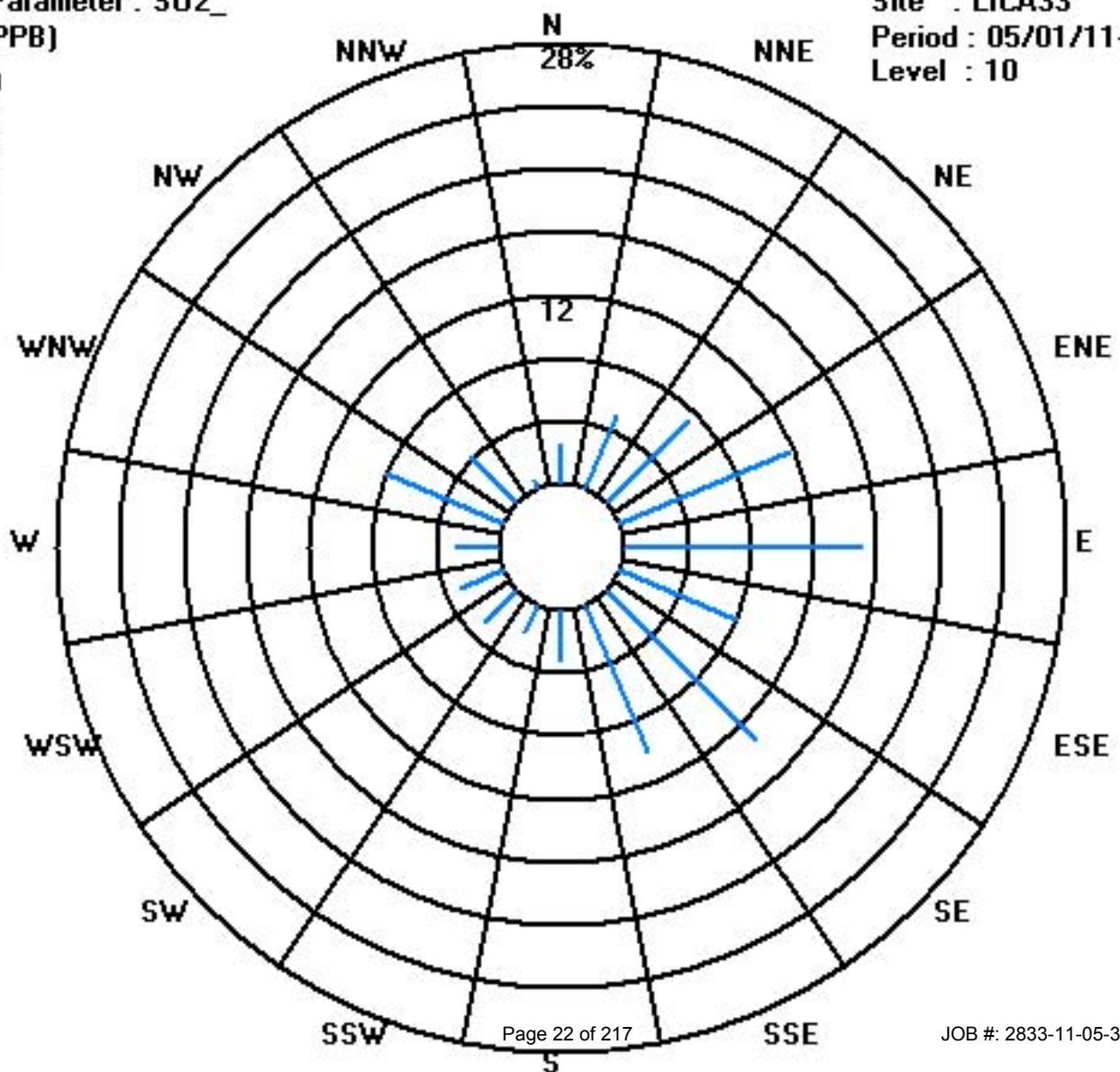
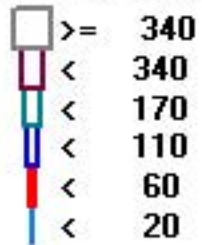
Calm : .00 %

Total # Operational Hours : 707

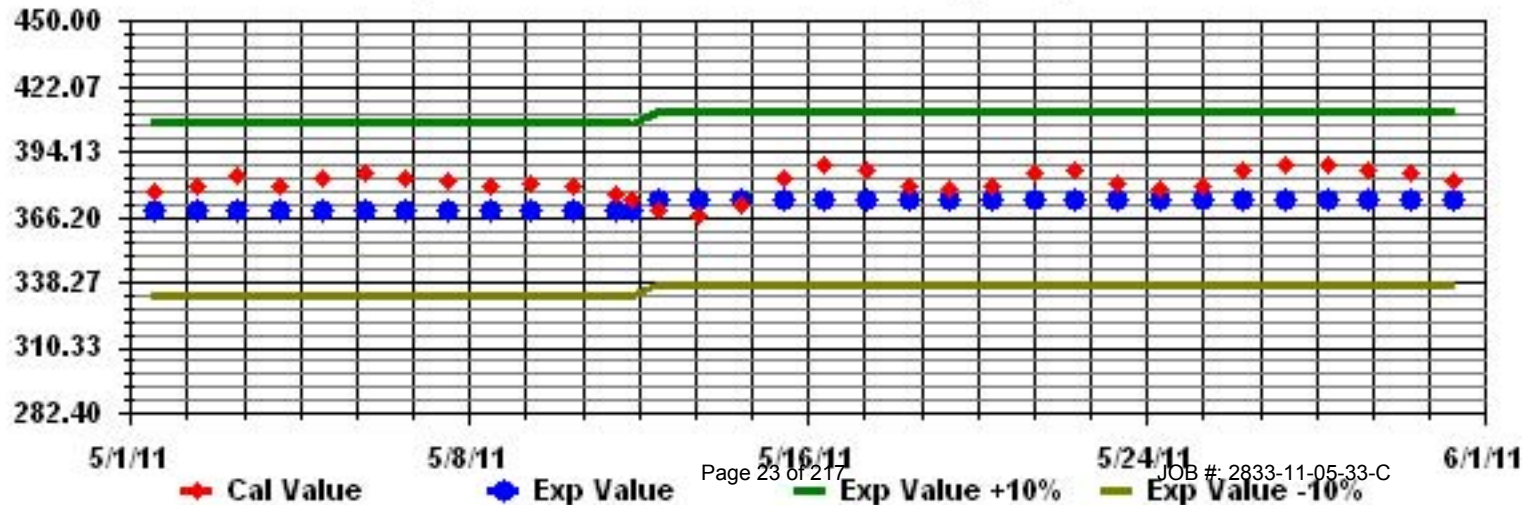
Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



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



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

MAY 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	IZS	0	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	IZS	0	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	IZS	0	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	5	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0.1	24	
6	6	0	1	1	0	0	0	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
7	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	24	
8	8	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
10	10	0	0	0	0	IZS	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
11	11	0	0	0	IZS	1	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0	1	0.1	24	
12	12	0	0	IZS	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	
13	13	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	
14	14	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	
15	15	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	
16	16	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	
17	17	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	3	0.2	24	
18	18	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	
19	19	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	IZS	0	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	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
22	22	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.1	24	
23	23	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	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	24	
25	25	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
27	27	0	0	0	0	0	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
28	28	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	2	3	2	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
30	30	2	0	0	0	1	1	0	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
31	31	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	0	3	2	3	2	1	1	0	0	1	0	0	0	1	0	0	0	0	0	1	0				
HOURLY AVG		0.1	0.0	0.1	0.0	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

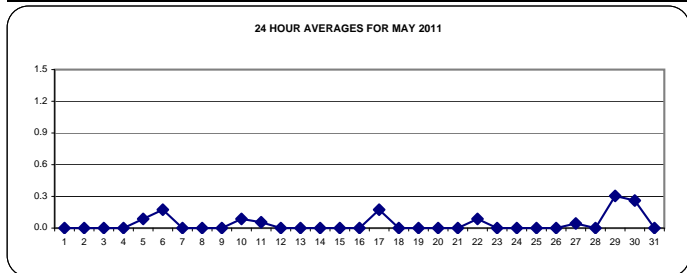
OBJECTIVE LIMIT:

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

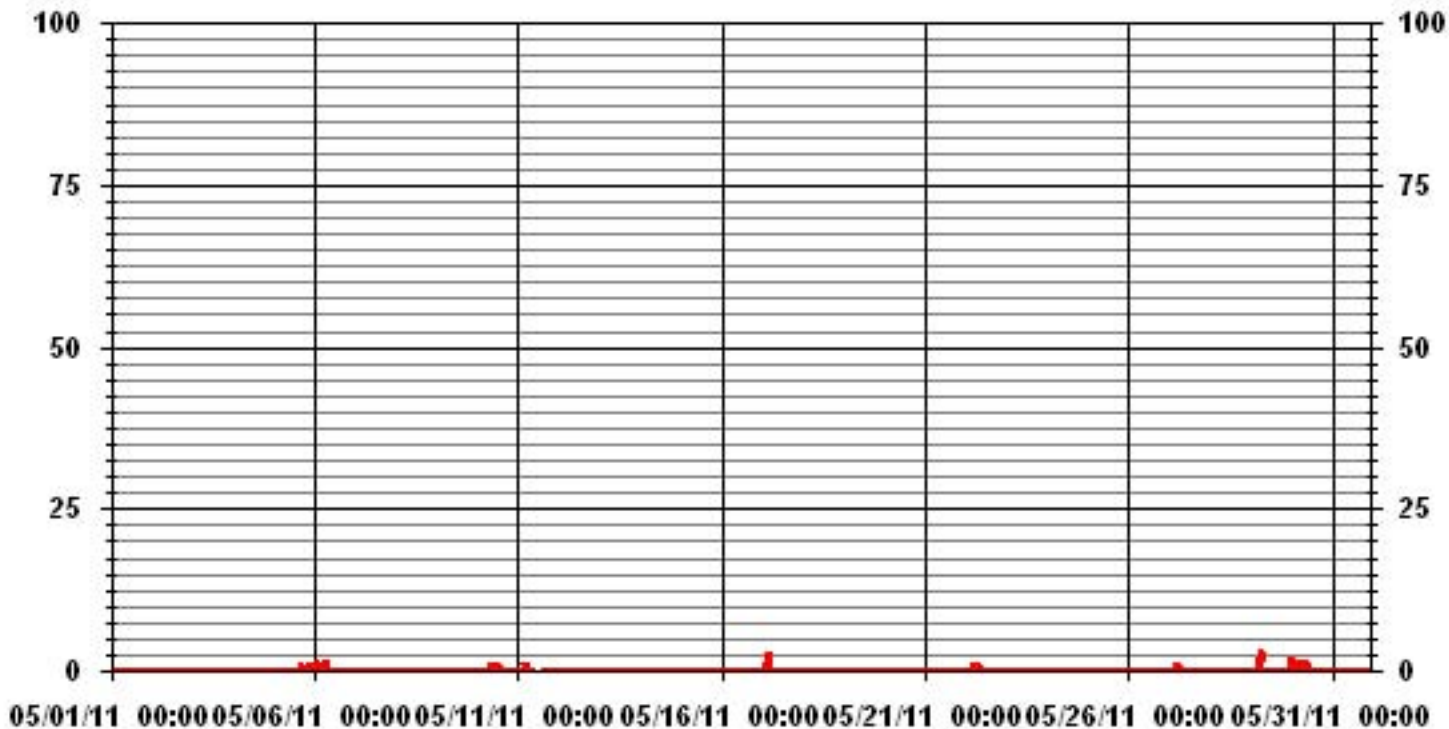
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	22
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) 6 ON DAY(S) 29
MAXIMUM 24-HR AVERAGE:	0.3 PPB ON DAY(S) 30
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.25
MONTHLY AVERAGE:	0.04 PPB

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	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	1	2	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	1	0	0	0	2	0.2	24	
2	0	0	0	0	1	1	1	1	1	1	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
3	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	0	0	0	1	1	0	1	0	0	1	0.3	24
4	0	0	0	0	1	0	1	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
5	1	0	0	0	0	1	0	0	0	0	IZS	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0.5	24
6	1	2	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
7	0	0	0	0	0	0	0	IZS	0	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	0.6	24
8	0	1	1	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24
9	0	0	0	0	0	0	IZS	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	1	1	1	1	0.4	24
10	1	1	1	0	0	IZS	0	1	1	2	1	1	1	1	1	1	1	1	0	1	1	1	1	1	0	2	0.9	24
11	1	1	1	1	IZS	3	0	1	1	1	1	C	C	C	C	C	0	0	0	0	0	0	0	0	0	3	0.6	24
12	0	0	IZS	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
13	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
14	IZS	0	0	1	1	1	1	1	1	0	0	1	0	0	0	1	1	0	1	1	1	1	1	1	IZS	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	IZS	0	0.0	24
16	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	1	1	1	1	1	IZS	0	0	0.4	24
17	0	1	1	1	5	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	5	0.7	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	IZS	0	0	0	0	0	5	0.2	24
19	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.1	24
20	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	2	2	0.1	24
21	1	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	2	0.3	24
22	0	1	2	2	1	1	1	1	1	1	1	0	0	0	0	IZS	0	1	1	1	1	1	1	1	0	2	0.8	24
23	0	0	0	0	P	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	23
24	0	0	1	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.1	24
25	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
26	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	0	1	0	1	1	1	0	1	0.2	24
27	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	1.0	24
28	1	1	0	1	1	0	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.3	24
29	1	1	1	1	1	4	4	3	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0.8	24
30	3	2	1	2	4	2	1	IZS	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0.8	24
31	0	0	2	0	0	1	IZS	1	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	2	0.3	24	
HOURLY MAX	3	2	2	2	5	4	4	3	2	1	1	1	1	1	1	5	1	1	1	1	1	1	1	1	2			
HOURLY AVG	0.4	0.5	0.5	0.4	0.8	0.7	0.6	0.5	0.3	0.3	0.2	0.3	0.2	0.2	0.2	0.4	0.2	0.2	0.4	0.3	0.3	0.3	0.3	0.3				

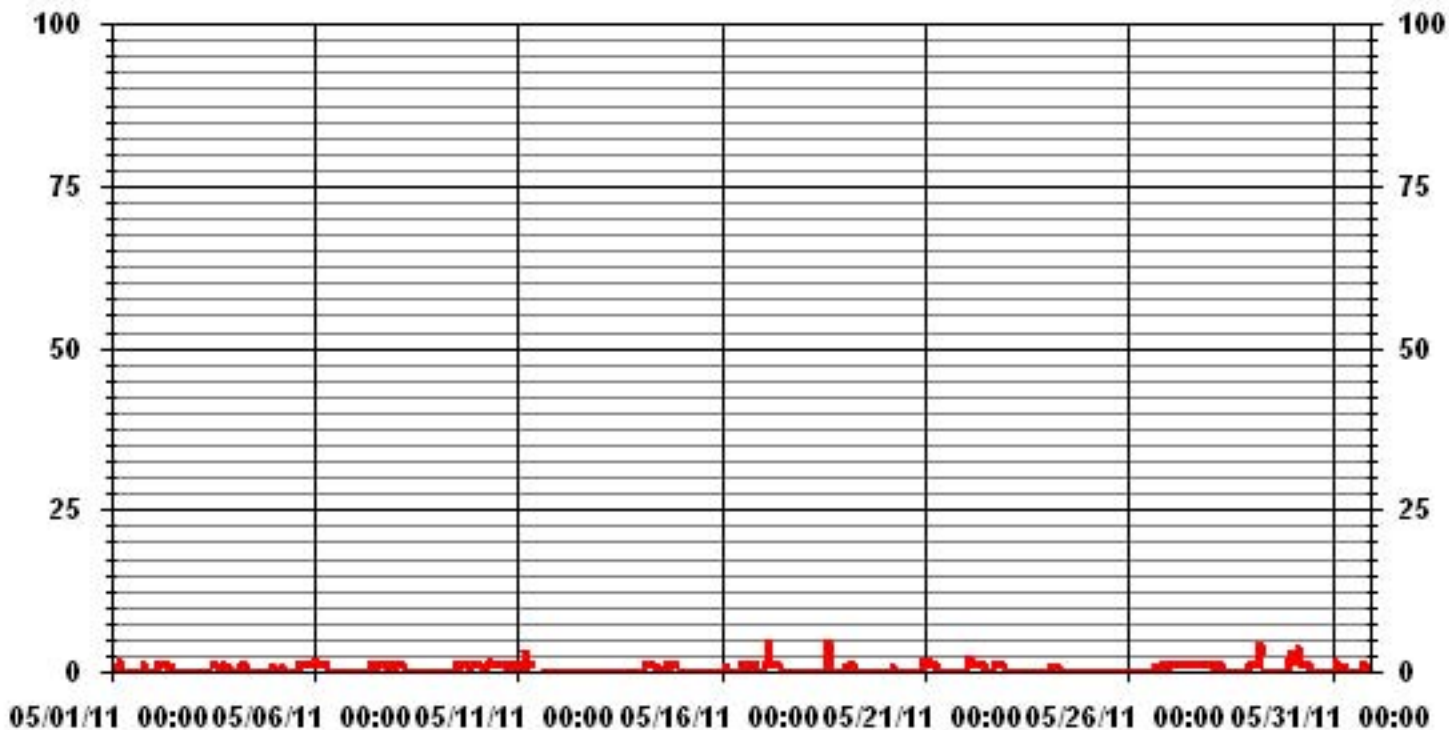
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	218				
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	4, 15	ON DAY(S) 17, 18
	VAR - VARIOUS				
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742 HRS	
MONTHLY CALIBRATION TIME:	5	HRS			
STANDARD DEVIATION:	0.63				

01 Hour Averages



— LICA33 H2S MAX PPB

LICA33
H2S_ / WDR Joint Frequency Distribution (Percent)

May 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	2.54	5.09	7.50	11.75	14.87	8.07	13.45	9.91	3.25	1.84	2.83	2.97	2.69	8.07	4.24	.56	99.71
< 10	.00	.00	.00	.00	.00	.14	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.28
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.54	5.09	7.50	11.75	14.87	8.21	13.45	10.05	3.25	1.84	2.83	2.97	2.69	8.07	4.24	.56	

Calm : .00 %

Total # Operational Hours : 706

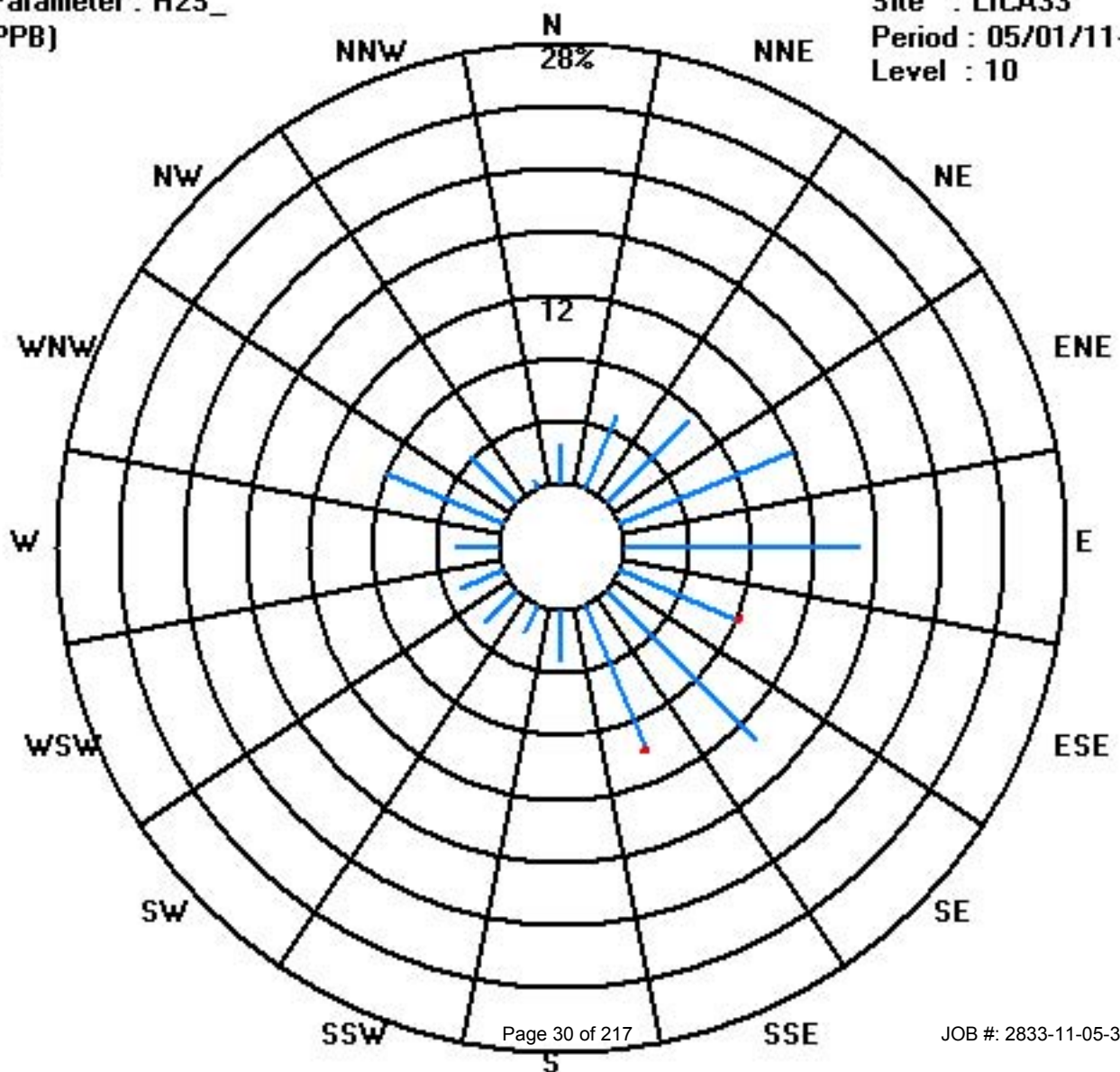
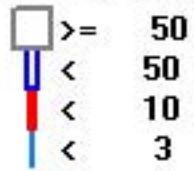
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	18	36	53	83	105	57	95	70	23	13	20	21	19	57	30	4	704
< 10						1		1									2
< 50																	
>= 50																	
Totals	18	36	53	83	105	58	95	71	23	13	20	21	19	57	30	4	

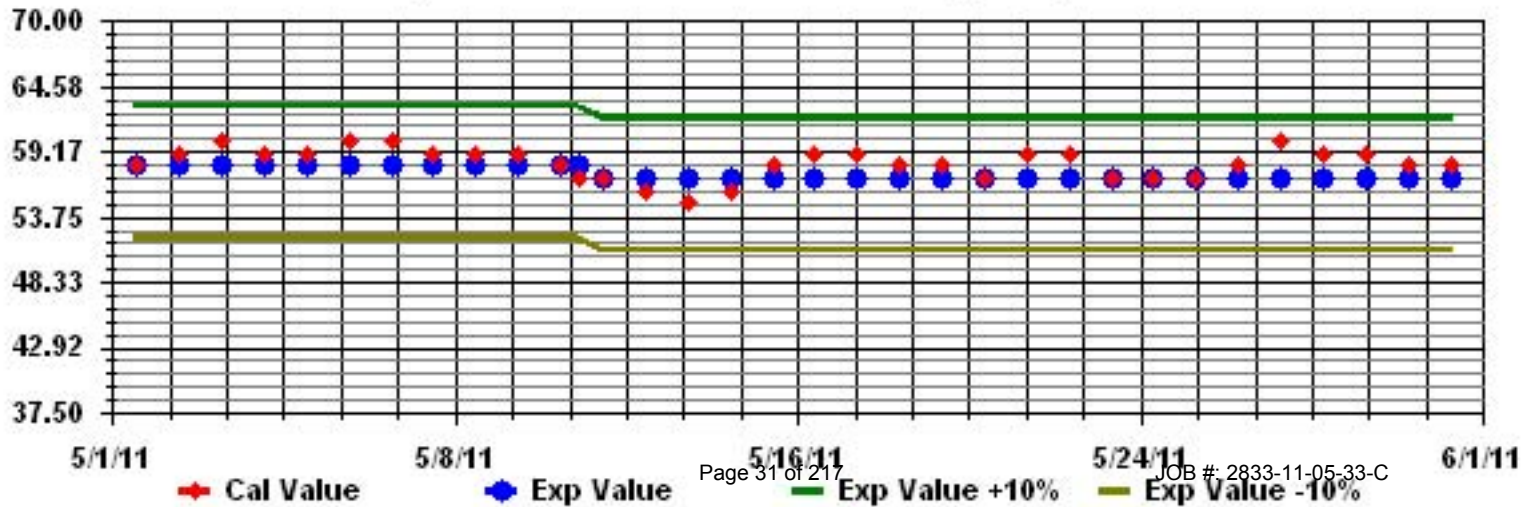
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	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		2.8	3.3	N	2.6	4.2	0.8	4.7	3.8	3.7	0.9	0.1	4.7	2.4	2.2	1.8	0	2.7	0	3.2	5.2	3.8	10.2	4.8	4.7	10.2	4.7	10.2	3.2	23
2		4.3	4.5	7.4	1.2	6.2	3.5	8.8	4.3	8.3	7.7	6.2	6.3	0	1.8	5.9	4.6	3.3	2.2	7.1	4.8	3.2	2.6	5.9	2.2	8.8	4.7	24	24	
3		5.8	0.9	5.5	0.8	2.9	2.6	4.7	0.8	5.6	0	8.9	0.1	3.6	0.6	0.7	0	1.3	N	4.6	N	1.8	0	4.3	0.6	8.9	2.6	22	22	
4		2.7	N	1.5	0.6	5.8	0	4.2	0.2	5	0	0.2	0	1.8	0	3.2	0	2.7	0	1.8	1.8	2.6	0.3	4.8	0	5.8	1.7	23	23	
5		2.7	0	2.5	0	3.7	3	4.7	1	1.3	2	2.5	2.6	6.2	2.5	2.7	1.6	2.9	3	4.8	2.3	3.2	1.8	3.4	7	7.0	2.8	24	24	
6		5.1	4.2	3	2.7	8.6	7.1	11.9	6.4	5.3	4.6	0	0.4	1.5	0	5.1	0.6	0.2	0.8	0.4	0.4	3.2	0	0	0.5	11.9	3.0	24	24	
7		0.8	1.6	0.1	2.6	N	0.2	5.9	6.3	0	0	0	0.3	0	5.2	1.2	0.8	0	5.1	1.2	2.2	1.4	2.7	1.1	2.6	6.3	1.8	23	23	
8		0	5.6	0.6	2.3	5	5.6	0	0.9	0	3.6	0	3.7	0.2	2.3	0	2.3	0.8	2.3	0	3.2	0	2.2	2.4	4.8	5.6	2.0	24	24	
9		3.7	3.7	0	6.8	5.8	4.7	0	2.3	1.2	4.8	0	3.7	0.8	5.2	0	0.3	2.3	1.8	1.2	5.2	7.7	8.3	4.3	1.8	8.3	3.2	24	24	
10		2.3	0	3.7	6.8	2.7	3.2	7.7	3.7	5.2	5.2	0.8	N	8.3	5.7	1.2	1.8	11.7	2.3	5.2	11.3	8.7	5.8	8.7	3.7	11.7	5.0	23	23	
11		4.3	2.7	3.2	4.8	3.7	N	2.7	0	4.3	2.3	1.8	N	17.7	0.2	3.3	4.8	0	3.7	5.8	4.8	5.2	3.7	4.8	1.8	17.7	3.9	22	22	
12		0.8	3.7	1.8	1.8	3.3	2.7	6.8	2.7	5.8	3.3	C	C	C	4.7	8.7	9.2	1.2	4.7	2.3	4.8	3.7	5.2	0	0.8	9.2	3.7	24	24	
13		1.8	2.3	1.7	7.3	2.7	0	0.2	2.7	0.2	4.3	1.8	1.2	2.7	1.8	5.7	10.2	0	6.2	1.2	4.2	4.3	2.3	6.8	4.7	10.2	3.2	24	24	
14		3.2	2.3	7.3	5.7	5.2	4.7	3.7	6.7	6.3	3.7	3.7	2.3	0	17.7	25.2	16.2	14.8	8.3	1.2	5.7	1.8	5.7	4.7	3.2	25.2	6.6	24	24	
15		4.7	3.7	9.7	7.3	2.3	6.8	2.3	4.3	3.2	5.2	7.3	3.7	2.3	14.2	22.2	14.2	16.8	5.2	8.3	8.7	1.8	4.8	3.2	6.3	22.2	7.0	24	24	
16		3.2	3.2	4.2	4.3	6.8	4.2	8.7	3.2	3.7	12.3	9.7	N	0.8	3.2	11.2	3.2	2.3	6.2	7.7	5.2	2.3	1.8	7.3	4.2	12.3	5.2	23	23	
17		5.2	3.7	3.7	2.7	3.2	3.2	1.2	0.8	2.3	2.3	0.2	0.8	6.8	0	0	6.8	7.3	N	4.8	7.7	9.2	2.7	2.3	1.7	9.2	3.4	23	23	
18		1.2	1.2	5.2	3.2	8.3	3.7	4.8	6.3	2.3	5.2	6.7	0	3.7	3.7	2.2	4.7	21.7	13.2	0	11.2	6.8	6.2	5.7	10.2	21.7	5.7	24	24	
19		10.7	11.7	9.2	6.2	10.7	9.2	10.7	7.7	8.3	7.7	0	21.2	13.2	2.7	22.7	5.2	8.7	13.3	0	15.2	10.2	5.2	7.7	12.2	22.7	9.6	24	24	
20		10.7	8.7	9.2	11.7	16.2	17.7	18.8	21.7	14.2	25.7	13.7	7.3	17.7	1.8	11.2	5.7	10.7	11.2	N	19.3	25.2	19.7	16.8	19.7	25.7	14.5	23	23	
21		18.7	16.2	27.3	16.2	15.7	15.8	17.2	15.2	11.2	10.7	13.8	10.2	10.7	8.7	5.7	5.2	17.2	5.2	8.3	8.3	5.7	3.7	8.7	13.3	27.3	12.0	24	24	
22		7.7	9.7	13.8	24.3	13.3	19.7	14.2	14.7	10.7	12.7	11.7	7.3	14.7	6.2	4.2	11.2	6.8	7.3	6.8	7.7	3.2	5.2	2.7	0.2	24.3	9.8	24	24	
23		0.8	0.8	0	3.2	0.3	3.3	0	0	2.3	0	1.8	0.8	0.8	2.3	5.3	3.3	0	0	1.3	2.3	0.3	14.8	3.8	14.8	2.0	24	24		
24		6.3	5.3	6.8	10.8	6.3	8.8	8.3	1.3	2.3	3.3	0	7.3	5.8	2.8	6.3	1.8	6.3	0.3	7.8	3.8	9.8	9.3	9.3	6.3	10.8	5.7	24	24	
25		12.8	10.3	11.3	12.3	8.3	12.3	15.8	11.8	14.3	8.8	9.8	15.3	17.3	11.8	14.3	0.3	10.8	12.8	9.8	4.8	4.3	7.8	6.3	8.8	17.3	10.5	24	24	
26		5.3	8.3	11.3	10.2	11.3	10.8	9.8	10.8	7.3	9.3	10.8	12.8	1.8	8.8	9.8	11.3	1.8	17.8	11.3	10.8	15.2	15.3	12.3	11.8	17.8	10.3	24	24	
27		15.8	12.8	16.8	13.3	13.3	15.3	16.3	18.8	15.8	21.3	0	16	12.3	2.1	22.9	0	31.9	29.3	31.7	20.6	17.7	13	13.2	4.9	31.9	15.6	24	24	
28		2.9	6.3	5.9	6.8	6.8	3.3	2.4	5.6	2.7	1.2	2.3	7.8	3.5	7.3	4.8	0.5	N	0	5.4	2.3	1.3	5.6	5.3	10.1	10.1	4.4	23	23	
29		5.3	3.8	8.6	6.7	6.5	11.3	4.7	10.3	3	8.2	4.4	2.4	8.6	9.3	9.1	0.6	12.6	22.8	14.4	8.8	13.1	14.5	16.8	13.5	22.8	9.1	24	24	
30		8.1	3.8	7	2.1	6.6	5	11.5	3.5	5.6	10.8	6.6	9.3	13.6	6.6	12.7	11.3	6.6	14.6	10	6.6	8.5	11.3	15.1	14.5	15.1	8.8	24	24	
31		17.9	32.7	15	18.5	14.5	13.7	18.4	13.2	14	13.8	21.7	22.7	29.4	29.6	23.3	21.1	22	26.6	25.8	29	26.3	23.8	41.1	34.5	41.1	22.9	24	24	
HOURLY MAX		19	33	27	24	16	20	19	22	16	26	22	23	29	30	25	21	32	29	32	29	26	24	41	35					
HOURLY AVG		5.7	5.9	6.8	6.6	7.0	6.7	7.5	6.2	5.6	6.6	4.8	6.3	6.9	5.5	8.1	5.2	7.7	7.8	6.4	7.6	6.9	6.5	7.9	6.9					

STATUS FLAG CODES

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

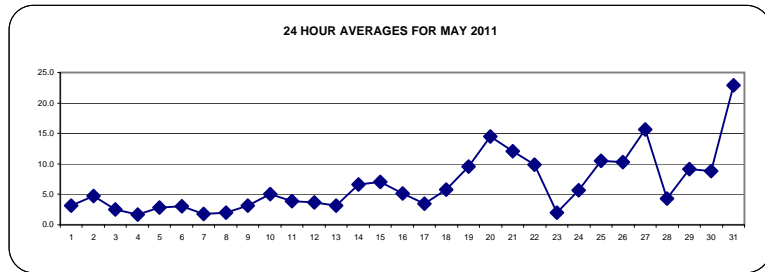
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:

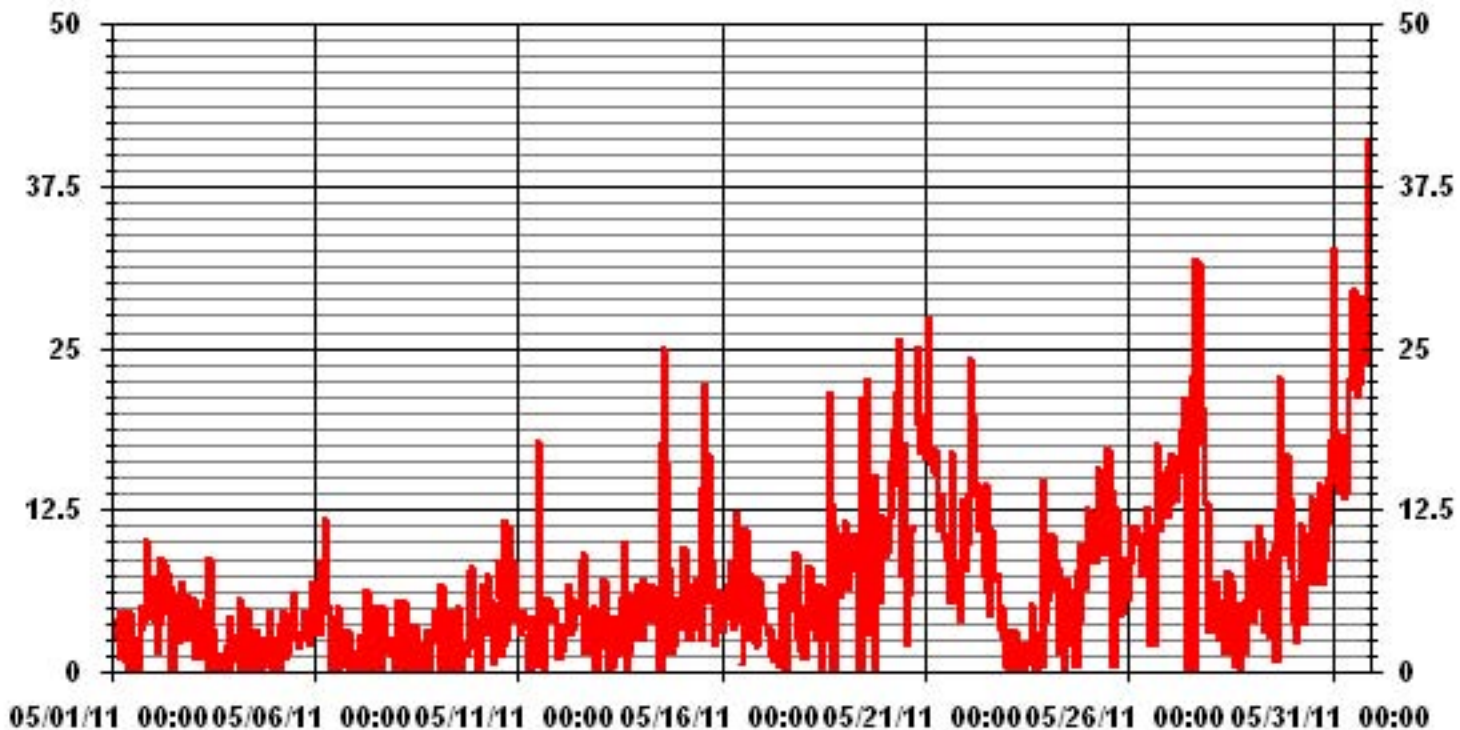
1-HR	-	PPB	24-HR	30	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-			
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE		
NUMBER OF NON-ZERO READINGS:	670			
MAXIMUM 1-HR AVERAGE:	41.1	UG/M ³	@ HOUR(S) 22	ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	22.9	UG/M ³		ON DAY(S) 31
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	732 HRS
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	98.4 %
STANDARD DEVIATION:	6.30		MONTHLY AVERAGE:	6.62 UG/M ³



01 Hour Averages



— LICA33 PM2 UG/M3

LICA33
PM2 / WDR Joint Frequency Distribution (Percent)

May 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	2.46	4.66	7.68	11.38	15.63	8.09	13.58	10.42	3.01	1.64	2.46	3.01	2.88	7.95	3.84	.54	99.31
< 60.0	.00	.27	.00	.00	.00	.00	.00	.00	.00	.13	.27	.00	.00	.00	.00	.00	.68
< 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	2.46	4.93	7.68	11.38	15.63	8.09	13.58	10.42	3.01	1.78	2.74	3.01	2.88	7.95	3.84	.54	

Calm : .00 %

Total # Operational Hours : 729

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	34	56	83	114	59	99	76	22	12	18	22	21	58	28	4	724
< 60.0		2								1	2						5
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	18	36	56	83	114	59	99	76	22	13	20	22	21	58	28	4	

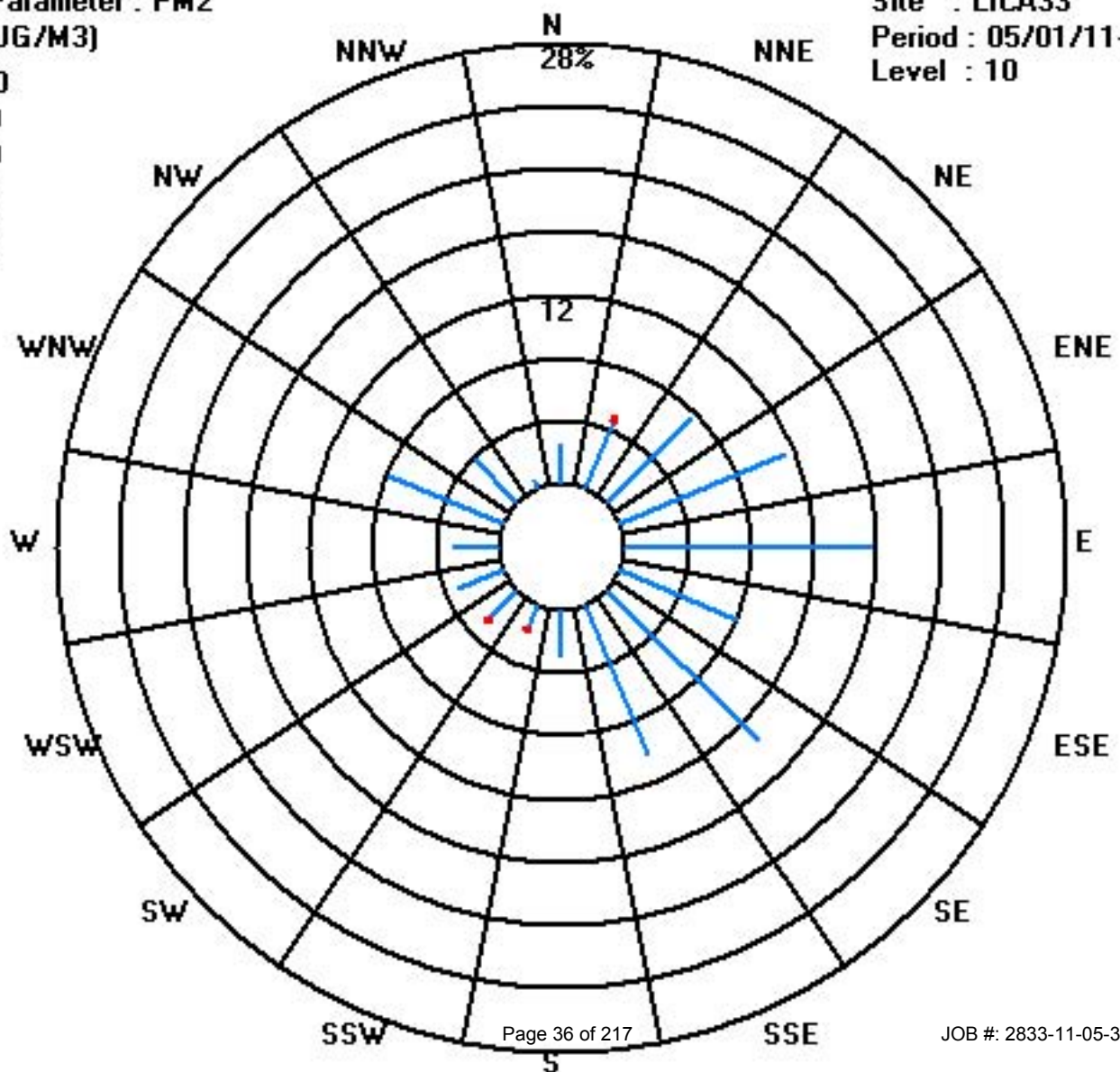
Calm : .00 %

Total # Operational Hours : 729

Class Limits (UG/M3)

Period : 05/01/11-05/31/11

Level : 10



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	8	9	7	6	7	7	6	6	4	4	3	3	3	IZS	1	1	1	1	1	2	3	2	2	1	9	3.8	24		
2	1	2	2	2	2	3	5	4	3	2	2	1	IZS	1	1	1	1	1	2	2	2	1	1	1	5	1.9	24		
3	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	4	5	3	5	1.4	24		
4	2	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	1	1	1	1	3	5	5	6	6	1.5	24		
5	4	4	2	3	3	3	5	4	2	IZS	2	1	1	1	1	1	1	1	1	2	2	2	3	6	6	2.4	24		
6	5	4	3	2	2	4	8	7	IZS	3	2	1	1	1	1	1	1	1	1	4	3	4	4	7	8	3.0	24		
7	4	4	3	2	1	1	1	IZS	1	1	1	0	0	1	0	0	0	1	1	1	1	1	1	2	4	1.2	24		
8	3	7	4	3	2	3	IZS	1	1	0	1	0	0	0	1	1	1	1	1	1	1	1	2	4	2	7	1.7	24	
9	3	5	7	7	2	IZS	2	2	2	1	1	1	1	1	1	1	1	1	2	1	1	2	3	3	7	2.2	24		
10	2	4	5	4	IZS	7	4	4	3	2	2	1	1	1	1	1	1	1	1	2	3	3	2	1	7	2.4	24		
11	1	1	2	IZS	2	2	1	2	1	C	C	C	C	C	C	0	0	0	0	1	1	1	1	1	2	1.1	24		
12	1	1	IZS	1	2	1	1	1	1	1	1	1	1	1	1	M	1	1	1	1	1	1	1	1	1	2	1.0	23	
13	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	3	2	1	3	1.3	24		
14	IZS	2	2	2	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	IZS	3	1.5	24		
15	2	2	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	1.2	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	IZS	1	2	2	1.1	24		
17	2	3	2	2	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	2	IZS	3	2	2	3	1.6	24		
18	1	1	2	3	3	3	3	2	2	1	1	1	1	1	2	1	1	1	2	IZS	8	7	7	8	8	2.7	24		
19	8	13	16	10	8	11	6	3	1	1	1	2	2	1	2	3	2	2	IZS	5	9	6	4	5	16	5.3	24		
20	9	10	7	10	9	8	10	8	7	6	4	2	1	1	2	2	1	IZS	1	5	14	8	16	17	17	6.9	24		
21	20	17	18	9	12	9	8	2	2	2	1	1	1	1	1	1	IZS	1	2	2	2	9	8	6	20	5.9	24		
22	17	15	14	10	8	7	8	8	7	4	2	1	1	1	2	IZS	1	1	1	1	1	1	1	1	1	17	4.9	24	
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	1	2	3	4	4	1.0	24	
24	5	5	6	5	6	6	8	4	1	0	0	1	0	IZS	0	0	0	0	0	0	3	6	10	6	10	3.1	24		
25	2	8	10	5	16	8	2	1	1	0	0	0	0	IZS	0	0	0	0	0	1	1	3	2	3	9	16	3.1	24	
26	11	4	4	4	4	2	1	1	1	0	0	0	IZS	0	0	0	0	0	0	1	2	2	6	4	6	11	2.3	24	
27	7	3	3	5	7	8	8	5	3	2	IZS	1	0	0	0	1	1	2	3	2	4	7	7	3	8	3.6	24		
28	7	8	4	2	2	2	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	3	11	9	9	11	3.0	24		
29	14	12	14	8	9	9	6	4	IZS	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	14	3.6	24		
30	2	2	2	2	2	2	2	IZS	1	1	1	0	0	0	0	0	0	0	1	1	4	8	9	6	9	2.0	24		
31	8	13	12	7	11	13	IZS	9	4	3	1	1	1	1	1	1	1	1	1	3	4	4	6	8	13	5.0	24		
HOURLY MAX		20	17	18	10	16	13	10	9	7	6	4	3	3	1	2	3	2	2	3	5	14	11	16	17				
HOURLY AVG		5.1	5.4	5.2	4.0	4.4	4.4	3.7	3.0	2.0	1.5	1.2	0.9	0.8	0.8	0.9	0.8	0.8	0.8	1.1	1.6	3.0	3.8	4.3	4.3				

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

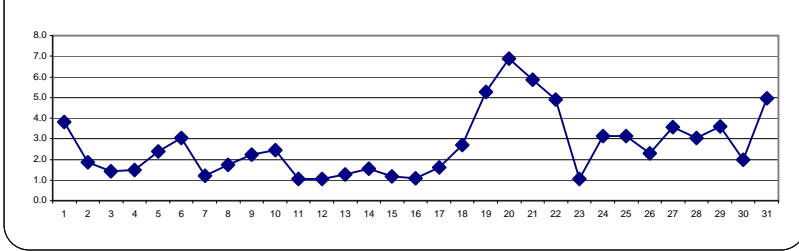
OBJECTIVE LIMIT:

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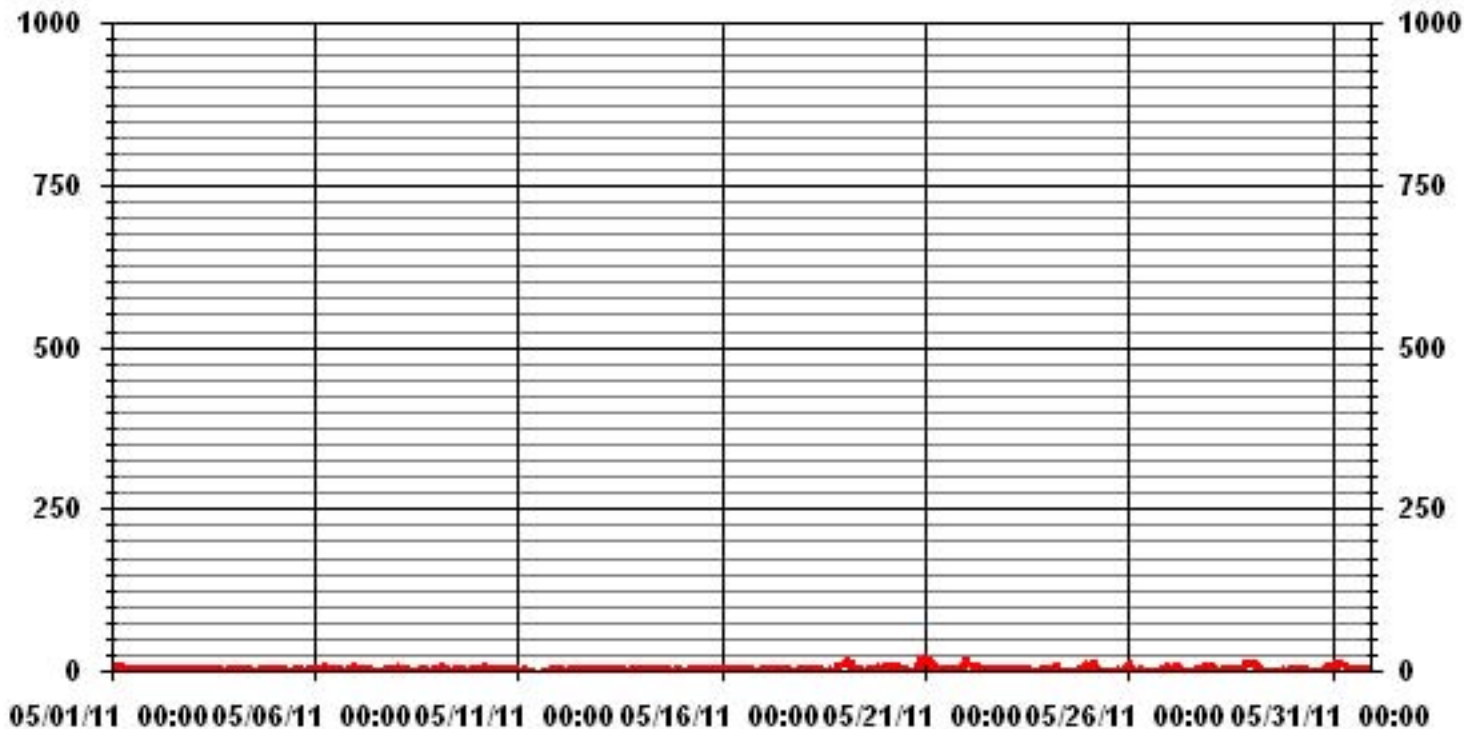
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	638
MAXIMUM 1-HR AVERAGE:	20 PPB @ HOUR(S) 0 ON DAY(S) 21
MAXIMUM 24-HR AVERAGE:	6.9 PPB ON DAY(S) 20
IZS CALIBRATION TIME:	32 HRS
OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	6 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	3.15
MONTHLY AVERAGE:	2.69 PPB

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA33 IIO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	9	10	9	7	8	8	7	7	5	5	4	3	3	IZS	1	1	1	1	2	3	5	3	4	2	10	4.7	24	
2	2	3	3	2	3	4	7	6	4	3	3	2	IZS	2	2	2	2	2	3	3	2	2	2	2	7	2.9	24	
3	1	2	1	1	1	2	1	1	2	2	2	IZS	1	1	1	2	1	1	3	2	4	5	8	8	8	2.3	24	
4	2	2	2	2	2	2	2	2	2	1	IZS	1	1	1	1	1	1	2	1	7	9	9	12	12	2.9	24		
5	10	5	4	6	5	4	6	6	3	IZS	16	2	2	2	1	1	2	2	5	5	6	4	5	13	16	5.0	24	
6	8	5	4	3	3	7	10	8	IZS	4	2	1	1	2	1	2	1	1	2	10	6	7	10	18	18	5.0	24	
7	8	8	5	4	3	2	1	IZS	2	1	1	1	1	1	1	1	1	2	2	1	2	2	2	6	8	2.5	24	
8	7	15	8	6	4	5	IZS	2	2	1	1	1	1	1	2	2	2	2	2	1	2	3	5	6	15	3.5	24	
9	5	9	16	11	3	IZS	3	3	3	2	1	1	1	1	2	1	2	1	6	2	2	4	4	3	16	3.7	24	
10	3	11	9	5	IZS	14	6	6	4	3	3	2	2	2	1	1	1	1	2	3	4	4	3	1	14	4.0	24	
11	1	2	5	IZS	4	4	2	C	C	C	C	C	C	C	C	C	1	1	1	2	2	2	1	2	22	3.5	24	
12	2	2	IZS	3	4	2	3	2	2	2	1	1	1	1	M	1	1	1	1	2	2	2	1	1	4	1.7	23	
13	1	IZS	1	1	1	1	2	1	1	1	1	1	1	1	2	3	4	3	2	2	3	4	4	2	4	1.9	24	
14	IZS	3	2	3	3	4	3	3	2	3	2	1	1	1	1	2	3	2	2	2	3	3	2	IZS	4	2.3	24	
15	3	3	2	2	2	2	2	2	1	1	2	1	1	2	1	1	1	2	1	1	1	1	1	IZS	1	3	1.6	24
16	2	2	2	2	2	2	2	1	8	1	1	1	1	1	1	1	1	1	2	2	3	IZS	2	3	8	1.9	24	
17	3	3	3	3	3	5	3	2	2	2	2	2	2	1	1	1	1	2	2	3	IZS	5	3	2	5	2.4	24	
18	2	2	4	6	5	5	4	3	2	2	2	2	1	1	36	2	1	2	3	IZS	14	9	10	14	36	5.7	24	
19	15	20	24	16	16	14	9	5	2	2	24	18	2	25	24	22	16	IZS	7	51	9	5	7	51	14.6	24		
20	17	13	8	14	10	11	13	13	8	7	5	3	3	2	19	22	3	IZS	3	8	26	12	24	30	30	11.9	24	
21	28	23	23	19	17	12	15	3	3	3	2	2	2	1	1	1	IZS	1	5	4	8	16	15	9	28	9.3	24	
22	25	20	18	13	10	9	12	9	9	6	3	1	1	3	3	IZS	2	1	2	2	2	1	1	1	25	6.7	24	
23	2	1	1	1	P	2	2	1	1	2	1	1	1	1	IZS	0	0	0	1	1	2	3	7	10	10	1.9	23	
24	7	6	14	6	9	10	10	7	3	1	1	1	1	IZS	0	1	0	0	1	1	2	5	9	21	21	6.0	24	
25	6	18	23	22	28	28	2	2	2	1	0	1	IZS	1	1	1	0	1	3	2	7	3	6	31	31	8.2	24	
26	14	10	10	7	6	4	2	2	1	1	1	IZS	1	1	1	1	9	1	1	3	6	11	7	8	14	4.7	24	
27	18	8	5	9	9	16	12	7	4	3	IZS	2	1	1	1	2	2	5	6	5	9	17	20	4	20	7.2	24	
28	10	14	4	4	4	3	2	1	1	IZS	1	2	2	2	2	2	2	1	2	2	9	21	14	11	21	5.0	24	
29	30	20	18	11	11	14	7	6	IZS	1	0	1	0	1	1	1	1	1	1	1	2	2	2	2	30	5.8	24	
30	2	2	2	3	3	3	3	IZS	2	2	2	1	1	1	1	1	1	1	3	3	10	19	13	11	19	3.9	24	
31	12	21	20	11	16	18	IZS	12	6	4	2	1	2	1	2	2	2	1	4	6	12	7	8	12	21	7.9	24	
HOURLY MAX	30	23	24	22	28	28	15	22	9	7	16	24	18	3	36	24	22	16	6	10	51	21	24	31				
HOURLY AVG	8.5	8.8	8.3	6.8	6.7	7.2	5.3	5.0	3.1	2.4	2.3	2.3	1.9	1.4	4.0	2.9	2.4	1.9	2.5	3.0	7.2	6.6	7.3	8.4				

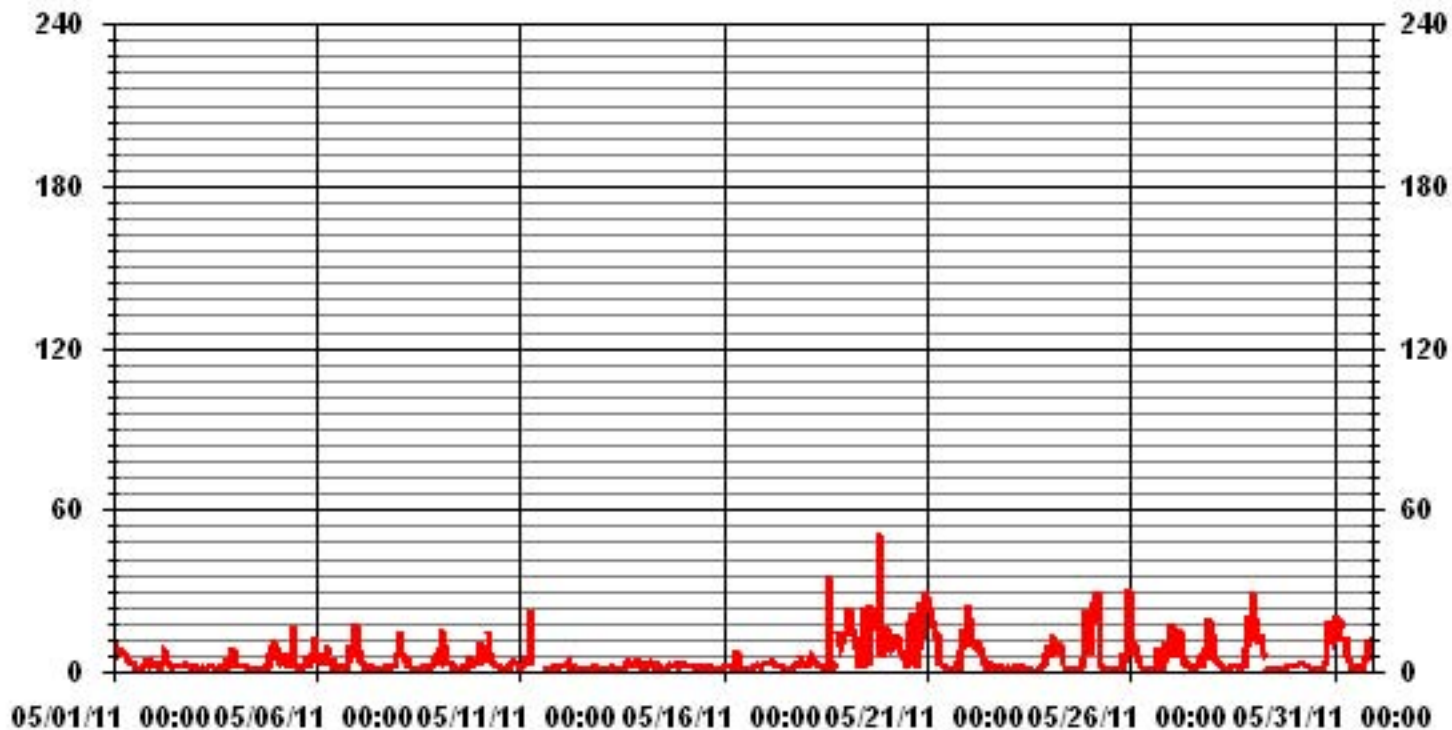
STATUS FLAG CODES

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:	693					
MAXIMUM INSTANTANEOUS VALUE:	51	PPB	@ HOUR(S)	20	ON DAY(S)	19
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	5.99					

01 Hour Averages



LICA33
 NO2_ / WDR Joint Frequency Distribution (Percent)

May 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	2.55	5.10	7.51	11.77	14.89	8.08	13.47	10.07	3.26	1.84	2.83	2.97	2.69	8.08	4.25	.56	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	2.55	5.10	7.51	11.77	14.89	8.08	13.47	10.07	3.26	1.84	2.83	2.97	2.69	8.08	4.25	.56	

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	18	36	53	83	105	57	95	71	23	13	20	21	19	57	30	4	705
< 110																	
< 210																	
>= 210																	
Totals	18	36	53	83	105	57	95	71	23	13	20	21	19	57	30	4	

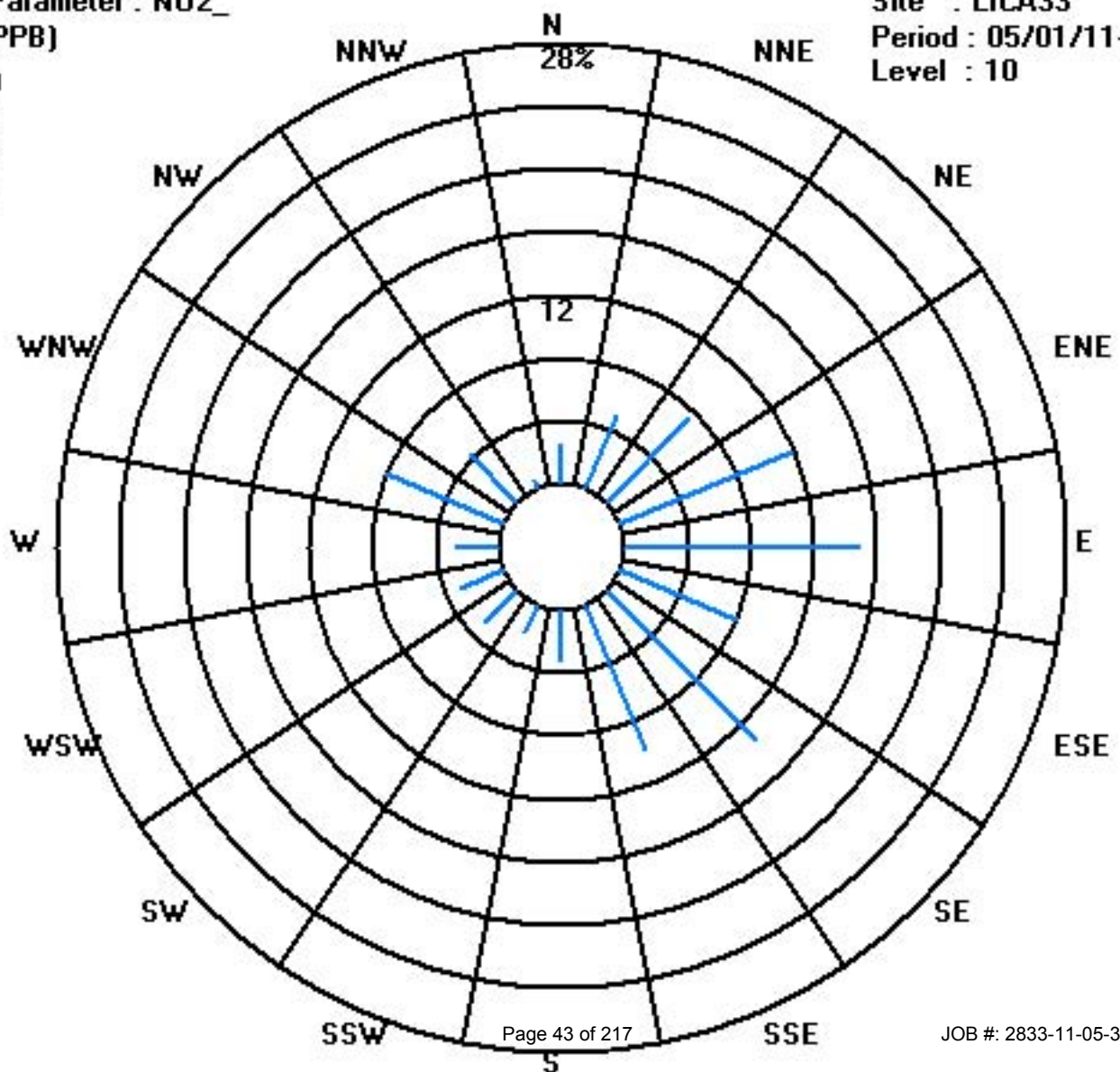
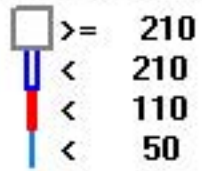
Calm : .00 %

Total # Operational Hours : 705

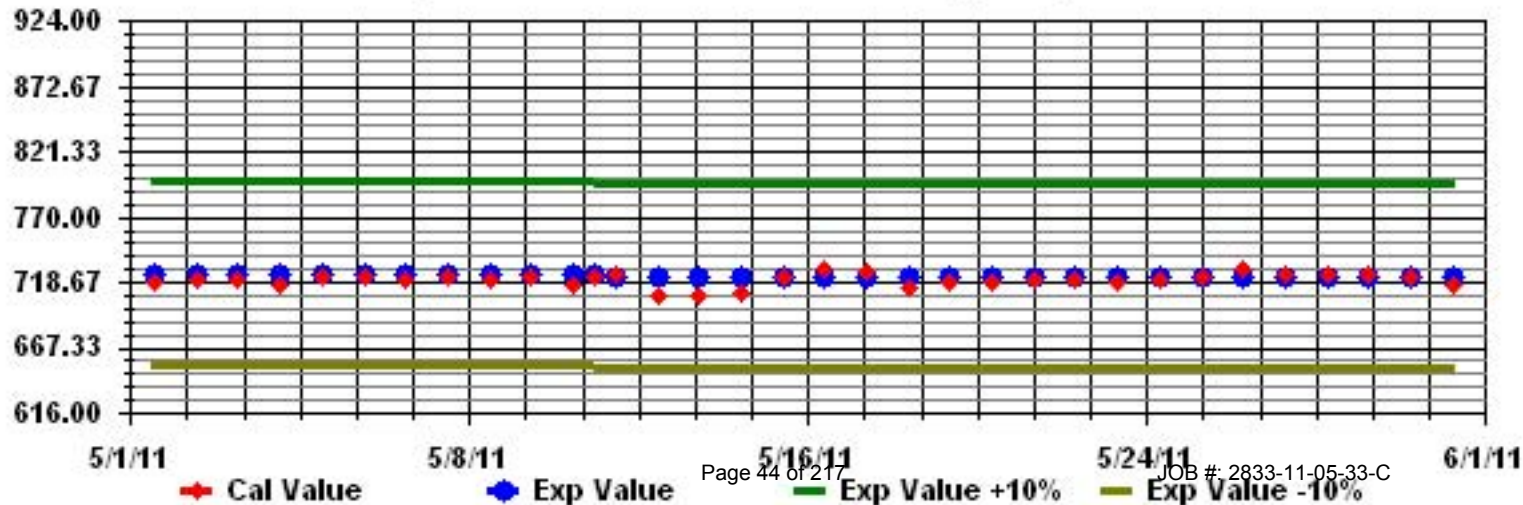
Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	1	1	1	1	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
2	0	0	0	0	0	0	1	1	1	1	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
3	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	1	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	24	
5	0	0	0	0	0	0	1	1	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
6	0	0	0	0	0	0	2	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
7	0	0	0	0	0	0	0	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
8	0	1	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
9	0	0	1	0	0	IZS	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
10	0	0	0	0	IZS	3	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	24	
11	0	0	0	IZS	1	0	0	1	1	C	C	C	C	C	1	0	0	0	0	0	0	0	0	0	0	1	0.2	24	
12	0	0	IZS	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	
13	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	
14	IZS	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
15	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	
16	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	0.0	24	
17	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	0.0	24	
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	1	1	1	1	1	1	0.2	24
19	3	5	5	2	1	5	2	1	0	0	0	1	0	0	1	2	1	0	IZS	1	2	0	0	0	0	5	1.4	24	
20	1	0	0	0	0	1	3	3	2	2	0	0	0	0	0	1	0	IZS	0	0	1	0	0	2	2	3	0.7	24	
21	3	2	5	1	2	2	2	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	5	0.7	24	
22	0	1	6	1	1	3	5	4	3	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	6	1.1	24	
23	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	1	1	0.1	24	
24	1	1	6	1	3	8	7	2	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	1	8	1.4	24	
25	0	1	1	1	4	2	0	1	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	1	4	0.5	24	
26	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
27	1	0	0	0	1	2	3	2	1	1	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	24	
28	0	0	0	0	0	1	1	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0.3	24	
29	2	2	1	1	2	4	2	1	IZS	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0.7	24	
30	0	0	0	0	0	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0.3	24	
31	0	1	2	1	4	9	IZS	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9	1.1	24	
HOURLY MAX	3	5	6	2	4	9	7	5	3	2	1	1	1	1	1	2	1	0	0	1	2	1	1	2					
HOURLY AVG	0.4	0.5	0.9	0.3	0.7	1.4	1.2	1.0	0.6	0.5	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3					

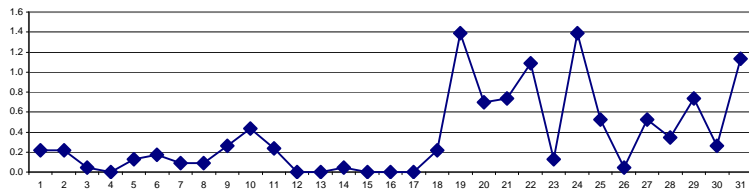
STATUS FLAG CODES

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

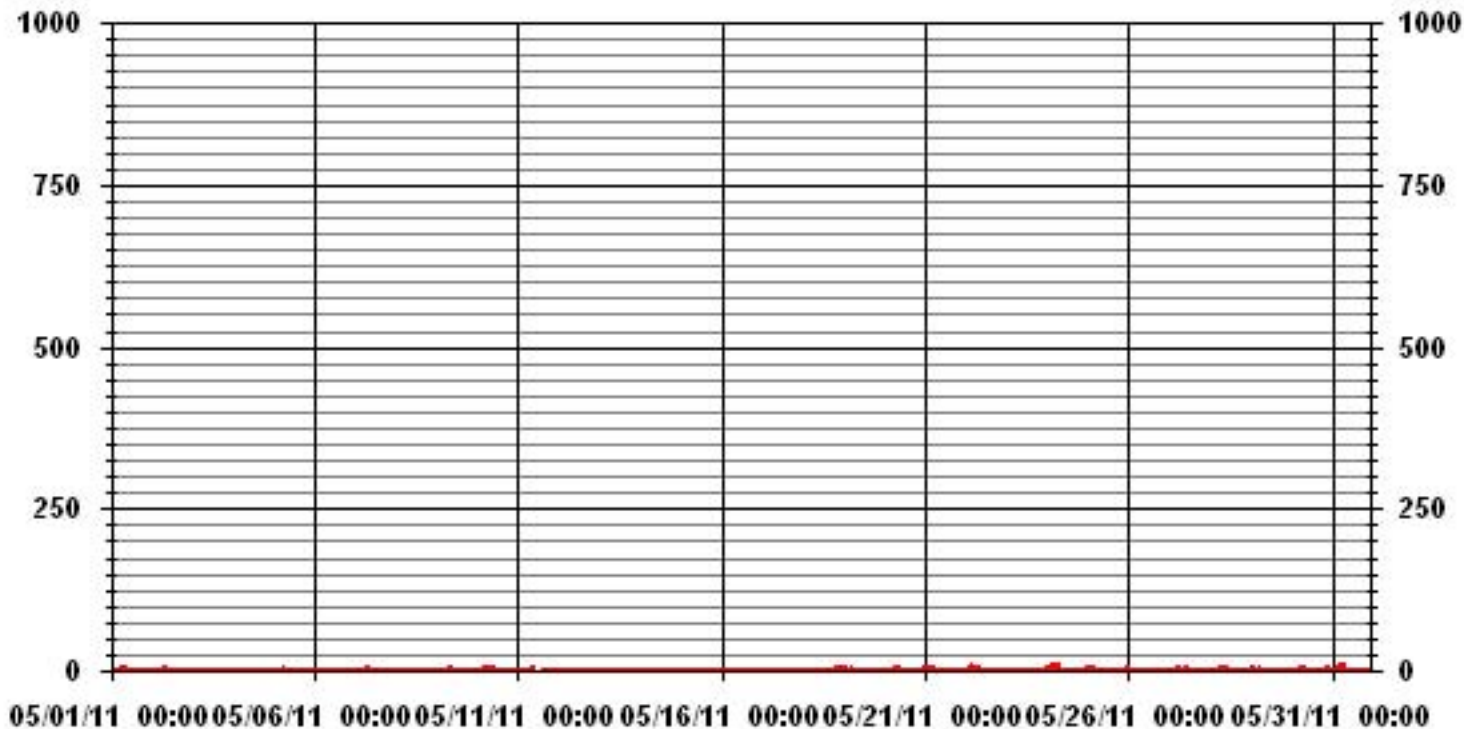
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	145
MAXIMUM 1-HR AVERAGE:	9 PPB @ HOUR(S) 5 ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	1.4 PPB ON DAY(S) 19, 24
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	0.97
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	0.36 PPB

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA33 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	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	1	1	1	1	1	1	2	2	1	1	1	1	1	IZS	2	1	1	1	1	1	1	0	1	0	2	1.0	24	
2	0	1	1	0	1	1	2	2	2	1	1	1	IZS	2	1	1	1	1	1	0	0	0	0	1	2	0.9	24	
3	0	0	1	1	1	0	1	1	1	1	1	1	IZS	1	1	1	1	1	1	0	1	1	2	2	2	0.9	24	
4	0	0	0	0	0	0	1	1	1	1	IZS	1	1	1	0	1	1	1	0	0	1	1	1	1	1	0.6	24	
5	1	1	0	1	1	1	2	1	1	IZS	6	1	1	1	1	1	0	0	1	1	0	0	0	1	6	1.0	24	
6	1	0	0	0	1	1	3	2	IZS	3	1	1	1	1	1	1	0	0	1	1	1	1	1	2	3	1.0	24	
7	1	0	1	1	1	1	0	IZS	2	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	2	0.8	24	
8	1	7	1	1	1	1	IZS	2	1	1	1	1	1	1	1	2	1	1	1	1	1	0	1	0	7	1.3	24	
9	1	1	7	2	1	IZS	2	2	2	1	1	0	1	0	1	0	1	1	2	1	1	0	1	1	7	1.3	24	
10	0	1	1	1	IZS	8	3	3	2	2	2	1	1	1	1	0	1	0	0	0	0	0	0	0	8	1.2	24	
11	0	0	0	IZS	1	1	1	21	C	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	21	1.6	24	
12	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	M	0	1	1	1	1	0	1	0	0	1	0.7	23	
13	0	IZS	1	1	0	0	0	1	1	1	1	0	1	1	1	1	2	1	0	0	0	0	0	1	1	2	0.7	24
14	IZS	1	1	1	1	1	1	1	1	2	1	0	0	0	0	1	2	1	1	1	0	0	1	IZS	2	0.8	24	
15	1	1	1	1	1	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0.6	24
16	1	0	0	0	0	0	1	1	9	1	1	1	0	0	0	1	1	0	0	0	0	0	IZS	1	1	9	0.8	24
17	1	0	1	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	IZS	1	1	1	1	0.7	24
18	0	1	1	1	0	1	1	1	1	1	1	0	0	24	0	0	1	0	IZS	3	2	4	5	24	2.1	24		
19	11	13	19	5	5	9	5	2	1	0	0	15	10	1	32	27	17	6	IZS	1	50	1	1	1	50	10.1	24	
20	4	1	1	1	1	3	6	6	3	2	1	1	0	14	22	1	IZS	1	1	1	1	2	10	22	3.7	24		
21	13	7	19	5	4	4	7	1	1	1	1	1	0	0	0	IZS	1	1	1	0	1	1	1	1	19	3.1	24	
22	2	4	13	6	4	6	11	5	4	2	1	0	1	1	1	IZS	1	1	1	1	1	1	1	1	13	3.0	24	
23	0	1	1	1	P	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	3	3	1.0	23	
24	2	3	41	2	11	13	10	5	2	1	1	1	1	IZS	1	1	1	1	1	1	1	1	4	4	41	4.7	24	
25	1	3	4	4	15	15	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	19	19	3.3	24	
26	2	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	8	1	1	1	1	1	1	1	8	1.3	24	
27	2	1	1	1	2	5	4	3	2	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1.5	24	
28	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	4	4	1.2	24	
29	27	10	3	2	5	7	2	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	3.2	24	
30	1	1	1	1	1	1	1	IZS	2	2	1	1	1	1	1	1	1	1	1	1	1	3	2	1	3	1.2	24	
31	1	4	5	6	10	21	IZS	8	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21	3.2	24	
HOURLY MAX	27	13	41	6	15	21	11	21	9	3	6	15	10	2	32	27	17	6	2	1	50	3	4	19				
HOURLY AVG	2.5	2.2	4.3	1.6	2.5	3.6	2.5	2.8	1.8	1.3	1.2	1.4	1.2	0.8	3.2	2.4	1.6	0.9	0.8	0.7	2.3	0.7	1.1	2.2				

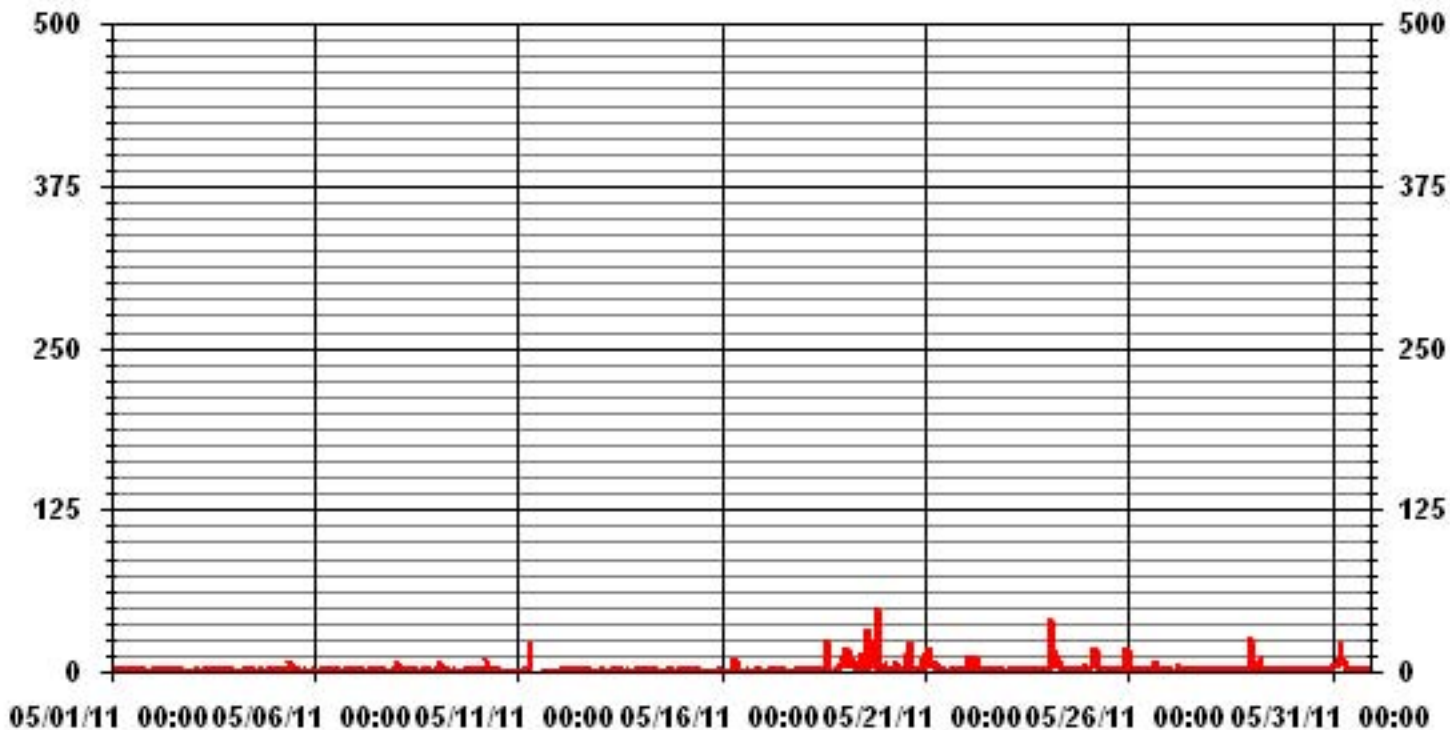
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	571					
MAXIMUM INSTANTANEOUS VALUE:	50	PPB	@ HOUR(S)	20	ON DAY(S)	19
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	4.12					

01 Hour Averages



LICA33
 NO_ / WDR Joint Frequency Distribution (Percent)

May 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	2.55	5.10	7.51	11.77	14.89	8.08	13.47	10.07	3.26	1.84	2.83	2.97	2.69	8.08	4.25	.56	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	2.55	5.10	7.51	11.77	14.89	8.08	13.47	10.07	3.26	1.84	2.83	2.97	2.69	8.08	4.25	.56	

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	18	36	53	83	105	57	95	71	23	13	20	21	19	57	30	4	705
< 110																	
< 210																	
>= 210																	
Totals	18	36	53	83	105	57	95	71	23	13	20	21	19	57	30	4	

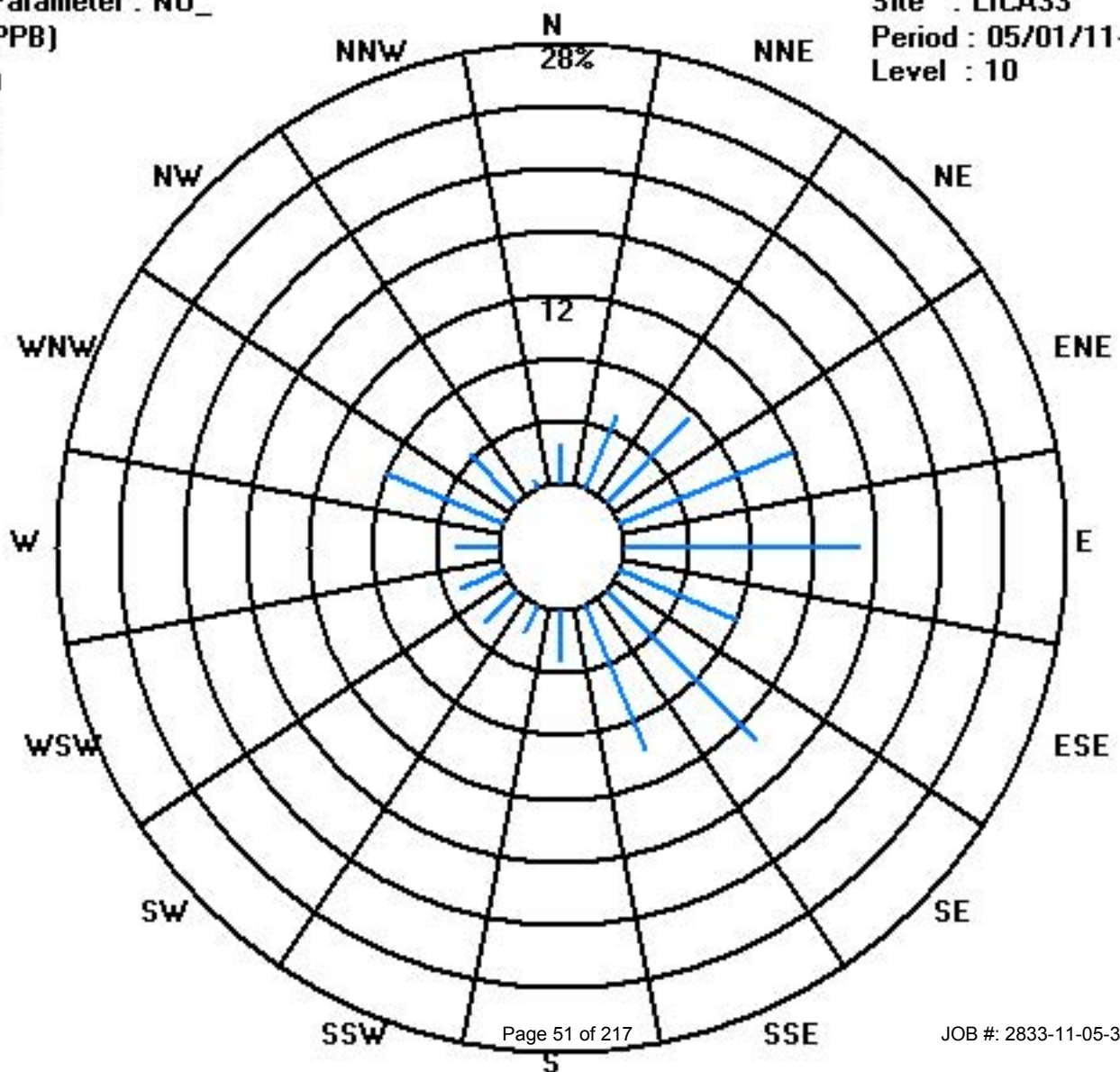
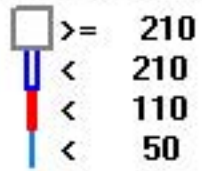
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 2011

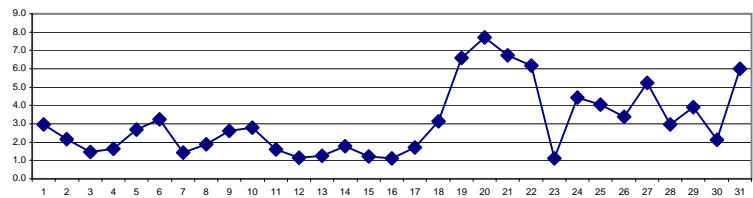
OXIDES OF NITROGEN hourly averages in ppb

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	6	7	5	5	5	6	6	5	3	2	1	1	1	IZS	1	1	1	1	1	2	3	2	2	1	7	3.0	24	
2	1	2	2	2	2	3	6	5	4	3	2	2	IZS	2	2	1	1	2	2	2	1	1	1	1	6	2.2	24	
3	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	2	4	5	3	5	1.5	24	
4	2	1	1	1	1	1	1	1	1	1	1	IZS	1	1	0	1	1	1	1	1	3	5	5	6	6	1.7	24	
5	4	4	2	3	3	4	5	5	3	IZS	4	1	1	1	1	1	1	1	2	3	2	2	3	6	6	2.7	24	
6	5	4	3	2	2	4	10	8	IZS	4	2	1	1	1	1	1	1	1	1	4	3	4	4	8	10	3.3	24	
7	4	4	3	2	1	1	1	IZS	2	1	1	1	1	1	1	0	1	1	1	1	1	1	1	2	4	1.4	24	
8	3	8	4	3	2	3	IZS	2	1	0	1	1	0	0	1	1	1	1	1	1	1	2	4	2	8	1.9	24	
9	3	6	8	7	2	IZS	4	3	3	2	1	1	1	1	1	1	1	1	2	1	2	3	3	3	8	2.6	24	
10	2	4	5	4	IZS	10	6	5	4	3	2	2	1	1	1	1	1	1	1	2	2	3	2	1	10	2.8	24	
11	1	1	2	IZS	3	2	2	3	2	C	C	C	C	C	2	1	1	1	1	2	1	1	1	1	3	1.6	24	
12	1	1	IZS	2	2	1	2	1	1	1	1	1	1	1	M	1	1	1	1	1	1	1	1	1	2	1.1	23	
13	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	2	3	2	1	3	1.3	24	
14	IZS	2	2	2	3	3	3	2	2	2	1	1	1	1	1	1	2	2	1	1	2	2	2	1	3	1.8	24	
15	2	2	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	1.2	24
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	IZS	2	2	2	1.1	24	
17	2	3	2	2	2	3	3	2	1	1	1	1	1	1	1	1	1	1	1	2	IZS	3	2	2	3	1.7	24	
18	1	1	2	3	3	4	3	3	2	1	1	1	1	1	4	1	1	1	2	IZS	9	8	9	10	10	3.1	24	
19	11	18	21	13	9	15	8	4	2	1	1	2	2	1	2	5	3	2	IZS	5	12	6	4	5	21	6.6	24	
20	9	10	7	10	9	10	13	11	9	8	4	2	2	1	3	3	1	IZS	2	5	14	8	16	20	20	7.7	24	
21	23	19	24	10	15	11	10	2	2	2	1	1	1	1	1	1	IZS	1	2	2	3	9	8	6	24	6.7	24	
22	17	16	21	11	10	10	14	12	10	5	2	1	1	2	2	IZS	1	1	1	1	1	1	1	1	1	21	6.2	24
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	1	2	4	5	5	1.1	24	
24	6	5	11	6	9	14	15	6	1	0	1	1	0	IZS	0	0	0	0	0	0	3	7	11	6	15	4.4	24	
25	2	9	11	5	20	10	2	1	1	1	0	0	IZS	1	1	1	1	1	2	2	4	3	4	11	20	4.0	24	
26	12	5	5	5	5	3	2	2	2	2	1	IZS	1	1	1	1	1	1	2	3	4	7	5	7	12	3.4	24	
27	9	5	4	6	8	11	12	7	5	3	IZS	2	2	1	2	2	2	4	5	3	6	8	9	4	12	5.2	24	
28	8	10	5	3	3	3	2	2	2	IZS	1	0	0	0	0	0	0	0	0	0	3	10	8	8	10	3.0	24	
29	15	13	14	8	9	12	7	4	IZS	1	0	0	0	0	0	0	0	0	0	1	1	1	2	2	15	3.9	24	
30	2	2	2	2	2	2	2	IZS	2	2	1	0	0	0	0	0	0	0	1	1	4	8	9	7	9	2.1	24	
31	8	14	13	8	15	22	IZS	14	6	4	1	1	1	1	1	1	1	1	1	3	4	4	6	8	22	6.0	24	
HOURLY MAX	23	19	24	13	20	22	15	14	10	8	4	2	2	2	4	5	3	4	5	5	14	10	16	20				
HOURLY AVG	5.4	6.0	6.1	4.3	5.0	5.8	5.0	4.0	2.6	2.0	1.3	1.0	0.9	0.9	1.1	1.1	1.0	1.0	1.3	1.7	3.3	4.0	4.5	4.7				

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

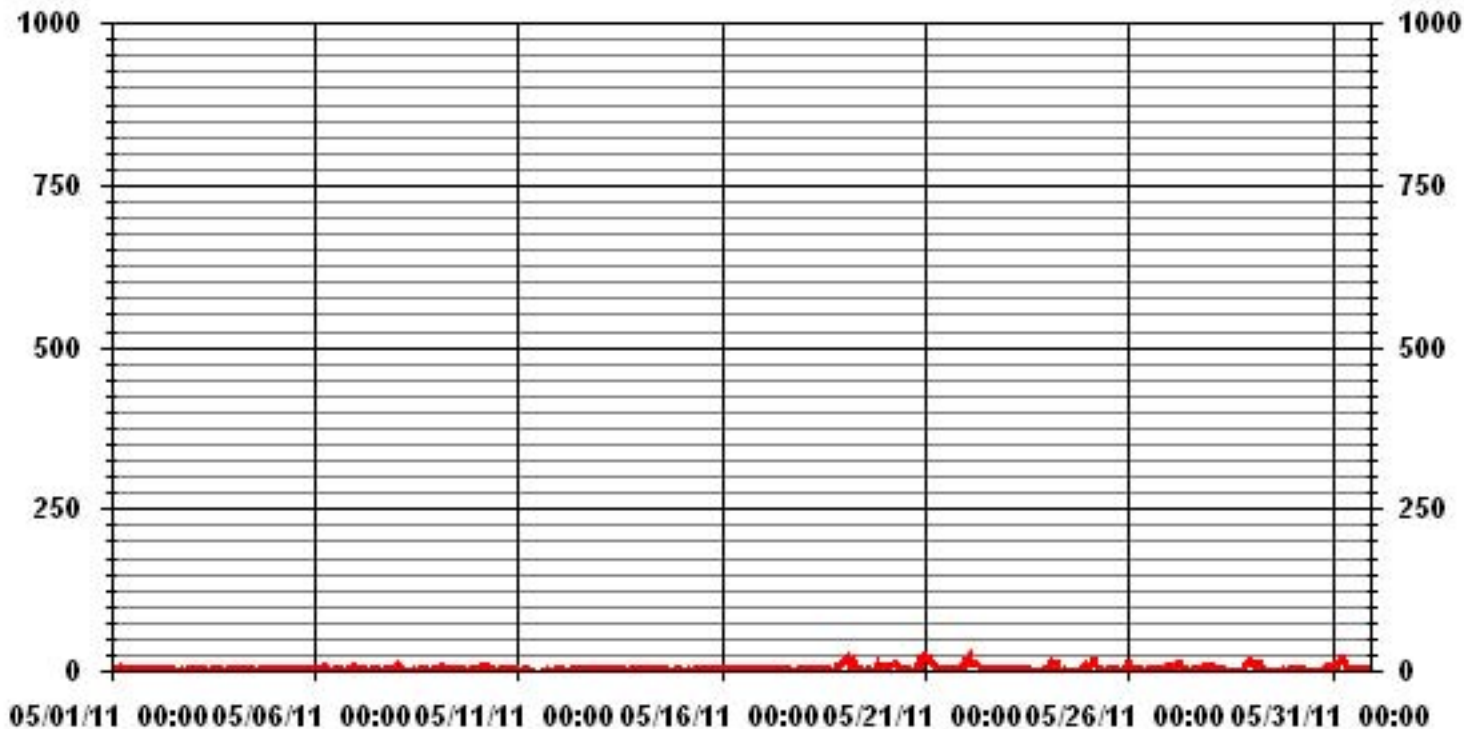
24 HOUR AVERAGES FOR MAY 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	660					
MAXIMUM 1-HR AVERAGE:	24	PPB	@ HOUR(S)	2	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	7.7	PPB			ON DAY(S)	20
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	3.78		MONTHLY AVERAGE:	3.12	PPB	

01 Hour Averages



— LICA33 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	10	9	7	8	9	8	8	6	5	4	3	3	IZS	2	1	1	1	3	4	6	3	4	2	10	5.0	24	
2	2	3	3	2	3	4	9	7	6	4	3	2	IZS	3	3	2	2	2	3	3	2	2	2	2	9	3.2	24	
3	1	1	1	1	1	2	1	1	2	2	2	IZS	2	2	2	2	2	2	3	2	4	5	8	10	10	2.6	24	
4	2	2	2	2	2	1	2	2	2	1	IZS	2	2	1	1	2	1	1	2	1	7	10	10	12	12	3.0	24	
5	10	5	4	7	5	4	8	7	4	IZS	22	3	2	2	1	1	1	2	5	5	6	3	5	13	22	5.4	24	
6	8	5	4	3	3	8	12	9	IZS	6	3	2	1	2	2	2	1	1	2	10	6	7	10	19	19	5.5	24	
7	8	8	5	4	3	1	1	IZS	4	2	1	1	1	1	1	1	2	2	1	1	2	2	6	8	8	2.6	24	
8	7	22	8	6	4	6	IZS	2	2	1	2	1	1	1	2	3	3	2	2	1	2	3	5	6	22	4.0	24	
9	5	9	22	13	3	IZS	5	4	4	3	2	1	1	2	2	1	2	1	7	2	2	4	4	3	22	4.4	24	
10	3	11	9	5	IZS	22	9	9	5	4	4	2	3	3	1	1	2	1	2	3	4	4	3	1	22	4.8	24	
11	1	2	5	IZS	4	5	3	40	C	C	C	C	C	C	C	C	1	1	1	2	2	2	1	2	40	4.8	24	
12	2	2	IZS	3	5	2	3	2	2	2	2	1	1	M	1	1	1	1	1	1	1	2	1	1	5	1.8	23	
13	1	IZS	2	1	1	1	1	1	1	1	1	1	1	3	4	5	4	1	2	3	4	3	2	5	2.0	24		
14	IZS	3	2	3	3	4	4	3	3	4	2	1	1	1	2	4	3	2	2	2	3	2	IZS	4	2.5	24		
15	3	3	2	2	2	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	IZS	2	3	1.5	24	
16	2	2	1	2	2	2	1	2	17	1	1	1	1	1	1	1	1	1	2	2	3	IZS	2	3	17	2.3	24	
17	3	3	3	3	3	5	4	2	2	2	2	2	1	1	1	2	2	2	3	IZS	5	3	2	5	2.5	24		
18	2	2	4	6	5	5	4	3	3	2	2	2	1	1	60	1	1	2	3	IZS	15	11	12	19	60	7.2	24	
19	25	32	43	19	20	20	14	6	2	2	2	36	28	3	55	32	40	20	IZS	8	94	10	5	7	94	22.7	24	
20	21	14	8	15	10	14	19	19	11	9	6	3	3	2	31	45	4	IZS	3	9	27	12	25	39	45	15.2	24	
21	39	30	32	24	21	17	21	4	3	3	2	2	2	1	1	1	IZS	1	5	4	8	16	15	10	39	11.4	24	
22	27	21	31	20	13	14	23	13	13	8	4	1	2	3	3	IZS	2	2	2	2	2	1	1	1	31	9.1	24	
23	1	1	1	2	P	2	2	2	1	1	1	1	1	1	IZS	0	1	0	1	1	2	3	8	12	12	2.0	23	
24	8	8	53	7	17	20	20	12	4	1	1	2	1	IZS	1	1	1	1	0	2	5	9	24	25	53	9.7	24	
25	6	21	27	26	43	43	3	2	2	1	1	0	IZS	2	2	2	2	2	4	3	9	4	7	47	47	11.3	24	
26	16	12	12	8	8	5	3	4	3	2	2	IZS	2	2	2	2	18	2	3	4	7	12	9	9	18	6.4	24	
27	21	9	6	10	11	23	17	10	7	5	IZS	3	3	2	2	3	4	7	8	6	11	19	22	5	23	9.3	24	
28	12	16	5	5	5	4	3	3	3	IZS	1	1	1	1	1	1	1	0	1	1	8	20	14	13	20	5.2	24	
29	52	28	18	11	15	19	8	6	IZS	1	1	1	1	1	1	0	1	1	1	1	2	2	2	2	52	7.6	24	
30	2	2	2	3	3	3	3	IZS	3	3	2	1	1	1	1	1	1	1	3	3	11	22	14	11	22	4.2	24	
31	13	24	24	16	22	37	IZS	20	7	6	2	1	2	1	2	1	2	2	4	7	12	8	9	12	37	10.2	24	
HOURLY MAX	52	32	53	26	43	43	23	40	17	9	22	36	28	3	60	45	40	20	8	10	94	22	25	47				
HOURLY AVG	10.4	10.4	11.6	7.9	8.4	10.1	7.3	7.1	4.4	3.0	2.9	2.8	2.5	1.6	6.6	4.0	3.6	2.3	2.6	3.2	8.8	7.0	7.7	9.9				

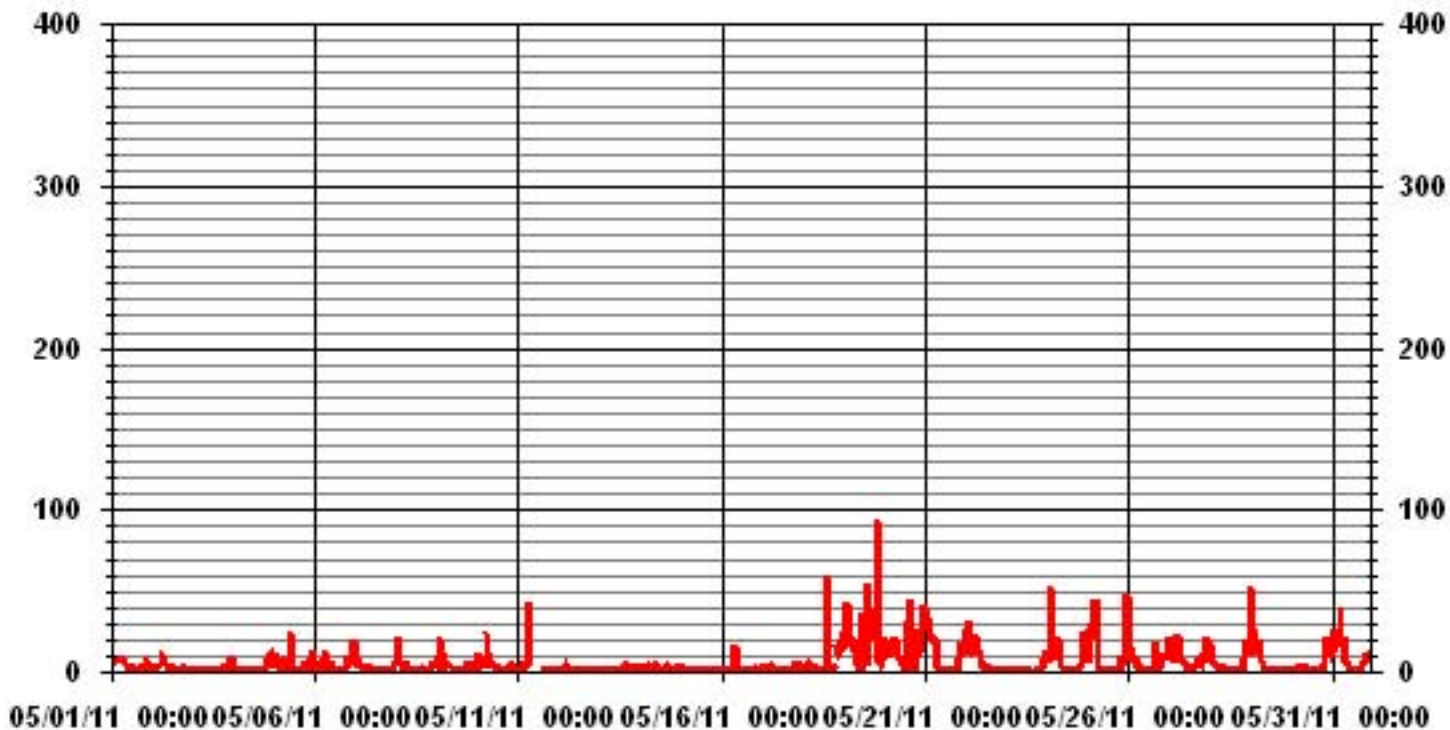
STATUS FLAG CODES

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:	696					
MAXIMUM INSTANTANEOUS VALUE:	94	PPB	@ HOUR(S)	20	ON DAY(S)	19
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	9.08					

01 Hour Averages



— LICA33 NOXMAX PPB

LICA33
 NOX_ / WDR Joint Frequency Distribution (Percent)

May 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	2.55	5.10	7.51	11.77	14.89	8.08	13.47	10.07	3.26	1.84	2.83	2.97	2.69	8.08	4.25	.56	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	2.55	5.10	7.51	11.77	14.89	8.08	13.47	10.07	3.26	1.84	2.83	2.97	2.69	8.08	4.25	.56	

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	18	36	53	83	105	57	95	71	23	13	20	21	19	57	30	4	705
< 110																	
< 210																	
>= 210																	
Totals	18	36	53	83	105	57	95	71	23	13	20	21	19	57	30	4	

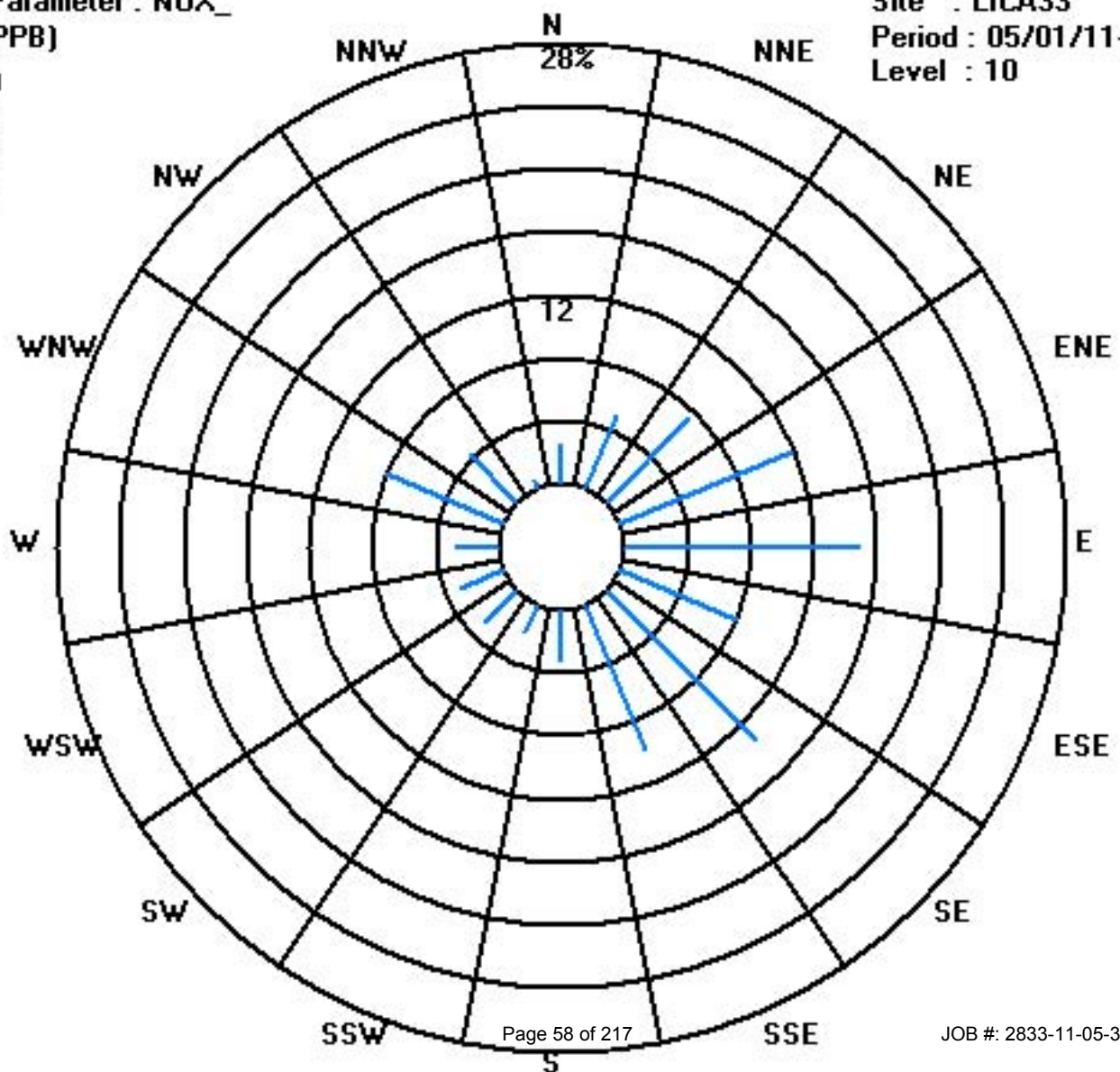
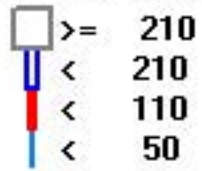
Calm : .00 %

Total # Operational Hours : 705

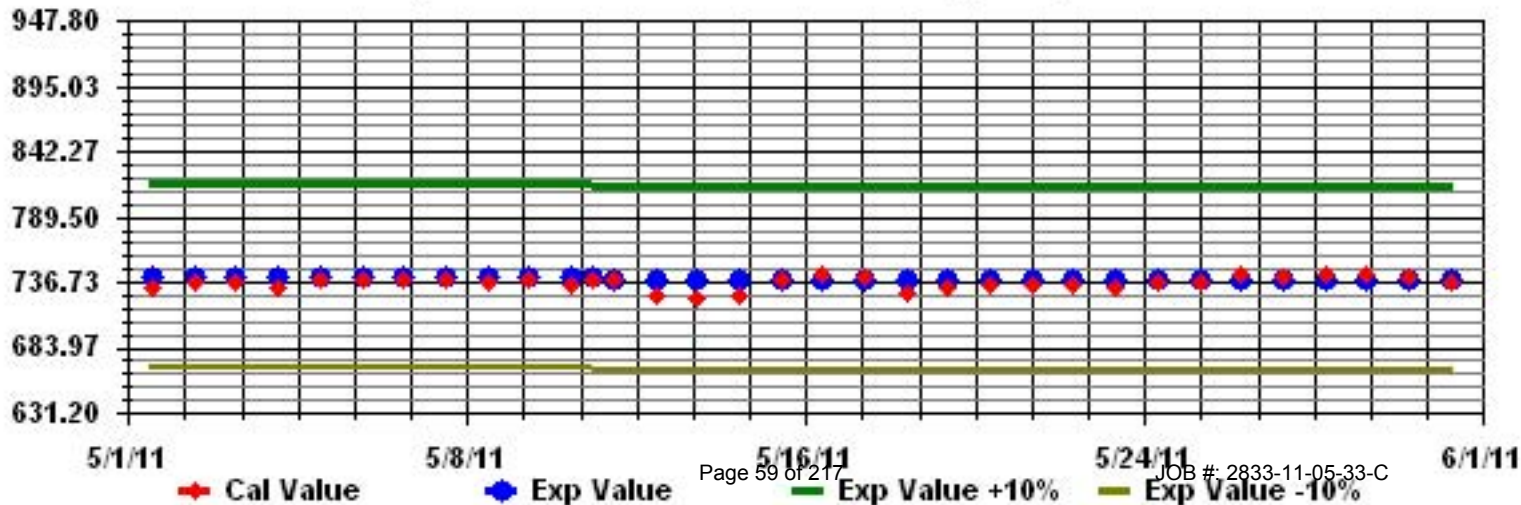
Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 2011

OZONE (O₃) hourly averages in ppb

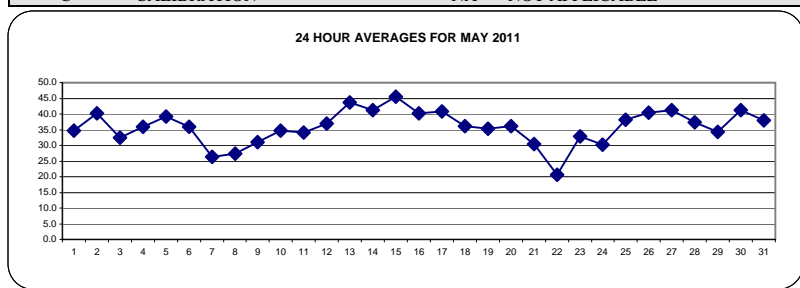
MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
1	1	22	21	23	24	24	23	24	27	31	36	41	44	45	IZS	47	48	48	45	43	40	35	39	32	34	48	34.6	24	
2	2	30	28	32	28	22	21	22	34	37	41	46	50	IZS	52	52	53	53	52	50	48	46	45	42	41	53	40.2	24	
3	3	37	34	33	31	30	30	31	32	34	36	37	IZS	37	39	37	35	35	35	36	34	25	20	21	28	39	32.5	24	
4	4	30	31	32	33	33	33	32	31	33	37	IZS	41	42	43	44	43	43	42	42	40	35	31	29	28	44	36.0	24	
5	5	27	24	26	25	25	24	24	33	39	IZS	41	49	52	52	53	54	54	54	52	46	42	40	36	27	54	39.1	24	
6	6	23	30	35	33	29	19	20	28	IZS	39	44	43	48	46	46	45	47	46	45	38	36	32	31	25	48	36.0	24	
7	7	25	23	22	18	20	22	23	IZS	24	27	31	33	31	31	33	32	33	30	28	26	24	25	25	20	33	26.3	24	
8	8	18	14	17	18	19	19	IZS	24	26	32	33	33	34	34	35	35	36	36	35	31	26	27	24	23	36	27.3	24	
9	9	16	17	17	13	18	IZS	20	23	27	31	37	41	42	43	44	46	46	46	43	33	29	30	28	24	46	31.0	24	
10	10	26	21	18	17	IZS	13	17	26	31	39	44	47	47	48	49	48	48	48	46	36	35	33	33	30	49	34.8	24	
11	11	27	25	24	IZS	21	22	23	24	27	32	39	37	39	41	42	43	44	45	44	41	35	36	37	35	45	34.0	24	
12	12	35	33	IZS	29	28	29	29	34	C	C	C	C	42	44	M	42	43	42	41	39	41	40	39	36	44	37.0	23	
13	13	34	IZS	37	38	37	40	42	42	44	45	46	47	47	47	47	48	51	52	52	53	49	43	36	38	36	53	43.7	24
14	14	IZS	30	28	25	26	29	33	37	40	43	45	47	50	53	53	54	52	50	50	50	47	43	34	36	IZS	54	41.1	24
15	15	31	35	37	35	34	33	36	41	44	47	50	52	53	55	58	57	56	54	53	51	49	46	IZS	41	58	45.6	24	
16	16	40	39	39	39	37	36	37	39	40	42	42	43	43	44	44	44	44	45	43	40	37	IZS	36	31	45	40.2	24	
17	17	28	27	35	32	32	30	33	37	39	40	43	45	47	49	52	53	53	49	51	49	IZS	35	39	41	53	40.8	24	
18	18	42	41	37	33	30	26	27	37	43	47	50	51	50	49	49	48	46	40	35	IZS	20	13	9	10	51	36.2	24	
19	19	6	4	6	6	11	8	20	31	39	47	56	58	58	58	57	55	58	55	IZS	40	30	39	40	31	58	35.3	24	
20	20	20	20	19	18	19	19	22	27	34	40	51	58	58	58	58	57	59	IZS	55	41	28	34	22	13	59	36.1	24	
21	21	8	9	3	17	8	13	20	29	33	36	40	40	44	45	45	46	IZS	47	42	46	48	30	25	27	48	30.5	24	
22	22	16	10	4	7	7	6	10	17	22	29	33	34	37	44	37	IZS	22	24	21	19	18	19	19	21	44	20.7	24	
23	23	24	28	30	32	33	34	35	36	36	35	36	36	36	37	IZS	40	41	42	43	35	28	26	19	14	43	32.9	24	
24	24	10	7	5	4	3	5	14	28	39	42	44	46	49	IZS	47	49	50	50	50	42	29	29	19	33	50	30.2	24	
25	25	37	28	24	32	16	28	36	39	39	43	48	48	IZS	49	49	49	48	47	45	44	40	36	30	24	49	38.2	24	
26	26	21	29	28	32	32	35	37	39	41	45	48	IZS	51	51	51	50	50	50	49	44	39	35	37	34	51	40.3	24	
27	27	32	34	33	27	21	21	25	32	39	48	IZS	55	55	54	54	54	54	52	48	53	46	39	37	36	55	41.3	24	
28	28	35	34	37	36	34	33	34	33	34	IZS	40	46	48	48	50	50	48	45	42	39	34	28	19	13	50	37.4	24	
29	29	9	9	6	9	8	12	22	27	IZS	38	40	43	46	48	50	53	55	54	51	44	42	42	41	41	55	34.3	24	
30	30	39	36	35	33	31	30	35	IZS	35	40	48	50	51	52	52	50	50	51	52	52	44	25	29	28	52	41.2	24	
31	31	20	11	11	12	7	6	IZS	28	41	46	56	58	56	57	57	57	57	57	56	45	42	41	32	22	58	38.0	24	
HOURLY MAX		42	41	39	39	37	40	42	42	44	48	56	58	58	58	58	57	59	57	56	53	49	46	42	41				
HOURLY AVG		25.6	24.4	24.4	24.5	23.2	23.3	27.0	31.6	35.4	39.4	43.2	45.5	46.1	47.3	48.0	48.0	47.5	46.2	44.8	41.1	35.6	32.8	30.1	28.2				

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

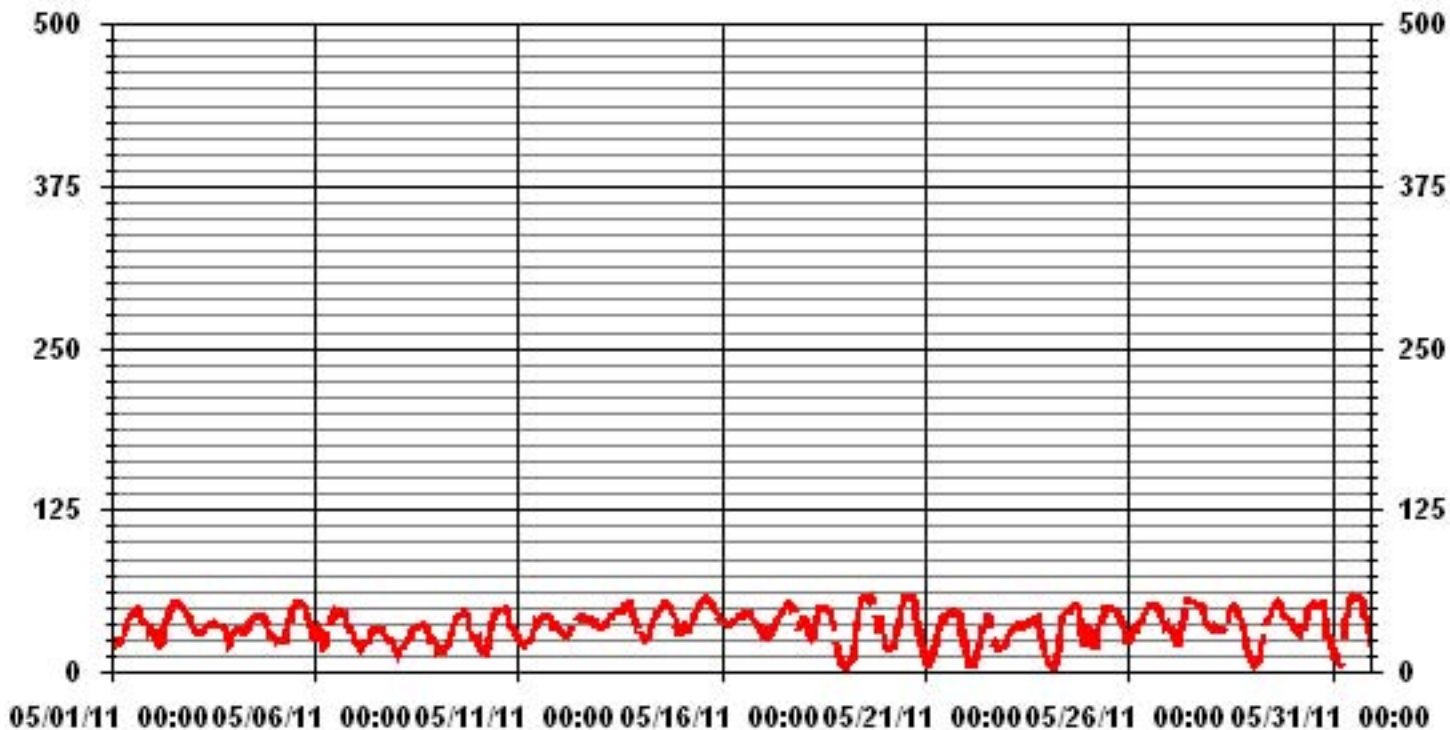
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	59	PPB	@ HOUR(S)	16	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	45.6	PPB			ON DAY(S)	15
					VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	99.9	%	
STANDARD DEVIATION	12.28		MONTHLY AVERAGE	35.89	PPB	

01 Hour Averages



— LICA33_03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	24	26	25	27	24	25	30	33	39	45	45	46	IZS	49	49	49	48	47	43	41	44	42	37	49	37.5	24	
2	35	33	34	35	30	27	30	37	39	43	48	52	IZS	53	54	54	54	54	52	51	47	47	44	42	54	43.3	24	
3	40	36	34	33	31	31	31	34	36	38	38	IZS	39	42	40	36	36	39	37	36	32	25	28	30	42	34.9	24	
4	32	32	33	33	36	34	34	34	32	35	38	IZS	43	43	44	44	44	44	43	41	39	37	32	35	44	37.9	24	
5	30	26	30	27	27	27	30	36	42	IZS	45	54	54	54	54	55	55	55	55	52	45	44	42	34	55	42.3	24	
6	33	36	38	38	35	27	30	31	IZS	43	48	49	50	49	47	48	48	48	46	43	42	38	35	32	50	40.6	24	
7	28	26	25	21	22	23	25	IZS	25	29	35	35	34	33	34	34	35	31	31	28	25	28	27	23	35	28.6	24	
8	21	21	20	20	20	21	IZS	25	29	34	34	34	35	36	36	37	37	37	37	34	30	31	30	24	37	29.7	24	
9	20	19	22	19	20	IZS	21	26	29	34	39	42	43	44	45	47	47	47	47	38	32	33	30	30	47	33.7	24	
10	30	27	22	19	IZS	17	22	29	35	43	48	49	49	50	51	50	51	50	49	41	40	35	36	33	51	38.1	24	
11	29	27	26	IZS	23	23	24	26	29	35	41	42	41	42	43	45	45	46	46	45	38	39	38	39	46	36.2	24	
12	37	36	IZS	31	29	30	31	38	C	C	C	C	45	45	M	43	44	44	43	41	43	41	41	37	45	38.8	23	
13	35	IZS	39	38	39	42	43	43	46	47	47	48	48	48	51	54	54	54	55	52	46	41	40	38	55	45.6	24	
14	IZS	37	34	29	29	33	34	39	41	45	46	50	54	55	55	56	53	52	51	50	46	39	39	IZS	56	44.0	24	
15	35	38	38	36	35	35	39	43	46	49	53	53	55	58	59	58	57	56	54	52	51	48	IZS	43	59	47.4	24	
16	41	39	40	40	39	37	39	40	41	43	43	44	44	45	45	45	45	46	44	43	40	IZS	38	36	46	41.6	24	
17	32	30	36	35	34	32	37	39	40	42	45	47	48	51	54	55	55	51	54	51	IZS	37	43	46	55	43.2	24	
18	44	44	41	36	32	28	31	42	45	49	52	53	52	51	51	51	47	45	39	IZS	26	23	16	19	53	39.9	24	
19	15	9	12	17	16	13	29	38	44	53	59	60	60	60	60	60	61	IZS	IZS	47	41	42	42	37	61	40.6	24	
20	29	28	25	25	22	24	23	34	38	46	56	60	60	59	60	60	61	IZS	59	53	43	44	35	20	61	41.9	24	
21	23	25	7	22	14	18	28	33	34	39	42	43	45	47	46	48	IZS	48	48	56	57	37	34	36	57	36.1	24	
22	32	18	14	11	13	10	17	21	25	33	36	38	41	47	47	IZS	26	25	23	20	19	19	20	23	47	25.1	24	
23	26	30	32	34	P	36	36	37	37	36	37	38	IZS	42	42	44	45	44	45	44	31	29	27	20	45	35.3	23	
24	16	9	10	7	4	9	20	35	41	44	46	47	51	IZS	49	51	52	51	50	37	32	30	39	52	34.0	24		
25	41	38	35	37	31	35	40	40	41	49	50	49	IZS	50	50	50	50	48	47	45	44	41	41	35	50	42.9	24	
26	30	33	33	35	35	38	38	41	42	48	50	IZS	52	52	52	52	52	52	51	48	44	40	39	37	52	43.2	24	
27	39	38	37	35	28	26	29	38	45	53	IZS	56	56	55	56	55	57	57	52	56	52	46	43	41	57	45.7	24	
28	39	39	39	37	36	35	35	34	35	IZS	44	50	51	49	52	52	50	49	44	41	39	36	26	19	52	40.5	24	
29	17	13	11	14	12	23	25	29	IZS	41	42	45	48	50	53	57	58	55	55	47	45	43	42	42	58	37.7	24	
30	41	37	36	36	36	34	38	IZS	38	44	51	51	54	54	53	52	51	52	54	54	49	35	36	34	54	44.3	24	
31	31	16	19	22	10	8	IZS	41	43	53	58	60	58	58	58	59	59	59	59	54	52	47	41	33	60	43.3	24	
HOURLY MAX	44	44	41	40	39	42	43	43	46	53	59	60	60	60	60	61	59	59	56	57	48	44	46					
HOURLY AVG	30.9	28.8	28.3	28.2	26.4	26.7	30.5	34.9	37.6	42.5	45.6	47.7	48.0	48.9	49.9	49.9	49.1	48.2	47.3	45.2	40.5	37.4	35.2	33.1				

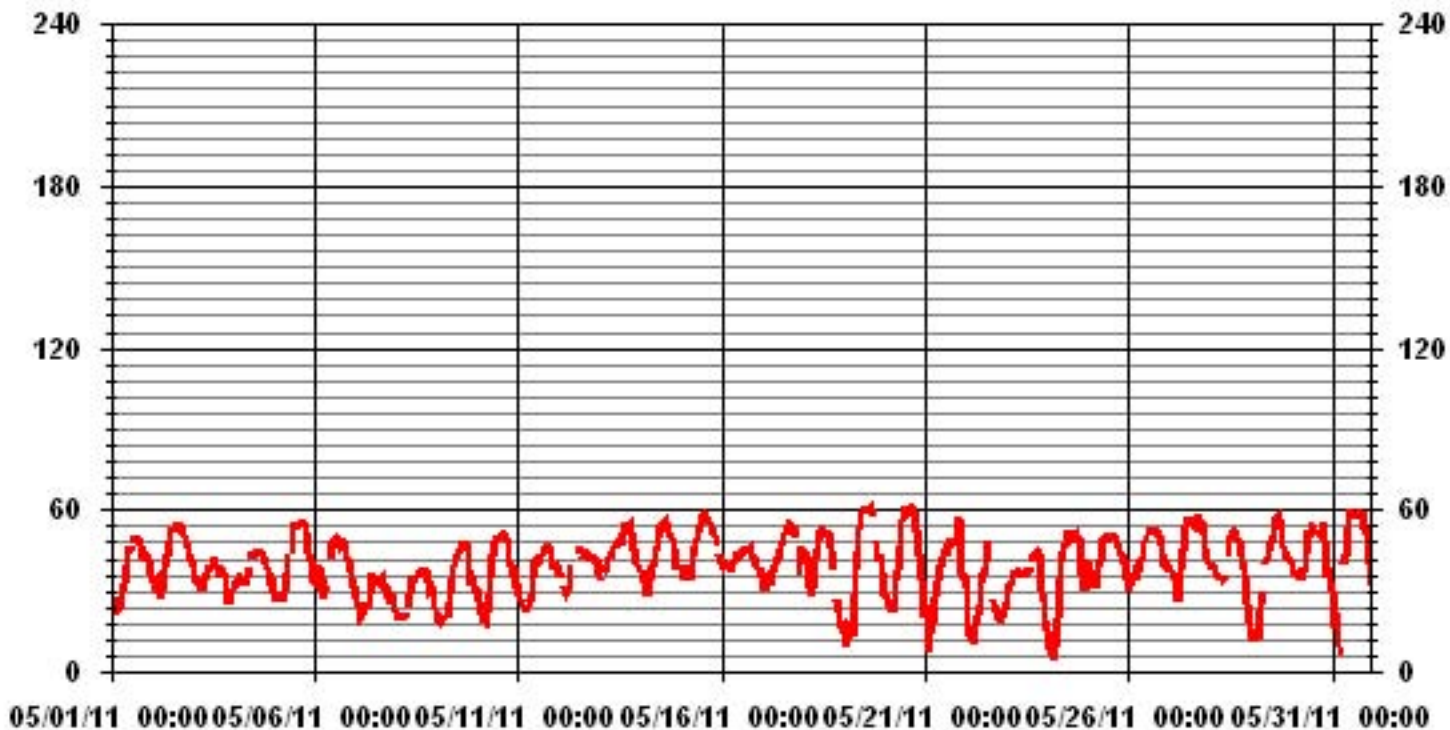
STATUS FLAG CODES

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:	61	PPB	@ HOUR(S)	16, 16	ON DAY(S)	19, 20
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION	11.39					

01 Hour Averages



— LICA33 O3MAX PPB

LICA33
 O3_ / WDR Joint Frequency Distribution (Percent)

May 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	1.83	4.52	6.93	10.89	12.87	6.36	10.74	8.20	2.26	1.83	2.68	2.54	2.40	7.77	3.53	.42	85.85
< 110	.70	.56	.56	.84	2.12	1.69	2.68	1.98	.99	.00	.14	.42	.28	.28	.70	.14	14.14
< 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	2.54	5.09	7.49	11.73	14.99	8.06	13.43	10.18	3.25	1.83	2.82	2.97	2.68	8.06	4.24	.56	

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	13	32	49	77	91	45	76	58	16	13	19	18	17	55	25	3	607
< 110	5	4	4	6	15	12	19	14	7		1	3	2	2	5	1	100
< 210																	
>= 210																	
Totals	18	36	53	83	106	57	95	72	23	13	20	21	19	57	30	4	

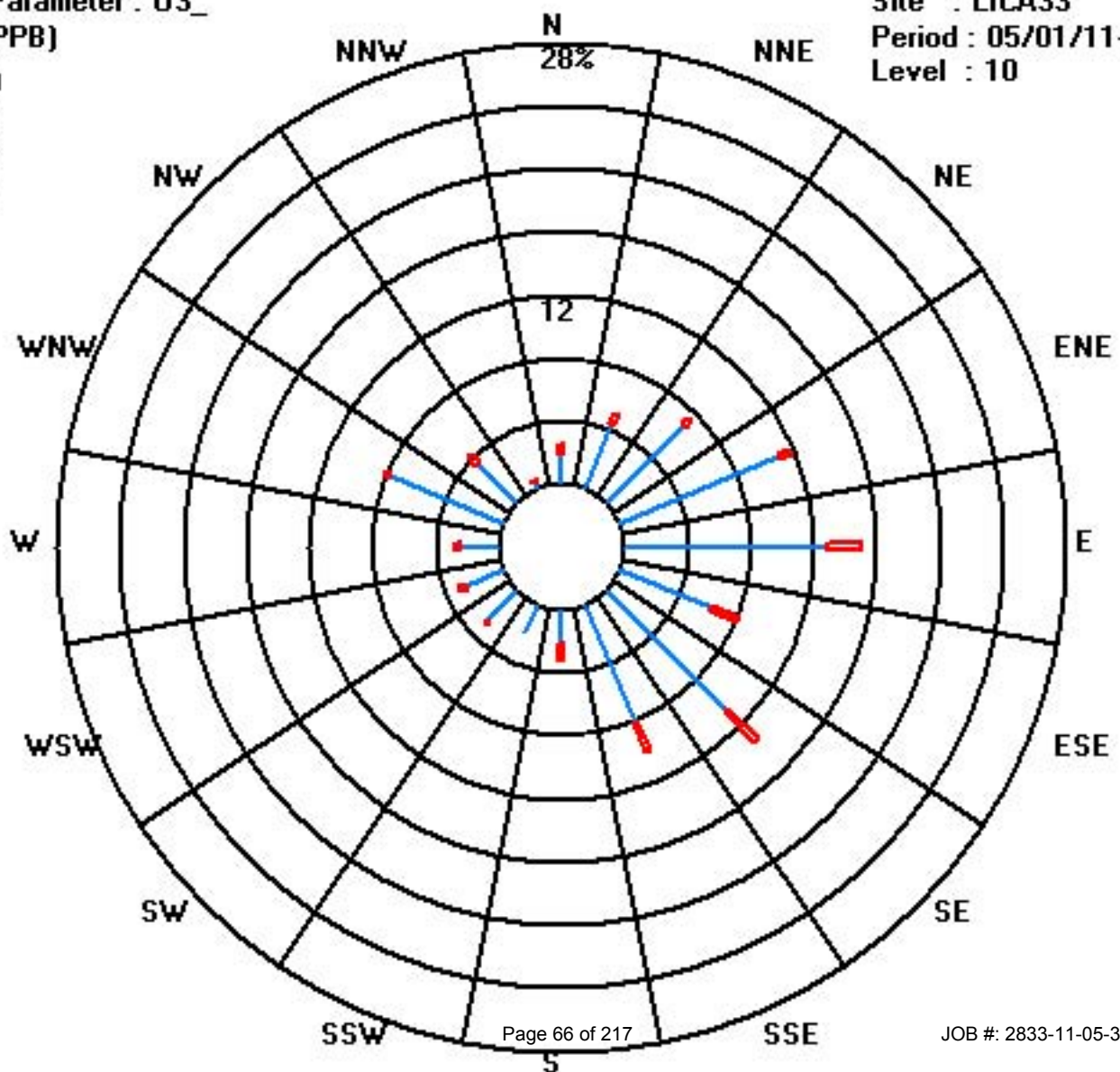
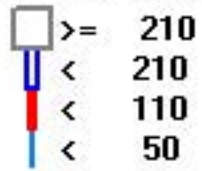
Calm : .00 %

Total # Operational Hours : 707

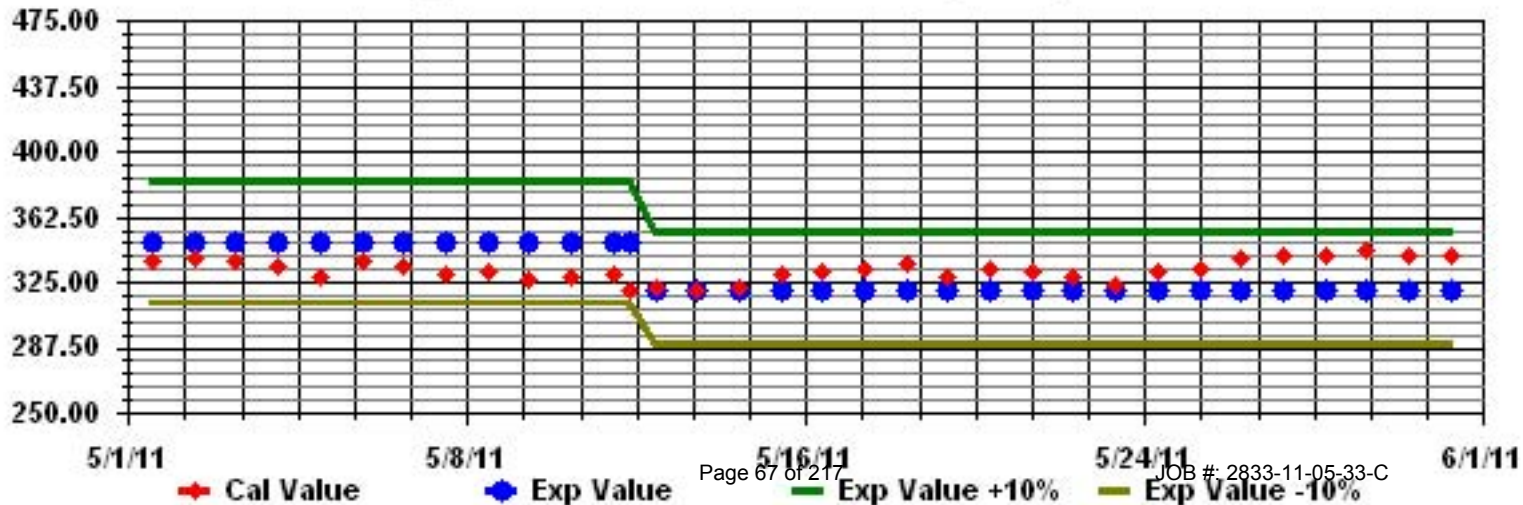
Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 2011

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST																										DAILY 24-HOUR		
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	0:00	MAX.	AVG.	RDGS.
1	2.9	2.9	2.6	2.6	2.6	2.5	2.5	2.5	2.4	2.2	2	1.9	2	IZS	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2.9	2.2	24
2	2.1	2.2	2.1	2.3	3.1	2.7	3.7	2.1	2.2	2.1	2	2	IZS	2	2.1	2	2.1	2.2	2.2	2.3	2	2	1.9	1.9	3.7	2.2	24	
3	2	2.1	2	2	1.9	1.9	1.9	2	2	1.9	1.9	IZS	1.9	2	1.9	1.9	2	2	2.1	2	2	2.1	2.1	2.3	2.3	2.0	24	
4	2.2	2.2	2.1	2.1	2.1	2	2.1	2.1	2	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.2	2.1	2.2	2.0	24	
5	2.2	2	2	2.1	2	2	2	2	1.9	IZS	1.9	1.8	1.9	1.8	1.8	1.8	2.1	2	2.2	2.1	2.1	2.1	2.4	2.4	2.0	24		
6	2.8	2.2	2.1	2.1	2.2	3.1	3.5	2.7	IZS	2.2	2	2	2	2.4	2	2.1	2	2.1	2.1	3	2.3	2.4	2.6	3.1	3.5	2.4	24	
7	2.5	2.7	2.7	2.4	2.1	2.1	2.1	IZS	2	2	2	2	1.9	1.9	1.9	2	2	2	2	2.1	2	2.2	2.1	2.2	2.7	2.1	24	
8	2.9	3.2	2.6	2.3	2.4	2.3	IZS	2	2.1	2	2.1	2	1.9	2	1.9	2	2	2	2	2.1	2.1	2.4	2.8	2.5	3.2	2.2	24	
9	2.8	3	3.4	2.8	2.5	IZS	2.4	2.3	2.2	2.1	2	2	2	2	2	2	2.1	2.2	2	2	2.1	2.2	2.5	3.4	2.3	24		
10	2.2	2.6	2.9	2.9	IZS	4.4	3	2.8	2.5	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2.1	2.2	4.4	2.3	24		
11	2.2	2.2	2.2	IZS	2.1	2.2	2.2	2.2	C	C	M	M	M	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.2	2.1	21
12	2	2	IZS	2.2	2.3	2.2	2	1.9	1.9	1.9	1.9	C	C	C	C	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.0	24
13	1.9	IZS	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	2.1	2.2	2.0	24
14	IZS	2.2	2.2	3.3	2.6	2.5	2.4	2.3	2.2	2.1	2.1	2	2	2	2	2	2	2	2	1.9	2	2.2	2.7	IZS	3.3	2.2	24	
15	2.2	2.1	2	2.1	2.1	2.1	2	2	2	2	2	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	IZS	2	2.2	1.9	24	
16	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2.1	1.9	24		
17	2.1	2.2	2.1	2.1	2.1	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	IZS	2.6	2.2	2.2	2.6	2.1	24	
18	2.1	2.2	2.1	2.6	2.2	2.2	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	IZS	3	3.2	4.1	7	7.0	2.5	24
19	5.6	8.5	7.9	5.5	4.4	8.5	3.6	2.3	2.1	2.1	2	2	2	2	2.1	2	2	IZS	2.7	2.1	3.2	2.3	2.3	8.5	3.4	24		
20	2.8	2.6	2.7	3.2	3.5	3.4	3.8	3.3	2.6	2.6	2.3	2	2	2	2	2	IZS	2.1	2.9	3.6	2.5	4.3	6.9	6.9	2.9	24		
21	6.6	8	7.7	3.8	4.7	4.1	3	2.1	2.2	2.1	2	2	2	1.9	1.9	IZS	1.9	2	2	2.2	2.8	2.6	2.3	8.0	3.1	24		
22	5.2	4.6	6.7	4.5	3.7	3.7	3.7	2.6	2.5	2.2	2	1.9	1.9	2.1	2	IZS	1.8	1.9	1.9	1.9	2	1.9	2	2	6.7	2.8	24	
23	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	1.9	2	2.1	2.3	2.2	2.3	2.0	24
24	2.5	2.8	3	2.8	3.4	3.8	5.9	3.7	2.2	2.2	2	2	2	IZS	2	2	2	2	2.1	2.2	2.1	2.1	3.3	2.6	5.9	2.6	24	
25	2.2	3.3	3.1	5.1	5.2	3	2.4	2.3	2.2	2.1	2	2	2	IZS	2	2	2.1	2	1.9	2	2	2	2	2.2	4.6	5.2	2.6	24
26	3.7	2.5	2.5	2.6	2.6	2.4	2.2	2.2	2	1.9	1.9	IZS	2	2	2	2	2	2.1	2	2	2.7	3.1	2.9	2.6	3.7	2.3	24	
27	2.8	2.2	2.2	2.4	2.5	4.2	3.7	3.1	2.3	2.2	IZS	2	1.9	2.2	2	2	2	2.1	2.3	2.1	2.5	3.3	3.2	2.1	4.2	2.5	24	
28	3.3	3.3	2.4	2.2	2.1	2.1	2	2	2	IZS	1.9	1.9	2	2	2	2	2.1	2.1	2.1	2.1	2.3	2.8	2.9	2.6	3.3	2.3	24	
29	5.5	6.3	6.3	3.6	4.6	5.1	3.5	2.4	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2.2	6.3	2.9	24	
30	2.2	2.2	2.2	2.2	2.3	2.2	IZS	2.2	2.1	1.9	1.9	2	2	1.9	1.9	1.9	1.9	1.9	2.2	2	2.6	3.1	3.7	2.4	3.7	2.2	24	
31	2.9	4.9	4.3	3	3.4	3.9	IZS	2.9	2.5	2.3	2	1.9	1.9	1.9	1.9	2	1.9	2	1.9	2	2.2	2.1	2.4	2.5	4.9	2.6	24	
HOURLY MAX	6.6	8.5	7.9	5.5	5.2	8.5	5.9	3.7	2.6	2.6	2.3	2.1	2.1	2.4	2.1	2.1	2.1	2.2	2.3	3.0	3.6	3.3	4.3	7.0				
HOURLY AVG	2.9	3.1	3.1	2.8	2.8	3.0	2.7	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.2	2.3	2.5	2.7				

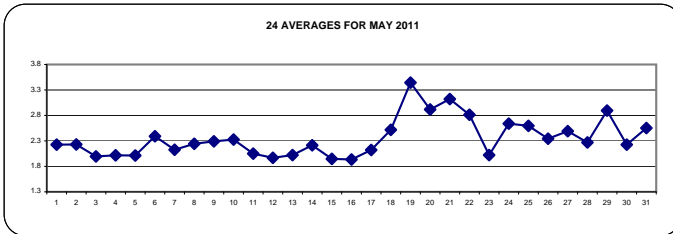
STATUS FLAG CODES

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	

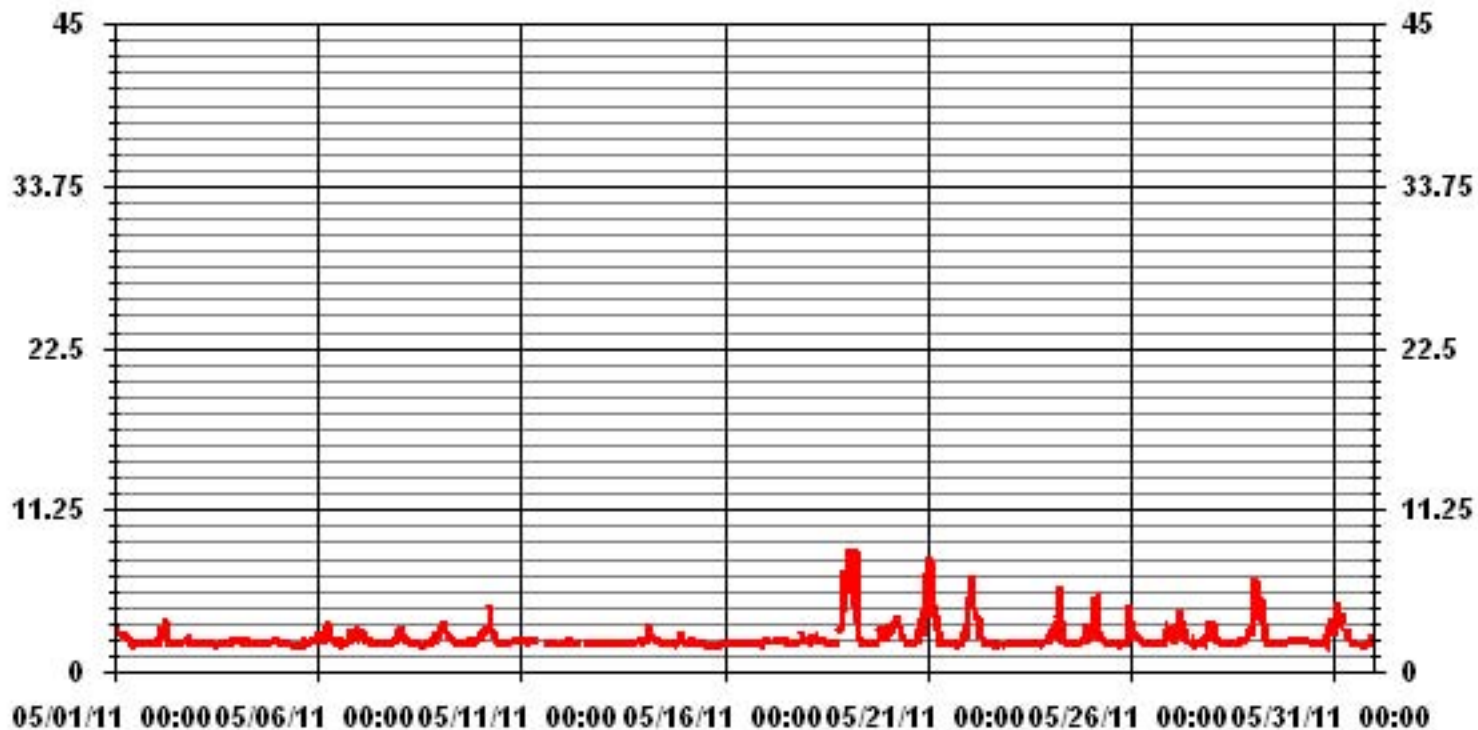
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM 1-HR AVERAGE:	8.5	PPM	@ HOUR(S)	1	ON DAY(S)	19
MAXIMUM 24-HR AVERAGE:	3.4	PPM			ON DAY(S)	19
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME:	99.6	%	
STANDARD DEVIATION:	0.87		MONTHLY AVERAGE:	2.36	PPM	

24 AVERAGES FOR MAY 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	3	2.9	2.8	2.7	2.7	2.5	2.6	2.6	2.5	2.3	2	2.1	3.7	IZS	2	2.1	2	2.8	3.5	2	2	2.1	2.6	2	3.7	2.5	24	
2	5.7	6	2.3	9.2	42.7	6.5	7.4	2.3	3.9	3.3	3.3	2.6	IZS	2.3	3.4	3.1	2.6	2.9	2.7	2.9	2.5	2.2	2	2.1	42.7	5.4	24	
3	2.5	2.8	2.5	2.4	2.2	2.2	2.3	3.4	3.5	2.1	2	IZS	2	2	2	2	2.6	2.9	2	2.4	2.3	2.9	2.9	3.5	2.4	24		
4	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.1	2.1	IZS	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2.9	2.6	3.2	2.3	3.2	2.2	24		
5	5.5	2.1	2.1	3.9	2.4	2	3.8	2	2	IZS	2.4	2	2.1	2.1	1.9	2	3.4	4	5.7	8	3.6	2.6	2.8	3.6	8	3.1	24	
6	6.3	2.3	2.2	3.2	2.5	4.1	4.2	3	IZS	2.5	2.4	2.4	4.3	7.5	2.6	2.9	2.5	3.7	3.4	6.3	3.6	4.9	7.3	5.2	7.5	3.9	24	
7	4.3	6.6	5.8	3.9	2.5	2.5	2.4	IZS	2.7	2.6	3.1	3	2.6	2.4	2.5	2.7	2.8	6	2.7	3.1	2.9	3	3	4.1	6.6	3.4	24	
8	8	6.7	6.4	5.1	7	3.9	IZS	2.7	2.9	3.3	4.7	3.5	2.5	2.5	2.6	3.1	3.3	3.1	2.3	2.9	2.5	4.2	3.5	3.6	8	3.9	24	
9	7	5.3	14	5.8	4.3	IZS	3.6	3.3	2.9	2.8	2.5	2.8	3.6	2.5	2.2	2.6	3	4.1	3	2.6	2.2	2.2	3.6	4.8	14	3.9	24	
10	2.6	4.1	4.8	3.6	IZS	7.6	4.5	3.6	2.9	2.2	2.1	2.1	2.6	2.1	2.7	2.4	2.1	2.3	2	3	2.2	2.7	2.5	2.5	7.6	3.0	24	
11	2.5	2.6	2.5	IZS	2.5	2.5	2.5	C	C	C	M	M	M	C	C	C	C	1.9	1.9	2	2	2	2	2.3	2.6	2.3	21	
12	2.2	2.6	IZS	2.8	2.9	2.7	2.3	2.1	2	2	2	C	C	C	C	C	C	1.9	1.9	2	2	2	2	2	2.9	2.2	24	
13	2	IZS	2	2	2	2.1	2	2	2.1	2.2	2.2	2	2	2	2.1	2.3	2.1	2	2	2	2.2	2.4	2.3	2.2	2.4	2.1	24	
14	IZS	3.2	3.5	10.4	5.4	3.4	2.9	2.4	2.3	2.2	2.2	2	2.1	2.1	2	2	2	2	2	2	2	2.1	3.1	3.8	IZS	10.4	3.0	24
15	2.9	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2	2	2	2	1.9	2	1.9	1.9	1.9	1.9	1.8	1.8	1.8	IZS	2	2.9	2.0	24		
16	2	2	2	2	2	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	IZS	2	2.8	2.8	2.0	24	
17	2.2	2.3	2.1	2.2	2.2	2.2	2.3	2.1	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	IZS	3.6	4.1	3.3	4.1	2.4	24	
18	2.6	2.9	3.3	5.1	5.2	2.7	2.9	2.6	2.9	2.7	2.5	2.6	2.9	2.4	3.3	2.4	2.1	2.2	2.1	IZS	7.2	7.5	35.1	54.1	54.1	6.9	24	
19	13.6	12	13.7	8	8.2	13.8	8.4	3.9	3	2.8	2.7	2.6	2.6	2.8	2.6	2.9	2.9	3.1	IZS	54.1	4.3	7.2	2.7	2.5	54.1	7.8	24	
20	5.3	3.1	2.8	3.8	3.6	3.6	5.5	5.4	3.4	3.2	2.8	3.8	2.4	2.6	2.7	2.5	2.5	IZS	2.7	7.2	9.9	3.6	9.5	28.4	28.4	5.2	24	
21	20.1	54.1	12.3	7.1	8.2	5.7	5.7	3.6	2.9	3.1	2.7	2.7	2.4	2.4	2.5	2.9	IZS	2.8	2.4	2.3	5.1	6.8	5.6	3.8	54.1	7.3	24	
22	7.5	6.7	11.1	5.6	6.3	5.3	12.3	2.9	3.3	3.1	2.5	3.3	2.5	2.5	2.7	IZS	2.1	2.2	2.2	2.1	2.1	3	2.3	2.4	12.3	4.2	24	
23	2.4	2.3	2.5	2.4	P	2.5	2.4	2.4	2.4	2.3	2.5	2.5	2.5	IZS	2.4	2.4	2.6	3	2.3	2	3.8	4.9	2.8	4.9	2.6	23		
24	3.4	3.5	4.2	3.4	9.2	7.4	7.6	6.5	3.6	4.1	2.6	2.6	IZS	2.5	2.4	2.9	2.2	3.2	4.2	2.4	2.3	7.2	4.5	9.2	4.1	24		
25	3.2	7.2	6.2	24.4	17.9	6.3	3.6	2.9	2.8	2.5	2.3	2.5	IZS	2.7	2.5	3.1	2.3	2.2	2.3	2	2.5	2	4.1	28	28	5.9	24	
26	6	4	3.8	4.3	5.2	3	3	2.8	2.6	2.4	2.4	IZS	2.5	2.6	2.4	2.5	2.5	2.7	2.4	2.7	4.6	5.5	4.9	3.8	6	3.4	24	
27	5	3.4	3.6	7.3	3.2	7.1	12.3	4.3	2.5	3.3	IZS	2.6	2.6	6.1	2.7	2.3	2.4	3	3	2.5	3.6	6	5.9	2.4	12.3	4.2	24	
28	4.4	5.1	2.6	2.4	2.4	2.4	2.2	2.2	2.2	IZS	2	2.2	2.2	2.5	2.3	2.4	2.5	2.6	2.6	4.1	6.9	8.2	5.5	8.2	3.2	24		
29	10.4	9.5	9	6.2	9.3	10.1	4.1	3.4	IZS	2.2	2	2.1	2	1.9	2.1	1.9	2.2	2.7	2.1	1.9	2.1	2.1	2.1	2.2	10.4	4.1	24	
30	2.3	2.2	2.2	2.2	3.2	3	2.7	IZS	2.3	2.2	2.1	2	2.1	2.7	2.1	2	1.9	4	2.5	5.2	4.8	6.4	3.2	6.4	2.8	24		
31	8.2	14.7	11.1	5	4.7	4.6	IZS	3.4	2.6	2.6	2	2	2	2	2.1	2.4	2.4	2.5	2	3.4	4.4	2.6	6.5	6.4	14.7	4.3	24	
HOURLY MAX	20	54	14	24	43	14	12	7	4	4	5	4	4	8	3	3	3	6	6	54	10	8	35	54				
HOURLY AVG	5.2	6.2	4.9	5.0	6.0	4.3	4.2	3.0	2.7	2.6	2.4	2.4	2.5	2.6	2.4	2.4	2.4	2.7	2.6	4.6	3.3	3.6	5.2	6.6				

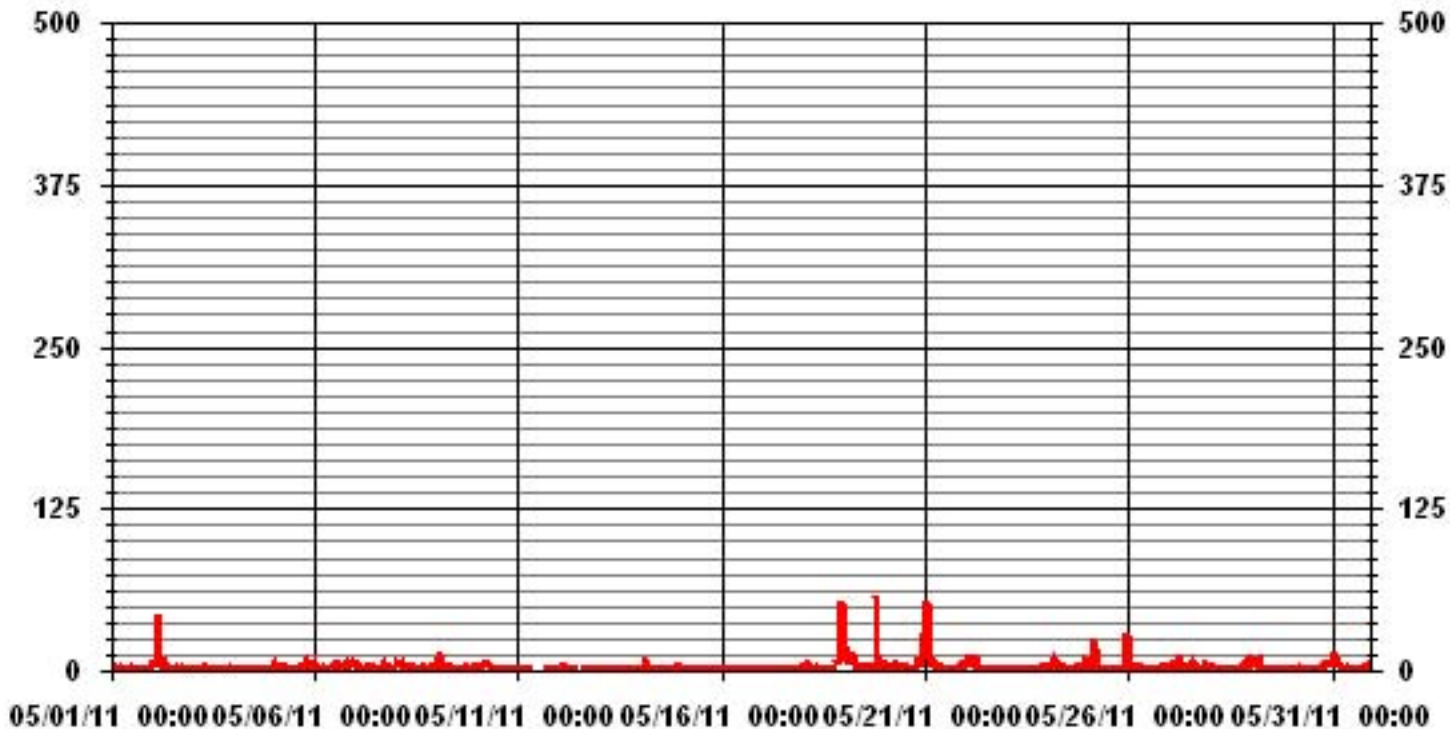
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	697					
MAXIMUM INSTANTANEOUS VALUE:	54.1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	11	HRS				
STANDARD DEVIATION	4.65					

01 Hour Averages



— LICA33 THCMAX PPM

LICA33
 THC / WDR Joint Frequency Distribution (Percent)

May 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	1.56	3.13	5.70	10.98	14.40	7.41	12.83	9.98	3.28	1.71	2.71	2.85	2.13	6.41	2.71	.57	88.44
< 10.0	.99	1.99	1.85	.85	.57	.57	.42	.00	.00	.14	.14	.14	.57	1.71	1.56	.00	11.55
< 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	2.56	5.13	7.56	11.84	14.97	7.98	13.26	9.98	3.28	1.85	2.85	2.99	2.71	8.13	4.27	.57	

Calm : .00 %

Total # Operational Hours : 701

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	11	22	40	77	101	52	90	70	23	12	19	20	15	45	19	4	620
< 10.0	7	14	13	6	4	4	3			1	1	1	4	12	11		81
< 50.0																	
>= 50.0																	
Totals	18	36	53	83	105	56	93	70	23	13	20	21	19	57	30	4	

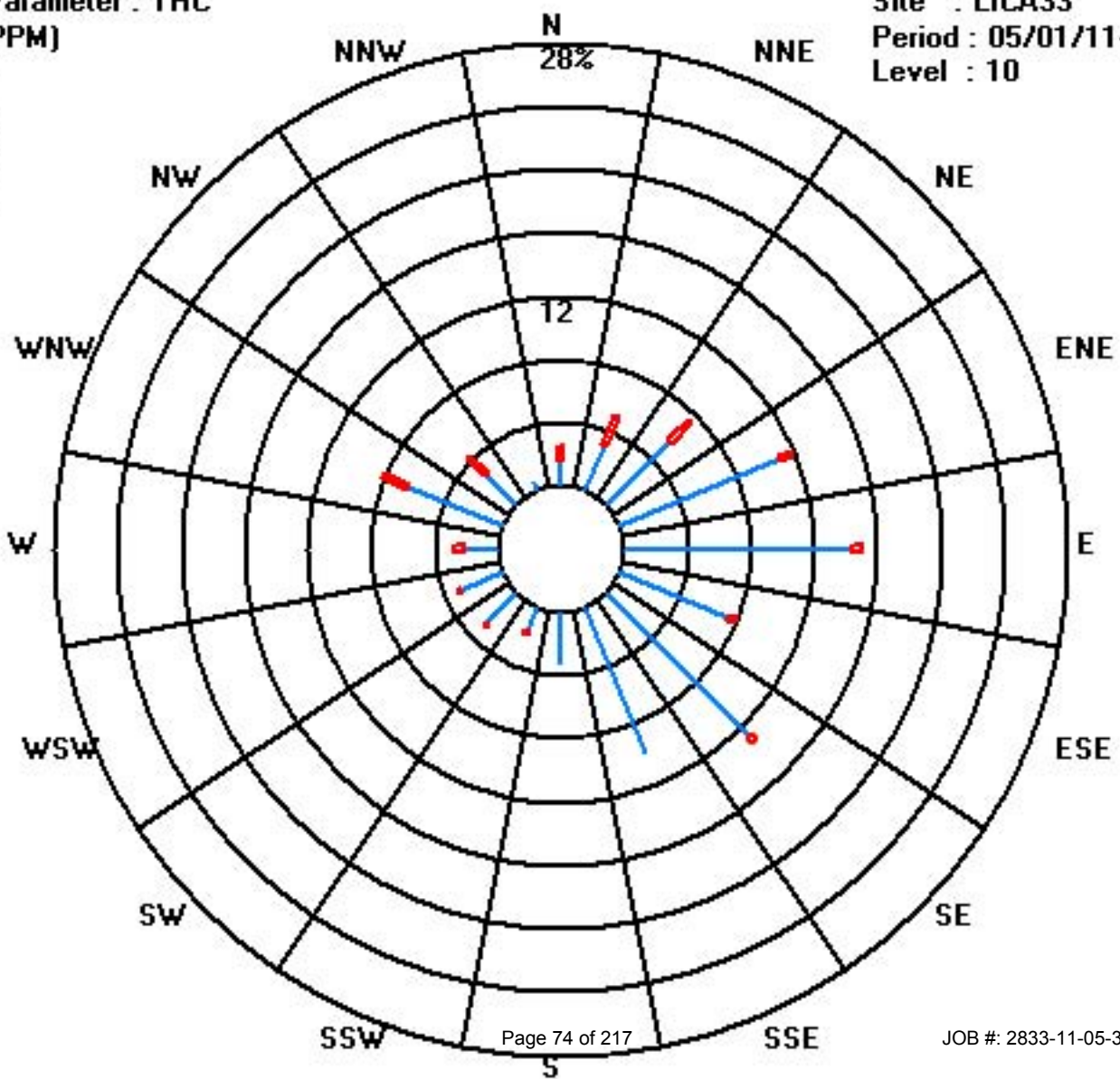
Calm : .00 %

Total # Operational Hours : 701

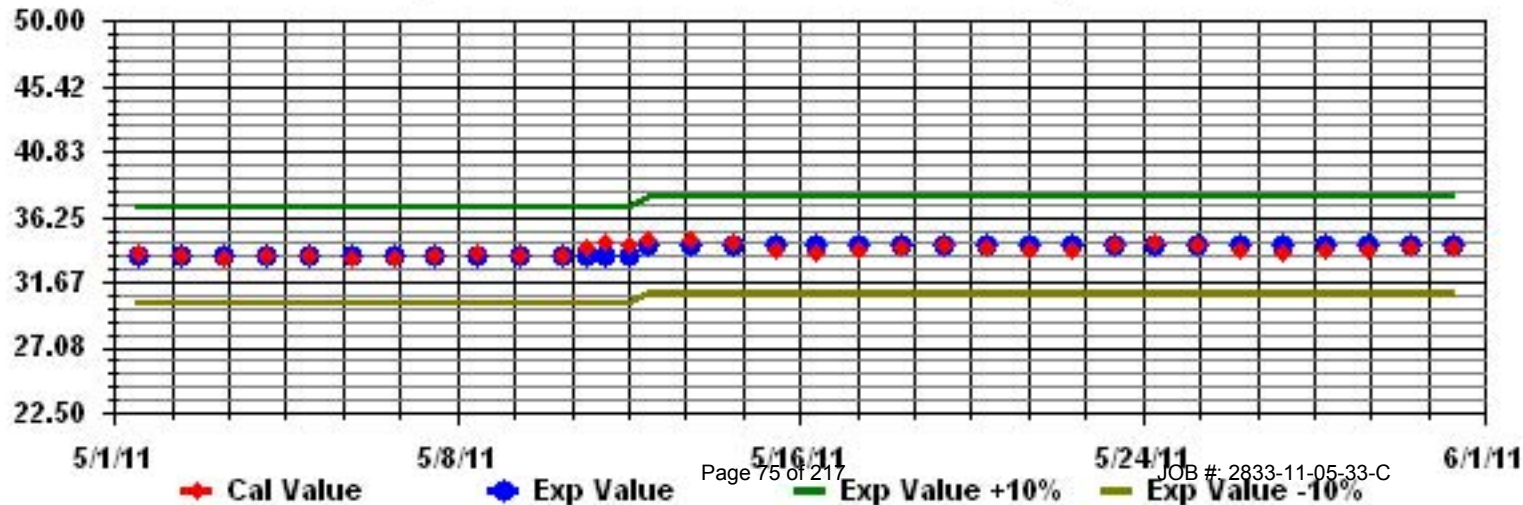
Class Limits (PPM)

Period : 05/01/11-05/31/11

Level : 10



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



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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		8.2	8.2	9.4	9.9	10.4	7.2	7.4	7.8	5.4	6.3	8.1	7.6	8.7	9.8	13.3	11.5	3.6	2.6	5.5	5.2	5.9	4.8	4.4	6.4	13.3	6.1	24
2		4.2	3.3	5.4	2.5	3	2.3	0.5	2.3	1.2	2.7	2.6	2.5	6	10.7	12.5	19.1	21.1	20	19.9	19.9	20.4	22.4	21	19.7	22.4	8.3	24
3		18.7	18.5	17.8	17.4	18.1	19	18.1	14.2	4.6	6.3	14.8	15.6	25.3	29	31.8	27.1	22	17.5	10.6	6.6	2.2	4.6	8.3	15.3	31.8	5.3	24
4		14.4	13.9	15.3	17.1	20.5	20.8	20.4	22	23.1	24.4	21.8	22.3	24	25.6	24.6	25.5	20.1	23.8	20.6	13.6	6.7	6.1	6.2	5.7	25.6	17.9	24
5		3.9	3.8	5.4	7.3	6.7	4.5	3	4.1	5.3	4.9	4.1	8.8	12.3	11.3	3	4.6	5.3	2.9	1.5	2.4	5.4	2.4	1.4	0.7	12.3	4.8	24
6		0.9	2.9	4.6	4.3	3.4	5.1	4	4.4	5.7	3.9	1.1	7.5	8.5	10	14.5	11	6.5	5.4	3.3	3.4	11.8	9.2	7.4	8.2	14.5	6.1	24
7		7.5	7.4	9.5	10	14.9	15.4	16.1	14.4	13.3	14	11.1	11.9	14.6	13.9	9.7	11.6	12.1	14.8	18.7	18.1	15.4	16.2	12.6	8.6	18.7	13.0	24
8		8.1	6.8	6.5	7.7	7.6	8.1	13.1	13.5	11.8	9.6	6.9	6.4	8.1	8.4	6.4	9.2	9	9.4	11.7	10.3	4	4.1	3.5	7.4	13.5	8.2	24
9		7.4	5.9	3.1	6.8	7.7	8.4	7.2	6.5	5.9	3	2.6	5.1	4.1	0.6	4.6	2.3	6.5	6.9	8	8.2	9.3	7.6	6.5	4.7	9.3	5.8	24
10		5.7	8.4	8.3	7	3.7	6.1	6.1	6.2	3.3	5.1	5.8	9	6.9	7.5	7.3	11.5	11.4	10.2	13	11.2	10.7	13.5	14.7	15.7	15.7	8.7	24
11		14.9	14.1	12.6	13.4	11	15.1	16.4	14.3	14.8	13.5	15.7	18.2	27.7	23.2	26.3	25.5	24.3	25.7	23.1	17.9	16.1	16.8	16	15.4	27.7	18.0	24
12		18.5	16.6	15.4	17.2	19.4	21.2	21.7	24.7	32.6	33.2	32.8	32	32.2	30.6	30.7	33.3	34.6	34.9	35.1	30.2	27.1	29.3	31	27.4	35.1	27.6	24
13		26.2	25.6	27.2	27.4	23.3	25.9	24.7	22.3	21.6	20.9	20.3	20.9	20.7	19.8	22.3	20.4	22.2	20.7	18.9	15.3	9.8	8.3	12.5	12.6	27.4	20.4	24
14		10.6	13.7	11.8	5.7	5.1	7.8	9.2	17.2	21.2	21.5	20.6	18.2	19.6	24.1	24.6	24.3	24.8	22.2	21.2	16.4	13.1	12.2	13.3	7.6	24.8	16.1	24
15		11.8	14.7	14.1	12.8	14.2	14	16.2	20.3	25.7	26.5	28.5	26.8	29.6	32.3	35.9	36.1	38.7	36.7	35.3	31.3	24.2	23.7	23.7	25.1	38.7	24.9	24
16		29.3	28	26.1	20.8	18.4	20	25.7	29.4	25.2	28.8	32.2	30.2	31.2	28.5	29.5	29.3	29	21.6	23.7	16.1	16.5	16.7	13	8.9	32.2	24.1	24
17		10.9	10.3	12.3	9	10	11.9	14.8	17.3	18.6	15.8	24.2	24.6	24.2	25.1	26.1	22.8	22.5	20.6	22.1	20.7	9.3	6.6	7.2	8.5	26.1	16.5	24
18		12.5	10.8	10	7.5	9.4	9.3	10.3	9.3	8.2	12.1	13.2	12.1	14.6	16.2	17.1	20.9	23.3	21.1	10.4	5.6	3.5	1.5	1.9	2.8	23.3	11.0	24
19		2.6	4.9	1.3	3.5	3.4	4.4	6.4	9	11	6.3	7.7	7.1	13.9	11.2	11.8	12.7	8.6	8.9	5.7	0.4	1.6	6.6	6.8	4.5	13.9	6.7	24
20		4.3	5.4	5.3	7	6.6	3.8	1.9	2	0.8	1.9	4.2	3.9	8.1	4.7	7.4	6.7	7	10	11.7	6.1	2.8	3.7	2.8	2.5	11.7	5.0	24
21		3.1	2.9	2.8	4.5	2.5	2.5	5.5	11.1	9.9	8.4	9.7	12.1	11.1	9.4	7.6	5	5.5	5.3	11.9	9	10.3	4.8	1.7	5.4	12.1	6.8	24
22		2.3	1	1	3.9	4	1.5	6.6	6.9	5.5	5	9.5	9.2	10.7	21	21.1	30.1	27.3	26.4	24.6	27.9	25.1	25.9	20.1	26.2	30.1	14.3	24
23		26.2	23.3	23	21.3	23.1	21.8	22.9	22.6	23	23.5	21.1	18.1	16.1	16.1	17.5	19.5	15.5	16	13.7	9.8	7.2	3.1	1.7	1.3	26.2	17.0	24
24		2	3.4	2.5	2.1	1.4	1	2.7	3.2	4.6	5.2	5.7	4.7	7.8	6.3	6.1	4.9	7	5.1	6.4	1.8	4.6	4.4	5.1	11.9	11.9	4.6	24
25		11.7	5.5	6.6	7.2	3	4.9	9.8	11.6	12.9	15.7	20.7	16.5	15.3	13.3	12.6	12.8	13.3	14.7	9.2	11.8	5.9	2.8	1.1	2.7	20.7	10.1	24
26		3.4	8.2	7.9	7.9	7.5	14.7	14.9	15.5	16.6	18.1	21.3	16.8	13.5	14	13.7	16.2	17	15.4	14.8	11.1	8.6	8.8	8.9	9	21.3	12.7	24
27		10.5	7.7	3.8	3.5	0.9	2.8	2.9	3.4	4.9	6.2	8.2	7.7	6.8	7.3	9.1	12	12.7	11.5	6.7	13.5	9.5	6.1	5.6	6.8	13.5	7.1	24
28		8.5	10.6	12.8	10.5	10.3	12.4	17.9	14	13.9	16.8	18.3	19.8	16.4	16.5	17.8	17.5	18.1	19.5	18.7	13.5	9	5.5	2.4	0.6	19.8	13.4	24
29		2.5	4.1	0.7	0.6	0.3	1.6	2.7	4.2	6.4	10.1	11.4	11.2	9.2	12.6	11.8	11.2	6.1	4.5	9.2	13.9	12	12.3	13	15.1	15.1	7.8	24
30		16.1	13.4	8.5	8	4.6	5.9	5.9	14.7	11.6	9.4	11	8.5	9.1	6.1	9.2	12.5	13	8.2	13.7	12.2	4.5	1.3	3.2	2.8	16.1	8.9	24
31		0.9	1.8	2.7	4.2	3.8	3.8	3.1	2.7	7.8	8	9.6	9.9	12	11	9.5	11.5	6.6	3.4	4.4	4.2	6.1	3.7	2.7	1.7	12.0	5.6	24
HOURLY MAX		29.3	28.0	27.2	27.4	23.3	25.9	25.7	29.4	32.6	33.2	32.8	32.0	32.2	32.3	35.9	36.1	38.7	36.7	35.3	31.3	27.1	29.3	31.0	27.4			
HOURLY AVG		9.9	9.8	9.5	9.3	9.0	9.8	10.9	12.0	12.1	12.5	13.7	13.7	15.1	15.4	16.0	16.7	16.0	15.0	14.6	12.5	10.3	9.5	9.0	9.4			

STATUS FLAG CODES

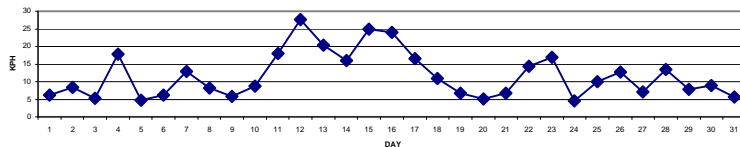
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: September 24, 2009

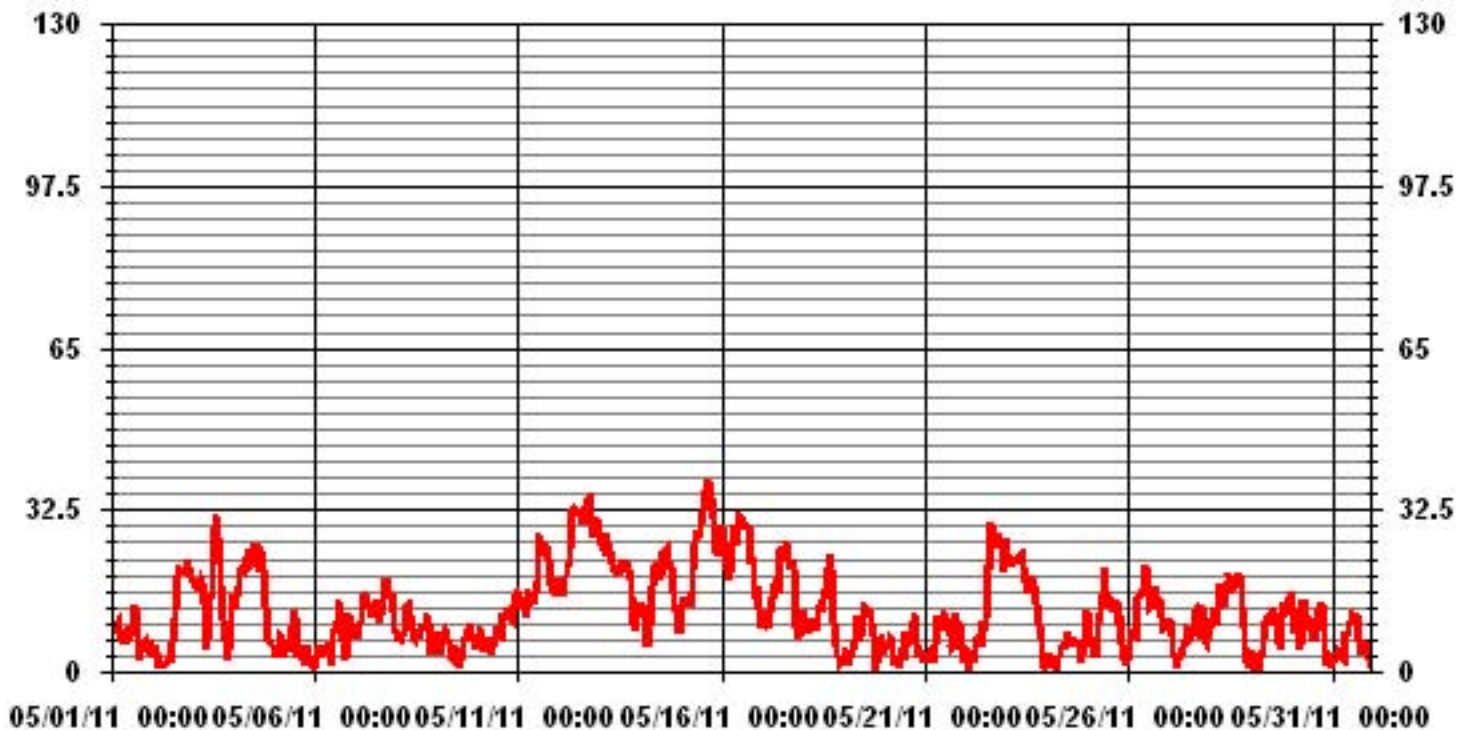
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	38.7	KPH	@ HOUR(S)	16	ON DAY(S)	15	
MAXIMUM 24-HR AVERAGE:	27.6	KPH			ON DAY(S)	12	
CALMS (≤ 0 KPH)	0.13	%			OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	0	HRS			AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION:	8.21				MONTHLY AVERAGE	12.15	KPH

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA33 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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		13	11.3	14.7	16.4	18.5	11.2	14.6	13.7	12.3	15.2	22	22.6	19.1	31.1	38.8	24.1	14.7	6.9	10.1	14.5	9.2	9.5	8.4	10.1	38.8	
2		8	10.3	8.6	8.2	5.3	4.8	5	7.7	6.9	7.8	9.1	20.6	21.6	26.8	23.6	29.4	33	28.1	30.3	28.6	30.5	35.3	31.3	29.3	35.3	
3		26.4	27.1	25	26.3	27.9	27.2	27.9	25.6	10.8	20.4	30	31.4	42.4	47.1	48.9	44.5	37.6	37	23.1	15.4	6.6	8.3	17.2	25.8	48.9	
4		21.3	18.8	25.6	27.3	35.3	35.6	36.9	36	37.4	38.6	35.5	41.3	42.6	46.1	44	42.2	41.3	41.9	40.3	27.5	13.3	9.1	9.9	9.5	46.1	
5		7.4	8.5	9.7	12.3	10.3	8.8	8.4	7.8	13.2	12.3	13	25.4	30.3	28.9	17.2	17	13.1	9.4	7.5	10.6	10.8	4.7	4.1	2.7	30.3	
6		4.5	9.9	11	11.1	6.7	14.9	9.2	10.7	10.8	12.3	29.1	22	17.5	30.1	35.5	26.2	15.1	14.7	9.1	17.4	20.2	14.2	10.6	11.1	35.5	
7		11.3	12.2	19.4	15	21.6	21.7	23.3	20.2	20.4	21.4	18.4	22	25.5	22.4	20.8	22.7	24	24.6	30.2	28.2	24	24.6	18.7	12	30.2	
8		11.2	10.3	11.7	11.7	11.7	12.8	19.4	19.6	16.9	20.5	23.5	18.8	26.1	23	21.1	31.5	22	18	19	14.5	6.8	6	10.7	10.7	31.5	
9		10.5	10	6.1	8.4	11.1	11.2	10.1	10	11.2	10.4	15	23	15	16.5	18.8	17	14.5	14.5	16.1	12.5	12.4	10.1	8.7	6.6	23	
10		9.4	15.6	14.5	9.6	7	9.4	10.5	10.7	11.1	18.6	23.1	24.8	30.7	27.8	29.4	24.3	21.6	23.2	19.8	15.3	13.5	19	22.7	21.2	30.7	
11		21.3	21.7	19.5	17.3	15.6	21.5	21.6	20	21.8	22.6	36.8	42.5	49.2	42.5	42.6	42.3	37.8	37.5	34.3	29	19.9	24.3	25.3	24.1	49.2	
12		28.3	25.7	19.9	24.8	25.9	28.6	28.7	42.7	47	47.8	46.3	50.1	49.3	46.4	46.9	50.6	48.5	49.6	50.9	45.2	43.8	44.5	47.1	41.2	50.9	
13		37.2	38.9	44.6	40.1	43.2	42.2	38.6	33.4	42.3	42.2	35.2	35.2	36.3	35.3	37.9	39.4	35.9	29.9	32.3	24.3	16.1	10.1	16.9	18.8	44.6	
14		16	18.1	16.1	9.6	8.6	13.8	16.9	27.2	33.3	35.1	34.2	32.7	41.2	38.8	38.3	38.6	37.6	36.3	31.1	24.7	18.9	16.3	16.7	13.6	41.2	
15		15.1	19.3	20.6	18.4	18	20.4	24.9	32.6	40.3	40.6	45.5	47.7	48.5	56.7	55.6	57.2	62	59	58.5	54.1	37.8	36.7	37.7	46.6	62	
16		44.9	41.5	41.1	35.4	28.6	32.6	42.7	46.8	38.6	45.2	48.7	51.3	49.9	45.8	45.9	47.5	46.4	39.2	37.7	29.2	28.2	29.4	21	13.7	51.3	
17		14	13.9	18.4	15.1	16.7	17	25.2	27.4	33.7	30.8	39.7	42.4	42.9	42.7	41.9	39.3	37.8	30	33.9	36.8	16.9	9	17.4	17.2	42.9	
18		20.1	14.7	14.6	11.3	13.3	12.8	14.4	17	16.4	23.9	28.8	27.4	29.8	27.1	30.5	33.6	35.4	37.8	23.9	8.7	7.4	4.3	5	5	37.8	
19		6.2	9.1	6.4	13.7	6.5	10.9	13.5	20.3	18.7	17.5	19.8	24	30.1	28.4	25.6	24.3	23.5	16.7	13.6	3.3	8.4	11.1	9.7	12.4	30.1	
20		8.4	9.1	8.4	10.5	10	7.7	6.8	6.8	6.5	10.8	15.4	15.7	30.3	22.3	24.3	23.9	19.6	20.6	19.3	11.2	5.5	14.7	12.3	9.4	30.3	
21		6.4	7.9	6.5	6.7	6.4	4.9	10.7	17.5	18.1	16.5	21.9	22.1	23.9	22.8	16.7	13.9	14.8	18.7	25.7	21.5	36.5	11.1	7.7	10.2	36.5	
22		10.2	3.3	4.9	6.9	7.1	5.8	12.4	11.6	10	17.9	19.3	28.6	27.9	38.6	41.5	49.5	47	43.4	41.9	46.4	43.2	43.6	36	43.5	49.5	
23		42.8	36.9	35	34.8	P	32.5	35.5	34.4	34.7	38.1	34.5	30.4	30.4	30.7	32.4	36	30.1	27.6	24.4	19.1	11.5	6.2	3.2	3.4	42.8	
24		4.5	4.9	4.1	4.2	3.5	3.8	5.3	9.3	16.2	26.4	21.6	24.4	26.8	28.6	22	22.3	22.4	18.9	14.1	8.3	10.6	7.3	21.8	21.4	28.6	
25		18.3	10.8	10.6	10.9	6	9.6	16.7	17.2	21.2	29.4	30.1	28.9	34.4	24.7	24	27.7	23.6	21.3	25.2	23.9	13.1	5.7	4.4	11.9	34.4	
26		12.1	12.2	13.7	15.9	14.4	24	22.8	25	24.5	29.7	33.4	29.9	30.5	39.8	33.1	33.6	40.5	32.3	25.2	17.1	14	12.1	11.8	12.9	40.5	
27		15.2	14.4	5.5	6	8.9	6.8	6.3	13	13.7	18.9	28.3	20	24.8	22.6	30.6	24	24.5	23.4	18.1	26.4	18.4	13.2	9	12.5	30.6	
28		15.6	19.8	19.7	18.7	18.5	27.6	30.1	23.5	26.4	31	36.1	35.7	33.3	33.6	38.1	35.9	34.6	31.6	30.3	25	13.8	8.3	5.8	2.6	38.1	
29		4.8	6.5	4.2	3	2.9	4.7	6.2	14.5	16.6	22.2	25.6	32.8	24.8	29.5	32.6	30.3	24.2	17.4	23.2	22.9	19.6	18.9	20.7	28	32.8	
30		25.6	20.5	14.9	13.8	13.1	9.9	13.5	23.4	25.3	22.1	25.5	23	25.6	18.8	21.9	28.9	27.1	21.5	31.1	23.7	10.9	4.4	12.5	7.8	31.1	
31		5.3	8.7	5.9	9.8	9.1	8.1	7.2	11.1	17.3	19.1	23.7	29.8	25.1	24.8	34.5	24.2	42.5	36.6	14.2	13	12.1	6.6	4.5	5.2	42.5	
PEAK		44.9	41.5	44.6	40.1	43.2	42.2	42.7	46.8	47.0	47.8	48.7	51.3	49.9	56.7	55.6	57.2	62.0	59.0	58.5	54.1	43.8	44.5	47.1	46.6		

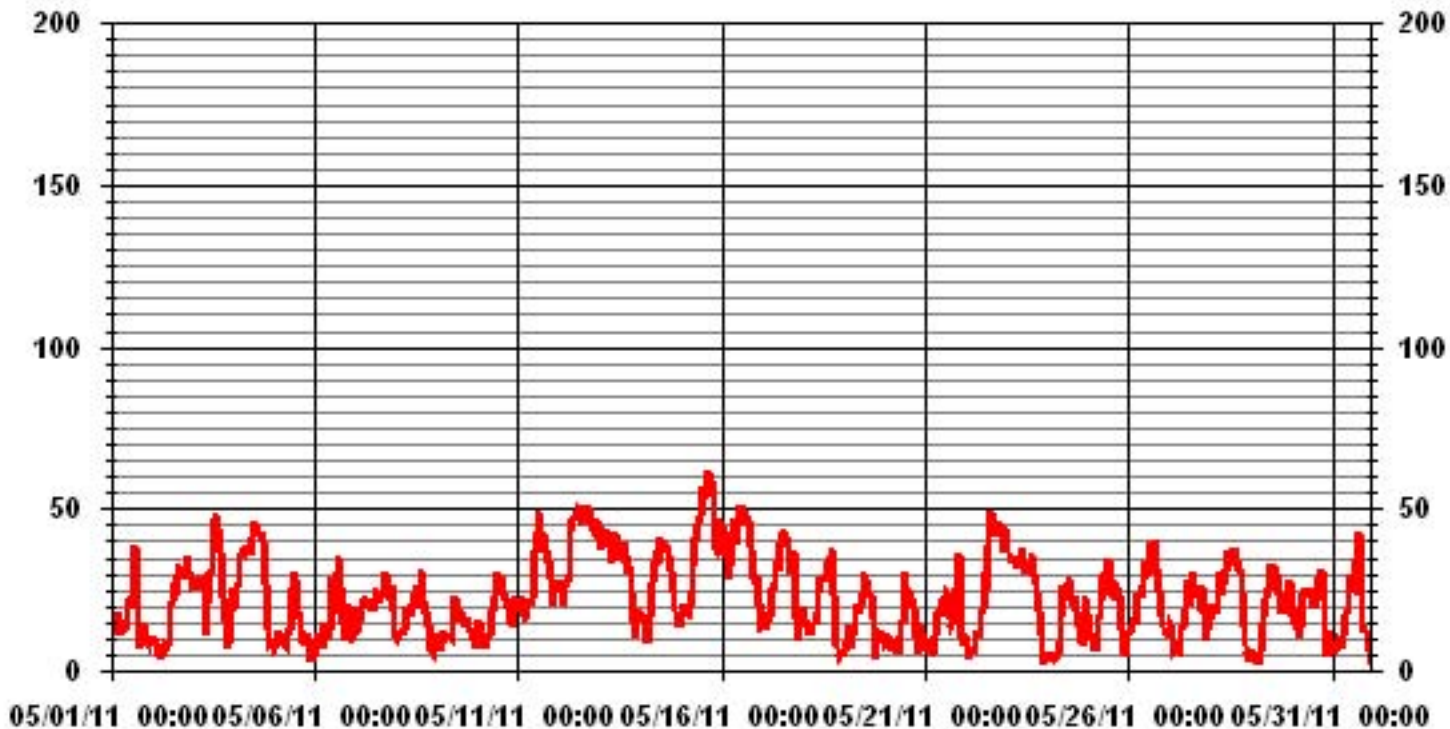
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	62	KPH	@ HOUR(S)	16
			ON DAY(S)	15

01 Hour Averages



LICA33
WSP / WDR Joint Frequency Distribution (Percent)

May 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	2.15	2.15	1.61	2.68	1.34	1.88	.94	.80	1.61	2.41	1.61	1.47	2.41	2.41	.13	26.74
< 12.0	.67	1.20	2.95	4.56	5.51	3.09	2.41	2.28	1.61	.13	.26	1.20	.80	2.28	1.20	.26	30.51
< 20.0	.53	1.47	.40	4.03	6.45	2.28	3.09	2.01	.67	.00	.00	.13	.53	.67	.40	.00	22.71
< 29.0	.13	.00	2.01	.94	1.07	.80	4.30	3.76	.00	.00	.00	.00	.00	2.41	.00	.13	15.59
< 39.0	.00	.00	.13	.00	.00	.80	2.01	1.20	.00	.00	.00	.00	.00	.26	.00	.00	4.43
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.41	4.83	7.66	11.15	15.72	8.33	13.70	10.21	3.09	1.74	2.68	2.95	2.82	8.06	4.03	.53	

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	16	16	12	20	10	14	7	6	12	18	12	11	18	18	1	199
< 12.0	5	9	22	34	41	23	18	17	12	1	2	9	6	17	9	2	227
< 20.0	4	11	3	30	48	17	23	15	5			1	4	5	3		169
< 29.0	1		15	7	8	6	32	28						18		1	116
< 39.0			1			6	15	9						2			33
>= 39.0																	
Totals	18	36	57	83	117	62	102	76	23	13	20	22	21	60	30	4	

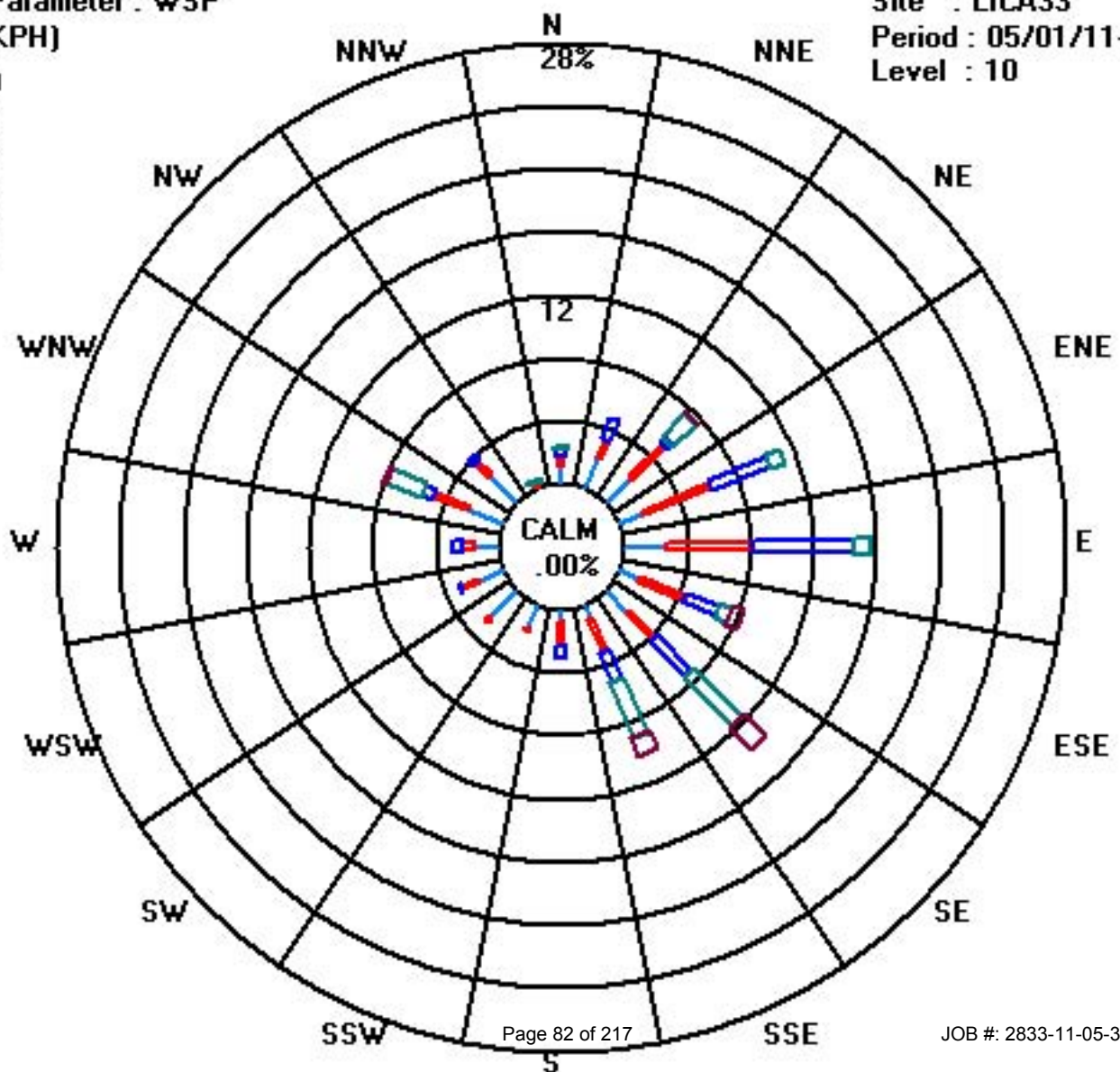
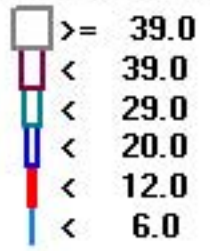
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 05/01/11-05/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	284	288	284	286	285	281	280	272	282	287	303	297	291	280	275	280	251	181	139	158	228	210	221	222	272		W	24	
2	218	213	226	221	136	142	14	233	45	81	31	104	158	119	85	74	67	64	66	66	80	84	82	81	82		E	24	
3	75	72	76	75	77	77	86	84	99	301	298	302	290	285	282	292	296	314	317	305	202	222	245	278	328		NNW	24	
4	279	284	277	283	284	282	287	293	295	297	294	299	296	303	302	292	298	286	285	297	277	256	254	244	290		WNW	24	
5	227	210	227	245	222	216	215	213	229	286	267	239	257	245	279	315	74	79	351	85	103	153	142	292	239		WSW	24	
6	113	190	212	178	220	302	316	288	244	215	290	100	113	30	321	21	36	55	8	18	67	63	53	57	36		NE	24	
7	76	80	78	82	97	94	99	101	89	81	76	75	85	98	92	76	69	57	72	70	81	59	68	80	81		E	24	
8	73	58	59	78	81	75	100	86	77	64	41	51	54	54	62	75	81	91	108	98	88	101	101	84	78		ENE	24	
9	89	80	71	69	81	95	88	101	113	200	167	87	48	58	141	90	70	76	120	112	116	119	126	141	101		E	24	
10	143	100	89	102	92	75	87	124	181	207	189	177	186	196	160	150	146	142	137	121	131	121	112	105	132		SE	24	
11	106	100	92	95	90	95	95	98	100	109	134	101	115	137	160	159	145	136	138	134	119	127	128	118	122		ESE	24	
12	116	115	98	95	101	101	100	123	130	129	116	115	125	138	129	124	129	124	121	114	115	117	118	120	119		ESE	24	
13	124	127	130	135	138	145	153	155	151	146	150	161	150	157	151	143	144	153	146	140	132	118	135	145	143		SE	24	
14	149	136	131	111	115	114	129	162	161	159	162	160	143	153	157	158	154	156	144	140	132	101	96	98	145		SE	24	
15	117	137	147	146	132	130	140	159	158	152	141	143	139	140	142	141	154	150	147	144	140	140	140	145	144		SE	24	
16	150	152	153	152	142	141	142	143	142	135	155	146	148	153	153	148	148	158	139	137	133	139	142	142	146		SE	24	
17	141	157	158	151	166	149	150	161	163	147	131	132	149	144	145	142	148	131	106	94	98	101	100	97	138		SE	24	
18	90	94	83	67	81	88	101	125	104	110	117	105	104	98	101	92	105	130	148	92	34	42	23	35	101		E	24	
19	355	356	95	143	51	14	42	48	63	97	127	114	93	103	95	90	101	112	146	201	350	325	321	276	81		E	24	
20	257	251	290	291	290	267	309	109	47	96	148	168	144	92	103	118	138	118	105	92	47	181	48	315	128		SE	24	
21	286	353	24	14	33	37	56	88	103	66	69	110	108	110	124	101	105	83	65	342	30	65	282	317	72		ENE	24	
22	357	307	15	293	291	321	293	301	317	345	44	60	25	348	1	39	47	45	42	41	39	45	49	60	31		NNE	24	
23	56	49	54	53	53	53	54	56	63	64	60	60	64	67	81	72	63	67	73	129	150	150	138	233	63		ENE	24	
24	310	305	302	251	307	263	13	359	23	45	73	36	84	53	53	60	74	143	99	100	263	305	20	39	45		NE	24	
25	50	56	49	51	53	82	85	95	91	92	93	93	95	88	97	84	121	123	138	238	249	288	284	15	92		E	24	
26	59	82	71	62	59	65	70	64	63	78	78	102	83	86	94	86	88	84	94	91	89	66	67	56	78		ENE	24	
27	43	53	77	76	68	25	21	305	324	18	56	355	33	56	45	22	31	34	23	10	21	20	322	317	25		NNR	24	
28	356	1	8	11	10	20	32	32	23	35	13	27	23	24	16	43	55	64	68	74	71	65	70	325	33		NNE	24	
29	297	308	286	240	115	135	119	195	167	164	160	174	180	169	163	177	248	234	185	149	149	151	157	174	171		S	24	
30	173	166	163	167	148	127	132	151	175	174	173	174	169	129	152	169	173	181	3	11	22	320	211	252	161		SSE	24	
31	275	231	294	268	261	291	268	238	293	307	294	332	306	305	310	286	322	99	271	256	249	240	234	213	290		WNW	24	
HOURLY AVG	357	356	302	293	307	321	316	359	324	345	303	355	306	348	321	315	322	314	351	342	350	325	322	325					

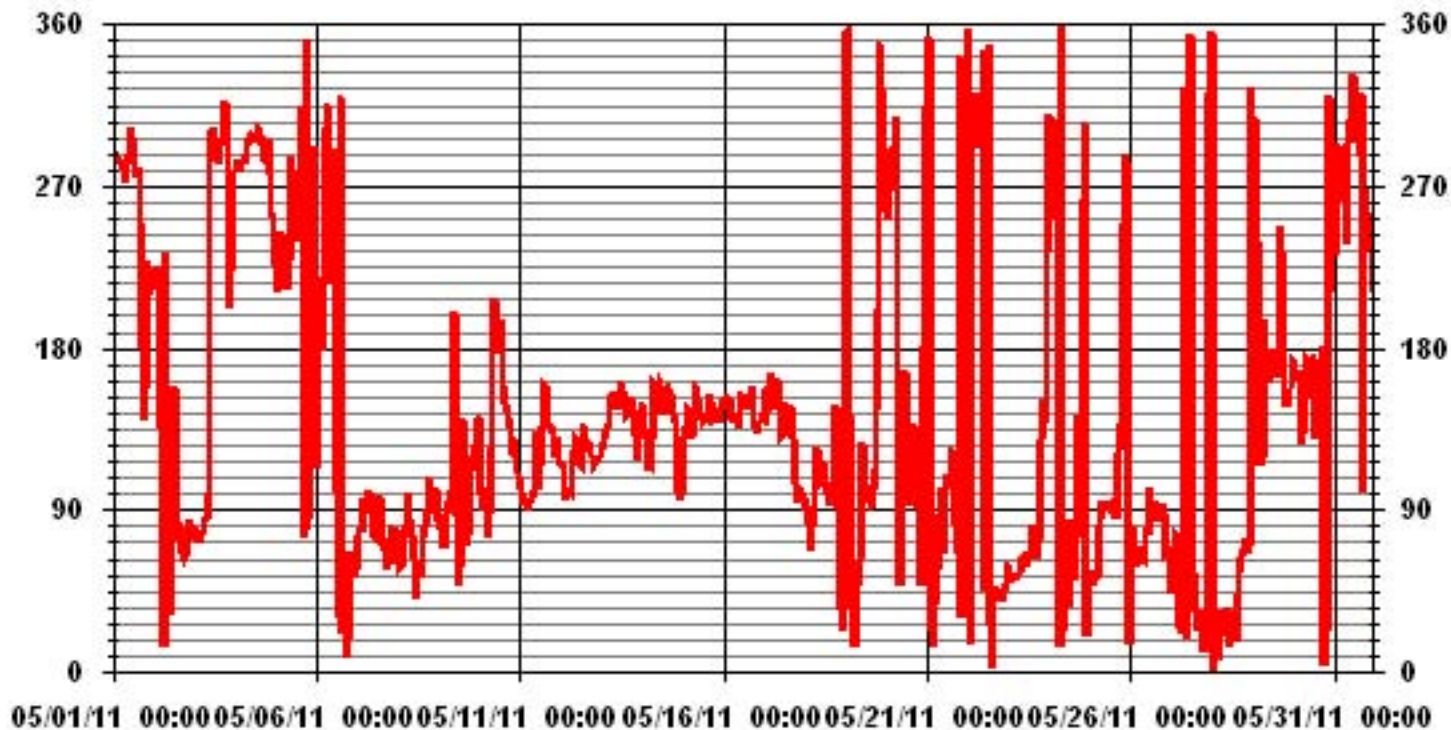
STATUS FLAG CODES

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	87.17		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	110	DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

MAY 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	4	5	6	6	5	7	9	12	22	27	26	35	31	21	20	25	27	23	10	15	12	16	14	12	
2	26	22	12	37	12	24	37	33	44	39	49	56	56	19	14	11	8	7	6	5	6	6	6	6	
3	6	6	5	5	6	6	7	18	42	58	24	17	11	12	9	10	9	13	14	11	15	7	7	6	
4	5	6	6	7	8	8	8	9	11	11	12	15	15	13	17	13	15	12	10	8	5	6	7	7	
5	11	22	11	8	17	17	29	21	22	23	48	25	19	27	48	37	36	33	43	31	7	18	24	44	
6	19	21	23	20	18	24	17	20	18	46	60	23	35	47	21	19	32	23	28	19	7	10	5	5	
7	7	8	7	7	7	8	9	8	11	11	15	14	15	15	24	18	16	12	6	7	6	7	6	5	
8	6	6	9	5	7	6	8	10	12	20	36	43	35	38	48	25	28	22	10	5	11	8	21	6	
9	6	11	9	4	4	6	10	12	20	56	75	43	41	58	56	51	30	17	18	5	4	6	6	8	
10	13	18	12	6	15	9	9	15	50	38	45	36	48	39	37	20	19	19	7	6	5	5	6	4	
11	4	7	6	4	5	5	6	7	10	14	20	23	15	15	13	12	13	9	8	6	3	5	4	5	
12	5	5	3	4	4	5	6	8	9	10	10	10	12	13	14	10	10	9	7	5	6	6	6	6	
13	6	7	8	7	7	8	8	10	11	14	13	14	16	14	13	17	13	10	9	5	3	5	4	4	
14	4	4	2	13	10	9	12	10	11	13	13	15	15	12	12	13	10	11	8	6	4	3	3	7	
15	3	4	6	5	4	5	8	11	10	13	13	13	13	12	10	10	9	9	8	8	7	7	6	7	
16	7	7	7	8	7	7	8	8	10	10	11	11	11	12	13	12	10	13	7	6	6	6	5	5	
17	3	4	7	6	8	7	8	12	12	14	12	14	12	14	11	14	9	9	7	6	5	5	17	14	
18	7	5	6	7	6	6	7	16	19	16	16	21	22	12	13	13	11	8	8	10	11	10	17	11	
19	16	13	29	15	17	8	9	13	13	32	26	41	24	24	20	14	26	12	7	35	11	8	8	31	
20	22	13	9	9	12	13	25	53	55	42	54	36	62	36	29	31	20	8	6	16	34	33	38	38	
21	26	21	23	11	17	15	12	9	12	16	19	18	19	29	28	43	29	47	22	34	14	13	48	11	
22	46	29	22	17	13	54	10	16	19	31	25	35	24	17	15	9	10	10	10	9	9	9	8	8	
23	8	9	8	9	8	8	9	10	11	11	13	15	18	18	17	15	17	17	13	15	4	4	12	41	
24	16	5	13	12	24	27	21	31	38	39	45	64	44	59	60	67	44	40	17	38	10	8	15	8	
25	6	6	9	4	11	14	11	12	13	12	11	19	17	18	25	22	13	8	26	12	15	14	33	32	
26	48	8	11	7	8	7	7	9	10	12	11	16	26	31	23	15	20	15	7	6	5	4	5	6	
27	5	9	10	14	63	22	21	28	24	33	32	29	38	41	38	21	17	14	13	12	11	10	8	10	
28	12	11	10	11	9	12	10	13	17	16	18	20	19	21	19	20	15	11	9	7	4	4	9	22	
29	22	9	49	22	40	20	19	26	27	27	24	28	34	26	30	26	39	47	23	11	7	7	7	10	
30	9	7	8	8	31	11	18	12	18	21	19	36	32	38	31	19	17	27	28	11	13	37	33	29	
31	28	27	22	15	28	22	19	31	23	27	29	29	19	21	27	20	32	53	34	16	16	10	14	14	

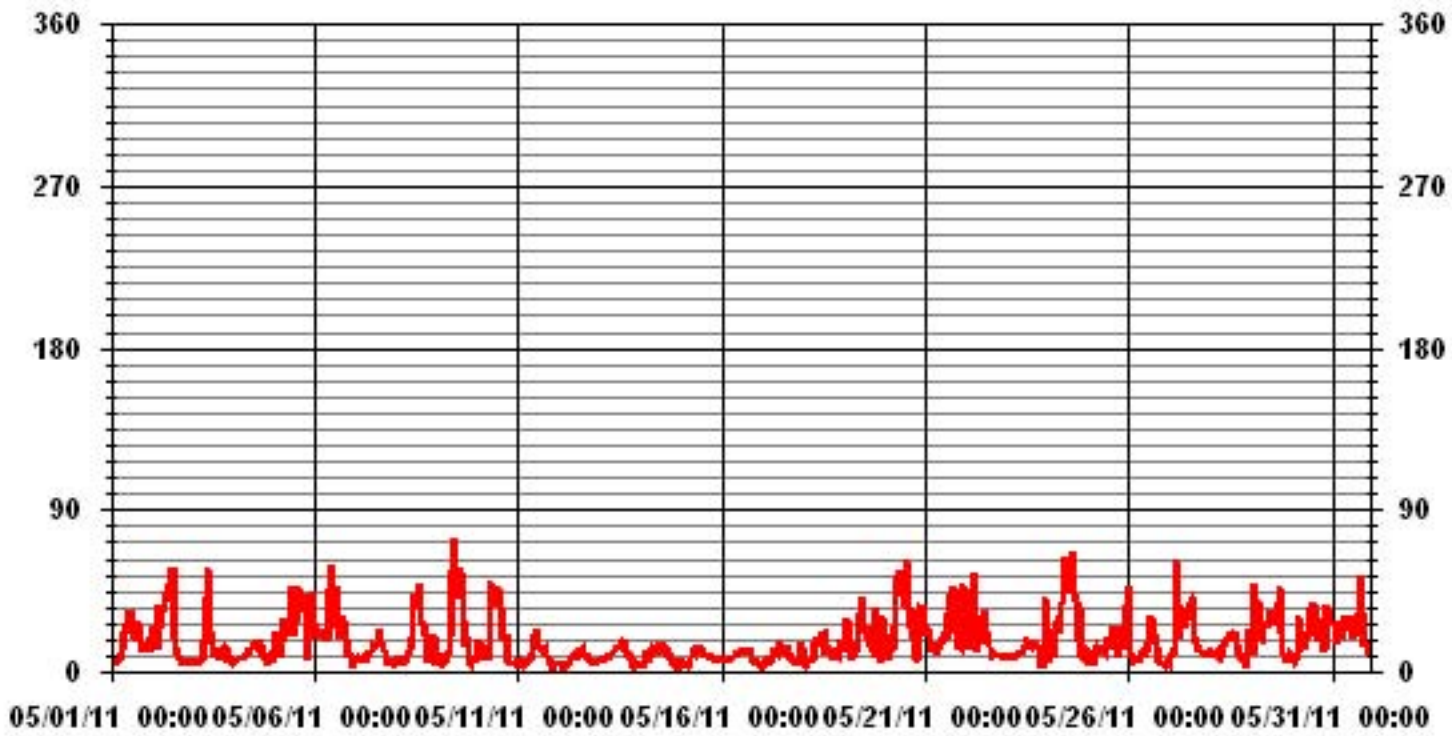
STATUS FLAG CODES

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

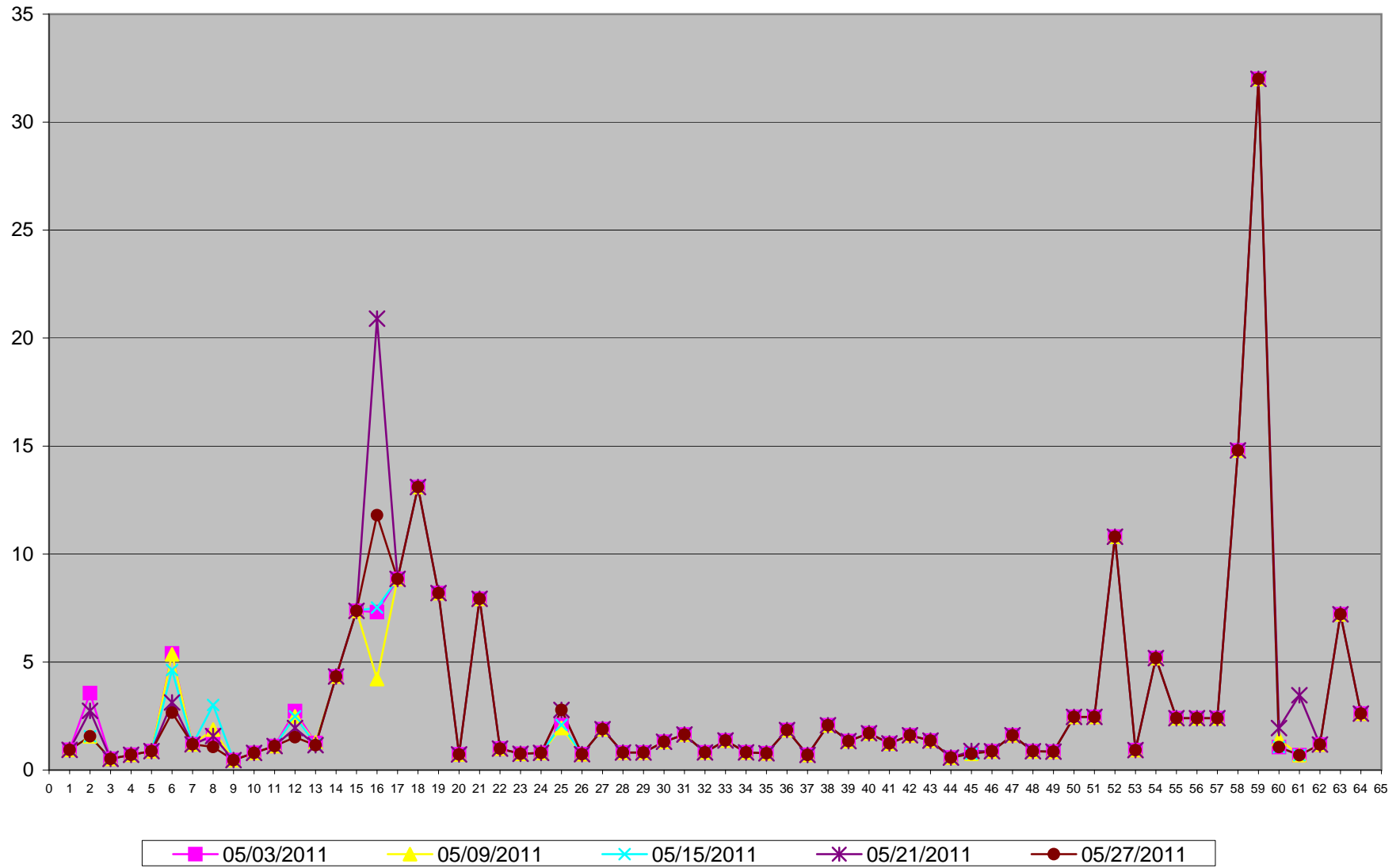
CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



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 May 2011

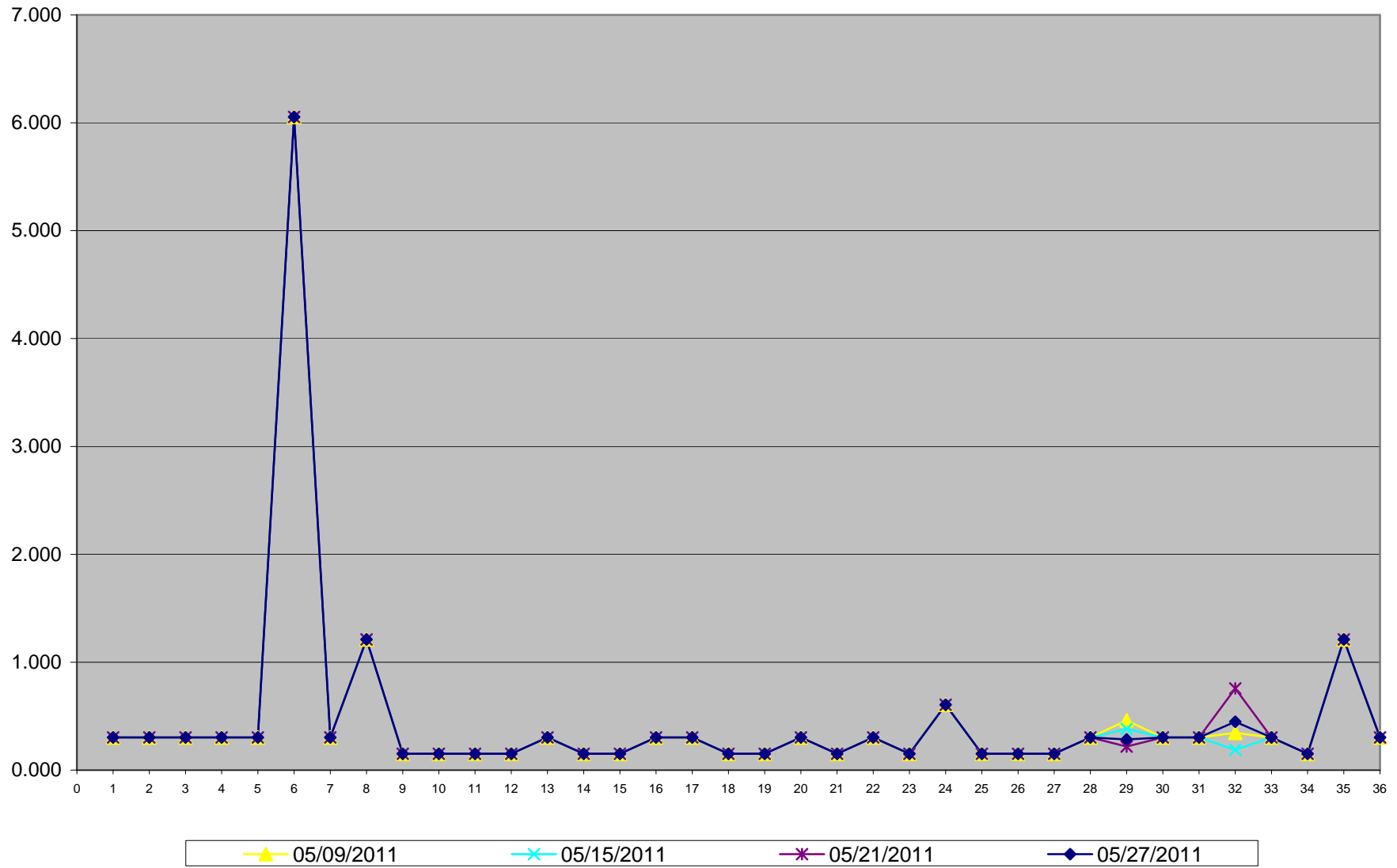
LICA- Portable Site

Unit: ng/m3

PAHs	05/03/2011	05/09/2011	05/15/2011	05/21/2011	05/27/2011
Sample Volume (unit: m3)	NA	330.34	330.33	330.34	330.34
1 1-Methylnaphthalene	NA	0.303	0.303	0.303	0.303
2 1-Methylphenanthrene	NA	0.303	0.303	0.303	0.303
3 2-Chloronaphthalene	NA	0.303	0.303	0.303	0.303
4 2-Methylantracene	NA	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	NA	0.303	0.303	0.303	0.303
6 3-Methylcholanthrene	NA	6.054	6.054	6.054	6.054
7 7,12-Dimethylbenzo(a)anthracene	NA	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	NA	1.211	1.211	1.211	1.211
9 Acenaphthene	NA	0.151	0.151	0.151	0.151
10 Acenaphthylene	NA	0.151	0.151	0.151	0.151
11 Anthracene	NA	0.151	0.151	0.151	0.151
12 Benzo(a)anthracene	NA	0.151	0.151	0.151	0.151
13 Benzo(a)fluorene	NA	0.303	0.303	0.303	0.303
14 Benzo(a)pyrene	NA	0.151	0.151	0.151	0.151
15 Benzo(b)fluoranthene	NA	0.151	0.151	0.151	0.151
16 Benzo(b)fluorene	NA	0.303	0.303	0.303	0.303
17 Benzo(e)pyrene	NA	0.303	0.303	0.303	0.303
18 Benzo(g,h,i)perylene	NA	0.151	0.151	0.151	0.151
19 Benzo(k)fluoranthene	NA	0.151	0.151	0.151	0.151
20 Biphenyl	NA	0.303	0.303	0.303	0.303
21 Chrysene	NA	0.151	0.151	0.151	0.151
22 Coronene	NA	0.303	0.303	0.303	0.303
23 Dibenz(a,h)anthracene	NA	0.151	0.151	0.151	0.151
24 Dibenzo(a,e)pyrene	NA	0.605	0.605	0.605	0.605
25 Fluoranthene	NA	0.151	0.151	0.151	0.151
26 Fluorene	NA	0.151	0.151	0.151	0.151
27 Indeno(1,2,3-cd)pyrene	NA	0.151	0.151	0.151	0.151
28 m-Terphenyl	NA	0.303	0.303	0.303	0.303
29 Naphthalene	NA	0.460	0.381	0.218	0.285
30 o-Terphenyl	NA	0.303	0.303	0.303	0.303
31 Perylene	NA	0.303	0.303	0.303	0.303
32 Phenanthrene	NA	0.345	0.188	0.757	0.448
33 p-Terphenyl	NA	0.303	0.303	0.303	0.303
34 Pyrene	NA	0.151	0.151	0.151	0.151
35 Quinoline	NA	1.211	1.211	1.211	1.211
36 Tetralin	NA	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

SO₂ Calibration Report

Station Information

Calibration Date	May 12, 2011	Previous Calibration	April 13, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	8:06	End Time (MST)	11:28
Reason:	Monthly Calibration		
Barometric Pressure	0.937 atm	Station Temperature	24 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	574 ccm 33 Deg C	574 ccm 32.6 Deg C	
HVPS / Lamp Setting	612 2045	612 2044	
PMT / RxCell Temp	8.1 Deg C 50.0 Deg C	8.1 Deg C 50.0 Deg C	
Converter / IZS Temp	NA Deg C 45.0 Deg C	NA Deg C 45.0 Deg C	
Offset / Slope	66.9 1.054	69 1.056	

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	751	0.9986
4959	40.8	400	398	1.0047
4981	17.3	170	170	0.9976
4996	0	0	0	N/A
Sum of Least Squares				0.2511
New Correction Factor				0.9986

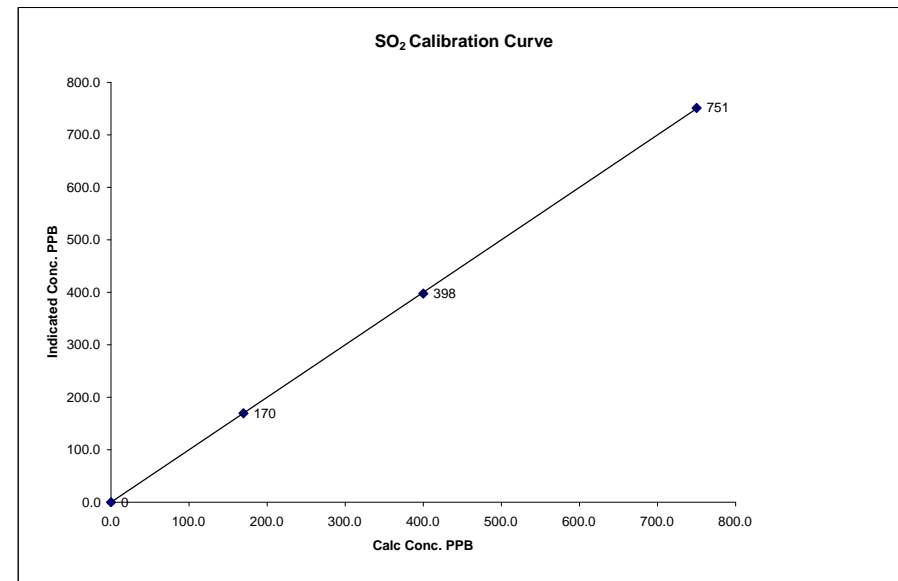
	Before Calibration	After Calibration
Auto Zero	1.6	0.4
Auto Span	376	374
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.1%

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

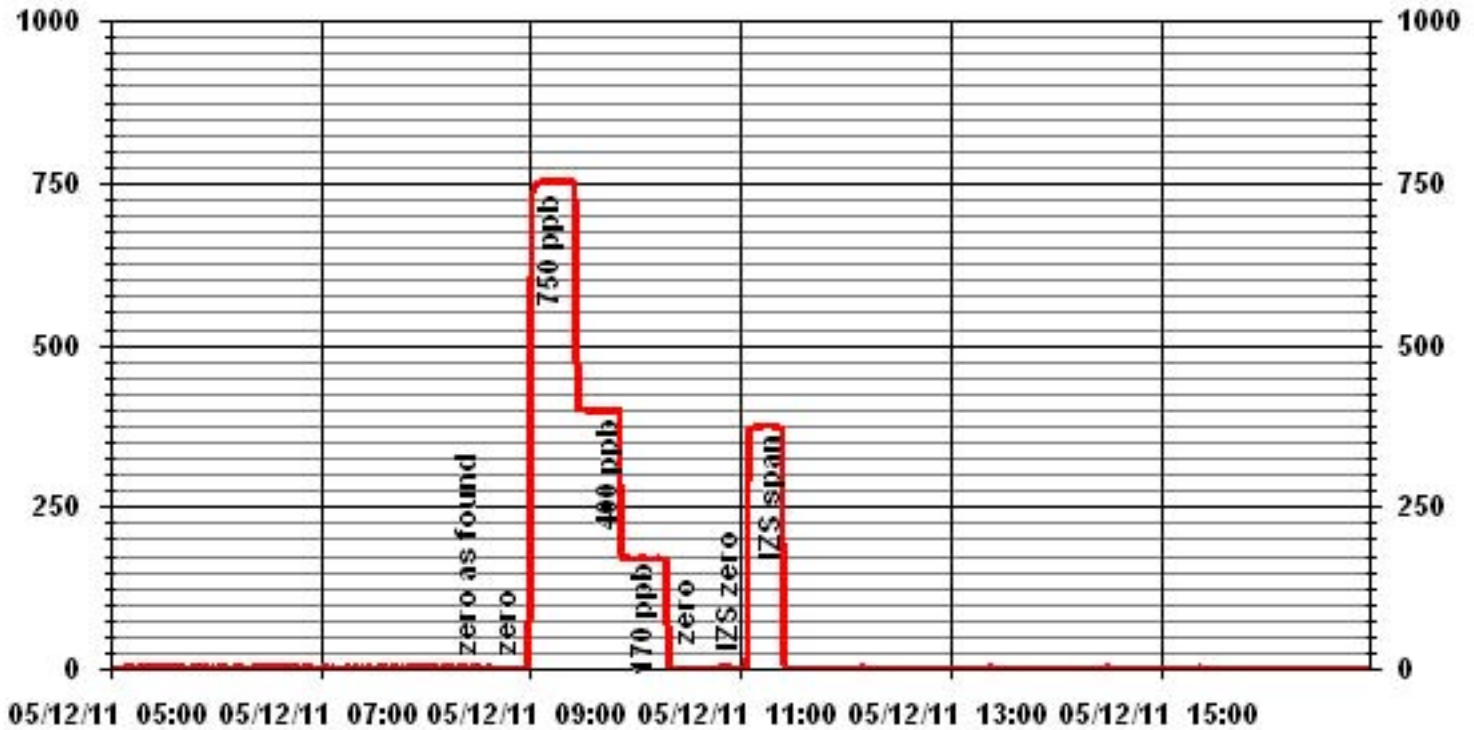
Calibration Date	May 12, 2011
Company	Lakeland Community and Industry Association
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M
Start Time (MST)	8:06
End Time (MST)	11:28

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999986
0	0	n/a	Intercept	(± 3% F.S.)	-0.363240
170	170	0.9976			
400	398	1.0047			
750	751	0.9986			



Notes:

01 Minute Averages



Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	May 11, 2011	Previous Calibration	April 12, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M		
Start Time (MST)	10:05	End Time (MST)	13:57
Reason:	Monthly Calibration		
Barometric Pressure	0.945 atm	Station Temperature	25 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	535 ccm	31.9 Deg C	533	32.8	Deg C
HVPS / Lamp Setting	540	2116	540	2117	
PMT / RxCell Temp	7.9 Deg C	50 Deg C	7.9 Deg C	50 Deg C	
Converter / IZS Temp	315.3 Deg C	45 Deg C	315.6 Deg C	45 Deg C	
Offset / Slope	52.3	1.058	53.4	1.048	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	N/A
4995	0	0	0	N/A
4959	39.2	80	81	0.9876
4959	39.2	80	80	1.0000
4981	19.6	40	40	0.9995
4885	11.2	23	23	1.0145
4996	0	0	0	N/A
Sum of Least Squares				1.0008
New Correction Factor				1.0000

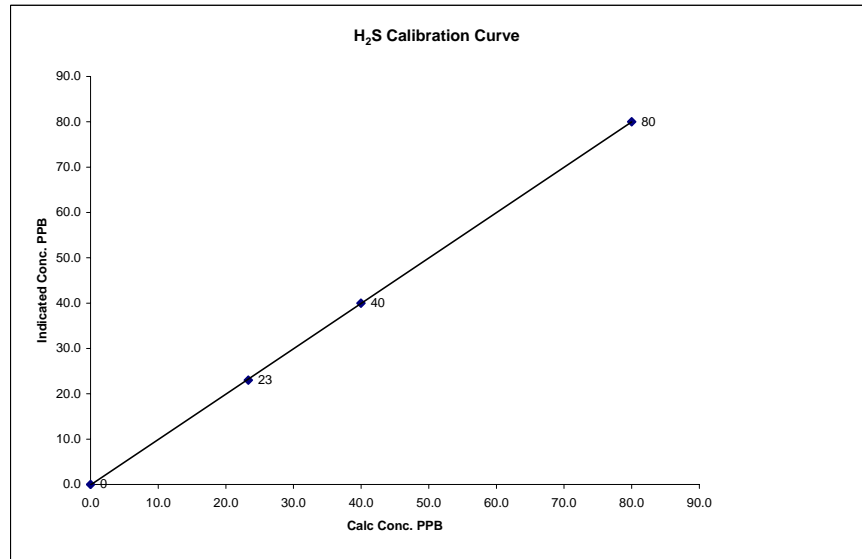
		Before Calibration	After Calibration
Auto Zero		0.8	0.7
Auto Span		58	57
Sample Lines Connected			YES
Percent Change from Previous Calibration			1.3%

Calibration Performed by: Ting Xu

H₂S Calibration Curve

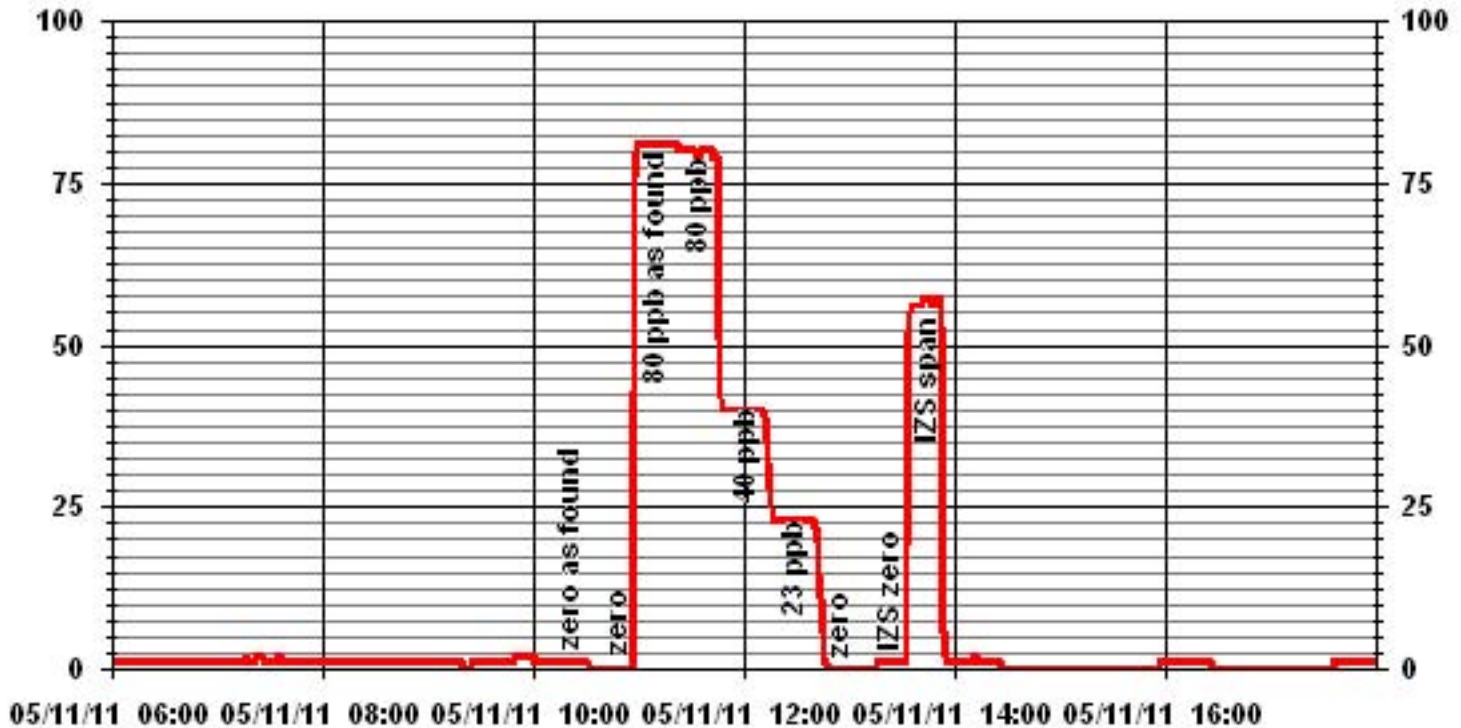
Calibration Date	May 11, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M
Start Time (MST)	10:05
End Time (MST)	13:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999976
0	0	n/a	Intercept	(± 3% F.S.)	-0.123150
23	23	1.0145			
40	40	0.9995			
80	80	1.0000			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	May 12, 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 (%)	24.7%
Firmware Ver.	1.51	K _o Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	17.3
		Press (ATM)	0.950

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)	17.5	D °C	-0.2
Measured Press (± 0.01atm)	0.929	DATM	0.021
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	0.47%
Measured Main Flow (l/min)	2.98	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.77%
Measured Bypass Flow (l/min)	13.68	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: 10:56 **Finish Time:** 13:14

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 17.8%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	May 11, 2011	Previous Calibration	April 12, 2011
Company	LICA	Plant/Location	Portable/ 13-16-62-5W4M
Start Time (MST)	8:45	End Time (MST)	15:13
Reason:	Monthly Calibration		Other
Barometric Pressure	0.945 atm	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 Volts	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	482 ccm	314.9 Deg C		483 ccm	316.0 Deg C		
Ozone Flow / Vacuum	78 ccm	4.2 "Hg-A		79 ccm	4.2 "Hg-A		
HVPS / A ZERO	662 Volts	6.9 MV		662 Volts	6.8 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.7 Deg C		50.0 Deg C	6.7 Deg C		
Box Temp / IZS Temp	32.9 Deg C	45.3 Deg C		33 Deg C	45.1 Deg C		
Offset	2.9 NOx	-0.2 NO		2.9 NOx	-0.2 NO		
Slope	1.094 NOx	1.056 NO		1.104 NOx	1.076 NO		
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
4994	0.0	----	0	0	----	3	0	3	----	----
4921	74.2	----	768	749	----	754	732	22	1.0226	1.0228
4921	74.2	----	768	749	----	768	749	19	1.0039	0.9995
4954	39.6	----	410	400	----	408	398	10	-1.1849	-1.1966
4973	19.8	----	205	200	----	204	200	4	-0.3728	-0.3757
4995	0.0	----	0	0	0	-1	1	-1	----	----

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	----	573	770	196	574	1.0380	100.18%
4921	74.2	250	768	----	245	771	524	247	1.0889	100.88%
4921	74.2	140	768	----	144	771	625	146	1.1613	101.57%

Linearity	Sum of Least Squares	NOx= 1.001	NO= 1.001	NO2= 0.997	
OK?	Yes No	Correction Factors:	NOx= 1.0039	NO= 0.9995	NO2= 1.0380
Average Converter Efficiency= 100.88%					

Before Calibration				After Calibration			
Auto Zero	-1.7 NOx	-1.7 NO2		-0.5 NOx	-2.7 NO2		
Auto Span	734 NOx	717 NO2		740 NOx	723 NO2		
Sample Lines Connected				YES			
Percent Change from Previous Calibration		NOx -2.6%	NO -2.4%	NO2 -2.0%			

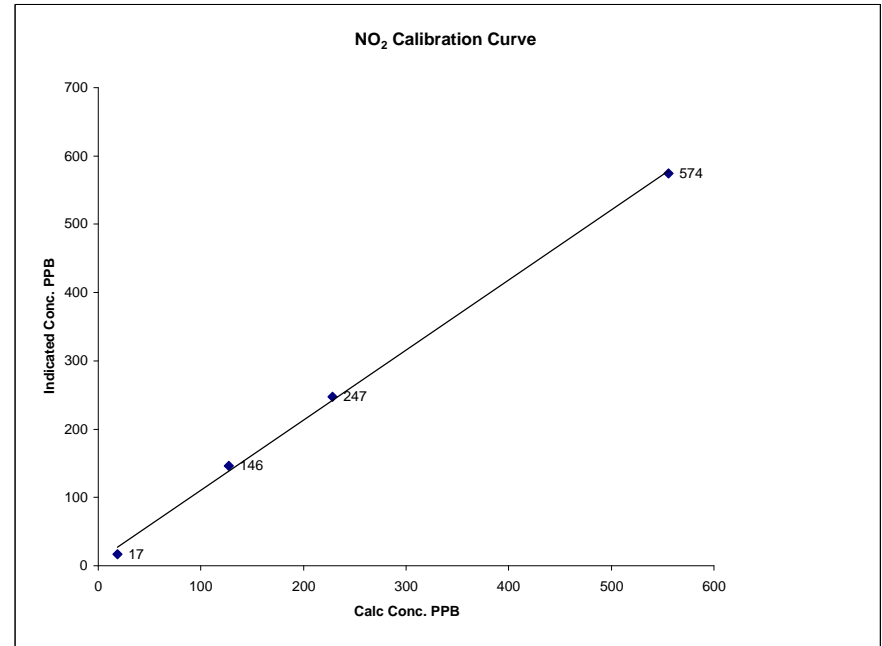
Notes Additional point done for ozone cal (O3 set point= 420), NOx=771, NO=367, NO2=405.

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	May 11, 2011	LICA	
Company		Portable/ 13-16-62-5W4M	
Plant / Location		15:13	
Start Time (MST)	8:45	End Time (MST)	15:13

Calculated Conc.	Indicated Response	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.998743
ppb	ppb		Slope	(0.85 to 1.15)	1.025777
19	17	N/A	Intercept	(± 3% F.S.)	7.50688
127	146	0.8699			
228	247	0.9231			
556	574	0.9686			

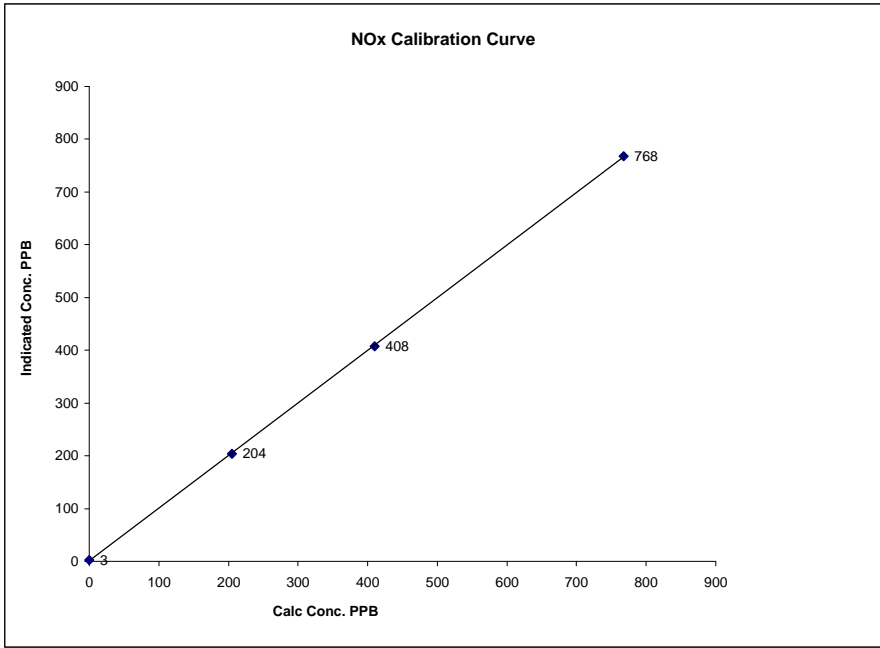


Notes:

NOx Calibration Curve

Calibration Date May 11, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:45 End Time (MST) 15:13

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999966
0	3	N/A	Slope (0.85 to 1.15)	0.996874
205	204	1.0050	Intercept (± 3% F.S.)	1.08551
410	408	1.0049		
768	768	1.0000		

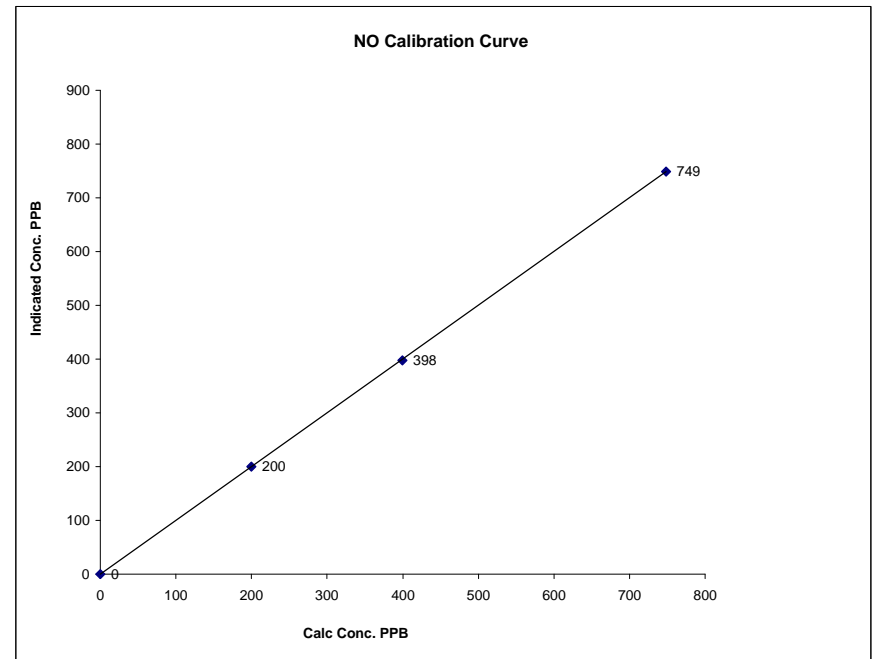


Notes:

NO Calibration Curve

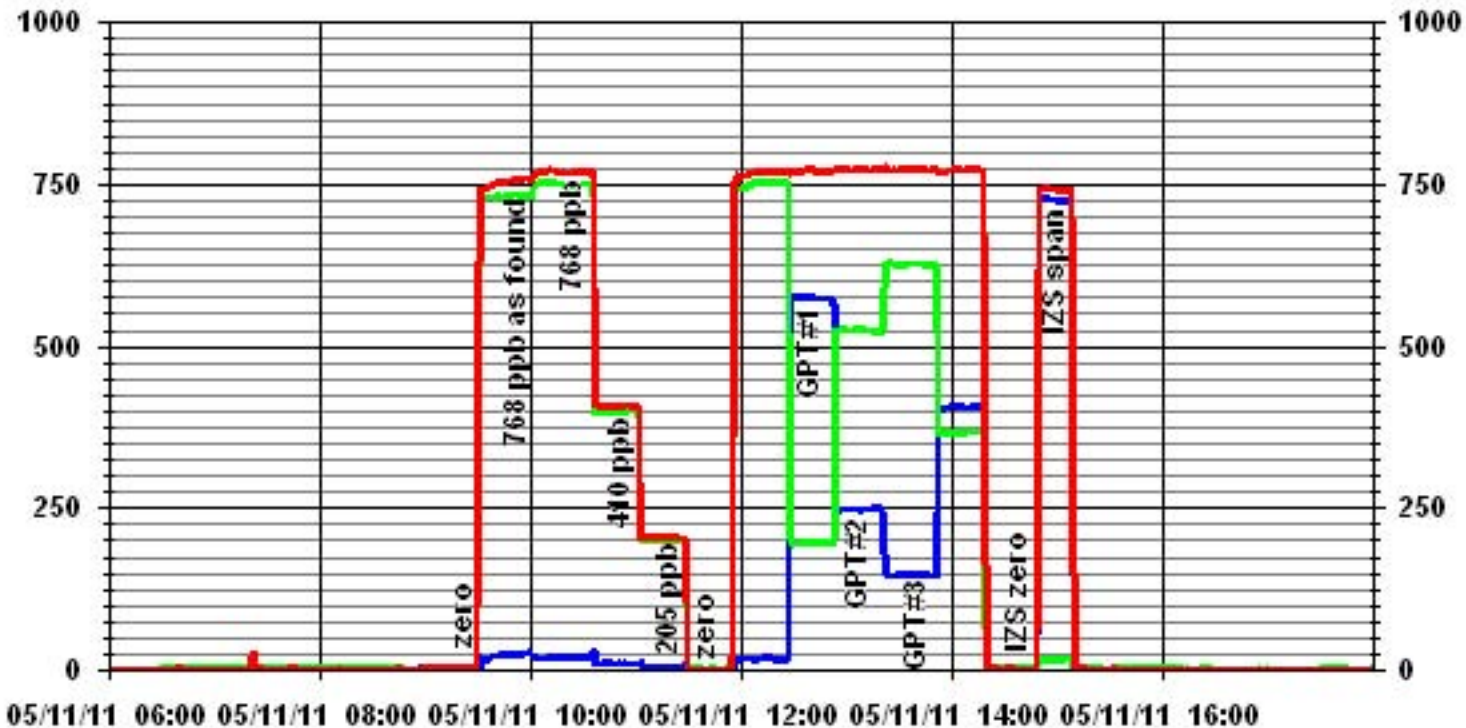
Calibration Date May 11, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:45 End Time (MST) 15:13

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999992
0	0	N/A	Slope (0.85 to 1.15)	1.001004
200	200	0.9994	Intercept (± 3% F.S.)	-3.9987
400	398	1.0042		
749	749	0.9995		



Notes:

01 Minute Averages



— LICA33 NOX_ PPB

— LICA33 NO_ PPB

— LICA33 NO2_ PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	May 12, 2011	Previous Calibration	April 13, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	8:06	End Time (MST)	11:41
Reason:	Monthly Calibration		
Barometric Pressure	0.937 mm Hg	Station Temperature	24 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			
Cell A Flow / Cell B Flow	755 ccm	764 ccm	758 ccm	769 Deg C
Pressure	690 mmHg		706 mmHg	
Bench Lamp Temp	54.1 Deg C		54.1 Deg C	
O3 Lamp / Box Temp	68.2 Deg C	32.4 Deg C	68.3 Deg C	32.1 Deg C
Offset/Slop	0	0.971	0	0.951

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
4995	420	385	392	0.9821
4995	420	385	386	0.9974
4995	250	228	230	0.9913
4995	140	127	129	0.9845
4995	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.9974

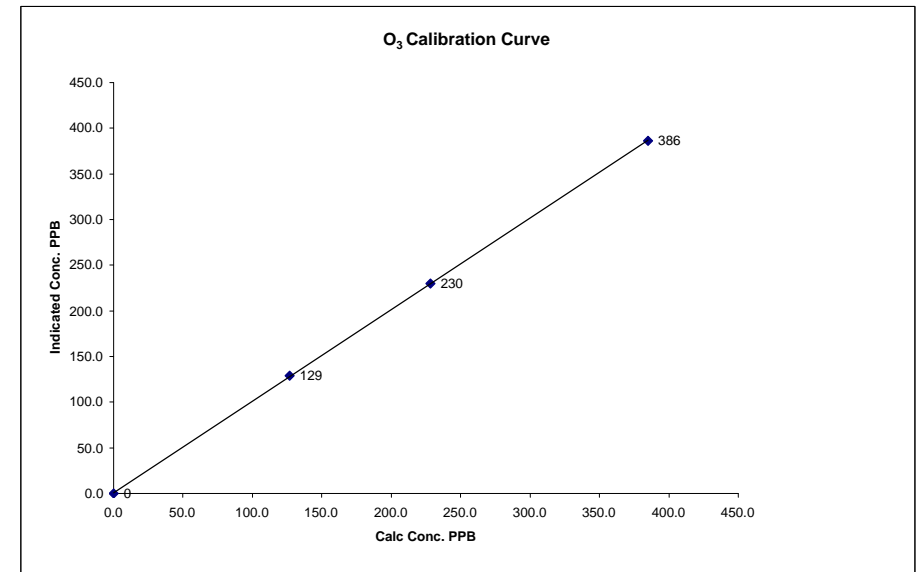
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	329	321
Sample Lines Connected		YES
Percent Change from Previous Calibration		1.6%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

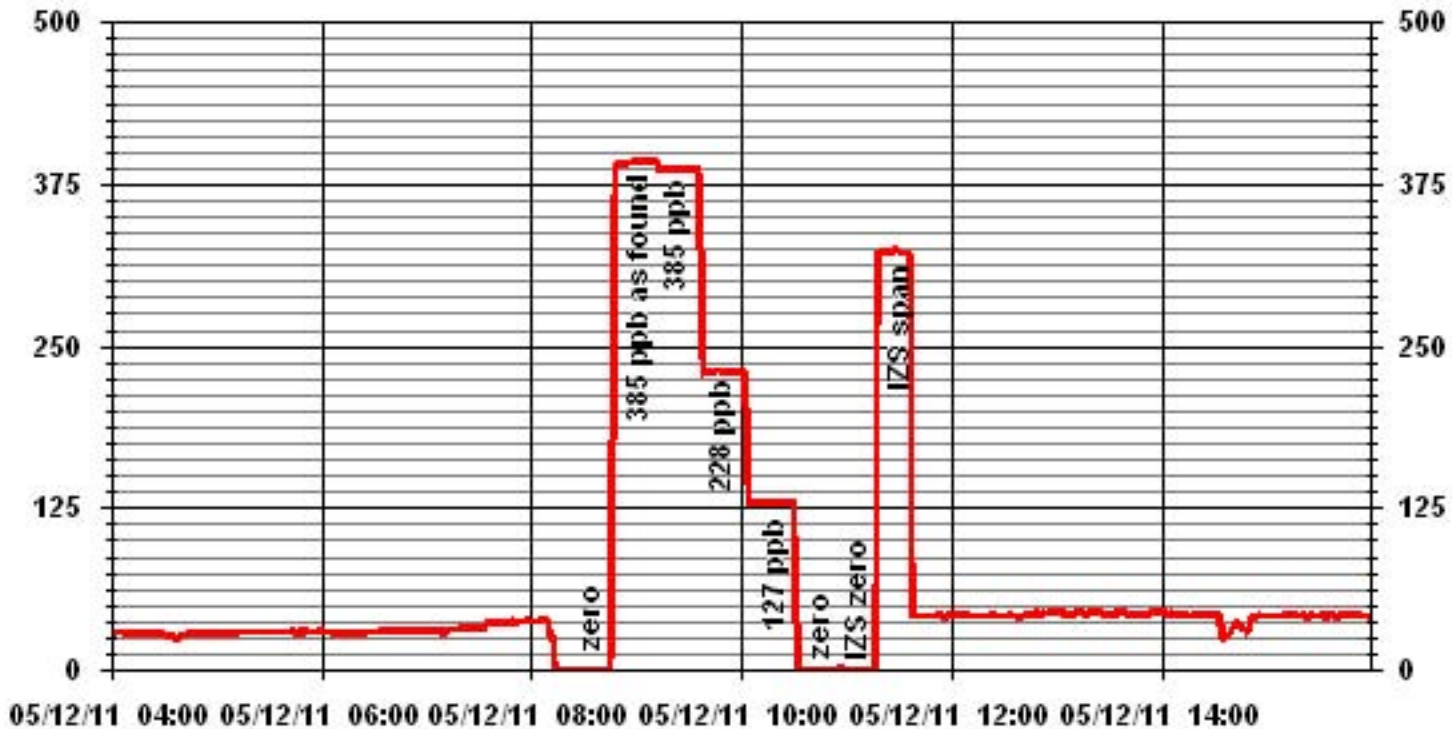
Calibration Date	May 12, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	8:06	End Time (MST)	11:41

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999970
0	0	n/a	Intercept	(0.85 to 1.15)	1.002140
127	129	0.9845			
228	230	0.9913			
385	386	0.9974			0.854094



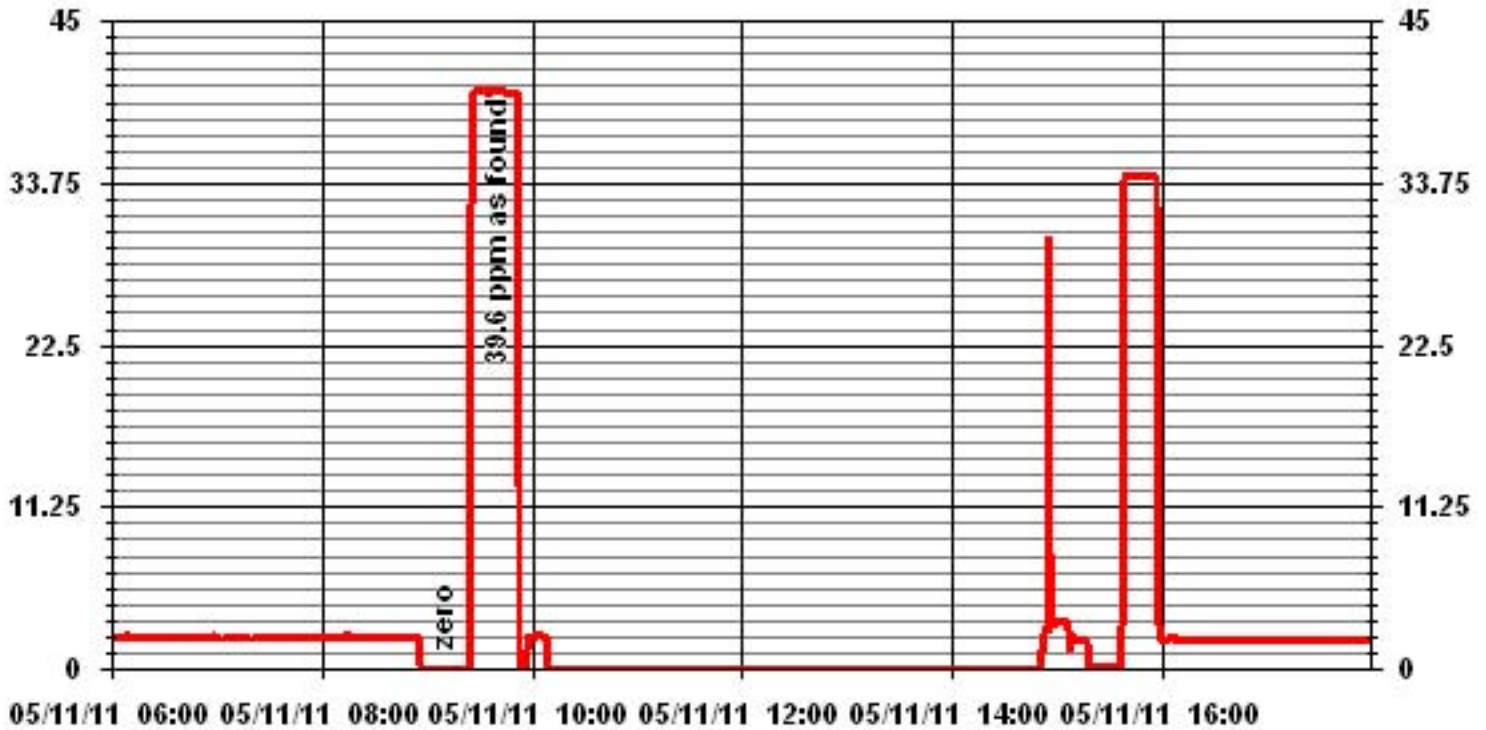
Notes:

01 Minute Averages



Total Hydrocarbons

01 Minute Averages



THC Calibration Report

Station Information

Calibration Date:	May 12, 2011	Previous Calibration	May 11, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	Portable Station Devon Wellsite 13-16-62-5W4M		
Start Time (MST)	11:14	End Time (MST)	15:14
Reason:	Post-Repair alibration		
Barometric Pressure:	0.95 atm	Station Temperature:	24 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
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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	0.0	N/A	
1999	70.0	39.6	40.4	0.9809	
1999	70.0	39.6	39.9	0.9931	
1999	34.9	20.1	19.9	1.0099	
1999	20.0	11.6	11.5	1.0089	
1999	0	0.0	0.0	N/A	
				Correction Factor:	0.9931

Percent Change

Previous Calibration Correction Factor:	0.9887
Current Correction Factor Before Span Adjust:	0.9809
Percent Change:	0.8%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.1
Auto Span	34.5	34.3
Sample Lines Connected		YES

Cylinder Pressures

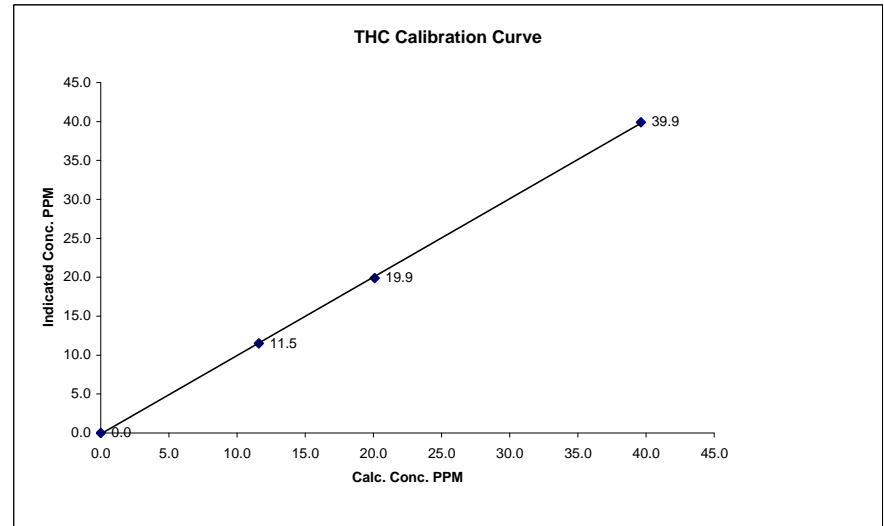
Span	2000 psi
Hydrogen	1300 psi
Zero Air	35 psi Using API 700

Calibration Performed by: Ting Xu

THC Calibration Curve

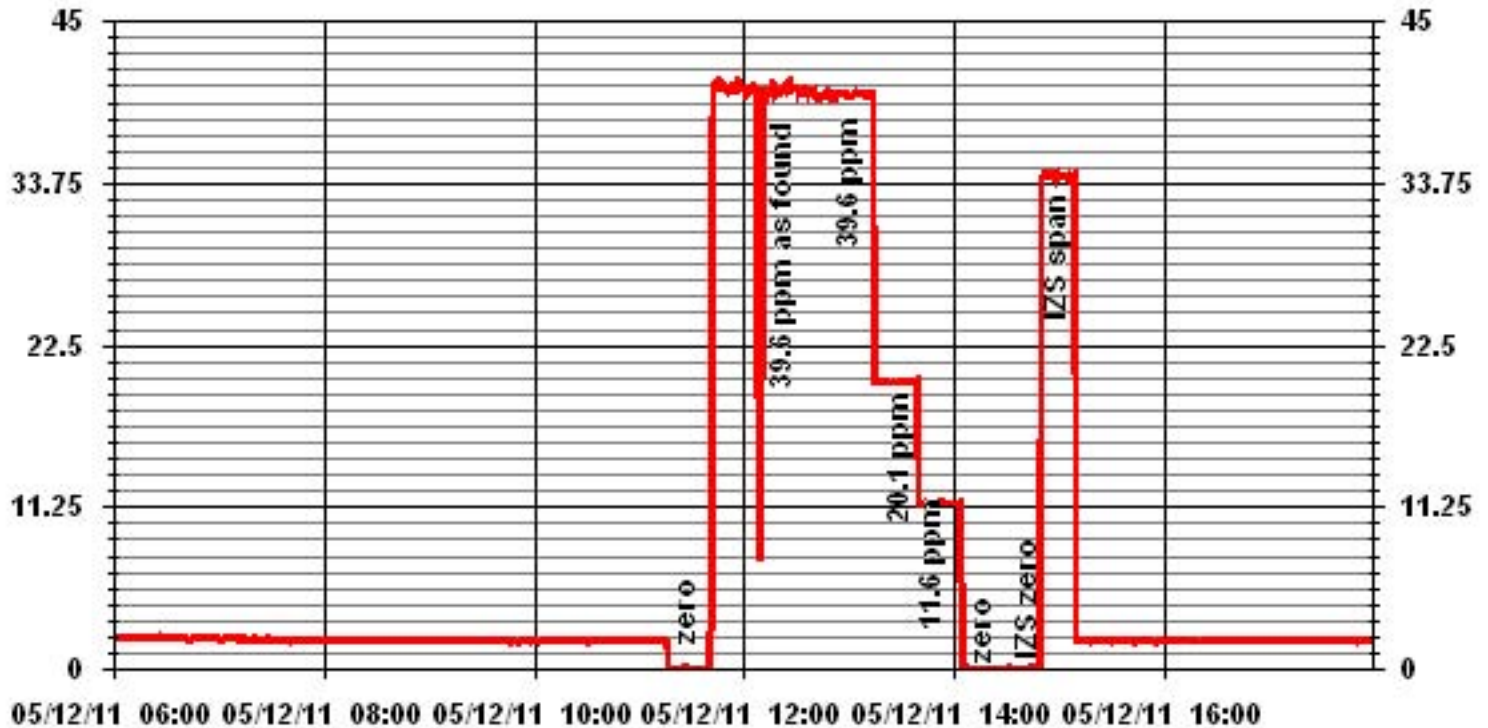
Calibration Date	May 12, 2011
Company	Lakeland Industry and Community Association
Plant / Location	Portable Station Devon Wellsite 13-16-62-5W4M
Start Time (MST)	11:14
End Time (MST)	15:14

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999907
0.0	0.0		Intercept	(± 3% F.S.)	-0.137616
11.6	11.5	1.0089			
20.1	19.9	1.0099			
39.6	39.9	0.9931			



Notes: The A/F span reading showed a little bit noisy. Increased the zero air to 35 psi, redid the point.

01 Minute Averages



Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7805
Station ID: Lica 33 (Portable) Canister Installation Date/Time: May 02, 11 @ 9:32 mst
Field Sample ID: LICA VOC/PORT/ May 03, 11 Canister Removal Date/Time: May 04, 11 @ 8:53 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
3-May-11	05/03/2011 0:00	05/04/2011 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 # 07625

Technician Signiture: Ting Xu_____



Your C.O.C. #: 07625

Attention: Michael Bisaga

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

Report Date: 2011/05/16

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B163170

Received: 2011/05/06, 10:35

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/05/10	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/05/10	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 #: B163170
 Report Date: 2011/05/16

RESULTS OF ANALYSES OF AIR

Maxxam ID		JK6401	JK6402	
Sampling Date		2011/05/03	2011/05/03	
COC Number		07625	07625	
	Units	LICA VOC/CLS/MAY 03,11 - 7860	LICA VOC/PORT/MAY 03,11 - 7805	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	22	2483796

QC Batch = Quality Control Batch

Maxxam Job #: B163170
 Report Date: 2011/05/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JK6401			JK6402				
Sampling Date		2011/05/03			2011/05/03				
COC Number		07625			07625				
	Units	LICA VOC/CLS/MAY 03,11 - 7860	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAY 03,11 - 7805	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	2483802
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	1.14	0.50	3.56	1.56	2483802
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2483802
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2483802
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2483802
Dichlorodifluoromethane (FREON 12)	ppbv	1.07	5.28	0.989	1.09	0.20	5.40	0.989	2483802
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2483802
Chloromethane	ppbv	0.68	1.41	0.620	0.77	0.30	1.60	0.620	2483802
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2483802
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2483802
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2483802
Trichlorofluoromethane (FREON 11)	ppbv	0.50	2.79	1.12	0.49	0.20	2.73	1.12	2483802
Trichlorotrifluoroethane	ppbv	0.16	1.26	1.15	0.16	0.15	1.25	1.15	2483802
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2483802
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2483802
2-Propanone	ppbv	3.44	8.17	1.90	3.08	0.80	7.31	1.90	2483802
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2483802
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2483802
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2483802
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2483802
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2483802
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2483802
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2483802
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2483802
Methylene Chloride(Dichloromethane)	ppbv	0.60	2.07	1.04	0.60	0.30	2.08	1.04	2483802
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2483802
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2483802
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2483802
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2483802
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2483802
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2483802

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B163170
 Report Date: 2011/05/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JK6401			JK6402				
Sampling Date		2011/05/03			2011/05/03				
COC Number		07625			07625				
	Units	LICA VOC/CLS/MAY 03,11 - 7860	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAY 03,11 - 7805	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	2483802
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2483802
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2483802
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2483802
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2483802
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2483802
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2483802
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2483802
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2483802
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2483802
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2483802
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2483802
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2483802
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2483802
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2483802
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2483802
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2483802
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2483802
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2483802
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2483802
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2483802
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2483802
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2483802
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2483802
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2483802
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2483802
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2483802
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2483802
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2483802
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2483802
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2483802
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2483802
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2483802
QC Batch = Quality Control Batch									

Maxxam Job #: B163170
 Report Date: 2011/05/16

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JK6401			JK6402				
Sampling Date		2011/05/03			2011/05/03				
COC Number		07625			07625				
	Units	LICA VOC/CLS/MAY 03,11 - 7860	ug/m3	DL (ug/m3)	LICA VOC/PORT/MAY 03,11 - 7805	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	92	N/A	N/A	90		N/A	N/A	2483802
D5-Chlorobenzene	%	96	N/A	N/A	93		N/A	N/A	2483802
Difluorobenzene	%	96	N/A	N/A	93		N/A	N/A	2483802

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

Maxxam Job #: B163170
Report Date: 2011/05/16

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: GB163170

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2483802 JIW	Spiked Blank	Bromochloromethane	2011/05/10		102	%	60 - 140
		D5-Chlorobenzene	2011/05/10		105	%	60 - 140
		Difluorobenzene	2011/05/10		106	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/10		83	%	70 - 130
		Carbon Disulfide	2011/05/10		85	%	70 - 130
		Propene	2011/05/10		77	%	70 - 130
		Vinyl Acetate	2011/05/10		83	%	70 - 130
		Vinyl Bromide	2011/05/10		96	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/05/10		101	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/05/10		112	%	70 - 130
		Chloromethane	2011/05/10		101	%	70 - 130
		Vinyl Chloride	2011/05/10		97	%	70 - 130
		Chloroethane	2011/05/10		89	%	70 - 130
		1,3-Butadiene	2011/05/10		91	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/05/10		109	%	70 - 130
		Trichlorotrifluoroethane	2011/05/10		97	%	70 - 130
		Ethanol	2011/05/10		81	%	70 - 130
		2-propanol	2011/05/10		97	%	70 - 130
		2-Propanone	2011/05/10		95	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/05/10		85	%	70 - 130
		Methyl Isobutyl Ketone	2011/05/10		81	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/05/10		84	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/05/10		95	%	70 - 130
		Ethyl Acetate	2011/05/10		86	%	70 - 130
		1,1-Dichloroethylene	2011/05/10		96	%	70 - 130
		cis-1,2-Dichloroethylene	2011/05/10		94	%	70 - 130
		trans-1,2-Dichloroethylene	2011/05/10		85	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/05/10		82	%	70 - 130
		Chloroform	2011/05/10		102	%	70 - 130
		Carbon Tetrachloride	2011/05/10		111	%	70 - 130
		1,1-Dichloroethane	2011/05/10		86	%	70 - 130
		1,2-Dichloroethane	2011/05/10		107	%	70 - 130
		Ethylene Dibromide	2011/05/10		95	%	70 - 130
		1,1,1-Trichloroethane	2011/05/10		107	%	70 - 130
		1,1,2-Trichloroethane	2011/05/10		93	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/05/10		87	%	70 - 130
		cis-1,3-Dichloropropene	2011/05/10		94	%	70 - 130
		trans-1,3-Dichloropropene	2011/05/10		99	%	70 - 130
		1,2-Dichloropropane	2011/05/10		86	%	70 - 130
		Bromomethane	2011/05/10		96	%	70 - 130
		Bromoform	2011/05/10		106	%	70 - 130
		Bromodichloromethane	2011/05/10		99	%	70 - 130
		Dibromochloromethane	2011/05/10		106	%	70 - 130
		Heptane	2011/05/10		77	%	70 - 130
		Trichloroethylene	2011/05/10		93	%	70 - 130
		Tetrachloroethylene	2011/05/10		93	%	70 - 130
		Benzene	2011/05/10		88	%	70 - 130
		Toluene	2011/05/10		89	%	70 - 130
		Ethylbenzene	2011/05/10		92	%	70 - 130
		p+m-Xylene	2011/05/10		90	%	70 - 130
		o-Xylene	2011/05/10		89	%	70 - 130
		Styrene	2011/05/10		87	%	70 - 130
		1,3,5-Trimethylbenzene	2011/05/10		92	%	70 - 130
		1,2,4-Trimethylbenzene	2011/05/10		92	%	70 - 130
		4-ethyltoluene	2011/05/10		89	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB163170

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2483802 JIW	Spiked Blank	Chlorobenzene	2011/05/10		90	%	70 - 130	
		Benzyl chloride	2011/05/10		96	%	70 - 130	
1,3-Dichlorobenzene		2011/05/10		92	%	70 - 130		
1,4-Dichlorobenzene		2011/05/10		90	%	70 - 130		
1,2-Dichlorobenzene		2011/05/10		91	%	70 - 130		
1,2,4-Trichlorobenzene		2011/05/10		97	%	70 - 130		
Hexachlorobutadiene		2011/05/10		99	%	70 - 130		
Hexane		2011/05/10		77	%	70 - 130		
Cyclohexane		2011/05/10		85	%	70 - 130		
Tetrahydrofuran		2011/05/10		85	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/05/10		83	%	70 - 130	
		Bromochloromethane	2011/05/10		104	%	60 - 140	
		D5-Chlorobenzene	2011/05/10		109	%	60 - 140	
		Difluorobenzene	2011/05/10		108	%	60 - 140	
		2,2,4-Trimethylpentane	2011/05/10	<0.20			ppbv	
		Carbon Disulfide	2011/05/10	<0.50			ppbv	
		Propene	2011/05/10	<0.30			ppbv	
		Vinyl Acetate	2011/05/10	<0.20			ppbv	
		Vinyl Bromide	2011/05/10	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/05/10	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/05/10	<0.17			ppbv	
		Chloromethane	2011/05/10	<0.30			ppbv	
		Vinyl Chloride	2011/05/10	<0.18			ppbv	
		Chloroethane	2011/05/10	<0.30			ppbv	
		1,3-Butadiene	2011/05/10	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/05/10	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/05/10	<0.15			ppbv	
		Ethanol	2011/05/10	<2.3			ppbv	
		2-propanol	2011/05/10	<3.0			ppbv	
		2-Propanone	2011/05/10	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/05/10	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/05/10	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/05/10	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/05/10	<0.20			ppbv	
		Ethyl Acetate	2011/05/10	<2.2			ppbv	
		1,1-Dichloroethylene	2011/05/10	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/05/10	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/05/10	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/05/10	0.46, RDL=0.30			ppbv	
		Chloroform	2011/05/10	<0.15			ppbv	
		Carbon Tetrachloride	2011/05/10	<0.30			ppbv	
		1,1-Dichloroethane	2011/05/10	<0.20			ppbv	
		1,2-Dichloroethane	2011/05/10	<0.20			ppbv	
		Ethylene Dibromide	2011/05/10	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/05/10	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/05/10	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/05/10	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/05/10	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/05/10	<0.17			ppbv			
1,2-Dichloropropane	2011/05/10	<0.40			ppbv			
Bromomethane	2011/05/10	<0.18			ppbv			
Bromoform	2011/05/10	<0.20			ppbv			
Bromodichloromethane	2011/05/10	<0.20			ppbv			
Dibromochloromethane	2011/05/10	<0.20			ppbv			
Heptane	2011/05/10	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB163170

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2483802 JIW	Method Blank	Trichloroethylene	2011/05/10	<0.30		ppbv	
		Tetrachloroethylene	2011/05/10	<0.20		ppbv	
		Benzene	2011/05/10	<0.18		ppbv	
		Toluene	2011/05/10	<0.20		ppbv	
		Ethylbenzene	2011/05/10	<0.20		ppbv	
		p+m-Xylene	2011/05/10	<0.37		ppbv	
		o-Xylene	2011/05/10	<0.20		ppbv	
		Styrene	2011/05/10	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/05/10	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/05/10	<0.50		ppbv	
		4-ethyltoluene	2011/05/10	<2.2		ppbv	
		Chlorobenzene	2011/05/10	<0.20		ppbv	
		Benzyl chloride	2011/05/10	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/05/10	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/05/10	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/05/10	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/05/10	<2.0		ppbv	
		Hexachlorobutadiene	2011/05/10	<3.0		ppbv	
		Hexane	2011/05/10	<0.30		ppbv	
		Cyclohexane	2011/05/10	<0.20		ppbv	
		Tetrahydrofuran	2011/05/10	<0.40		ppbv	
		1,4-Dioxane	2011/05/10	<2.0		ppbv	
		Xylene (Total)	2011/05/10	<0.60		ppbv	
	RPD - Sample/Sample Dup	Vinyl Chloride	2011/05/10	NC		%	25
		1,1-Dichloroethylene	2011/05/10	NC		%	25
		cis-1,2-Dichloroethylene	2011/05/10	6.4		%	25
		trans-1,2-Dichloroethylene	2011/05/10	5.2		%	25
		Methylene Chloride(Dichloromethane)	2011/05/10	NC		%	25
		Chloroform	2011/05/10	NC		%	25
		Carbon Tetrachloride	2011/05/10	NC		%	25
		1,2-Dichloroethane	2011/05/10	6.1		%	25
		1,1,1-Trichloroethane	2011/05/10	NC		%	25
		Trichloroethylene	2011/05/10	9.1		%	25
		Tetrachloroethylene	2011/05/10	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: 7830
Station ID: Lica 33 (Portable) Canister Installation Date/Time: May 06, 11 @ 13:58 mst
Field Sample ID: LICA VOC/PORT/ May 09, 11 Canister Removal Date/Time: May 10, 11 @ 8:10 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
9-May-11	05/09/2011 0:00	05/10/2011 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 # 07153

Technician Signiture: Ting Xu_____



Your C.O.C. #: 07153

Attention: Michael Bisaga

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

Report Date: 2011/05/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B166056

Received: 2011/05/12, 09:40

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/05/18	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/05/18	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

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

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Total cover pages: 1

Maxxam Job #: B166056
 Report Date: 2011/05/20

RESULTS OF ANALYSES OF AIR

Maxxam ID		JL9566	JL9567	
Sampling Date		2011/05/09	2011/05/09	
COC Number		07153	07153	
	Units	LICA VOC\CLS\ MAY09,11 - 7867	LICA VOC\PORT\ MAY09,11 - 7830	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	22	2492540
QC Batch = Quality Control Batch				

Maxxam Job #: B166056
 Report Date: 2011/05/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JL9566			JL9567				
Sampling Date		2011/05/09			2011/05/09				
COC Number		07153			07153				
	Units	LICA VOC\CLS\ MAY09,11 - 7867	ug/m3	DL (ug/m3)	LICA VOC\PORT\ MAY09,11 - 7830	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	2492862
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2492862
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2492862
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2492862
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2492862
Dichlorodifluoromethane (FREON 12)	ppbv	1.04	5.17	0.989	1.08	0.20	5.36	0.989	2492862
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2492862
Chloromethane	ppbv	0.89	1.85	0.620	0.91	0.30	1.87	0.620	2492862
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2492862
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2492862
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2492862
Trichlorofluoromethane (FREON 11)	ppbv	0.39	2.19	1.12	0.44	0.20	2.48	1.12	2492862
Trichlorotrifluoroethane	ppbv	0.16	1.20	1.15	0.17	0.15	1.28	1.15	2492862
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2492862
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2492862
2-Propanone	ppbv	2.46	5.83	1.90	1.77	0.80	4.21	1.90	2492862
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2492862
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2492862
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2492862
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2492862
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2492862
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2492862
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2492862
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2492862
Methylene Chloride(Dichloromethane)	ppbv	0.61	2.11	1.04	0.56	0.30	1.95	1.04	2492862
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2492862
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2492862
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2492862
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2492862
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2492862

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B166056
 Report Date: 2011/05/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JL9566			JL9567				
Sampling Date		2011/05/09			2011/05/09				
COC Number		07153			07153				
	Units	LICA VOC\CLS\ MAY09,11 - 7867	ug/m3	DL (ug/m3)	LICA VOC\PORT\ MAY09,11 - 7830	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2492862
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2492862
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2492862
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2492862
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2492862
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2492862
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2492862
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2492862
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2492862
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2492862
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2492862
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2492862
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2492862
Benzene	ppbv	0.19	0.606	0.575	<0.18	0.18	<0.575	0.575	2492862
Toluene	ppbv	0.33	1.25	0.753	<0.20	0.20	<0.753	0.753	2492862
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2492862
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2492862
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2492862
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2492862
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2492862
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2492862
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2492862
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2492862
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2492862
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2492862
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2492862
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2492862
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2492862
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2492862
Hexane	ppbv	<0.30	<1.06	1.06	0.41	0.30	1.43	1.06	2492862
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2492862
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2492862
QC Batch = Quality Control Batch									

Maxxam Job #: B166056
 Report Date: 2011/05/20

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JL9566			JL9567				
Sampling Date		2011/05/09			2011/05/09				
COC Number		07153			07153				
	Units	LICA VOC\CLS\ MAY09,11 - 7867	ug/m3	DL (ug/m3)	LICA VOC\PORT\ MAY09,11 - 7830	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2492862
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2492862
Surrogate Recovery (%)									
Bromochloromethane	%	76	N/A	N/A	72		N/A	N/A	2492862
D5-Chlorobenzene	%	75	N/A	N/A	72		N/A	N/A	2492862
Difluorobenzene	%	73	N/A	N/A	70		N/A	N/A	2492862
N/A = Not Applicable QC Batch = Quality Control Batch									

Maxxam Job #: B166056
 Report Date: 2011/05/20

Test Summary

Maxxam ID	JL9566	Collected	2011/05/09
Sample ID	LICA VOC\CLS\ MAY09,11 - 7867	Shipped	
Matrix	AIR	Received	2011/05/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2492540	N/A	2011/05/18	JIE WU
Volatile Organics in Air (TO-15)	GC/MS	2492862	N/A	2011/05/18	JIE WU

Maxxam ID	JL9567	Collected	2011/05/09
Sample ID	LICA VOC\PORT\ MAY09,11 - 7830	Shipped	
Matrix	AIR	Received	2011/05/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2492540	N/A	2011/05/18	JIE WU
Volatile Organics in Air (TO-15)	GC/MS	2492862	N/A	2011/05/18	JIE WU

Maxxam Job #: B166056
Report Date: 2011/05/20

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: GB166056

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2492862 JIW	Spiked Blank	Bromochloromethane	2011/05/18		102	%	60 - 140
		D5-Chlorobenzene	2011/05/18		103	%	60 - 140
		Difluorobenzene	2011/05/18		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/18		88	%	70 - 130
		Carbon Disulfide	2011/05/18		90	%	70 - 130
		Propene	2011/05/18		88	%	70 - 130
		Vinyl Acetate	2011/05/18		97	%	70 - 130
		Vinyl Bromide	2011/05/18		100	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/05/18		94	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/05/18		102	%	70 - 130
		Chloromethane	2011/05/18		99	%	70 - 130
		Vinyl Chloride	2011/05/18		98	%	70 - 130
		Chloroethane	2011/05/18		100	%	70 - 130
		1,3-Butadiene	2011/05/18		94	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/05/18		85	%	70 - 130
		Trichlorotrifluoroethane	2011/05/18		97	%	70 - 130
		Ethanol	2011/05/18		101	%	70 - 130
		2-propanol	2011/05/18		75	%	70 - 130
		2-Propanone	2011/05/18		65 (1)	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/05/18		91	%	70 - 130
		Methyl Isobutyl Ketone	2011/05/18		91	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/05/18		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/05/18		92	%	70 - 130
		Ethyl Acetate	2011/05/18		95	%	70 - 130
		1,1-Dichloroethylene	2011/05/18		99	%	70 - 130
		cis-1,2-Dichloroethylene	2011/05/18		98	%	70 - 130
		trans-1,2-Dichloroethylene	2011/05/18		88	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/05/18		84	%	70 - 130
		Chloroform	2011/05/18		96	%	70 - 130
		Carbon Tetrachloride	2011/05/18		99	%	70 - 130
		1,1-Dichloroethane	2011/05/18		88	%	70 - 130
		1,2-Dichloroethane	2011/05/18		98	%	70 - 130
		Ethylene Dibromide	2011/05/18		91	%	70 - 130
		1,1,1-Trichloroethane	2011/05/18		95	%	70 - 130
		1,1,2-Trichloroethane	2011/05/18		91	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/05/18		84	%	70 - 130
		cis-1,3-Dichloropropene	2011/05/18		98	%	70 - 130
		trans-1,3-Dichloropropene	2011/05/18		99	%	70 - 130
		1,2-Dichloropropane	2011/05/18		93	%	70 - 130
		Bromomethane	2011/05/18		95	%	70 - 130
		Bromoform	2011/05/18		102	%	70 - 130
		Bromodichloromethane	2011/05/18		93	%	70 - 130
		Dibromochloromethane	2011/05/18		99	%	70 - 130
		Heptane	2011/05/18		85	%	70 - 130
		Trichloroethylene	2011/05/18		93	%	70 - 130
		Tetrachloroethylene	2011/05/18		90	%	70 - 130
		Benzene	2011/05/18		92	%	70 - 130
		Toluene	2011/05/18		91	%	70 - 130
		Ethylbenzene	2011/05/18		91	%	70 - 130
		p+m-Xylene	2011/05/18		90	%	70 - 130
		o-Xylene	2011/05/18		87	%	70 - 130
		Styrene	2011/05/18		100	%	70 - 130
		1,3,5-Trimethylbenzene	2011/05/18		90	%	70 - 130
		1,2,4-Trimethylbenzene	2011/05/18		92	%	70 - 130
		4-ethyltoluene	2011/05/18		88	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB166056

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2492862 JIW	Spiked Blank	Chlorobenzene	2011/05/18		91	%	70 - 130
		Benzyl chloride	2011/05/18		110	%	70 - 130
		1,3-Dichlorobenzene	2011/05/18		96	%	70 - 130
		1,4-Dichlorobenzene	2011/05/18		96	%	70 - 130
		1,2-Dichlorobenzene	2011/05/18		92	%	70 - 130
		1,2,4-Trichlorobenzene	2011/05/18		105	%	70 - 130
		Hexachlorobutadiene	2011/05/18		88	%	70 - 130
		Hexane	2011/05/18		84	%	70 - 130
		Cyclohexane	2011/05/18		87	%	70 - 130
		Tetrahydrofuran	2011/05/18		90	%	70 - 130
		1,4-Dioxane	2011/05/18		92	%	70 - 130
	Method Blank	Bromochloromethane	2011/05/18		106	%	60 - 140
		D5-Chlorobenzene	2011/05/18		105	%	60 - 140
		Difluorobenzene	2011/05/18		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/18	<0.20		ppbv	
		Carbon Disulfide	2011/05/18	<0.50		ppbv	
		Propene	2011/05/18	<0.30		ppbv	
		Vinyl Acetate	2011/05/18	<0.20		ppbv	
		Vinyl Bromide	2011/05/18	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/05/18	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/05/18	<0.17		ppbv	
		Chloromethane	2011/05/18	<0.30		ppbv	
		Vinyl Chloride	2011/05/18	<0.18		ppbv	
		Chloroethane	2011/05/18	<0.30		ppbv	
		1,3-Butadiene	2011/05/18	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/05/18	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/05/18	<0.15		ppbv	
		Ethanol	2011/05/18	<2.3		ppbv	
		2-propanol	2011/05/18	<3.0		ppbv	
		2-Propanone	2011/05/18	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/05/18	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/05/18	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/05/18	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/05/18	<0.20		ppbv	
		Ethyl Acetate	2011/05/18	<2.2		ppbv	
		1,1-Dichloroethylene	2011/05/18	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/05/18	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/05/18	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/05/18	0.43, RDL=0.30		ppbv	
		Chloroform	2011/05/18	<0.15		ppbv	
		Carbon Tetrachloride	2011/05/18	<0.30		ppbv	
		1,1-Dichloroethane	2011/05/18	<0.20		ppbv	
		1,2-Dichloroethane	2011/05/18	<0.20		ppbv	
		Ethylene Dibromide	2011/05/18	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/05/18	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/05/18	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/05/18	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/05/18	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/05/18	<0.17		ppbv	
		1,2-Dichloropropane	2011/05/18	<0.40		ppbv	
		Bromomethane	2011/05/18	<0.18		ppbv	
		Bromoform	2011/05/18	<0.20		ppbv	
		Bromodichloromethane	2011/05/18	<0.20		ppbv	
		Dibromochloromethane	2011/05/18	<0.20		ppbv	
		Heptane	2011/05/18	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB166056

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2492862 JIW	Method Blank	Trichloroethylene	2011/05/18	<0.30		ppbv	
		Tetrachloroethylene	2011/05/18	<0.20		ppbv	
		Benzene	2011/05/18	<0.18		ppbv	
		Toluene	2011/05/18	<0.20		ppbv	
		Ethylbenzene	2011/05/18	<0.20		ppbv	
		p+m-Xylene	2011/05/18	<0.37		ppbv	
		o-Xylene	2011/05/18	<0.20		ppbv	
		Styrene	2011/05/18	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/05/18	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/05/18	<0.50		ppbv	
		4-ethyltoluene	2011/05/18	<2.2		ppbv	
		Chlorobenzene	2011/05/18	<0.20		ppbv	
		Benzyl chloride	2011/05/18	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/05/18	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/05/18	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/05/18	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/05/18	<2.0		ppbv	
		Hexachlorobutadiene	2011/05/18	<3.0		ppbv	
		Hexane	2011/05/18	<0.30		ppbv	
		Cyclohexane	2011/05/18	<0.20		ppbv	
		Tetrahydrofuran	2011/05/18	<0.40		ppbv	
		1,4-Dioxane	2011/05/18	<2.0		ppbv	
		Xylene (Total)	2011/05/18	<0.60		ppbv	
	RPD - Sample/Sample Dup	Vinyl Chloride		TBA		%	25
		1,1-Dichloroethylene		TBA		%	25
		cis-1,2-Dichloroethylene		TBA		%	25
		trans-1,2-Dichloroethylene		TBA		%	25
		Trichloroethylene		TBA		%	25
		Tetrachloroethylene		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: 7855
Station ID: Lica 33 (Portable) Canister Installation Date/Time: May 13, 11 @ 8:24 mst
Field Sample ID: LICA VOC/PORT/ May 15, 11 Canister Removal Date/Time: May 16, 11 @ 10:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
15-May-11	05/15/2011 0:00	05/16/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-30	20

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 # 07229

Technician Signiture: Ting Xu_____



Your C.O.C. #: 07229

Attention: Michael Bisaga

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

Report Date: 2011/05/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B169895

Received: 2011/05/18, 10:00

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/05/19	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/05/19	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 #: B169895
 Report Date: 2011/05/27

RESULTS OF ANALYSES OF AIR

Maxxam ID		JN6666	JN6667	
Sampling Date		2011/05/15 00:00	2011/05/15 00:00	
COC Number		07229	07229	
	Units	LICA VOC/CLS/MAY 15,11 - 7849	LICA VOC/PORT/MAY 15,11 - 7855	QC Batch

Volatile Organics				
Pressure on Receipt	psig	23	20	2496552
QC Batch = Quality Control Batch				

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6666				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/CLS/MAY 15,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2496572
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2496572
Propene	ppbv	<0.30	0.30	<0.516	0.516	2496572
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2496572
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2496572
Dichlorodifluoromethane (FREON 12)	ppbv	0.96	0.20	4.73	0.989	2496572
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2496572
Chloromethane	ppbv	1.27	0.30	2.62	0.620	2496572
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2496572
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2496572
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2496572
Trichlorofluoromethane (FREON 11)	ppbv	0.44	0.20	2.47	1.12	2496572
Trichlorotrifluoroethane	ppbv	0.16	0.15	1.24	1.15	2496572
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2496572
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2496572
2-Propanone	ppbv	2.97	0.80	7.05	1.90	2496572
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2496572
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2496572
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2496572
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2496572
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2496572
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2496572
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2496572
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2496572
Methylene Chloride(Dichloromethane)	ppbv	0.75	0.30	2.60	1.04	2496572
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2496572
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2496572
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2496572
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2496572
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2496572
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN666				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/CLS/MAY 15,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2496572
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2496572
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2496572
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2496572
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2496572
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2496572
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2496572
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2496572
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2496572
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2496572
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2496572
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2496572
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2496572
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2496572
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2496572
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2496572
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2496572
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2496572
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2496572
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2496572
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2496572
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2496572
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2496572
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2496572
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2496572
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2496572
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2496572
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2496572
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2496572
QC Batch = Quality Control Batch						

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6666				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/CLS/MAY 15,11 - 7849	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2496572
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2496572
Surrogate Recovery (%)						
Bromochloromethane	%	115		N/A	N/A	2496572
D5-Chlorobenzene	%	119		N/A	N/A	2496572
Difluorobenzene	%	117		N/A	N/A	2496572
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B169895
 Report Date: 2011/05/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6667				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/PORT/MAY 15,11 - 7855	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2496572
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2496572
Propene	ppbv	<0.30	0.30	<0.516	0.516	2496572
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2496572
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2496572
Dichlorodifluoromethane (FREON 12)	ppbv	0.94	0.20	4.63	0.989	2496572
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2496572
Chloromethane	ppbv	1.46	0.30	3.01	0.620	2496572
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2496572
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2496572
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2496572
Trichlorofluoromethane (FREON 11)	ppbv	0.44	0.20	2.48	1.12	2496572
Trichlorotrifluoroethane	ppbv	0.16	0.15	1.19	1.15	2496572
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2496572
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2496572
2-Propanone	ppbv	3.16	0.80	7.52	1.90	2496572
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2496572
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2496572
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2496572
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2496572
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2496572
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2496572
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2496572
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2496572
Methylene Chloride(Dichloromethane)	ppbv	0.60	0.30	2.09	1.04	2496572
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2496572
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2496572
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2496572
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2496572
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2496572
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B169895
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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6667				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/PORT/MAY 15,11 - 7855	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2496572
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2496572
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2496572
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2496572
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2496572
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2496572
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2496572
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2496572
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2496572
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2496572
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2496572
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2496572
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2496572
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2496572
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2496572
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2496572
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2496572
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2496572
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2496572
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2496572
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2496572
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2496572
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2496572
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2496572
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2496572
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2496572
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2496572
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2496572
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2496572
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2496572
QC Batch = Quality Control Batch						

Maxxam Job #: B169895
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VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JN6667				
Sampling Date		2011/05/15 00:00				
COC Number		07229				
	Units	LICA VOC/PORT/MAY 15,11 - 7855	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2496572
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2496572
Surrogate Recovery (%)						
Bromochloromethane	%	111		N/A	N/A	2496572
D5-Chlorobenzene	%	112		N/A	N/A	2496572
Difluorobenzene	%	112		N/A	N/A	2496572
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B169895
Report Date: 2011/05/27

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
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Quality Assurance Report

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QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2496572 JIW	Spiked Blank	Bromochloromethane	2011/05/19		102	%	60 - 140
		D5-Chlorobenzene	2011/05/19		104	%	60 - 140
		Difluorobenzene	2011/05/19		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/19		84	%	70 - 130
		Carbon Disulfide	2011/05/19		86	%	70 - 130
		Propene	2011/05/19		79	%	70 - 130
		Vinyl Acetate	2011/05/19		93	%	70 - 130
		Vinyl Bromide	2011/05/19		95	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/05/19		110	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/05/19		110	%	70 - 130
		Chloromethane	2011/05/19		102	%	70 - 130
		Vinyl Chloride	2011/05/19		92	%	70 - 130
		Chloroethane	2011/05/19		89	%	70 - 130
		1,3-Butadiene	2011/05/19		85	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/05/19		100	%	70 - 130
		Trichlorotrifluoroethane	2011/05/19		100	%	70 - 130
		Ethanol	2011/05/19		88	%	70 - 130
		2-propanol	2011/05/19		95	%	70 - 130
		2-Propanone	2011/05/19		79	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/05/19		86	%	70 - 130
		Methyl Isobutyl Ketone	2011/05/19		90	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/05/19		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/05/19		99	%	70 - 130
		Ethyl Acetate	2011/05/19		90	%	70 - 130
		1,1-Dichloroethylene	2011/05/19		98	%	70 - 130
		cis-1,2-Dichloroethylene	2011/05/19		101	%	70 - 130
		trans-1,2-Dichloroethylene	2011/05/19		85	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/05/19		80	%	70 - 130
		Chloroform	2011/05/19		107	%	70 - 130
		Carbon Tetrachloride	2011/05/19		118	%	70 - 130
		1,1-Dichloroethane	2011/05/19		87	%	70 - 130
		1,2-Dichloroethane	2011/05/19		114	%	70 - 130
		Ethylene Dibromide	2011/05/19		99	%	70 - 130
		1,1,1-Trichloroethane	2011/05/19		112	%	70 - 130
		1,1,2-Trichloroethane	2011/05/19		93	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/05/19		89	%	70 - 130
		cis-1,3-Dichloropropene	2011/05/19		101	%	70 - 130
		trans-1,3-Dichloropropene	2011/05/19		107	%	70 - 130
		1,2-Dichloropropane	2011/05/19		89	%	70 - 130
		Bromomethane	2011/05/19		92	%	70 - 130
		Bromoform	2011/05/19		115	%	70 - 130
		Bromodichloromethane	2011/05/19		104	%	70 - 130
		Dibromochloromethane	2011/05/19		112	%	70 - 130
		Heptane	2011/05/19		80	%	70 - 130
		Trichloroethylene	2011/05/19		95	%	70 - 130
		Tetrachloroethylene	2011/05/19		94	%	70 - 130
		Benzene	2011/05/19		87	%	70 - 130
		Toluene	2011/05/19		91	%	70 - 130
		Ethylbenzene	2011/05/19		95	%	70 - 130
		p+m-Xylene	2011/05/19		94	%	70 - 130
		o-Xylene	2011/05/19		92	%	70 - 130
		Styrene	2011/05/19		98	%	70 - 130
		1,3,5-Trimethylbenzene	2011/05/19		97	%	70 - 130
		1,2,4-Trimethylbenzene	2011/05/19		102	%	70 - 130
		4-ethyltoluene	2011/05/19		95	%	70 - 130

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
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Quality Assurance Report (Continued)

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QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2496572 JIW	Spiked Blank	Chlorobenzene	2011/05/19		93	%	70 - 130
		Benzyl chloride	2011/05/19		119	%	70 - 130
		1,3-Dichlorobenzene	2011/05/19		102	%	70 - 130
		1,4-Dichlorobenzene	2011/05/19		99	%	70 - 130
		1,2-Dichlorobenzene	2011/05/19		100	%	70 - 130
		1,2,4-Trichlorobenzene	2011/05/19		114	%	70 - 130
		Hexachlorobutadiene	2011/05/19		101	%	70 - 130
		Hexane	2011/05/19		76	%	70 - 130
		Cyclohexane	2011/05/19		86	%	70 - 130
		Tetrahydrofuran	2011/05/19		86	%	70 - 130
		1,4-Dioxane	2011/05/19		98	%	70 - 130
	Method Blank	Bromochloromethane	2011/05/19		107	%	60 - 140
		D5-Chlorobenzene	2011/05/19		107	%	60 - 140
		Difluorobenzene	2011/05/19		106	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/19	<0.20		ppbv	
		Carbon Disulfide	2011/05/19	<0.50		ppbv	
		Propene	2011/05/19	<0.30		ppbv	
		Vinyl Acetate	2011/05/19	<0.20		ppbv	
		Vinyl Bromide	2011/05/19	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/05/19	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/05/19	<0.17		ppbv	
		Chloromethane	2011/05/19	<0.30		ppbv	
		Vinyl Chloride	2011/05/19	<0.18		ppbv	
		Chloroethane	2011/05/19	<0.30		ppbv	
		1,3-Butadiene	2011/05/19	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/05/19	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/05/19	<0.15		ppbv	
		Ethanol	2011/05/19	<2.3		ppbv	
		2-propanol	2011/05/19	<3.0		ppbv	
		2-Propanone	2011/05/19	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/05/19	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/05/19	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/05/19	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/05/19	<0.20		ppbv	
		Ethyl Acetate	2011/05/19	<2.2		ppbv	
		1,1-Dichloroethylene	2011/05/19	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/05/19	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/05/19	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/05/19	0.49, RDL=0.30		ppbv	
		Chloroform	2011/05/19	<0.15		ppbv	
		Carbon Tetrachloride	2011/05/19	<0.30		ppbv	
		1,1-Dichloroethane	2011/05/19	<0.20		ppbv	
		1,2-Dichloroethane	2011/05/19	<0.20		ppbv	
		Ethylene Dibromide	2011/05/19	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/05/19	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/05/19	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/05/19	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/05/19	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/05/19	<0.17		ppbv	
		1,2-Dichloropropane	2011/05/19	<0.40		ppbv	
		Bromomethane	2011/05/19	<0.18		ppbv	
		Bromoform	2011/05/19	<0.20		ppbv	
		Bromodichloromethane	2011/05/19	<0.20		ppbv	
		Dibromochloromethane	2011/05/19	<0.20		ppbv	
		Heptane	2011/05/19	<0.30		ppbv	

Maxxam Analytics
 Attention: Michael Bisaga
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Quality Assurance Report (Continued)

Maxxam Job Number: GB169895

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2496572	JIW	Method Blank					
		Trichloroethylene	2011/05/19	<0.30		ppbv	
		Tetrachloroethylene	2011/05/19	<0.20		ppbv	
		Benzene	2011/05/19	<0.18		ppbv	
		Toluene	2011/05/19	<0.20		ppbv	
		Ethylbenzene	2011/05/19	<0.20		ppbv	
		p+m-Xylene	2011/05/19	<0.37		ppbv	
		o-Xylene	2011/05/19	<0.20		ppbv	
		Styrene	2011/05/19	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/05/19	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/05/19	<0.50		ppbv	
		4-ethyltoluene	2011/05/19	<2.2		ppbv	
		Chlorobenzene	2011/05/19	<0.20		ppbv	
		Benzyl chloride	2011/05/19	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/05/19	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/05/19	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/05/19	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/05/19	<2.0		ppbv	
		Hexachlorobutadiene	2011/05/19	<3.0		ppbv	
		Hexane	2011/05/19	<0.30		ppbv	
		Cyclohexane	2011/05/19	<0.20		ppbv	
		Tetrahydrofuran	2011/05/19	<0.40		ppbv	
		1,4-Dioxane	2011/05/19	<2.0		ppbv	
		Xylene (Total)	2011/05/19	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/05/19	NC		%	25
		Carbon Disulfide	2011/05/19	NC		%	25
		Propene	2011/05/19	NC		%	25
		Vinyl Acetate	2011/05/19	NC		%	25
		Vinyl Bromide	2011/05/19	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/05/19	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/05/19	NC		%	25
		Chloromethane	2011/05/19	NC		%	25
		Vinyl Chloride	2011/05/19	NC		%	25
		Chloroethane	2011/05/19	NC		%	25
		1,3-Butadiene	2011/05/19	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/05/19	NC		%	25
		Trichlorotrifluoroethane	2011/05/19	NC		%	25
		Ethanol	2011/05/19	NC		%	25
		2-propanol	2011/05/19	NC		%	25
		2-Propanone	2011/05/19	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/05/19	NC		%	25
		Methyl Isobutyl Ketone	2011/05/19	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/05/19	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/05/19	NC		%	25
		Ethyl Acetate	2011/05/19	NC		%	25
		1,1-Dichloroethylene	2011/05/19	NC		%	25
		cis-1,2-Dichloroethylene	2011/05/19	NC		%	25
		trans-1,2-Dichloroethylene	2011/05/19	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/05/19	NC		%	25
		Chloroform	2011/05/19	NC		%	25
		Carbon Tetrachloride	2011/05/19	NC		%	25
		1,1-Dichloroethane	2011/05/19	NC		%	25
		1,2-Dichloroethane	2011/05/19	NC		%	25
		Ethylene Dibromide	2011/05/19	NC		%	25

Maxxam Analytics
 Attention: Michael Bisaga
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Quality Assurance Report (Continued)

Maxxam Job Number: GB169895

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2496572 JIW	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/05/19	NC		%	25
		1,1,2-Trichloroethane	2011/05/19	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/05/19	NC		%	25
		cis-1,3-Dichloropropene	2011/05/19	NC		%	25
		trans-1,3-Dichloropropene	2011/05/19	NC		%	25
		1,2-Dichloropropane	2011/05/19	NC		%	25
		Bromomethane	2011/05/19	NC		%	25
		Bromoform	2011/05/19	NC		%	25
		Bromodichloromethane	2011/05/19	NC		%	25
		Dibromochloromethane	2011/05/19	NC		%	25
		Heptane	2011/05/19	NC		%	25
		Trichloroethylene	2011/05/19	NC		%	25
		Tetrachloroethylene	2011/05/19	NC		%	25
		Benzene	2011/05/19	NC		%	25
		Toluene	2011/05/19	NC		%	25
		Ethylbenzene	2011/05/19	NC		%	25
		p+m-Xylene	2011/05/19	NC		%	25
		o-Xylene	2011/05/19	NC		%	25
		Styrene	2011/05/19	NC		%	25
		1,3,5-Trimethylbenzene	2011/05/19	NC		%	25
		1,2,4-Trimethylbenzene	2011/05/19	NC		%	25
		4-ethyltoluene	2011/05/19	NC		%	25
		Chlorobenzene	2011/05/19	NC		%	25
		Benzyl chloride	2011/05/19	NC		%	25
		1,3-Dichlorobenzene	2011/05/19	NC		%	25
		1,4-Dichlorobenzene	2011/05/19	NC		%	25
		1,2-Dichlorobenzene	2011/05/19	NC		%	25
		1,2,4-Trichlorobenzene	2011/05/19	NC		%	25
		Hexachlorobutadiene	2011/05/19	NC		%	25
		Hexane	2011/05/19	NC		%	25
		Cyclohexane	2011/05/19	NC		%	25
		Tetrahydrofuran	2011/05/19	NC		%	25
		1,4-Dioxane	2011/05/19	NC		%	25
		Xylene (Total)	2011/05/19	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: 7782
Station ID: Lica 33 (Portable) Canister Installation Date/Time: May 19, 11 @ 8:58 mst
Field Sample ID: LICA VOC/PORT/ May 21, 11 Canister Removal Date/Time: May 24, 11 @ 8:26 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
21-May-11	05/21/2011 0:00	05/22/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	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 # 2569

Technician Signiture: Ting Xu_____

Your C.O.C. #: 2569

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

Report Date: 2011/06/03

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B175046****Received: 2011/05/26, 10:00**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/05/31	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/05/31	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 11

Maxxam Job #: B175046
 Report Date: 2011/06/03

RESULTS OF ANALYSES OF AIR

Maxxam ID		JQ0471	JQ0472	
Sampling Date		2011/05/21	2011/05/21	
COC Number		2569	2569	
	Units	LICA VOC / CLS/ MAY 21,11 - 7869	LICA VOC / PORT/ MAY 21,11 - 7782	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2506604

QC Batch = Quality Control Batch

Maxxam Job #: B175046
 Report Date: 2011/06/03

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JQ0471			JQ0472				
Sampling Date		2011/05/21			2011/05/21				
COC Number		2569			2569				
	Units	LICA VOC / CLS/ MAY 21,11 - 7869	ug/m3	DL (ug/m3)	LICA VOC / PORT/ MAY 21,11 - 7782	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	2506074
Carbon Disulfide	ppbv	0.89	2.78	1.56	0.88	0.50	2.74	1.56	2506074
Propene	ppbv	1.01	1.75	0.516	<0.30	0.30	<0.516	0.516	2506074
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2506074
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2506074
Dichlorodifluoromethane (FREON 12)	ppbv	0.66	3.24	0.989	0.63	0.20	3.13	0.989	2506074
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2506074
Chloromethane	ppbv	0.81	1.67	0.620	0.76	0.30	1.57	0.620	2506074
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2506074
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2506074
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2506074
Trichlorofluoromethane (FREON 11)	ppbv	0.36	2.01	1.12	0.35	0.20	1.94	1.12	2506074
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2506074
Ethanol	ppbv	4.9	9.28	4.33	<2.3	2.3	<4.33	4.33	2506074
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2506074
2-Propanone	ppbv	8.41	20.0	1.90	8.80	0.80	20.9	1.90	2506074
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2506074
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2506074
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2506074
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2506074
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2506074
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2506074
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2506074
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2506074
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2506074
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2506074
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2506074
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2506074
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2506074
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2506074
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2506074

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B175046
 Report Date: 2011/06/03

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JQ0471			JQ0472				
Sampling Date		2011/05/21			2011/05/21				
COC Number		2569			2569				
	Units	LICA VOC / CLS/ MAY 21,11 - 7869	ug/m3	DL (ug/m3)	LICA VOC / PORT/ MAY 21,11 - 7782	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	2506074
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2506074
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2506074
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2506074
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2506074
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2506074
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2506074
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2506074
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2506074
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2506074
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2506074
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2506074
Benzene	ppbv	0.19	0.611	0.575	<0.18	0.18	<0.575	0.575	2506074
Toluene	ppbv	1.24	4.66	0.753	0.23	0.20	0.879	0.753	2506074
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2506074
p+m-Xylene	ppbv	0.66	2.85	1.61	<0.37	0.37	<1.61	1.61	2506074
o-Xylene	ppbv	0.22	0.954	0.868	<0.20	0.20	<0.868	0.868	2506074
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2506074
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2506074
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2506074
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2506074
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2506074
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2506074
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2506074
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2506074
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2506074
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2506074
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2506074
Hexane	ppbv	<0.30	<1.06	1.06	0.55	0.30	1.94	1.06	2506074
Cyclohexane	ppbv	<0.20	<0.688	0.688	1.01	0.20	3.46	0.688	2506074
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2506074
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2506074
Xylene (Total)	ppbv	0.88	3.80	2.61	<0.60	0.60	<2.61	2.61	2506074
QC Batch = Quality Control Batch									

Maxxam Job #: B175046
 Report Date: 2011/06/03

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JQ0471			JQ0472				
Sampling Date		2011/05/21			2011/05/21				
COC Number		2569			2569				
	Units	LICA VOC / CLS/ MAY 21,11 - 7869	ug/m3	DL (ug/m3)	LICA VOC / PORT/ MAY 21,11 - 7782	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	87	N/A	N/A	85		N/A	N/A	2506074
D5-Chlorobenzene	%	73	N/A	N/A	71		N/A	N/A	2506074
Difluorobenzene	%	91	N/A	N/A	87		N/A	N/A	2506074

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

Maxxam Job #: B175046
 Report Date: 2011/06/03

Test Summary

Maxxam ID JQ0471 **Collected** 2011/05/21
Sample ID LICA VOC / CLS/ MAY 21,11 - 7869 **Shipped**
Matrix AIR **Received** 2011/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2506604	N/A	2011/05/31	DIANE VOYER
Volatile Organics in Air (TO-15)	GC/MS	2506074	N/A	2011/05/31	DIANE VOYER

Maxxam ID JQ0472 **Collected** 2011/05/21
Sample ID LICA VOC / PORT/ MAY 21,11 - 7782 **Shipped**
Matrix AIR **Received** 2011/05/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2506604	N/A	2011/05/31	DIANE VOYER
Volatile Organics in Air (TO-15)	GC/MS	2506074	N/A	2011/05/31	DIANE VOYER

Maxxam Job #: B175046
Report Date: 2011/06/03

GENERAL COMMENTS

Sample JQ0471-01: 2-Propanone exceeds 40%RSD in the continuing calibration and may be biased high.

Sample JQ0472-01: 2-Propanone exceeds 40%RSD in the continuing calibration and may be biased high.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB175046

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2506074	DVO	Spiked Blank					
		Bromochloromethane	2011/05/31		132	%	60 - 140
		D5-Chlorobenzene	2011/05/31		133	%	60 - 140
		Difluorobenzene	2011/05/31		138	%	60 - 140
		2,2,4-Trimethylpentane	2011/05/31		110	%	70 - 130
		Carbon Disulfide	2011/05/31		94	%	70 - 130
		Propene	2011/05/31		105	%	70 - 130
		Vinyl Acetate	2011/05/31		123	%	70 - 130
		Vinyl Bromide	2011/05/31		110	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/05/31		114	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/05/31		128	%	70 - 130
		Chloromethane	2011/05/31		112	%	70 - 130
		Vinyl Chloride	2011/05/31		113	%	70 - 130
		Chloroethane	2011/05/31		113	%	70 - 130
		1,3-Butadiene	2011/05/31		124	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/05/31		114	%	70 - 130
		Trichlorotrifluoroethane	2011/05/31		102	%	70 - 130
		Ethanol	2011/05/31		119	%	70 - 130
		2-propanol	2011/05/31		123	%	70 - 130
		2-Propanone	2011/05/31		134 (1)	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/05/31		131 (1)	%	70 - 130
		Methyl Isobutyl Ketone	2011/05/31		122	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/05/31		124	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/05/31		112	%	70 - 130
		Ethyl Acetate	2011/05/31		123	%	70 - 130
		1,1-Dichloroethylene	2011/05/31		124	%	70 - 130
		cis-1,2-Dichloroethylene	2011/05/31		105	%	70 - 130
		trans-1,2-Dichloroethylene	2011/05/31		105	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/05/31		97	%	70 - 130
		Chloroform	2011/05/31		114	%	70 - 130
		Carbon Tetrachloride	2011/05/31		110	%	70 - 130
		1,1-Dichloroethane	2011/05/31		114	%	70 - 130
		1,2-Dichloroethane	2011/05/31		113	%	70 - 130
		Ethylene Dibromide	2011/05/31		117	%	70 - 130
		1,1,1-Trichloroethane	2011/05/31		107	%	70 - 130
		1,1,2-Trichloroethane	2011/05/31		116	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/05/31		109	%	70 - 130
		cis-1,3-Dichloropropene	2011/05/31		122	%	70 - 130
		trans-1,3-Dichloropropene	2011/05/31		113	%	70 - 130
		1,2-Dichloropropane	2011/05/31		110	%	70 - 130
		Bromomethane	2011/05/31		118	%	70 - 130
		Bromoform	2011/05/31		125	%	70 - 130
		Bromodichloromethane	2011/05/31		125	%	70 - 130
		Dibromochloromethane	2011/05/31		129	%	70 - 130
		Heptane	2011/05/31		116	%	70 - 130
		Trichloroethylene	2011/05/31		102	%	70 - 130
		Tetrachloroethylene	2011/05/31		115	%	70 - 130
		Benzene	2011/05/31		116	%	70 - 130
		Toluene	2011/05/31		120	%	70 - 130
		Ethylbenzene	2011/05/31		111	%	70 - 130
		p+m-Xylene	2011/05/31		117	%	70 - 130
		o-Xylene	2011/05/31		113	%	70 - 130
		Styrene	2011/05/31		107	%	70 - 130
		1,3,5-Trimethylbenzene	2011/05/31		105	%	70 - 130
		1,2,4-Trimethylbenzene	2011/05/31		97	%	70 - 130
		4-ethyltoluene	2011/05/31		113	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB175046

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2506074 DVO	Spiked Blank	Chlorobenzene	2011/05/31		106	%	70 - 130	
		Benzyl chloride	2011/05/31		93	%	70 - 130	
1,3-Dichlorobenzene		2011/05/31		91	%	70 - 130		
1,4-Dichlorobenzene		2011/05/31		95	%	70 - 130		
1,2-Dichlorobenzene		2011/05/31		89	%	70 - 130		
1,2,4-Trichlorobenzene		2011/05/31		77	%	70 - 130		
Hexachlorobutadiene		2011/05/31		87	%	70 - 130		
Hexane		2011/05/31		123	%	70 - 130		
Cyclohexane		2011/05/31		117	%	70 - 130		
Tetrahydrofuran		2011/05/31		120	%	70 - 130		
Method Blank	Method Blank	1,4-Dioxane	2011/05/31		122	%	70 - 130	
		Bromochloromethane	2011/05/31		89	%	60 - 140	
		D5-Chlorobenzene	2011/05/31		76	%	60 - 140	
		Difluorobenzene	2011/05/31		93	%	60 - 140	
		2,2,4-Trimethylpentane	2011/05/31	<0.20			ppbv	
		Carbon Disulfide	2011/05/31	0.89, RDL=0.50			ppbv	
		Propene	2011/05/31	<0.30			ppbv	
		Vinyl Acetate	2011/05/31	<0.20			ppbv	
		Vinyl Bromide	2011/05/31	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/05/31	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/05/31	<0.17			ppbv	
		Chloromethane	2011/05/31	<0.30			ppbv	
		Vinyl Chloride	2011/05/31	<0.18			ppbv	
		Chloroethane	2011/05/31	<0.30			ppbv	
		1,3-Butadiene	2011/05/31	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/05/31	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/05/31	<0.15			ppbv	
		Ethanol	2011/05/31	<2.3			ppbv	
		2-propanol	2011/05/31	<3.0			ppbv	
		2-Propanone	2011/05/31	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/05/31	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/05/31	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/05/31	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/05/31	<0.20			ppbv	
		Ethyl Acetate	2011/05/31	<2.2			ppbv	
		1,1-Dichloroethylene	2011/05/31	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/05/31	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/05/31	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/05/31	<0.80			ppbv	
		Chloroform	2011/05/31	<0.15			ppbv	
		Carbon Tetrachloride	2011/05/31	<0.30			ppbv	
		1,1-Dichloroethane	2011/05/31	<0.20			ppbv	
		1,2-Dichloroethane	2011/05/31	<0.20			ppbv	
		Ethylene Dibromide	2011/05/31	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/05/31	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/05/31	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/05/31	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/05/31	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/05/31	<0.17			ppbv			
1,2-Dichloropropane	2011/05/31	<0.40			ppbv			
Bromomethane	2011/05/31	<0.18			ppbv			
Bromoform	2011/05/31	<0.20			ppbv			
Bromodichloromethane	2011/05/31	<0.20			ppbv			
Dibromochloromethane	2011/05/31	<0.20			ppbv			
Heptane	2011/05/31	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB175046

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2506074	DVO	Method Blank					
		Trichloroethylene	2011/05/31	<0.30		ppbv	
		Tetrachloroethylene	2011/05/31	<0.20		ppbv	
		Benzene	2011/05/31	<0.18		ppbv	
		Toluene	2011/05/31	<0.20		ppbv	
		Ethylbenzene	2011/05/31	<0.20		ppbv	
		p+m-Xylene	2011/05/31	<0.37		ppbv	
		o-Xylene	2011/05/31	<0.20		ppbv	
		Styrene	2011/05/31	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/05/31	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/05/31	<0.50		ppbv	
		4-ethyltoluene	2011/05/31	<2.2		ppbv	
		Chlorobenzene	2011/05/31	<0.20		ppbv	
		Benzyl chloride	2011/05/31	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/05/31	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/05/31	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/05/31	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/05/31	<2.0		ppbv	
		Hexachlorobutadiene	2011/05/31	<3.0		ppbv	
		Hexane	2011/05/31	<0.30		ppbv	
		Cyclohexane	2011/05/31	<0.20		ppbv	
		Tetrahydrofuran	2011/05/31	<0.40		ppbv	
		1,4-Dioxane	2011/05/31	<2.0		ppbv	
		Xylene (Total)	2011/05/31	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/05/31	NC		%	25
		Carbon Disulfide	2011/05/31	NC		%	25
		Propene	2011/05/31	NC		%	25
		Vinyl Acetate	2011/05/31	NC		%	25
		Vinyl Bromide	2011/05/31	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/05/31	3.5		%	25
		1,2-Dichlorotetrafluoroethane	2011/05/31	NC		%	25
		Chloromethane	2011/05/31	NC		%	25
		Vinyl Chloride	2011/05/31	NC		%	25
		Chloroethane	2011/05/31	NC		%	25
		1,3-Butadiene	2011/05/31	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/05/31	NC		%	25
		Trichlorotrifluoroethane	2011/05/31	NC		%	25
		Ethanol	2011/05/31	NC		%	25
		2-propanol	2011/05/31	NC		%	25
		2-Propanone	2011/05/31	4.1		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/05/31	NC		%	25
		Methyl Isobutyl Ketone	2011/05/31	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/05/31	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/05/31	NC		%	25
		Ethyl Acetate	2011/05/31	NC		%	25
		1,1-Dichloroethylene	2011/05/31	NC		%	25
		cis-1,2-Dichloroethylene	2011/05/31	NC		%	25
		trans-1,2-Dichloroethylene	2011/05/31	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/05/31	NC		%	25
		Chloroform	2011/05/31	NC		%	25
		Carbon Tetrachloride	2011/05/31	NC		%	25
		1,1-Dichloroethane	2011/05/31	NC		%	25
		1,2-Dichloroethane	2011/05/31	NC		%	25
		Ethylene Dibromide	2011/05/31	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB175046

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2506074 DVO	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/05/31	NC		%	25
		1,1,2-Trichloroethane	2011/05/31	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/05/31	NC		%	25
		cis-1,3-Dichloropropene	2011/05/31	NC		%	25
		trans-1,3-Dichloropropene	2011/05/31	NC		%	25
		1,2-Dichloropropane	2011/05/31	NC		%	25
		Bromomethane	2011/05/31	NC		%	25
		Bromoform	2011/05/31	NC		%	25
		Bromodichloromethane	2011/05/31	NC		%	25
		Dibromochloromethane	2011/05/31	NC		%	25
		Heptane	2011/05/31	NC		%	25
		Trichloroethylene	2011/05/31	NC		%	25
		Tetrachloroethylene	2011/05/31	NC		%	25
		Benzene	2011/05/31	NC		%	25
		Toluene	2011/05/31	NC		%	25
		Ethylbenzene	2011/05/31	NC		%	25
		p+m-Xylene	2011/05/31	NC		%	25
		o-Xylene	2011/05/31	NC		%	25
		Styrene	2011/05/31	NC		%	25
		1,3,5-Trimethylbenzene	2011/05/31	NC		%	25
		1,2,4-Trimethylbenzene	2011/05/31	NC		%	25
		4-ethyltoluene	2011/05/31	NC		%	25
		Chlorobenzene	2011/05/31	NC		%	25
		Benzyl chloride	2011/05/31	NC		%	25
		1,3-Dichlorobenzene	2011/05/31	NC		%	25
		1,4-Dichlorobenzene	2011/05/31	NC		%	25
		1,2-Dichlorobenzene	2011/05/31	NC		%	25
		1,2,4-Trichlorobenzene	2011/05/31	NC		%	25
		Hexachlorobutadiene	2011/05/31	NC		%	25
		Hexane	2011/05/31	NC		%	25
		Cyclohexane	2011/05/31	NC		%	25
		Tetrahydrofuran	2011/05/31	10.9		%	25
		1,4-Dioxane	2011/05/31	NC		%	25
		Xylene (Total)	2011/05/31	NC		%	25

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

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

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7838
Station ID: Lica 33 (Portable) Canister Installation Date/Time: May 26, 11 @ 15:21 mst
Field Sample ID: LICA VOC/PORT/ May 27, 11 Canister Removal Date/Time: May 30, 11 @ 8:55 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
27-May-11	05/27/2011 0:00	05/28/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	20

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 # 06124

Technician Signiture: Ting Xu_____

Your C.O.C. #: 06124

Attention: Michael Bisaga

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

Report Date: 2011/06/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B177992

Received: 2011/06/01, 10:30

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	1	N/A	2011/06/02	BRL SOP-00304	EPA TO-15
Canister Pressure (TO-15)	1	N/A	2011/06/03	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	1	N/A	2011/06/02	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	1	N/A	2011/06/03	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 #: B177992
 Report Date: 2011/06/08

RESULTS OF ANALYSES OF AIR

Maxxam ID		JR4262		JR4263	
Sampling Date		2011/05/27		2011/05/27	
COC Number		06124		06124	
	Units	LICA VOC/CLS/MAY 27,11 - 7824	QC Batch	LICA VOC/PORT/MAY 27,11 - 7838	QC Batch

Volatile Organics					
Pressure on Receipt	psig	21	2510429	21	2507471

QC Batch = Quality Control Batch

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4262				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/CLS/MAY 27,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2510474
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2510474
Propene	ppbv	<0.30	0.30	<0.516	0.516	2510474
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2510474
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2510474
Dichlorodifluoromethane (FREON 12)	ppbv	0.49	0.20	2.42	0.989	2510474
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2510474
Chloromethane	ppbv	0.51	0.30	1.05	0.620	2510474
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2510474
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2510474
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2510474
Trichlorofluoromethane (FREON 11)	ppbv	0.26	0.20	1.44	1.12	2510474
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2510474
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2510474
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2510474
2-Propanone	ppbv	3.96	0.80	9.41	1.90	2510474
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2510474
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2510474
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2510474
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2510474
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2510474
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2510474
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2510474
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2510474
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2510474
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2510474
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2510474
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2510474
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2510474
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2510474
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2510474

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4262				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/CLS/MAY 27,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2510474
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2510474
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2510474
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2510474
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2510474
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2510474
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2510474
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2510474
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2510474
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2510474
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2510474
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2510474
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2510474
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2510474
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2510474
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2510474
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2510474
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2510474
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2510474
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2510474
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2510474
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2510474
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2510474
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2510474
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2510474
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2510474
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2510474
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2510474
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2510474
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2510474
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2510474
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2510474
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2510474
QC Batch = Quality Control Batch						

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4262				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/CLS/MAY 27,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	103		N/A	N/A	2510474
D5-Chlorobenzene	%	104		N/A	N/A	2510474
Difluorobenzene	%	105		N/A	N/A	2510474

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

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4263				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/PORT/MAY 27,11 - 7838	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2507525
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2507525
Propene	ppbv	<0.30	0.30	<0.516	0.516	2507525
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2507525
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2507525
Dichlorodifluoromethane (FREON 12)	ppbv	0.54	0.20	2.66	0.989	2507525
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2507525
Chloromethane	ppbv	0.52	0.30	1.07	0.620	2507525
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2507525
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2507525
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2507525
Trichlorofluoromethane (FREON 11)	ppbv	0.27	0.20	1.52	1.12	2507525
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2507525
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2507525
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2507525
2-Propanone	ppbv	4.98	0.80	11.8	1.90	2507525
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2507525
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2507525
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2507525
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2507525
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2507525
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2507525
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2507525
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2507525
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2507525
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2507525
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2507525
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2507525
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2507525
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2507525
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2507525
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4263				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA VOC/PORT/MAY 27,11 - 7838	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2507525
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2507525
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2507525
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2507525
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2507525
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2507525
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2507525
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2507525
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2507525
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2507525
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2507525
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2507525
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2507525
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2507525
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2507525
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2507525
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2507525
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2507525
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2507525
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2507525
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2507525
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2507525
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2507525
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2507525
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2507525
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2507525
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2507525
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2507525
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2507525
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2507525
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2507525
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2507525
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2507525
QC Batch = Quality Control Batch						

Maxxam Job #: B177992
 Report Date: 2011/06/08

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		JR4263				
Sampling Date		2011/05/27				
COC Number		06124				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/MAY				
		27,11 - 7838				

Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2507525
D5-Chlorobenzene	%	75		N/A	N/A	2507525
Difluorobenzene	%	88		N/A	N/A	2507525

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

Maxxam Job #: B177992
Report Date: 2011/06/08

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
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Quality Assurance Report
 Maxxam Job Number: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507525 S_S	Spiked Blank	Bromochloromethane	2011/06/02		102	%	60 - 140
		D5-Chlorobenzene	2011/06/02		96	%	60 - 140
		Difluorobenzene	2011/06/02		106	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/02		107	%	70 - 130
		Carbon Disulfide	2011/06/02		90	%	70 - 130
		Propene	2011/06/02		72	%	70 - 130
		Vinyl Acetate	2011/06/02		115	%	70 - 130
		Vinyl Bromide	2011/06/02		89	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/02		79	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/02		92	%	70 - 130
		Chloromethane	2011/06/02		82	%	70 - 130
		Vinyl Chloride	2011/06/02		83	%	70 - 130
		Chloroethane	2011/06/02		86	%	70 - 130
		1,3-Butadiene	2011/06/02		91	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/02		88	%	70 - 130
		Trichlorotrifluoroethane	2011/06/02		94	%	70 - 130
		Ethanol	2011/06/02		87	%	70 - 130
		2-propanol	2011/06/02		89	%	70 - 130
		2-Propanone	2011/06/02		121	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/02		113	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/02		103	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/02		102	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/02		103	%	70 - 130
		Ethyl Acetate	2011/06/02		114	%	70 - 130
		1,1-Dichloroethylene	2011/06/02		104	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/02		105	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/02		104	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/02		93	%	70 - 130
		Chloroform	2011/06/02		95	%	70 - 130
		Carbon Tetrachloride	2011/06/02		90	%	70 - 130
		1,1-Dichloroethane	2011/06/02		98	%	70 - 130
		1,2-Dichloroethane	2011/06/02		98	%	70 - 130
		Ethylene Dibromide	2011/06/02		88	%	70 - 130
		1,1,1-Trichloroethane	2011/06/02		92	%	70 - 130
		1,1,2-Trichloroethane	2011/06/02		91	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/02		87	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/02		99	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/02		100	%	70 - 130
		1,2-Dichloropropane	2011/06/02		99	%	70 - 130
		Bromomethane	2011/06/02		84	%	70 - 130
		Bromoform	2011/06/02		97	%	70 - 130
		Bromodichloromethane	2011/06/02		94	%	70 - 130
		Dibromochloromethane	2011/06/02		96	%	70 - 130
		Heptane	2011/06/02		113	%	70 - 130
		Trichloroethylene	2011/06/02		93	%	70 - 130
		Tetrachloroethylene	2011/06/02		89	%	70 - 130
		Benzene	2011/06/02		103	%	70 - 130
		Toluene	2011/06/02		102	%	70 - 130
		Ethylbenzene	2011/06/02		105	%	70 - 130
		p+m-Xylene	2011/06/02		109	%	70 - 130
		o-Xylene	2011/06/02		104	%	70 - 130
		Styrene	2011/06/02		101	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/02		99	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/02		98	%	70 - 130
		4-ethyltoluene	2011/06/02		104	%	70 - 130

Maxxam Analytics
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Quality Assurance Report (Continued)

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QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507525 S_S	Spiked Blank	Chlorobenzene	2011/06/02		92	%	70 - 130
		Benzyl chloride	2011/06/02		89	%	70 - 130
		1,3-Dichlorobenzene	2011/06/02		82	%	70 - 130
		1,4-Dichlorobenzene	2011/06/02		78	%	70 - 130
		1,2-Dichlorobenzene	2011/06/02		79	%	70 - 130
		1,2,4-Trichlorobenzene	2011/06/02		75	%	70 - 130
		Hexachlorobutadiene	2011/06/02		75	%	70 - 130
		Hexane	2011/06/02		110	%	70 - 130
		Cyclohexane	2011/06/02		113	%	70 - 130
		Tetrahydrofuran	2011/06/02		117	%	70 - 130
		1,4-Dioxane	2011/06/02		105	%	70 - 130
	Method Blank	Bromochloromethane	2011/06/02		99	%	60 - 140
		D5-Chlorobenzene	2011/06/02		84	%	60 - 140
		Difluorobenzene	2011/06/02		101	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/02	<0.20		ppbv	
		Carbon Disulfide	2011/06/02	<0.50		ppbv	
		Propene	2011/06/02	<0.30		ppbv	
		Vinyl Acetate	2011/06/02	<0.20		ppbv	
		Vinyl Bromide	2011/06/02	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/02	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/02	<0.17		ppbv	
		Chloromethane	2011/06/02	<0.30		ppbv	
		Vinyl Chloride	2011/06/02	<0.18		ppbv	
		Chloroethane	2011/06/02	<0.30		ppbv	
		1,3-Butadiene	2011/06/02	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/02	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/06/02	<0.15		ppbv	
		Ethanol	2011/06/02	<2.3		ppbv	
		2-propanol	2011/06/02	<3.0		ppbv	
		2-Propanone	2011/06/02	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/02	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/06/02	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/06/02	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/02	<0.20		ppbv	
		Ethyl Acetate	2011/06/02	<2.2		ppbv	
		1,1-Dichloroethylene	2011/06/02	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/06/02	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/06/02	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/02	<0.80		ppbv	
		Chloroform	2011/06/02	<0.15		ppbv	
		Carbon Tetrachloride	2011/06/02	<0.30		ppbv	
		1,1-Dichloroethane	2011/06/02	<0.20		ppbv	
		1,2-Dichloroethane	2011/06/02	<0.20		ppbv	
		Ethylene Dibromide	2011/06/02	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/06/02	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/06/02	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/02	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/06/02	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/06/02	<0.17		ppbv	
		1,2-Dichloropropane	2011/06/02	<0.40		ppbv	
		Bromomethane	2011/06/02	<0.18		ppbv	
		Bromoform	2011/06/02	<0.20		ppbv	
		Bromodichloromethane	2011/06/02	<0.20		ppbv	
		Dibromochloromethane	2011/06/02	<0.20		ppbv	
		Heptane	2011/06/02	<0.30		ppbv	

Maxxam Analytics
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Quality Assurance Report (Continued)

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QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507525 S_S	Method Blank	Trichloroethylene	2011/06/02	<0.30		ppbv	
		Tetrachloroethylene	2011/06/02	<0.20		ppbv	
		Benzene	2011/06/02	<0.18		ppbv	
		Toluene	2011/06/02	<0.20		ppbv	
		Ethylbenzene	2011/06/02	<0.20		ppbv	
		p+m-Xylene	2011/06/02	<0.37		ppbv	
		o-Xylene	2011/06/02	<0.20		ppbv	
		Styrene	2011/06/02	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/02	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/02	<0.50		ppbv	
		4-ethyltoluene	2011/06/02	<2.2		ppbv	
		Chlorobenzene	2011/06/02	<0.20		ppbv	
		Benzyl chloride	2011/06/02	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/02	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/02	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/02	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/02	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/02	<3.0		ppbv	
		Hexane	2011/06/02	<0.30		ppbv	
		Cyclohexane	2011/06/02	<0.20		ppbv	
		Tetrahydrofuran	2011/06/02	<0.40		ppbv	
1,4-Dioxane	2011/06/02	<2.0		ppbv			
Xylene (Total)	2011/06/02	<0.60		ppbv			
2510474 S_S	Spiked Blank	Bromochloromethane	2011/06/03		110	%	60 - 140
		D5-Chlorobenzene	2011/06/03		110	%	60 - 140
		Difluorobenzene	2011/06/03		116	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/03		113	%	70 - 130
		Carbon Disulfide	2011/06/03		98	%	70 - 130
		Propene	2011/06/03		80	%	70 - 130
		Vinyl Acetate	2011/06/03		124	%	70 - 130
		Vinyl Bromide	2011/06/03		99	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/06/03		88	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/06/03		103	%	70 - 130
		Chloromethane	2011/06/03		94	%	70 - 130
		Vinyl Chloride	2011/06/03		95	%	70 - 130
		Chloroethane	2011/06/03		98	%	70 - 130
		1,3-Butadiene	2011/06/03		102	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/06/03		99	%	70 - 130
		Trichlorotrifluoroethane	2011/06/03		104	%	70 - 130
		Ethanol	2011/06/03		101	%	70 - 130
		2-propanol	2011/06/03		101	%	70 - 130
		2-Propanone	2011/06/03		123	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/06/03		118	%	70 - 130
		Methyl Isobutyl Ketone	2011/06/03		114	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/06/03		116	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/06/03		113	%	70 - 130
		Ethyl Acetate	2011/06/03		122	%	70 - 130
		1,1-Dichloroethylene	2011/06/03		115	%	70 - 130
		cis-1,2-Dichloroethylene	2011/06/03		115	%	70 - 130
		trans-1,2-Dichloroethylene	2011/06/03		111	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/06/03		100	%	70 - 130
		Chloroform	2011/06/03		104	%	70 - 130
		Carbon Tetrachloride	2011/06/03		102	%	70 - 130
1,1-Dichloroethane	2011/06/03		106	%	70 - 130		
1,2-Dichloroethane	2011/06/03		107	%	70 - 130		

Maxxam Analytics
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QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2510474 S_S	Spiked Blank	Ethylene Dibromide	2011/06/03		95	%	70 - 130
		1,1,1-Trichloroethane	2011/06/03		101	%	70 - 130
		1,1,2-Trichloroethane	2011/06/03		98	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/06/03		93	%	70 - 130
		cis-1,3-Dichloropropene	2011/06/03		106	%	70 - 130
		trans-1,3-Dichloropropene	2011/06/03		106	%	70 - 130
		1,2-Dichloropropane	2011/06/03		106	%	70 - 130
		Bromomethane	2011/06/03		96	%	70 - 130
		Bromoform	2011/06/03		103	%	70 - 130
		Bromodichloromethane	2011/06/03		101	%	70 - 130
		Dibromochloromethane	2011/06/03		102	%	70 - 130
		Heptane	2011/06/03		117	%	70 - 130
		Trichloroethylene	2011/06/03		101	%	70 - 130
		Tetrachloroethylene	2011/06/03		97	%	70 - 130
		Benzene	2011/06/03		112	%	70 - 130
		Toluene	2011/06/03		112	%	70 - 130
		Ethylbenzene	2011/06/03		117	%	70 - 130
		p+m-Xylene	2011/06/03		117	%	70 - 130
		o-Xylene	2011/06/03		114	%	70 - 130
		Styrene	2011/06/03		116	%	70 - 130
		1,3,5-Trimethylbenzene	2011/06/03		110	%	70 - 130
		1,2,4-Trimethylbenzene	2011/06/03		109	%	70 - 130
		4-ethyltoluene	2011/06/03		112	%	70 - 130
		Chlorobenzene	2011/06/03		100	%	70 - 130
		Benzyl chloride	2011/06/03		97	%	70 - 130
		1,3-Dichlorobenzene	2011/06/03		89	%	70 - 130
		1,4-Dichlorobenzene	2011/06/03		83	%	70 - 130
		1,2-Dichlorobenzene	2011/06/03		85	%	70 - 130
		1,2,4-Trichlorobenzene	2011/06/03		83	%	70 - 130
		Hexachlorobutadiene	2011/06/03		82	%	70 - 130
		Hexane	2011/06/03		116	%	70 - 130
		Cyclohexane	2011/06/03		118	%	70 - 130
		Tetrahydrofuran	2011/06/03		125	%	70 - 130
		1,4-Dioxane	2011/06/03		115	%	70 - 130
	Method Blank	Bromochloromethane	2011/06/03		100	%	60 - 140
		D5-Chlorobenzene	2011/06/03		90	%	60 - 140
		Difluorobenzene	2011/06/03		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/06/03	<0.20		ppbv	
		Carbon Disulfide	2011/06/03	<0.50		ppbv	
		Propene	2011/06/03	<0.30		ppbv	
		Vinyl Acetate	2011/06/03	<0.20		ppbv	
		Vinyl Bromide	2011/06/03	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/06/03	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/06/03	<0.17		ppbv	
		Chloromethane	2011/06/03	<0.30		ppbv	
		Vinyl Chloride	2011/06/03	<0.18		ppbv	
		Chloroethane	2011/06/03	<0.30		ppbv	
		1,3-Butadiene	2011/06/03	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/06/03	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/06/03	<0.15		ppbv	
		Ethanol	2011/06/03	<2.3		ppbv	
		2-propanol	2011/06/03	<3.0		ppbv	
		2-Propanone	2011/06/03	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/06/03	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/06/03	<3.2		ppbv	

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Quality Assurance Report (Continued)

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QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2510474 S_S	Method Blank	Methyl Butyl Ketone (2-Hexanone)	2011/06/03	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/06/03	<0.20		ppbv	
		Ethyl Acetate	2011/06/03	<2.2		ppbv	
		1,1-Dichloroethylene	2011/06/03	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/06/03	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/06/03	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/06/03	<0.80		ppbv	
		Chloroform	2011/06/03	<0.15		ppbv	
		Carbon Tetrachloride	2011/06/03	<0.30		ppbv	
		1,1-Dichloroethane	2011/06/03	<0.20		ppbv	
		1,2-Dichloroethane	2011/06/03	<0.20		ppbv	
		Ethylene Dibromide	2011/06/03	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/06/03	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/06/03	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/06/03	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/06/03	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/06/03	<0.17		ppbv	
		1,2-Dichloropropane	2011/06/03	<0.40		ppbv	
		Bromomethane	2011/06/03	<0.18		ppbv	
		Bromoform	2011/06/03	<0.20		ppbv	
		Bromodichloromethane	2011/06/03	<0.20		ppbv	
		Dibromochloromethane	2011/06/03	<0.20		ppbv	
		Heptane	2011/06/03	<0.30		ppbv	
		Trichloroethylene	2011/06/03	<0.30		ppbv	
		Tetrachloroethylene	2011/06/03	<0.20		ppbv	
		Benzene	2011/06/03	<0.18		ppbv	
		Toluene	2011/06/03	<0.20		ppbv	
		Ethylbenzene	2011/06/03	<0.20		ppbv	
		p+m-Xylene	2011/06/03	<0.37		ppbv	
		o-Xylene	2011/06/03	<0.20		ppbv	
		Styrene	2011/06/03	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/06/03	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/06/03	<0.50		ppbv	
		4-ethyltoluene	2011/06/03	<2.2		ppbv	
		Chlorobenzene	2011/06/03	<0.20		ppbv	
		Benzyl chloride	2011/06/03	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/06/03	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/06/03	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/06/03	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/06/03	<2.0		ppbv	
		Hexachlorobutadiene	2011/06/03	<3.0		ppbv	
		Hexane	2011/06/03	<0.30		ppbv	
		Cyclohexane	2011/06/03	<0.20		ppbv	
		Tetrahydrofuran	2011/06/03	<0.40		ppbv	
		1,4-Dioxane	2011/06/03	<2.0		ppbv	
		Xylene (Total)	2011/06/03	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/06/03	NC		%	25
		Carbon Disulfide	2011/06/03	NC		%	25
		Propene	2011/06/03	NC		%	25
		Vinyl Acetate	2011/06/03	NC		%	25
		Vinyl Bromide	2011/06/03	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/06/03	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/06/03	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB177992

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2510474 S_S	RPD - Sample/Sample Dup	Chloromethane	2011/06/03	NC		%	25
		Vinyl Chloride	2011/06/03	NC		%	25
		Chloroethane	2011/06/03	NC		%	25
		1,3-Butadiene	2011/06/03	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/06/03	NC		%	25
		Trichlorotrifluoroethane	2011/06/03	NC		%	25
		Ethanol	2011/06/03	NC		%	25
		2-propanol	2011/06/03	NC		%	25
		2-Propanone	2011/06/03	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/06/03	NC		%	25
		Methyl Isobutyl Ketone	2011/06/03	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/06/03	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/06/03	NC		%	25
		Ethyl Acetate	2011/06/03	NC		%	25
		1,1-Dichloroethylene	2011/06/03	NC		%	25
		cis-1,2-Dichloroethylene	2011/06/03	NC		%	25
		trans-1,2-Dichloroethylene	2011/06/03	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/06/03	NC		%	25
		Chloroform	2011/06/03	NC		%	25
		Carbon Tetrachloride	2011/06/03	NC		%	25
		1,1-Dichloroethane	2011/06/03	NC		%	25
		1,2-Dichloroethane	2011/06/03	NC		%	25
		Ethylene Dibromide	2011/06/03	NC		%	25
		1,1,1-Trichloroethane	2011/06/03	NC		%	25
		1,1,2-Trichloroethane	2011/06/03	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/06/03	NC		%	25
		cis-1,3-Dichloropropene	2011/06/03	NC		%	25
		trans-1,3-Dichloropropene	2011/06/03	NC		%	25
		1,2-Dichloropropane	2011/06/03	NC		%	25
		Bromomethane	2011/06/03	NC		%	25
		Bromoform	2011/06/03	NC		%	25
		Bromodichloromethane	2011/06/03	NC		%	25
		Dibromochloromethane	2011/06/03	NC		%	25
		Heptane	2011/06/03	NC		%	25
		Trichloroethylene	2011/06/03	NC		%	25
		Tetrachloroethylene	2011/06/03	NC		%	25
		Benzene	2011/06/03	NC		%	25
		Toluene	2011/06/03	NC		%	25
		Ethylbenzene	2011/06/03	NC		%	25
		p+m-Xylene	2011/06/03	NC		%	25
		o-Xylene	2011/06/03	NC		%	25
		Styrene	2011/06/03	NC		%	25
		1,3,5-Trimethylbenzene	2011/06/03	NC		%	25
		1,2,4-Trimethylbenzene	2011/06/03	NC		%	25
		4-ethyltoluene	2011/06/03	NC		%	25
		Chlorobenzene	2011/06/03	NC		%	25
		Benzyl chloride	2011/06/03	NC		%	25
		1,3-Dichlorobenzene	2011/06/03	NC		%	25
		1,4-Dichlorobenzene	2011/06/03	NC		%	25
		1,2-Dichlorobenzene	2011/06/03	NC		%	25
		1,2,4-Trichlorobenzene	2011/06/03	NC		%	25
		Hexachlorobutadiene	2011/06/03	NC		%	25
		Hexane	2011/06/03	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB177992

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2510474 S_S	RPD - Sample/Sample Dup	Cyclohexane	2011/06/03	NC		%	25
		Tetrahydrofuran	2011/06/03	NC		%	25
		1,4-Dioxane	2011/06/03	NC		%	25
		Xylene (Total)	2011/06/03	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.

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/May 09, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: May 06, 2011 @ 14:08 mst
 Removal Date/Time: May 10, 2011 @ 8:17 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
09-May-11	05/09/2011 0:00	05/10/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
03-May-11	10-May-11	16-May-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)
709	229	9.2	330.34

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

Comments: COC# 07154

GB157127 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/May 09, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07154

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

Report Date: 2011/05/25

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B166207****Received: 2011/05/12, 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	2011/05/14	2011/05/19	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

Maxxam Job #: B166207
 Report Date: 2011/05/25

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

Maxxam ID		JM0377	JM0378		
Sampling Date		2011/05/09	2011/05/09		
COC Number		07154	07154		
	Units	LICA PUFF+QFF/CLS/MAY 09,11	LICA PUFF+QFF/PORT/MAY 09,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.13	<0.10	0.10	2488919
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2488919
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2488919
2-Methylantracene	ug	<0.10	<0.10	0.10	2488919
2-Methylnaphthalene	ug	0.28	<0.10	0.10	2488919
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2488919
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2488919
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2488919
Acenaphthene	ug	<0.050	<0.050	0.050	2488919
Acenaphthylene	ug	<0.050	<0.050	0.050	2488919
Anthracene	ug	<0.050	<0.050	0.050	2488919
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2488919
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2488919
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2488919
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2488919
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2488919
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2488919
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2488919
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2488919
Biphenyl	ug	<0.10	<0.10	0.10	2488919
Chrysene	ug	<0.050	<0.050	0.050	2488919
Coronene	ug	<0.10	<0.10	0.10	2488919
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2488919
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2488919
Fluoranthene	ug	0.058	<0.050	0.050	2488919
Fluorene	ug	0.096	<0.050	0.050	2488919
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2488919
m-Terphenyl	ug	<0.10	<0.10	0.10	2488919
Naphthalene	ug	0.370	0.152	0.072	2488919
o-Terphenyl	ug	<0.10	<0.10	0.10	2488919
Perylene	ug	<0.10	<0.10	0.10	2488919

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B166207
 Report Date: 2011/05/25

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

Maxxam ID		JM0377	JM0378		
Sampling Date		2011/05/09	2011/05/09		
COC Number		07154	07154		
	Units	LICA PUFF+QFF/CLS/MAY 09,11	LICA PUFF+QFF/PORT/MAY 09,11	RDL	QC Batch

Phenanthrene	ug	0.306	0.114	0.050	2488919
p-Terphenyl	ug	<0.10	<0.10	0.10	2488919
Pyrene	ug	<0.050	<0.050	0.050	2488919
Quinoline	ug	<0.40	<0.40	0.40	2488919
Tetralin	ug	<0.10	<0.10	0.10	2488919
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	62		2488919
D10-Fluoranthene	%	96	88		2488919
D10-Fluorene (FS)	%	18 (1)	12 (1)		2488919
D10-Phenanthrene	%	88	80		2488919
D12-Benzo(a)anthracene	%	102	104		2488919
D12-Benzo(a)pyrene	%	92	98		2488919
D12-Benzo(b)fluoranthene	%	92	94		2488919
D12-Benzo(ghi)perylene	%	98	100		2488919
D12-Benzo(k)fluoranthene	%	86	88		2488919
D12-Chrysene	%	82	84		2488919
D12-Indeno(1,2,3-cd)pyrene	%	94	96		2488919
D12-Perylene	%	90	94		2488919
D14-Dibenzo(a,h)anthracene	%	94	94		2488919
D14-Terphenyl (FS)	%	90	83		2488919
D8-Acenaphthylene	%	80	74		2488919
D8-Naphthalene	%	64	60		2488919

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 #: B166207
 Report Date: 2011/05/25

Test Summary

Maxxam ID	JM0377	Collected	2011/05/09
Sample ID	LICA PUFF+QFF/CLS/MAY 09,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/05/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2488919	2011/05/14	2011/05/19	WENDY ZHAO

Maxxam ID	JM0378	Collected	2011/05/09
Sample ID	LICA PUFF+QFF/PORT/MAY 09,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/05/12

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2488919	2011/05/14	2011/05/19	WENDY ZHAO

Maxxam Job #: B166207
Report Date: 2011/05/25

GENERAL COMMENTS

PAHMS-F

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

Chrysene is statistically out of control at 76.3% recovery in the spike:dup. Spike recovery is in control. Acceptance criteria met for both spike and dup. Data reported and flagged.

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 JM0377-01: PAHMS-F

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

Sample JM0378-01: 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: GB166207

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2488919 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/05/19		74	%	50 - 150
		D10-Fluoranthene	2011/05/19		90	%	50 - 150
		D10-Phenanthrene	2011/05/19		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/05/19		102	%	50 - 150
		D12-Benzo(a)pyrene	2011/05/19		100	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/05/19		94	%	50 - 150
		D12-Benzo(ghi)perylene	2011/05/19		100	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/05/19		88	%	50 - 150
		D12-Chrysene	2011/05/19		82	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/05/19		96	%	50 - 150
		D12-Perylene	2011/05/19		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/05/19		96	%	50 - 150
		D8-Acenaphthylene	2011/05/19		76	%	50 - 150
		D8-Naphthalene	2011/05/19		72	%	50 - 150
		Acenaphthene	2011/05/19		74	%	60 - 130
	RPD	Acenaphthene	2011/05/19	6.3		%	50
	Spiked Blank	Acenaphthylene	2011/05/19		72	%	60 - 130
	RPD	Acenaphthylene	2011/05/19	3.2		%	50
	Spiked Blank	Anthracene	2011/05/19		68	%	60 - 130
	RPD	Anthracene	2011/05/19	2.2		%	50
	Spiked Blank	Benzo(a)anthracene	2011/05/19		86	%	60 - 130
	RPD	Benzo(a)anthracene	2011/05/19	0		%	50
	Spiked Blank	Benzo(a)pyrene	2011/05/19		77	%	60 - 130
	RPD	Benzo(a)pyrene	2011/05/19	3.5		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/05/19		83	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/05/19	2.4		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/05/19		87	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/05/19	2.6		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/05/19		83	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/05/19	4.1		%	50
	Spiked Blank	Chrysene	2011/05/19		78	%	60 - 130
	RPD	Chrysene	2011/05/19	2.6		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/05/19		82	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/05/19	3.3		%	50
	Spiked Blank	Fluoranthene	2011/05/19		83	%	60 - 130
	RPD	Fluoranthene	2011/05/19	3.8		%	50
	Spiked Blank	Fluorene	2011/05/19		70	%	60 - 130
	RPD	Fluorene	2011/05/19	1.8		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/05/19		83	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/05/19	2.1		%	50
	Spiked Blank	Naphthalene	2011/05/19		71	%	60 - 130
	RPD	Naphthalene	2011/05/19	9.6		%	50
	Spiked Blank	Phenanthrene	2011/05/19		73	%	60 - 130
	RPD	Phenanthrene	2011/05/19	0.7		%	50
	Spiked Blank	Pyrene	2011/05/19		77	%	60 - 130
	RPD	Pyrene	2011/05/19	3.8		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/05/19		74	%	50 - 150
		D10-Fluoranthene	2011/05/19		94	%	50 - 150
		D10-Phenanthrene	2011/05/19		82	%	50 - 150
		D12-Benzo(a)anthracene	2011/05/19		100	%	50 - 150
		D12-Benzo(a)pyrene	2011/05/19		100	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/05/19		94	%	50 - 150
		D12-Benzo(ghi)perylene	2011/05/19		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/05/19		88	%	50 - 150
		D12-Chrysene	2011/05/19		80	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB166207

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2488919 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/05/19		96	%	50 - 150
		D12-Perylene	2011/05/19		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/05/19		94	%	50 - 150
		D8-Acenaphthylene	2011/05/19		80	%	50 - 150
		D8-Naphthalene	2011/05/19		74	%	50 - 150
		1-Methylnaphthalene	2011/05/19	<0.10		ug	
		1-Methylphenanthrene	2011/05/19	<0.10		ug	
		2-Chloronaphthalene	2011/05/19	<0.10		ug	
		2-Methylanthracene	2011/05/19	<0.10		ug	
		2-Methylnaphthalene	2011/05/19	<0.10		ug	
		3-Methylcholanthrene	2011/05/19	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/05/19	<0.10		ug	
		9,10-Dimethylanthracene	2011/05/19	<0.40		ug	
		Acenaphthene	2011/05/19	<0.050		ug	
		Acenaphthylene	2011/05/19	<0.050		ug	
		Anthracene	2011/05/19	<0.050		ug	
		Benzo(a)anthracene	2011/05/19	<0.050		ug	
		Benzo(a)fluorene	2011/05/19	<0.10		ug	
		Benzo(a)pyrene	2011/05/19	<0.050		ug	
		Benzo(b)fluoranthene	2011/05/19	<0.050		ug	
		Benzo(b)fluorene	2011/05/19	<0.10		ug	
		Benzo(e)pyrene	2011/05/19	<0.10		ug	
		Benzo(g,h,i)perylene	2011/05/19	<0.050		ug	
		Benzo(k)fluoranthene	2011/05/19	<0.050		ug	
		Biphenyl	2011/05/19	<0.10		ug	
		Chrysene	2011/05/19	<0.050		ug	
		Coronene	2011/05/19	<0.10		ug	
		Dibenz(a,h)anthracene	2011/05/19	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/05/19	<0.20		ug	
		Fluoranthene	2011/05/19	<0.050		ug	
		Fluorene	2011/05/19	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/05/19	<0.050		ug	
		m-Terphenyl	2011/05/19	<0.10		ug	
		Naphthalene	2011/05/19	<0.072		ug	
		o-Terphenyl	2011/05/19	<0.10		ug	
		Perylene	2011/05/19	<0.10		ug	
		Phenanthrene	2011/05/19	<0.050		ug	
		p-Terphenyl	2011/05/19	<0.10		ug	
		Pyrene	2011/05/19	<0.050		ug	
		Quinoline	2011/05/19	<0.40		ug	
		Tetralin	2011/05/19	<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/May 15, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: May 13, 2011 @ 8:35 mst
Removal Date/Time: May 16, 2011 @ 10:35 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
15-May-11	05/15/2011 0:00	05/16/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
10-May-11	16-May-11	23-May-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	13.6	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# 07230

GB160431 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/May 15, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 07230

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

Report Date: 2011/06/01

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B170106****Received: 2011/05/18, 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	2011/05/20	2011/05/30	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 #: B170106
 Report Date: 2011/06/01

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

Maxxam ID		JN7551	JN7552		
Sampling Date		2011/05/15	2011/05/15		
COC Number		07230	07230		
	Units	LICA PUFF+QFF/CLS/MAY 15,11	LICA PUFF+QFF/PORT/MAY 15,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2494004
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2494004
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2494004
2-Methylantracene	ug	<0.10	<0.10	0.10	2494004
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2494004
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2494004
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2494004
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2494004
Acenaphthene	ug	<0.050	<0.050	0.050	2494004
Acenaphthylene	ug	<0.050	<0.050	0.050	2494004
Anthracene	ug	<0.050	<0.050	0.050	2494004
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2494004
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2494004
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2494004
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2494004
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2494004
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2494004
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2494004
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2494004
Biphenyl	ug	<0.10	<0.10	0.10	2494004
Chrysene	ug	<0.050	<0.050	0.050	2494004
Coronene	ug	<0.10	<0.10	0.10	2494004
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2494004
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2494004
Fluoranthene	ug	<0.050	<0.050	0.050	2494004
Fluorene	ug	<0.050	<0.050	0.050	2494004
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2494004
m-Terphenyl	ug	<0.10	<0.10	0.10	2494004
Naphthalene	ug	0.158	0.126	0.072	2494004
o-Terphenyl	ug	<0.10	<0.10	0.10	2494004
Perylene	ug	<0.10	<0.10	0.10	2494004

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B170106
 Report Date: 2011/06/01

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

Maxxam ID		JN7551	JN7552		
Sampling Date		2011/05/15	2011/05/15		
COC Number		07230	07230		
	Units	LICA PUFF+QFF/CLS/MAY 15,11	LICA PUFF+QFF/PORT/MAY 15,11	RDL	QC Batch

Phenanthrene	ug	0.214	0.062	0.050	2494004
p-Terphenyl	ug	<0.10	<0.10	0.10	2494004
Pyrene	ug	<0.050	<0.050	0.050	2494004
Quinoline	ug	<0.40	<0.40	0.40	2494004
Tetralin	ug	<0.10	<0.10	0.10	2494004
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	50	54		2494004
D10-Fluoranthene	%	104	94		2494004
D10-Fluorene (FS)	%	14 (1)	18 (1)		2494004
D10-Phenanthrene	%	88	80		2494004
D12-Benzo(a)anthracene	%	100	104		2494004
D12-Benzo(a)pyrene	%	80	96		2494004
D12-Benzo(b)fluoranthene	%	94	94		2494004
D12-Benzo(ghi)perylene	%	108	108		2494004
D12-Benzo(k)fluoranthene	%	88	88		2494004
D12-Chrysene	%	82	82		2494004
D12-Indeno(1,2,3-cd)pyrene	%	102	100		2494004
D12-Perylene	%	84	92		2494004
D14-Dibenzo(a,h)anthracene	%	100	98		2494004
D14-Terphenyl (FS)	%	97	86		2494004
D8-Acenaphthylene	%	68	76		2494004
D8-Naphthalene	%	48 (1)	52		2494004

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 #: B170106
 Report Date: 2011/06/01

Test Summary

Maxxam ID	JN7551	Collected	2011/05/15
Sample ID	LICA PUFF+QFF/CLS/MAY 15,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/05/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2494004	2011/05/20	2011/05/30	WENDY ZHAO

Maxxam ID	JN7552	Collected	2011/05/15
Sample ID	LICA PUFF+QFF/PORT/MAY 15,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/05/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2494004	2011/05/20	2011/05/30	WENDY ZHAO

Maxxam Job #: B170106
Report Date: 2011/06/01

GENERAL COMMENTS

PAHMS-F

7,12-Dimethylbenzo(a)anthracene is above 25% RSD in initial calibration and Coronene Dibenzo(a,e)pyrene and Tetralin are above 25% RSD in continuing calibration. No positives found for these compounds.

Pyrene is statistically out of control at 91.3% recovery in the spike and spike:dup is OK . Chrysene is statistically out of control at 76.0% and 77.3%recovery in the spike and spike:dup .Acceptance criteria met for both spike and dup. Data reported and flagged.

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 JN7551-01: PAHMS-F

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

Low Surrogate d8-Naphthalene recovery in sample.

Sample JN7552-01: 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: GB170106

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2494004 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/05/30		68	%	50 - 150
		D10-Fluoranthene	2011/05/30		104	%	50 - 150
		D10-Phenanthrene	2011/05/30		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/05/30		100	%	50 - 150
		D12-Benzo(a)pyrene	2011/05/30		106	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/05/30		96	%	50 - 150
		D12-Benzo(ghi)perylene	2011/05/30		110	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/05/30		90	%	50 - 150
		D12-Chrysene	2011/05/30		78	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/05/30		102	%	50 - 150
		D12-Perylene	2011/05/30		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/05/30		100	%	50 - 150
		D8-Acenaphthylene	2011/05/30		88	%	50 - 150
		D8-Naphthalene	2011/05/30		68	%	50 - 150
		RPD	Acenaphthene	2011/05/30	0.7		%
	Spiked Blank	Acenaphthene	2011/05/30			%	50
	RPD	Acenaphthylene	2011/05/30		1.2	%	60 - 130
	Spiked Blank	Acenaphthylene	2011/05/30			%	50
	RPD	Anthracene	2011/05/30		13.5	%	60 - 130
	Spiked Blank	Anthracene	2011/05/30			%	50
	RPD	Benzo(a)anthracene	2011/05/30		1.8	%	60 - 130
	Spiked Blank	Benzo(a)anthracene	2011/05/30			%	50
	RPD	Benzo(a)pyrene	2011/05/30		12.9	%	60 - 130
	Spiked Blank	Benzo(a)pyrene	2011/05/30			%	50
	RPD	Benzo(b)fluoranthene	2011/05/30		7.5	%	60 - 130
	Spiked Blank	Benzo(b)fluoranthene	2011/05/30			%	50
	RPD	Benzo(g,h,i)perylene	2011/05/30		8.6	%	60 - 130
	Spiked Blank	Benzo(g,h,i)perylene	2011/05/30			%	50
	RPD	Benzo(k)fluoranthene	2011/05/30		7.4	%	60 - 130
	Spiked Blank	Benzo(k)fluoranthene	2011/05/30			%	50
	RPD	Chrysene	2011/05/30		1.6	%	60 - 130
	Spiked Blank	Chrysene	2011/05/30			%	50
	RPD	Dibenz(a,h)anthracene	2011/05/30		10.6	%	60 - 130
	Spiked Blank	Dibenz(a,h)anthracene	2011/05/30			%	50
	RPD	Fluoranthene	2011/05/30		14.1	%	60 - 130
	Spiked Blank	Fluoranthene	2011/05/30			%	50
	RPD	Fluorene	2011/05/30		0.4	%	60 - 130
	Spiked Blank	Fluorene	2011/05/30			%	50
	RPD	Indeno(1,2,3-cd)pyrene	2011/05/30		9.2	%	60 - 130
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/05/30			%	50
RPD	Naphthalene	2011/05/30		4.8	%	60 - 130	
Spiked Blank	Naphthalene	2011/05/30			%	50	
RPD	Phenanthrene	2011/05/30		7.3	%	60 - 130	
Spiked Blank	Phenanthrene	2011/05/30			%	50	
RPD	Pyrene	2011/05/30		14.4	%	60 - 130	
Spiked Blank	Pyrene	2011/05/30			%	50	
Method Blank	D10-2-Methylnaphthalene	2011/05/30			%	50 - 150	
	D10-Fluoranthene	2011/05/30			%	50 - 150	
	D10-Phenanthrene	2011/05/30			%	50 - 150	
	D12-Benzo(a)anthracene	2011/05/30			%	50 - 150	
	D12-Benzo(a)pyrene	2011/05/30			%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/05/30			%	50 - 150	
	D12-Benzo(ghi)perylene	2011/05/30			%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/05/30			%	50 - 150	
	D12-Chrysene	2011/05/30			%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB170106

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2494004 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/05/30		88	%	50 - 150
		D12-Perylene	2011/05/30		88	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/05/30		84	%	50 - 150
		D8-Acenaphthylene	2011/05/30		78	%	50 - 150
		D8-Naphthalene	2011/05/30		60	%	50 - 150
		1-Methylnaphthalene	2011/05/30	<0.10		ug	
		1-Methylphenanthrene	2011/05/30	<0.10		ug	
		2-Chloronaphthalene	2011/05/30	<0.10		ug	
		2-Methylanthracene	2011/05/30	<0.10		ug	
		2-Methylnaphthalene	2011/05/30	<0.10		ug	
		3-Methylcholanthrene	2011/05/30	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/05/30	<0.10		ug	
		9,10-Dimethylanthracene	2011/05/30	<0.40		ug	
		Acenaphthene	2011/05/30	<0.050		ug	
		Acenaphthylene	2011/05/30	<0.050		ug	
		Anthracene	2011/05/30	<0.050		ug	
		Benzo(a)anthracene	2011/05/30	<0.050		ug	
		Benzo(a)fluorene	2011/05/30	<0.10		ug	
		Benzo(a)pyrene	2011/05/30	<0.050		ug	
		Benzo(b)fluoranthene	2011/05/30	<0.050		ug	
		Benzo(b)fluorene	2011/05/30	<0.10		ug	
		Benzo(e)pyrene	2011/05/30	<0.10		ug	
		Benzo(g,h,i)perylene	2011/05/30	<0.050		ug	
		Benzo(k)fluoranthene	2011/05/30	<0.050		ug	
		Biphenyl	2011/05/30	<0.10		ug	
		Chrysene	2011/05/30	<0.050		ug	
		Coronene	2011/05/30	<0.10		ug	
		Dibenz(a,h)anthracene	2011/05/30	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/05/30	<0.20		ug	
		Fluoranthene	2011/05/30	<0.050		ug	
		Fluorene	2011/05/30	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/05/30	<0.050		ug	
		m-Terphenyl	2011/05/30	<0.10		ug	
		Naphthalene	2011/05/30	<0.072		ug	
		o-Terphenyl	2011/05/30	<0.10		ug	
		Perylene	2011/05/30	<0.10		ug	
		Phenanthrene	2011/05/30	<0.050		ug	
		p-Terphenyl	2011/05/30	<0.10		ug	
		Pyrene	2011/05/30	<0.050		ug	
		Quinoline	2011/05/30	<0.40		ug	
		Tetralin	2011/05/30	<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/May 21, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: May 19, 2011 @ 9:11 mst
 Removal Date/Time: May 24, 2011 @ 8:31 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
21-May-11	05/21/2011 0:00	05/22/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
17-May-11	24-May-11	30-May-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)
708	229	18.2	330.34

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

Comments: COC# 2570
GB160438 Puff #2
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/May 21, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 2570

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

Report Date: 2011/06/10

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B174348****Received: 2011/05/26, 08:45**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/05/28	2011/06/08	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

Maxxam Job #: B174348
 Report Date: 2011/06/10

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

Maxxam ID		JP7422	JP7423		
Sampling Date		2011/05/21	2011/05/21		
COC Number		2570	2570		
	Units	LICA PUFF+QFF/CLS/MAY 21, 11	LICA PUFF+QFF/PORT/MAY 21, 11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2501906
1-Methylphenanthrene	ug	0.10	<0.10	0.10	2501906
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2501906
2-Methylantracene	ug	<0.10	<0.10	0.10	2501906
2-Methylnaphthalene	ug	0.11	<0.10	0.10	2501906
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2501906
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2501906
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2501906
Acenaphthene	ug	0.092	<0.050	0.050	2501906
Acenaphthylene	ug	<0.050	<0.050	0.050	2501906
Anthracene	ug	<0.050	<0.050	0.050	2501906
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2501906
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2501906
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2501906
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2501906
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2501906
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2501906
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2501906
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2501906
Biphenyl	ug	<0.10	<0.10	0.10	2501906
Chrysene	ug	<0.050	<0.050	0.050	2501906
Coronene	ug	<0.10	<0.10	0.10	2501906
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2501906
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2501906
Fluoranthene	ug	0.124	<0.050	0.050	2501906
Fluorene	ug	0.192	<0.050	0.050	2501906
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2501906
m-Terphenyl	ug	<0.10	<0.10	0.10	2501906
Naphthalene	ug	0.120	<0.072	0.072	2501906
o-Terphenyl	ug	<0.10	<0.10	0.10	2501906
Perylene	ug	<0.10	<0.10	0.10	2501906

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B174348
 Report Date: 2011/06/10

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

Maxxam ID		JP7422	JP7423		
Sampling Date		2011/05/21	2011/05/21		
COC Number		2570	2570		
	Units	LICA PUFF+QFF/CLS/MAY 21, 11	LICA PUFF+QFF/PORT/MAY 21, 11	RDL	QC Batch

Phenanthrene	ug	0.974	0.250	0.050	2501906
p-Terphenyl	ug	<0.10	<0.10	0.10	2501906
Pyrene	ug	0.092	<0.050	0.050	2501906
Quinoline	ug	<0.40	<0.40	0.40	2501906
Tetralin	ug	<0.10	<0.10	0.10	2501906
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	56		2501906
D10-Fluoranthene	%	114	110		2501906
D10-Fluorene (FS)	%	9.8 (1)	8.2 (1)		2501906
D10-Phenanthrene	%	92	90		2501906
D12-Benzo(a)anthracene	%	106	98		2501906
D12-Benzo(a)pyrene	%	96	86		2501906
D12-Benzo(b)fluoranthene	%	96	90		2501906
D12-Benzo(ghi)perylene	%	96	94		2501906
D12-Benzo(k)fluoranthene	%	84	82		2501906
D12-Chrysene	%	74	72		2501906
D12-Indeno(1,2,3-cd)pyrene	%	110	104		2501906
D12-Perylene	%	92	82		2501906
D14-Dibenzo(a,h)anthracene	%	110	106		2501906
D14-Terphenyl (FS)	%	114	112		2501906
D8-Acenaphthylene	%	84	66		2501906
D8-Naphthalene	%	56	52		2501906

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 #: B174348
Report Date: 2011/06/10

GENERAL COMMENTS

Sample JP7422-01: PAHMS-F
Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample JP7423-01: 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: GB174348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2501906 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/06/07		74	%	50 - 150
		D10-Fluoranthene	2011/06/07		124	%	50 - 150
		D10-Phenanthrene	2011/06/07		98	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/07		104	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/07		110	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/07		100	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/07		98	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/07		88	%	50 - 150
		D12-Chrysene	2011/06/07		76	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/07		112	%	50 - 150
		D12-Perylene	2011/06/07		104	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/07		112	%	50 - 150
		D8-Acenaphthylene	2011/06/07		84	%	50 - 150
		D8-Naphthalene	2011/06/07		70	%	50 - 150
		RPD	Acenaphthene	2011/06/07		77	%
	Spiked Blank	Acenaphthene	2011/06/07	3.6		%	50
	RPD	Acenaphthylene	2011/06/07		81	%	60 - 130
	Spiked Blank	Acenaphthylene	2011/06/07	0		%	50
	RPD	Anthracene	2011/06/07		84	%	60 - 130
	Spiked Blank	Anthracene	2011/06/07	0.3		%	50
	RPD	Anthracene	2011/06/07		0.3	%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/07		79	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/07	1		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/07		84	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/07	0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/07		73	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/07	6.3		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/07		82	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/07	1.5		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/07		92	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/07	13.7		%	50
	Spiked Blank	Chrysene	2011/06/07		68	%	60 - 130
	RPD	Chrysene	2011/06/07	3.0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/07		87	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/07	0.9		%	50
	Spiked Blank	Fluoranthene	2011/06/07		105	%	60 - 130
	RPD	Fluoranthene	2011/06/07	4.1		%	50
	Spiked Blank	Fluorene	2011/06/07		81	%	60 - 130
	RPD	Fluorene	2011/06/07	2.5		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/07		91	%	60 - 130
RPD	Indeno(1,2,3-cd)pyrene	2011/06/07	0.5		%	50	
Spiked Blank	Naphthalene	2011/06/07		71	%	60 - 130	
RPD	Naphthalene	2011/06/07	2.5		%	50	
Spiked Blank	Phenanthrene	2011/06/07		85	%	60 - 130	
RPD	Phenanthrene	2011/06/07	1.8		%	50	
Spiked Blank	Pyrene	2011/06/07		101	%	60 - 130	
RPD	Pyrene	2011/06/07	3.8		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/06/07		70	%	50 - 150	
	D10-Fluoranthene	2011/06/07		120	%	50 - 150	
	D10-Phenanthrene	2011/06/07		94	%	50 - 150	
	D12-Benzo(a)anthracene	2011/06/07		114	%	50 - 150	
	D12-Benzo(a)pyrene	2011/06/07		114	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/06/07		98	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/06/07		98	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/06/07		92	%	50 - 150	
	D12-Chrysene	2011/06/07		62	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB174348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2501906 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/07		116	%	50 - 150
		D12-Perylene	2011/06/07		106	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/07		114	%	50 - 150
		D8-Acenaphthylene	2011/06/07		84	%	50 - 150
		D8-Naphthalene	2011/06/07		64	%	50 - 150
		1-Methylnaphthalene	2011/06/07	<0.10		ug	
		1-Methylphenanthrene	2011/06/07	<0.10		ug	
		2-Chloronaphthalene	2011/06/07	<0.10		ug	
		2-Methylanthracene	2011/06/07	<0.10		ug	
		2-Methylnaphthalene	2011/06/07	<0.10		ug	
		3-Methylcholanthrene	2011/06/07	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/07	<0.10		ug	
		9,10-Dimethylanthracene	2011/06/07	<0.40		ug	
		Acenaphthene	2011/06/07	<0.050		ug	
		Acenaphthylene	2011/06/07	<0.050		ug	
		Anthracene	2011/06/07	<0.050		ug	
		Benzo(a)anthracene	2011/06/07	<0.050		ug	
		Benzo(a)fluorene	2011/06/07	<0.10		ug	
		Benzo(a)pyrene	2011/06/07	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/07	<0.050		ug	
		Benzo(b)fluorene	2011/06/07	<0.10		ug	
		Benzo(e)pyrene	2011/06/07	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/07	0.066, RDL=0.050		ug	
		Benzo(k)fluoranthene	2011/06/07	<0.050		ug	
		Biphenyl	2011/06/07	<0.10		ug	
		Chrysene	2011/06/07	<0.050		ug	
		Coronene	2011/06/07	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/07	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/07	<0.20		ug	
		Fluoranthene	2011/06/07	<0.050		ug	
		Fluorene	2011/06/07	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/07	0.054, RDL=0.050		ug	
		m-Terphenyl	2011/06/07	<0.10		ug	
		Naphthalene	2011/06/07	<0.072		ug	
		o-Terphenyl	2011/06/07	<0.10		ug	
		Perylene	2011/06/07	<0.10		ug	
		Phenanthrene	2011/06/07	<0.050		ug	
		p-Terphenyl	2011/06/07	<0.10		ug	
		Pyrene	2011/06/07	<0.050		ug	
		Quinoline	2011/06/07	<0.40		ug	
		Tetralin	2011/06/07	<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/May 27, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: May 26, 2011 @ 14:36 mst
Removal Date/Time: May 30, 2011 @ 9:03 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
27-May-11	05/27/2011 0:00	05/28/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
24-May-11	30-May-11	02-Jun-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)
704	229	15.4	330.34

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

Comments: COC# 06125

GB160447 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/May 27, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06125

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

Report Date: 2011/06/09

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B178051****Received: 2011/06/01, 08:57**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/06/02	2011/06/07	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

Maxxam Job #: B178051
 Report Date: 2011/06/09

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

Maxxam ID		JR4488	JR4489		
Sampling Date		2011/05/27	2011/05/27		
COC Number		06125	06125		
	Units	LICA PUFF+QFF/CLS/MAY 27,11	LICA PUFF+QFF/PORT/MAY 27,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.15	<0.10	0.10	2507304
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2507304
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2507304
2-Methylantracene	ug	<0.10	<0.10	0.10	2507304
2-Methylnaphthalene	ug	0.25	<0.10	0.10	2507304
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2507304
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2507304
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2507304
Acenaphthene	ug	0.118	<0.050	0.050	2507304
Acenaphthylene	ug	<0.050	<0.050	0.050	2507304
Anthracene	ug	<0.050	<0.050	0.050	2507304
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2507304
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2507304
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2507304
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2507304
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2507304
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2507304
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2507304
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2507304
Biphenyl	ug	<0.10	<0.10	0.10	2507304
Chrysene	ug	<0.050	<0.050	0.050	2507304
Coronene	ug	<0.10	<0.10	0.10	2507304
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2507304
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2507304
Fluoranthene	ug	0.098	<0.050	0.050	2507304
Fluorene	ug	0.142	<0.050	0.050	2507304
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2507304
m-Terphenyl	ug	<0.10	<0.10	0.10	2507304
Naphthalene	ug	0.194	0.094	0.072	2507304
o-Terphenyl	ug	<0.10	<0.10	0.10	2507304
Perylene	ug	<0.10	<0.10	0.10	2507304

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B178051
 Report Date: 2011/06/09

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

Maxxam ID		JR4488	JR4489		
Sampling Date		2011/05/27	2011/05/27		
COC Number		06125	06125		
	Units	LICA PUFF+QFF/CLS/MAY 27,11	LICA PUFF+QFF/PORT/MAY 27,11	RDL	QC Batch

Phenanthrene	ug	0.716	0.148	0.050	2507304
p-Terphenyl	ug	<0.10	<0.10	0.10	2507304
Pyrene	ug	0.066	<0.050	0.050	2507304
Quinoline	ug	<0.40	<0.40	0.40	2507304
Tetralin	ug	<0.10	<0.10	0.10	2507304
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	60		2507304
D10-Fluoranthene	%	124	110		2507304
D10-Fluorene (FS)	%	9.6 (1)	9.4 (1)		2507304
D10-Phenanthrene	%	98	90		2507304
D12-Benzo(a)anthracene	%	110	104		2507304
D12-Benzo(a)pyrene	%	108	104		2507304
D12-Benzo(b)fluoranthene	%	104	100		2507304
D12-Benzo(ghi)perylene	%	98	90		2507304
D12-Benzo(k)fluoranthene	%	86	84		2507304
D12-Chrysene	%	78	76		2507304
D12-Indeno(1,2,3-cd)pyrene	%	114	106		2507304
D12-Perylene	%	102	98		2507304
D14-Dibenzo(a,h)anthracene	%	114	106		2507304
D14-Terphenyl (FS)	%	119	110		2507304
D8-Acenaphthylene	%	86	76		2507304
D8-Naphthalene	%	58	56		2507304

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 #: B178051
Report Date: 2011/06/09

GENERAL COMMENTS

PAHMS-F

9.10-Dimethylanthracene is above 25% RSD in initial calibration and Benzo(a)fluorene is above 25% RSD in continuing 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 JR4488-01: PAHMS-F

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

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

Sample JR4489-01: 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: GB178051

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507304 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/06/07		68	%	50 - 150
		D10-Fluoranthene	2011/06/07		106	%	50 - 150
		D10-Phenanthrene	2011/06/07		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/06/07		108	%	50 - 150
		D12-Benzo(a)pyrene	2011/06/07		106	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/06/07		100	%	50 - 150
		D12-Benzo(ghi)perylene	2011/06/07		90	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/06/07		88	%	50 - 150
		D12-Chrysene	2011/06/07		82	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/06/07		102	%	50 - 150
		D12-Perylene	2011/06/07		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/07		100	%	50 - 150
		D8-Acenaphthylene	2011/06/07		68	%	50 - 150
		D8-Naphthalene	2011/06/07		68	%	50 - 150
		Acenaphthene	2011/06/07		68	%	60 - 130
	RPD	Acenaphthene	2011/06/07	5.7		%	50
	Spiked Blank	Acenaphthylene	2011/06/07		67	%	60 - 130
	RPD	Acenaphthylene	2011/06/07	9.3		%	50
	Spiked Blank	Anthracene	2011/06/07		78	%	60 - 130
	RPD	Anthracene	2011/06/07	5.2		%	50
	Spiked Blank	Benzo(a)anthracene	2011/06/07		80	%	60 - 130
	RPD	Benzo(a)anthracene	2011/06/07	0		%	50
	Spiked Blank	Benzo(a)pyrene	2011/06/07		77	%	60 - 130
	RPD	Benzo(a)pyrene	2011/06/07	0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/06/07		72	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/06/07	6.1		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/06/07		77	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/06/07	7.8		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/06/07		89	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/06/07	4.9		%	50
	Spiked Blank	Chrysene	2011/06/07		73	%	60 - 130
	RPD	Chrysene	2011/06/07	8.6		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/06/07		79	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/06/07	2.5		%	50
	Spiked Blank	Fluoranthene	2011/06/07		90	%	60 - 130
	RPD	Fluoranthene	2011/06/07	1.4		%	50
	Spiked Blank	Fluorene	2011/06/07		70	%	60 - 130
	RPD	Fluorene	2011/06/07	6.5		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/06/07		81	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/06/07	2.1		%	50
Spiked Blank	Naphthalene	2011/06/07		68	%	60 - 130	
RPD	Naphthalene	2011/06/07	3.0		%	50	
Spiked Blank	Phenanthrene	2011/06/07		74	%	60 - 130	
RPD	Phenanthrene	2011/06/07	5.3		%	50	
Spiked Blank	Pyrene	2011/06/07		87	%	60 - 130	
RPD	Pyrene	2011/06/07	3.1		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/06/07		66	%	50 - 150	
	D10-Fluoranthene	2011/06/07		110	%	50 - 150	
	D10-Phenanthrene	2011/06/07		86	%	50 - 150	
	D12-Benzo(a)anthracene	2011/06/07		102	%	50 - 150	
	D12-Benzo(a)pyrene	2011/06/07		108	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/06/07		102	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/06/07		96	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/06/07		84	%	50 - 150	
	D12-Chrysene	2011/06/07		78	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB178051

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2507304 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/06/07		108	%	50 - 150
		D12-Perylene	2011/06/07		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/06/07		108	%	50 - 150
		D8-Acenaphthylene	2011/06/07		76	%	50 - 150
		D8-Naphthalene	2011/06/07		64	%	50 - 150
		1-Methylnaphthalene	2011/06/07	<0.10		ug	
		1-Methylphenanthrene	2011/06/07	<0.10		ug	
		2-Chloronaphthalene	2011/06/07	<0.10		ug	
		2-Methylanthracene	2011/06/07	<0.10		ug	
		2-Methylnaphthalene	2011/06/07	<0.10		ug	
		3-Methylcholanthrene	2011/06/07	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/06/07	<0.10		ug	
		9,10-Dimethylanthracene	2011/06/07	<0.40		ug	
		Acenaphthene	2011/06/07	<0.050		ug	
		Acenaphthylene	2011/06/07	<0.050		ug	
		Anthracene	2011/06/07	<0.050		ug	
		Benzo(a)anthracene	2011/06/07	<0.050		ug	
		Benzo(a)fluorene	2011/06/07	<0.10		ug	
		Benzo(a)pyrene	2011/06/07	<0.050		ug	
		Benzo(b)fluoranthene	2011/06/07	<0.050		ug	
		Benzo(b)fluorene	2011/06/07	<0.10		ug	
		Benzo(e)pyrene	2011/06/07	<0.10		ug	
		Benzo(g,h,i)perylene	2011/06/07	<0.050		ug	
		Benzo(k)fluoranthene	2011/06/07	<0.050		ug	
		Biphenyl	2011/06/07	<0.10		ug	
		Chrysene	2011/06/07	<0.050		ug	
		Coronene	2011/06/07	<0.10		ug	
		Dibenz(a,h)anthracene	2011/06/07	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/06/07	<0.20		ug	
		Fluoranthene	2011/06/07	<0.050		ug	
		Fluorene	2011/06/07	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/06/07	<0.050		ug	
		m-Terphenyl	2011/06/07	<0.10		ug	
		Naphthalene	2011/06/07	<0.072		ug	
		o-Terphenyl	2011/06/07	<0.10		ug	
		Perylene	2011/06/07	<0.10		ug	
		Phenanthrene	2011/06/07	<0.050		ug	
		p-Terphenyl	2011/06/07	<0.10		ug	
		Pyrene	2011/06/07	<0.050		ug	
		Quinoline	2011/06/07	<0.40		ug	
		Tetralin	2011/06/07	<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
May 2011

Prepared By:



June 22, 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: May 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 – May 2011

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.05	1	VAR	VAR	VAR	VAR	0.7	22	99.9
H2S (PPB)	10	3	0	0	0.05	1	VAR	VAR	VAR	VAR	0.7	26	85.8
THC (PPM)	-	-	-	-	2.10	4.2	18	4	7	101(E)	2.2	VAR	99.9
OZONE (PPB)	82	-	0	-	41.2	59	21	0	5.7	305(WNW)	49.3	31	100.0
NOx (PPB)	-	-	-	-	1.25	6	18, 19	3, 20	14.1, 2.3	33(NNE), 333(NNW)	2.1	18	99.9
NO (PPB)	-	-	-	-	0.10	1	VAR	VAR	VAR	VAR	0.3	2	99.9
NO2 (PPB)	212	106	0	0	1.15	6	19	3	11.9	312(NW)	2.0	19	99.9
PM2.5 (ug/m3)	-	30	-	0	6.68	29.3	27	18	9.2	8(N)	15.2	27	99.7
TEMPERATURE (DEGREE C)	-	-	-	-	12.75	26.4	20	11	0.9	194(SSW)	20.0	20	100.0
BP (MILLIBAR)	-	-	-	-	932	950	13, 14	VAR	VAR	VAR	947.4	13, 14	100.0
RH (%)	-	-	-	-	45.23	92	7	7	9.1	277(W)	77.2	7	100.0
PRECIPITATION (MM)	-	-	-	-	0.01	2.3	26	14	5.3	276(W)	2.3	26	100.0
VECTOR WS (KPH)	-	-	-	-	10.83	24.4	15	12	-	100(E)	17.8	12	100.0
VECTOR WD (DEGREES)	-	-	-	-	129(SE)	-	-	-	-	-	-	-	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

The monthly calibration was performed on May 10th. The inlet filter was changed before the monthly calibration was started. The analyzer spanned high on May 26th. The as found points check was performed on May 28th, and the result was good. The issue was likely because the pump for the sample flow needed to be rebuilt. The pump was rebuilt on May 30th following a post-repair calibration. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

The monthly calibration was performed on May 9th. The inlet filter was changed before the monthly calibration was started. The analyzer spanned low on May 21st. The as found points check was performed on May 24th, and the result was good. The issue was likely due to a loose signal wire. Data was invalidated back to the last validate daily calibration, which was May 20th. 64 hours of data were invalidated. The total operational time for this month was 85.8%. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

Analyzer make / model –TECO 51C, S/N: 77021-384

No operational issue was observed 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. One hour of the maximum concentration was invalidated as the analyzer spiked for unknown reason; reading of 115 ppb on May 10th at 06:00. 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 May 10th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Two hours of data were invalidated as the data were above –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 the WS maximum reading was invalidated as the reading went above the full scale on May 6th at 17:00.

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 May 10th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Ninety-eight hours of AQI values recorded in May 2011 were in the Fair range, and they were all due to ozone. Others were within the Good range, and they were all due to ozone as well. The highest hourly concentration of Ozone was 59 ppb and an AQI value of 33, on May 21st, hour of 0. The highest AQI valued for PM2.5 was 24 on May 20th, hour of 7.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

MAY 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	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		
1	20	19	19	18	18	18	-	18	19	21	22	23	23	23	24	24	24	24	24	23	23	23	23	23	23	-	22	24
	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	NA	O3	O3
2	21	19	18	17	17	16	16	17	19	21	24	25	25	25	25	25	25	26	26	26	25	24	-	23	23	26	26	
	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	O3	O3
3	21	20	18	17	17	16	15	15	16	19	20	20	18	19	21	22	20	19	19	19	-	20	19	19	22	22	22	
	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	O3
4	19	19	19	19	18	17	15	15	16	17	20	21	22	22	22	21	21	21	21	-	21	21	20	20	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	O3
5	19	18	18	20	-	20	19	21	22	23	25	28	27	28	28	28	28	28	28	-	27	28	25	25	25	28	28	
	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3
6	24	22	22	21	20	19	19	20	21	23	23	24	24	24	24	22	22	-	21	21	22	22	22	21	18	24	24	
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7	18	17	16	15	14	15	15	15	13	14	13	14	16	19	19	20	-	19	17	15	13	12	11	10	20	20	20	
	O3	O3	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
8	11	11	11	10	9	9	10	12	13	15	16	17	17	18	19	-	21	21	21	21	21	18	19	18	17	21	21	
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9	17	17	16	15	14	13	12	14	15	19	-	-	-	-	-	-	23	23	22	21	21	20	20	19	23	23	23	
	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	NA	NA	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
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12	19	18	18	17	16	16	16	17	18	20	21	-	22	23	24	24	24	24	23	21	20	21	22	20	18	24	24	
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17	22	23	21	20	19	18	-	16	19	21	22	23	23	24	24	25	26	28	27	26	25	23	22	21	28	28	28	
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19	14	15	13	12	-	13	14	15	20	22	30	31	32	32	32	32	32	32	31	29	24	24	24	22	21	32	32	
	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	O3	O3
20	21	21	21	-	20	19	22	24	21	23	25	27	28	28	28	29	30	30	31	28	27	29	30	32	32	32	32	
	O3	O3	O3	NA	O3	O3	PM2	PM2	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
21	33	32	-	22	18	16	15	15	17	20	22	26	25	24	24	24	24	25	24	22	20	20	21	21	33	33	33	
	O3	O3	NA	O3	O3	O3	O3	PM2	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3
22	19	-	18	18	19	20	22	14	13	16	19	18	19	18	19	18	16	15	13	13	11	9	9	9	22	22	22	
	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	O3
23	-	12	13	15	16	16	16	17	17	17	17	17	17	18	18	19	20	20	21	21	19	18	18	16	-	21	21	
	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	
24	16	18	19	19	19	18	18	19	20	21	22	23	25	25	25	25	25	26	26	25	23	22	22	-	20	26	26	
	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	NA	O3	O3
25	19	19	19	18	18	17	18	18	21	23	23	24	24	24	24	24	24	24	23	23	24	24	-	24	23	24	24	
	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	O3	
26	22	22	20	17	17	18	18	20	21	22	22	24	25	26	25	25	25	25	25	25	24	-	22	20	19	26	26	
	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	
27	19	19	17	17	16	15	17	20	21	25	28	29	29	29	29	28	28	28	28	-	28	26	24	24	29	29		
	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	
28	24	23	22	21	20	19	18	18	-	23	23	24	24	24	24	24	24	25	-	23	22	20	19	20	25	25		
	O3	O3	O3	O3	O3	O3	O3	O3	NA	NA	O3	O3	O3	O3	O3	O3	O3	O3	NA	O3	O3	O3	O3	O3	O3	O3	O3	
29	20	21	20	18	16	14	13	14	17	20	24	27	28	27	27	27	27	-	26	25	24	22	20	19	28	28		
	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	O3	O3	
30	18	18	17	17	17	17	17	19	21	21	24	-	-	-	-	-	28	27	26	25	24	23	24	24	28	28		
	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	NA	NA	NA	NA	NA	NA	NA	O3	O3	O3	O3	O3	O3	O3	O3	O3	O3	
31	24	22	21	21	20	20	20	19	23	28	30	32	32	32	-	31	31	31	29	28	29	27	27	32	32	32		
	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	
PEAK	33	32	22	22	20	20	22	24	22	25	30	31	32	32	32	32	32	32	31	31	29	28	29	30	32			

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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	
DAY	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	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	0	0	0	0	0.0	24
2	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	1	1	1	1	0	0	1	0.4	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.0	24
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16	0	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	24
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23
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	24
HOURLY MAX	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0		
HOURLY AVG	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	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	NA - NOT APPLICABLE

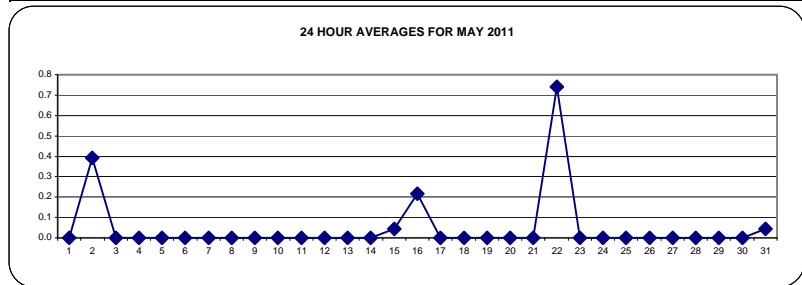
OBJECTIVE LIMIT:

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

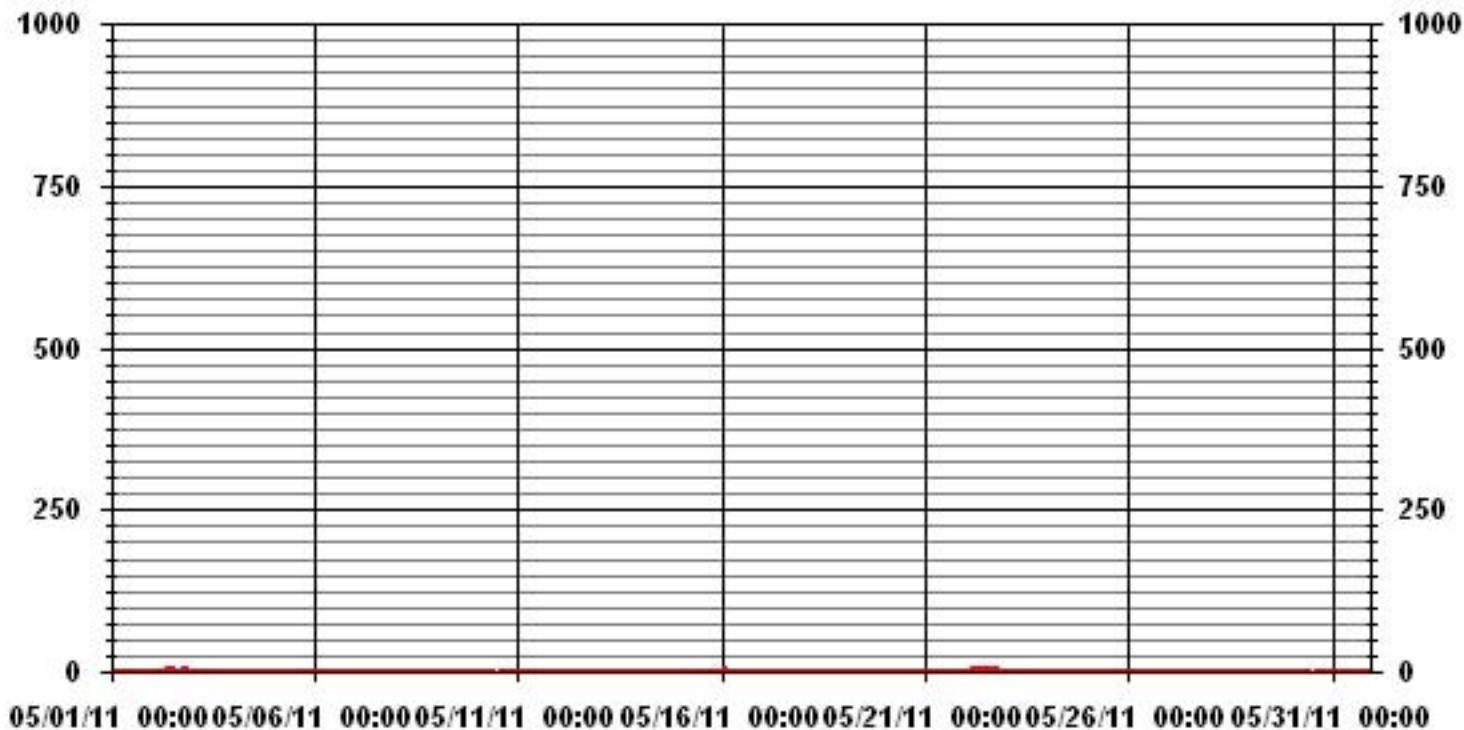
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	33
MAXIMUM 1-HR AVERAGE:	1 PPB @ HOUR(S) VAR ON DAY(S) VAR
MAXIMUM 24-HR AVERAGE:	0.7 PPB ON DAY(S) 22
IZS CALIBRATION TIME:	30 HRS OPERATIONAL TIME: 743 HRS
MONTHLY CALIBRATION TIME:	11 HRS AMD OPERATION UPTIME: 99.9 %
STANDARD DEVIATION:	0.21 MONTHLY AVERAGE: 0.05 PPB

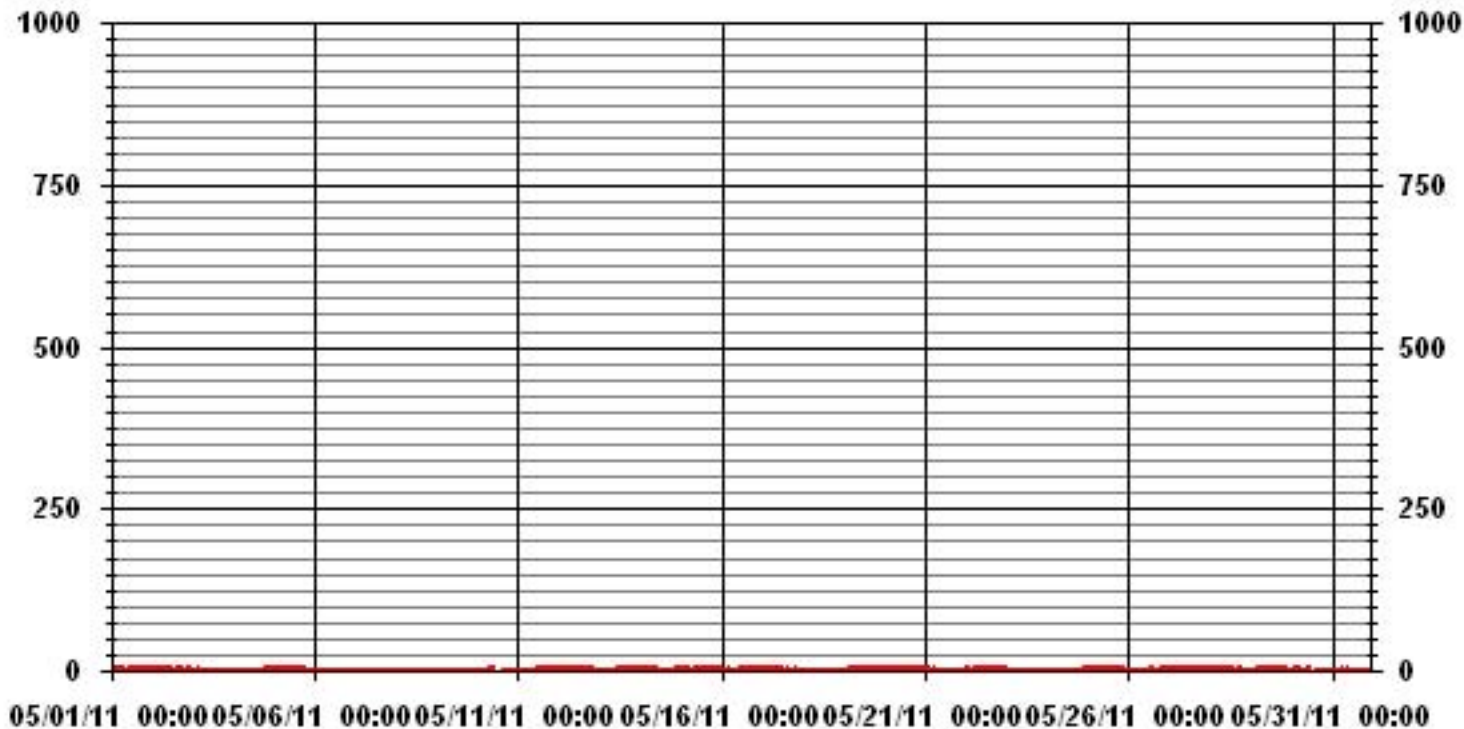
24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



01 Hour Averages



— LICA31 SO2MAX PPB

LICA31
SO2_ / WDR Joint Frequency Distribution (Percent)

May 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	3.70	3.27	7.40	7.40	9.54	8.26	3.56	6.26	6.12	5.12	4.55	6.55	6.26	9.11	7.97	4.84	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.70	3.27	7.40	7.40	9.54	8.26	3.56	6.26	6.12	5.12	4.55	6.55	6.26	9.11	7.97	4.84	

Calm : .00 %

Total # Operational Hours : 702

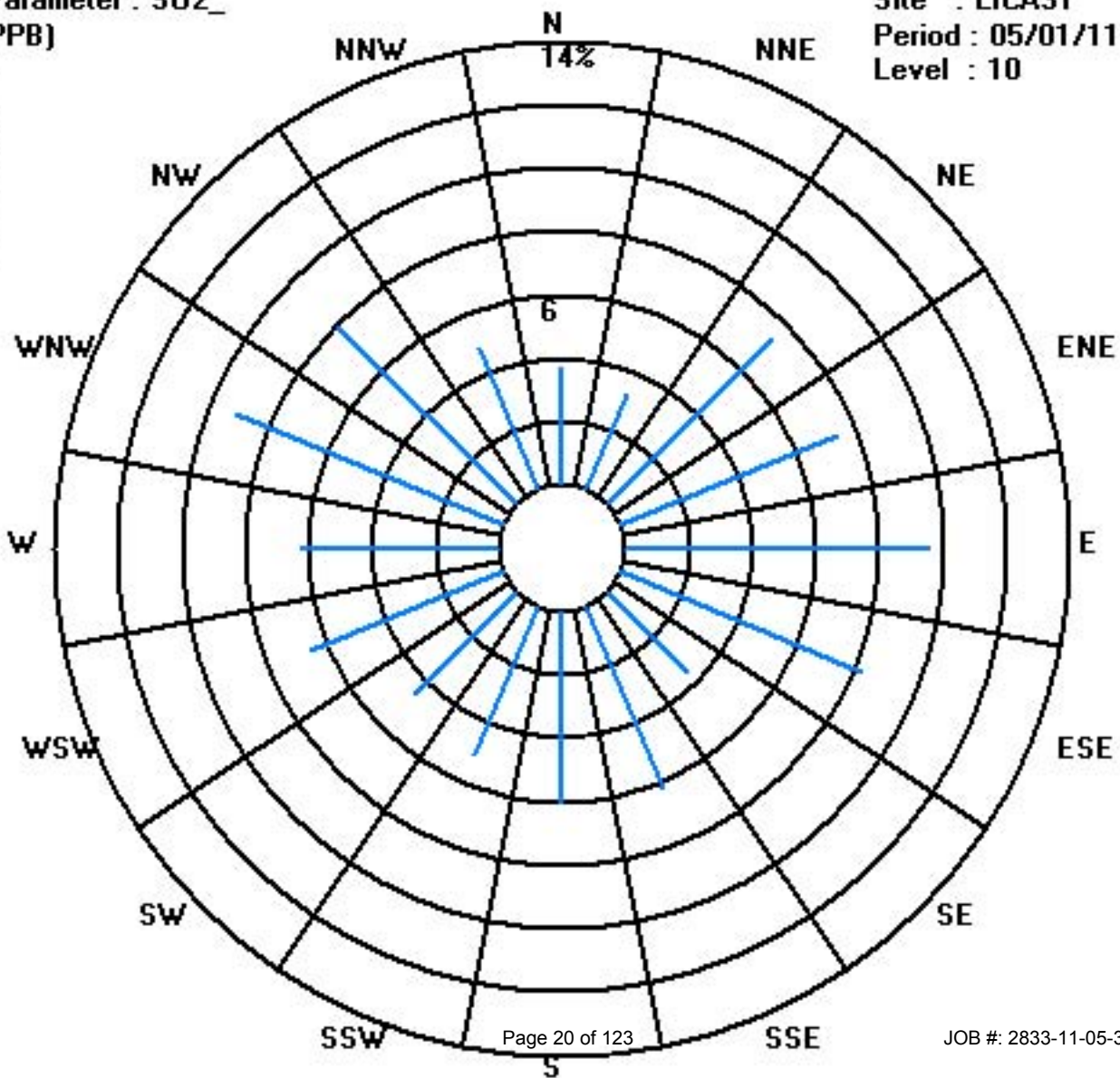
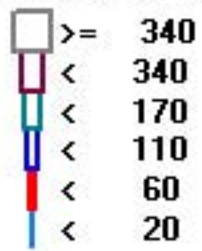
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	26	23	52	52	67	58	25	44	43	36	32	46	44	64	56	34	702
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	26	23	52	52	67	58	25	44	43	36	32	46	44	64	56	34	

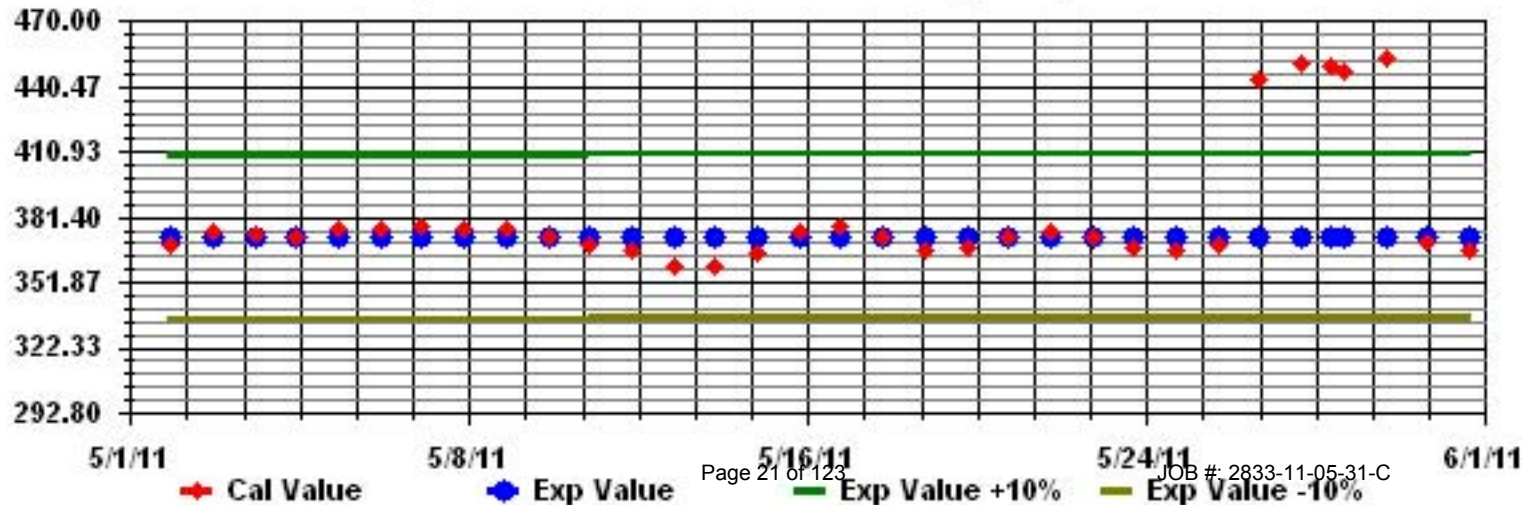
Calm : .00 %

Total # Operational Hours : 702

Class Limits (PPB)

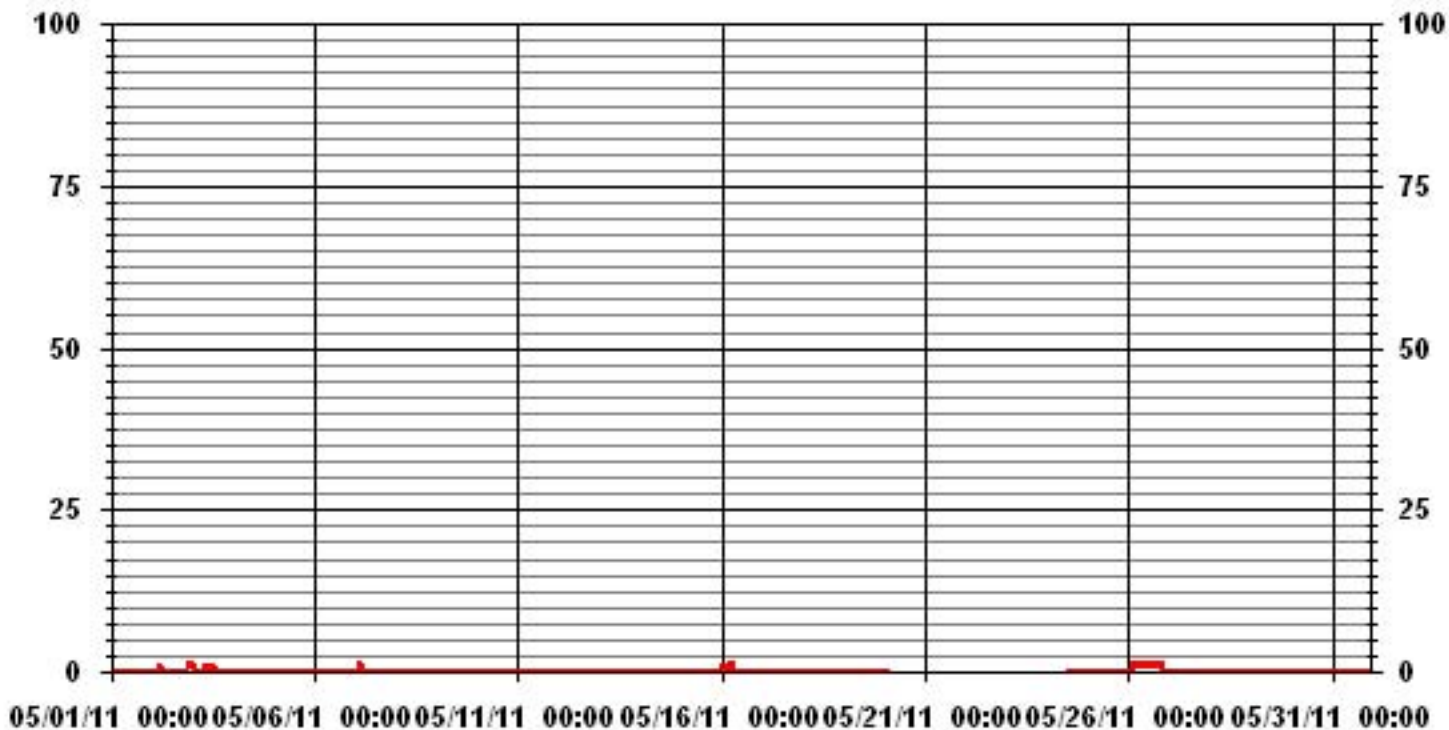


Calibration Graph for Site: LICA31 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

May 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	3.96	3.13	6.93	7.75	10.23	6.10	3.96	7.26	7.42	5.28	5.61	5.61	5.77	8.74	7.42	4.78	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.96	3.13	6.93	7.75	10.23	6.10	3.96	7.26	7.42	5.28	5.61	5.61	5.77	8.74	7.42	4.78	

Calm : .00 %

Total # Operational Hours : 606

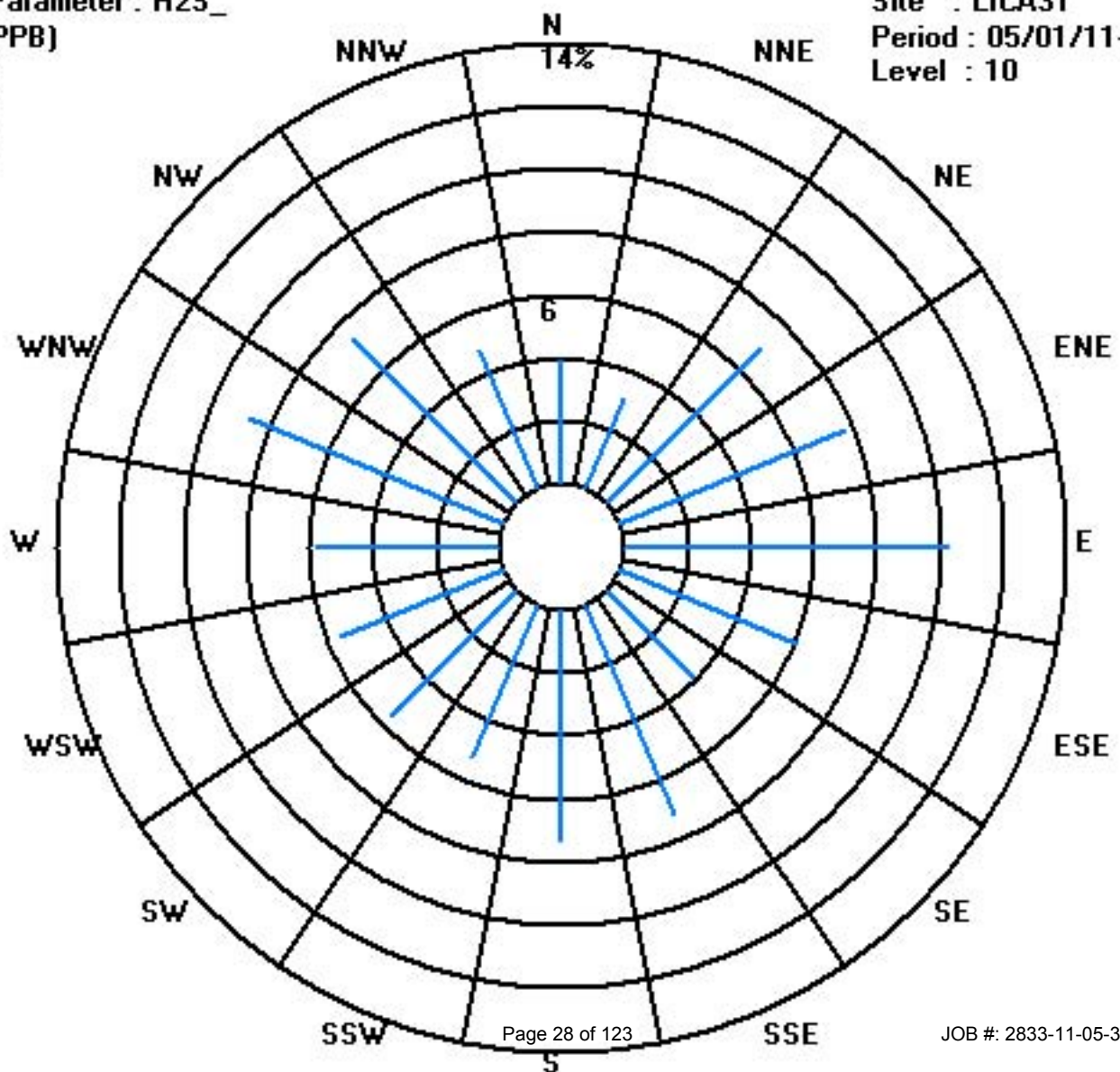
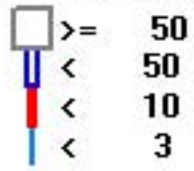
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	24	19	42	47	62	37	24	44	45	32	34	34	35	53	45	29	606
< 10																	
< 50																	
>= 50																	
Totals	24	19	42	47	62	37	24	44	45	32	34	34	35	53	45	29	

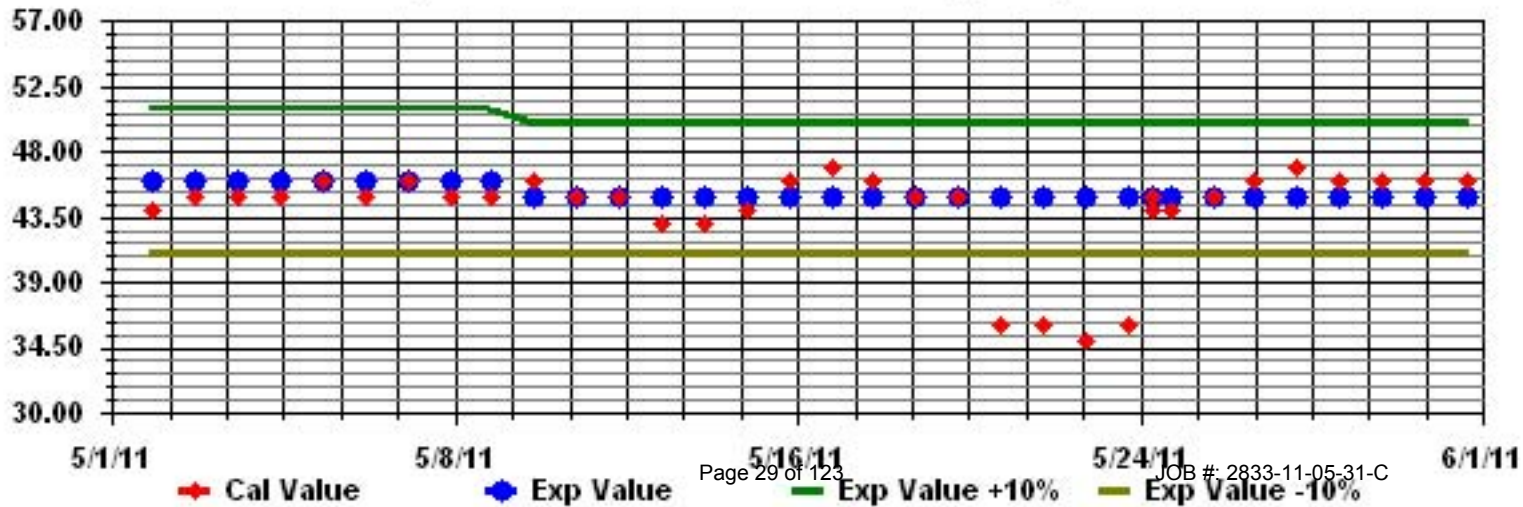
Calm : .00 %

Total # Operational Hours : 606

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST.LINA

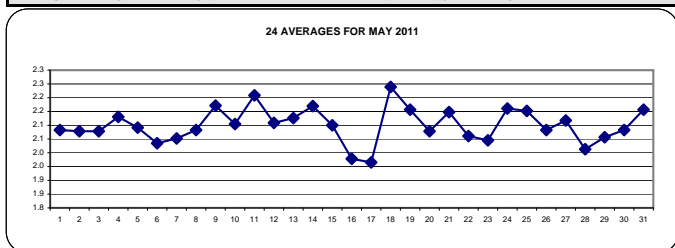
MAY 2011

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						
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		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	24			
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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.2	24			
3		2.1	2.1	2	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	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2	2	2.1	2.2	24			
4		2.2	2.2	2.1	2.1	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.6	24		
5		2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.8	2.1	2.4			
6		2	2.1	2.1	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	2.1	2.1	2.0	24		
7		2.1	2.2	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.1	24		
8		2.1	2.1	2.1	2.1	2.3	2.3	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.3	2.1	24		
9		2.1	2.1	2.2	2.2	2.4	2.5	2.4	2.3	2.3	2.1	2.1	2.1	2.1	C	C	C	2	2	2	2	2.1	2.1	2.1	2.1	2.2	2.2	2.5	2.2	24			
10		2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.1	23		
11		2.1	2.1	2.1	2.2	2.6	2.7	2.6	2.4	2.4	2.3	2.2	2.2	2.2	IZS	2.1	2.1	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.2	24		
12		2.2	2.2	2.2	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	24	
13		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	2.2	2.2	2.3	2.3	2.3	2.3	2.1	24		
14		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	2.1	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	2.2	24		
15		2.2	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.4	2.1	24	
16		2.1	2	2	2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24	
17		1.9	1.9	1.9	1.9	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	2.2	2.0	24
18		2.1	2.5	2.1	2.2	4.2	IZS	2.2	2.2	2.3	2.1	2.1	2.1	2	2.1	2.1	2.1	2	2	2	2	2.1	2.3	2.3	2.2	2.2	4.2	2.2	2.2	2.4	24		
19		2.2	2.2	2.4	2.5	IZS	2.4	2.3	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2	2	2	2.1	2.5	2.2	2.4			
20		2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2.1	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	2.4		
21		2.1	2	IZS	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.2	2.1	2	2	2	2	2.1	2.1	2.1	2	2	2	2	2	2	2.1	2.1	2.4	2.1	24		
22		2.1	IZS	2.3	2.1	2.1	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	2.3	2.1	2.4	24		
23		IZS	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.4			
24		2.6	2.2	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.6	IZS	2.2	2.6	2.2	2.4				
25		2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	2.4			
26		2.1	2.1	2.1	2.2	2.4	2.3	2.3	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.4	2.1	24		
27		2.1	2.3	2.4	2.5	2.5	2.5	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.5	2.1	2.4			
28		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	2.1	2.1	2.0	24		
29		2.1	2	2	2.1	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.1	2.1	24		
30		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.4	24		
31		2.2	2.3	2.1	2.2	2.2	2.3	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	2.4			
HOURLY MAX		2.6	2.5	2.4	2.5	4.2	2.7	2.6	2.4	2.4	2.4	2.2	2.2	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.8	2.6	2.6	2.3	2.3							
HOURLY AVG		2.1	2.1	2.1	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1							

STATUS FLAG CODES

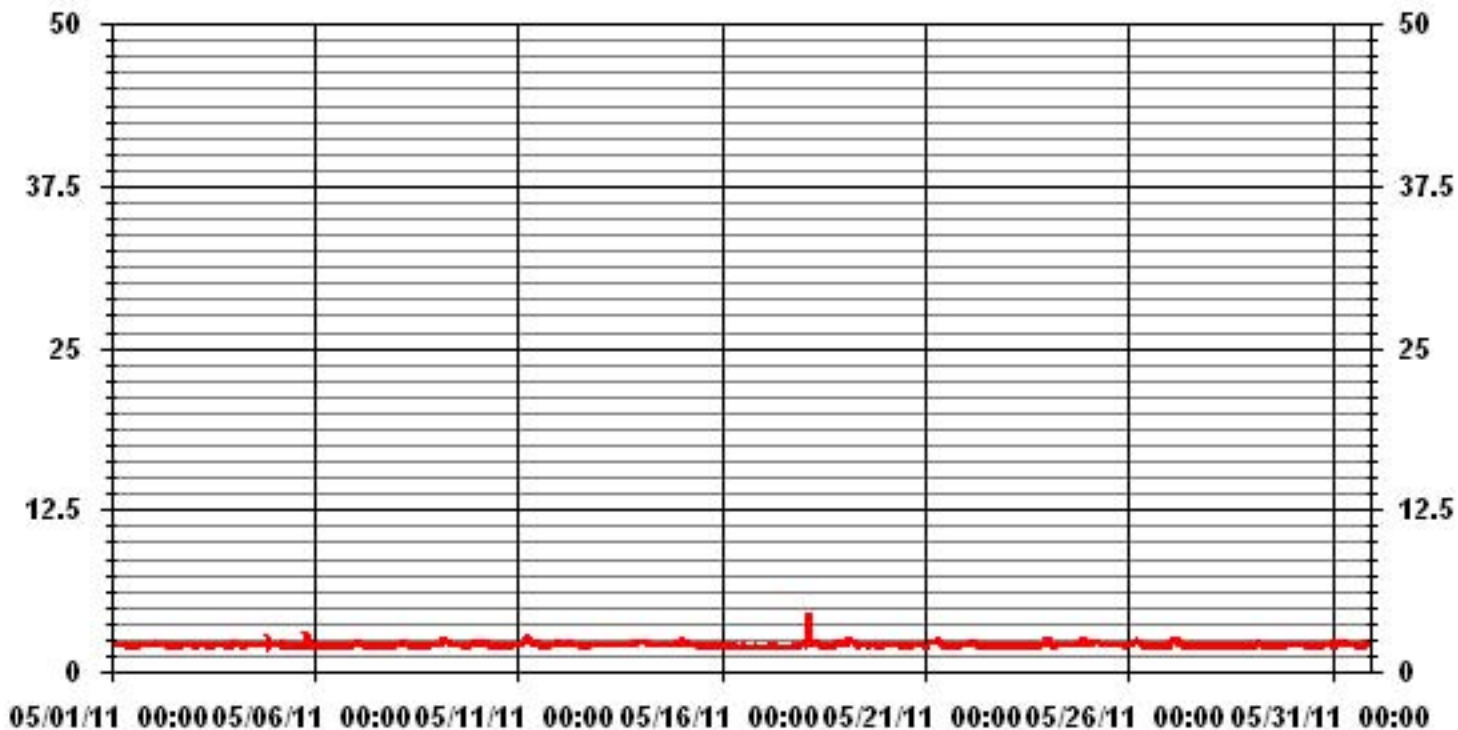
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	709
MAXIMUM 1-HR AVERAGE:	4.2 PPM @ HOUR(S) 4 ON DAY(S) 18
MAXIMUM 24-HR AVERAGE:	2.2 PPM ON DAY(S) VAR VAR
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	3 HRS
STANDARD DEVIATION:	0.14
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	2.10 PPM

01 Hour Averages



— LICA31 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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		
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		2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24
2		2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	24
3		2.1	2.1	2.1	2.1	2.4	2.2	2.1	2.1	2.3	2.6	2.5	2.3	2.5	2.3	2.6	2.4	3	2.6	3.1	3.5	2.2	2.2	2.2	2.2	2.2	2.3	2.2	24
4		3.1	3.4	2.7	2.6	2.9	2.5	2.2	2.4	2.6	2.3	2.4	2.6	2.6	2.7	2.6	2.8	2.7	3.3	4.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
5		2.2	2.1	3.7	3	4.3	3.6	3	3	2.1	2.4	2.8	2.7	3.4	2.1	2.8	2.4	2.6	3.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
6		2.1	2.2	3.3	3	3.2	2.9	3.4	2.9	3	2	2.5	2.9	3.4	2.5	2.6	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
7		2.1	2.3	2.3	2.4	2.4	2.3	2.3	2.2	2.1	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
8		2.7	2.4	2.2	2.2	2.3	2.3	2.4	2.3	2.2	2.2	2.1	2.2	2.1	2.2	2.4	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
9		2.2	2.2	2.2	2.3	2.6	3.5	2.9	2.4	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	2.2	2.2	2.2	2.2	24
10		2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	24
11		2.1	2.1	2.2	2.6	2.8	2.8	2.7	2.7	2.4	2.4	2.4	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
12		2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
13		2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
14		2.4	2.3	2.4	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
15		2.3	2.4	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	24
16		2.1	2.1	2.1	2	2.1	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	24
17		1.9	1.9	1.9	2	2	2.1	2.2	2.2	2.1	2	2	2	2	2	1.9	1.9	2	2	2	2	2	2	2	2	2	2	2	24
18		2.1	13	2.5	6.4	18.3	2.2	6	4.3	3.4	2.9	2.1	2.2	2.3	2.4	2.4	2.2	2.2	2	2.8	3.7	3.5	2.7	2.2	2.2	2.2	2.2	24	
19		2.2	2.3	2.6	2.6	2.4	2.3	2.3	2.5	2.4	2.2	2.3	2.2	2.5	2.5	2.3	2.4	3	2.7	2.6	3.8	2.1	2.1	2.1	2.1	2.1	2.1	24	
20		2.6	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.3	2.2	2.7	2.1	2.5	2.2	2.6	3.1	3.3	2.1	2.3	2.4	3.3	2.3	24	
21		2.6	2.2	2.2	2.4	2.4	2.3	2.5	2.4	2.6	2.8	2.5	2.2	2.1	2.2	2.2	3.3	2.9	3.9	2	2	2.1	4.1	2.1	2.1	4.1	2.5	24	
22		2.3	2.3	4.8	4	5	4.3	6.8	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	2.1	2.1	24	
23		2.2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	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
24		5.1	5	2.1	2.1	2.1	2.4	2.3	2.4	2.3	2.1	2.2	2.2	2.2	2.2	2.6	2.3	2.3	2.3	2.1	2.1	4.4	4.4	2.2	2.2	2.2	2.2	24	
25		7.9	2.2	2.3	2.5	3	2.5	2.6	2.4	2.2	2.2	2.2	2.1	2.1	2.1	2.3	2.2	2.4	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24	
26		2.5	2.3	2.5	2.3	2.5	2.5	2.4	2.4	2.2	2.2	2.2	2.3	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
27		2.2	2.4	2.5	2.8	2.6	3.1	2.8	2.1	2.8	2.2	2.2	2.2	2.2	2.2	2.3	2	2	2	2	2	2	2	2	2	2	2	2	24
28		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		2.5	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.2	3.1	2.6	2.3	3.3	2.7	2.3	2.3	2.3	2.1	2	2	2.1	2.2	2.1	2.1	3.3	2.3	24
30		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	24
31		3.2	5	2.2	2.2	2.8	3.7	3.3	3.1	3.2	2.9	2.6	2.6	3.3	2.7	3.1	2.2	2.2	2.5	2.5	3.7	3.9	3	2.1	3	5	3.0	24	
HOURLY MAX		8	13	5	6	18	4	7	6	4	3	3	3	3	3	3	3	3	4	4	13	5	4	3	5				
HOURLY AVG		2.6	2.8	2.4	2.5	3.1	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.3	2.2	2.3	2.2	2.2	2.3	2.3	2.7	2.7	2.4	2.2	2.4				

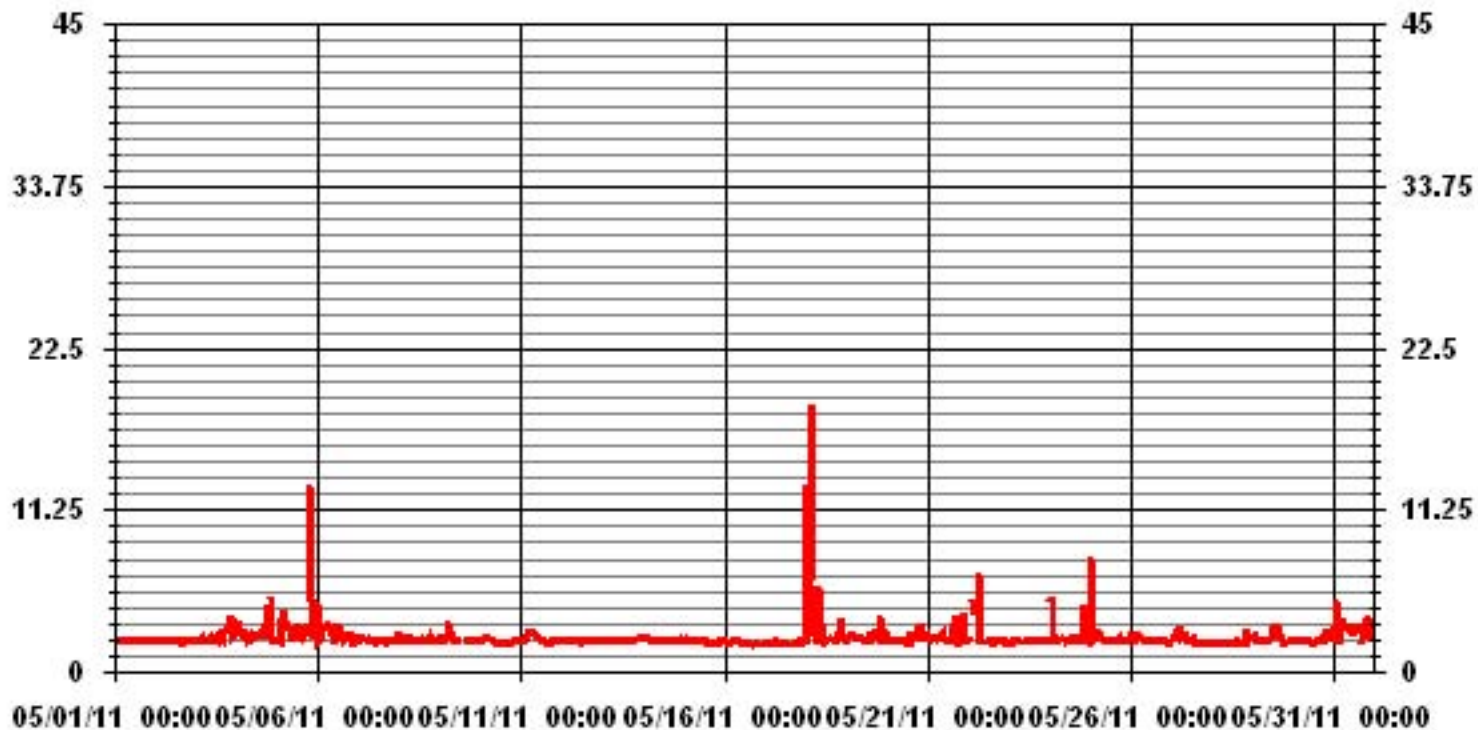
STATUS FLAG CODES

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
BB - BELOW BACKGROUND OF 1.5 PPM	

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM INSTANTANEOUS VALUE:	18.3	PPM	@ HOUR(S)	4	ON DAY(S)	18
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	1.01					

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

May 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	3.66	3.24	7.33	7.33	9.30	8.18	3.38	6.20	6.48	5.21	4.93	6.48	6.06	9.02	7.89	5.07	99.85
< 10.0	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.66	3.24	7.33	7.33	9.44	8.18	3.38	6.20	6.48	5.21	4.93	6.48	6.06	9.02	7.89	5.07	

Calm : .00 %

Total # Operational Hours : 709

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	26	23	52	52	66	58	24	44	46	37	35	46	43	64	56	36	708
< 10.0					1												1
< 50.0																	
>= 50.0																	
Totals	26	23	52	52	67	58	24	44	46	37	35	46	43	64	56	36	

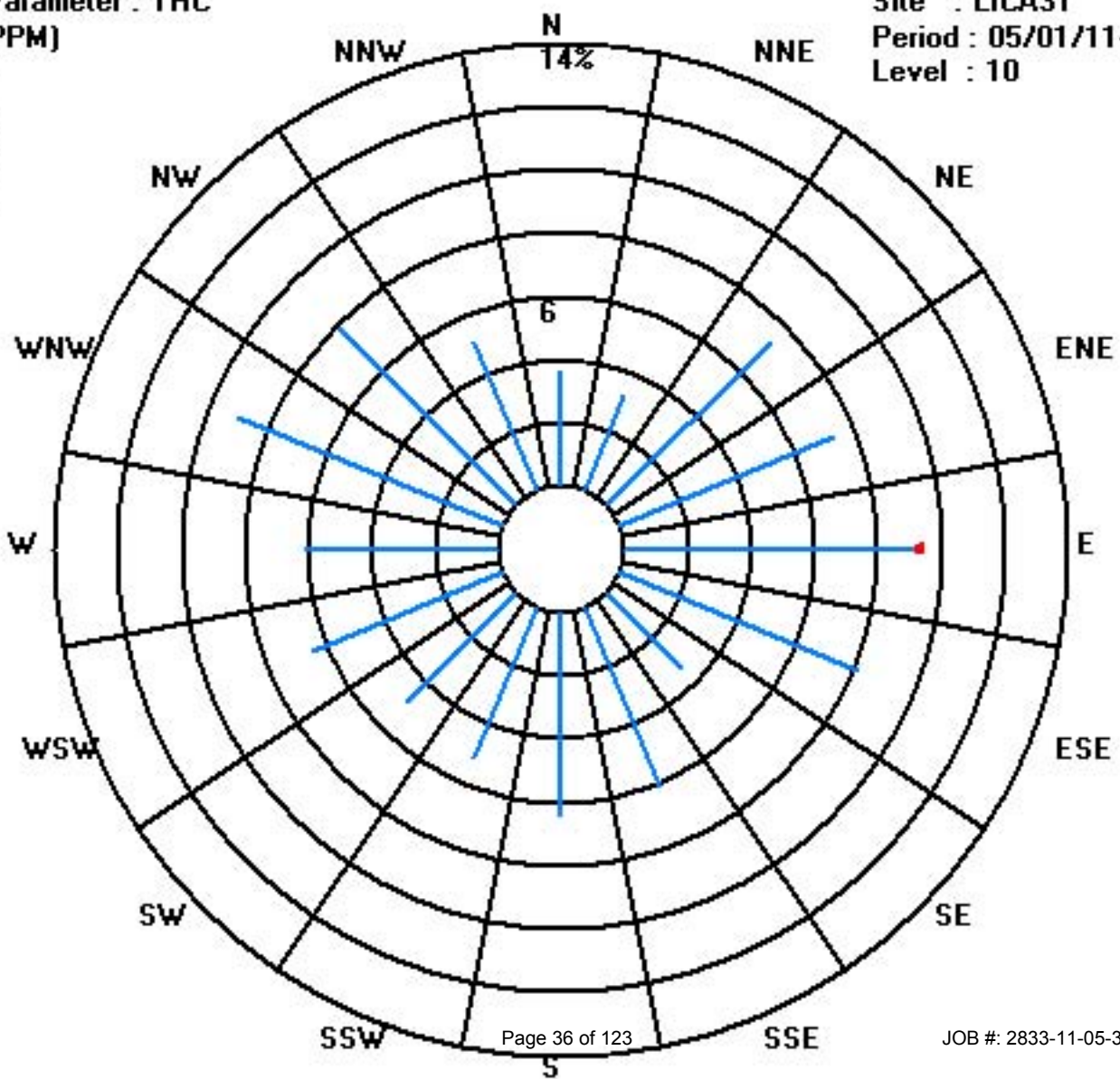
Calm : .00 %

Total # Operational Hours : 709

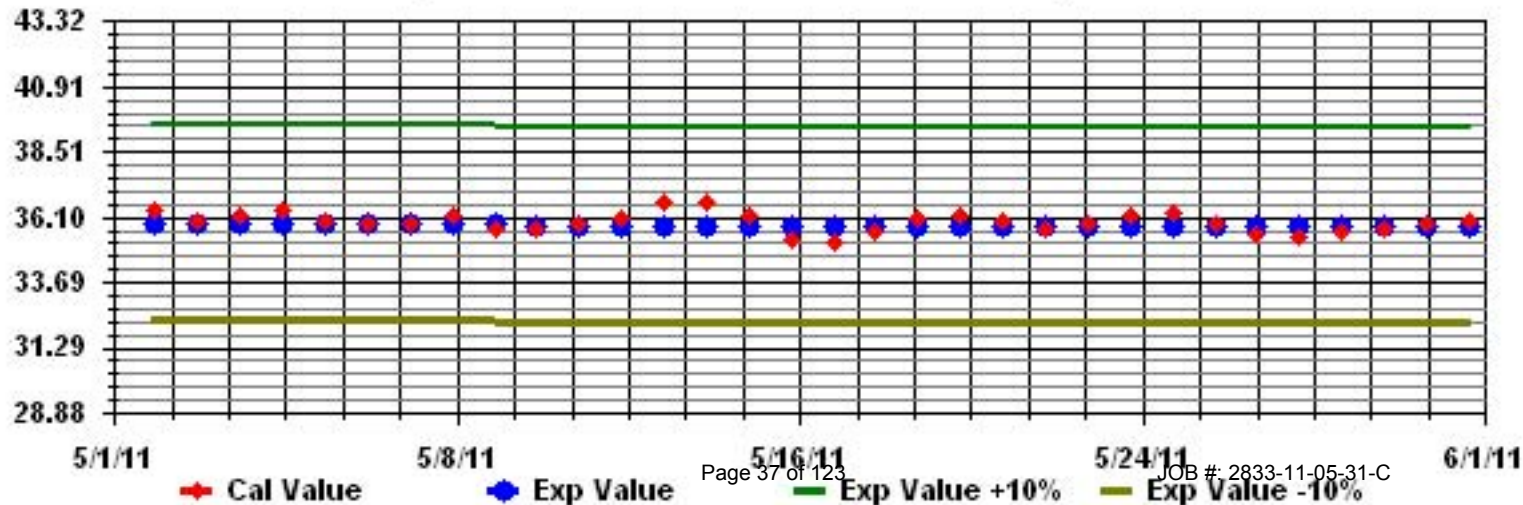
Class Limits (PPM)

Period : 05/01/11-05/31/11

Level : 10



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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	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		39	38	37	36	35	36	34	36	37	41	44	46	45	46	47	47	47	47	45	45	45	45	45	45	45	45	47	41.8	24
2		42	38	36	34	33	31	31	34	38	41	47	49	49	50	50	50	50	51	51	49	47	47	46	45	45	51	43.1	24	
3		41	39	36	34	33	31	30	30	32	37	39	40	35	37	41	43	39	37	37	37	37	39	37	37	43	36.6	24		
4		37	37	38	38	35	33	30	30	32	34	39	42	43	43	42	42	41	41	41	41	41	40	39	43	38.3	24			
5		38	36	35	39	44	39	38	41	43	46	49	53	52	53	54	54	54	53	41	41	41	52	53	50	50	49	54	46.7	24
6		48	43	44	42	40	38	38	39	42	46	46	47	47	47	48	43	44	41	41	41	43	43	42	36	48	43.0	24		
7		36	33	31	30	28	30	29	29	26	27	25	28	32	37	38	39	41	37	34	29	26	24	22	20	39	30.0	24		
8		21	22	22	19	18	18	20	24	26	29	31	33	34	36	37	41	41	42	41	42	41	36	37	35	34	42	30.3	24	
9		34	33	31	30	28	26	24	27	29	37	39	40	40	42	41	45	45	44	44	42	41	40	39	37	45	36.4	24		
10		36	35	34	33	31	31	29	32	35	41	C	C	C	C	C	50	50	49	49	46	45	44	41	38	50	39.4	24		
11		37	35	34	31	25	25	26	30	33	36	41	C	IZS	46	44	46	46	46	46	45	42	40	41	40	46	38.2	24		
12		38	36	35	33	32	32	32	33	35	39	42	IZS	44	45	47	48	47	45	42	40	42	43	39	36	48	39.3	24		
13		34	34	36	34	34	35	35	37	38	39	IZS	45	48	49	50	50	49	52	54	52	49	48	44	42	54	43.0	24		
14		41	42	41	39	37	37	37	39	41	IZS	47	49	51	52	52	53	53	51	51	50	47	44	44	45	53	45.3	24		
15		44	41	39	38	37	37	38	40	IZS	49	49	51	54	56	56	56	55	54	52	50	50	48	44	39	56	46.8	24		
16		38	38	38	38	36	33	33	IZS	36	38	40	41	42	43	44	44	45	45	44	42	39	39	40	42	45	39.9	24		
17		44	46	42	39	37	35	IZS	32	37	41	43	46	46	48	48	49	51	54	52	51	49	45	43	41	54	44.3	24		
18		41	38	37	38	38	IZS	36	36	37	42	46	49	50	52	52	51	49	45	41	38	32	29	29	28	52	40.6	24		
19		27	29	26	24	IZS	25	28	30	39	43	56	57	58	58	58	58	57	55	48	47	47	44	42	58	44.1	24			
20		41	42	42	IZS	40	38	38	38	41	45	49	52	54	54	54	55	56	56	57	53	52	55	56	58	58	49.0	24		
21		59	58	IZS	43	36	32	30	30	33	39	44	51	50	48	47	48	48	49	48	44	40	40	41	41	59	43.4	24		
22		38	IZS	35	36	38	40	43	27	26	31	37	36	36	37	38	36	31	29	25	26	21	17	17	18	43	31.2	24		
23		IZS	24	26	29	31	32	32	33	34	34	34	34	35	36	37	39	40	41	41	38	36	35	32	IZS	41	34.2	24		
24		31	35	37	37	37	35	35	38	39	41	43	45	49	49	49	50	51	51	49	46	44	43	IZS	40	51	42.3	24		
25		37	37	37	35	35	33	36	36	42	45	46	47	48	48	48	47	47	46	46	48	48	48	48	48	48	48	42.9	24	
26		44	43	39	34	34	35	35	39	41	43	44	47	50	51	50	50	50	49	49	47	47	43	39	38	51	43.2	24		
27		38	37	34	33	32	30	34	39	41	49	54	55	55	55	54	53	54	53	41	41	41	48	47	55	45.8	24			
28		47	46	44	42	39	37	35	35	36	41	C	45	45	48	47	47	48	49	49	46	44	40	38	39	49	42.6	24		
29		39	41	40	36	31	28	26	28	34	40	47	52	53	52	52	52	52	41	41	49	47	43	39	37	53	42.1	24		
30		36	35	34	33	33	33	34	37	41	42	47	50	52	54	54	C	53	52	51	50	47	46	47	47	54	43.8	24		
31		47	43	42	42	39	39	39	37	38	45	54	56	58	58	58	IZS	57	57	57	55	54	55	52	52	58	49.3	24		
HOURLY MAX		59	58	44	43	44	40	43	41	43	49	56	57	58	58	58	58	58	57	57	55	54	55	56	58					
HOURLY AVG		39.1	37.8	36.1	35.0	34.2	32.8	32.8	33.9	36.1	40.0	43.6	45.8	46.7	47.7	48.2	48.0	48.4	47.7	46.5	44.8	43.4	41.9	40.6	39.9					

STATUS FLAG CODES

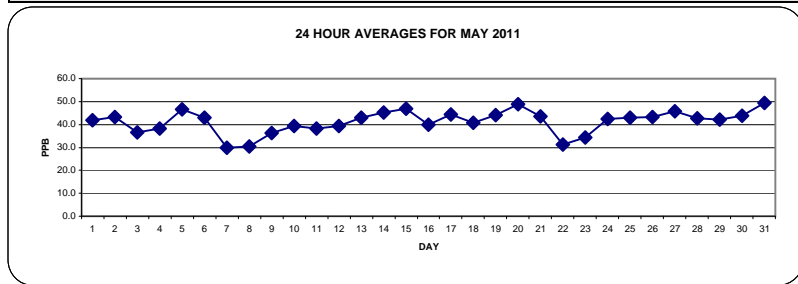
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

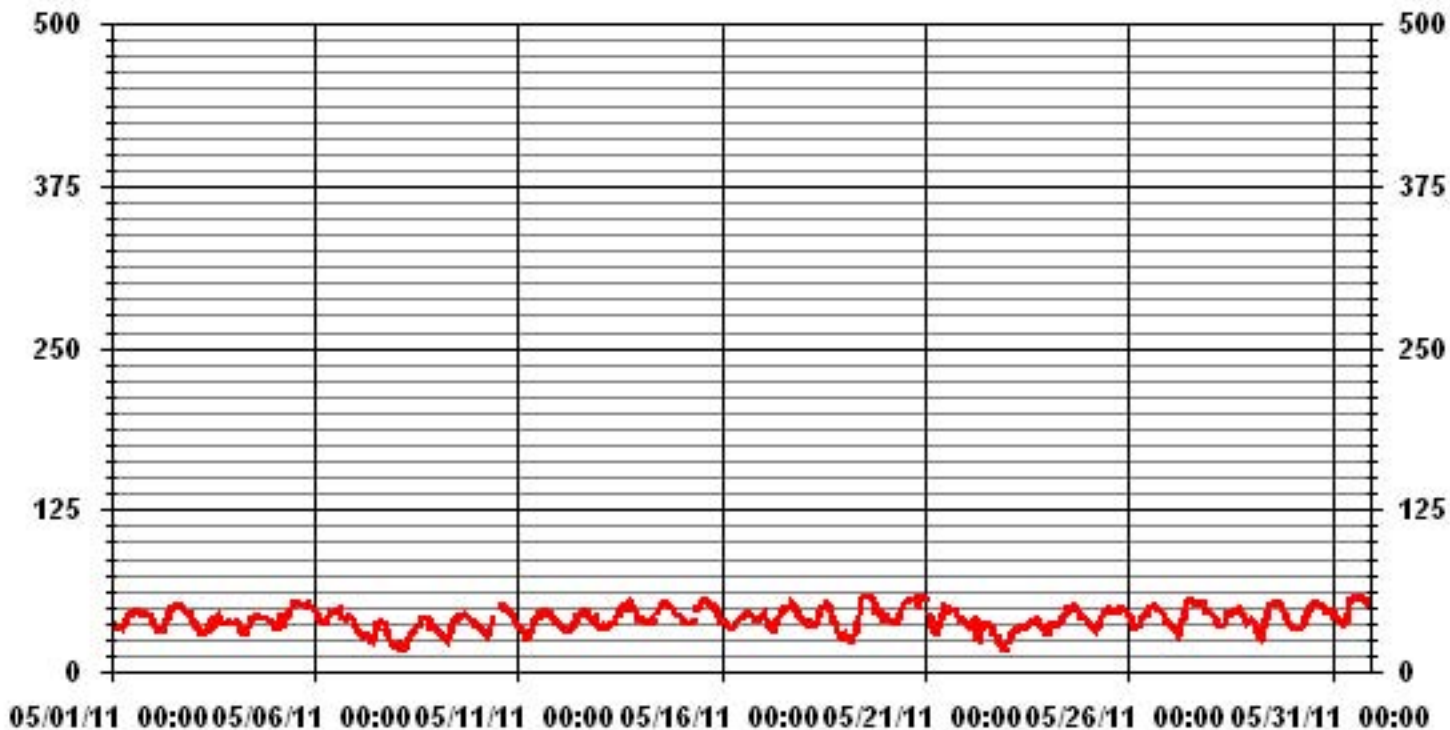
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	707				
MAXIMUM 1-HR AVERAGE:	59	PPB	@ HOUR(S)	0	ON DAY(S) 21
MAXIMUM 24-HR AVERAGE:	49.3	PPB			ON DAY(S) 31
					VAR-VARIOUS
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION	8.26		MONTHLY AVERAGE	41.2	PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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	40	39	38	37	36	36	36	38	39	44	46	46	47	49	49	47	47	48	47	46	46	46	IZS	45	49	43.1	24	
2	44	40	37	36	34	32	33	36	40	43	51	50	51	51	51	51	52	53	50	48	IZS	46	46	53	44.6	24		
3	44	39	38	35	34	32	31	31	34	40	40	40	37	40	43	43	41	38	38	38	IZS	39	38	38	44	37.9	24	
4	38	38	39	39	37	34	32	31	33	36	42	43	44	44	44	44	43	42	42	IZS	41	42	42	40	44	39.6	24	
5	40	37	36	42	46	42	43	43	45	48	52	54	54	54	54	55	55	55	IZS	54	54	53	50	52	55	48.6	24	
6	50	44	44	45	41	39	38	42	45	46	47	48	48	49	48	45	IZS	43	42	44	44	45	38	50	44.5	24		
7	36	36	32	33	31	31	33	32	28	28	27	32	36	38	39	40	IZS	38	37	32	28	25	23	21	40	32.0	24	
8	22	23	23	20	19	19	23	26	28	30	32	34	35	37	38	IZS	42	42	43	42	37	38	37	35	43	31.5	24	
9	35	35	33	32	30	27	27	27	34	39	40	41	41	43	IZS	46	46	46	46	43	41	41	40	38	46	37.9	24	
10	38	36	35	34	32	31	N	34	38	44	C	C	C	C	C	50	51	51	50	47	46	45	42	39	51	41.3	23	
11	38	37	35	33	27	26	29	33	35	38	43	45	IZS	48	45	48	48	46	46	47	44	41	41	40	48	39.7	24	
12	39	38	36	34	33	33	33	34	37	40	44	IZS	45	46	49	49	47	47	44	41	45	44	41	38	49	40.7	24	
13	34	35	37	36	35	35	36	38	38	40	IZS	46	49	49	51	51	51	54	55	54	50	49	47	42	55	44.0	24	
14	42	43	42	40	39	37	37	40	43	IZS	49	50	53	53	53	54	54	53	51	51	49	46	46	46	54	46.6	24	
15	45	42	40	39	37	38	39	42	IZS	50	49	52	56	57	57	56	56	54	51	50	49	46	41	57	48.0	24		
16	39	38	38	39	38	34	34	IZS	37	39	41	42	43	44	44	45	45	45	45	43	41	40	43	43	45	40.9	24	
17	46	46	45	40	38	36	IZS	33	40	42	46	47	47	48	48	49	53	55	53	52	51	48	44	42	55	45.6	24	
18	42	40	38	39	39	IZS	36	37	39	44	48	50	51	53	53	53	50	47	42	40	35	30	30	32	53	42.1	24	
19	32	30	28	25	IZS	27	29	35	42	50	60	60	59	59	59	59	59	59	57	51	49	49	46	44	60	46.4	24	
20	43	44	43	IZS	41	39	39	40	44	47	52	55	55	56	55	56	57	58	58	57	57	56	58	59	59	50.8	24	
21	60	60	IZS	46	39	34	32	33	40	40	48	54	53	49	49	50	49	51	49	47	42	41	42	43	60	45.7	24	
22	41	IZS	38	39	39	44	51	34	31	33	40	38	37	39	41	40	33	31	29	27	24	18	18	20	51	34.1	24	
23	IZS	26	28	30	33	33	33	34	35	35	35	36	37	38	40	41	43	43	40	36	36	34	IZS	43	35.5	24		
24	33	37	38	38	38	37	39	39	41	42	45	46	51	51	50	51	52	53	52	49	44	44	IZS	40	53	43.9	24	
25	39	38	38	36	37	35	37	41	45	47	47	48	49	49	49	49	49	48	47	48	49	IZS	49	47	49	44.4	24	
26	46	44	43	35	36	36	38	41	42	44	46	50	52	52	52	51	51	51	50	49	IZS	45	43	39	52	45.0	24	
27	39	39	36	34	33	32	37	41	46	54	57	58	57	57	57	55	55	56	56	IZS	54	53	49	49	58	48.0	24	
28	48	48	45	43	40	38	36	36	38	43	C	48	48	50	48	49	50	IZS	48	45	42	39	39	50	44.1	24		
29	40	42	42	39	33	30	28	31	39	44	52	53	54	54	54	53	53	IZS	53	50	49	47	41	38	54	44.3	24	
30	36	36	35	33	34	34	36	40	42	44	49	51	54	56	M	C	54	53	53	51	49	48	48	49	56	44.8	23	
31	49	45	43	43	41	41	40	38	41	51	59	58	60	59	59	IZS	58	58	58	56	56	56	56	56	60	51.3	24	
HOURLY MAX	60	60	45	46	46	44	51	43	46	54	60	60	60	59	59	59	59	59	58	57	57	56	58	59				
HOURLY AVG	40.6	39.2	37.4	36.5	35.7	34.1	35.0	36.0	38.6	42.2	46.0	47.4	48.3	49.0	49.2	49.4	49.5	49.2	48.1	46.4	45.0	43.3	42.2	41.3				

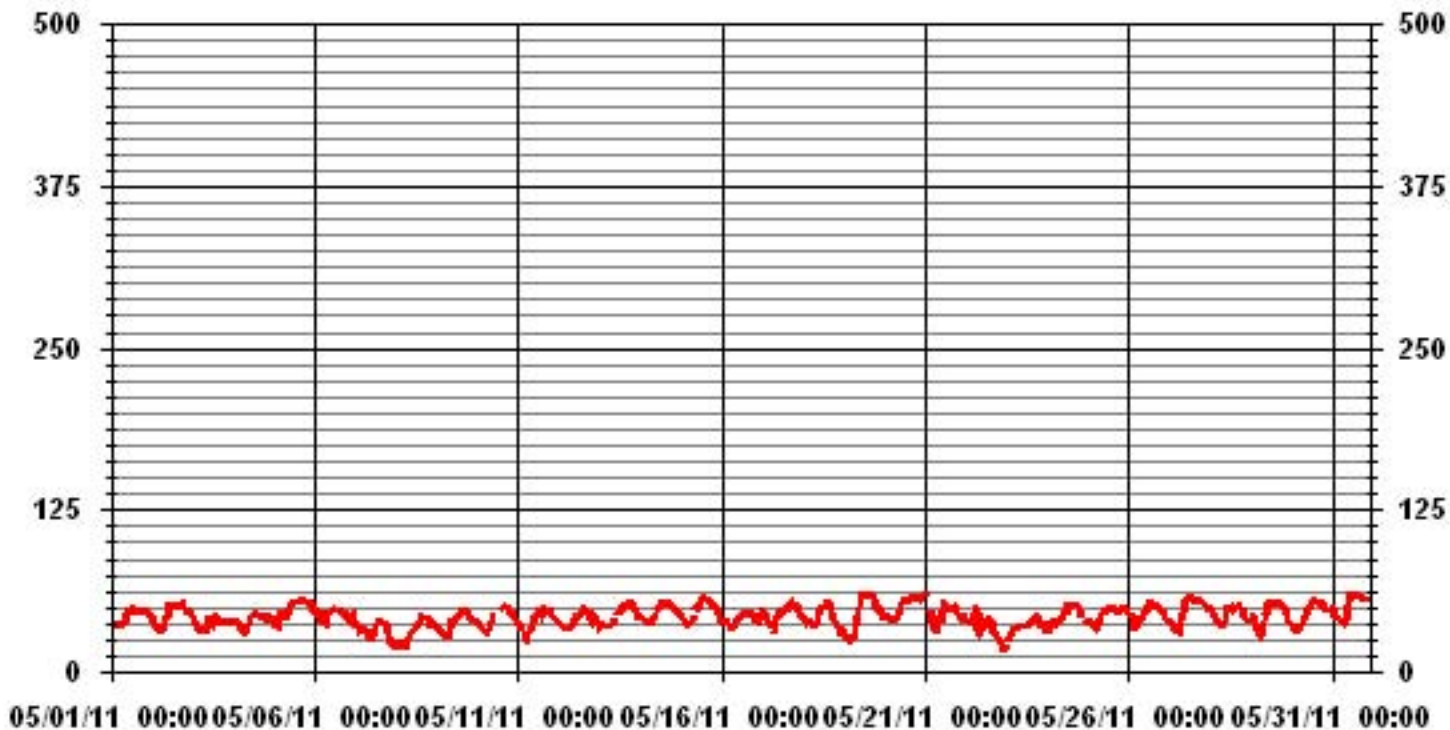
STATUS FLAG CODES

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:	705				
MAXIMUM INSTANTANEOUS VALUE:	60	PPB	@ HOUR(S)	12	ON DAY(S) 31
IZS CALIBRATION TIME:	30	HRS	OPERATIONAL TIME:	742	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION	8.24				

01 Hour Averages



— LICA31 O3MAX PPB

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

May 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	2.82	2.82	6.93	6.22	6.78	6.78	3.11	5.65	5.94	3.81	3.67	4.52	4.52	7.77	7.21	3.96	82.60
< 110	.84	.42	.42	1.13	2.68	1.41	.42	.56	.14	1.41	1.27	1.98	1.69	1.27	.70	.99	17.39
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.67	3.25	7.35	7.35	9.47	8.20	3.53	6.22	6.08	5.23	4.95	6.50	6.22	9.05	7.92	4.95	

Calm : .00 %

Total # Operational Hours : 707

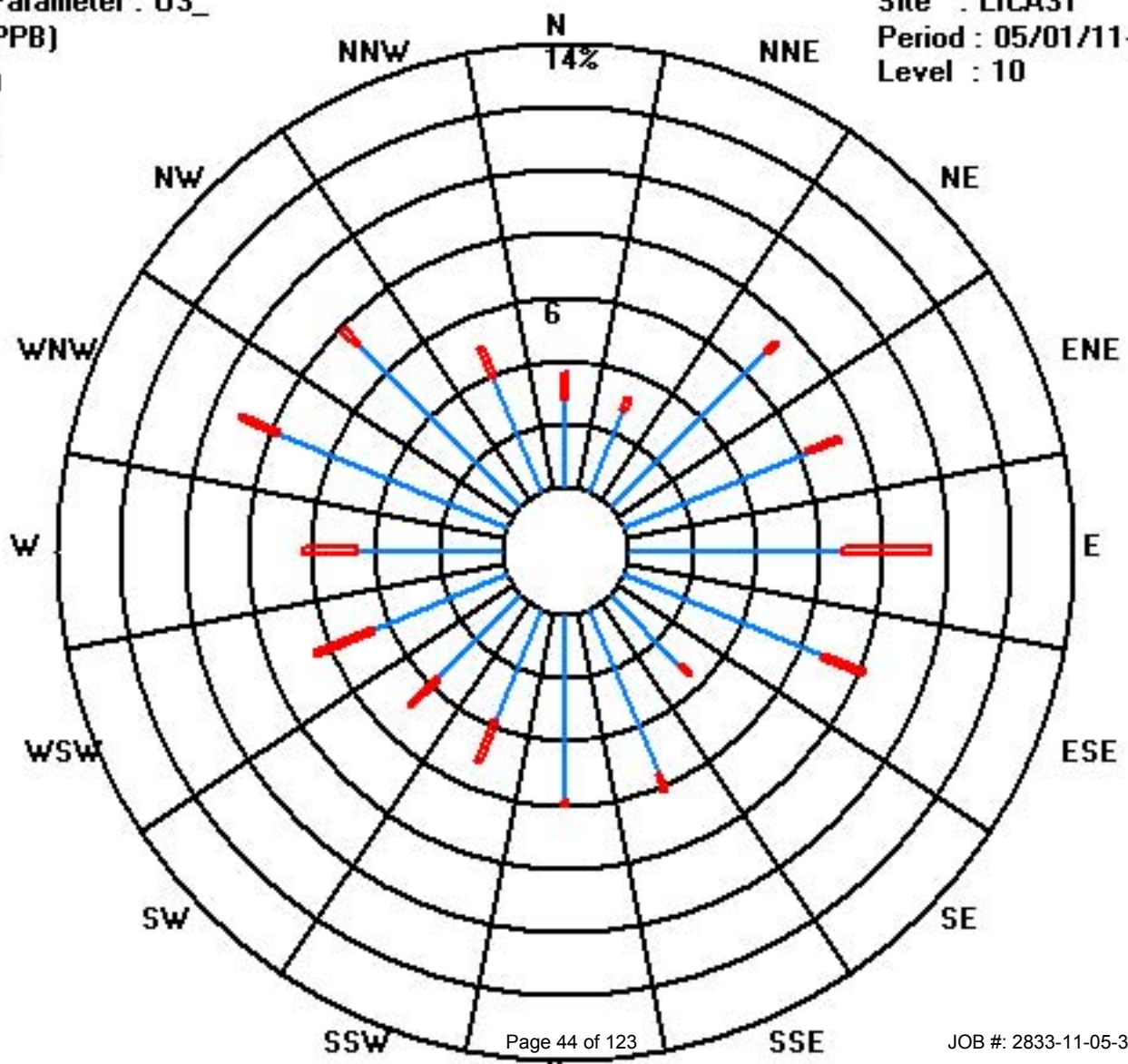
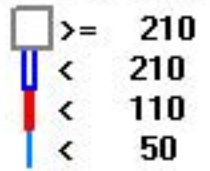
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	20	20	49	44	48	48	22	40	42	27	26	32	32	55	51	28	584
< 110	6	3	3	8	19	10	3	4	1	10	9	14	12	9	5	7	123
< 210																	
>= 210																	
Totals	26	23	52	52	67	58	25	44	43	37	35	46	44	64	56	35	

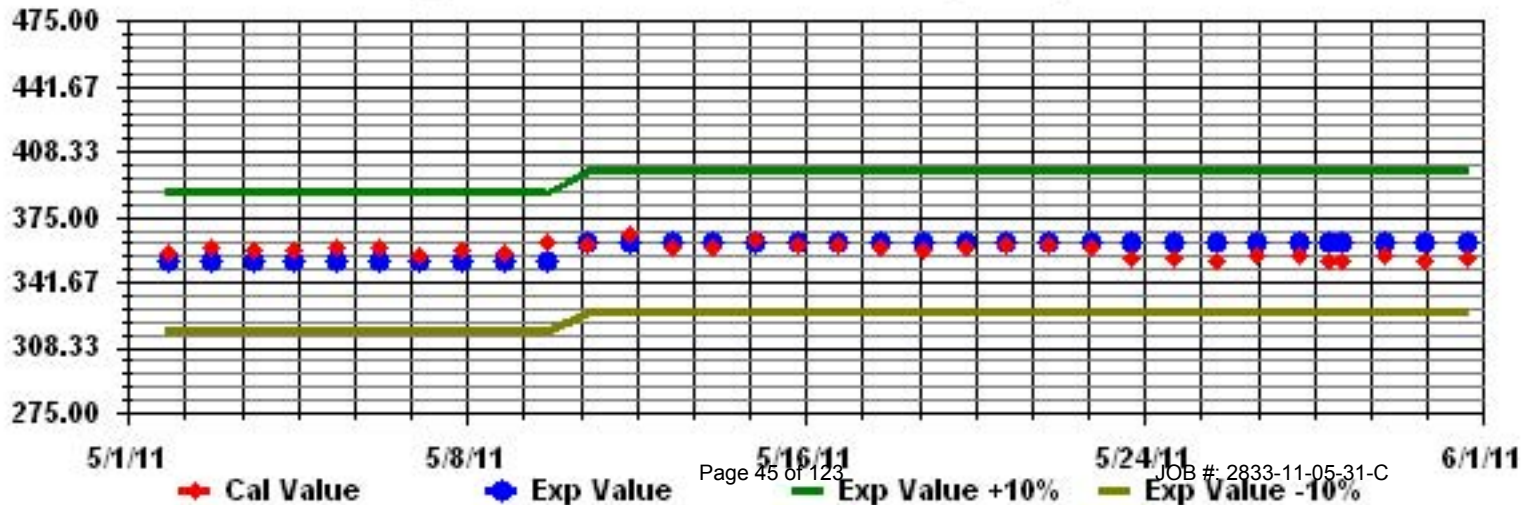
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 2011

NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 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	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	1	IZS	1	1	1	0.6	24	
2	1	2	2	2	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	2	2	IZS	1	1	3	1.6	24	
3	2	2	1	1	1	2	1	1	1	1	1	1	1	0	0	0	0	1	1	1	IZS	0	0	0	2	0.8	24	
4	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	1	1	0.3	24	
5	1	2	2	2	1	1	1	1	1	1	1	0	0	0	0	0	0	1	IZS	1	0	1	1	1	2	0.8	24	
6	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	2	2	0.7	24
7	2	2	3	2	2	1	1	1	1	1	1	1	0	0	0	0	IZS	0	0	1	1	1	1	2	3	1.0	24	
8	1	1	1	2	2	2	1	1	0	0	0	0	0	0	IZS	0	0	0	1	1	1	1	1	1	2	0.7	24	
9	1	1	1	1	2	2	2	1	1	1	C	C	C	C	C	C	0	1	1	1	2	2	2	2	2	1.3	24	
10	2	3	3	2	3	3	3	2	2	2	2	2	2	IZS	M	1	1	1	1	1	1	1	2	1	3	1.9	23	
11	1	1	1	2	3	3	2	2	2	2	1	1	IZS	IZS	0	1	0	0	0	1	1	1	1	1	3	1.2	24	
12	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	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	IZS	0	1	1	1	1	0	1	1	1	1	2	2	2	1.0	24	
14	2	2	1	1	1	1	1	1	1	IZS	0	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1.1	24	
15	1	2	2	1	1	1	1	1	IZS	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
16	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1.0	24	
17	1	1	1	1	1	2	IZS	2	1	1	1	1	1	1	1	0	1	0	1	1	1	1	1	1	2	1.0	24	
18	1	2	2	2	2	IZS	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	3	3	3	3	1.7	24	
19	4	3	5	6	IZS	5	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	2.0	24	
20	2	1	1	IZS	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	4	5	2	2	1	5	1.6	24	
21	1	1	IZS	3	3	3	4	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	4	1.7	24	
22	2	IZS	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
23	IZS	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	IZS	1	0.4	24	
24	1	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	0.7	24	
25	1	2	2	2	2	3	2	2	1	1	1	1	1	1	1	2	1	1	1	1	1	IZS	1	1	3	1.4	24	
26	1	1	1	3	3	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	1	3	3	3	1.6	24	
27	3	3	4	4	4	4	3	2	2	2	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	4	1.9	24	
28	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	1	1	1	0.3	24	
29	1	0	1	1	2	2	2	2	1	1	1	1	1	1	1	1	IZS	IZS	1	1	1	2	2	2	2	1.3	24	
30	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	IZS	1	1	1	1	2	2	2	2	1.5	24	
31	2	2	2	2	3	2	2	3	2	1	1	1	1	1	1	IZS	1	1	1	1	2	1	2	2	3	1.6	24	
HOURLY MAX	4	3	5	6	4	5	4	3	3	3	2	2	2	1	1	1	2	1	1	4	5	3	3	3				
HOURLY AVG	1.4	1.4	1.6	1.7	1.6	1.7	1.6	1.5	1.3	1.1	0.8	0.7	0.7	0.6	0.7	0.6	0.7	0.8	0.9	1.1	1.2	1.2	1.4	1.3				

STATUS FLAG CODES

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

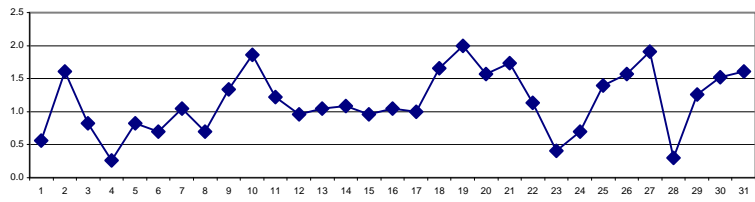
OBJECTIVE LIMIT:

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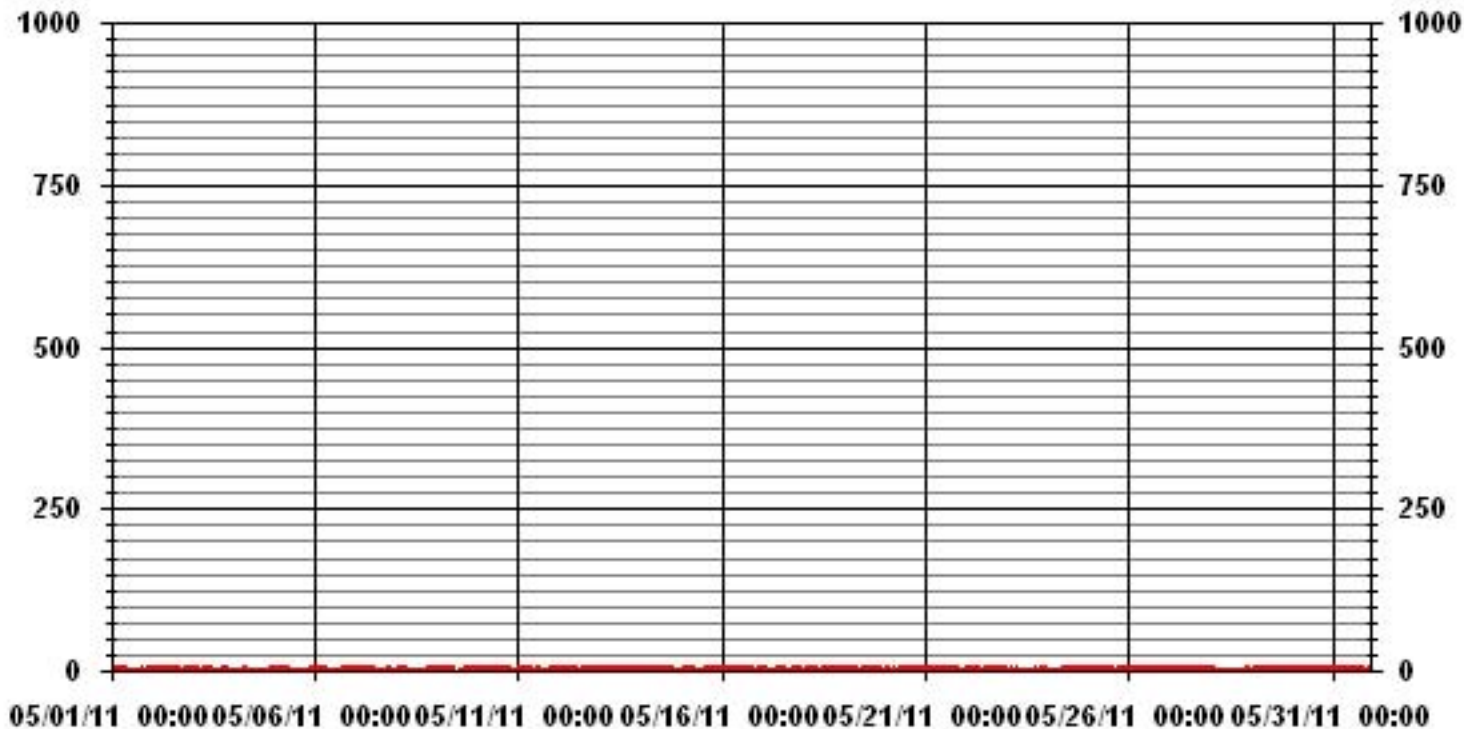
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	590
MAXIMUM 1-HR AVERAGE:	6 PPB @ HOUR(S) 3 ON DAY(S) 19
MAXIMUM 24-HR AVERAGE:	2.0 PPB ON DAY(S) 19
IZS CALIBRATION TIME:	31 HRS
OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	6 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.83
MONTHLY AVERAGE:	1.15 PPB

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA31 IIO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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	1	1	2	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	6	6	2	3	IZS	2	6	1.7	24
2	2	3	3	3	3	6	3	3	3	2	2	1	2	2	1	8	2	2	2	3	3	IZS	2	2	8	2.7	24
3	3	3	2	2	2	3	2	2	2	2	1	1	1	1	1	1	1	1	2	1	IZS	1	1	1	3	1.6	24
4	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	2	8	1.3	24
5	2	3	3	3	2	2	3	2	2	2	1	1	1	1	1	1	1	11	IZS	21	1	1	2	4	21	3.1	24
6	3	2	1	1	2	2	2	1	1	1	1	1	1	1	1	1	IZS	IZS	2	1	2	2	2	4	4	1.6	24
7	3	4	4	3	4	1	1	1	1	1	1	1	1	1	1	IZS	1	1	2	2	2	2	3	4	4	1.8	24
8	2	1	2	2	3	3	3	2	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	2	2	3	1.5	24
9	2	1	2	2	2	3	3	2	2	2	C	C	C	C	C	C	C	3	2	2	2	3	3	3	3	2.3	24
10	3	3	3	3	3	4	3	3	3	3	2	3	3	IZS	M	2	1	1	2	2	2	2	2	2	4	2.5	23
11	2	2	2	2	4	3	3	3	2	2	2	2	IZS	1	1	1	1	1	1	2	2	2	2	4	2.0	24	
12	2	2	2	2	2	2	2	2	2	2	2	IZS	1	1	1	1	1	1	2	2	2	2	2	2	2	1.7	24
13	2	1	2	2	2	2	1	1	1	1	IZS	1	1	1	1	1	1	1	1	2	2	2	3	3	3	1.5	24
14	3	2	2	2	2	2	2	2	2	IZS	1	1	1	1	1	1	1	1	1	2	2	2	2	2	3	1.7	24
15	2	2	2	2	2	2	2	2	IZS	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	2	1.5	24
16	2	2	2	2	2	2	2	IZS	2	2	2	1	1	1	2	2	1	1	1	2	2	2	2	2	2	1.7	24
17	2	2	2	2	2	2	IZS	2	2	2	2	2	1	1	1	1	2	1	1	1	2	2	2	2	2	1.7	24
18	2	2	2	2	2	IZS	2	2	3	2	2	2	2	2	2	1	1	2	2	2	3	4	4	4	4	2.3	24
19	10	5	7	7	IZS	6	4	3	2	3	2	2	2	2	2	2	1	1	2	2	2	2	3	10	3.2	24	
20	3	2	2	IZS	2	3	3	2	2	2	3	2	2	2	2	2	2	2	2	19	18	3	3	2	19	3.7	24
21	2	2	IZS	4	4	4	5	4	4	4	4	2	2	1	3	22	2	2	2	2	2	2	2	2	22	3.6	24
22	3	IZS	2	2	2	2	1	2	2	3	2	2	2	1	1	2	1	2	2	2	2	2	2	3	1.9	24	
23	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	IZS	2	1.1	24
24	2	1	2	1	1	1	1	1	1	1	2	1	1	2	2	1	2	2	2	2	3	2	IZS	2	3	1.6	24
25	2	3	3	3	3	4	3	3	2	2	2	1	1	1	1	2	4	2	2	2	2	IZS	1	1	4	2.2	24
26	2	2	3	4	4	3	3	3	3	2	2	2	2	2	2	2	1	2	2	2	IZS	2	6	4	6	2.6	24
27	4	4	4	4	5	5	4	5	4	3	2	2	2	2	2	2	2	2	2	IZS	2	1	1	1	5	2.8	24
28	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	2	2	1	2	1.1	24
29	1	1	2	2	3	3	3	3	2	2	2	2	2	3	2	2	2	IZS	2	2	2	3	2	3	3	2.2	24
30	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	IZS	1	2	2	2	2	4	3	4	2.4	24
31	3	3	3	3	16	10	3	4	3	2	2	2	2	2	3	IZS	2	3	2	3	5	2	3	4	16	3.7	24
HOURLY MAX	10	5	7	7	16	10	5	5	4	4	4	3	3	3	3	22	4	11	6	21	18	4	6	4			
HOURLY AVG	2.8	2.2	2.4	2.4	2.9	2.9	2.4	2.2	2.0	1.9	1.7	1.5	1.4	1.4	1.4	2.4	1.4	1.8	1.8	3.2	2.6	2.0	2.3	2.4			

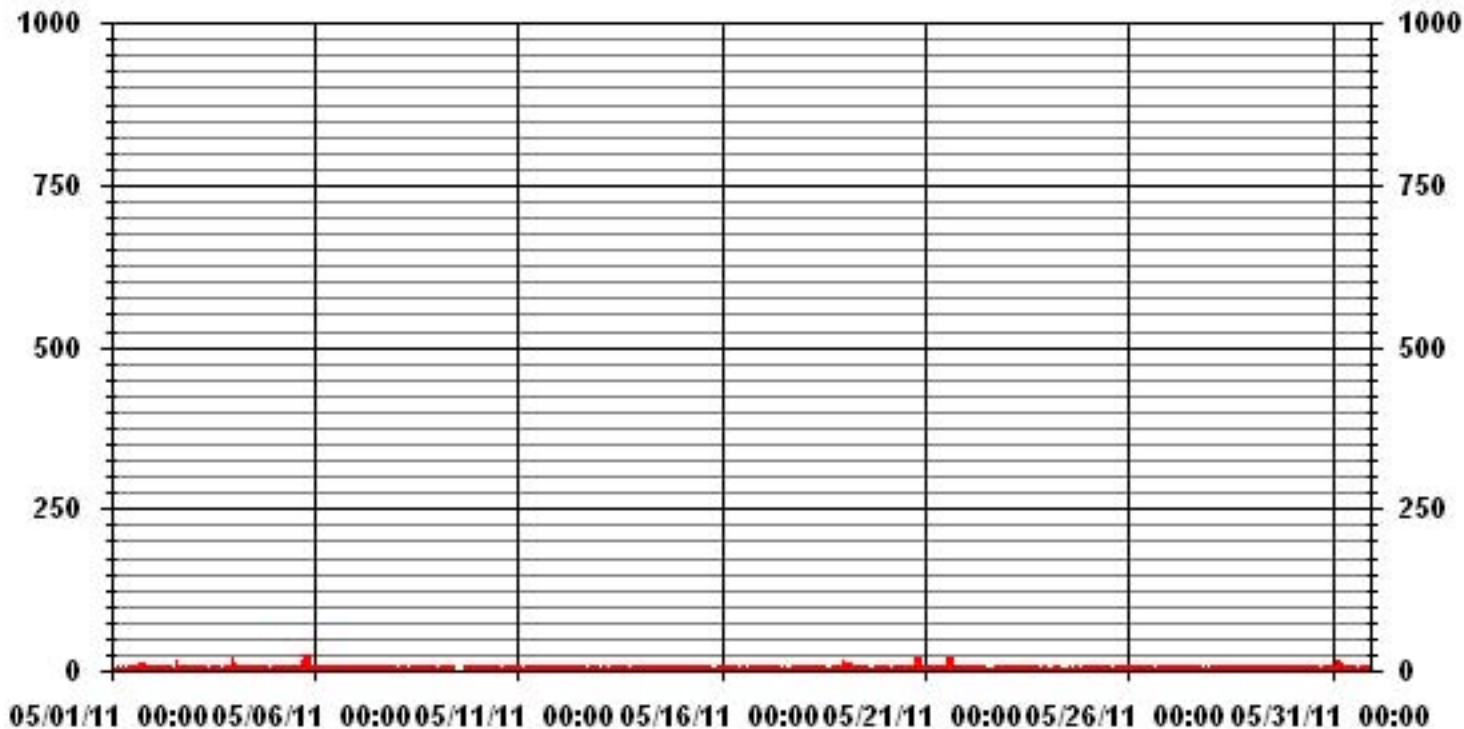
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705
MAXIMUM INSTANTANEOUS VALUE:	22 PPB @ HOUR(S) 15 ON DAY(S) 21
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION	1.85
OPERATIONAL TIME:	743 HRS

01 Hour Averages



— LICA31 IIO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

May 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	3.68	3.25	7.36	7.36	9.49	8.21	3.39	6.23	6.51	5.24	4.95	6.23	6.09	8.92	7.93	5.09	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.68	3.25	7.36	7.36	9.49	8.21	3.39	6.23	6.51	5.24	4.95	6.23	6.09	8.92	7.93	5.09	

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
< 50	26	23	52	52	67	58	24	44	46	37	35	44	43	63	56	36	706
< 110																	
< 210																	
>= 210																	
Totals	26	23	52	52	67	58	24	44	46	37	35	44	43	63	56	36	

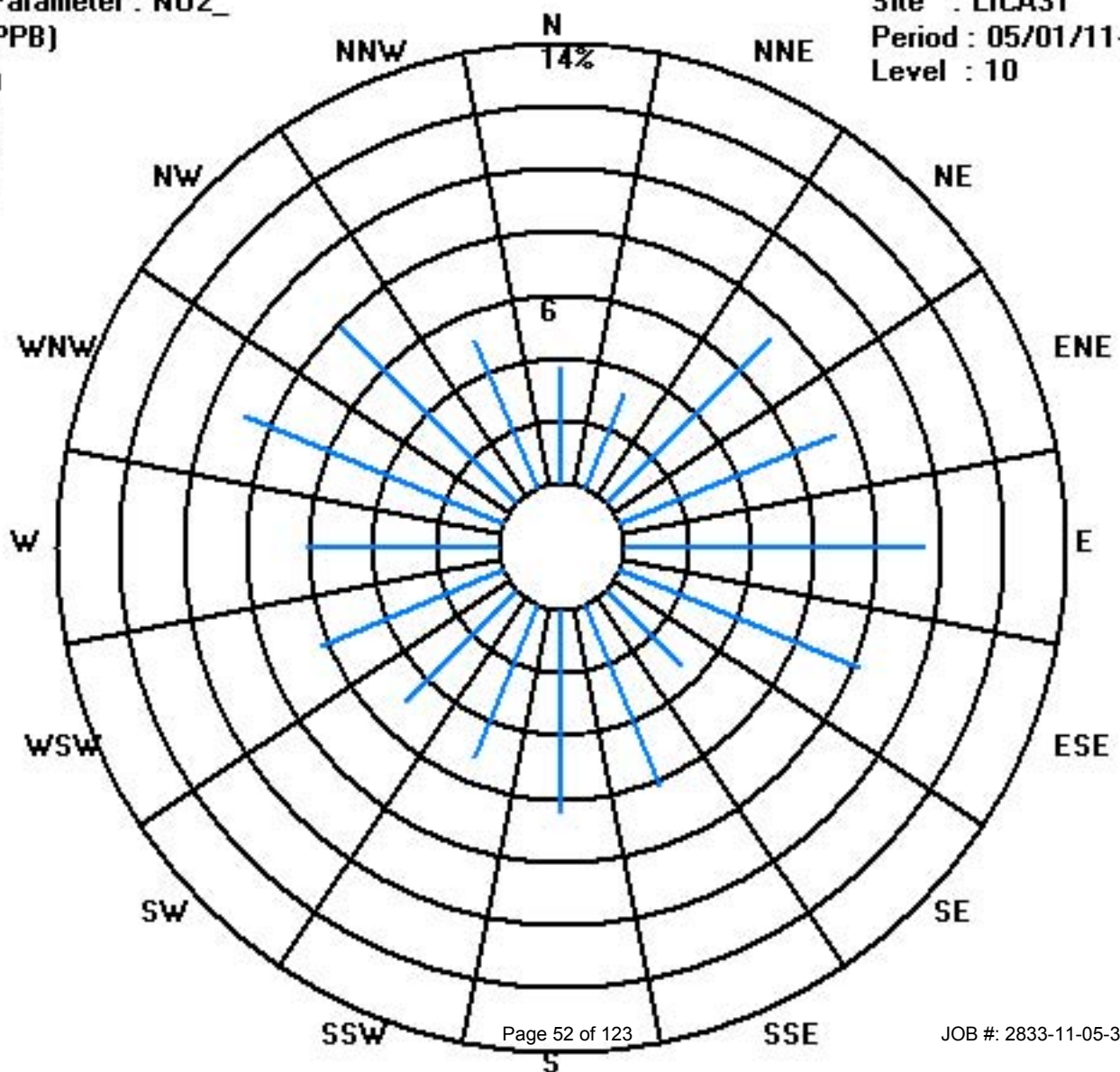
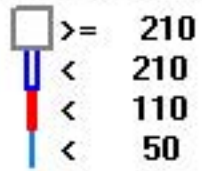
Calm : .00 %

Total # Operational Hours : 706

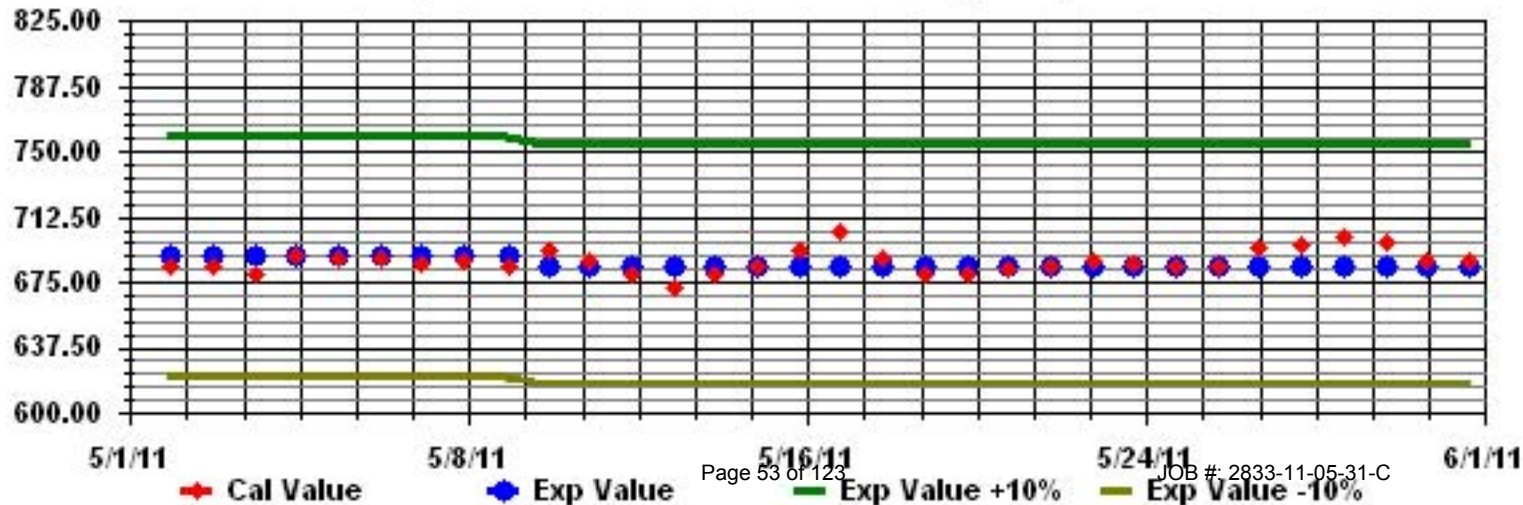
Class Limits (PPB)

Period : 05/01/11-05/31/11

Level : 10

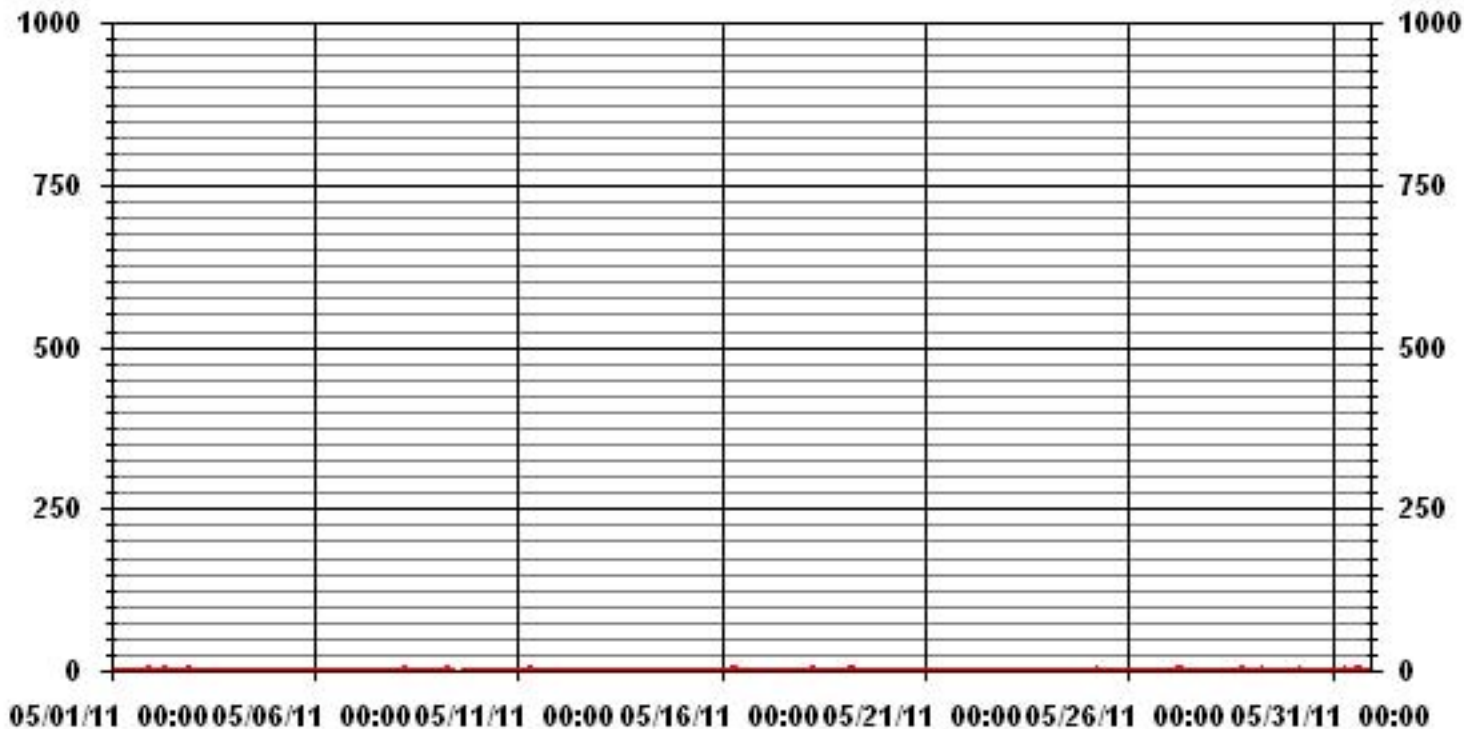


Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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	DAILY	24-HOUR				
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.				
DAY																															
1	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	2	1.1	24		
2	1	1	1	1	1	2	2	2	1	1	1	1	1	1	4	1	1	1	1	1	1	1	1	1	IZS	1	1	4	1.3	24	
3	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	2	1	1	2	1.0	24
4	12	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	IZS	2	1	1	1	1	12	1.5	24		
5	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	8	IZS	11	1	1	1	1	2	11	1.8	24			
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	2	1.0	24			
7	1	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			
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	2	1.0	24			
9	1	1	1	1	1	1	1	2	1	1	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	2	0.6	24			
10	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	M	1	1	1	0	1	1	1	1	1	1	1	1	0.4	23		
11	1	1	1	1	1	2	1	2	1	1	1	1	IZS	2	1	1	0	1	1	1	1	1	1	1	1	2	1.1	24			
12	1	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			
13	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.5	24			
14	0	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			
15	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24			
16	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24			
17	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	2	1.0	24			
18	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24			
19	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	2	2	1.0	24				
20	1	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24			
21	1	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	13	1	1	1	1	1	1	1	1	1	13	1.6	24			
22	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	2	1.0	24			
23	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	IZS	2	1.0	24			
24	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.1	24		
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	IZS	2	1	2	1.1	24				
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	2	1.0	24			
27	1	1	1	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	3	1.2	24			
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	1	2	1.0	24			
29	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	IZS	2	1	1	1	1	1	1	2	1.1	24			
30	1	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			
31	1	1	1	1	12	17	1	2	1	1	1	1	1	1	1	IZS	2	1	1	1	1	1	1	1	1	17	2.3	24			
HOURLY MAX	12	2	2	2	12	17	2	3	2	2	2	1	2	2	1	13	2	8	2	11	2	2	2	2	2						
HOURLY AVG	1.4	1.0	1.0	1.0	1.3	1.6	1.0	1.2	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.5	1.0	1.3	0.9	1.3	1.0	1.0	1.0	1.0	1.0						

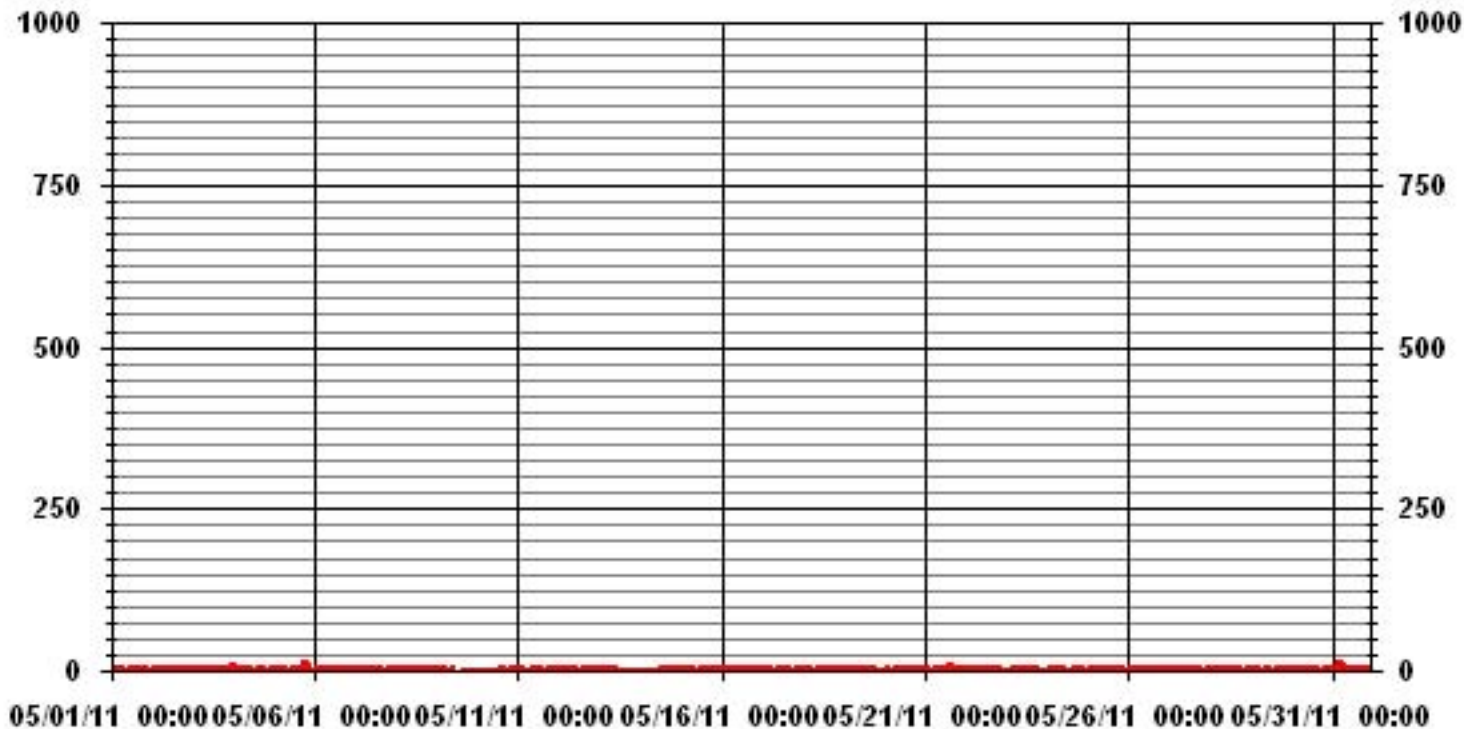
STATUS FLAG CODES

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:	657					
MAXIMUM INSTANTANEOUS VALUE:	17	PPB	@ HOUR(S)	5	ON DAY(S)	31
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	1.12					

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

May 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	3.68	3.25	7.36	7.36	9.49	8.21	3.39	6.23	6.51	5.24	4.95	6.23	6.09	8.92	7.93	5.09	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.68	3.25	7.36	7.36	9.49	8.21	3.39	6.23	6.51	5.24	4.95	6.23	6.09	8.92	7.93	5.09	

Calm : .00 %

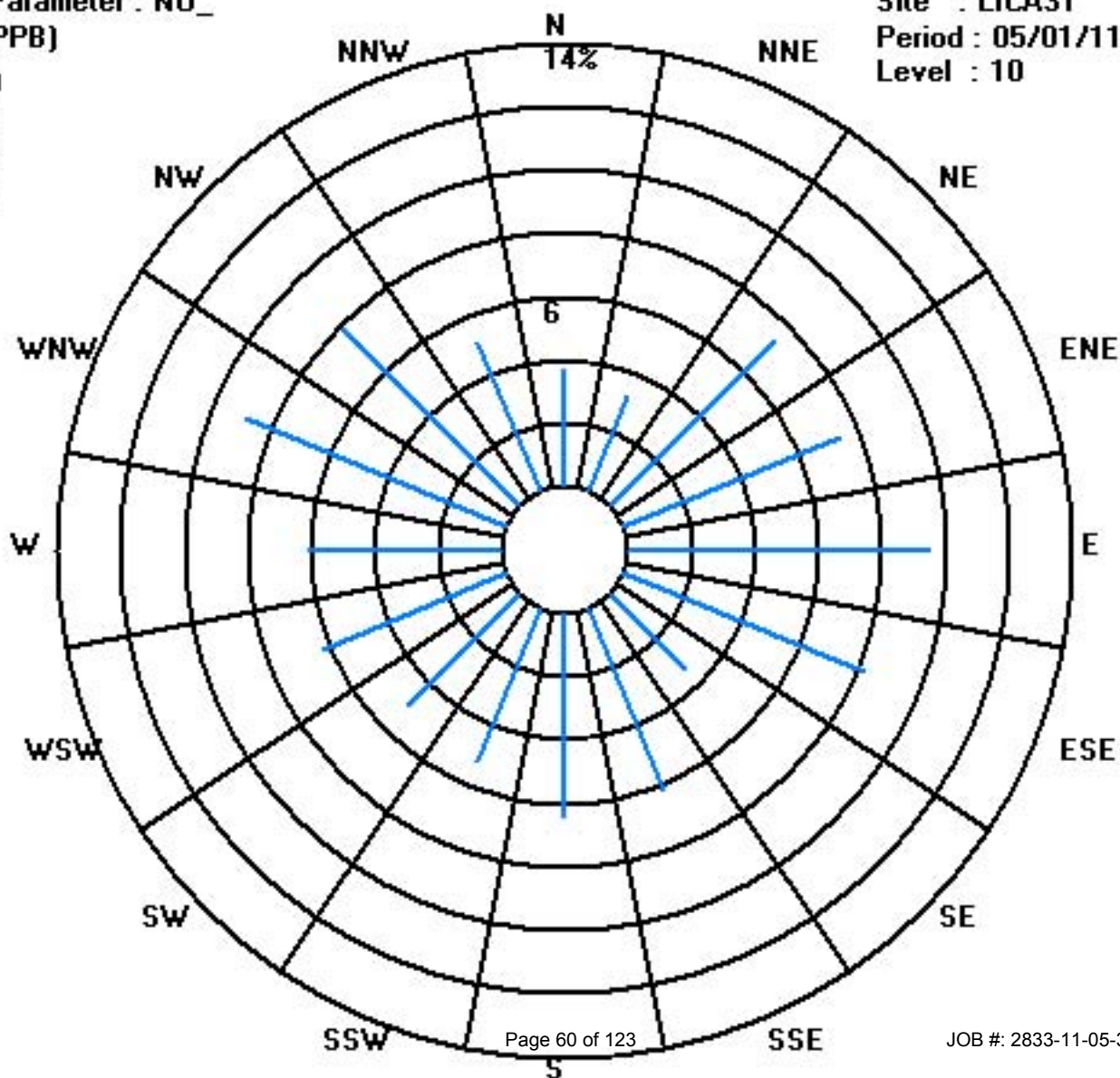
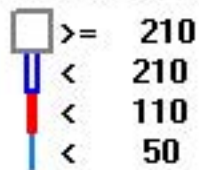
Total # Operational Hours : 706

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	26	23	52	52	67	58	24	44	46	37	35	44	43	63	56	36	706
< 110																	
< 210																	
>= 210																	
Totals	26	23	52	52	67	58	24	44	46	37	35	44	43	63	56	36	

Calm : .00 %

Total # Operational Hours : 706



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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	1	1	1	1	1	1	0	0	0	1	0	0	0	0	1	1	0	1	IZS	1	1	0.7	24
2	1	2	2	2	3	3	3	3	2	2	1	1	1	1	1	1	1	1	1	2	2	IZS	1	1	3	1.7	24
3	2	2	1	1	1	2	2	1	1	1	1	1	1	1	1	0	0	1	1	1	IZS	1	1	1	2	1.1	24
4	1	1	1	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	IZS	1	1	1	1	0.7	24
5	1	2	2	2	1	1	2	1	1	1	1	1	0	0	1	0	0	1	IZS	1	1	1	1	1	2	1.0	24
6	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0	IZS	1	1	1	1	1	2	2	0.8	24
7	2	2	3	2	2	1	1	1	1	1	1	1	0	0	0	0	IZS	1	1	1	1	1	1	2	3	1.2	24
8	1	1	1	2	2	3	2	1	1	0	0	0	0	1	1	IZS	1	1	0	1	1	1	1	1	3	1.0	24
9	1	1	1	1	1	2	2	2	2	2	1	C	C	C	C	C	C	0	1	0	0	1	1	1	2	1.1	24
10	1	2	2	1	2	2	2	2	2	2	1	1	1	IZS	M	1	1	1	1	1	1	1	2	1	2	1.4	23
11	1	1	1	1	3	3	3	3	2	2	1	1	IZS	IZS	1	1	1	0	1	1	1	1	1	1	3	1.4	24
12	1	1	1	1	1	2	1	1	2	1	1	IZS	IZS	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24
13	1	1	1	1	1	1	1	1	1	1	IZS	IZS	1	1	1	1	1	1	1	1	1	2	2	2	2	1.1	24
14	2	2	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	1.1	24
15	1	1	2	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
16	1	1	1	1	2	2	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	2	1.2	24
17	1	1	1	1	1	2	IZS	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24	
18	1	2	2	2	2	IZS	2	2	2	2	1	1	1	1	1	1	1	1	1	1	2	3	3	3	3	1.7	24
19	4	3	5	6	IZS	5	4	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	6	2.1	24	
20	2	1	1	IZS	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	4	6	2	2	1	6	1.7	24
21	1	1	IZS	3	4	4	4	4	3	3	3	1	1	1	2	1	1	1	1	1	1	1	1	4	1.9	24	
22	2	IZS	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24
23	IZS	1	1	1	1	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	1	1	1	IZS	1	0.5	24
24	2	1	1	0	0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	0.8	24
25	1	2	2	2	2	4	2	2	1	1	0	1	1	1	1	1	2	1	1	1	1	IZS	1	1	4	1.4	24
26	1	1	1	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	IZS	2	3	3	3	1.7	24
27	3	3	4	4	4	5	3	3	3	2	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	5	2.0	24
28	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	0.4	24
29	1	0	1	1	2	2	3	2	1	1	1	1	1	1	1	1	1	IZS	1	1	1	2	2	2	3	1.3	24
30	2	2	2	2	2	3	2	2	2	2	1	1	1	1	1	1	IZS	1	1	1	1	2	2	2	3	1.6	24
31	2	2	2	2	3	3	2	3	3	1	1	1	1	1	2	IZS	2	1	1	1	2	1	2	2	3	1.8	24
HOURLY MAX	4	3	5	6	4	5	4	4	3	3	3	3	1	1	2	2	2	2	1	1	4	6	3	3	3		
HOURLY AVG	1.4	1.4	1.6	1.6	1.7	2.1	1.8	1.7	1.5	1.3	0.9	0.8	0.8	0.8	0.9	0.8	0.8	0.9	0.9	1.1	1.3	1.2	1.4	1.3			

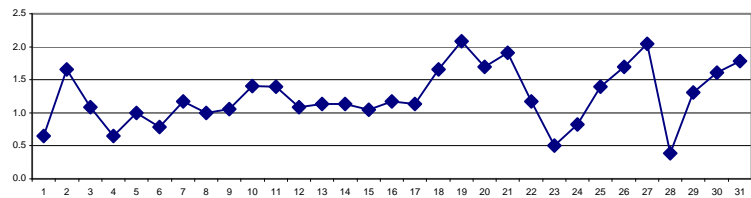
STATUS FLAG CODES

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

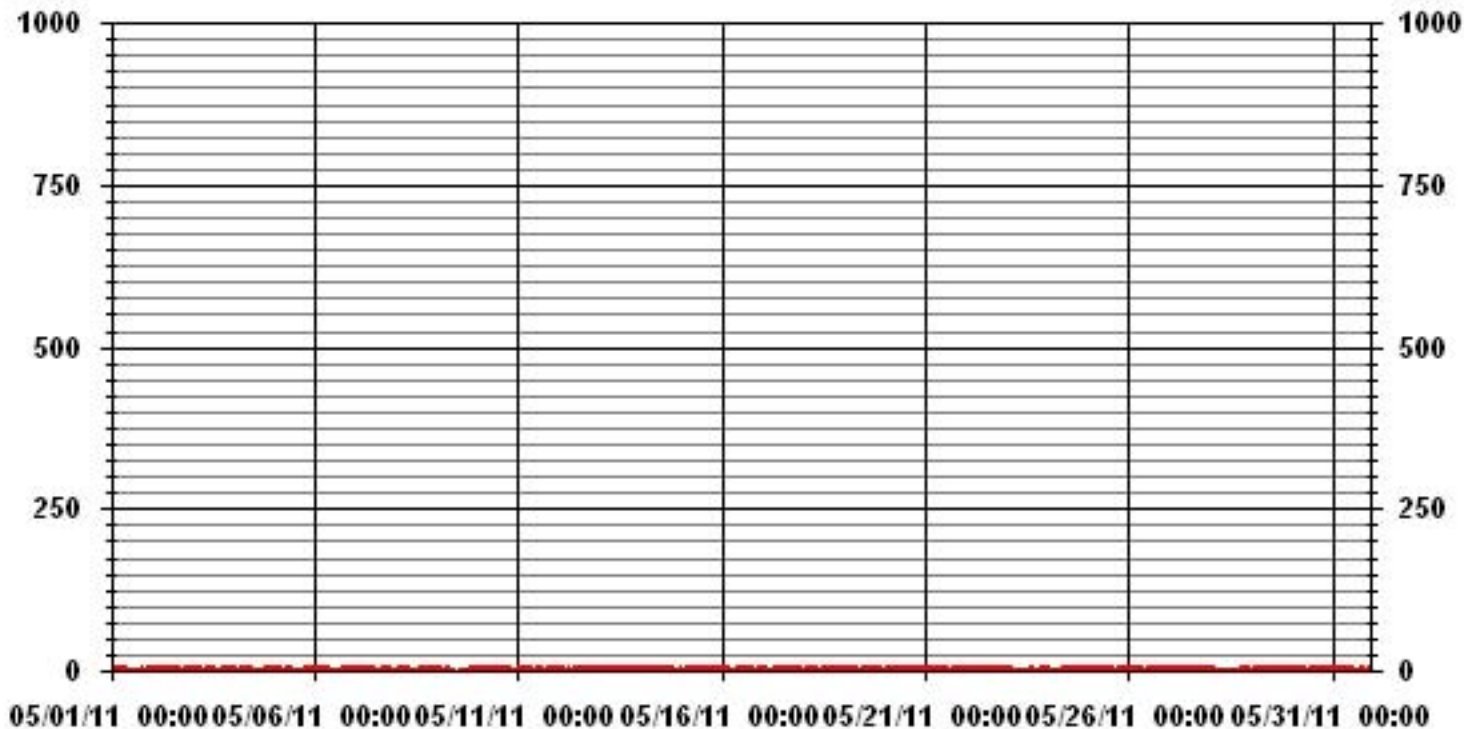
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	634					
MAXIMUM 1-HR AVERAGE:	6	PPB	@ HOUR(S)	3, 20	ON DAY(S)	18, 19
MAXIMUM 24-HR AVERAGE:	2.1	PPB			ON DAY(S)	18
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.83		MONTHLY AVERAGE:	1.25	PPB	

24 HOUR AVERAGES FOR MAY 2011



01 Hour Averages



— LICA31 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 2011

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1	2	2	2	1	1	1	2	2	2	3	1	1	1	2	1	1	2	1	7	7	2	3	IZS	2	7	2.1	24		
2	2	2	3	4	3	7	4	4	3	3	2	2	1	1	11	2	2	2	3	3	IZS	2	2	11	3.0	24			
3	3	3	2	2	2	3	2	2	2	2	2	2	1	2	1	1	1	2	2	2	IZS	2	1	1	3	1.9	24		
4	19	2	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	2	IZS	2	2	1	2	19	2.1	24			
5	3	3	3	3	2	2	3	2	2	3	2	2	2	1	1	1	1	17	IZS	31	1	1	2	5	31	4.0	24		
6	3	2	2	1	1	2	2	2	2	1	1	1	2	1	1	1	1	IZS	2	1	2	2	2	4	4	1.7	24		
7	3	4	4	3	4	1	1	1	1	2	1	1	1	1	1	1	IZS	2	2	2	2	1	2	3	4	1.9	24		
8	2	1	2	2	3	3	3	2	1	1	1	1	1	2	1	1	IZS	2	1	1	1	1	2	2	3	1.6	24		
9	2	1	2	2	2	3	3	3	3	2	2	C	C	C	C	C	C	2	1	1	1	2	2	2	3	1.9	24		
10	2	2	2	2	2	3	3	3	3	3	2	2	2	2	IZS	M	2	1	1	2	1	2	2	3	2	3	2.1	23	
11	2	2	2	3	4	4	4	3	3	2	2	2	2	IZS	2	2	1	1	1	2	1	2	2	2	2	4	2.2	24	
12	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	1	1	1	1	2	2	2	2	2	2	1.8	24	
13	2	2	1	2	1	1	1	1	1	1	2	IZS	2	2	1	1	1	1	2	1	2	2	2	3	3	3	1.6	24	
14	2	2	2	2	2	2	2	2	2	1	IZS	2	1	2	1	2	2	1	2	1	2	2	2	2	2	2	1.8	24	
15	2	2	2	2	2	2	2	2	2	IZS	2	2	1	1	1	1	1	2	1	1	2	1	2	2	2	2	1.6	24	
16	1	2	2	2	2	2	2	IZS	2	2	2	2	1	2	2	1	1	2	1	2	2	2	2	2	2	2	1.8	24	
17	2	2	2	2	2	2	IZS	4	2	2	2	2	2	1	1	1	1	1	1	1	2	2	2	2	2	4	1.8	24	
18	2	2	3	2	3	IZS	3	3	3	3	2	2	2	1	1	1	1	2	2	2	3	4	4	4	4	4	2.4	24	
19	11	5	7	7	IZS	7	5	4	2	3	2	2	2	2	2	1	1	1	2	2	3	2	2	5	11	3.5	24		
20	4	2	2	IZS	3	3	3	3	2	2	2	4	1	2	2	1	2	1	2	19	18	3	3	2	19	3.7	24		
21	2	2	IZS	4	5	4	5	4	4	5	5	2	2	1	3	33	2	2	1	2	2	2	2	2	33	4.2	24		
22	3	IZS	3	2	2	2	2	3	3	3	2	2	2	1	2	1	1	2	1	2	2	2	2	1	3	2.0	24		
23	IZS	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.1	24	
24	3	1	2	1	1	1	1	1	1	1	2	1	1	2	2	1	3	2	2	2	3	2	IZS	2	3	1.7	24		
25	2	3	3	3	3	5	3	3	2	1	2	1	1	2	1	2	5	3	2	2	2	IZS	2	2	5	2.4	24		
26	2	2	2	4	4	3	3	3	3	2	2	2	2	2	2	2	1	1	2	2	IZS	3	6	4	6	2.6	24		
27	4	4	5	5	5	6	5	8	5	3	2	2	2	2	2	2	2	2	2	2	IZS	2	2	1	1	8	3.2	24	
28	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	2	2	1	2	1.2	24	
29	1	1	1	2	2	3	3	3	2	2	2	2	2	4	1	2	2	IZS	2	2	2	3	3	3	4	2.2	24		
30	3	3	3	3	3	4	3	3	3	2	2	2	2	2	2	2	IZS	2	2	2	2	3	4	3	4	2.6	24		
31	3	3	3	3	26	24	3	5	4	2	2	2	2	4	IZS	2	3	2	3	5	2	3	4	26	4.9	24			
HOURLY MAX	19	5	7	7	26	24	5	8	5	5	5	4	2	4	4	33	5	17	7	31	18	4	6	5					
HOURLY AVG	3.2	2.3	2.5	2.5	3.2	3.5	2.6	2.7	2.2	2.1	1.9	1.7	1.6	1.6	1.6	2.8	1.5	2.2	1.8	3.5	2.6	2.1	2.3	2.5					

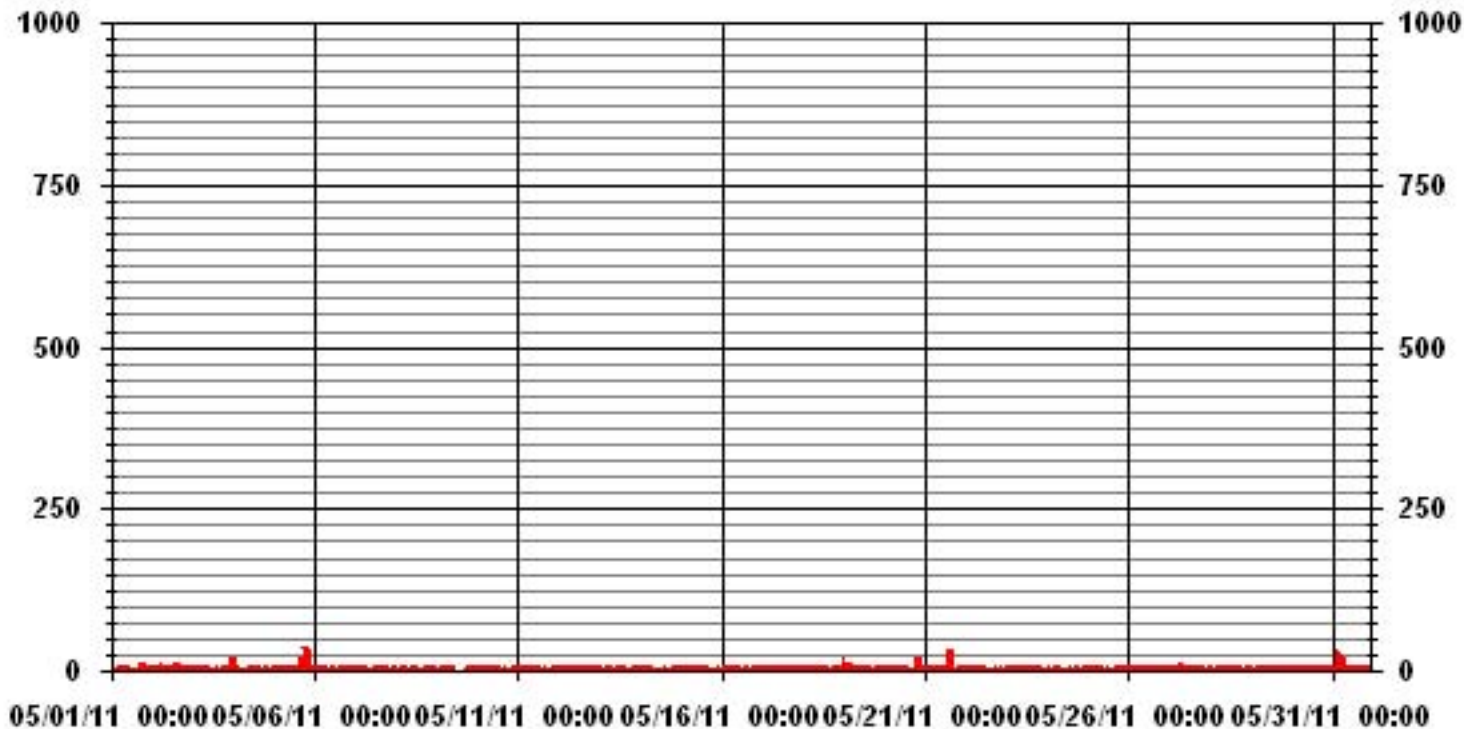
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705
MAXIMUM INSTANTANEOUS VALUE:	33 PPB @ HOUR(S) 15 ON DAY(S) 21
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION	2.61
OPERATIONAL TIME:	743 HRS

01 Hour Averages



LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)

May 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	3.68	3.25	7.36	7.36	9.49	8.21	3.39	6.23	6.51	5.24	4.95	6.23	6.09	8.92	7.93	5.09	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.68	3.25	7.36	7.36	9.49	8.21	3.39	6.23	6.51	5.24	4.95	6.23	6.09	8.92	7.93	5.09	

Calm : .00 %

Total # Operational Hours : 706

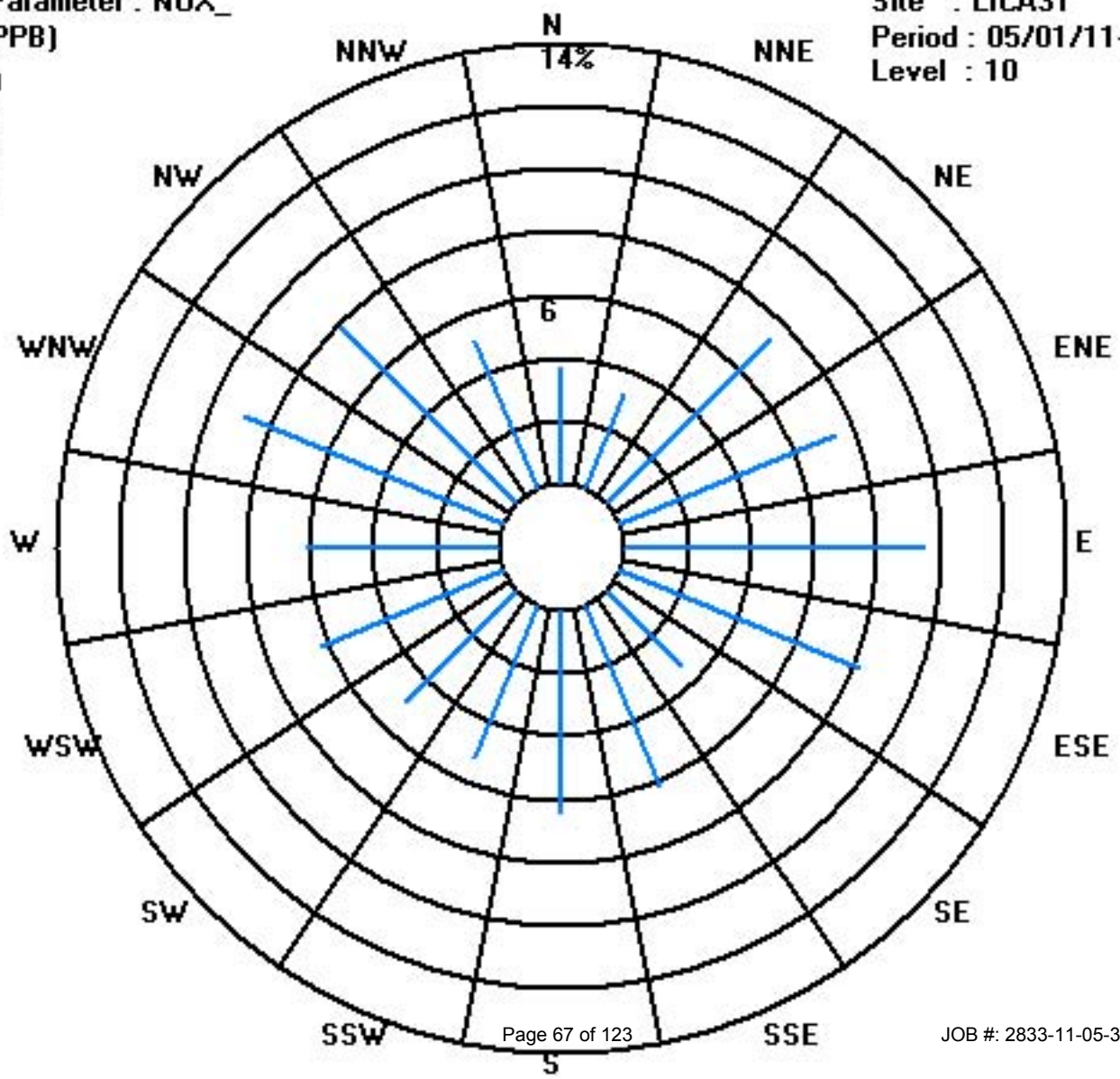
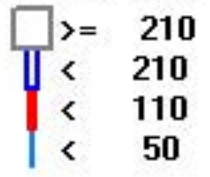
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	26	23	52	52	67	58	24	44	46	37	35	44	43	63	56	36	706
< 110																	
< 210																	
>= 210																	
Totals	26	23	52	52	67	58	24	44	46	37	35	44	43	63	56	36	

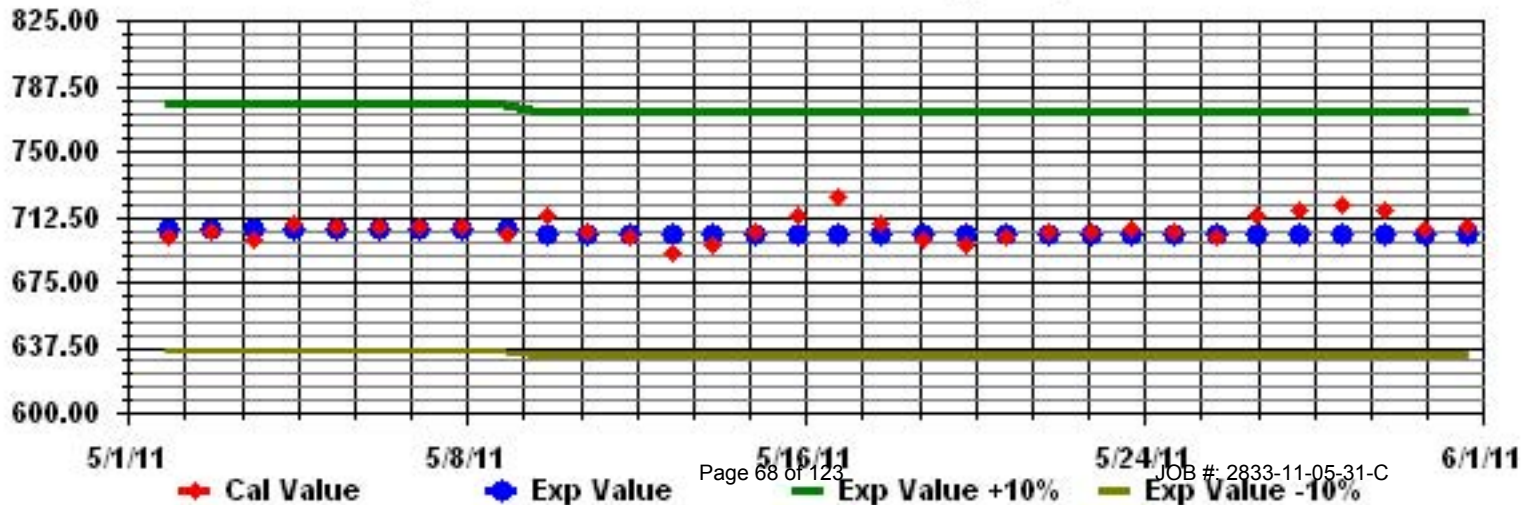
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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.		
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		3.7	3.3	2.2	0	3.3	4.3	N	0.7	2.2	2	1.8	3	2.9	2.9	1.5	3.5	6.3	6.8	5.5	4.3	6.8	4.7	1.4	1.2	6.8	3.2	23			
2		2.7	6.2	4.6	6.7	5.4	5.4	6.9	5.5	2	6.8	4.3	2	1.6	5.2	5.4	3.3	3.6	4.3	5.5	5.9	5.7	6.9	6.2	7.5	7.5	5.0	24			
3		4.4	3.3	5.6	0	0	2.8	5.3	6.9	4.8	3.7	5.6	5.2	0.7	1.1	2.6	1.5	3.8	2.7	2.2	1.6	0.3	1.5	1.7	0.2	6.9	2.8	24			
4		2.1	2.2	3.2	0.9	0	0.1	0.5	0.1	1.7	0	2.3	0	1	1.6	0	0.1	4.6	3.8	2.2	1.8	2.3	2.7	4.3	1.6	4.6	1.6	24			
5		2.2	0	0	1.8	N	0.6	0	2.3	3.5	3.5	3.6	3.3	3.4	1.9	1.2	2.7	4.1	4.1	4.9	6.4	2.2	6.9	4.7	2.5	6.9	2.9	23			
6		2.4	4.7	2.5	1.2	3.1	3.1	3.3	3.1	3.8	0	1.2	1.3	2.3	3.3	0	2.6	2.8	2.9	2.6	5.3	2.7	0.5	2.5	3.4	5.3	2.5	24			
7		4.4	2.1	2.3	4.2	0.9	1.2	2	2.8	1.2	0	2	2.4	2.4	2.2	5.6	3	4.3	4.3	3.9	2.2	0	2.5	1	1.9	5.6	2.5	24			
8		3.2	1.9	2.9	3.6	4.6	4.5	4.8	5.6	2.7	1.8	5.1	3.8	5.6	4.8	4.3	4.4	1.3	1	4.6	5.1	4	0.7	2.3	3.3	5.6	3.6	24			
9		5	5.4	4.5	3.6	2.9	4.1	2.3	3.2	1.4	2.2	3.7	3.2	2.6	3.8	5.9	1.8	5.7	4.7	2.6	6.6	5.2	3.2	3.3	4.9	6.6	3.8	24			
10		4.3	2.8	6.1	2.6	4	2.8	3.9	4	0.5	1.2	C	C	C	5.6	6.3	6.7	9.2	7.8	8.6	5.3	3.2	4.8	6.6	6.8	9.2	4.9	24			
11		3.8	4.9	2	4.8	7.4	8	7.5	7.2	5.9	9.3	4.4	6.7	5.7	3.9	5.5	6.3	7.2	7.8	7.9	5.5	5.2	4.8	5.7	3.3	9.3	5.9	24			
12		4.2	3.5	4.7	8.4	7.8	8.7	7.1	3.4	5.4	7.3	8.4	6.9	6.3	7.2	6.2	6.9	6.7	9.9	10.8	8.2	6.8	7.2	1.5	2.3	10.8	6.5	24			
13		7.1	5.1	2.4	4.8	3.4	4.9	4.8	4	2.1	4.6	4.9	3	6.9	4.4	3.1	2.8	3.8	5.3	5.8	5.6	6.2	6.2	4.8	5.7	7.1	4.7	24			
14		3.2	6.4	6.4	5.1	4.5	4.5	6.9	5.3	4.8	5.5	5.1	4.4	6	6.9	6.8	6	3.9	5.2	7.3	6.2	4.3	4.4	4.9	5.2	7.3	5.4	24			
15		7.7	5.2	6.3	5	2.5	2.9	2.8	2.9	7.2	4.9	3.5	5.6	5.8	8	7.7	7	6.6	8.5	10.5	5	4.8	4.8	6.7	6.7	10.5	5.8	24			
16		10.6	8.7	5.3	5.5	6.1	4.5	6.7	6.2	4.5	5.2	4.7	4.9	2.1	1.4	7.7	6.4	5.6	5.3	6.2	5.8	6.4	8.2	5.9	6.4	10.6	5.8	24			
17		7.1	9	7.4	4.8	5.3	4.9	5.7	5.6	4.5	3.2	4.3	6.6	5.7	2.4	3.7	4.3	1.5	4.3	4.1	4.5	5.9	5.9	6.2	6.2	9.0	5.1	24			
18		4	4.4	4.4	4	6.1	7.3	6.7	3.5	2.5	7	5.2	5	3.6	5.8	4	5.2	4.9	3	3.9	4.6	3.9	7.7	9.7	12.8	12.8	5.4	24			
19		12.7	14.4	13.5	12	11.3	8.9	10.2	11.2	8.9	10.3	8.2	7.4	5.5	9.4	10.5	10.8	10	8.9	8.3	8	10.6	9.7	9.2	9.4	14.4	10.0	24			
20		10.8	12.4	11.1	15.3	15.2	19.7	25.8	28.8	25.5	24.5	22.1	16.8	12.7	10.2	10.2	9.8	10.3	8.5	8.9	6.9	11.9	11.7	11.6	9.6	28.8	14.6	24			
21		11.5	10.8	11.5	13.7	13.5	13.1	15.6	17.9	20.4	18.5	18.5	15.2	9.2	8.9	8.5	9.5	7.3	9.7	7.8	9.8	10.2	8.1	10.2	11.1	20.4	12.1	24			
22		9.9	10.7	10.2	10.8	10.5	10.5	6.9	10.5	14.7	18.4	8.5	9.2	9.1	9.5	8.7	11.5	11.3	10.9	4.9	5	6	5.1	6	6.8	18.4	9.4	24			
23		3.8	4.9	0	1.1	2.2	5.4	3.4	2.5	1.3	2.2	5.9	5.9	6.7	4.7	0	1.6	1.7	2.8	4.5	8.3	4.7	3.5	7.4	4.7	8.3	3.7	24			
24		5.3	5.2	3.5	3.7	4.2	3.3	4.4	5.1	2.2	0	4.6	4.6	6.4	4.1	3	4	5	6.1	6.2	6	5.2	4.4	4.3	6.4	6.4	4.5	24			
25		7.3	7.8	7.7	11.9	12.5	9.4	11.5	13	10.4	8.8	11.4	7.6	6.9	5.1	6.8	9.1	6.7	6.8	9.9	7.7	4.8	11	8.1	9.1	13.0	8.8	24			
26		6	5.1	7.3	7.4	10.4	9.9	10.1	8.5	9.3	11.3	10.7	9.4	10.2	14.3	13	9.5	11	13.1	12.9	12.9	13.6	12.8	14.2	11.2	14.3	10.6	24			
27		12.6	11.3	10.1	12.8	12.4	15	13.8	8.6	8.9	9.9	9.7	12	12.5	14.7	18.6	23.4	25.8	24.5	29.3	21.5	18.2	18.1	11.5	8.9	29.3	15.2	24			
28		17.1	15.4	9.5	4.7	4.2	3.7	3.3	3.4	5.2	3.6	2.9	1.4	2.7	4.3	4.2	4.8	5.6	2.2	4.2	1.8	3.7	5	4.9	3.6	17.1	5.1	24			
29		3.9	3.8	3.6	5.3	11	6	4.9	5.7	5.6	5.2	7	12.3	13.4	15.1	22	24.7	26.8	26.5	23.8	22.5	23.3	19.9	12	8.2	26.8	13.0	24			
30		7.7	8.5	7	7.4	5.8	11.8	10.1	5	5.6	4.2	3.4	5.6	7.6	6.5	6.3	7.5	9.7	10.3	8.4	9.2	10.1	9.1	11.9	13	13.0	8.0	24			
31		11.2	15.3	18.8	14.2	11.9	12.5	8.8	8.9	10.5	9.4	9.3	10.4	16.6	21	20.2	23.9	19.6	17	15	16.2	15.4	15.8	12.9	12.7	23.9	14.5	24			
HOURLY MAX		17	15	19	15	15	20	26	29	26	25	22	17	17	21	22	25	27	27	29	23	23	20	14	13						
HOURLY AVG		6.5	6.6	6.0	6.0	6.4	6.6	6.9	6.5	6.1	6.3	6.4	6.2	6.1	6.5	6.8	7.2	7.6	7.7	7.8	7.3	6.9	7.0	6.6	6.3						

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

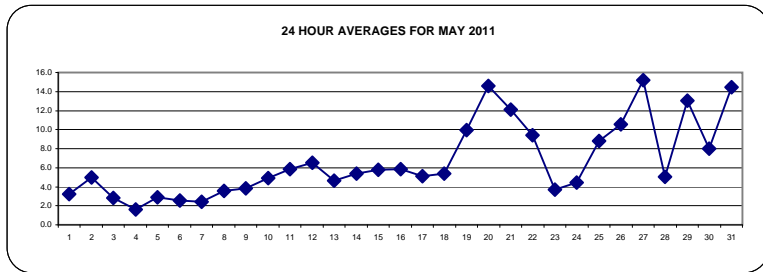
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:

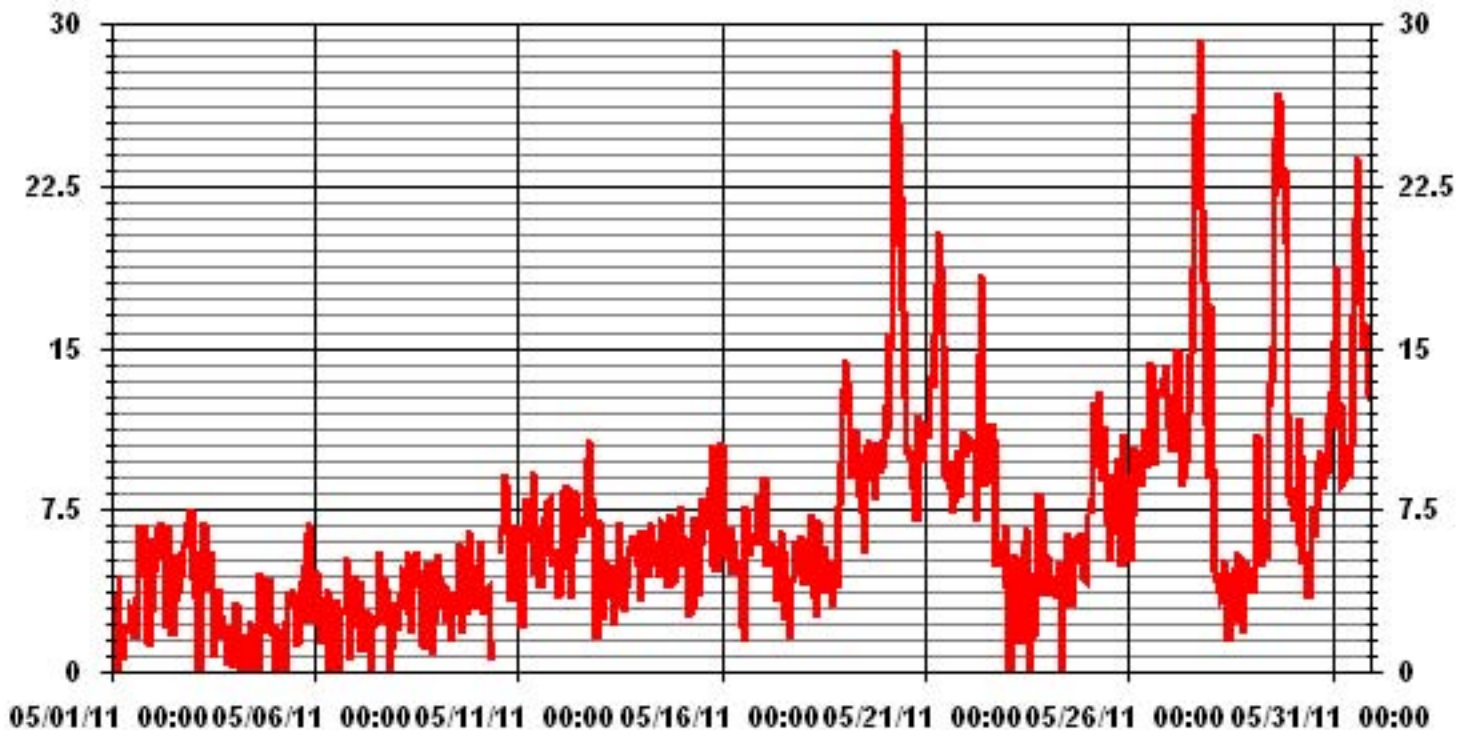
1-HR	-	ug/m ³	24-HR	30	ug/m ³
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-			
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE		
NUMBER OF NON-ZERO READINGS:	722			
MAXIMUM 1-HR AVERAGE:	29.3	UG/M ³	@ HOUR(S)	18 ON DAY(S) 27
MAXIMUM 24-HR AVERAGE:	15.2	UG/M ³		ON DAY(S) 27
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	742 HRS
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	4.87		MONTHLY AVERAGE:	6.68 UG/M ³



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
 PM2 / WDR Joint Frequency Distribution (Percent)

May 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	3.78	3.24	7.44	7.17	9.33	8.25	3.92	6.22	6.08	5.27	4.87	6.22	6.08	8.93	8.11	5.00	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	3.78	3.24	7.44	7.17	9.33	8.25	3.92	6.22	6.08	5.27	4.87	6.22	6.08	8.93	8.11	5.00	

Calm : .00 %

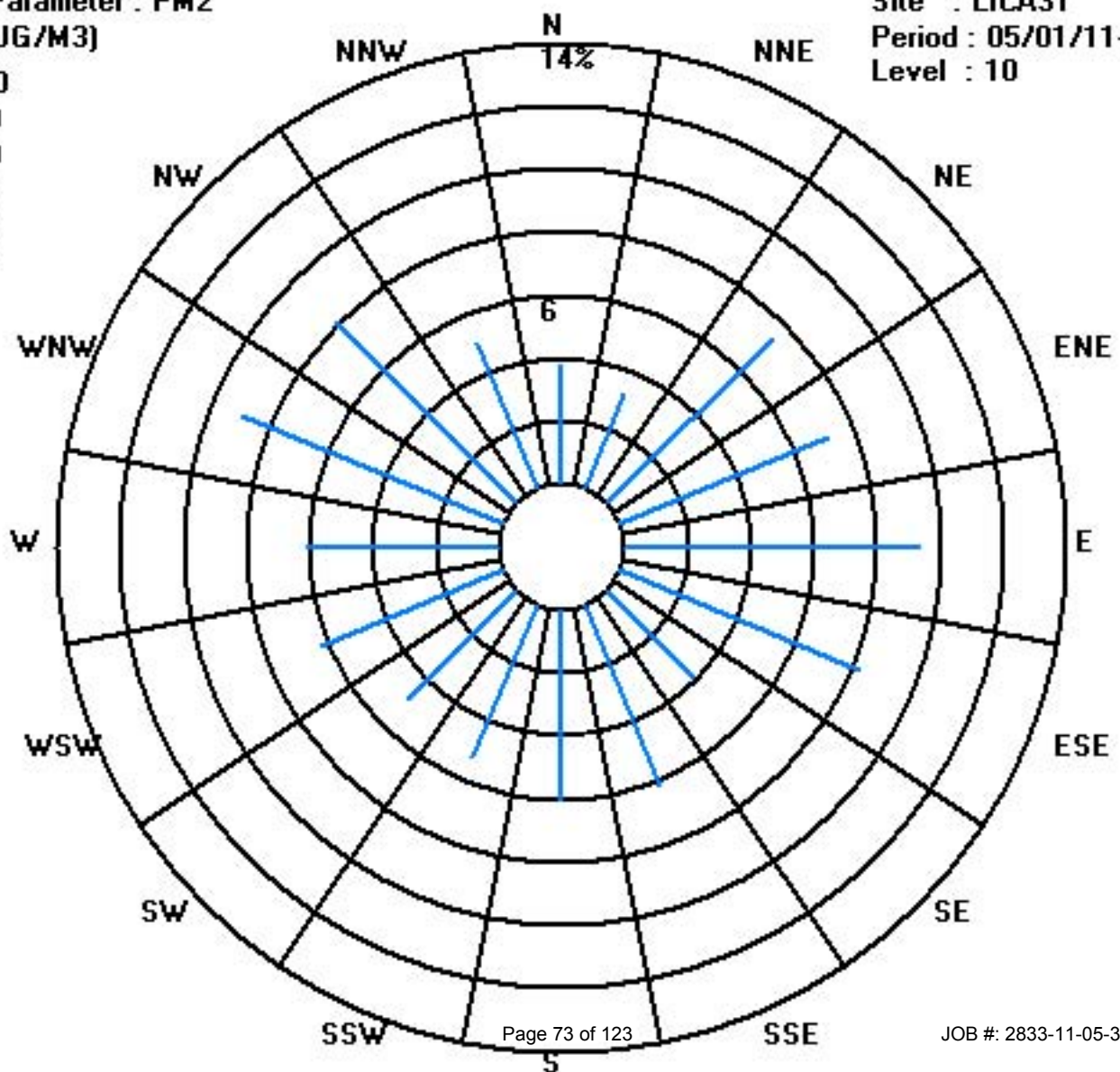
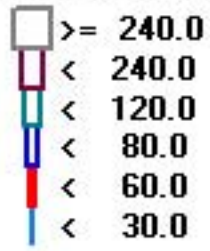
Total # Operational Hours : 739

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	28	24	55	53	69	61	29	46	45	39	36	46	45	66	60	37	739
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	28	24	55	53	69	61	29	46	45	39	36	46	45	66	60	37	

Calm : .00 %

Total # Operational Hours : 739



Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA
MAY 2011

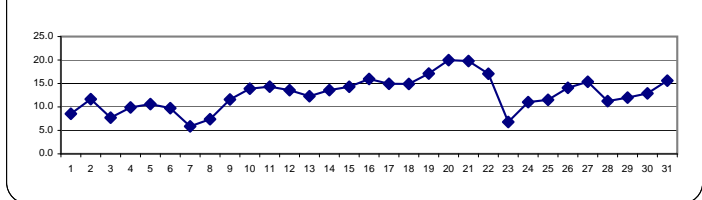
AMBIENT TEMPERATURE hourly averages (Degrees C)

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	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	MAX.	AVG.	
DAY	1	2.9	2.5	2.1	1.7	1.6	2.6	4.6	7.1	9.7	11	12.6	12.3	11.5	12.9	14.3	14.4	13.3	12.3	11.5	11.1	9.5	8.5	8	7	14.4	8.5	24
2	5.8	4.3	3.7	3.5	3.1	3.1	5.6	8.3	11.4	13.5	15.9	16.8	17.2	18.4	18.3	19.3	19.1	18.2	15.2	14	12.7	11.7	10.9	9.8	19.3	11.7	24	
3	8.6	7.8	7.3	6.7	6.1	5.9	6.3	6.9	8.1	11	11.3	10.2	6	4.9	4.9	6.4	8.8	10.4	10.3	9.6	8.4	7.1	6.2	5.9	11.3	7.7	24	
4	5.4	5	5.3	4.7	4	4.3	4.8	6.6	8.7	11	13	14	14.2	15	15.2	14.7	14.9	14.2	14	12.3	10.4	9.1	8.6	8	15.2	9.9	24	
5	7.9	7.1	6.5	7.7	8.5	6.9	7.6	9	10.8	12.6	13.8	13	12.8	13.3	13.1	13.7	14.1	12.9	12.2	11.4	10.8	10	9.7	9.3	14.1	10.6	24	
6	8.7	7.9	7.2	6.5	5.8	5.3	5.6	7.5	10.7	12.8	13.7	14.6	13.6	12.5	15.3	12.2	12	11.6	10.7	9.9	8.8	8.3	7	5.4	15.3	9.7	24	
7	4.4	3.6	2.8	2.3	1.8	2.6	3.5	4	4.1	4.5	4.8	5.7	7.5	9.4	10.7	11.7	11.5	10.6	9.2	7.6	6	4.9	4.1	3.3	11.7	5.9	24	
8	2.4	1.8	0.9	0.1	-0.5	0.5	2.5	4.8	6.1	7.7	8.9	9.9	10.9	11.9	12.8	13.3	13.5	13.2	12.3	11.4	9.6	8.7	7.5	7	13.5	7.4	24	
9	6.2	5.6	4.7	4.3	4.4	5.4	7.4	9.2	12.3	14.5	16	14.4	15.6	16.3	16.7	17.6	17.6	16.5	15.5	14	12.6	11.6	10.5	9.3	17.6	11.6	24	
10	8.3	7.4	6.7	6.2	5.7	6.5	8.3	11.4	14.1	16.3	17.7	18.4	19.2	19.3	19.9	20.3	19.2	18.9	18.1	16.9	15.3	14	13	12.3	20.3	13.9	24	
11	11.6	10	8.9	7.6	5.9	7.4	10.2	12.6	15.1	17.1	18.3	18.9	19.4	19.4	19.6	19.8	19.6	18.8	17.8	16.3	14.2	12.9	11.7	10.6	19.8	14.3	24	
12	9.7	9.2	8.7	8	7.8	8.7	9.9	11.6	13.2	14.9	16	17	17.6	18.9	19.6	19.7	19.7	19.2	16.9	14.8	13.1	11.7	10.5	9.5	19.7	13.6	24	
13	8.8	8.5	8.2	7.8	7.6	7.7	8.3	9.3	10.1	10.9	14	15.3	16	16.7	16.7	17.7	17.9	17.4	16.2	14.7	13	12	10.6	9.5	17.9	12.3	24	
14	8.7	8.1	7.5	6.5	6	7.1	9.5	11.6	13.6	15	16.6	17.4	18.2	18.8	19.2	19.4	19.4	18.7	17.8	16.5	14.5	12.8	11.7	11.5	19.4	13.6	24	
15	10.6	9.1	8.4	7.6	7.1	8.5	10.3	12.1	13.8	15.1	16.2	17.2	17.8	18.6	19.2	19.5	19.4	19.2	18.3	17.3	15.9	15.1	13.9	13	19.5	14.3	24	
16	12.4	11.7	11	10.6	9.6	9.5	10.8	12.5	14.2	15.6	16.9	18	19	20	21.1	21.8	22	22	21.1	20	17.7	16.5	15.2	13.9	22.0	16.0	24	
17	13.5	13	11.8	10	9	8.6	9.5	9	13	15	16.4	17.7	18.7	19.7	20.1	20.4	19.6	19.7	19	17.5	16	14.4	13.7	13.2	20.4	14.9	24	
18	13	12	11.5	11	10.2	10.2	11.6	14.1	16.1	17.8	19.3	20.4	21.3	22.4	21.5	20.4	19.6	17.6	14	12.6	11.5	10.5	9.8	9.3	22.4	14.9	24	
19	9.2	9.1	8.6	8.6	8.9	10	12.4	15.2	18.1	19.7	21.9	22.6	22.8	23.4	22.9	22.7	23.3	22.4	21.1	19.7	18.4	17.9	16.6	15.3	23.4	17.1	24	
20	14.4	14.1	13.6	12.1	11.8	12.6	15.7	18.3	21.6	23.3	24.8	26.4	25.2	24.1	24.4	25.6	25.8	24.1	23.2	22	20.5	19.3	18.1	18.4	26.4	20.0	24	
21	18.5	17	14.7	14.7	13.6	13.8	14.2	15.8	20.2	22	23.7	24.3	25.7	26.1	24.3	23.2	25.6	24.8	22.3	20.8	18.3	16.7	17.2	17.4	26.1	19.8	24	
22	16.5	15.7	15	15.2	15.7	16	16	14.4	17	19.9	21.5	23.8	24.5	24.1	23.8	22.8	20.5	18.9	16.6	14.8	12.8	9.4	7.6	7.2	24.5	17.1	24	
23	6.5	5.4	4.6	3.9	3.3	2.8	2.9	3.1	3.8	5.2	6.8	8.5	9.3	10.2	10.9	11.6	11.3	10.9	10.2	9	7.3	6.2	4.9	4.4	11.6	6.8	24	
24	3.6	3.8	3.9	4.5	4.7	7.3	8.6	9.8	10.2	12.1	12.9	14.2	15.4	16.3	16	16.2	16	15.5	14.9	13.5	12	11.6	11.2	10.5	16.3	11.0	24	
25	9.4	7.9	6.9	6.4	6.2	7.4	9.6	10.8	13	14.6	15.8	16.6	17.6	17.2	16.5	15.3	13.3	11.4	10.4	10.3	10.4	10.1	9.9	9.5	17.6	11.5	24	
26	9.5	9.6	9	8.1	8.3	8.7	9.6	12.2	13.4	14.7	16.1	17.2	18.5	19.3	19.3	18.9	18.6	18.2	17.1	16.2	15.3	14.3	13.3	12.5	19.3	14.1	24	
27	11.4	10.4	9	8.3	7.5	9.9	14.6	16.6	18.7	19.2	19.5	19.9	20.3	20.4	20.5	20	19.6	19	17.8	16.8	14.4	12.7	11.6	10.7	20.5	15.4	24	
28	9.5	8.4	7	6.5	5.9	7.7	8.9	10.6	12.8	13.7	14.5	15.4	16.1	15.8	16.3	15.9	15.5	14.5	13.3	11.7	9.1	7.4	6.8	6.5	16.3	11.2	24	
29	5.9	5.9	5.3	4.1	3.6	5.2	8.5	11.5	13.2	14.4	16.4	16.8	17.3	17.6	17.7	18.3	18.2	17.6	16.2	14	11.5	10.3	9.6	8.6	18.3	12.0	24	
30	7.5	6.7	5.8	5.1	4.7	6	8.8	11.2	13.4	15.1	17.7	18.2	19	20	19.8	17.3	17.9	17.9	16.3	14.2	11.8	11.9	11.9	11.1	20.0	12.9	24	
31	10.3	8.6	7.7	7.1	7.1	9.7	12.8	15.5	17.8	19.6	20.4	21	20.7	22.3	21.2	21.4	20.6	19.4	18.6	17.3	15.1	14.3	14	13.3	22.3	15.6	24	
HOURLY MAX		18.5	17.0	15.0	15.2	15.7	16.0	16.0	18.3	21.6	23.3	24.8	26.4	25.7	26.1	24.4	25.6	25.8	24.8	23.2	22.0	20.5	19.3	18.1	18.4			
HOURLY AVG		9.1	8.3	7.6	7.0	6.6	7.4	9.0	10.7	12.8	14.5	15.9	16.6	17.1	17.6	17.7	17.8	17.7	17.0	15.7	14.5	12.8	11.7	10.8	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

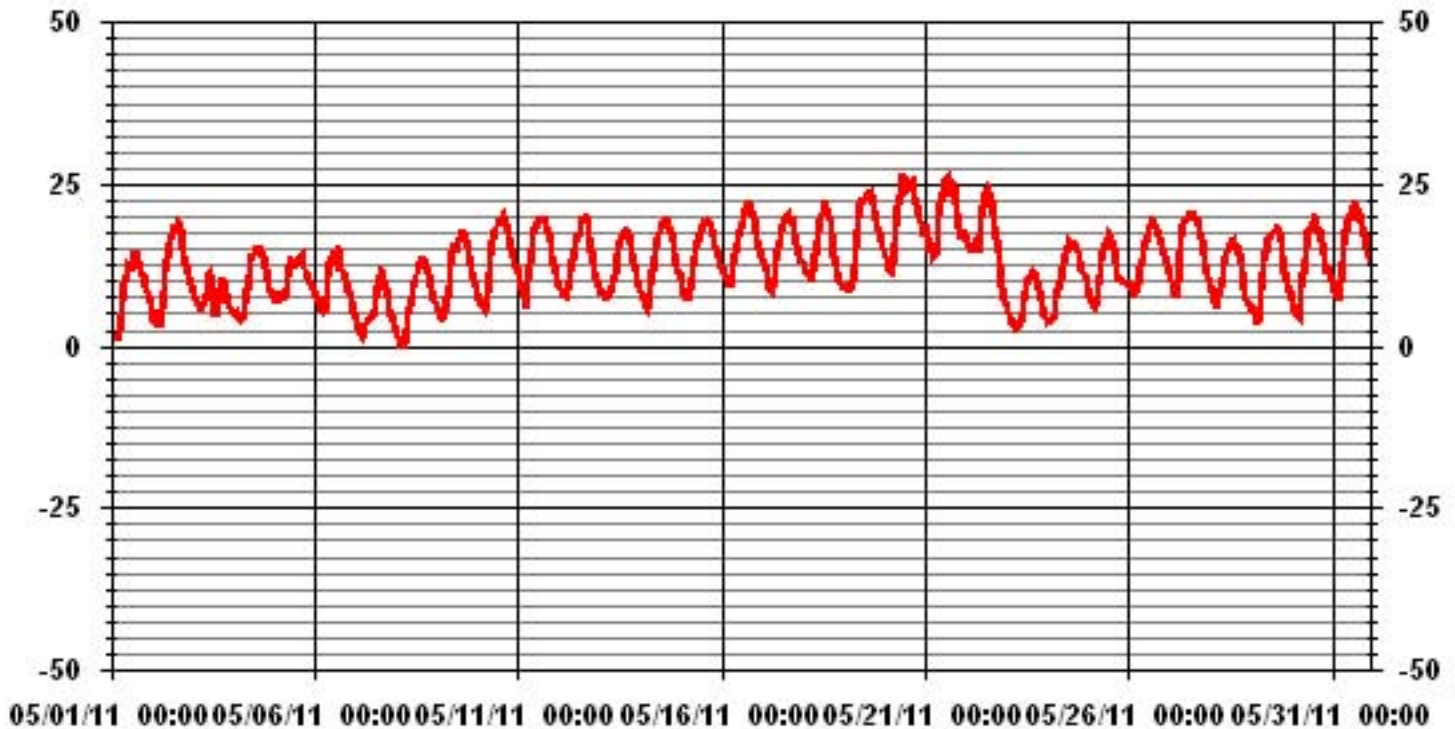
24 HOUR AVERAGES FOR MAY 2011



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-0.5 °C	@ HOUR(S)	4	ON DAY(S)	8
MAXIMUM 1-HR AVERAGE:	26.4 °C	@ HOUR(S)	11	ON DAY(S)	20
MAXIMUM 24-HR AVERAGE:	20.0 °C			ON DAY(S)	20
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
STANDARD DEVIATION:	5.47	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	12.75 °C		

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 2011

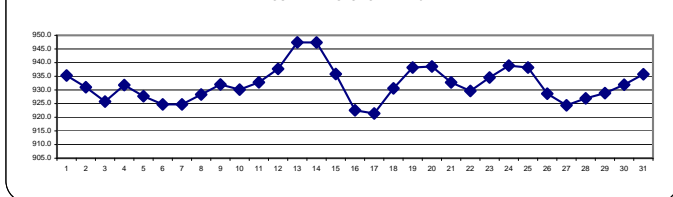
BAROMETRIC PRESSURE hourly averages (millibar)

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	934	934	934	933	933	934	935	935	936	937	937	937	936	936	937	937	936	936	936	935	934	934	934	934	934	937	935.3	24	
2	933	933	933	932	932	932	932	933	933	933	933	933	933	932	932	931	931	930	929	928	928	927	926	925	925	933	931.0	24	
3	925	924	923	923	922	922	923	923	924	925	925	926	926	926	927	927	928	929	929	929	928	928	928	928	928	929	925.8	24	
4	928	929	929	929	929	930	930	931	932	932	933	933	934	934	934	934	934	934	934	933	933	932	932	931	934	931.8	24		
5	931	930	930	930	930	929	929	929	929	929	929	928	928	928	927	927	927	926	925	925	925	925	925	924	924	931	927.7	24	
6	924	924	923	923	923	923	924	924	924	925	926	926	926	926	926	926	926	925	925	925	925	925	924	924	926	924.7	24		
7	924	923	923	923	923	924	924	924	924	924	925	925	925	926	926	926	926	926	926	926	925	925	925	925	925	926	924.7	24	
8	925	924	924	924	924	925	926	927	928	928	929	929	929	930	930	931	931	932	932	931	931	930	930	930	930	932	928.3	24	
9	930	930	930	930	931	931	932	933	933	934	934	934	934	934	933	933	933	933	932	932	931	930	930	930	934	932.0	24		
10	929	929	929	929	929	930	930	931	931	932	931	931	931	931	931	931	930	930	930	930	930	930	930	930	932	930.1	24		
11	930	930	930	930	929	930	931	932	933	933	934	934	934	935	935	934	935	935	934	934	934	934	934	934	933	935	932.8	24	
12	934	934	934	934	934	935	935	936	937	937	938	938	939	939	940	940	940	940	940	940	940	940	940	940	941	941	937.7	24	
13	941	941	942	943	944	945	946	947	948	948	949	949	950	950	950	950	950	950	950	950	949	949	949	949	949	950	947.4	24	
14	948	948	948	948	948	948	949	949	950	950	950	950	949	949	948	948	947	947	946	945	944	943	943	942	950	947.4	24		
15	942	941	941	940	939	939	939	939	939	939	939	938	937	936	935	934	933	932	932	931	930	929	928	928	942	935.8	24		
16	927	926	925	925	924	924	923	923	923	923	923	923	923	922	922	922	922	922	921	921	920	919	919	919	927	922.5	24		
17	918	918	918	918	918	919	919	919	920	921	921	922	922	922	923	923	923	924	924	924	924	924	924	924	925	925	921.4	24	
18	925	925	925	925	926	926	927	928	929	930	931	932	932	932	933	934	934	934	934	934	934	934	934	934	934	934	930.6	24	
19	935	935	935	935	935	936	936	937	938	939	940	940	940	940	940	940	940	940	940	940	939	939	939	939	940	938.2	24		
20	939	938	938	938	938	938	938	939	940	940	940	941	940	940	940	940	939	938	938	937	936	936	935	941	938.6	24			
21	935	935	934	934	933	933	933	933	934	934	934	934	934	934	933	932	933	933	932	931	931	930	929	929	935	932.8	24		
22	929	928	928	928	928	928	928	928	928	930	930	930	930	931	931	931	931	931	930	930	931	931	931	931	931	931	929.6	24	
23	931	931	932	932	932	932	932	933	933	934	934	935	936	937	937	937	937	937	937	937	936	936	936	936	937	934.5	24		
24	936	936	936	936	936	937	938	938	939	939	940	940	940	941	941	941	941	940	940	940	940	940	940	940	941	938.9	24		
25	939	939	939	939	939	939	940	940	940	941	941	941	940	940	939	939	938	937	936	935	935	934	934	933	941	938.2	24		
26	932	932	931	931	930	930	930	930	930	930	930	929	929	929	929	928	928	927	926	926	926	925	924	932	928.6	24			
27	924	923	923	923	923	923	924	925	925	926	925	925	926	926	926	925	925	925	924	925	924	924	923	923	926	924.4	24		
28	923	923	923	923	923	924	925	926	926	927	927	928	928	929	929	929	930	930	930	930	929	928	928	928	930	926.9	24		
29	928	927	927	927	927	927	928	929	929	930	930	930	930	930	931	930	930	930	930	929	928	928	927	931	928.8	24			
30	927	927	928	928	927	928	929	930	931	932	933	934	934	934	935	934	934	935	935	935	934	934	934	934	935	931.9	24		
31	934	933	933	934	934	934	935	936	937	937	937	937	937	937	937	937	937	937	937	937	936	935	935	935	937	935.8	24		
HOURLY MAX	948	948	948	948	948	948	949	949	950	950	950	950	950	950	950	950	950	950	950	949	949	949	949	949	949	949			
HOURLY AVG	931	931	931	931	930	931	931	932	932	933	933	933	933	933	933	933	933	933	933	933	932	932	932	931	931				

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

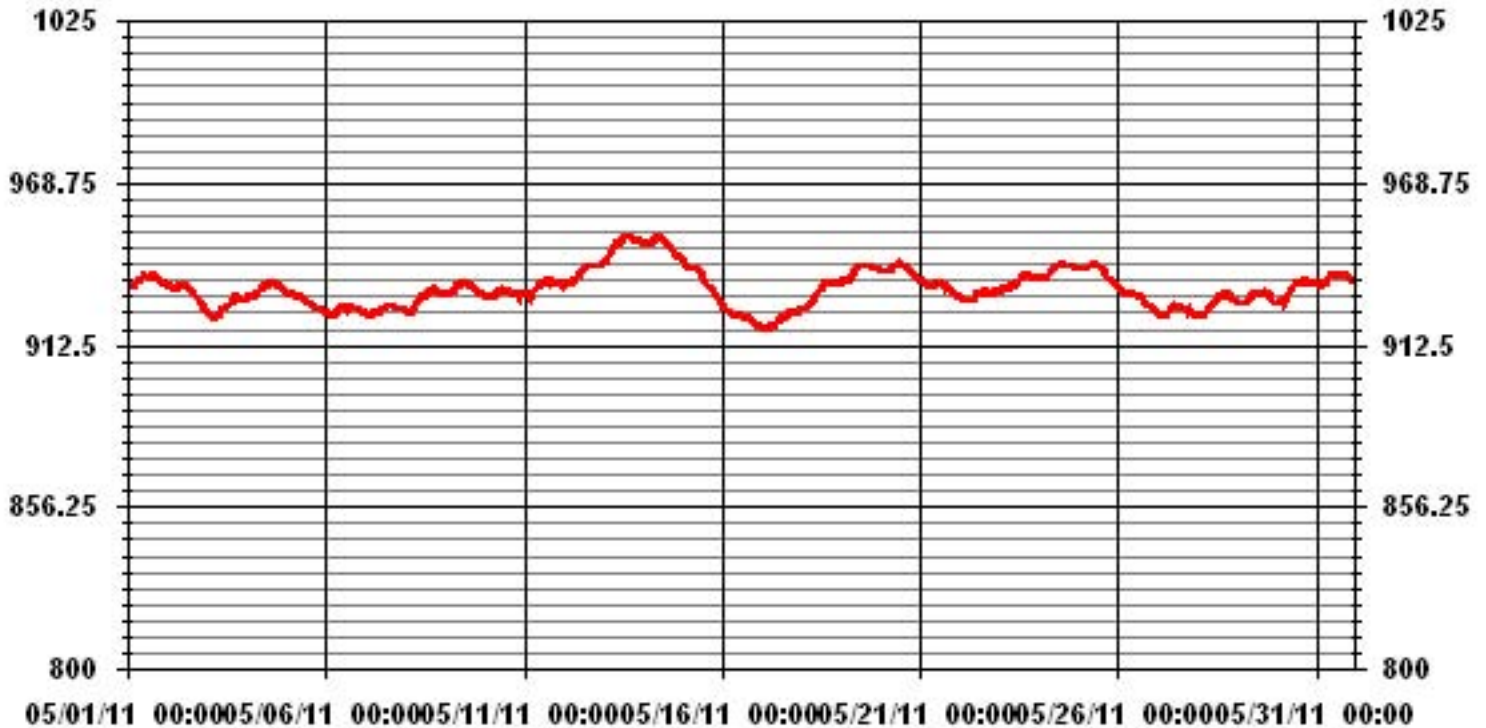
24 HOUR AVERAGES FOR MAY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	950	MB	@ HOUR(S)	VAR	ON DAY(S)	13, 14
MAXIMUM 24-HR AVERAGE:	947.4	MB			ON DAY(S)	13, 14
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	6.64		MONTHLY AVERAGE:	932	MB	

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 2011

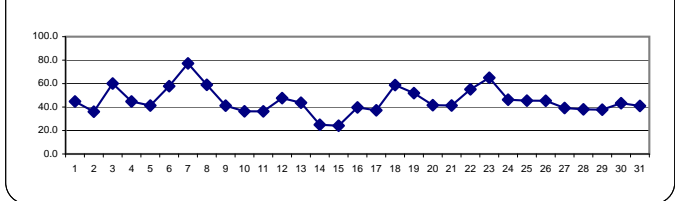
RELATIVE HUMIDITY hourly averages (%)

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	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	69	69	71	73	75	71	65	57	51	43	36	34	35	28	24	23	25	26	28	29	33	35	36	38	75	44.8	24
2	2	42	48	53	55	58	60	54	47	38	32	24	21	20	18	18	17	17	20	29	31	35	40	42	46	60	36.0	24
3	3	51	55	58	61	63	64	64	62	57	46	48	60	81	85	85	79	69	57	53	54	47	45	47	51	85	60.1	24
4	4	57	62	66	76	84	80	76	61	54	47	39	31	26	23	22	23	22	24	25	29	32	36	38	41	84	44.8	24
5	5	42	45	48	44	42	48	50	45	42	36	32	34	38	37	38	36	34	37	39	40	42	46	47	49	50	41.3	24
6	6	53	60	66	71	75	77	76	69	58	49	42	36	37	42	29	52	51	54	57	61	63	64	69	77	77	57.8	24
7	7	81	86	89	90	91	91	91	92	91	91	91	89	79	69	58	51	50	50	54	61	70	76	79	83	92	77.2	24
8	8	84	84	86	89	90	87	82	74	68	61	57	53	49	45	41	38	36	35	34	37	44	44	48	49	90	59.0	24
9	9	52	56	60	62	63	62	59	54	46	35	31	32	30	28	26	23	23	24	27	32	36	39	43	46	63	41.2	24
10	10	50	53	55	56	57	54	50	44	40	35	28	24	22	21	21	20	22	23	25	27	32	35	39	40	57	36.4	24
11	11	40	46	50	55	62	59	52	44	38	33	28	27	23	22	23	20	20	23	25	26	32	37	41	46	62	36.3	24
12	12	52	56	60	62	63	62	60	57	54	48	42	37	36	33	29	29	30	32	42	46	48	48	55	62	63	47.6	24
13	13	65	66	64	67	67	65	63	58	56	53	44	37	34	33	32	28	29	26	21	25	27	26	30	33	67	43.7	24
14	14	35	37	39	43	45	43	38	33	28	23	19	16	14	12	10	10	9	12	13	16	21	25	29	28	45	24.9	24
15	15	31	36	37	40	42	39	35	30	23	17	16	14	13	11	10	11	13	14	16	19	22	25	30	34	42	24.1	24
16	16	37	40	42	44	49	52	50	45	43	40	38	35	33	32	30	29	30	30	32	36	40	43	49	54	54	39.7	24
17	17	53	50	52	55	55	55	53	53	38	31	27	24	23	20	19	17	19	18	20	25	30	45	54	58	58	37.3	24
18	18	57	61	64	66	70	72	69	62	55	48	40	32	29	28	30	33	40	50	71	79	84	88	90	92	92	58.8	24
19	19	92	92	91	87	85	82	75	69	57	49	27	26	26	24	24	22	21	22	25	41	46	47	55	60	92	51.9	24
20	20	64	64	65	71	71	68	59	53	44	39	33	27	25	26	25	22	22	25	27	30	33	35	37	34	71	41.6	24
21	21	33	38	48	48	54	56	59	58	48	42	35	29	23	21	26	33	29	29	35	43	50	54	51	50	59	41.3	24
22	22	55	57	61	58	54	55	60	72	65	55	48	39	35	33	35	39	48	54	56	58	63	71	76	76	76	55.1	24
23	23	76	78	78	78	77	77	75	72	69	65	60	58	55	52	49	48	46	48	54	61	64	69	73	78	78	65.0	24
24	24	78	73	70	68	67	61	59	53	50	42	38	33	28	29	28	26	28	29	31	38	42	43	47	50	78	46.3	24
25	25	56	54	52	56	57	54	47	44	33	28	26	25	23	23	24	33	45	56	60	57	56	58	60	64	64	45.5	24
26	26	62	59	61	68	69	66	64	54	48	41	37	34	30	29	29	30	30	31	33	35	39	43	47	50	69	45.4	24
27	27	53	55	60	65	69	63	53	48	43	37	30	28	27	24	22	23	25	25	27	30	31	31	33	39	69	39.2	24
28	28	43	45	50	54	58	54	53	49	44	36	33	29	27	23	23	23	21	22	23	28	35	43	48	49	58	38.0	24
29	29	50	47	50	58	65	62	56	50	41	35	25	19	18	19	19	19	20	20	26	32	38	43	46	48	65	37.8	24
30	30	52	54	56	59	61	60	55	49	43	39	31	29	26	24	24	28	29	29	35	46	54	53	51	52	61	43.3	24
31	31	56	63	66	65	69	59	50	46	42	35	28	26	24	22	26	22	26	28	29	33	39	40	45	44	69	41.0	24
HOURLY MAX		92	92	91	90	91	91	91	92	91	91	91	89	81	85	85	79	69	57	71	79	84	88	90	92			
HOURLY AVG		55.5	57.7	60.3	62.7	64.7	63.2	59.8	55.1	48.7	42.4	36.7	33.5	32.0	30.3	29.1	29.3	30.0	31.3	34.4	38.6	42.7	45.9	49.4	52.1			

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

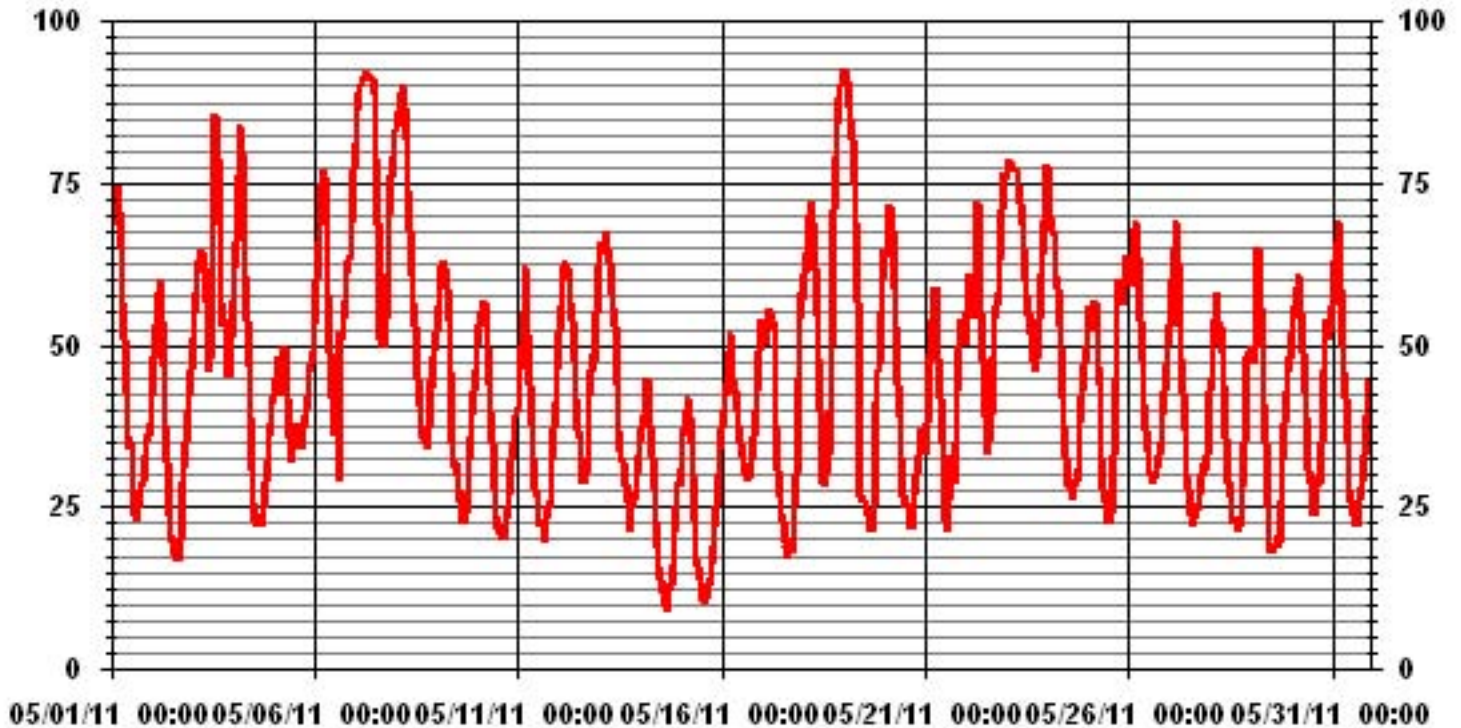
24 HOUR AVERAGES FOR MAY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	92	%	@ HOUR(S)	7	ON DAY(S)	7
MAXIMUM 24-HR AVERAGE:	77.2	%			ON DAY(S)	7
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	18.42		MONTHLY AVERAGE:	45.23	%	

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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		
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.	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	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	0.1	0.9	0.1	0	0	0	0	0	0	0	0	0	0.9	1.1	24	
	4	0	0	0	0.2	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	24	
	5	0	0	0	0	0	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	24	
	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	19	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	22	0	0	0	0	0	0.2	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.6	24	
	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.3	0	0	0	0	0	0	0	0	0	2.3	2.3	24	
	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
	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	24	
HOURLY MAX		0.0	0.0	0.1	0.2	0.1	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.9	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24

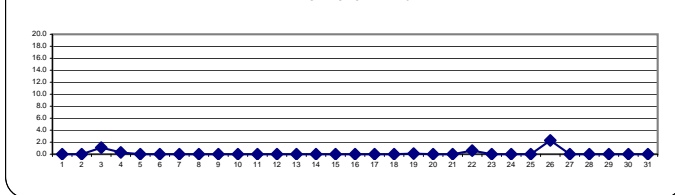
STATUS FLAG CODES

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

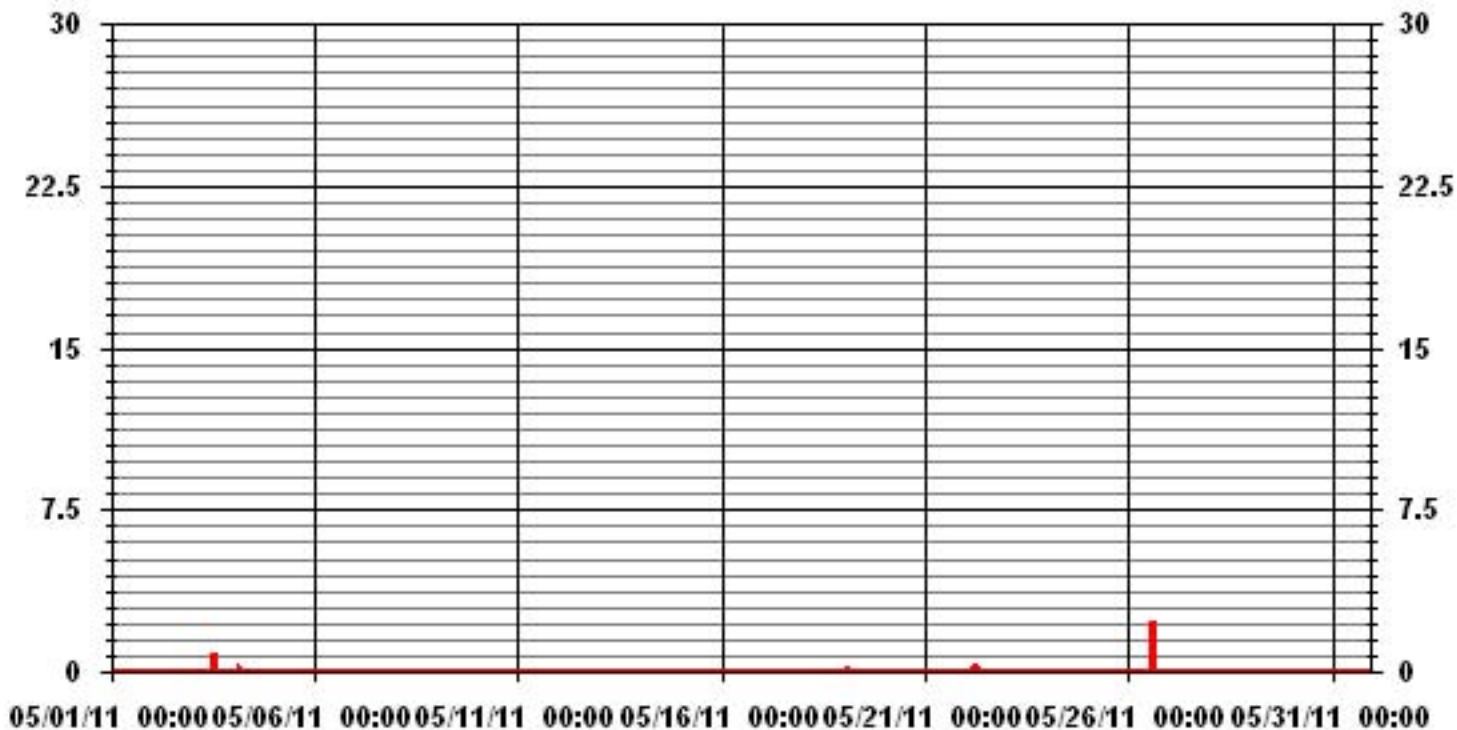
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	2.3	MM	HOUR(S)	14	ON DAY(S)	26
MAXIMUM DAILY TOTAL	2.3	MM			ON DAY(S)	26
MONTHLY TOTAL	4.4	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.09		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.01	MM	

DAILY TOTALS FOR MAY 2011



01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MAY 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	
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	10.6	11.6	12.3	12.3	11.2	11	7	6.3	7.1	8	7.6	3.5	6.5	7.7	4.1	6.4	7.1	8.7	16	3.8	5.8	7.1	7.6	8.1	16	1.9	24
2	2	8.7	9.1	4.2	8.5	8.9	9.3	10.5	9.9	9.4	8.5	8.2	8.7	11.2	3.5	3.5	5	11.8	5.5	2.5	5.3	6.2	5.7	5.5	5.8	11.8	3.6	24
3	3	8	8.7	8.9	7.6	6.2	7.5	10.8	9	14.8	16	21.6	14.5	11.9	11.5	14.2	15.5	13.8	12.5	13.3	13.2	11.1	9.2	6.7	7.2	21.6	9.4	24
4	4	7.7	8.6	7.5	9.1	9.7	10.6	5.9	7.3	7.1	6.4	11.9	11.4	11.6	7.7	9.9	11.1	12.7	13.5	12.2	12	12.2	11.7	11.9	11.5	13.5	8.6	24
5	5	13.2	13.3	12	11.8	8.3	13.1	13.5	13.2	7.2	2.4	3.3	7.1	4.6	8.5	12.6	2.3	5.5	4.2	3.9	2.3	4.4	3.8	4.8	4.6	13.5	3	24
6	6	7.2	7.6	8.4	9.9	8.8	8.7	9.3	9.6	10.6	4.7	9.6	8.6	9.9	15.3	8.1	15.6	6.7	10.7	11.9	4.7	4.5	5	5.8	15.8	2.2	24	
7	7	14.9	14.6	10.1	9.7	5.3	6.2	6.9	9.1	5.3	12.2	6.3	6.8	4.5	6.1	5.8	7.3	8.6	6.5	4.2	5.2	7.3	6.9	5.2	5.4	14.9	3.2	24
8	8	5.2	5	7.6	8.2	8.9	8.7	5.3	3.6	4.5	7	10.1	10.6	10.4	10.5	7.4	9.4	7.9	12	12.5	13	12.4	10.4	7.9	12.1	13	7.9	24
9	9	11.4	9.6	10.5	12	16.1	15	13.9	7.9	7.4	5.2	8.1	9.3	7.5	11.1	9.6	3.6	6	8.1	9.9	11.8	10.6	11.7	15.9	16.7	16.7	8.6	24
10	10	16	14.8	17.4	17.7	17	14	11	10.6	9.4	10.2	13.1	14.8	13.2	3.9	5	12.2	10.9	14.9	8.6	12.1	13.8	16.2	16.8	15.9	17.7	10.8	24
11	11	14.1	10.2	10.3	10.4	15.6	15.2	14.1	9.9	11.1	11.1	11.8	15.1	15.1	17.3	17.1	19.5	20.2	16.9	15.3	12.1	8.5	11	12.9	13.5	20.2	8.4	24
12	12	16.6	17.5	16.4	14.1	11.6	15.4	13	14.9	17.7	20.3	21.8	22.5	21.8	21.7	21	21.9	21.6	20.6	19.3	17.6	18.9	15.8	16.7	18.4	22.5	17.8	24
13	13	20.9	20.1	16.5	16	20.5	19	17.3	16.1	2.9	4.3	1.6	14.3	17	15.4	14.6	19.5	16.9	18.4	15.8	11.8	9.2	8	10.4	12.8	20.9	12.9	24
14	14	13.5	16	17.3	16.7	16.4	15.5	16.3	19.8	6	7.4	9.9	9.3	13.3	12.8	11.5	12.8	13	14.8	15	14.7	15.6	15.1	15	12.1	19.8	5.8	24
15	15	12.3	12.4	11.8	12.8	12.4	7.5	8.1	10	12.3	15.2	16.4	20.3	24.4	23.8	23.9	21.5	23.1	18.6	19.2	16.5	18	18.1	17.4	16.8	24.4	15.5	24
16	16	14.3	13	12.7	14	13.5	16.6	15.9	14.8	16	11.5	10.1	13.4	11.2	14	11.8	10.9	10.7	12.7	12.5	14.1	17.3	12.3	7.5	9.9	17.3	12.2	24
17	17	7.9	4.9	4.1	6.5	11	13.3	16.6	15.5	12.3	12.8	16.1	16.6	17.4	15.6	18.1	13.1	16.5	14.1	16.4	17.7	17.2	16.9	15.2	14.3	18.1	12.8	24
18	18	14.3	14.2	15.2	14.1	7	7.3	6.9	1.7	11.1	9.8	8.1	10.6	6.7	10.9	4.6	4.3	2.3	10.2	12.9	11.8	9.7	12	12	9.7	15.2	1.9	24
19	19	12.2	13	11.8	11.9	10.5	11.6	10.2	9.3	7.4	7.8	9.5	11	7.8	3.5	7.5	11.2	11.9	12.6	13.3	5.2	2.3	8.9	7.5	8.4	13.3	8.3	24
20	20	9.1	9.5	10.9	8.3	10.4	9.1	6.5	2.2	4.6	1.5	5.1	0.9	8.4	6.5	4.3	10.3	5.3	7.3	2.7	5.5	6.7	4.6	4.9	6.6	10.9	2.9	24
21	21	5.7	4.5	7.3	8	8.7	8.4	8.7	7.1	3.7	12	8.6	7.4	8.7	7.1	9.8	12.4	11.7	7.6	11.7	15.3	14.3	11	5.8	6.3	15.3	4	24
22	22	4.2	11.6	13.6	11.7	12.5	9.7	5.4	14.9	7.3	13.6	13.4	11.8	11	1.2	7.3	12.5	19.6	17.9	19.5	16.3	19.8	19.3	18	20.7	20.7	4.9	24
23	23	19.8	17.1	16.7	16.2	17.2	15.9	15.5	16.2	17.4	16.9	8.6	6.2	3.2	7	8.2	7.4	6.1	7.1	7.5	12.2	13.5	14	16.1	12.5	19.8	4.5	24
24	24	13.8	16.9	2.3	3.1	3.9	3.2	3	5.1	11.5	9.6	10.5	8.3	7.8	7.3	6	10.7	10.3	7	2.5	4.9	6.8	7.7	8.8	7.9	16.9	3.4	24
25	25	4.9	9.5	11.3	11.1	10.5	11	8.9	8.7	10.8	10.8	9.2	10.2	11.3	12.5	10.5	12.5	15	12.6	15	16.9	15.7	16.5	12.1	8.2	16.9	7	24
26	26	9.3	11.7	8.7	9.6	12.4	13.6	14.9	16.1	11.6	4	3.8	4.1	6.1	5.6	5.3	7.3	6.5	8.4	7.9	9.2	10.1	11	12.2	12.2	16.1	2.3	24
27	27	12.3	12.7	12.9	10.6	11.5	14.1	7.8	5	3	11.8	11.1	11.6	8.9	9.2	8.4	10	13.1	12.3	9.2	8.9	11.9	16.4	15.6	12.6	16.4	9.1	24
28	28	15.2	16.1	15.6	14.7	15.4	15.9	15.8	15.3	14.3	16.4	14.2	16.1	14.1	13.7	12.9	14.3	14.4	3.4	7.6	10.7	13.1	7.5	9.8	9.3	16.4	8.1	24
29	29	7	6.8	8.7	8.9	7.4	5.6	6.1	7.9	6.9	7.6	2	9.8	6.9	6.4	8.9	8.9	5.6	3.7	4.2	6.4	8.8	9.6	9.6	10.3	10.3	3.8	24
30	30	10.3	11.3	13.3	12.9	13.3	11.8	8.4	10.4	10.3	9.1	7.1	9.1	9.2	7.4	8.6	12.2	12.6	11.8	12.4	14.3	13.3	11	11.2	12	14.3	7.9	24
31	31	9	11.4	11.5	10.9	13.7	10.6	10.6	11.2	11.6	11.2	11.4	4.8	9.1	7.1	8.9	0.4	9.6	5	8.4	14.1	14.3	16.1	10.7	5.9	16.1	7.5	24
HOURLY MAX		20.9	20.1	17.4	17.7	20.5	19.0	17.3	19.8	17.7	20.3	21.8	22.5	24.4	23.8	23.9	21.9	23.1	20.6	19.5	17.7	19.8	19.3	18.0	20.7			
HOURLY AVG		11.3	11.7	11.2	11.3	11.5	11.4	10.5	10.3	9.4	9.8	10.0	10.6	10.7	10.1	10.0	11.0	11.5	11.0	11.1	11.0	11.4	11.3	10.9	11.1			

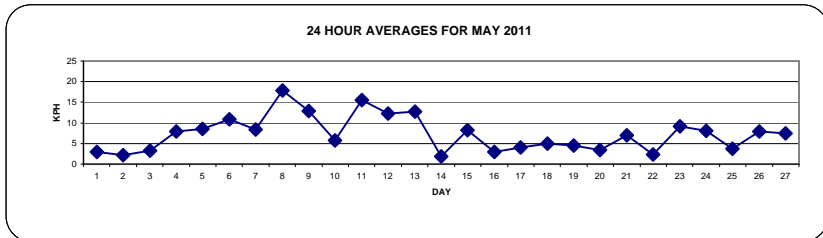
STATUS FLAG CODES

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

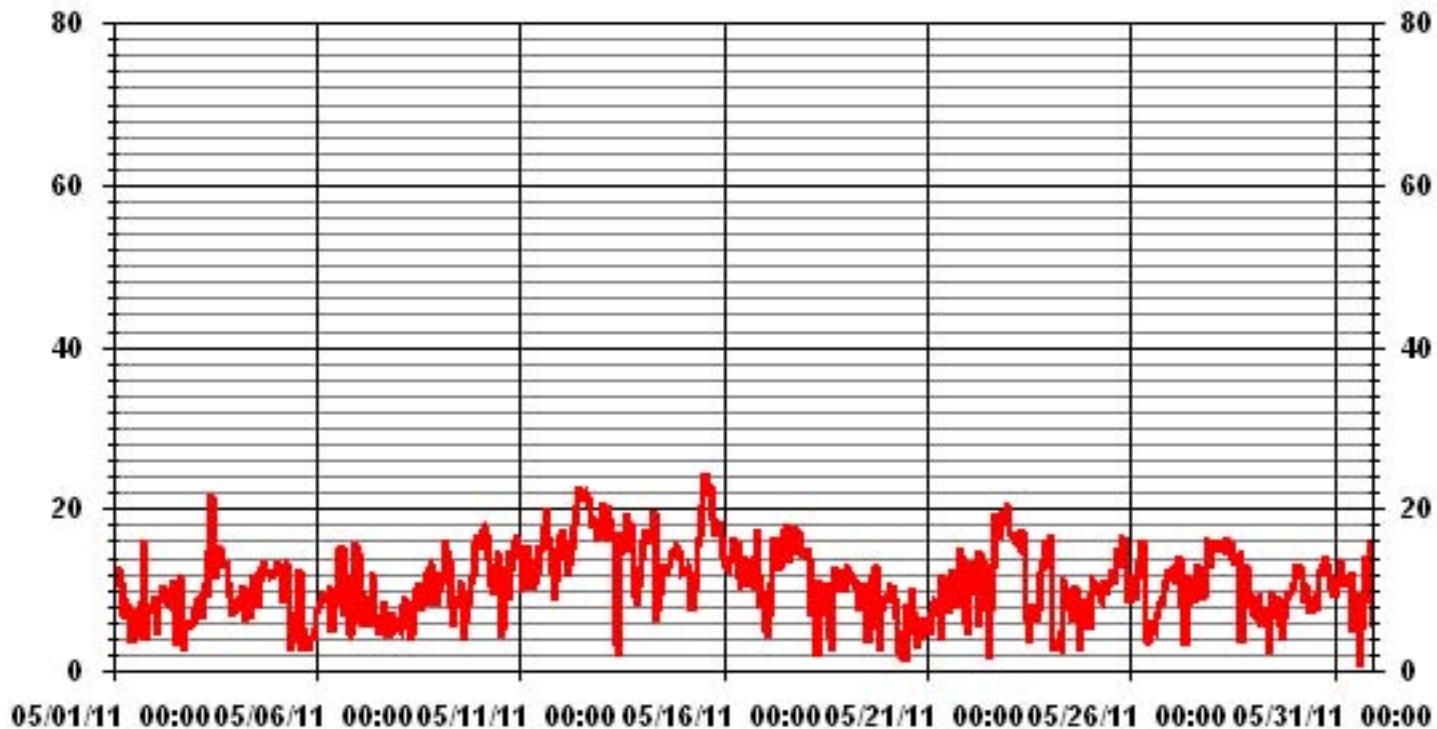
LAST CALIBRATION: June 17, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	24.4	KPH	@ HOUR(S)	12	ON DAY(S)	15
MAXIMUM 24-HR AVERAGE:	17.8	KPH			ON DAY(S)	12
CALMS (≤ 0 KPH)	0.13	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	4.44		MONTHLY AVERAGE	10.83	KPH	



01 Hour Averages



— LICA31 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

MAY 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		18.4	20.6	21.2	26	21.9	22.6	13.6	16.2	15.8	24.1	22.1	29.8	32.9	26.3	20.4	25.4	17.7	16	20.1	20.4	8.1	10.8	11.7	11.8	32.9	
2		16	15.8	14	18.4	14.7	15.3	20.6	19.5	20.8	25.6	29.8	27.8	28	25	24.1	26.7	29.6	25.8	24.1	23.9	21	31.1	33.7	35.7	35.7	
3		18.2	21.5	20.6	21	20.4	30.4	19.3	26.3	32.9	48.2	52.1	47.3	38.5	46.2	45.6	38.5	29.8	22.5	26.7	18.6	17.1	16.7	16.4	21.9	52.1	
4		22.3	24.1	30.3	38.5	18.8	33.3	16.2	31.1	28.3	23.4	36.8	39.2	38.1	38.7	42	35.7	39.6	32	27.1	23.8	17.1	16.4	14.9	14.2	42	
5		17.5	15.6	18	18.2	18.6	18.2	19.7	19.5	19.9	21.4	19.9	32.2	25	28.2	21.7	19.9	20.6	12.7	13.4	8.6	10.7	7.5	7.7	9	32.2	
6		11.6	17.1	17.5	19.1	20.1	18.8	20.2	27.4	30	34.8	25.8	32.4	44.2	40.5	27	34.4	24.1	N	20.2	9.4	5.9	6.4	19.1	21.2	44.2	
7		20.4	21	21	17.5	28	24.7	21.4	30	16.2	31.6	27.2	19.3	16.9	18.4	18.4	21.5	22.8	30	19.9	21.9	18.2	15.8	26.9	13.8	31.6	
8		14.5	13.1	15.3	14	15	15.6	17.3	15.3	21	19.5	23.6	26.3	26.5	24.5	25.4	21.2	28.3	20.6	19.9	17.1	16.6	16.2	13.6	17.7	28.3	
9		16.9	15.1	14.9	17.3	20.1	18.8	19.7	21.9	21.2	24.1	26.5	20.8	24.6	22.5	23.6	24.3	27.1	28	20.1	16.5	17.7	19.9	21.4	22.1	28	
10		23.4	24.7	22.1	23.2	26	27.6	25.6	24.3	27.4	29.2	33.5	40.7	38.1	34.8	34.8	34.4	24.1	28.9	26	22.5	27.8	29.3	34.8	36.5	40.7	
11		33.8	24.1	17.9	23.2	23.9	21.4	21.9	24.5	26	35	45.3	50.1	45.7	48.6	45.1	50.1	48.4	43.1	40.5	35.9	27.1	32.2	37.4	44.6	50.1	
12		37.9	44.2	40.5	38.3	40.9	41.2	37.4	43.6	46.6	45.5	53.4	57.8	52.5	57.8	57.8	58.8	55.6	51.8	53.2	53.2	53	45.5	48.2	53.4	58.8	
13		48.4	51.9	50.2	40.7	43.3	44	35.3	44	40.3	33.5	36.5	34.8	41.6	40.7	37.2	50.2	41.1	42.7	38.3	23.6	22.1	25.2	27.4	25.6	51.9	
14		26	29.6	27.6	28.5	24.5	29.8	28.9	41.4	41.6	46.8	48.4	44	45.1	44.4	49.9	54	41.6	44.9	40.7	29.8	27.6	29.1	26.7	34.4	54	
15		26.5	29.1	26.7	25.8	28.7	37.7	36.1	45.3	63.2	57.6	50.1	57.1	64.5	63.9	75.2	66.1	65.7	54.3	64.8	41.6	50.1	42.2	39.6	41.8	75.2	
16		43.4	36.5	34.8	37.9	30	38.3	40.7	41.2	40.1	53.6	42.2	41.1	51	48.1	44.9	45.5	38.7	35.2	24.9	25.8	32.6	30.7	24.3	21.7	53.6	
17		16.2	36.8	33.1	33.7	20.6	23.9	32.9	29.3	39	42.5	49.4	46.4	45.3	59.5	49.4	59.5	40.9	39.8	37.4	35.9	35.7	29.6	24.1	22.5	59.5	
18		24.3	22.3	23	20.4	19.1	13.2	15.3	19.5	21.2	19.5	23.6	31.8	30.4	30.9	23.2	26	27.1	40.3	37.3	18.6	18.4	17.7	18.4	13.4	40.3	
19		17.8	19.3	18.8	19.1	16.6	20.1	19.5	20	20.8	20.4	27.8	30	23.6	22.5	19	22.1	20.4	20.6	19.3	19.9	19.9	17.5	15.8	16.2	30	
20		16.6	16.9	19.7	15.1	17.5	20.4	23.9	12.3	22.5	23.2	25.4	23.6	22.3	25.2	25.6	26.9	22.1	21.9	8.5	12.7	14	23.4	9.2	10.7	26.9	
21		10.3	22.3	13.1	10.5	13.6	12.5	15.1	13.1	20.1	19.9	20.6	20.4	24.3	23.8	21.6	29.5	22.3	25.6	27.3	19.5	19.5	20.4	7.9	11.6	29.5	
22		24.1	21	19.3	17.6	19.3	20.1	23.4	21	24.9	23.2	25.9	27.6	29.1	28.2	36.3	46	46	44.9	48.8	39.2	45.3	42.9	44.4	47.9	48.8	
23		48.4	50.2	47.3	43.3	38.3	42.7	37.4	36.8	40.1	42	46	43.8	36.3	36	35	30	26.5	28.7	28.5	18.8	17.3	18.6	19.5	20.2	50.2	
24		15.1	19.3	20.4	4.6	5.1	5.1	8.3	20.6	20.8	22.5	21	23.9	27.6	22.1	21	20.9	20.6	20.1	12.5	16.7	11.6	14.2	15.4	14.9	27.6	
25		21.5	17.7	21.9	19.5	17.7	20.8	19.7	25.2	22.8	22.8	23.6	33.3	29.5	31.8	30.6	40.1	36.1	34.6	34.2	40.1	35.7	44	40.5	17.3	44	
26		23.9	23.5	21.7	27.4	26.9	30	43.6	43.6	35.7	22.8	25.4	20.6	23.2	27.1	21.9	21.9	26.9	26.9	20.6	19.7	18.8	18.4	18	17.3	43.6	
27		17.5	18.2	17.5	18.4	16.4	22.3	20.2	11.4	26	34.1	29.6	29.6	28.7	28	28.1	32.4	32.2	36.8	26	26	89.5	29.8	30.2	32	89.5	
28		30.9	32.6	24.1	22.8	25.2	30.4	32.4	33.1	31.5	37.2	38.5	39	37.2	41.4	35.5	39.6	39.8	36.8	33.5	23.4	19.3	19.7	13.8	13.6	41.4	
29		11.4	10.1	13.1	16.4	14	11.6	13.4	24.9	25.4	27.6	26.9	31.5	28	21.9	22.1	24.7	23.6	21	13.6	11.6	14.7	21.3	19.3	20.4	31.5	
30		20.8	25.8	26.7	27.8	27.6	27.8	24.9	28.9	30	30	29	31.8	29.3	27.6	29.6	24.3	26.3	21.9	27.2	27.4	19.9	17.1	18.2	17.1	31.8	
31		19.7	18.4	16	13.8	19.1	16.9	18.2	19.5	20.4	26.7	31.1	30.9	30	24.1	53.6	27.4	31.6	17.7	18.6	18	18.4	19.1	19.1	18.7	53.6	
PEAK		48.4	51.9	50.2	43.3	43.3	44.0	43.6	45.3	63.2	57.6	53.4	57.8	64.5	63.9	75.2	66.1	65.7	54.3	64.8	53.2	89.5	45.5	48.2	53.4		

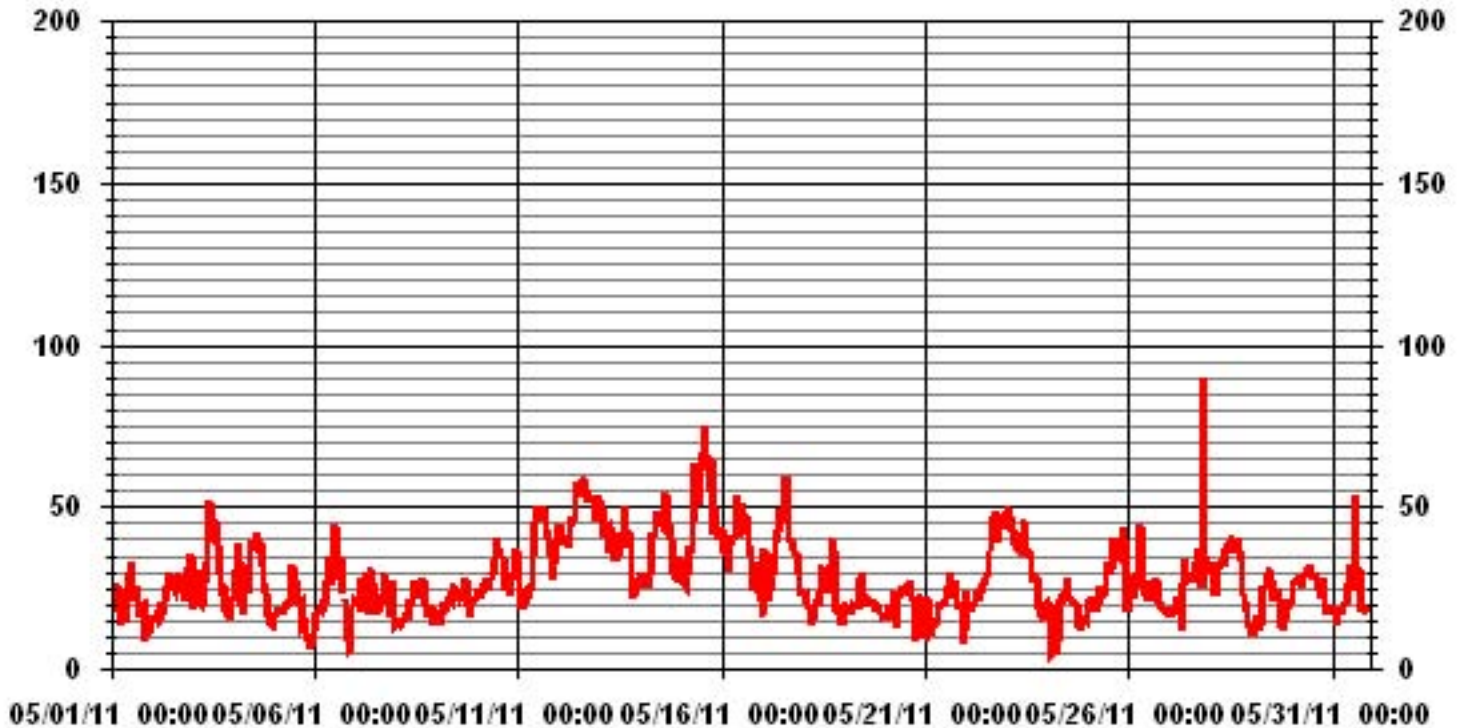
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	89.5	KPH	@ HOUR(S)	20
			ON DAY(S)	27

01 Hour Averages



LICA31
WSP / WDR Joint Frequency Distribution (Percent)

May 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	.67	.94	.80	1.07	.67	1.07	.53	.94	.26	.80	.40	.80	1.34	.80	1.61	1.34	14.11
< 12.0	2.15	1.74	3.09	3.49	2.82	2.95	1.88	1.61	2.15	2.55	2.15	3.89	3.62	5.51	4.70	2.68	47.04
< 20.0	.80	.53	3.49	2.68	5.37	3.62	1.47	2.15	3.89	1.74	2.28	1.47	1.20	2.41	1.74	.94	35.88
< 29.0	.13	.00	.00	.00	.40	.53	.00	1.47	.13	.13	.00	.00	.00	.00	.00	.00	2.82
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	3.76	3.22	7.39	7.25	9.27	8.19	3.89	6.18	6.45	5.24	4.83	6.18	6.18	8.73	8.06	4.97	

Calm : .13 %

Total # Operational Hours : 744

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	5	7	6	8	5	8	4	7	2	6	3	6	10	6	12	10	105
< 12.0	16	13	23	26	21	22	14	12	16	19	16	29	27	41	35	20	350
< 20.0	6	4	26	20	40	27	11	16	29	13	17	11	9	18	13	7	267
< 29.0	1				3	4		11	1	1							21
< 39.0																	
>= 39.0																	
Totals	28	24	55	54	69	61	29	46	48	39	36	46	46	65	60	37	

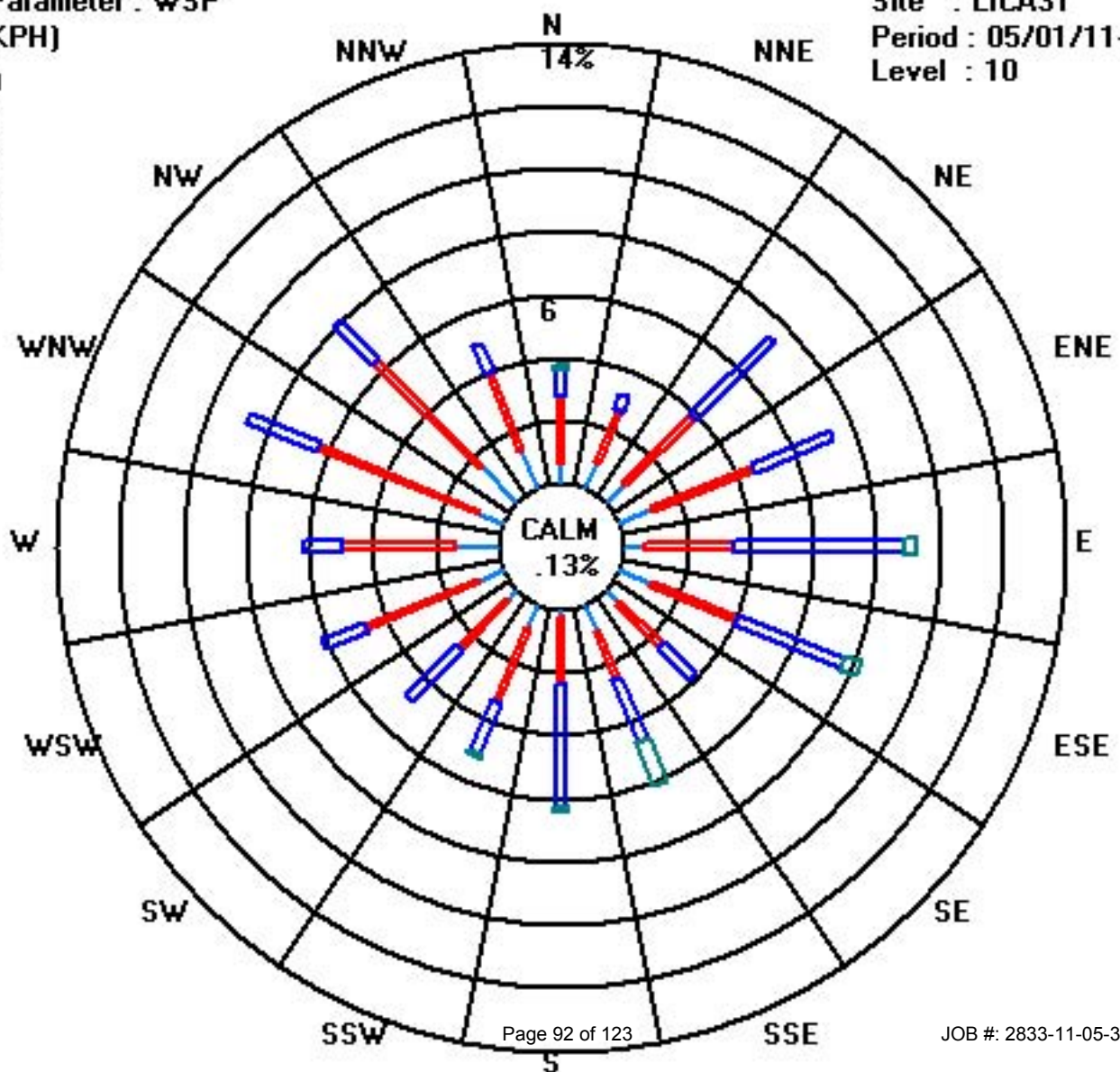
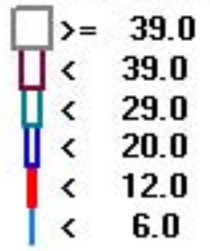
Calm : .13 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 05/01/11-05/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MAY 2011

WIND DIRECTION hourly averages in degrees

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.
DAY																												
1		286	291	302	305	309	299	265	285	279	284	77	118	154	62	107	158	125	103	93	260	231	203	198	192	265	W	24
2		191	202	201	348	347	349	352	342	340	346	350	4	20	16	163	153	234	208	342	343	346	1	20	16	342	NNW	24
3		356	357	354	348	339	319	309	16	36	14	2	352	337	346	358	17	41	43	57	79	69	76	66	48	16	NNE	24
4		38	36	19	21	52	36	70	9	17	24	29	13	359	347	354	8	21	34	36	52	73	83	103	106	36	NE	24
5		108	114	108	74	57	84	85	69	307	102	244	259	278	336	303	304	65	1	32	333	341	68	152	235	66	ENE	24
6		240	252	293	280	286	288	292	304	42	184	218	212	227	260	208	122	105	65	22	96	126	162	138	147	225	SW	24
7		143	143	121	68	320	312	285	277	321	267	299	273	275	266	281	294	324	333	353	324	329	319	322	310	299	WNW	24
8		289	288	303	310	317	318	308	263	296	290	302	311	301	301	298	281	275	286	266	253	240	243	251	245	283	W	24
9		249	255	254	241	237	251	263	205	144	149	244	250	286	273	271	131	157	149	240	241	233	223	230	233	237	NW	24
10		231	224	231	228	226	193	182	198	181	167	186	181	179	211	345	174	142	225	187	140	144	152	160	168	189	S	24
11		173	144	157	130	54	39	37	36	44	64	92	95	150	168	176	183	185	176	180	182	182	164	167	174	144	SE	24
12		175	177	187	180	180	177	173	169	166	164	158	160	157	167	154	154	159	163	140	146	139	139	146	154	161	SSE	24
13		158	161	165	179	201	181	162	154	94	28	140	198	196	199	200	200	199	195	199	225	208	197	203	207	187	S	24
14		203	215	221	224	227	223	219	190	116	140	89	98	87	95	95	94	94	87	85	71	60	52	54	72	125	SE	24
15		69	71	74	54	61	79	93	114	141	116	100	100	100	106	117	121	118	113	116	94	91	94	84	94	100	E	24
16		93	88	87	92	70	64	76	85	73	94	95	97	109	89	91	91	85	76	56	47	52	59	39	26	77	ENE	24
17		26	66	66	44	47	49	54	54	80	100	97	102	85	93	91	100	78	84	72	64	53	45	37	70	ENE	24	
18		43	34	42	33	101	119	141	117	273	258	247	43	221	233	265	255	158	181	203	258	265	276	284	292	275	W	24
19		297	301	305	312	317	313	317	318	313	291	238	239	286	249	257	245	267	273	287	323	333	321	335	300	292	WNW	24
20		297	319	326	313	331	337	346	335	68	288	308	194	267	233	339	20	22	100	121	121	140	197	254	287	322	NW	24
21		305	350	39	53	40	44	46	59	318	279	279	257	254	266	253	51	64	31	313	285	295	287	51	43	336	NNW	24
22		78	178	193	199	183	202	48	305	309	293	299	304	307	302	121	109	107	114	112	121	108	104	107	96	126	SE	24
23		98	109	111	115	112	117	117	113	112	113	86	360	340	325	330	314	321	301	258	252	250	245	242	122	120	ESE	24
24		102	94	100	25	44	49	75	288	272	255	273	269	271	272	302	273	263	256	173	238	288	304	317	317	283	W	24
25		5	48	67	76	75	74	86	107	120	119	141	229	232	219	208	170	150	144	151	175	189	184	163	95	145	SE	24
26		95	102	71	56	75	77	80	80	69	348	280	263	272	281	276	294	298	292	295	287	282	285	290	292	0	N	24
27		293	293	293	288	289	270	246	227	249	291	290	297	307	305	10	355	332	3	8	3	331	317	319	332	311	NW	24
28		324	320	313	309	311	317	321	324	322	335	340	339	342	1	342	355	10	86	131	153	157	94	104	107	338	NNW	24
29		128	130	168	175	196	200	215	220	177	164	322	245	243	71	81	70	104	104	37	52	65	112	142	165	145	SE	24
30		170	172	171	177	175	177	184	173	205	178	168	200	219	223	216	233	234	238	280	303	289	280	269	251	216	SW	24
31		112	107	117	107	97	76	64	72	75	56	50	46	201	213	238	303	137	95	102	90	93	92	100	165	303	WNW	24
HOURLY AVG		356	357	354	348	347	349	352	342	340	348	350	360	359	347	358	355	332	333	353	343	346	321	335	332			

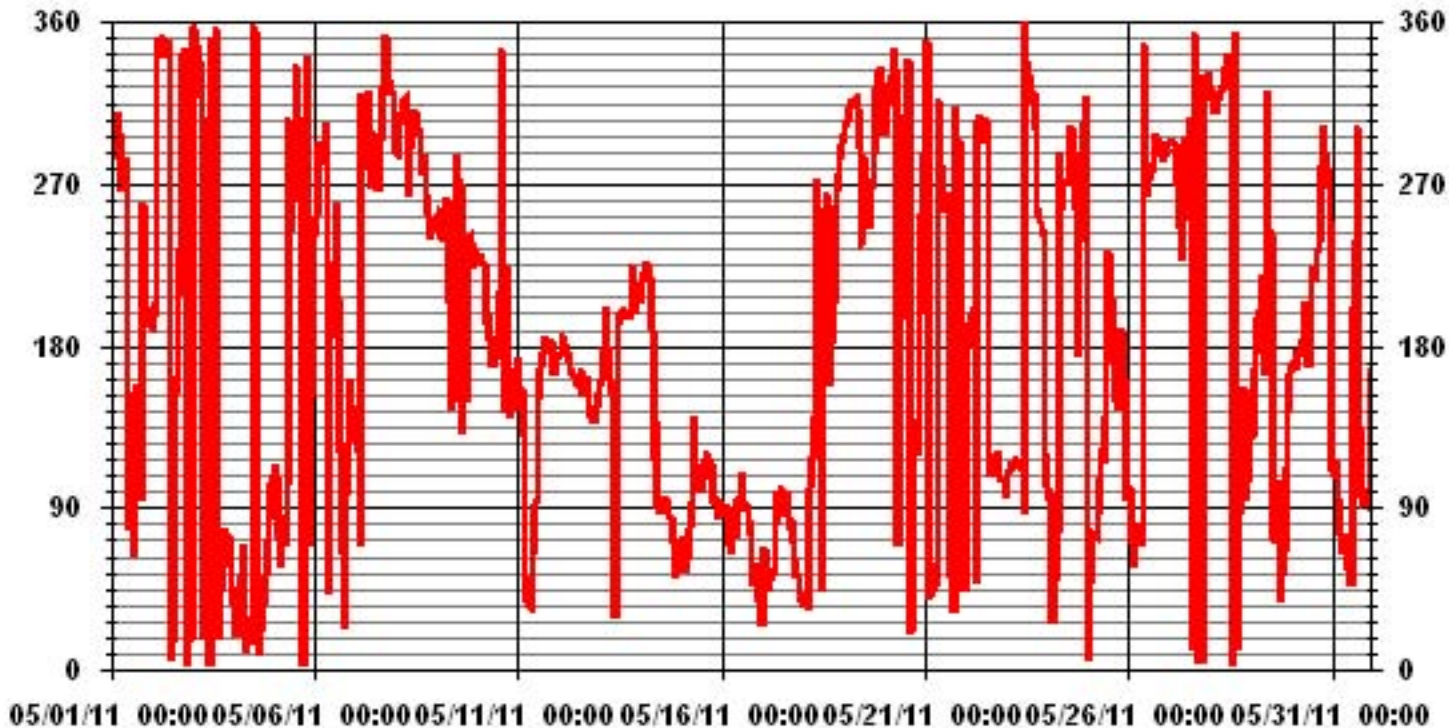
STATUS FLAG CODES

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	100.93	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	129 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

MAY 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	11	10	10	11	11	12	13	20	27	42	40	52	55	54	60	54	31	17	8	43	5	5	5	8
2	8	7	36	10	8	8	10	14	16	22	37	36	28	67	68	73	38	66	68	41	37	39	44	41
3	28	28	26	28	36	23	14	53	31	25	21	35	39	37	26	21	20	18	16	8	13	17	29	32
4	31	27	40	34	19	24	36	44	47	51	31	39	40	57	47	39	31	19	20	13	7	6	3	3
5	3	3	13	10	42	6	11	15	62	72	49	40	55	47	38	60	40	46	41	27	15	18	12	7
6	7	13	14	12	14	13	14	29	36	60	37	48	33	41	51	23	31	44	19	10	6	6	29	11
7	5	7	18	9	37	30	26	20	42	32	39	29	45	43	40	39	30	46	54	42	27	27	35	27
8	27	27	16	13	12	16	38	51	47	32	25	31	31	32	55	31	42	27	11	6	7	8	11	7
9	7	9	8	6	5	5	23	68	65	70	49	44	50	29	41	60	57	57	31	10	12	13	13	20
10	23	38	18	20	26	17	11	12	52	49	44	39	45	56	65	43	52	27	39	11	11	11	10	10
11	11	13	10	13	19	16	15	22	20	27	37	32	34	27	27	22	20	23	23	27	30	27	26	24
12	21	19	19	23	26	23	25	24	24	24	23	21	25	24	24	24	23	23	24	24	23	25	25	23
13	21	22	25	22	22	21	13	28	76	54	57	28	23	27	26	21	25	19	20	14	20	27	21	16
14	16	14	14	15	16	30	20	24	65	61	45	46	37	38	42	34	30	28	24	18	13	12	14	22
15	20	19	22	17	19	36	37	39	42	34	31	28	21	24	24	27	24	27	23	23	20	20	20	22
16	23	25	26	25	22	17	21	24	24	35	41	35	40	35	36	39	37	29	21	14	16	19	24	14
17	19	43	46	26	15	16	22	16	32	33	30	30	26	30	27	37	23	28	20	16	16	28	17	15
18	19	28	31	34	32	11	16	33	22	26	40	39	39	34	54	63	73	36	22	14	13	8	6	5
19	6	9	10	12	11	12	18	24	35	31	31	33	53	55	42	25	19	18	32	51	62	10	16	12
20	12	10	10	14	9	14	17	34	51	70	75	81	48	59	45	44	55	16	19	10	8	11	7	8
21	9	21	5	4	9	5	8	12	16	14	29	37	45	64	41	30	25	44	48	11	9	43	6	6
22	31	28	6	9	8	37	77	28	49	31	33	25	34	51	45	33	22	25	21	22	21	18	19	19
23	21	22	23	24	21	22	22	22	23	30	53	61	76	52	47	49	53	42	31	11	4	5	14	40
24	1	1	54	7	5	11	27	37	30	46	33	52	45	56	69	43	42	46	31	16	11	10	9	11
25	20	10	11	12	10	12	16	15	16	19	26	35	36	41	52	41	31	30	37	23	14	15	21	12
26	14	14	14	13	15	15	15	17	43	68	67	67	53	53	57	47	45	31	31	20	14	9	7	7
27	7	6	6	9	6	6	30	20	56	32	26	28	52	56	52	45	42	20	16	16	25	20	27	49
28	37	19	13	13	19	25	28	29	32	28	44	35	42	47	47	48	47	64	39	17	13	38	5	4
29	7	5	6	6	11	16	18	21	37	61	62	53	64	53	49	46	62	68	28	10	7	11	13	12
30	10	9	9	11	10	12	18	16	56	61	60	51	53	49	45	27	23	23	22	23	13	7	9	9
31	21	3	5	3	4	12	14	14	17	34	41	54	46	64	51	62	37	50	18	4	2	3	32	27

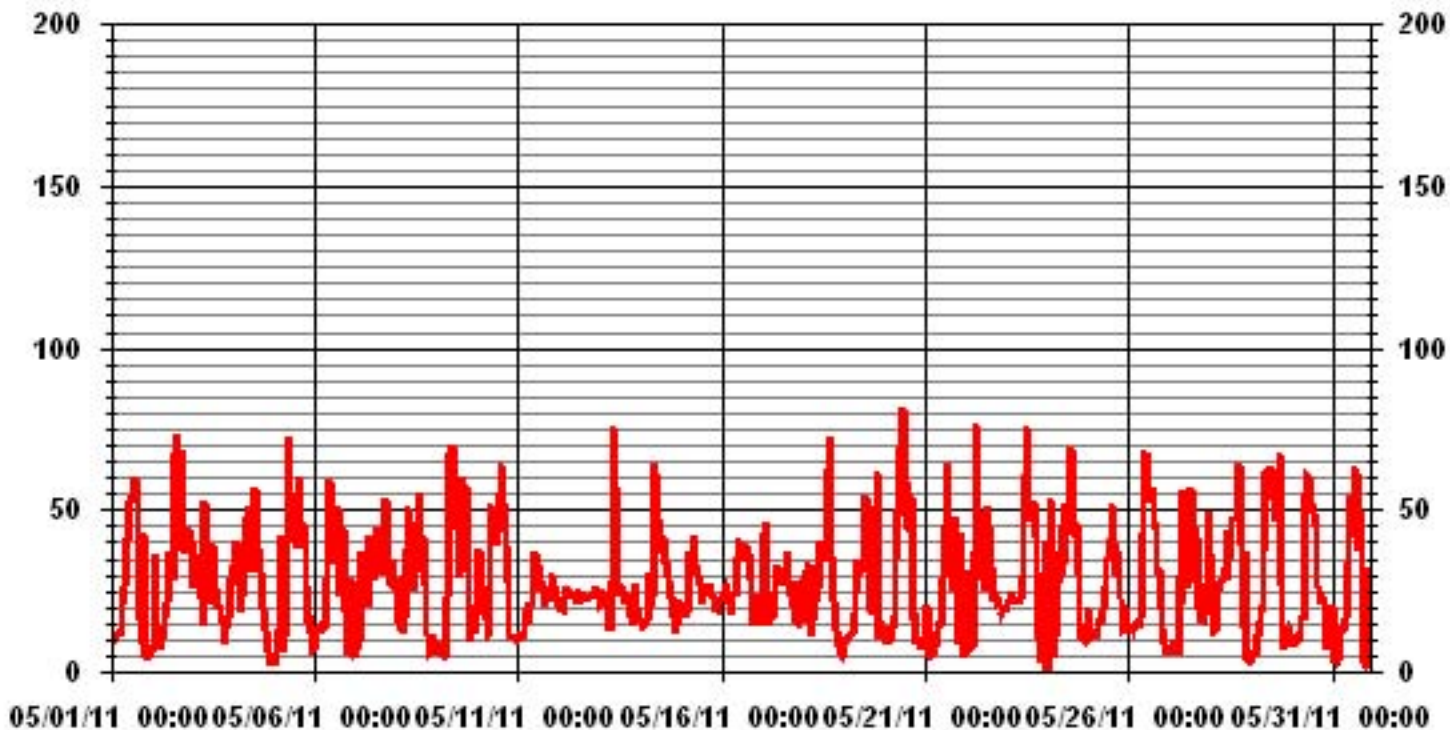
STATUS FLAG CODES

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



Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	May 10, 2011	Previous Calibration	April 21, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:33	End Time (MST)	14:22
Reason:	Monthly Calibration		
Barometric Pressure	932 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	518 ccm 33.6 Deg C	520 ccm 34.4 Deg C	
HVPS / Lamp Setting	529 2436	529 2435	
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	65.7 1.128	65.7 1.128	

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	749	1.0012
4959	40.8	400	397	1.0072
4979	17.3	170	170	0.9980
4998	0	0	0	N/A
Sum of Least Squares				1.0024
New Correction Factor				1.0012

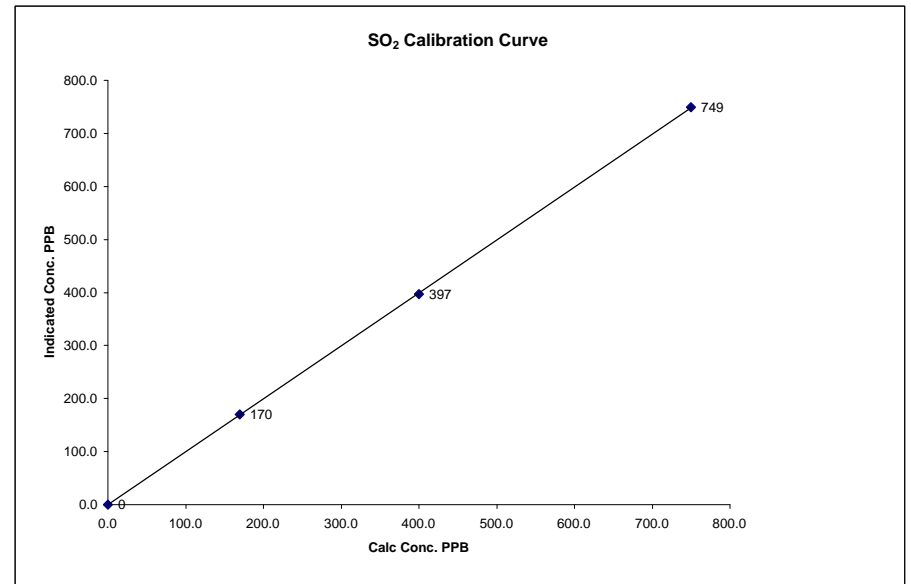
	Before Calibration	After Calibration
Auto Zero	0.7	0.6
Auto Span	376	373
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.0%

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

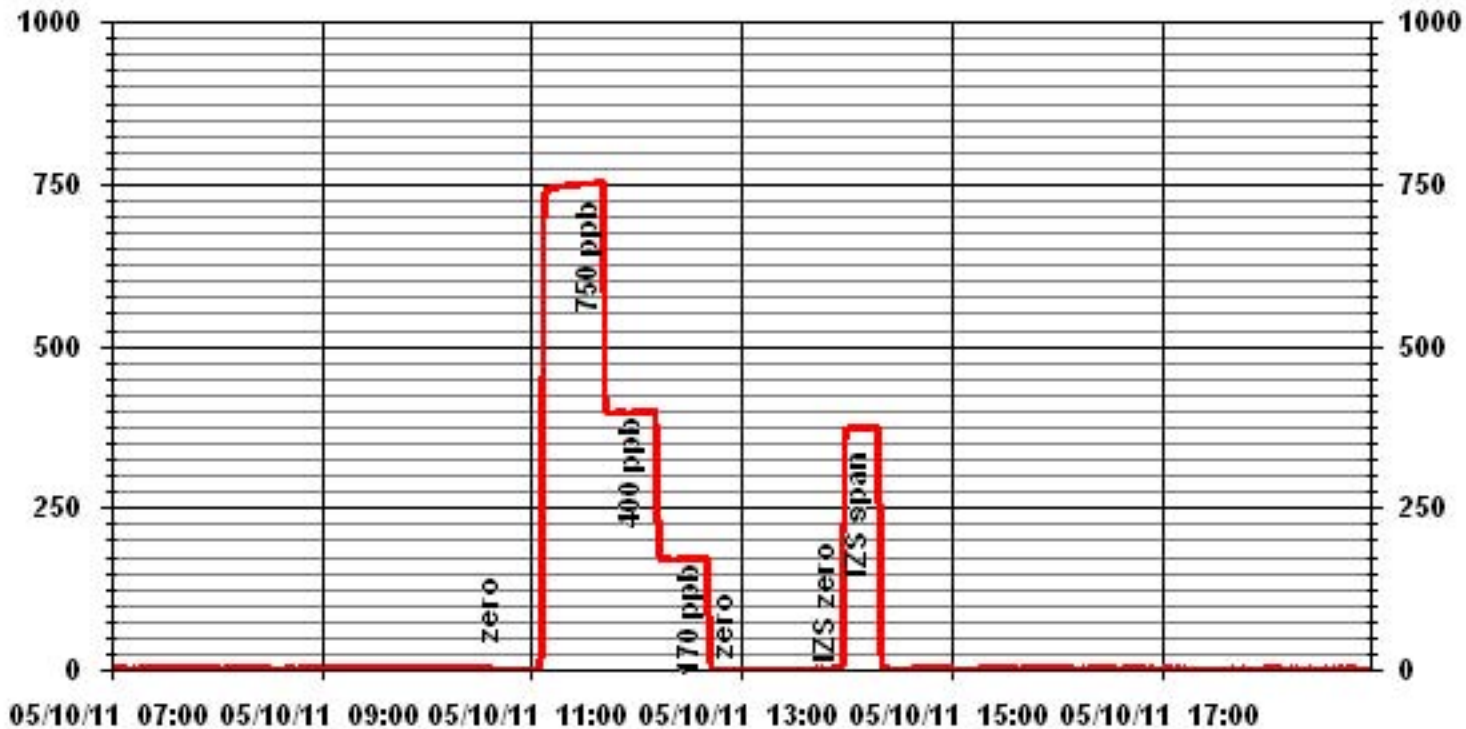
Calibration Date	May 10, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	10:33
End Time (MST)	14:22

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999985
0	0	n/a	Intercept	($\pm 3\% F.S.$)	-0.191064
170	170	0.9980			
400	397	1.0072			
750	749	1.0012			

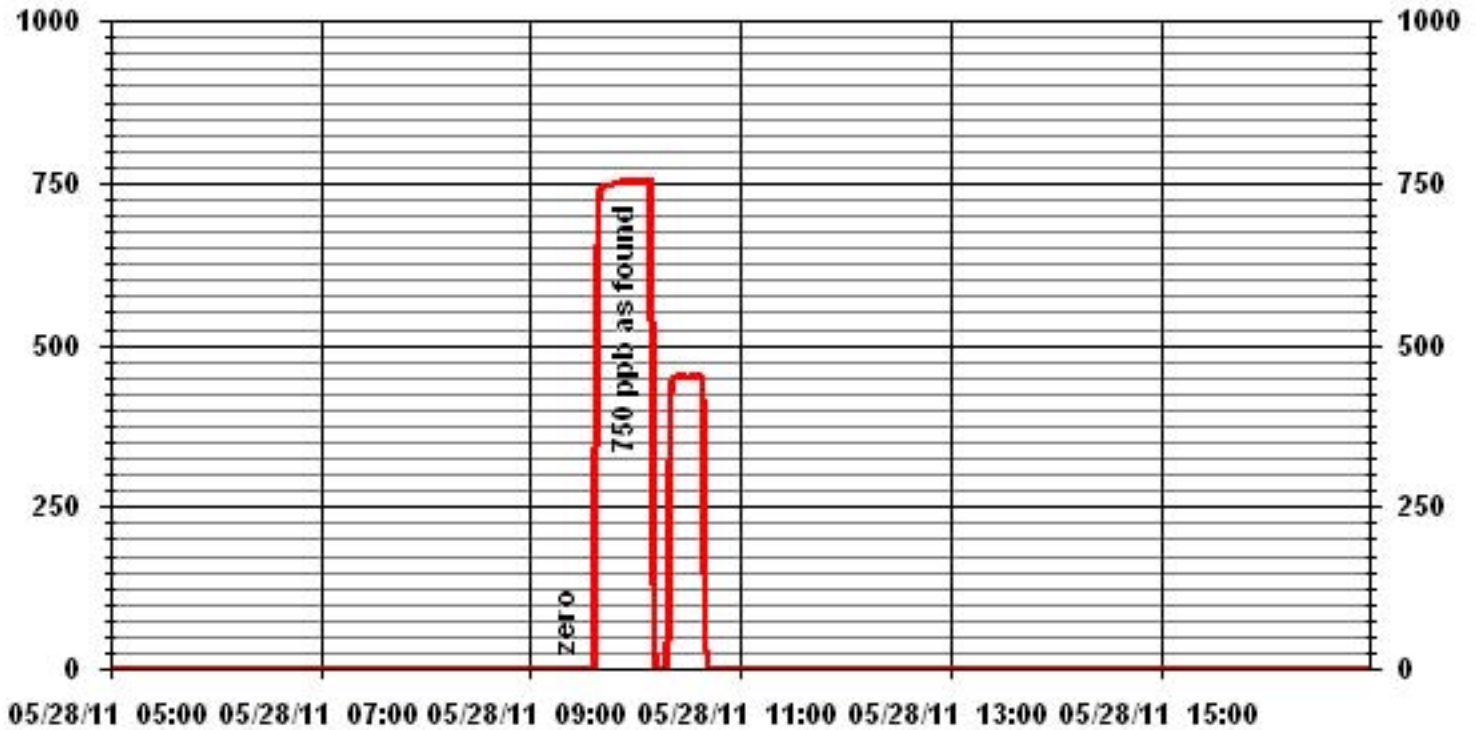


Notes:

01 Minute Averages



01 Minute Averages



SO₂ Calibration Report

Station Information

Calibration Date	May 30, 2011	Previous Calibration	May 28, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	11:16	End Time (MST)	15:43
Reason:	Post Repair Calibration		
Barometric Pressure	934 mmHg	Station Temperature	24 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	418 ccm 31.9 Deg C	524 ccm 32.4 Deg C	
HVPS / Lamp Setting	529 2429	529 2428	
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	65.7 1.128	65.7 1.128	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	-1	N/A
4922	76.5	750	753	0.9959
4996	0	0	0	N/A
4922	76.5	750	750	0.9999
4959	40.8	400	397	1.0072
4979	17.3	170	170	0.9980
4998	0	0	0	N/A
Sum of Least Squares				1.0014
New Correction Factor				0.9999

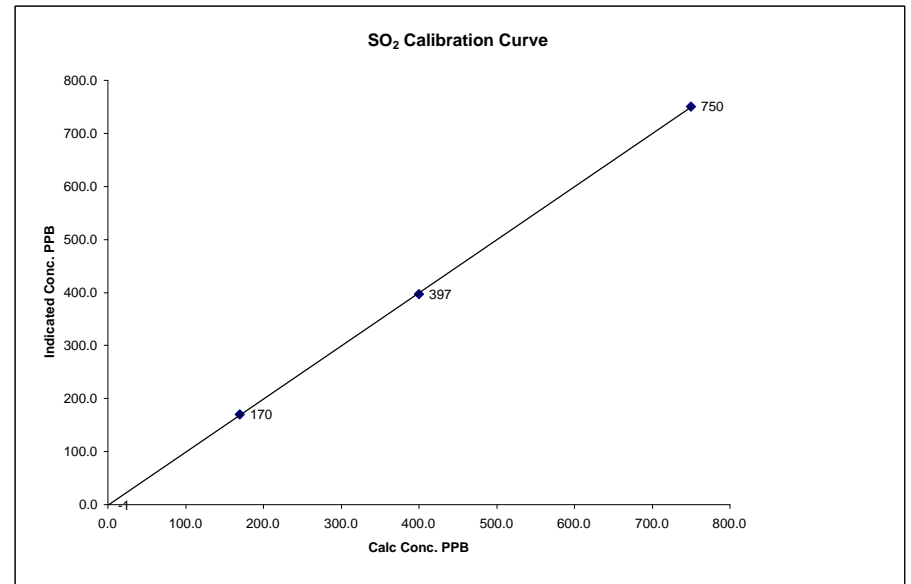
	Before Calibration	After Calibration
Auto Zero	0.0	0.5
Auto Span	453	370
Sample Lines Connected		YES
Percent Change from Previous Calibration		-

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

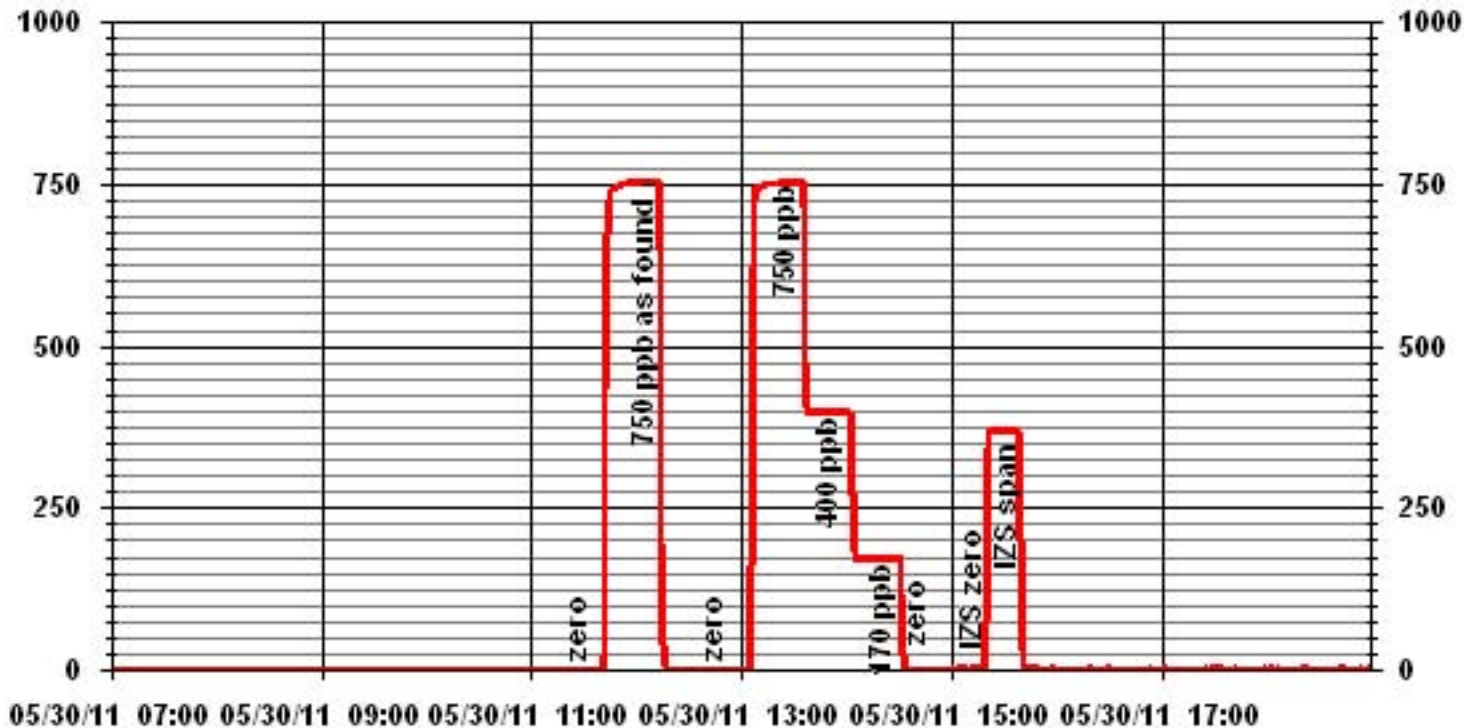
Calibration Date	May 30, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	11:16
End Time (MST)	15:43

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999980
0	-1	n/a	Intercept	(± 3% F.S.)	-0.974322
170	170	0.9980			
400	397	1.0072			
750	750	0.9999			



Notes:

01 Minute Averages



Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	May 9, 2011	Previous Calibration	April 11, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	10:01	End Time (MST)	13:24
Reason:	Monthly Calibration		
Barometric Pressure	934 mmHg	Station Temperature	25 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	551 ccm	35.2 Deg C	548	36.6	Deg C
HVPS / Lamp Setting	518	2521	518	2519	
PMT / RxCell Temp	8.4 Deg C	50 Deg C	8.4 Deg C	50 Deg C	
Converter / IZS Temp	315.5 Deg C	45 Deg C	315 Deg C	45 Deg C	
Offset / Slope	60.6	1.031	60.6	1.045	

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	79	1.0126
4959	39.2	80	80	1.0000
4979	19.6	40	40	0.9999
4985	11.2	23	23	0.9941
4995	0	0	0	N/A
Sum of Least Squares				0.9996
New Correction Factor				1.0000

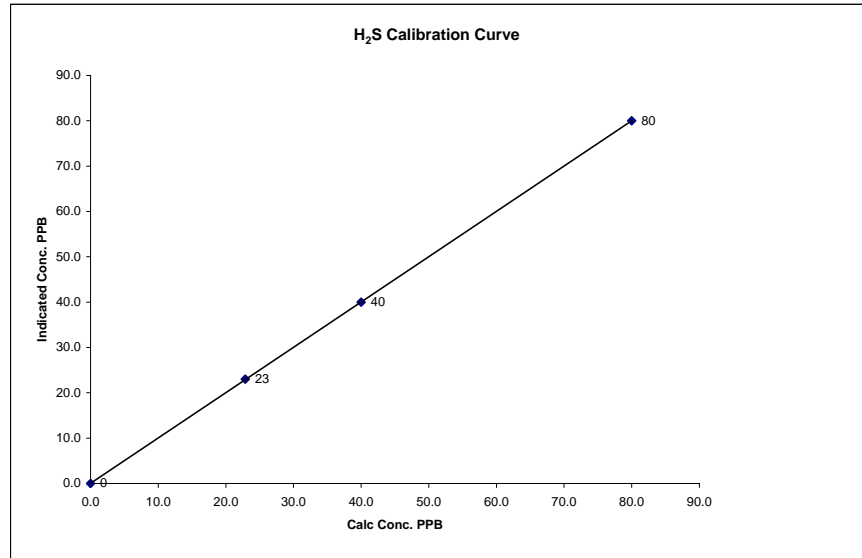
		Before Calibration	After Calibration
Auto Zero		0.4	0.2
Auto Span		45	45
Sample Lines Connected			YES
Percent Change from Previous Calibration			-1.3%

Calibration Performed by: Ting Xu

H₂S Calibration Curve

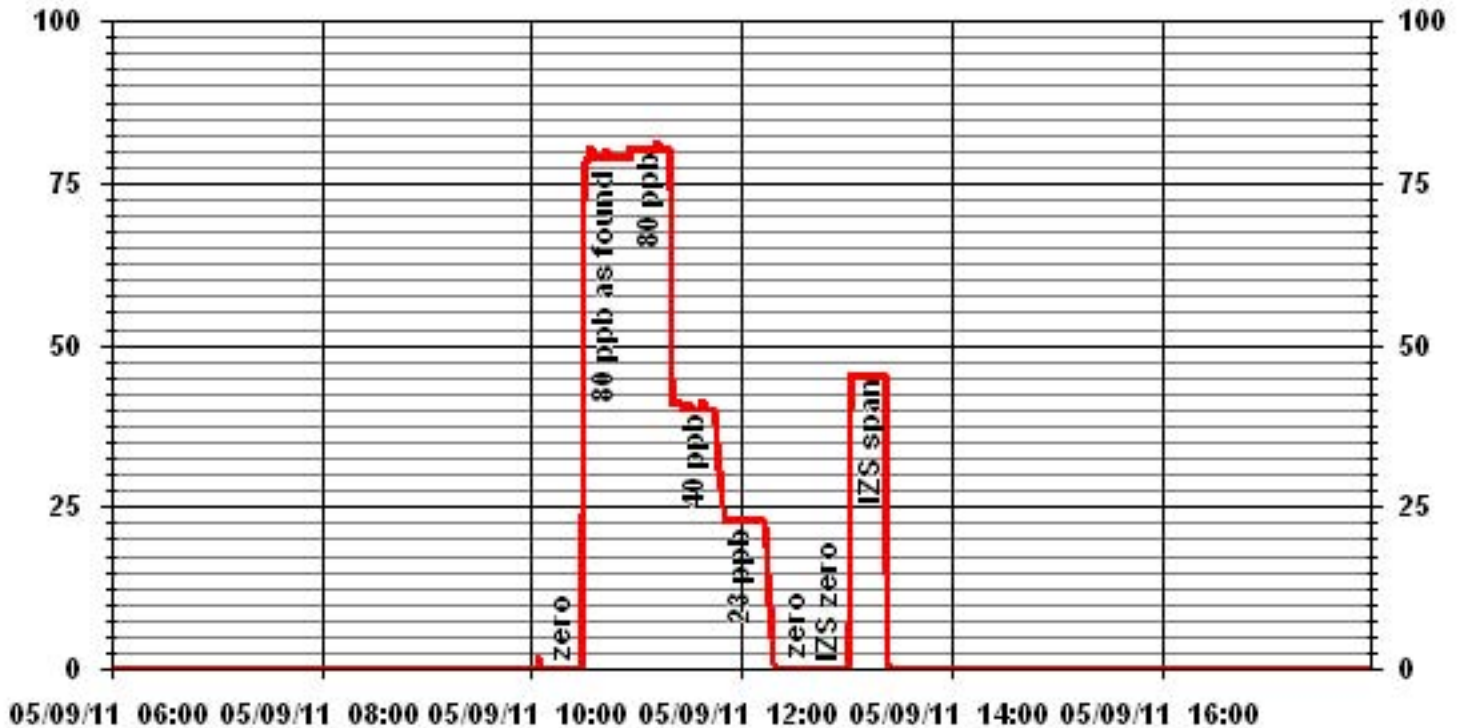
Calibration Date	May 9, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST.LINA
Start Time (MST)	10:01
End Time (MST)	13:24

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			

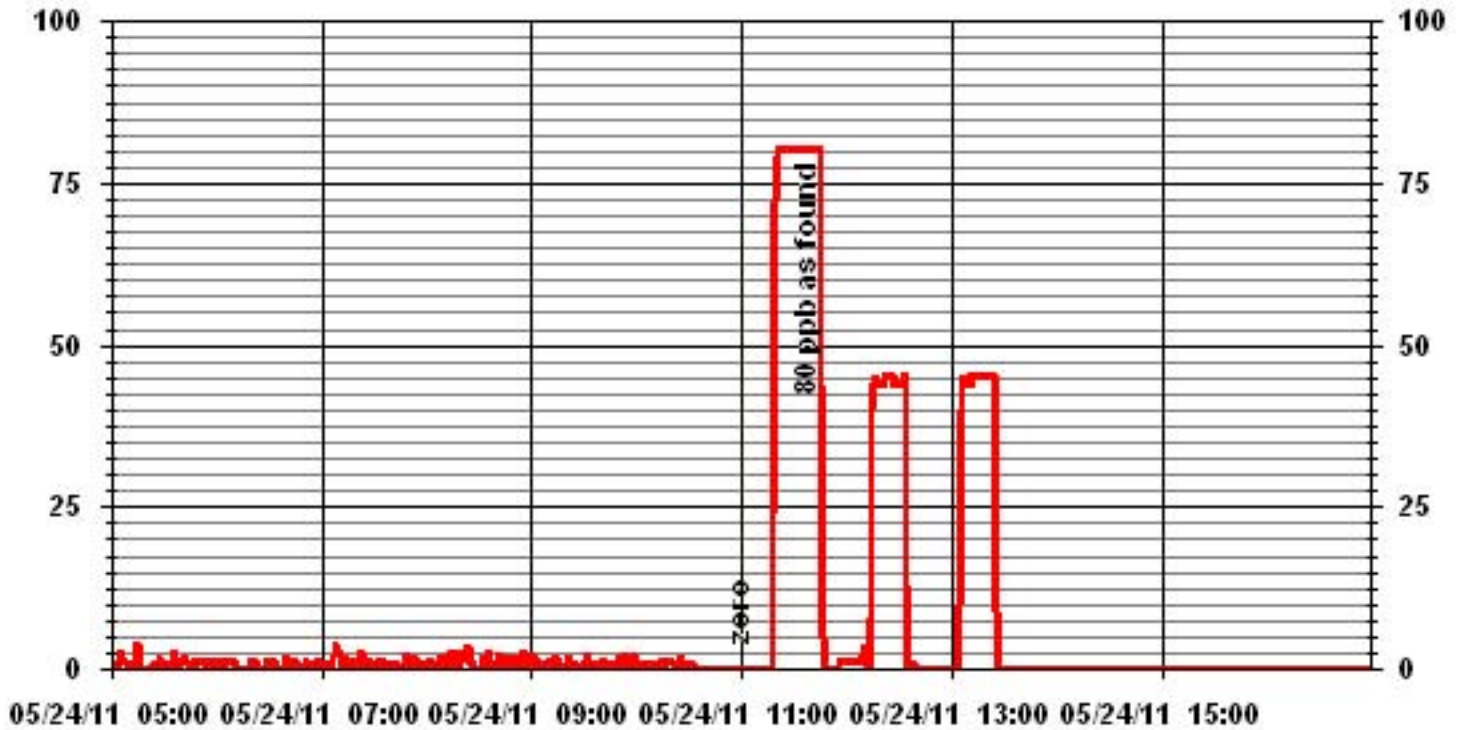


Notes:

01 Minute Averages



01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	May 9, 2011	Previous Calibration	April 20, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
:	(MST) 12:47	End Time	(MST) 16:01
Reason:	Monthly Calibration		
Barometric Pressure:	933 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
1998	70.0	39.6	40.5	0.9789
1998	70.0	39.6	40.0	0.9911
1998	34.9	20.1	19.9	1.0101
1998	20.0	11.6	11.4	1.0175
1999	0	0.0	0.0	N/A
Correction Factor:				0.9911

Previous Calibration Correction Factor:	0.9907
Current Correction Factor Before Span Adjust:	0.9789
Percent Change:	1.20%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	36.2	35.8
Sample Lines Connected		YES

Cylinder Pressures

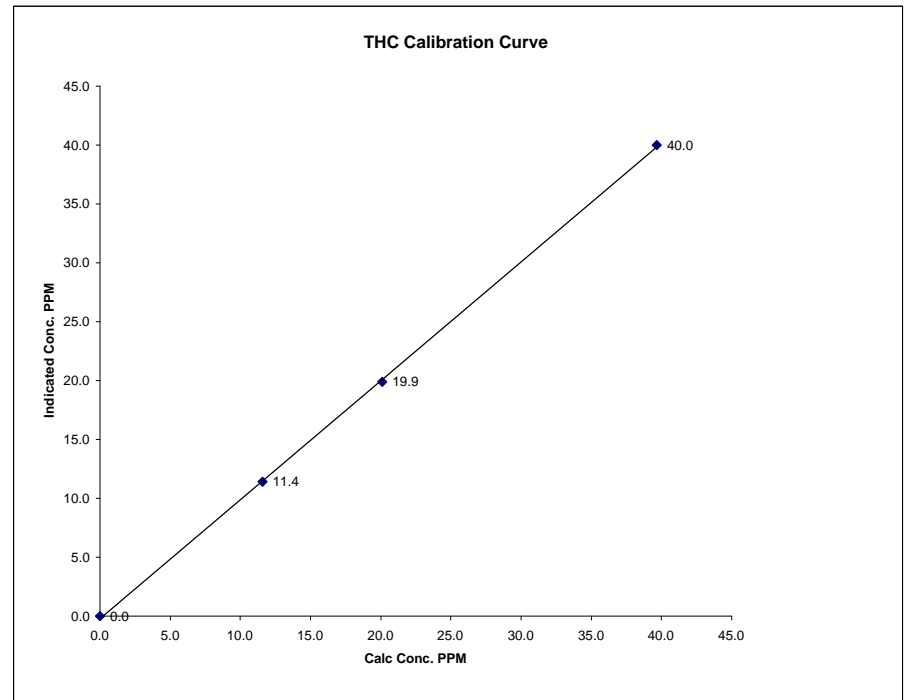
Span	1800	psi	
Hydrogen	800	psi	
Zero Air	34	psi	Unlimited API 701

Calibration Performed by: Ting Xu

THC Calibration Curve

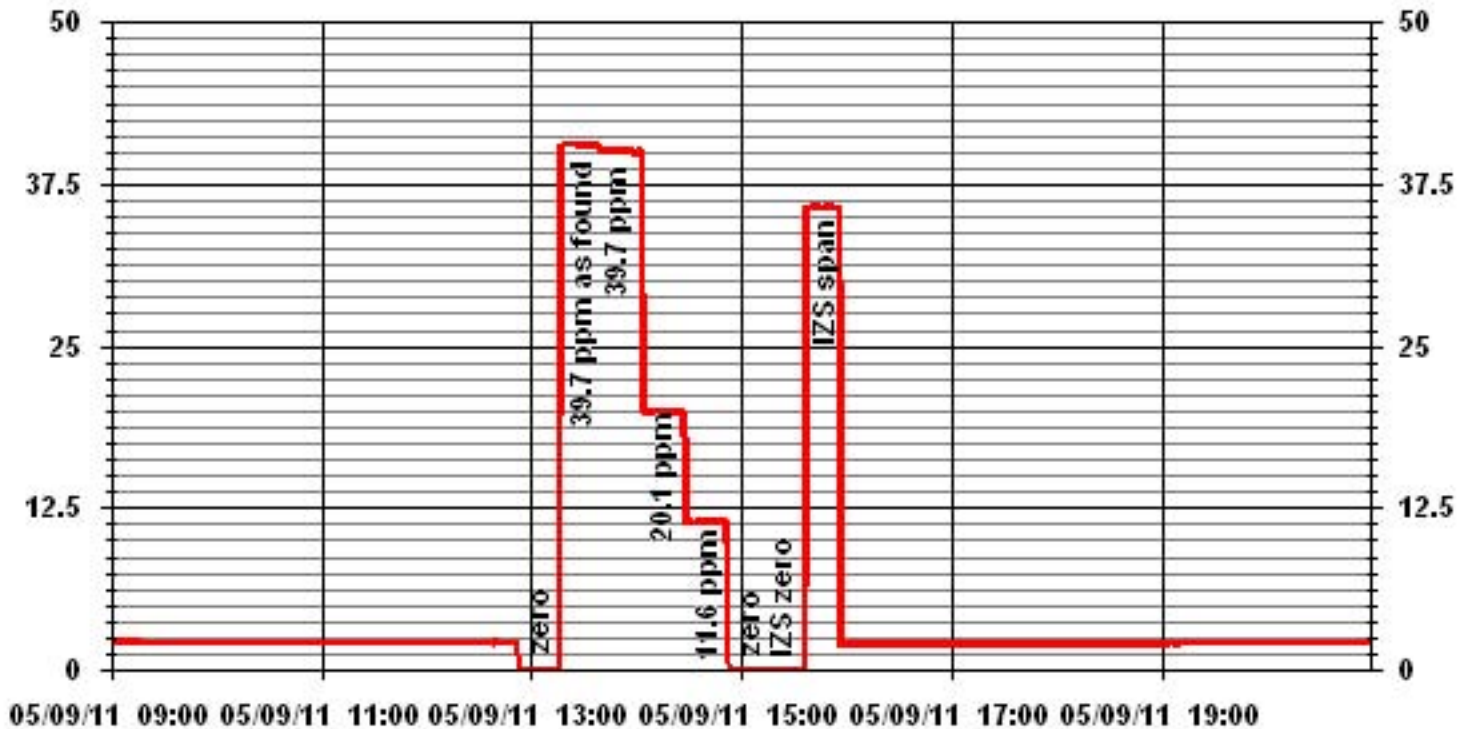
Calibration Date	May 9, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:47	End Time (MST)	16:01

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		0.999862	1.010169	-0.192827
11.6	11.4	1.0175			
20.1	19.9	1.0101			
39.6	40.0	0.9911			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	May 9, 2011	Previous Calibration	April 20, 2011
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	10:01	End Time (MST)	16:01
Reason:	Monthly Calibration	Other	
Barometric Pressure	934 mmHg	Station Temperature	25 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:	Envionics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 717		
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	480 ccm	314 Deg C		475 ccm	315.7 Deg C		
Ozone Flow / Vacuum	73 ccm	4.6 "Hg-A		72 ccm	4.6 "Hg-A		
HVPS / A ZERO	662 Volts	20.0 MV		662 Volts	20.6 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	32.9 Deg C	45.1 Deg C		33.8 Deg C	45.1 Deg C		
Offset	3 NOx	0.4 NO		3 NOx	0.4 NO		
Slope	1.092 NOx	1.059 NO		1.095 NOx	1.067 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.993		NA NO2	0.993		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	----	0	0	0	1	0	0	----	----
4921	74.2	----	768	749	----	765	743	22	1.0052	1.0076
4921	74.2	----	768	749	----	769	751	18	1.0000	0.9969
4960	34.6	----	358	349	----	357	349	8	1.0060	1.0004
4978	16.8	----	174	170	----	174	171	3	1.0052	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			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.2	----	768	749	----	768	752	17	----	----
4921	74.2	550	768	----	520	771	249	522	0.9962	100.40%
4921	74.2	300	768	----	291	770	478	292	0.9966	100.36%
4921	74.2	100	768	----	123	769	646	123	1.0000	100.00%

Linearity OK?	Yes	No	Sum of Least Squares	NOx= 0.999	NO= 0.997	NO2= 0.996
			Correction Factors:	NOx= 1.0000	NO= 0.9969	NO2= 0.9962
			Average Converter Efficiency= 100.25%			

Before Calibration				After Calibration			
Auto Zero	-1.0 NOx	-1.2 NO2		-1.1 NOx	-2.2 NO2		
Auto Span	707 NOx	688 NO2		703 NOx	685 NO2		
Sample Lines Connected				YES			
Percent Change from Previous Calibration				NOx -0.4%	NO -0.5%	NO2 0.2%	

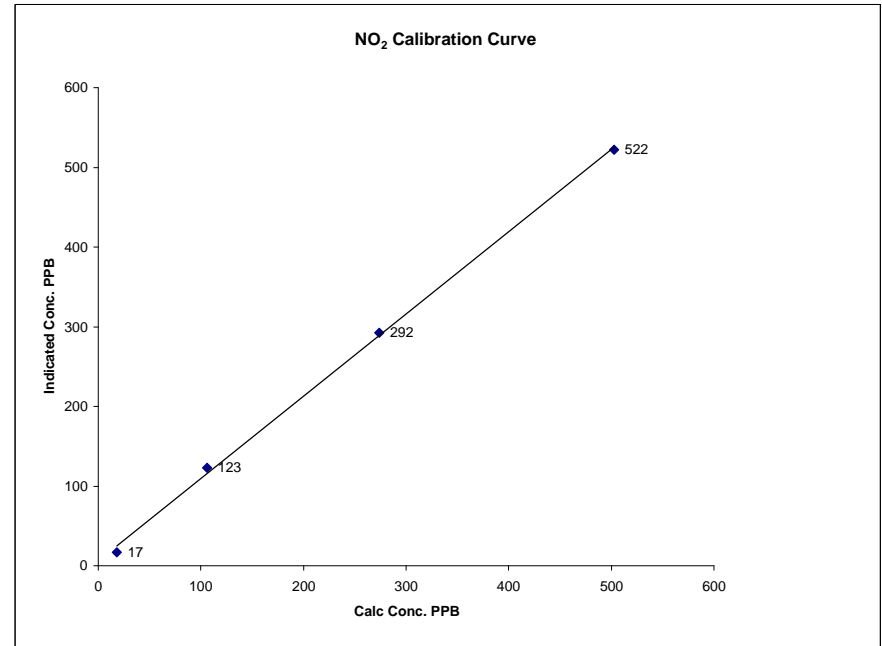
Notes Additional GPT point done for ozone calibration. O3 set point 450, NO=340, NO2=429

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	May 9, 2011	LICA	
Company		St. Lina	
Plant / Location			
Start Time (MST)	10:01	End Time (MST)	16:01

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
18	17	N/A	Slope (0.85 to 1.15)	0.999071
106	123	0.8618	Intercept (± 3% F.S.)	1.031711
274	292	0.9384		6.10706
503	522	0.9636		

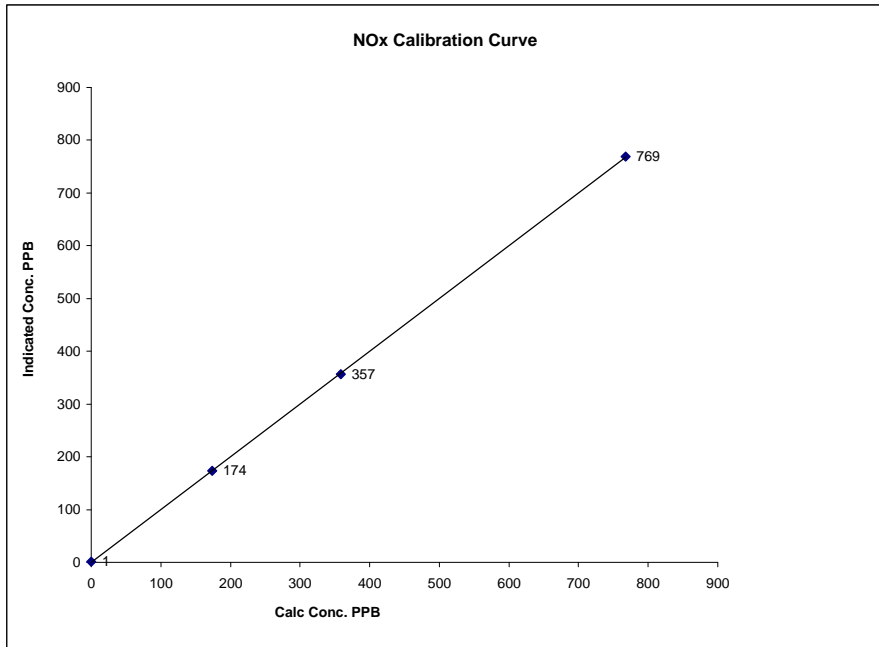


Notes:

NOx Calibration Curve

Calibration Date May 9, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 10:01 End Time (MST) 16:01

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999990
0	1	N/A	Slope (0.85 to 1.15)	1.000243
174	174	0.9994	Intercept (± 3% F.S.)	0.16895
358	357	1.0032		
768	769	0.9987		

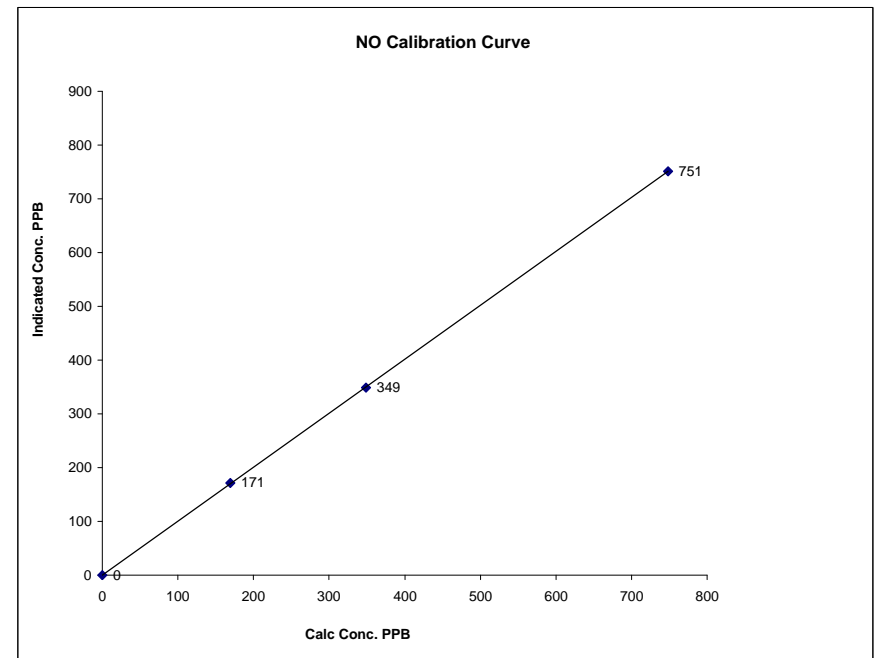


Notes:

NO Calibration Curve

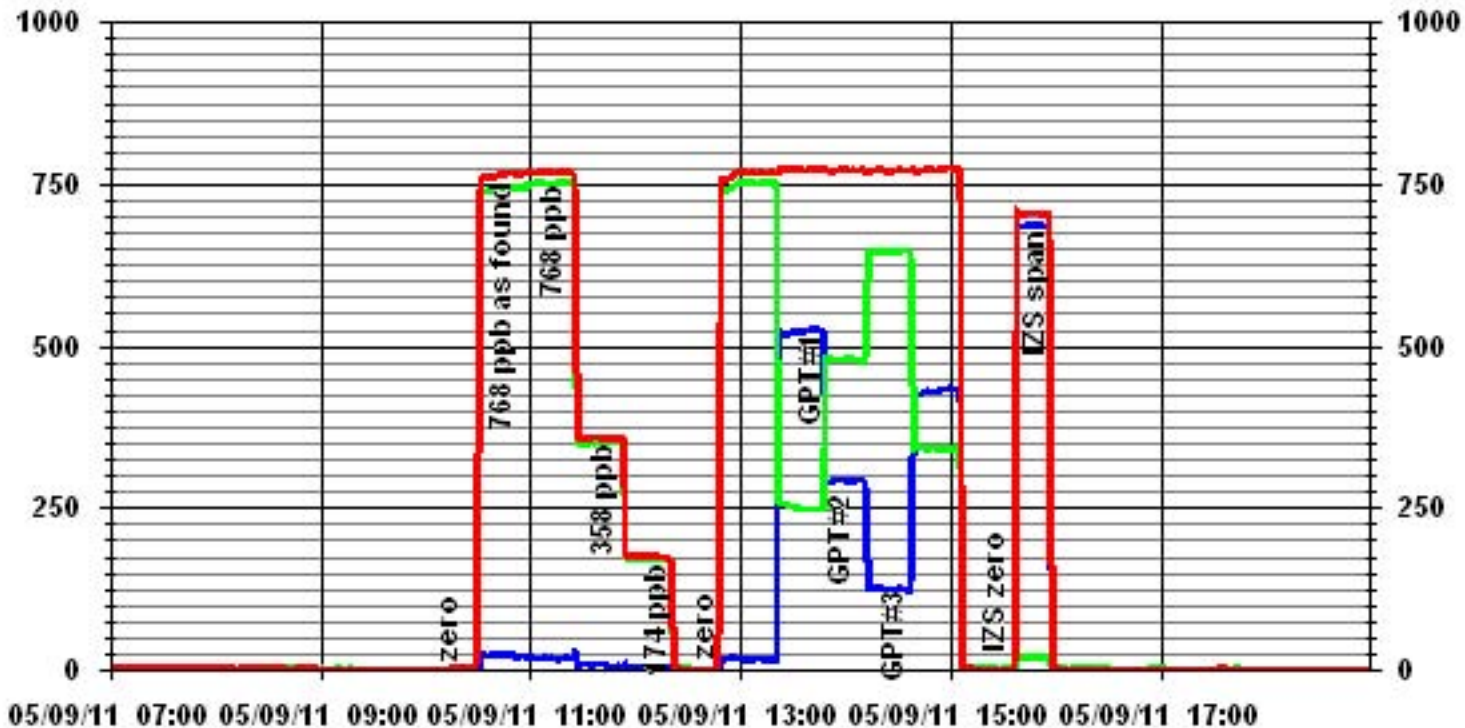
Calibration Date May 9, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 10:01 End Time (MST) 16:01

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999993
0	0	N/A	Slope (0.85 to 1.15)	1.002284
170	171	0.9913	Intercept (± 3% F.S.)	-2.3215
349	349	1.0004		
749	751	0.9969		



Notes:

01 Minute Averages



— LICA31 IIOX_ PPB

— LICA31 IIO_ PPB

— LICA31 IIO2_ PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	May 10, 2011	Previous Calibration	April 21, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	10:33	End Time (MST)	14:22
Reason:	Monthly Calibration		
Barometric Pressure	932 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:	Enviroincs 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
	0 - 500			
Concentration Range	ppb			
Cell A Flow / Cell B Flow	719 ccm	737 ccm	720 ccm	739 ccm
Pressure	698 mmHg		700 mmHg	
Bench Temp	55.1 Deg C		55.2 Deg C	
O3 Lamp / Box Temp	80 Deg C	32.8 Deg C	80 Deg C	34.2 Deg C
Offset / Slope	0.2	0.988	0.2	0.98

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	-1	N/A
4995	450	412	414	0.9952
4995	450	412	412	1.0000
4995	300	274	275	0.9964
4995	120	106	111	0.9550
4995	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0000

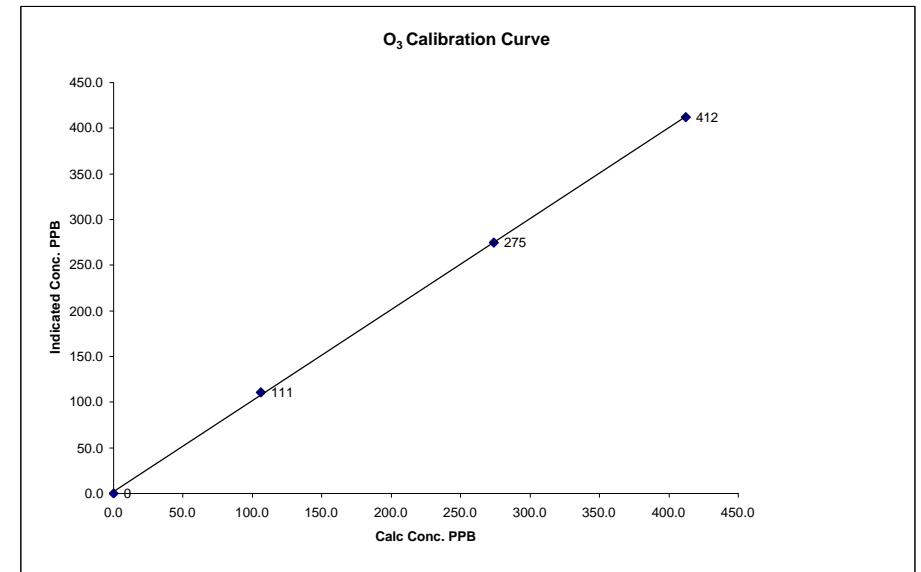
	Before Calibration	After Calibration
Auto Zero	1.1	1.1
Auto Span	357	362
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.5%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

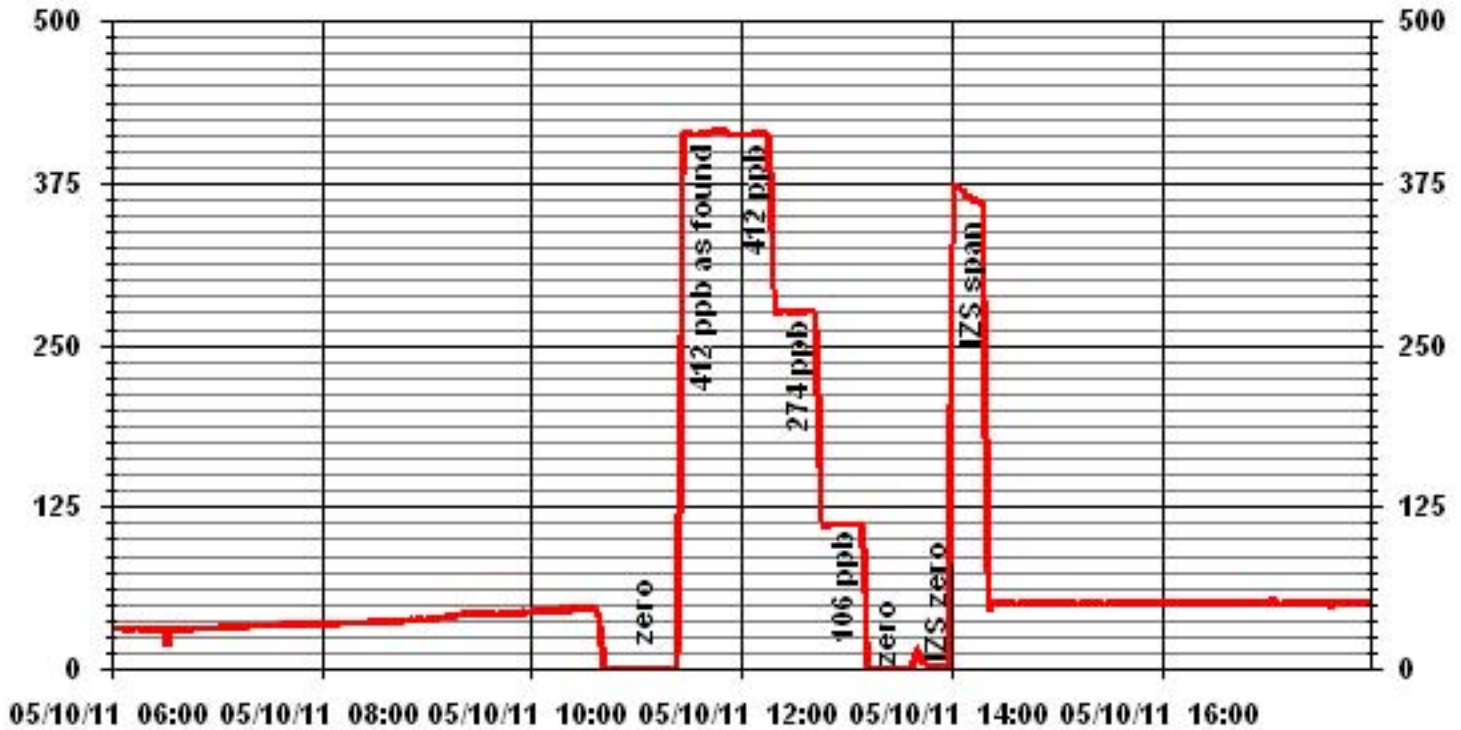
Calibration Date	May 10, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	10:33	End Time (MST)	14:22

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995)	Intercept (± 3% F.S.)	
0	0	n/a			0.999842
106	111	0.9550			0.996131
274	275	0.9964			
412	412	1.0000			2.266143



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOMÒ 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	May 10, 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 (%)	29.5%
Firmware Ver.	1.52	K _o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	17.7
		Press (ATM)	0.922

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	0.002	Warnings	None
Pump Vacuum <0.4atm	0.29	Pump Gauge (inHg)	-20
Temperature/Pressure			
Measured Temp (± 2 °C)	17.8	D °C	-0.1
Measured Press (± 0.01atm)	0.920	DATM	0.002
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	1.11%
Measured Main Flow (l/min)	3.02	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.00%
Measured Bypass Flow (l/min)	13.70	Flow Adjusted to Measured?	No
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: 10:04 **Finish Time:** 12:16

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 17.2%

Comments: _____

Auditor/s: Ting Xu