

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

Data Report

For

January 2011

Prepared By:



February 25, 2011

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

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Introduction

The following Ambient Air Monitoring report was prepared for:

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Monitoring Location: Cold Lake
Data Period: January 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 – January 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	57	0	0	0.21	4	21	VAR	VAR	VAR	1.8	21	100.0
TRS (PPB)	-	-	-	-	0.00	1	25	8	NA	NA	0.0	25	89.1
NO ₂ (PPB)	212	106	0	0	7.65	31	VAR	VAR	VAR	VAR	18.2	4	99.9
NO (PPB)	-	-	-	-	1.82	75	25	8	NA	NA	12.0	25	99.9
NO _x (PPB)	-	-	-	-	9.80	107	25	8	NA	NA	29.0	25	99.9
O ₃ (PPB)	82	-	0	-	22.31	42	28	0	15.7	276(W)	39.8	23	90.9
THC (PPM)	-	-	-	-	2.19	3.4	31	22	0.7	127(SE)	2.8	1.4	99.5
PM 2.5 (UG/M ³)	-	30	-	0	4.48	23.9	12	7	1.2	53(NE)	13.4	1	98.8
TEMPERATURE (DEG C)	-	-	-	-	-15.20	4.9	27	15	2.8	205(SSW)	1.1	23	99.6
RELATIVE HUMIDITY (%)	-	-	-	-	75.22	94.0	27	0	4.1	252(WSW)	88.3	5	99.6
VECTOR WS (KPH)	-	-	-	-	5.27	38.7	22	15	-	127(SE)	14.9	23	92.6
VECTOR WD (DEGREES)	-	-	-	-	18(NNE)	-	-	-	-	-	-	-	92.6

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – January 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#14, #27	1.2	0.78
H ₂ S	#17	0.21	0.16
NO ₂	#28	11.3	3.1
O ₃	#8	33.3	27.0

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – January 3, 2010

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

Xontech Model 910A – January 9, 2010

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

Xontech Model 910A – January 15, 2010

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

Xontech Model 910A – January 21, 2010

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

Xontech Model 910A – January 27, 2010

Maximum reading (ug/m3)	Volatile Organic
41.8	2-Propanone

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – January 3, 2010

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

PUF cartridge – January 9, 2010

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

PUF cartridge – January 15, 2010

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

PUF cartridge – January 21, 2010

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

PUF cartridge – January 27, 2010

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

A routine calibration attempted to be performed on January 13th. A stability issue was noticed when an as found span point was put. Replaced the charcoal scrubbing material in the zero air supply and allowed the analyzer time to stabilize. Following 20 minutes of stability the SO₂ scrubber was bypassed and calibration gas was supplied to the analyzer- the analyzer response was normal. Replaced the SO₂ scrubber material. When the TRS converter was power-up after the scrubber material changed, there was a fault indicated on the temperature controller; the thermocouple in the TRS converter was replaced. Allowed the TRS converter to warm up, and then ran the daily cal program. A post-repair calibration was performed on January 14th- no issue appeared this time. The analyzer spanned low on January 16th. As found points attempted to be performed on the 17th, but the response was slow. Aborted the span check and changed the scrubber material. A multi-points calibration was done on the 18th. Data was invalidated back to the last valid calibration, which was January 15th. A total of 105 hours of data were invalidated. The inlet filter was changed before the monthly calibration was started on the 14th. Data was corrected using daily zero information. The operational uptime for the month was 89.1%.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Ozone (PPB)

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

The monthly calibration was performed on January 13th. The inlet filter was changed before the monthly calibration was started. The analyzer spanned low on January 21st. It was noticed that the issue was due to a faulty solenoid valve. The issue was fixed on the 21st. Data was invalidated back to the last valid calibration, which was January 20th. A total of 59 hours of data were invalidated. Data was corrected using daily zero information.

Total Hydrocarbon (PPM)

- Analyzer make / model -TECO 51C-LT, S/N: 427408718

No operational issues observed during the month. The pump diaphragm was replaced following as found points on January 13th. A multi-points calibration was performed on January 14th. 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 calibration was started. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m³)

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

No operational issues observed during the month. 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. 9 hours of data were invalidated as the data were below –3.0 ug/m³.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

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

- System make / model – Met One 50.5, S/N: F1644 replaced to RM Young, S/N: 46553

The wind system is reported as vector wind speed and vector wind direction. It was noticed that the wind speed as recorded by the data system was higher than expected on January 25th. Found that the wiring in the junction box outside the station had a poor connection. Fixed issue by tightening all connectors, the wind speed and wind direction then seem normal. Performed a wind system orientation check, the results were good. It was determined that data was bad since January 23rd at 10:00 after compared it with the data posted on the Environment Canada website. 52 hours of data were invalidated.

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3
- No operational issues 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.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Trailer

No issue was observed during this month. The manifold was cleaned on January 14th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. All AQI values recorded in January 2011 were within the Good range. The highest hourly concentration of PM_{2.5} was 23.9ug/m³ and an AQI value of 20, hour 7 on January 12th. The highest hourly concentration of Ozone was 42 ppb and an AQI value of 21 on January 28th, hour of 0.

Passive Network

No issue was observed during this month.

Volatile Organics (VOCs)

The volatile organics were sampled from January 3rd to January 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. A flow verification on the Xontech on January 26th. The fitting that connected to the canister was replaced as the old one was showing sign of wear.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs were sampled from January 4th to January 28th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m³. A flow, temperature and pressure calibrations on the PUF system were performed on January 26th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

SULPHUR DIOXIDE (SO₂) 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 MAX.	24-HOUR AVG.	RDGS.
1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.3	24
2	0	0	0	0	0	0	0	0	0	0	0	0	1	2	IZS	1	1	0	0	1	0	0	0	0	2	0.3	24	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
6	0	0	0	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
7	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
8	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
9	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
10	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
11	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
12	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
13	0	0	0	IZS	0	0	0	0	0	0	0	1	2	2	2	1	1	1	1	1	0	0	0	0	2	0.5	24	
14	0	0	IZS	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0.0	24	
15	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0.0	24	
16	IZS	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	3	2	1	1	IZS	3	0.9	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	IZS	0	0.0	24	
18	0	0	0	0	0	0	1	1	2	1	1	1	1	0	1	1	1	0	0	0	0	0	IZS	0	2	0.5	24	
19	0	0	0	0	0	0	0	0	0	1	2	2	3	2	2	3	2	0	0	0	0	IZS	0	0	3	0.7	24	
20	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	IZS	0	0	0	1	0.2	24	
21	0	1	0	0	1	1	1	0	1	3	4	4	4	4	4	4	3	2	IZS	1	1	1	1	0	4	1.8	24	
22	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	IZS	0	0	0	0	0	0	1	0.3	24	
23	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0.1	24	
24	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	1	1	0	0	0	0	0	0	1	0.2	24	
25	0	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	0	1	1	1	1	1	0	0	0	1	0.3	24	
26	0	0	0	0	0	0	0	0	1	1	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.2	24	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	1	0	0	1	1	0	0	0	1	0.2	24	
28	0	0	0	0	0	0	0	1	1	1	0	IZS	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	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
31	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	
HOURLY MAX	1	1	1	0	1	1	1	1	2	3	4	4	4	4	4	4	3	2	2	3	2	1	1	1				
HOURLY AVG	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.2	0.2	0.2	0.1	0.1	0.1	0.0				

STATUS FLAG CODES

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

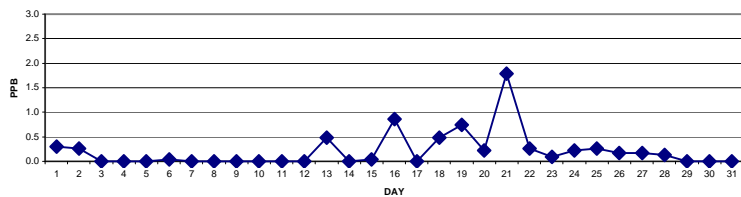
OBJECTIVE LIMIT:

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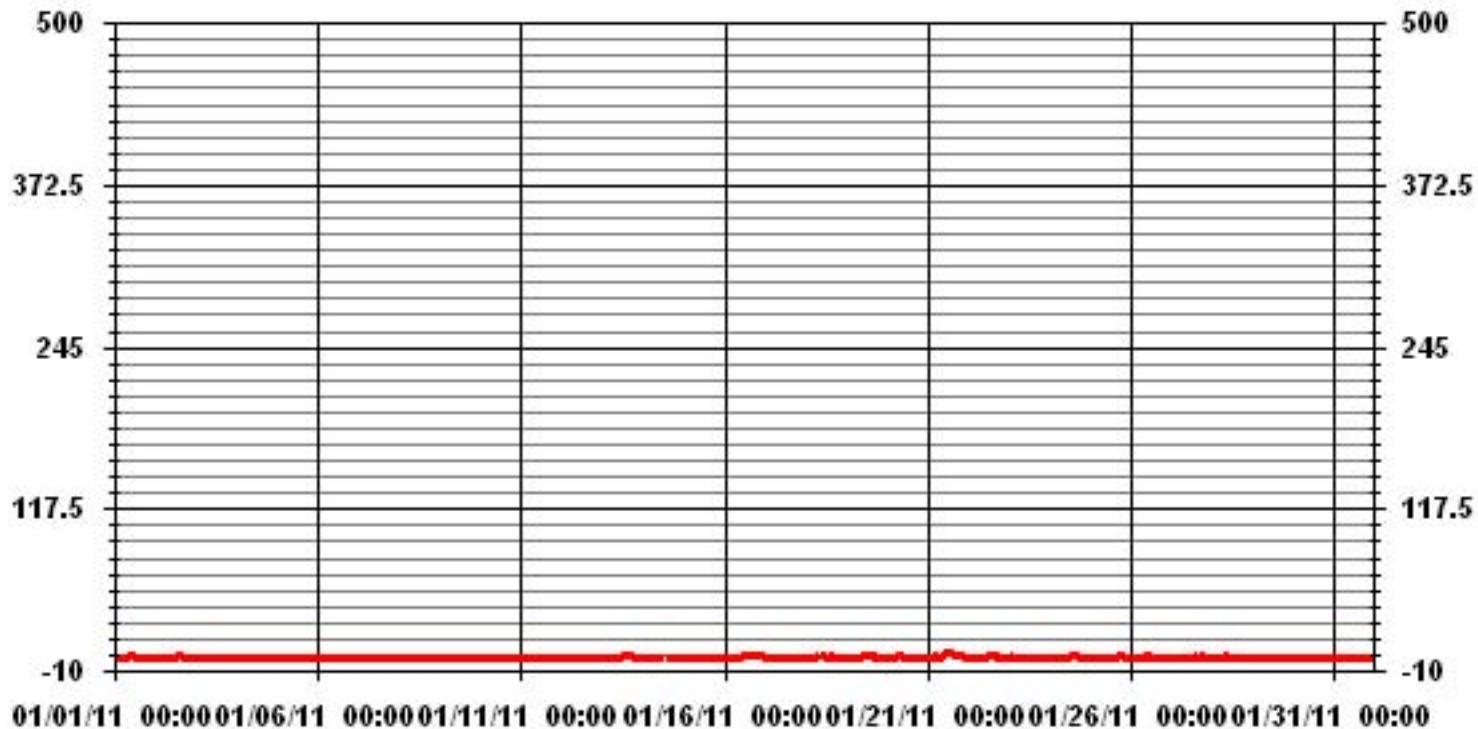
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	105					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	VAR	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	1.8	PPB			ON DAY(S)	21
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744 HRS		
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	0.60		MONTHLY AVERAGE:	0.21 PPB		

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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	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		1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	0	1	0.7	24	
2		0	0	1	1	0	0	1	0	0	0	1	1	2	1	2	2	1	1	1	1	1	0	0	0	0	2	0.6	24
3		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	1	0.0	24
4		0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0.1	24
5		0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	0.1	24	
6		0	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0.3	24	
7		0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
8		0	0	0	0	0	0	0	0	1	1	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	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
10		0	0	0	0	0	0	1	1	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	1	1	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	1	1	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	1	1	0	0	0	0	0	0	0	2	3	3	2	3	1	1	1	1	1	1	0	0	3	0.8	24
14		0	0	1	0	0	0	0	0	0	0	0	0	C	C	C	C	C	0	0	0	0	0	0	0	0	0.0	24	
15		0	1	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	
16		1	1	1	0	0	0	0	0	0	0	1	1	1	1	3	2	2	2	2	3	3	2	1	1	1	3	1.2	24
17		1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	1	0.2	24	
18		0	0	0	0	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	0	0	1	1	1	1	2	0.9	24
19		1	0	0	0	0	0	0	0	0	2	2	3	3	2	3	3	3	1	1	0	1	0	1	1	1	3	1.1	24
20		0	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0.8	24	
21		1	1	1	1	1	1	1	1	1	4	5	5	5	5	5	5	4	3	1	1	1	1	1	1	1	5	2.4	24
22		1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	0.7	24
23		1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	1	1	0.4	24
24		1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	0.4	24
25		0	0	0	0	0	0	0	1	1	1	0	1	0	0	1	2	2	1	1	1	1	1	1	1	1	2	0.6	24
26		1	1	1	1	0	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	0	0	0	0	2	0.6	24
27		0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	1	0.3	24
28		0	0	1	1	1	0	0	1	1	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
29		0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24
30		0	0	0	0	0	0	0	0	0	1	1	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	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0.1	24
HOURLY MAX		1	1	1	1	1	1	2	2	4	5	5	5	5	5	5	4	3	2	3	3	3	2	1	1				
HOURLY AVG		0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.8	0.8	0.8	0.7	0.8	0.6	0.5	0.4	0.4	0.4	0.4	0.2	0.2				

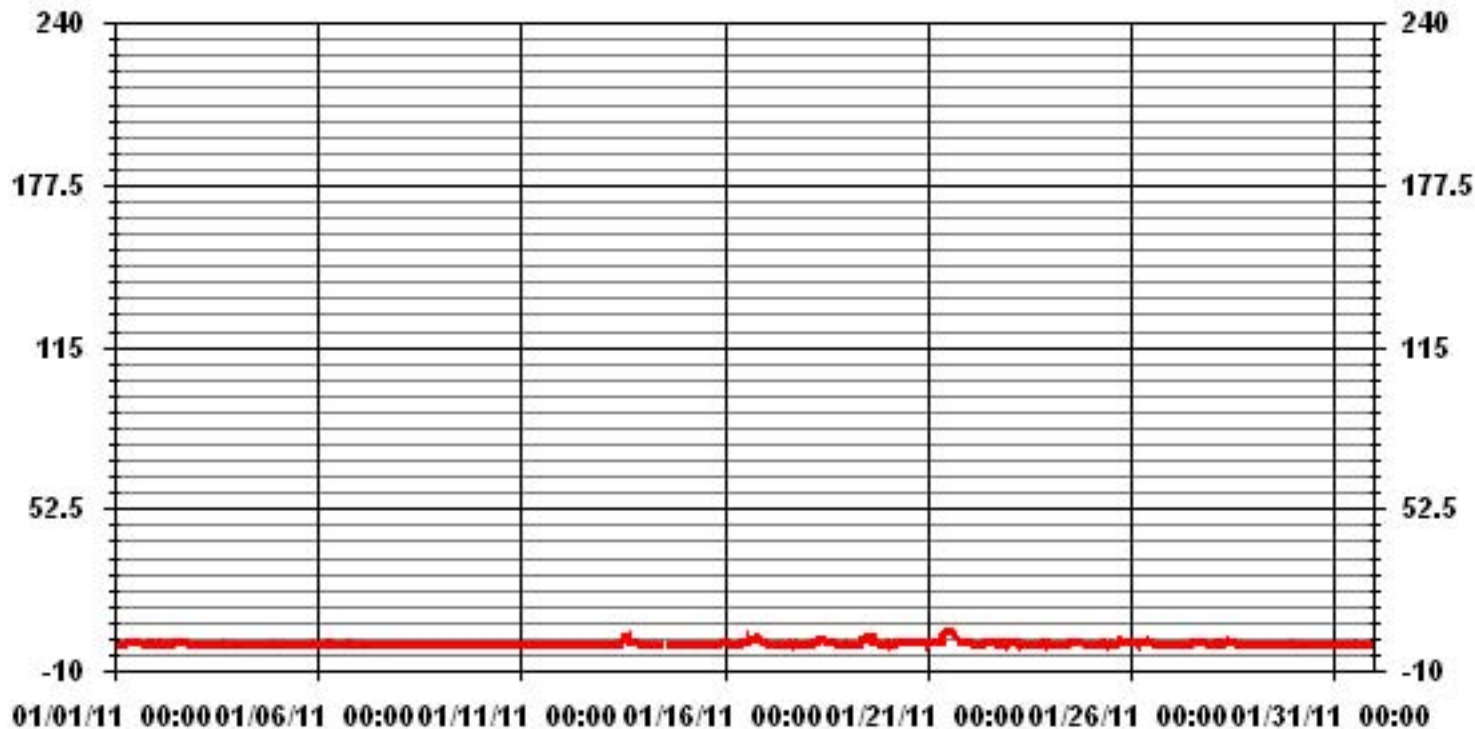
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	219					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	VAR	ON DAY(S)	21
IZS CALIBRATION TIME:	32	HRS		OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.78					

01 Hour Averages



— LICA SO2MAX PPB

LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

January 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	8.35	16.71	10.05	6.51	7.08	3.54	6.37	2.83	1.98	2.83	5.66	10.62	6.09	3.82	3.25	4.24	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	8.35	16.71	10.05	6.51	7.08	3.54	6.37	2.83	1.98	2.83	5.66	10.62	6.09	3.82	3.25	4.24	

Calm : .00 %

Total # Operational Hours : 706

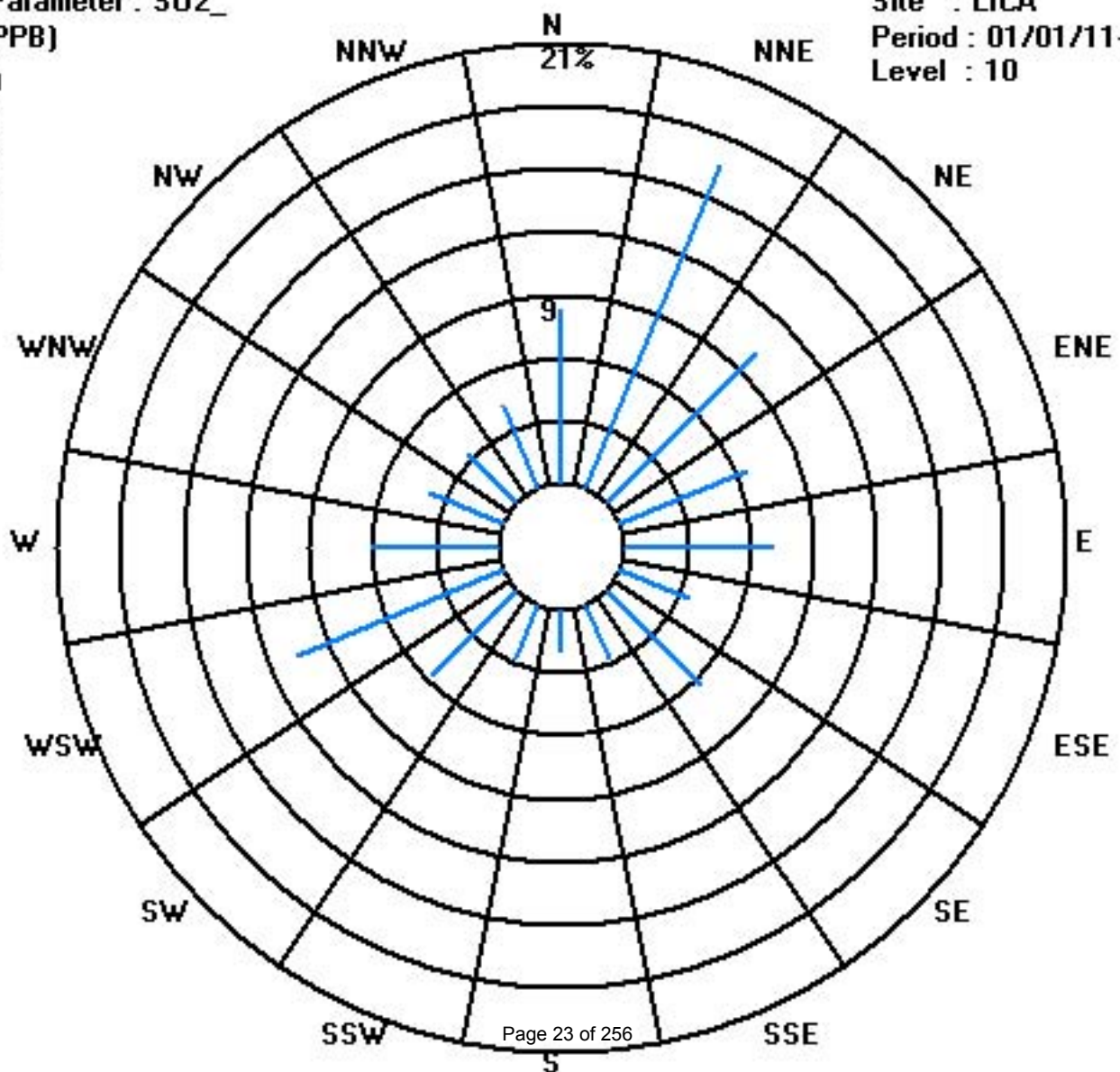
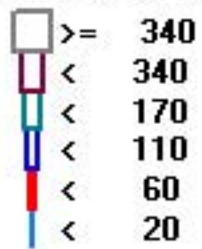
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	59	118	71	46	50	25	45	20	14	20	40	75	43	27	23	30	706
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	59	118	71	46	50	25	45	20	14	20	40	75	43	27	23	30	

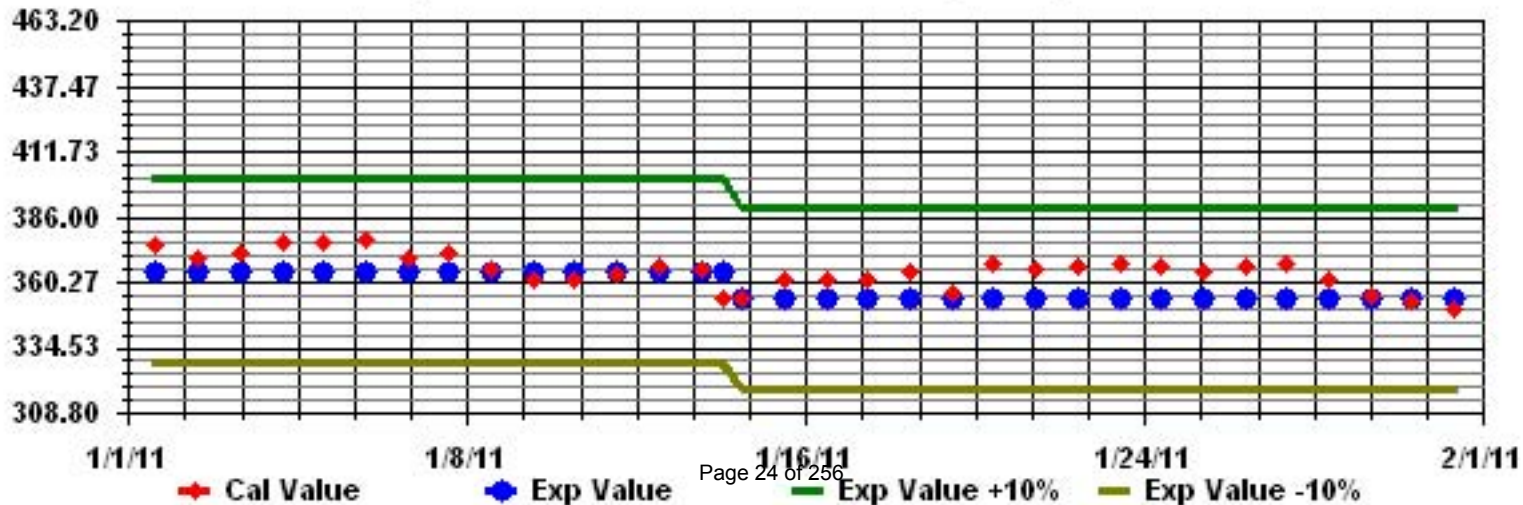
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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		
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	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
2		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
3		0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4		0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
7		0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
8		0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
9		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	
10		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	
11		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	
12		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	
13		0	0	0	IZS	0	0	0	0	0	0	0	C	C	M	M	C	C	0	0	0	0	0	0	0	0	0.0	22	
14		0	0	IZS	0	0	0	0	0	C	C	C	C	0	0	0	M	0	0	0	0	0	0	0	0	0	0.0	23	
15		0	IZS	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0.0	2
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	M	M	M	M	N	N	N	N	N	N	N	N		0	
18		N	N	N	N	N	N	N	N	C	C	C	C	C	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	16	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	24	
20		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24	
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24	
22		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0.0	24	
23		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
24		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24	
25		0	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.0	24
26		0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28		0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
29		0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
30		0	0	0	0	0	0	0	0	0	IZS	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	IZS	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	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
HOURLY AVG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

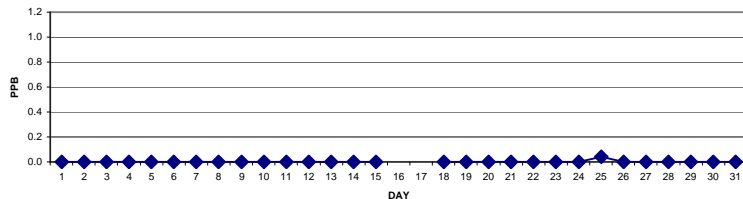
OBJECTIVE LIMIT:

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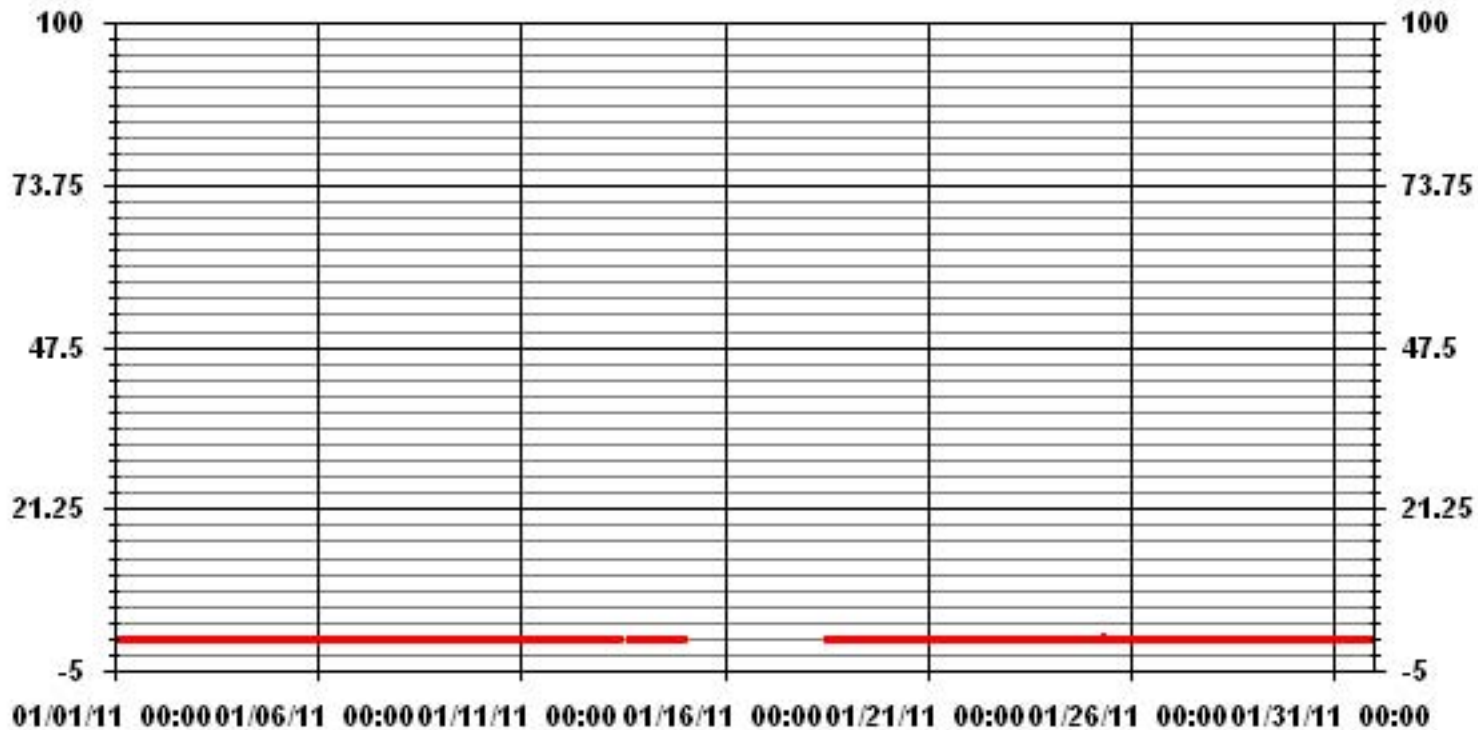
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	1					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	8	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	0.0	PPB			ON DAY(S)	25
				VAR-VARIOUS		
IZS CALIBRATION TIME:	29	HRS	OPERATIONAL TIME:	663	HRS	
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:	89.1	%	
STANDARD DEVIATION:	0.04		MONTHLY AVERAGE:	0.00	PPB	

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA TRS_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

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

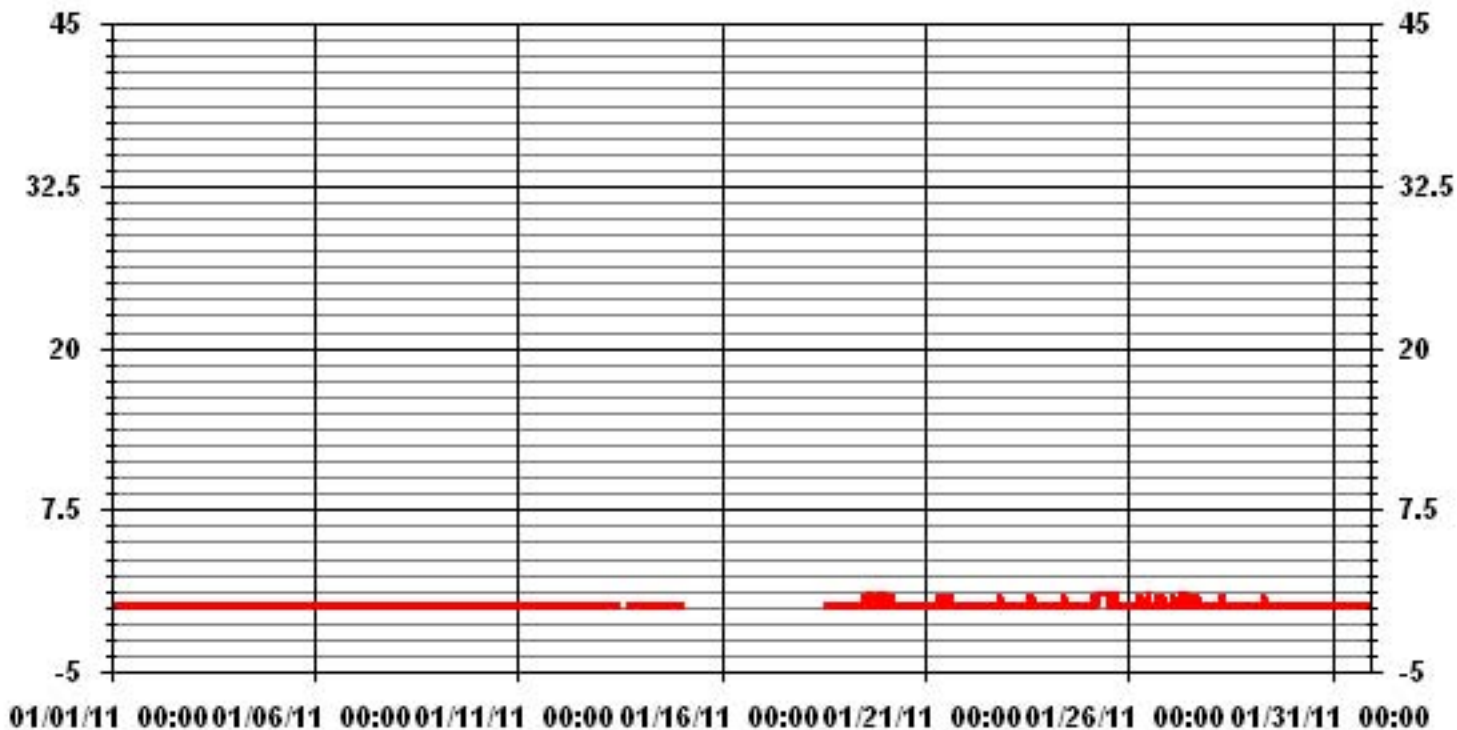
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	35					
MAXIMUM INSTANTANEOUS VALUE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
VAR - VARIOUS						
IZS CALIBRATION TIME:	29	HRS	OPERATIONAL TIME:	663	HRS	
MONTHLY CALIBRATION TIME:	14	HRS				
STANDARD DEVIATION:	0.23					

01 Hour Averages



— LICA TRSMAX PPB

LICA
 TRS_ / WD Joint Frequency Distribution (Percent)

January 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	9.47	16.49	6.66	3.15	7.36	3.15	6.49	2.98	1.57	3.15	6.66	12.80	6.66	4.38	4.21	4.73	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	9.47	16.49	6.66	3.15	7.36	3.15	6.49	2.98	1.57	3.15	6.66	12.80	6.66	4.38	4.21	4.73	

Calm : .00 %

Total # Operational Hours : 570

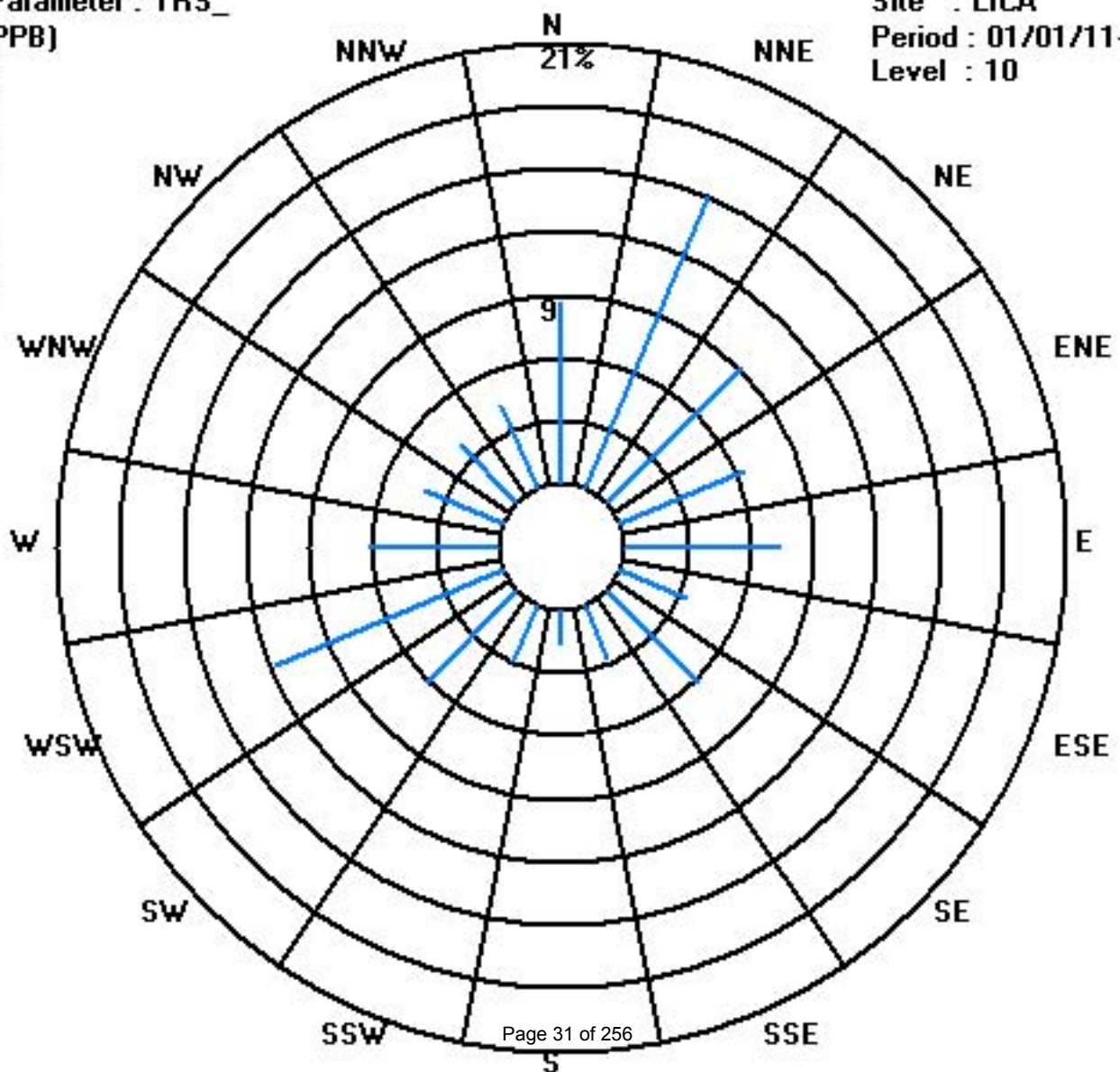
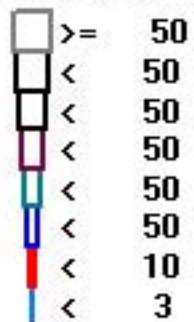
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	54	94	38	18	42	18	37	17	9	18	38	73	38	25	24	27	570
< 10																	
< 50																	
>= 50																	
Totals	54	94	38	18	42	18	37	17	9	18	38	73	38	25	24	27	

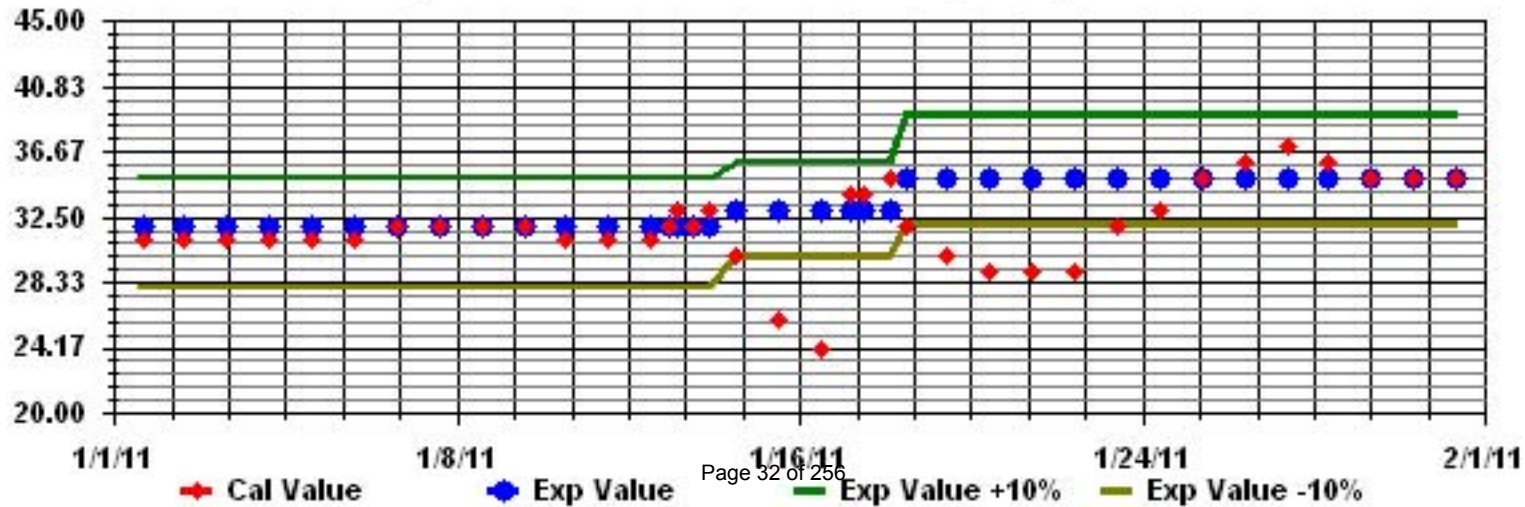
Calm : .00 %

Total # Operational Hours : 570

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

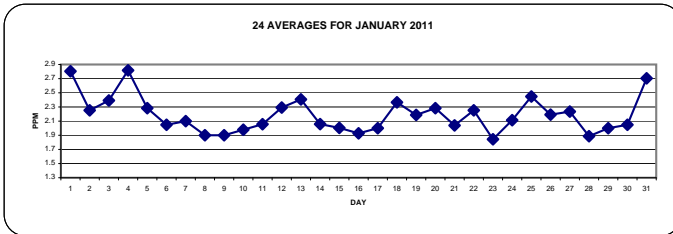
JANUARY 2011

TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	2.9	2.8	2.8	2.8	2.6	2.7	2.7	2.7	2.8	2.7	3	3.1	2.8	2.7	2.8	IZS	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8	3.1	2.8	24	
2	2.8	2.7	2.6	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.1	2.1	2.3	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.8	2.3	24
3	2.2	2.2	2.4	2.6	2.6	2.4	2.3	2.2	2.2	2.2	2.4	2.4	2.4	IZS	2.4	2.7	2.4	2.4	2.3	2.3	2.4	2.4	2.5	2.7	2.7	2.4	24	
4	2.9	3.1	3.2	3.2	3.1	3	3	2.5	2.7	2.8	3	3.2	IZS	2.9	2.7	2.8	2.8	2.9	3.1	2.9	2.4	2.2	2.2	2.2	3.2	2.8	24	
5	2.3	2.4	2.3	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.2	IZS	2.3	2.3	2.2	2.2	2.3	2.3	2.2	2.2	2.3	2.3	2.4	2.4	2.4	2.3	24	
6	2.4	2.5	2.5	2.3	2.4	2.4	2.3	2.2	2.1	1.9	IZS	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	2	2.2	2.5	2.0	24		
7	2.3	2.2	2.2	2.3	2.4	2.4	2.4	2.5	2.6	IZS	2.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.6	2.1	24
8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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	1.9	1.9	1.9	1.9	1.9	24
9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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	1.9	1.9	1.9	1.9	1.9	1.9	24
10	1.9	1.9	2	2	2	2	IZS	1.9	2	1.9	2	2	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24
11	2.1	2.3	2.3	2.1	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2	2	2	2.1	2.3	2.3	2.1	24
12	2.6	2.7	2.7	2.7	IZS	2.7	2.7	2.9	2.7	2.5	2.2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.9	2.3	24
13	2.1	2.2	2.3	IZS	2.6	3.1	3	3.2	2.8	C	M	M	M	M	C	C	C	2.2	2.1	2.1	2.1	2.1	2.1	2.1	3.2	2.4	20	
14	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	C	C	C	C	2	2	2	2	2	2	2	2	2	2.1	2.1	24
15	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2.1	2.0	24
16	IZS	2	2	2	2	1.9	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	1.9	1.9	1.9	1.9	IZS	2.0	1.9	24
17	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	2	2	2	2	2	IZS	2.4	2.0	24	
18	2.6	2.7	2.7	2.7	2.7	2.8	2.8	2.7	2.7	2.9	2.7	2.3	2.3	2.1	1.9	1.9	1.9	2	2	2	2	IZS	2	2	2.9	2.4	24	
19	2.3	2.4	2.3	2.4	2.5	2.4	2.2	2.3	2.2	2.1	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.2	IZS	2.2	2.2	2.3	2.5	2.2	24
20	2.3	2.9	2.5	2.4	2.5	2.4	2.2	2.3	2.3	2.4	2.4	2.1	2.1	2	2	2.1	2.1	2.1	2.1	IZS	2.1	2.3	2.4	2.5	2.9	2.3	24	
21	2.5	2.2	2	2	2.1	2.1	2.1	2.2	2.1	2.1	2	2	2	2	2	2	2	2	IZS	1.9	1.9	1.9	1.9	1.9	1.9	2.5	2.0	24
22	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.1	2.3	2.4	2.3	2.3	2.4	2.3	2.4	IZS	2.7	2.6	2.9	2.7	2.6	2.4	2.9	2.3	24	
23	2.2	2.1	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	IZS	1.8	1.8	1.8	1.8	1.8	1.9	1.9	2.2	1.8	24
24	2.1	2.6	2	2.1	2.2	2.1	2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	IZS	2	2	2	2	2	2.1	2.2	2.3	2.6	2.1	24	
25	2.3	2.4	2.4	2.5	2.6	2.5	2.7	2.9	3.3	2.8	2.6	2.7	2.7	2.3	IZS	2.3	2.5	2.3	2.2	2.1	2.1	2.1	2	2	3.3	2.4	24	
26	2.3	2.1	2.2	2.2	2.2	2.2	2.1	2.4	2.6	2.2	2.4	2.7	2.8	IZS	2	1.9	2	1.9	2.1	2	2	2	2	2	2.1	2.8	2.2	24
27	2.3	2.2	2.3	2.3	2.4	2.4	2.3	2.5	2.3	2.4	2.4	2.1	IZS	2.4	2.3	2.2	2.3	2.3	2.2	2.1	2.1	2	1.8	1.8	2.5	2.2	24	
28	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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	1.9	24
29	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24
30	2	2	2	2	2	2	2	2	2	2	IZS	2	2.1	2	2	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	24
31	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	IZS	2.5	2.6	2.8	3.2	3.2	3	2.8	2.9	2.9	2.9	3	3.2	3.3	3.4	3.3	3.4	2.7	24	
HOURLY MAX	2.9	3.1	3.2	3.2	3.1	3.1	3.0	3.2	3.3	2.9	3.0	3.2	3.2	3.2	3.0	2.8	2.9	2.9	3.1	3.0	3.2	3.3	3.4	3.3				
HOURLY AVG	2.2	2.3	2.2	2.2	2.2	2.3	2.2	2.3	2.3	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	2.2				

STATUS FLAG CODES

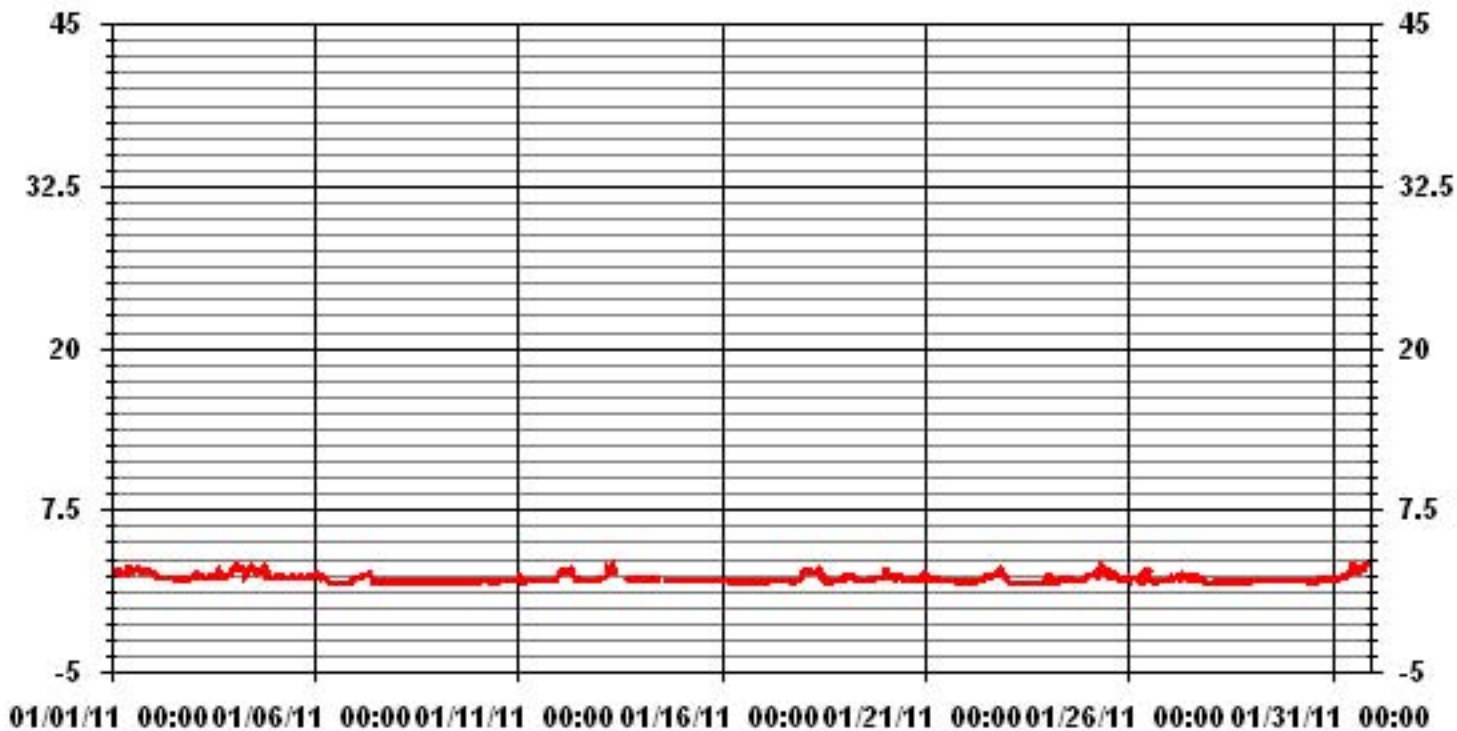
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	700		
MAXIMUM 1-HR AVERAGE:	3.4 PPM	@ HOUR(S)	22 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	2.8 PPM		ON DAY(S)
			1, 4
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	740 HRS
MONTHLY CALIBRATION TIME:	8 HRS	AMD OPERATION UPTIME:	99.5 %
STANDARD DEVIATION:	0.33	MONTHLY AVERAGE:	2.19 PPM

01 Hour Averages



— LICA — THC — PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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	3.2	3	3	2.9	2.8	2.7	2.7	2.8	2.9	3	3.4	3.3	3.1	3.5	3.3	IZS	3.1	3	2.9	2.9	2.8	2.8	2.8	2.9	3.5	3.0	24	
2	2.9	2.8	2.7	2.5	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.3	IZS	2.3	2.2	2.9	2.6	2.3	2.3	2.2	2.2	2.2	2.3	2.9	2.4	24
3	2.3	2.3	2.8	2.8	2.7	2.6	2.4	2.2	2.4	2.4	2.5	2.5	2.5	IZS	4.9	5	3.1	3.1	2.4	2.5	2.4	2.4	2.8	3	5	2.8	24	
4	3.2	3.2	3.3	3.3	3.3	3.2	3.3	2.7	3	3	3.3	3.3	IZS	3.2	2.8	3.5	5.1	3.1	3.2	3.2	2.8	2.3	2.5	2.4	5.1	3.1	24	
5	2.7	3	2.7	2.7	2.5	2.6	2.4	2.4	2.3	2.2	2.3	IZS	2.4	2.5	2.4	2.3	2.4	2.4	2.3	2.5	2.5	2.7	2.7	3	2.5	24		
6	2.5	2.7	2.6	2.6	2.5	2.5	2.4	2.3	2.2	2.1	IZS	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.3	2.2	2.7	24	
7	2.4	2.3	2.3	2.4	2.5	2.7	2.5	2.6	3.2	IZS	2.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	2	3.2	2.2	24	
8	1.9	1.9	1.9	2	2	2.1	2	2	IZS	1.9	2.5	1.9	1.9	2	2.1	1.9	1.9	1.9	1.9	2.1	1.9	1.9	1.9	1.9	1.9	2.5	2.0	24
9	1.9	1.9	1.9	1.9	2	2	2	2	IZS	2	2	2	2	2.1	2	2	2.1	2.1	2	2	2	2	2	2	2	2.1	2.0	24
10	2	2	2	2.1	2.1	2.1	IZS	2	2.1	2.1	2	2.1	2	2	2	2.1	3.3	2.1	2.3	2.1	2	2	2.1	2.1	3.3	2.1	24	
11	2.2	2.5	2.6	2.4	2	IZS	2.1	2	2.9	2.1	2	2	2.3	2	2.1	2.1	2.1	2.5	2.2	2.1	3	2.1	2.3	2.5	3	2.3	24	
12	2.8	2.8	2.7	2.8	IZS	2.8	2.9	3.1	3.4	2.7	2.6	2.2	2.4	2.7	2.1	2.5	2.1	2.1	2.4	2.1	2.1	2.2	2.1	2.2	3.4	2.5	24	
13	2.2	2.3	2.4	IZS	3.1	3.4	3.2	3.3	C	C	C	M	M	M	M	C	C	2.3	2.2	2.2	2.1	2.2	2.1	2.1	3.4	2.5	20	
14	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	C	C	C	C	4.4	2.2	2.1	2	2.1	2.1	2.1	2.1	4.4	2.2	24		
15	2.1	IZS	2	2	2	2	2	2	2.1	2.2	2	2.1	2	2.1	2	2	2	2.1	2.1	2.1	2.3	2.3	2.1	2.2	2.3	2.1	24	
16	IZS	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2	2	2	2	2	2	2	2	2.2	2.0	24	
17	2	2	2	2	2.1	2.4	2.1	2.1	2.3	2.3	2.1	2	2	2.1	2.2	2.4	2.5	2.3	2	2	2	2	IZS	2.6	2.6	2.2	24	
18	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.7	3	3.1	2.9	2.6	2.4	2.4	1.9	2	2	2.1	2	2.1	2.4	IZS	2.1	2.2	3.1	2.5	24	
19	2.7	3	2.8	2.5	2.5	2.5	2.3	2.9	2.5	2.4	2	2	2.1	2	2.1	2.9	2.4	2.3	2.3	IZS	2.4	2.3	2.3	3	2.4	24		
20	2.6	3.6	2.9	2.7	4.2	2.5	2.5	2.5	2.4	2.5	2.5	2.3	2.2	2.2	2.3	2.4	2.2	2.3	2.2	IZS	2.2	2.4	2.5	2.6	4.2	2.6	24	
21	2.6	2.5	2.1	2.1	2.1	2.1	2.2	2.5	2.3	2.1	2.2	2.1	2.2	2.1	2.4	2.1	2.1	2.6	IZS	2	2	2	2	2	2.6	2.2	24	
22	2	2	2	2	2	2	2	2	2.1	2.2	2.4	2.4	2.5	2.8	2.5	2.4	2.6	IZS	3.5	3	3.5	3	2.7	2.6	3.5	2.4	24	
23	2.5	2.2	2.1	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.8	1.8	1.8	IZS	1.8	1.9	1.9	1.9	1.9	1.9	1.9	2.5	1.9	24	
24	3.6	3.6	2.2	2.2	2.3	2.2	2.1	2.7	2.4	2.2	2.2	2.2	2.2	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.4	3.6	2.3	24
25	2.4	2.5	2.5	2.8	2.9	2.7	3.2	3.8	9.3	3.2	2.8	2.8	3	2.6	IZS	2.5	3.2	3.1	2.3	2.2	2.3	2.2	2.2	2.1	9.3	3.0	24	
26	2.7	2.4	2.4	2.3	2.4	2.4	2.3	2.6	2.9	2.5	2.5	3	3	IZS	2.2	2.1	2.2	2.4	2.3	2.2	2.2	2.3	2.2	2.3	3	2.4	24	
27	2.5	2.4	2.4	2.5	2.5	2.6	2.6	3	2.6	2.6	2.5	2.3	IZS	2.9	2.5	2.3	2.6	2.6	2.4	2.5	2.2	2.1	2	2.4	3	2.5	24	
28	2.4	2	1.9	1.9	1.9	2	2.1	2.1	2.1	2.1	2	IZS	2.1	2	2	2	2.1	2.3	2.1	2.4	2.5	2.6	3	2.1	3	2.2	24	
29	2.1	2.3	2.1	2.2	2.6	2.4	2.2	2.7	2.4	2.2	IZS	2.1	2.2	2.5	2.3	2.1	2.5	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.7	2.2	24	
30	2.2	2.1	2.2	2.2	2.2	2.5	2.1	2.3	2.2	IZS	2.3	2.3	2.3	2.1	2.5	2.4	2.3	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.5	2.2	24	
31	2.2	2.2	2.3	2.2	2.4	2.3	2.3	2.5	IZS	2.6	2.8	2.9	3.6	3.5	3.3	3	3.2	4.1	3	3.2	3.4	3.4	3.5	3.5	4.1	2.9	24	
HOURLY MAX	4	4	3	3	4	3	3	4	9	3	3	3	4	4	5	5	5	4	4	3	4	3	4	4				
HOURLY AVG	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.5	2.7	2.4	2.4	2.3	2.3	2.3	2.4	2.3	2.6	2.4	2.3	2.3	2.3	2.3	2.3	2.3				

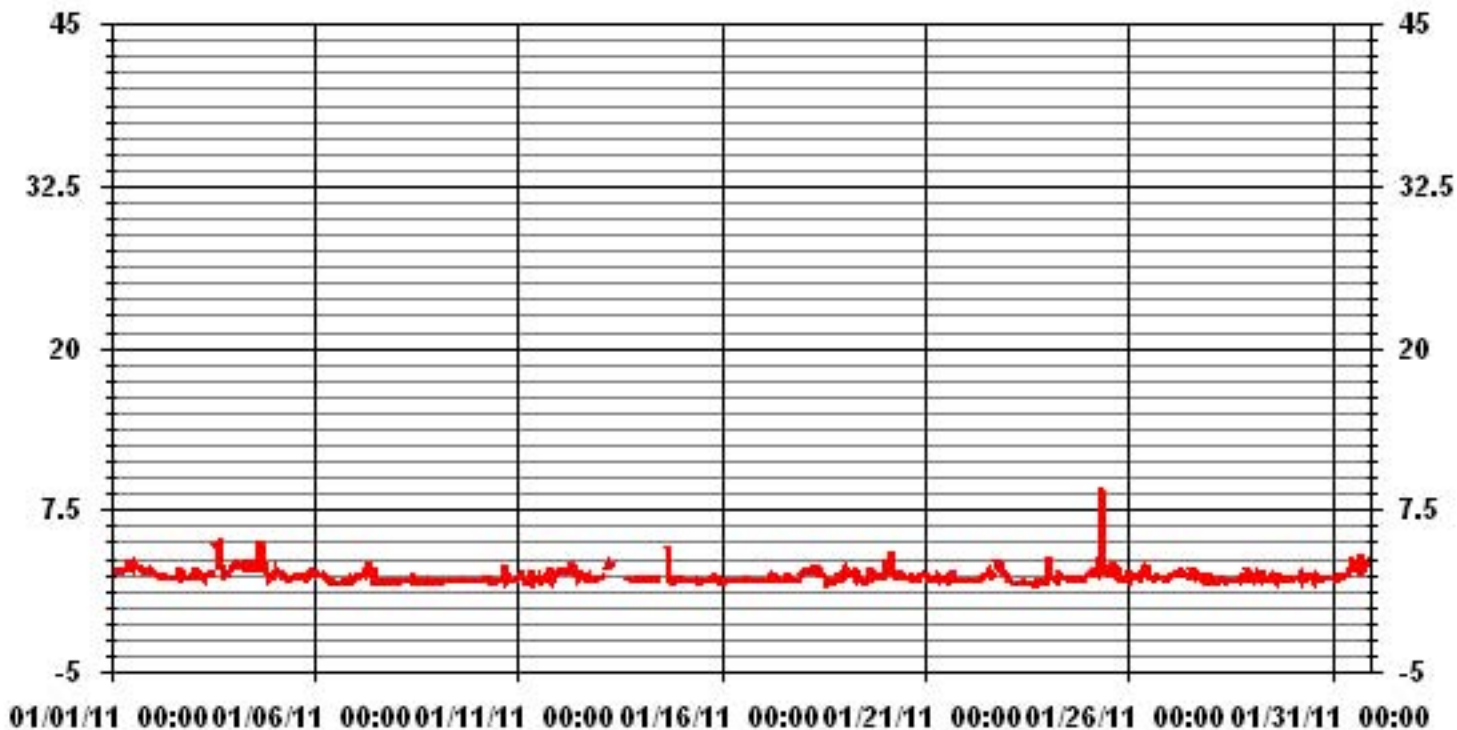
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	698					
MAXIMUM INSTANTANEOUS VALUE:	9.3	PPM	@ HOUR(S)	8	ON DAY(S)	25
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	10	HRS				
STANDARD DEVIATION:	0.52					

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

January 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	8.45	16.90	10.17	6.44	7.02	3.58	6.30	2.57	2.00	2.43	5.30	9.16	5.58	3.29	3.29	4.15	96.70
< 10.0	.00	.00	.00	.14	.14	.00	.14	.28	.00	.42	.28	1.14	.42	.28	.00	.00	3.29
< 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	8.45	16.90	10.17	6.59	7.16	3.58	6.44	2.86	2.00	2.86	5.58	10.31	6.01	3.58	3.29	4.15	

Calm : .00 %

Total # Operational Hours : 698

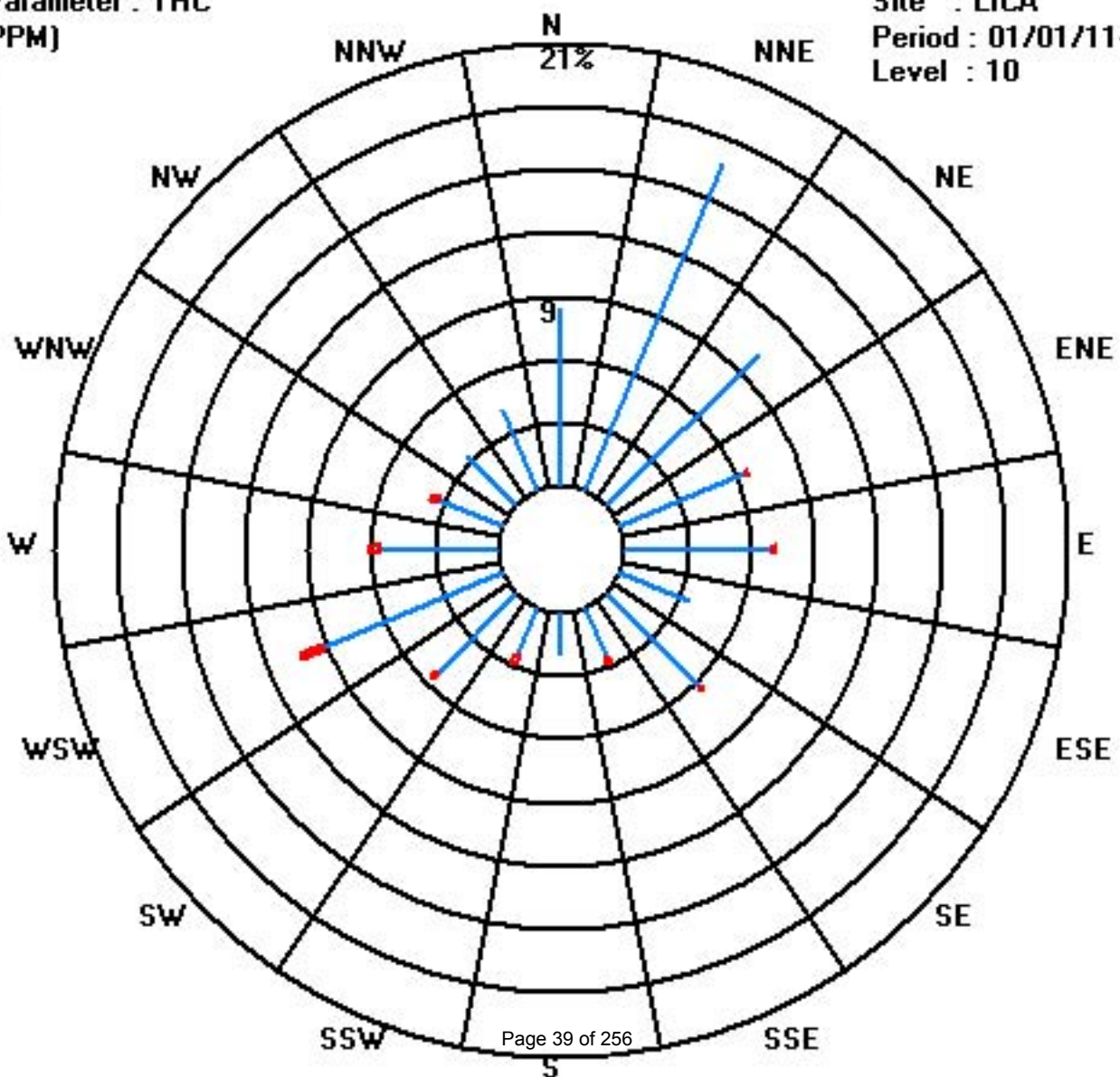
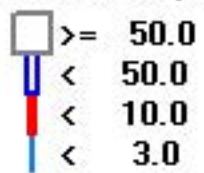
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	59	118	71	45	49	25	44	18	14	17	37	64	39	23	23	29	675
< 10.0				1	1		1	2		3	2	8	3	2			23
< 50.0																	
>= 50.0																	
Totals	59	118	71	46	50	25	45	20	14	20	39	72	42	25	23	29	

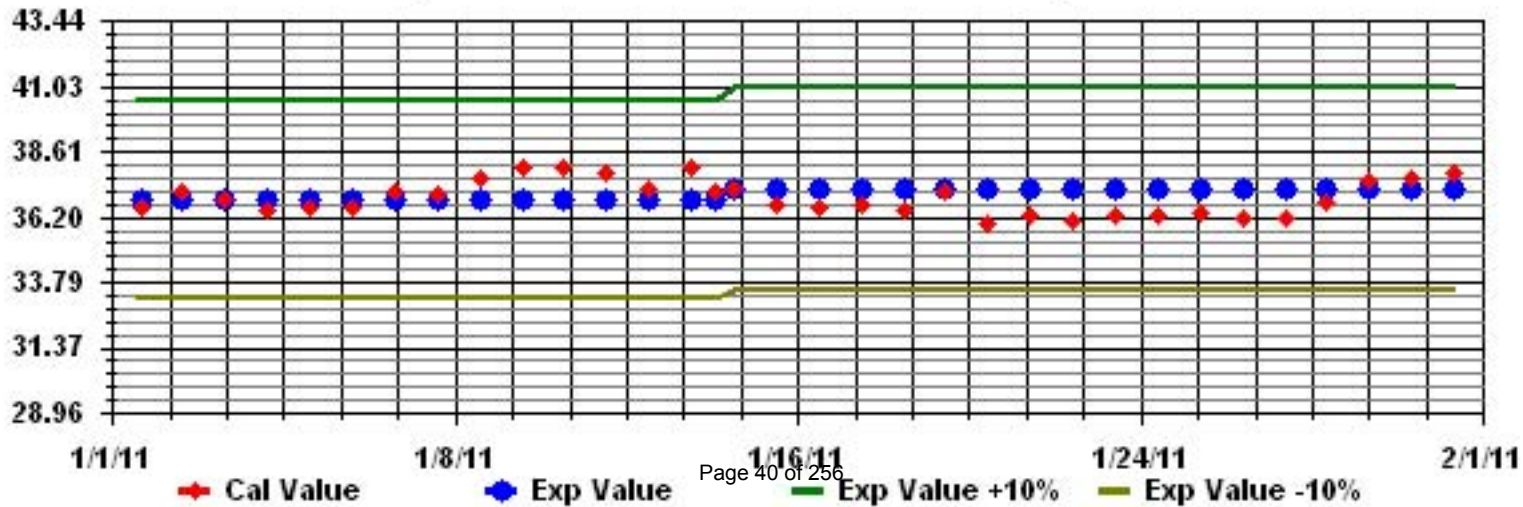
Calm : .00 %

Total # Operational Hours : 698

Class Limits (PPM)



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

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

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	9.4	7.9	9.4	2.9	7.4	11.4	2.9	11.9	16.4	14.9	12.4	10.4	13.9	13.9	15.4	13.9	12.4	20.4	14.9	22.4	20.9	20.9	15.9	20.4	22.4	13.4	24	
2	17.4	17.9	12.4	14.4	12.9	6.9	8.4	6.9	9.9	7.9	10.9	3.9	11.4	5.4	8.9	3.4	10.4	5.9	10.4	3.9	5.4	4.9	5.9	5.9	17.9	8.8	24	
3	4.9	8.4	0.4	3.9	3.4	4.4	6.4	7.9	3.4	N	4.4	5.4	7.9	7.9	4.4	14.9	13.4	10.4	7.9	10.4	6.4	3.9	11.4	5.4	14.9	6.8	23	
4	11.4	11.9	8.4	11.4	6.4	9.9	5.4	6.4	10.4	7.9	8.4	19.4	12.9	13.9	7.4	6.9	10.4	10.9	10.4	5.4	6.4	2.9	1.9	6.9	19.4	8.9	24	
5	8.9	4.4	5.4	1.4	10.9	5.4	7.4	5.9	5.4	3.9	5.9	7.4	7.9	6.4	4.9	7.9	3.4	0	3.4	6.9	6.9	6.4	11.9	6.9	11.9	6.1	24	
6	9.4	12.4	7.4	0.4	11.4	3.4	8.4	7.9	N	4.4	4.4	0	3.9	4.4	1.4	0	2.4	3.4	6.9	4.9	5.9	3.9	0	12.4	4.6	23		
7	3.9	0	4.9	0.4	0	5.9	3.4	2.9	3.4	6.9	4.4	0.4	6.9	3.4	1.9	8.4	1.4	4.4	3.4	0.9	0	N	4.9	0	8.4	3.1	23	
8	4.4	2.4	4.4	4.4	3.4	0.9	0.4	1.9	8.4	2.9	1.4	3.9	0.9	0.9	2.4	2.4	1.9	N	4.9	1.9	0	1.4	0	3.9	8.4	2.6	23	
9	1.9	0	2.9	1.9	0.9	0	4.4	2.4	2.9	3.4	0.4	2.9	0	N	0.9	0	1.4	0	1.9	2.9	3.4	0	0	0.4	4.4	1.5	23	
10	0	0	4.4	0	5.4	0	2.4	0	0.9	2.4	0	0.4	0.4	1.9	2.9	0.9	0	2.4	1.9	0	1.4	3.4	5.4	6.9	6.9	1.8	24	
11	0	0	2.4	0	0	4.4	2.9	0	2.4	0	0	1.9	3.9	0	1.4	1.9	2.9	10.9	4.4	1.9	3.4	2.4	4.9	1.9	10.9	2.2	24	
12	4.9	0.4	3.9	2.4	8.4	9.4	7.4	23.9	11.9	7.4	1.4	1.9	3.9	2.4	4.4	1.4	2.4	6.4	15.4	0.4	3.9	5.4	3.9	6.9	23.9	5.8	24	
13	1.9	5.4	3.9	2.4	1.9	6.9	4.9	5.9	8.4	C	C	N	1.9	3.9	1.4	0	1.4	3.4	0.9	4.4	3.9	2.4	3.4	2.9	8.4	3.4	23	
14	3.4	0.4	3.4	4.4	1.4	3.9	0	0	2.9	0.4	1.4	1.9	3.9	1.4	3.9	6.9	2.9	0.4	1.4	1.4	3.9	5.4	4.4	0.9	6.9	2.5	24	
15	3.4	1.4	3.4	1.9	2.4	2.4	0.4	1.4	1.9	4.4	4.9	1.9	1.9	0	2.4	2.4	1.4	2.4	2.9	5.4	0	0	2.9	2.4	5.4	2.2	24	
16	3.9	3.9	4.9	3.9	6.9	8.9	5.9	3.9	1.9	2.4	1.9	3.4	3.4	0.9	3.4	2.9	5.4	0	1.4	1.9	0.9	0	3.9	1.9	8.9	3.2	24	
17	0	1.4	0.4	0.9	0	4.4	0	1.4	2.4	1.9	5.4	0.9	0	0	6.9	5.9	1.9	0	0.4	0	2.9	3.4	0	2.4	6.9	1.8	24	
18	0.4	3.4	0	0.9	0	7.9	10.4	7.4	12.4	4.4	4.9	5.4	7.9	0	0.4	3.4	0	2.9	1.4	1.9	3.4	2.4	5.4	5.9	12.4	3.9	24	
19	5.9	6.9	3.9	5.4	5.4	2.9	0.9	2.9	4.9	2.9	4.4	4.4	5.9	3.4	2.4	3.4	2.9	4.4	2.9	6.9	6.4	8.4	8.4	8.4	8.4	4.7	24	
20	9.4	10.9	7.9	9.9	7.9	6.9	5.9	9.9	6.9	11.4	5.9	10.9	5.4	7.9	6.4	0.4	8.4	4.9	0	0	5.9	2.9	4.4	2.4	11.4	6.4	24	
21	0	6.9	4.4	0	1.9	2.9	0.4	4.9	7.4	6.4	1.4	0	5.9	4.9	3.5	4.9	6.9	5.4	1.4	2.8	6.4	5.4	0	3.5	7.4	3.7	24	
22	2.3	5.4	4.8	3.1	2.3	2.5	10.2	0	3.4	0.9	2	1.9	3.3	3.9	1	9.7	14.3	8.5	7.9	10.8	13.4	13.7	9.9	7.8	14.3	6.0	24	
23	0	2.1	2.8	1	2.9	1.1	1.3	0	0	0	N	N	3.9	0	5.4	5.3	6.4	5.4	0	0	0.7	4.7	5.3	4.4	6.4	2.4	22	
24	4.1	2.8	4.9	0	7.9	0.6	3.2	N	1.4	0	1.4	5.2	1.6	0	2.3	6.2	3.5	8.7	2.2	0	4.4	3.7	1.1	1.6	8.7	2.9	23	
25	3.1	0.9	2.4	1.2	4.9	3.8	8.2	5.2	16.8	8.8	7.2	8.5	5.9	3.5	0	7.1	7.1	10.4	11.2	10.3	9.6	4.4	9.2	4.6	16.8	6.4	24	
26	2.9	3.8	2.4	2.4	7	5.9	2	10.3	3.6	8.4	10	6.1	3.9	1.4	5	0	1.7	1.4	4.9	2.5	3.3	5.3	1.9	0.1	10.3	4.0	24	
27	4.4	7.4	6.5	3.9	1	3.3	7.5	4.9	7.6	9.3	10.4	1.1	5.4	7.9	1.8	2.5	2.9	4.5	4.9	2.4	0	1.9	0.9	0	10.4	4.3	24	
28	0	1.4	3.9	5.4	6.4	2.9	4.9	2.4	1.9	5.4	2.9	6.4	0.4	0.4	0	2.4	1.4	1.4	1.9	4.4	0.9	3.9	2.9	0	6.4	2.7	24	
29	3.9	2.4	3.4	1.9	3.9	0.4	3.9	1.4	1.9	0	3.9	2.4	2.4	0	10.4	2.9	4.9	3.9	5.4	0.4	4.4	3.4	3.9	1.9	10.4	3.1	24	
30	4.9	0	3.9	0.4	1.9	0.4	2.9	1.9	0.4	0.9	1.9	3.4	3.9	4.9	2.9	2.4	4.4	4.4	4.9	4.4	3.4	5.9	5.9	5.9	5.9	3.2	24	
31	4.9	7.4	4.4	5.4	3.9	6.4	3.4	2.4	1.4	5.9	9.9	9.9	6.9	7.4	5.9	4.9	3.9	9.9	4.4	4.4	3.9	9.9	5.4	7.9	9.9	5.8	24	
HOURLY MAX	17	18	12	14	13	11	10	24	17	15	12	19	14	14	15	15	14	20	15	22	21	21	16	20				
HOURLY AVG	4.4	4.5	4.4	3.2	4.5	4.5	4.5	4.7	5.4	4.8	4.6	4.5	4.7	3.8	4.0	4.3	4.6	5.2	4.7	4.0	4.6	4.8	4.8	4.2				

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

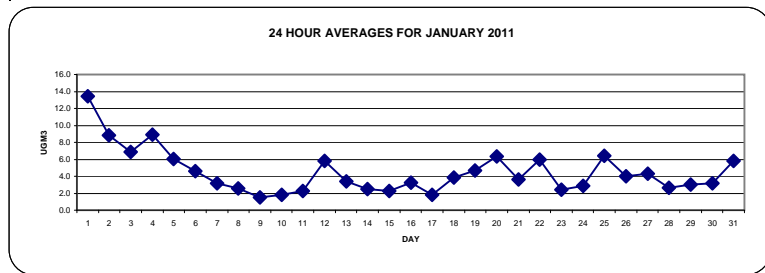
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:

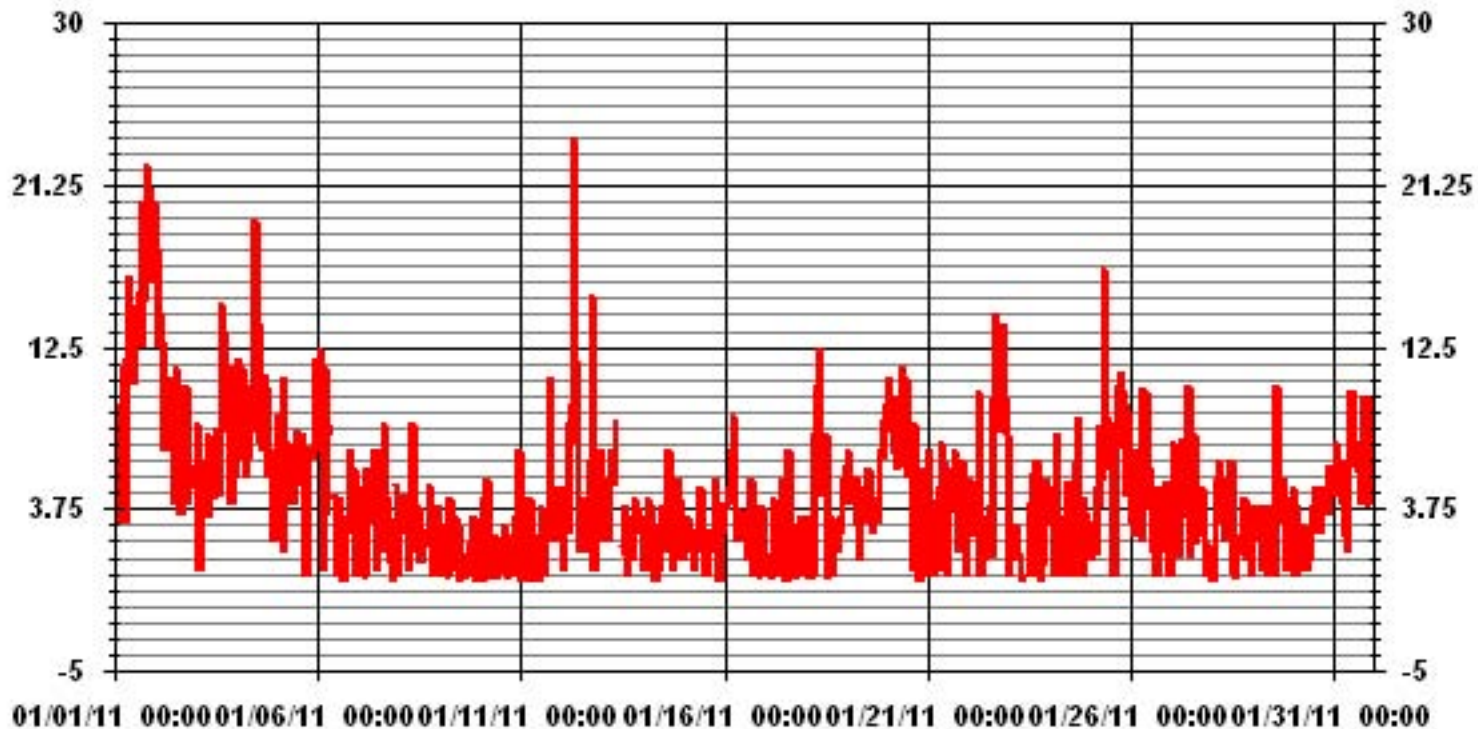
1-HR	-	ug/m ³	24-HR	30	ug/m ³
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-					
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE				
NUMBER OF NON-ZERO READINGS:	651					
MAXIMUM 1-HR AVERAGE:	23.9	UG/M ³	@ HOUR(S)	7	ON DAY(S)	12
MAXIMUM 24-HR AVERAGE:	13.4	UG/M ³			ON DAY(S)	1
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	735	HRS	
MONTHLY CALIBRATION TIME:	2	HRS	AMD OPERATION UPTIME:	98.8	%	
STANDARD DEVIATION:	3.88		MONTHLY AVERAGE:	4.48	UG/M ³	



01 Hour Averages



— LICA PM2 UG/M3

LICA
 PM2 / WD Joint Frequency Distribution (Percent)

January 2011

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	8.63	16.57	10.27	6.43	6.57	3.69	6.30	3.01	1.78	2.87	5.89	10.27	6.02	3.69	3.28	4.65	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	8.63	16.57	10.27	6.43	6.57	3.69	6.30	3.01	1.78	2.87	5.89	10.27	6.02	3.69	3.28	4.65	

Calm : .00 %

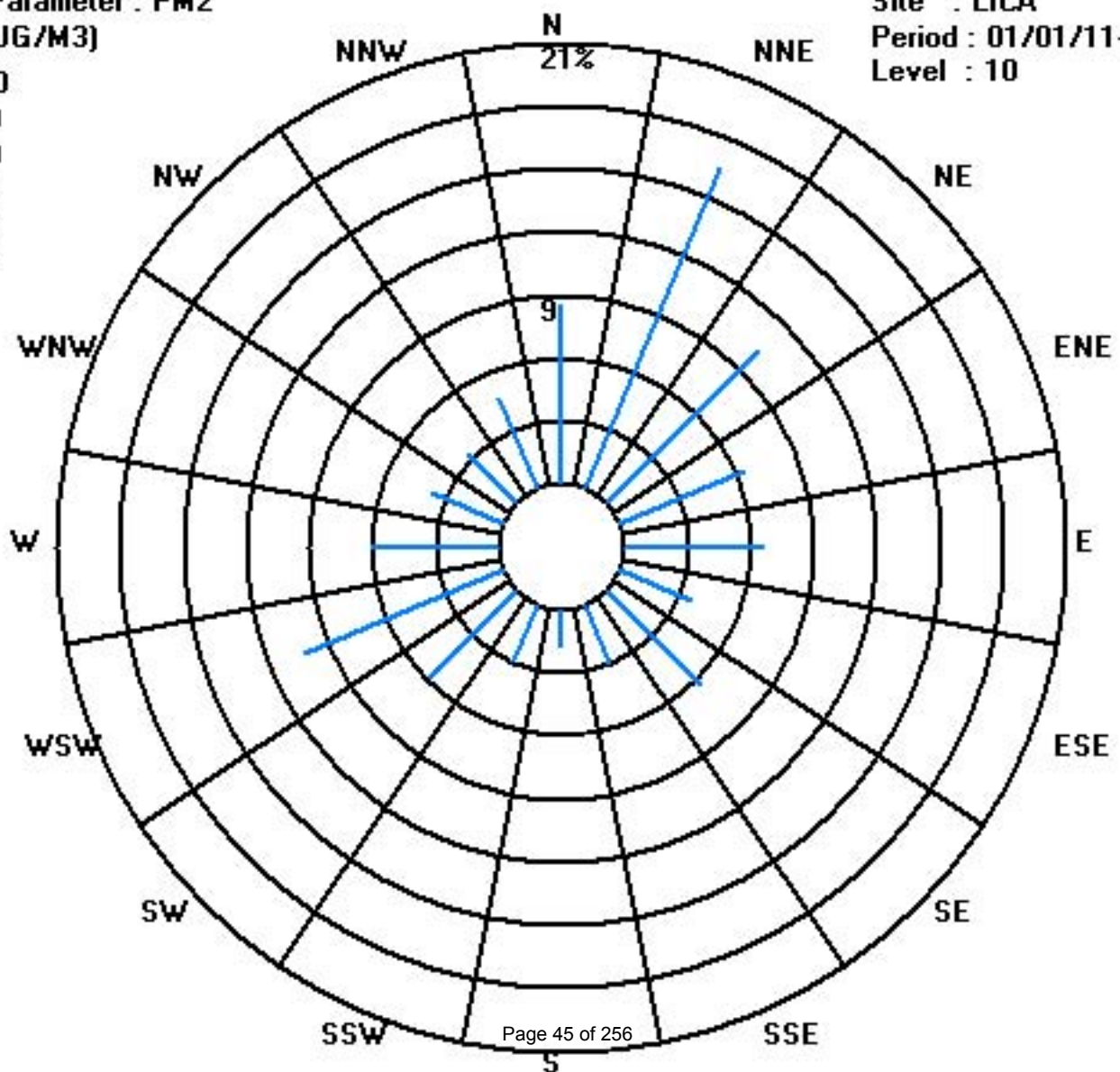
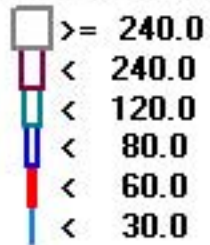
Total # Operational Hours : 730

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	63	121	75	47	48	27	46	22	13	21	43	75	44	27	24	34	730
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	63	121	75	47	48	27	46	22	13	21	43	75	44	27	24	34	

Calm : .00 %

Total # Operational Hours : 730



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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 MAX.	24-HOUR AVG.	RDGS.	
DAY	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			
1	11	8.5	10	8	8	9	8	9	8	9	9	10	9	9	9	12	IZS	14	16	18	16	17	17	15	19	19	11.7	24	
2	18	8.3	12	11	9	6	5	5	7	5	5	4	4	3	6	IZS	7	9	18	16	18	15	19	19	16	19	10.3	24	
3	15	7.7	13	13	12	11	9	4	4	5	5	5	4	5	IZS	8	28	21	23	18	19	13	17	19	20	28	12.7	24	
4	21	7.0	21	22	18	14	12	13	12	16	14	18	23	IZS	20	14	22	24	31	29	22	12	9	16	15	31	18.2	24	
5	13	7.3	14	12	8	6	10	9	6	6	5	4	IZS	6	8	8	13	14	12	14	20	17	20	24	22	24	11.8	24	
6	21	8.8	27	26	14	7	6	6	8	6	3	IZS	2	1	1	1	1	2	2	2	2	2	3	4	5	27	6.6	24	
7	5	7.9	6	5	5	8	20	12	20	23	IZS	15	2	3	3	5	6	5	3	3	2	2	2	2	2	23	6.9	24	
8	1	9.1	1	1	1	2	3	2	2	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	3	1.2	24	
9	0	8.0	0	0	0	0	0	0	0	IZS	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0.3	24
10	0	6.0	0	0	1	2	2	IZS	2	1	1	1	1	2	1	2	5	5	10	6	4	9	4	5	7	10	3.1	24	
11	5	4.9	6	5	2	0	IZS	1	1	2	3	2	1	1	2	3	5	9	21	22	20	20	15	14	4	22	7.1	24	
12	5	4.4	5	5	7	IZS	21	22	29	24	25	6	7	6	5	4	5	6	6	7	9	7	6	6	13	29	10.3	24	
13	14	4.1	11	9	IZS	10	15	15	20	C	C	C	C	C	C	9	9	12	10	5	4	4	3	2	2	20	9.1	24	
14	1	4.2	1	IZS	1	1	1	1	1	1	0	1	0	1	1	1	M	1	2	2	2	2	2	2	1	1	2	1.1	23
15	1	5.9	IZS	1	1	1	1	1	2	2	2	1	1	0	1	1	1	1	4	7	9	5	4	3	4	9	2.3	24	
16	IZS	4.1	3	3	4	4	7	4	3	2	3	2	1	1	0	0	1	1	1	1	1	1	1	2	2	IZS	7	2.1	24
17	1	4.2	1	2	5	6	8	9	6	9	8	5	3	3	3	3	4	4	5	3	4	3	4	IZS	3	9	4.4	24	
18	4	4.9	5	5	5	6	6	10	12	16	13	12	7	5	3	1	1	1	2	2	7	20	IZS	20	15	20	7.7	24	
19	24	6.0	20	21	29	31	26	15	14	12	10	2	2	11	2	3	5	14	29	28	27	IZS	25	26	26	31	17.5	24	
20	25	4.9	24	24	25	25	22	11	11	10	8	9	6	6	6	5	3	4	5	4	IZS	5	5	7	7	25	11.2	24	
21	8	4.9	5	4	4	4	5	14	22	26	16	6	3	3	4	6	10	9	6	IZS	6	4	4	4	3	26	7.7	24	
22	4	6.0	3	2	2	2	1	1	1	3	2	2	2	3	3	4	5	11	IZS	22	24	27	23	18	14	27	7.8	24	
23	10	4.9	7	3	2	1	1	1	1	1	1	1	1	0	1	0	1	IZS	1	1	1	1	1	1	1	1	10	1.7	24
24	6	6.8	9	4	3	6	15	3	3	6	5	3	3	3	4	4	IZS	9	10	12	9	9	12	10	9	15	6.8	24	
25	8	16.7	9	6	10	27	20	26	27	31	27	20	27	27	11	IZS	7	19	17	13	15	13	10	8	6	31	16.7	24	
26	7	9.1	5	6	6	6	7	9	10	13	14	12	12	11	IZS	7	7	8	12	21	8	8	6	7	7	21	9.1	24	
27	8	11.4	12	15	11	9	8	12	22	18	24	15	5	IZS	7	7	8	20	15	13	12	10	7	3	1	24	11.4	24	
28	1	0.9	1	1	2	1	1	1	2	2	2	1	IZS	0	1	0	0	1	1	1	1	1	1	0	0	0	2	0.9	24
29	0	1.2	0	0	1	0	1	1	2	3	1	IZS	0	1	0	1	1	2	2	2	2	2	2	1	2	3	1.2	24	
30	3	5.1	3	2	2	2	5	3	2	3	IZS	3	2	4	3	5	2	6	5	6	9	10	10	13	15	15	5.1	24	
31	14	13.0	14	14	13	13	18	16	21	IZS	16	8	9	8	8	7	6	10	17	19	19	13	11	14	11	21	13.0	24	
HOURLY MAX	25		27	26	29	31	26	26	29	31	27	20	27	27	20	14	28	24	31	29	27	27	25	26	26				
HOURLY AVG	8.5	8.3	7.7	7.0	7.3	8.8	7.9	9.4	9.1	8.0	6.0	4.9	4.4	4.1	4.2	5.9	8.1	9.6	9.9	9.8	8.4	8.1	8.8	8.4					

STATUS FLAG CODES

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

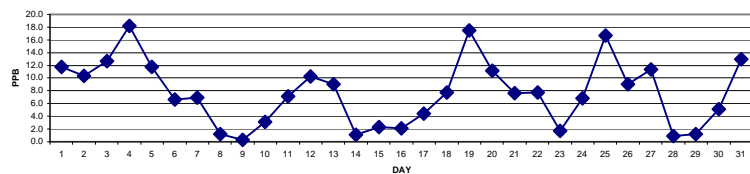
OBJECTIVE LIMIT:

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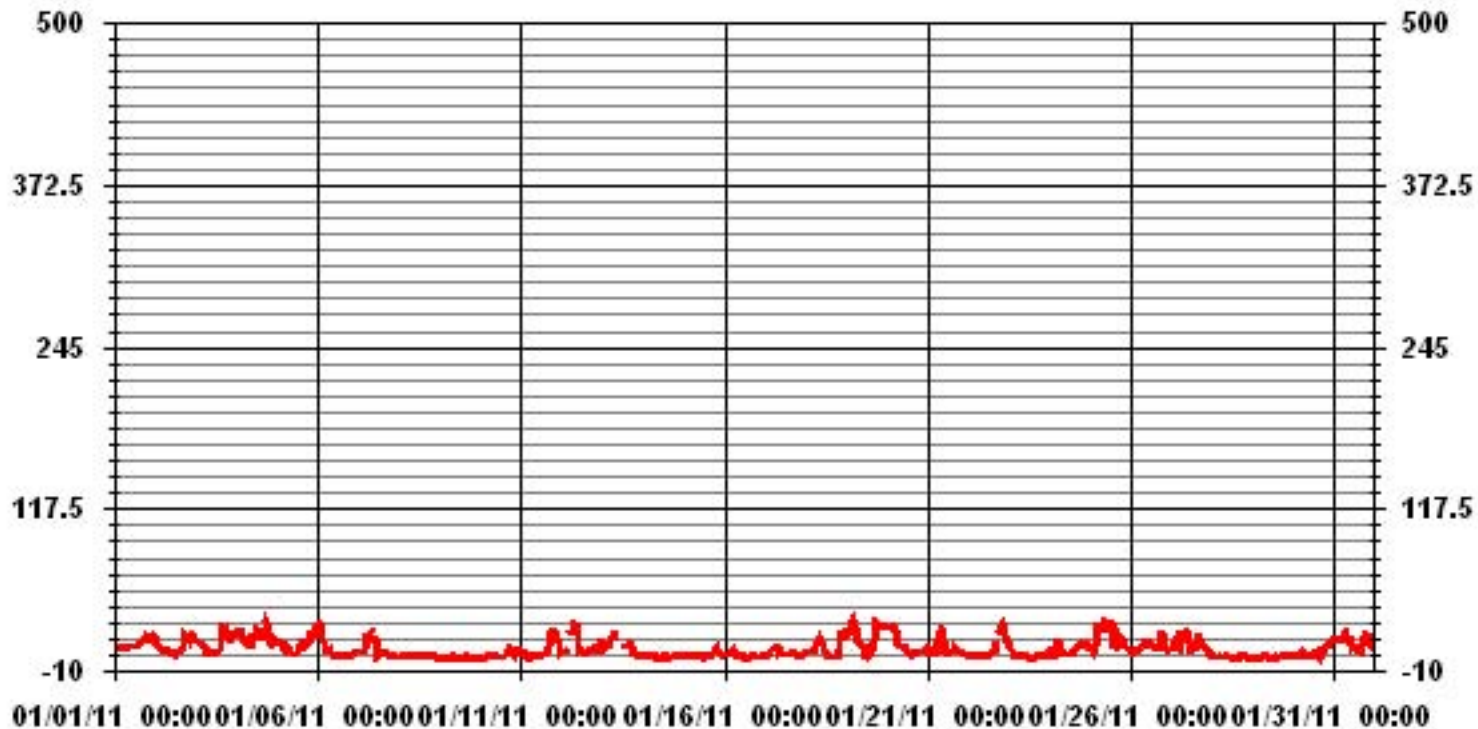
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0			
NUMBER OF 24-HR EXCEEDENCES:	0			
NUMBER OF NON-ZERO READINGS:	664			
MAXIMUM 1-HR AVERAGE:	31 PPB @ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	18.2 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:	7.33	MONTHLY AVERAGE:	7.65 PPB	

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA H02_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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	18	14	12	10	12	14	11	10	11	11	11	11	10	12	14	IZS	16	20	19	20	19	21	16	20	21	14.4	24	
2	21	15	13	10	8	7	9	9	7	7	7	6	4	8	IZS	9	18	27	22	73	20	24	24	20	73	16.0	24	
3	18	15	16	14	13	12	7	9	8	10	9	5	14	IZS	16	33	28	30	23	25	17	22	22	23	33	16.9	24	
4	23	23	25	22	17	18	15	19	25	21	27	27	IZS	48	17	51	33	34	34	27	16	14	19	19	51	25.0	24	
5	19	23	16	12	7	22	19	7	7	7	9	IZS	7	14	14	20	23	18	19	31	24	41	30	31	41	18.3	24	
6	28	30	48	30	13	8	8	10	10	6	IZS	2	1	1	1	2	2	2	2	3	4	7	7	7	48	9.9	24	
7	7	8	8	9	17	117	21	27	43	IZS	28	5	5	8	12	7	5	4	4	4	3	3	3	3	117	15.3	24	
8	3	2	2	3	3	11	5	4	IZS	4	2	2	3	1	3	1	2	4	2	2	2	7	1	3	11	3.1	24	
9	1	1	1	1	1	1	1	IZS	2	2	1	1	1	2	2	10	2	2	1	1	3	1	1	1	10	1.7	24	
10	1	1	1	2	2	2	IZS	4	4	2	2	2	5	2	4	27	9	22	13	16	15	6	9	20	27	7.4	24	
11	6	9	7	5	2	IZS	2	2	10	6	4	2	5	5	7	15	17	28	30	27	42	17	25	7	42	12.2	24	
12	5	6	9	16	IZS	51	44	87	65	66	9	10	10	9	6	8	8	10	13	15	14	13	13	19	87	22.0	24	
13	18	12	12	IZS	24	18	17	26	C	C	C	C	C	C	C	11	14	18	8	5	5	4	3	3	26	12.4	24	
14	2	2	IZS	2	2	2	3	7	6	1	2	1	2	2	2	M	3	3	3	3	5	4	2	3	7	2.8	23	
15	2	IZS	3	3	3	2	3	4	3	3	3	2	1	6	5	3	3	12	12	12	10	8	5	29	29	6.0	24	
16	IZS	5	5	7	7	37	7	5	4	5	6	4	3	1	2	3	5	4	2	2	2	4	3	3	IZS	37	5.6	24
17	2	3	4	8	10	14	14	10	17	13	13	5	10	5	5	10	30	10	5	8	6	9	IZS	4	30	9.3	24	
18	5	6	6	6	7	9	11	16	18	15	16	13	6	5	1	1	2	3	4	18	53	IZS	33	24	53	12.1	24	
19	60	26	27	33	35	31	19	17	17	23	4	6	44	39	6	5	39	38	33	31	IZS	31	34	32	60	27.4	24	
20	28	27	27	29	33	41	29	20	19	18	23	13	19	16	15	8	6	10	6	IZS	9	7	8	11	41	18.3	24	
21	10	9	6	6	6	8	22	35	32	34	11	5	5	7	15	16	12	9	IZS	9	7	6	6	5	35	12.2	24	
22	5	4	4	4	4	3	3	4	6	4	4	3	5	5	7	6	23	IZS	27	28	30	29	25	20	30	11.0	24	
23	15	16	3	3	2	1	2	1	1	1	1	1	1	1	1	1	IZS	1	2	2	2	2	1	3	16	2.8	24	
24	10	14	8	9	17	57	8	6	15	8	4	5	4	6	6	IZS	11	12	14	12	12	16	15	11	57	12.2	24	
25	13	12	8	22	36	29	32	34	45	34	23	34	31	24	IZS	13	30	28	15	16	15	12	10	8	45	22.8	24	
26	10	7	10	9	8	10	12	13	17	24	14	14	14	IZS	12	8	9	22	32	13	12	10	9	9	32	13.0	24	
27	16	19	20	20	13	13	25	62	29	41	33	7	IZS	12	8	14	30	30	17	18	12	10	5	2	62	19.8	24	
28	1	1	3	3	2	2	2	3	9	3	3	IZS	2	1	1	2	2	3	3	3	4	3	2	2	9	2.6	24	
29	2	1	1	2	2	2	2	7	8	4	IZS	1	7	3	4	5	12	5	4	3	4	5	3	4	12	4.0	24	
30	4	4	4	4	7	22	9	5	5	IZS	4	4	8	4	6	6	11	19	12	14	16	24	18	22	24	10.1	24	
31	18	18	17	16	16	25	23	28	IZS	21	9	10	12	11	10	9	23	22	26	27	18	17	17	16	28	17.8	24	
HOURLY MAX	60	30	48	33	36	117	44	87	65	66	33	34	44	48	17	51	39	38	34	73	53	41	34	32				
HOURLY AVG	12.4	11.1	10.9	10.7	11.0	19.6	12.8	16.4	15.8	14.1	10.1	7.2	8.5	9.1	7.1	11.0	14.3	15.0	13.6	15.6	13.4	12.5	12.3	12.7				

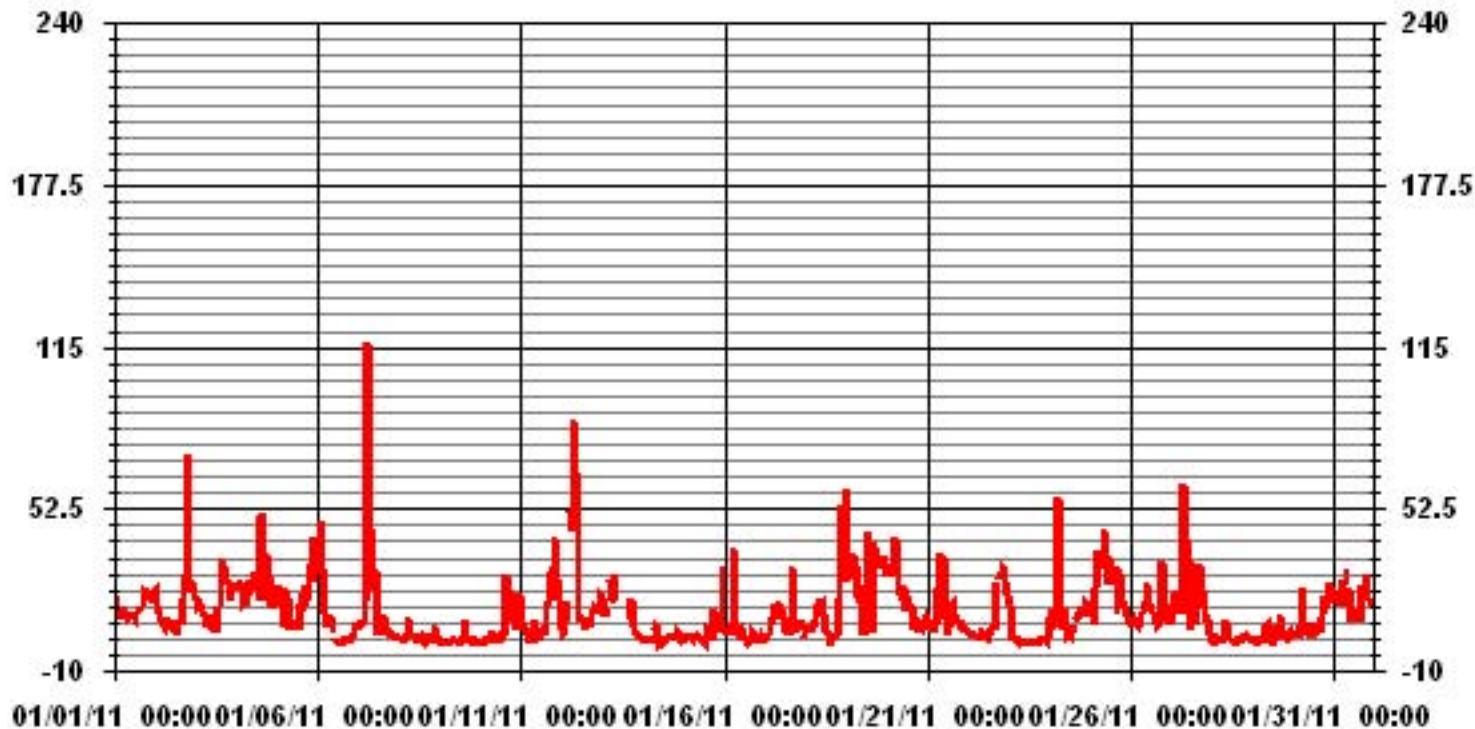
STATUS FLAG CODES

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:	704					
MAXIMUM INSTANTANEOUS VALUE:	117	PPB	@ HOUR(S)	5	ON DAY(S)	7
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	12.24					

01 Hour Averages



— LICA NO2MAX PPB

LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

January 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	8.39	16.78	10.09	6.54	7.11	3.55	6.40	2.84	1.99	2.84	5.68	10.24	6.11	3.55	3.41	4.40	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	8.39	16.78	10.09	6.54	7.11	3.55	6.40	2.84	1.99	2.84	5.68	10.24	6.11	3.55	3.41	4.40	

Calm : .00 %

Total # Operational Hours : 703

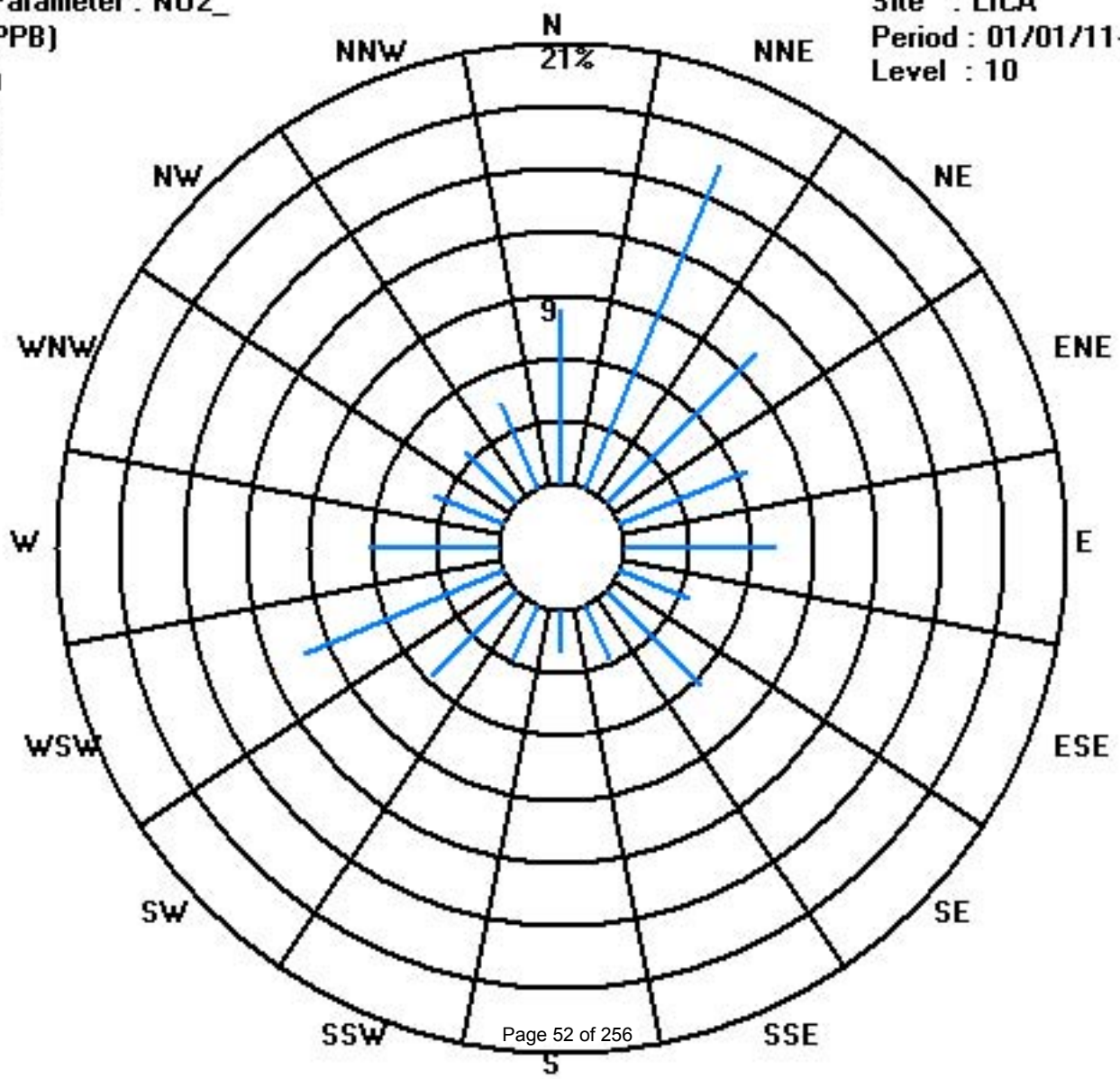
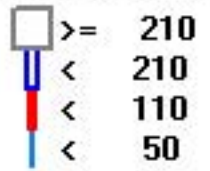
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	59	118	71	46	50	25	45	20	14	20	40	72	43	25	24	31	703
< 110																	
< 210																	
>= 210																	
Totals	59	118	71	46	50	25	45	20	14	20	40	72	43	25	24	31	

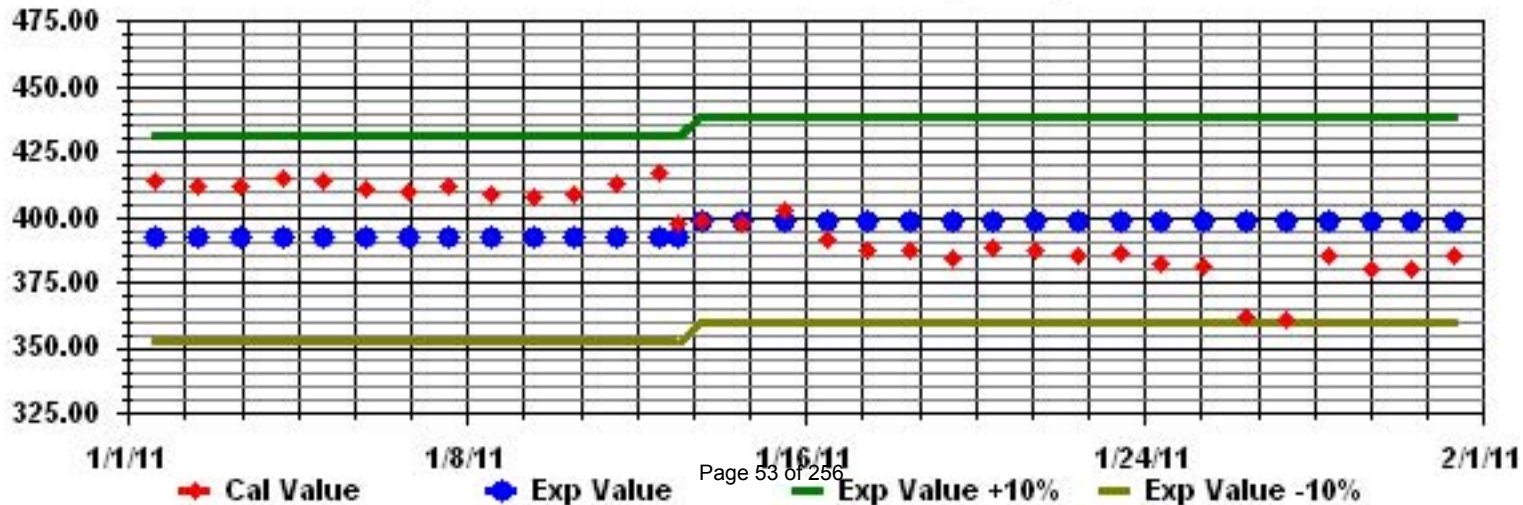
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

NITRIC OXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	0	0	0	0	0	0	0	0	2	4	3	2	2	IZS	0	0	0	0	0	0	0	0	0	4	0.6	24
2	0	0	0	0	0	0	0	0	0	1	1	2	1	2	IZS	1	0	2	0	8	0	3	2	0	8	1.0	24	
3	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	2	12	1	2	0	1	0	0	0	0	12	0.9	24	
4	0	0	1	0	0	0	0	0	2	6	19	23	IZS	10	4	9	4	26	17	1	0	0	0	0	26	5.3	24	
5	0	0	0	0	0	1	0	0	0	0	0	0	IZS	2	3	2	2	1	0	0	0	2	10	13	13	2.1	24	
6	5	13	11	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	13	1.3	24	
7	0	0	0	0	0	5	0	5	11	IZS	17	0	0	0	1	1	0	0	0	0	0	0	0	0	17	1.7	24	
8	0	0	0	0	0	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
9	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	
10	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	0.1	24	
11	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	2	2	1	4	0	0	0	4	0.4	24	
12	0	0	0	0	IZS	3	3	13	9	13	2	3	3	2	1	1	1	1	1	0	0	0	0	0	13	2.4	24	
13	0	0	0	IZS	0	1	0	8	C	C	C	C	C	C	5	2	1	0	0	0	0	0	0	0	8	1.0	24	
14	0	0	IZS	0	0	0	0	0	1	0	0	0	0	0	0	M	0	0	0	0	0	0	0	0	1	0.0	23	
15	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	
16	IZS	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	2	0.2	24
17	0	0	0	1	1	0	0	1	4	3	2	1	2	2	1	1	1	1	0	0	0	0	0	IZS	0	4	0.9	24
18	0	0	0	0	0	0	0	0	2	6	12	6	3	1	0	0	0	0	0	0	4	IZS	6	1	12	1.8	24	
19	8	1	1	8	8	2	0	0	0	3	1	1	19	3	1	1	12	14	8	13	IZS	20	22	28	28	7.6	24	
20	19	22	22	12	14	10	6	4	6	6	6	4	4	4	3	0	0	0	0	IZS	0	0	0	0	22	6.2	24	
21	0	0	0	0	0	0	0	5	9	5	2	1	1	1	1	2	1	1	IZS	0	0	0	0	0	9	1.3	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	IZS	2	5	11	4	2	0	11	1.3	24	
23	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	
24	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	2	0.1	24	
25	0	0	0	0	4	3	13	33	75	53	20	35	30	4	IZS	1	3	1	0	0	0	0	0	0	75	12.0	24	
26	0	0	0	0	0	0	0	0	0	2	3	3	3	IZS	1	0	0	6	0	0	0	0	0	0	6	0.8	24	
27	0	0	0	1	0	0	2	14	9	23	13	1	IZS	2	1	1	8	1	0	0	0	0	0	0	23	3.3	24	
28	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	
29	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30	0	0	0	0	0	1	0	0	1	IZS	1	1	2	1	1	0	1	0	0	0	1	0	0	0	2	0.4	24	
31	0	0	0	0	0	1	1	9	IZS	22	10	9	8	7	5	2	1	0	1	1	0	0	0	0	22	3.3	24	
HOURLY MAX	19	22	22	12	14	10	13	33	75	53	20	35	30	10	5	12	12	26	17	13	11	20	22	28				
HOURLY AVG	1.1	1.2	1.2	0.8	0.9	1.1	0.8	3.1	4.6	5.1	4.0	3.4	3.0	1.6	1.1	1.4	1.2	1.7	1.2	1.0	0.7	1.3	1.5	1.4				

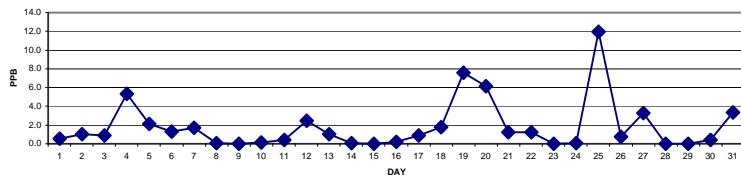
STATUS FLAG CODES

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

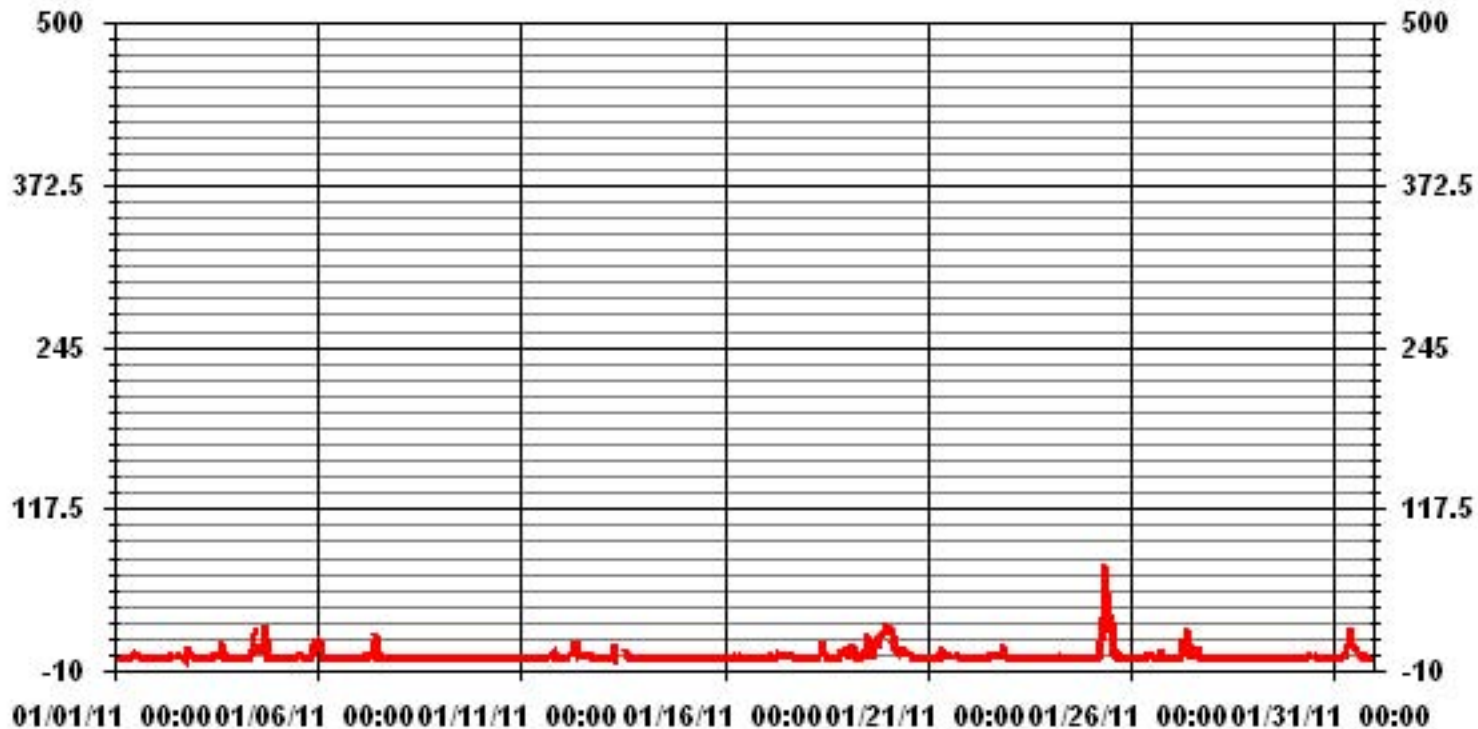
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	219					
MAXIMUM 1-HR AVERAGE:	75	PPB	@ HOUR(S)	8	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	12.0	PPB			ON DAY(S)	25
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	5.54		MONTHLY AVERAGE:	1.82	PPB	

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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	6	2	5	4	4	1	1	0	0	3	5	7	4	4	3	IZS	2	1	1	1	2	3	1	1	7	2.7	24
2	1	1	1	2	1	4	1	2	1	2	4	4	2	5	IZS	4	10	11	4	144	3	11	5	3	144	9.8	24
3	3	1	0	1	1	1	0	0	2	4	3	1	16	IZS	4	20	15	14	0	3	0	2	2	4	20	4.2	24
4	3	3	6	1	1	3	2	4	17	23	36	35	IZS	81	5	82	24	35	44	4	0	1	2	8	82	18.3	24
5	0	1	1	0	1	7	1	0	1	0	3	IZS	4	6	12	7	7	1	2	4	49	64	31	40	64	10.5	24
6	12	17	30	10	0	5	0	1	1	2	IZS	0	0	0	0	0	0	0	0	0	0	1	3	1	30	3.6	24
7	1	1	0	1	3	76	2	24	37	IZS	47	3	1	2	4	8	2	1	2	0	1	0	0	0	76	9.4	24
8	0	0	1	1	1	6	2	1	IZS	3	1	2	3	1	4	3	1	1	0	0	1	3	0	1	6	1.6	24
9	0	0	0	0	0	0	0	IZS	0	0	0	0	1	3	1	5	3	0	1	0	1	0	0	0	5	0.7	24
10	0	0	0	0	0	0	IZS	2	1	0	3	2	4	1	1	8	2	15	7	8	0	0	0	7	15	2.7	24
11	0	4	1	0	1	IZS	8	11	19	5	1	1	1	3	3	7	19	8	15	6	37	4	14	1	37	7.3	24
12	0	1	2	3	IZS	27	15	72	40	50	5	6	11	5	3	4	6	3	6	2	2	1	1	1	72	11.6	24
13	2	1	4	IZS	13	4	3	38	C	C	C	C	C	C	C	4	3	2	1	1	0	2	1	0	38	4.9	24
14	0	0	IZS	0	3	0	0	3	38	0	1	0	1	1	0	M	4	0	0	0	3	2	0	0	38	2.5	23
15	0	IZS	1	1	0	0	1	1	1	1	0	1	5	2	1	8	3	1	1	1	4	3	1	8	1.6	24	
16	IZS	1	1	1	3	15	2	1	1	2	2	7	1	0	4	6	4	3	0	0	1	3	2	IZS	15	2.7	24
17	1	1	1	2	3	2	2	2	82	7	7	3	6	5	5	4	5	3	7	4	4	9	IZS	0	82	7.2	24
18	0	1	1	0	0	1	1	3	4	9	15	12	4	3	0	0	0	0	0	1	65	IZS	81	5	81	9.0	24
19	129	7	6	13	14	6	2	1	1	13	2	3	77	44	2	1	64	51	21	23	IZS	38	34	44	129	25.9	24
20	26	28	26	23	22	20	18	11	50	12	20	8	9	21	18	4	1	2	0	IZS	0	1	1	1	50	14.0	24
21	1	0	1	0	1	1	3	21	39	19	4	3	6	7	3	4	3	5	IZS	2	1	0	1	0	39	5.4	24
22	1	1	2	2	1	1	0	0	6	1	1	1	4	2	4	3	15	IZS	16	17	20	16	21	4	21	6.0	24
23	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	4	0.2	24
24	1	0	1	1	1	31	1	6	9	2	0	2	1	2	3	IZS	1	1	0	1	1	3	1	1	31	3.0	24
25	1	2	1	2	11	49	29	65	183	69	32	54	41	20	IZS	4	11	6	0	1	0	1	0	0	183	25.3	24
26	1	1	1	0	2	0	1	0	1	7	5	5	4	IZS	6	1	1	2	21	2	1	1	0	1	21	2.8	24
27	2	4	4	9	3	4	12	61	28	50	49	3	IZS	5	2	2	27	16	1	0	1	0	0	0	61	12.3	24
28	0	0	0	0	0	0	0	0	5	0	0	IZS	1	0	2	2	0	0	1	1	2	2	6	0	6	1.0	24
29	0	0	0	2	1	0	0	2	2	1	IZS	1	6	1	12	2	8	2	1	2	2	1	0	0	12	2.0	24
30	0	1	2	1	1	8	5	3	3	IZS	3	2	3	2	2	1	3	5	1	1	3	33	0	3	33	3.7	24
31	1	3	1	0	2	4	6	21	IZS	34	12	10	14	9	14	8	8	3	6	7	1	3	2	2	34	7.4	24
HOURLY MAX	129	28	30	23	22	76	29	72	183	69	49	54	77	81	18	82	64	51	44	144	65	64	81	44			
HOURLY AVG	6.5	2.8	3.3	2.7	3.1	9.2	3.9	11.9	20.4	11.4	9.4	6.3	8.1	8.5	4.3	7.0	8.6	6.5	5.3	7.9	6.7	7.0	7.1	4.3			

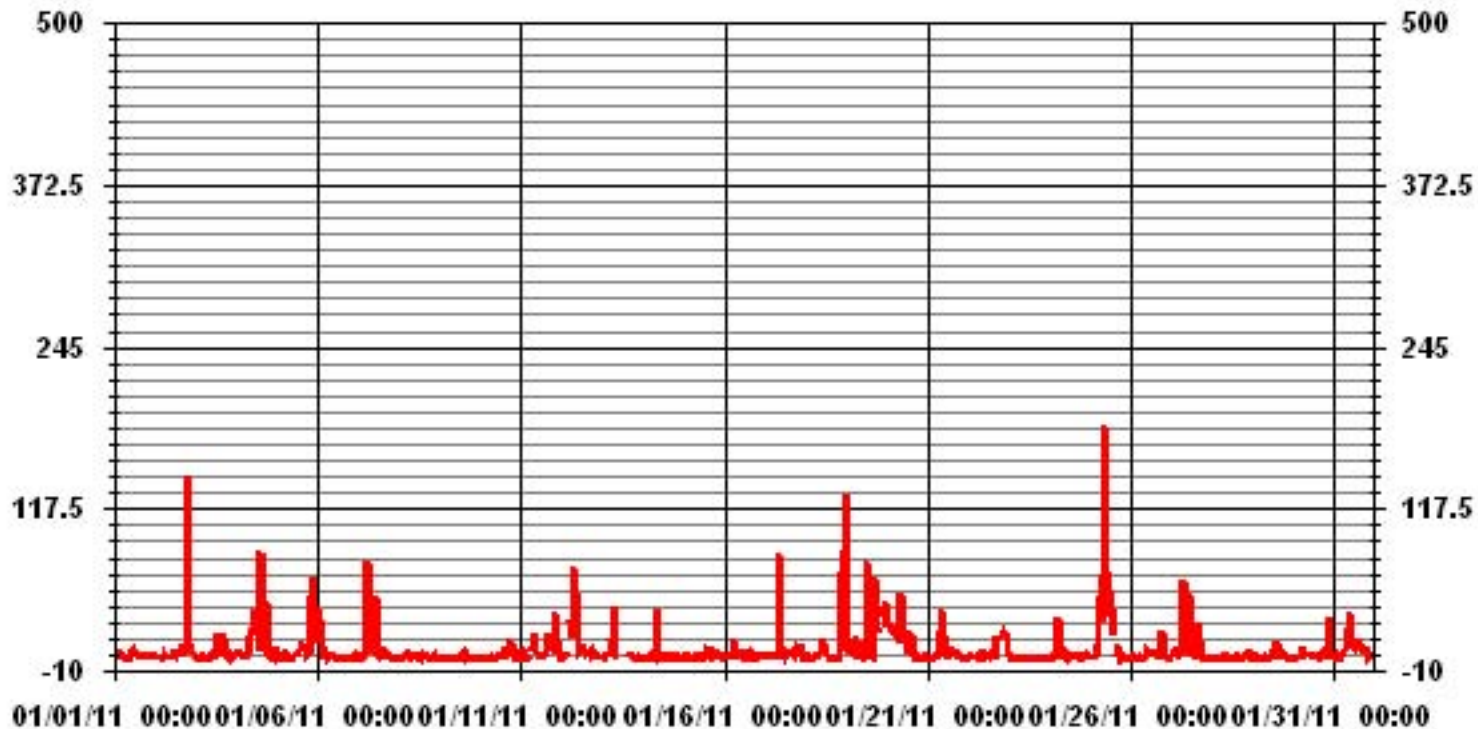
STATUS FLAG CODES

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:	541					
MAXIMUM INSTANTANEOUS VALUE:	183	PPB	@ HOUR(S)	8	ON DAY(S)	25
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	16.15					

01 Hour Averages



— LICA NOMAX PPB

LICA
 NO_ / WD Joint Frequency Distribution (Percent)

January 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	8.39	16.78	9.95	6.54	6.97	3.55	6.40	2.84	1.99	2.84	5.68	10.24	6.11	3.55	3.41	4.40	99.71	
< 110	.00	.00	.14	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.28	
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	8.39	16.78	10.09	6.54	7.11	3.55	6.40	2.84	1.99	2.84	5.68	10.24	6.11	3.55	3.41	4.40		

Calm : .00 %

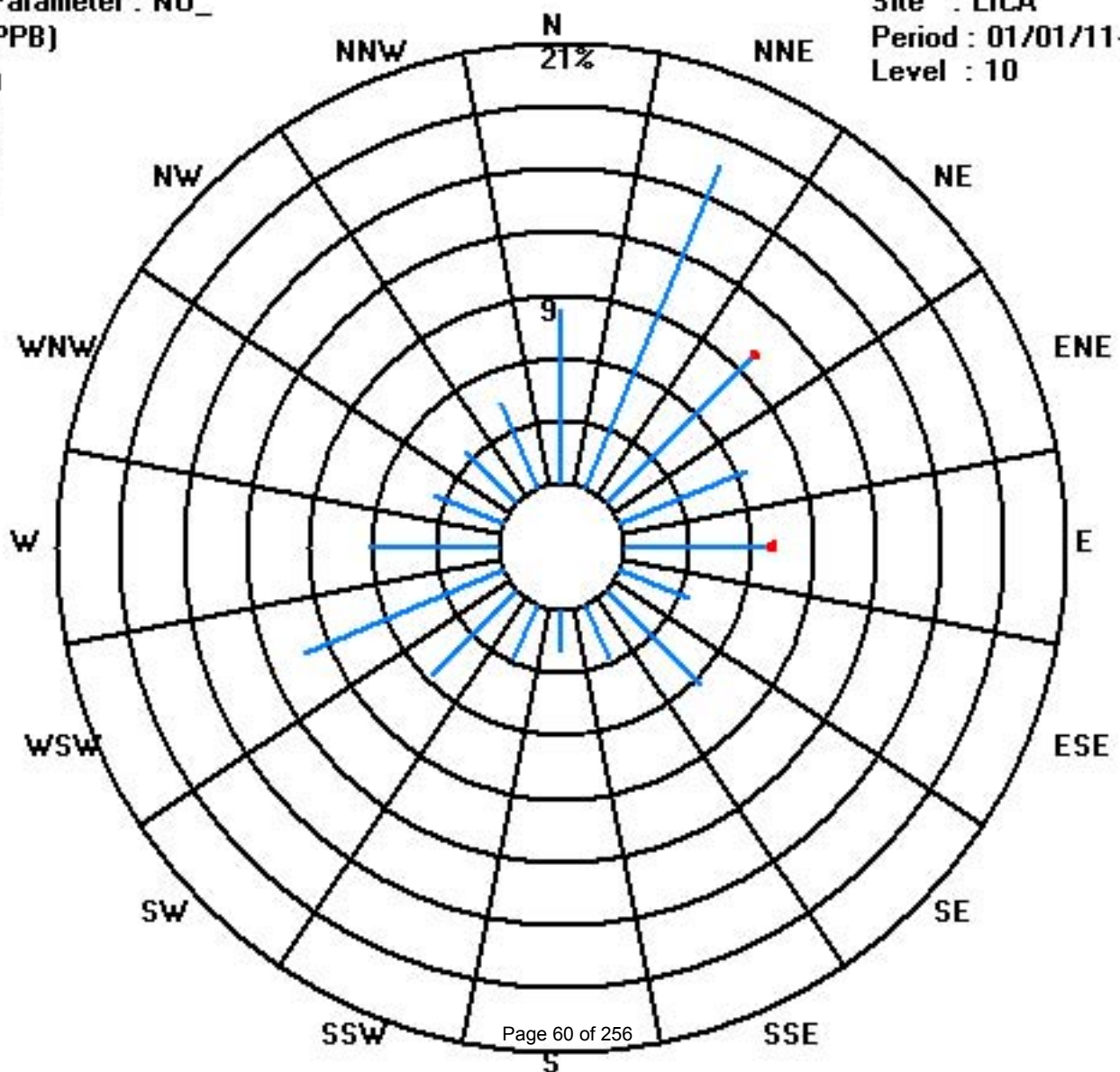
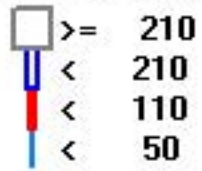
Total # Operational Hours : 703

Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 50	59	118	70	46	49	25	45	20	14	20	40	72	43	25	24	31	701	
< 110			1		1												2	
< 210																		
>= 210																		
Totals	59	118	71	46	50	25	45	20	14	20	40	72	43	25	24	31		

Calm : .00 %

Total # Operational Hours : 703



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

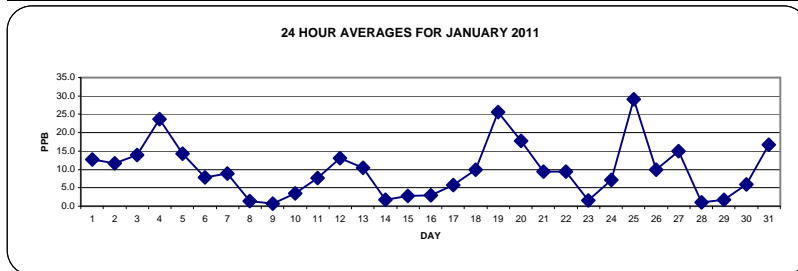
OXIDES OF NITROGEN hourly averages in ppb

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	12	10	9	8	9	8	9	8	9	10	13	13	12	12	14	IZS	14	16	18	17	18	18	15	19	19	12.7	24	
2	18	12	11	9	7	5	6	7	5	6	6	6	4	9	IZS	9	9	20	17	27	15	22	21	16	27	11.6	24	
3	16	13	13	13	11	9	4	4	5	5	6	5	7	IZS	10	41	23	25	18	20	13	17	20	21	41	13.9	24	
4	22	22	23	19	14	12	13	12	18	21	37	46	IZS	30	18	31	28	58	46	24	12	9	16	15	58	23.7	24	
5	13	15	12	8	6	11	9	6	6	5	5	IZS	8	11	10	15	15	13	14	21	20	30	38	36	38	14.2	24	
6	27	40	37	15	7	6	6	8	6	4	IZS	2	1	1	1	1	1	1	1	2	2	3	4	5	40	7.9	24	
7	5	6	5	5	9	25	13	25	34	IZS	32	3	4	4	6	7	5	4	3	2	3	2	2	2	34	9.0	24	
8	1	1	2	2	2	4	3	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.4	24	
9	1	0	0	0	0	1	0	IZS	1	1	1	1	1	1	1	2	1	1	1	0	0	0	0	1	2	0.7	24	
10	0	0	0	1	2	1	IZS	2	2	1	1	1	3	2	3	6	6	11	7	5	9	4	5	8	11	3.5	24	
11	5	6	5	2	0	IZS	1	1	3	3	2	1	2	2	3	6	10	23	25	21	24	15	14	4	25	7.7	24	
12	5	5	5	8	IZS	24	25	43	34	39	8	11	10	7	6	6	7	7	8	10	7	6	6	13	43	13.0	24	
13	15	11	9	IZS	11	16	16	29	C	C	C	C	C	C	15	11	13	10	6	4	4	4	3	2	29	10.5	24	
14	2	1	IZS	1	1	1	2	2	2	0	1	0	2	2	2	M	2	2	2	2	3	3	2	2	3	1.7	23	
15	1	IZS	2	2	2	1	2	2	2	3	2	1	2	1	2	1	4	8	9	5	4	4	5	9	2.9	24		
16	IZS	3	4	5	4	10	5	3	3	4	3	2	2	1	1	1	2	2	1	1	1	3	3	IZS	10	2.9	24	
17	1	2	3	6	7	9	10	7	14	11	7	5	5	5	5	6	5	6	3	4	3	4	IZS	3	14	5.7	24	
18	4	5	5	5	6	7	10	13	18	19	24	14	9	5	1	1	2	2	8	25	IZS	27	16	27	9.9	24		
19	32	21	23	38	39	28	16	14	13	13	4	4	30	6	5	6	26	43	37	41	IZS	46	48	55	25.6	24		
20	44	47	47	38	40	32	17	16	16	14	15	10	10	10	8	4	4	6	4	IZS	5	5	7	8	47	17.7	24	
21	8	5	4	4	4	5	15	27	36	22	8	5	5	6	8	12	10	7	IZS	7	5	4	4	4	36	9.3	24	
22	4	3	2	2	3	1	1	1	4	2	3	3	4	5	6	7	12	IZS	25	29	38	27	21	15	38	9.5	24	
23	10	7	3	2	1	1	1	1	1	1	1	1	0	0	0	1	IZS	1	1	1	1	1	1	1	10	1.7	24	
24	6	9	4	3	7	17	3	3	7	5	3	4	3	5	5	IZS	9	10	12	9	9	12	10	9	17	7.1	24	
25	8	10	6	11	31	23	39	61	107	81	41	62	57	16	IZS	8	22	19	13	15	13	10	8	6	107	29.0	24	
26	7	5	6	6	6	7	9	10	13	16	15	16	15	IZS	9	7	8	12	27	8	8	6	7	7	27	10.0	24	
27	8	13	16	13	9	8	14	36	28	48	29	6	IZS	9	8	10	28	16	14	12	10	7	3	1	48	15.0	24	
28	0	0	1	2	1	1	1	2	2	2	1	IZS	1	1	1	1	1	2	2	1	1	1	1	0	2	1.1	24	
29	1	1	0	1	1	1	1	3	4	2	IZS	1	1	1	2	2	2	3	2	2	3	2	1	2	4	1.7	24	
30	3	3	3	3	3	6	3	3	4	IZS	4	4	6	4	6	3	8	5	6	9	10	12	13	16	16	6.0	24	
31	14	14	14	13	14	19	18	31	IZS	39	18	18	17	15	12	8	11	18	21	20	13	12	14	12	39	16.7	24	
HOURLY MAX	44	47	47	38	40	32	39	61	107	81	41	62	57	30	18	41	28	58	46	41	38	46	48	55				
HOURLY AVG	9.8	9.7	9.1	8.2	8.6	10.0	9.1	12.7	14.2	13.5	10.4	8.8	7.9	6.2	5.8	7.7	9.5	11.6	11.5	11.1	9.4	9.7	10.6	10.2				

STATUS FLAG CODES

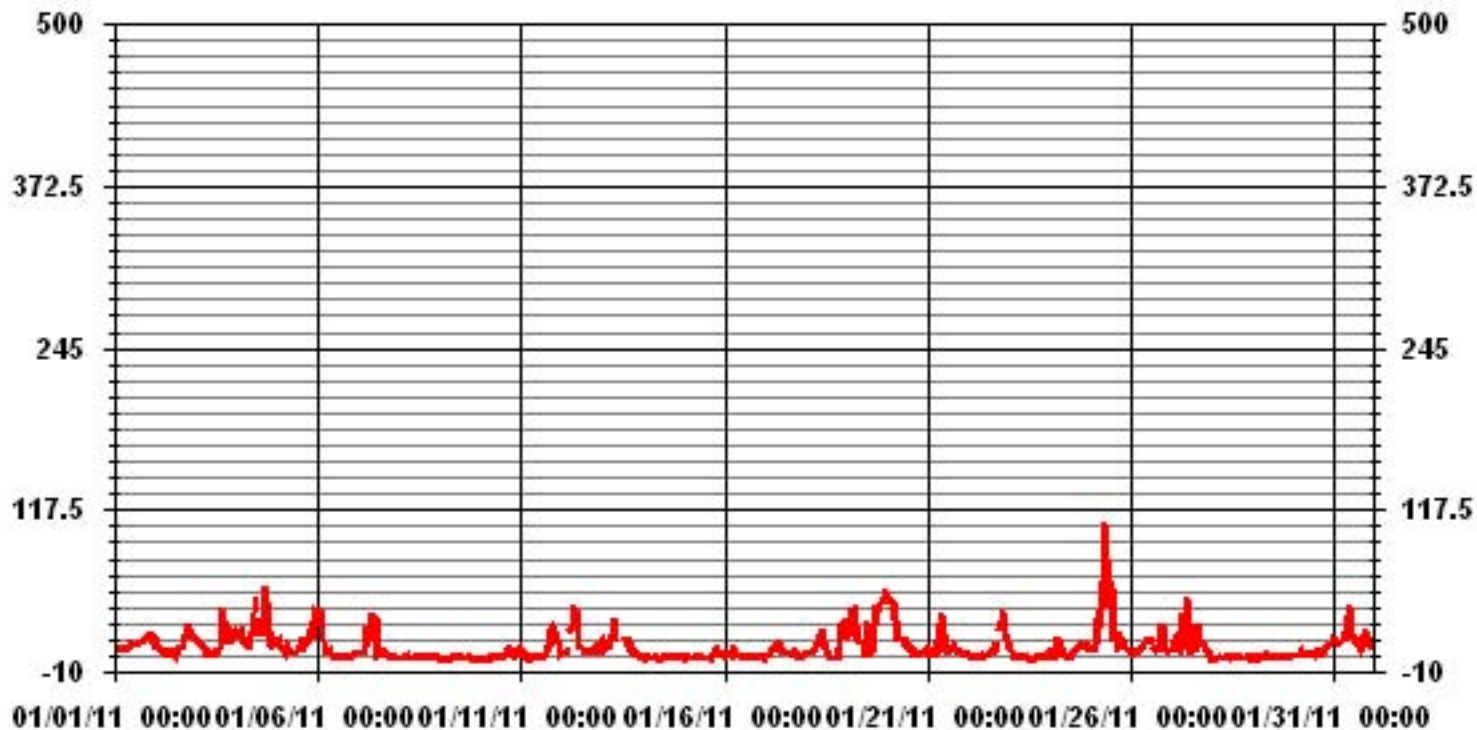
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	683
MAXIMUM 1-HR AVERAGE:	107 PPB @ HOUR(S) 8 ON DAY(S) 25
MAXIMUM 24-HR AVERAGE:	29.0 PPB ON DAY(S) 25
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	11.54
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	9.80 PPB

01 Hour Averages



— LICA NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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	24	16	16	14	14	16	12	10	12	13	16	17	13	15	17	IZS	17	21	21	21	21	22	18	21	24	16.8	24
2	21	15	14	11	8	10	9	11	8	9	9	10	6	13	IZS	12	28	38	27	202	21	34	30	24	202	24.8	24
3	21	17	16	14	14	13	7	10	9	15	12	7	30	IZS	20	52	43	43	24	28	17	24	24	28	52	21.2	24
4	26	26	32	23	17	22	18	23	41	44	63	62	IZS	119	23	129	56	67	78	30	17	16	20	24	129	42.4	24
5	20	25	17	13	9	29	21	7	8	7	13	IZS	11	21	22	28	28	20	20	35	67	94	62	71	94	28.2	24
6	40	48	76	39	13	12	8	11	10	6	IZS	3	2	1	1	2	2	2	3	3	4	8	8	8	76	13.2	24
7	8	9	9	11	19	184	24	45	71	IZS	74	7	7	10	19	8	7	6	5	4	3	4	3	184	23.7	24	
8	3	3	3	4	5	17	7	4	IZS	8	3	4	6	2	3	4	3	3	3	10	1	4	17	4.7	24		
9	2	1	1	1	1	2	1	IZS	3	2	2	2	3	5	3	15	4	2	2	2	4	2	1	2	15	2.7	24
10	1	2	1	2	2	2	IZS	6	5	3	4	3	10	4	5	36	11	36	21	24	15	6	9	27	36	10.2	24
11	7	12	7	5	4	IZS	2	4	20	11	5	3	6	8	11	22	33	33	45	31	71	19	30	7	71	17.2	24
12	6	7	11	17	IZS	74	59	159	106	116	13	16	19	14	10	13	9	14	17	17	16	14	13	19	159	33.0	24
13	21	13	15	IZS	37	21	19	62	C	C	C	C	C	C	C	15	16	21	9	6	6	6	4	3	62	17.1	24
14	3	2	IZS	2	3	3	4	10	30	2	2	2	4	3	3	M	6	4	4	4	7	6	3	3	30	5.0	23
15	2	IZS	4	4	3	3	3	5	4	5	3	3	12	8	4	10	14	14	13	11	12	6	31	31	7.8	24	
16	IZS	6	7	9	9	52	8	5	6	8	8	10	4	2	4	8	7	3	3	3	5	5	IZS	52	8.0	24	
17	3	4	6	11	12	17	17	13	84	20	21	9	15	11	11	14	36	13	11	12	10	17	IZS	4	84	16.1	24
18	6	7	7	7	7	11	13	19	21	23	30	26	10	9	1	1	2	3	5	18	109	IZS	102	29	109	20.3	24
19	183	34	34	46	48	38	21	18	19	34	7	10	116	81	8	7	104	87	53	55	IZS	68	69	71	183	52.7	24
20	54	54	52	49	56	58	40	25	26	27	38	18	23	34	24	10	6	12	6	IZS	9	7	9	11	58	28.2	24
21	11	10	7	6	7	8	26	56	65	47	16	8	11	15	19	20	14	10	IZS	12	8	6	7	6	65	17.2	24
22	6	5	7	6	6	5	3	5	9	6	5	5	7	7	11	9	38	IZS	42	46	49	42	40	24	49	16.7	24
23	20	16	4	3	2	2	2	1	1	1	2	2	1	1	1	1	IZS	1	2	2	2	2	1	3	20	3.2	24
24	10	15	10	10	18	83	10	10	23	9	5	6	5	7	7	IZS	11	13	14	12	12	16	16	12	83	14.5	24
25	13	14	9	24	44	62	55	98	224	98	56	87	71	45	IZS	18	37	35	16	18	16	12	10	8	224	46.5	24
26	11	8	12	9	10	10	12	15	18	32	18	19	18	IZS	19	9	10	25	48	14	14	11	9	10	48	15.7	24
27	18	22	22	26	14	18	37	120	52	90	81	10	IZS	17	10	17	55	46	18	18	13	10	6	2	120	31.4	24
28	1	1	3	3	2	2	2	3	13	3	3	IZS	3	2	3	4	3	4	4	5	7	6	4	3	13	3.7	24
29	3	2	2	4	3	3	2	10	11	5	IZS	3	12	4	12	8	20	7	5	5	7	6	4	4	20	6.2	24
30	5	5	5	5	9	30	14	8	9	IZS	8	7	11	7	8	8	13	25	13	14	16	57	18	24	57	13.9	24
31	19	21	19	16	20	30	30	46	IZS	55	22	21	26	20	18	14	31	26	31	33	19	20	20	16	55	24.9	24
HOURLY MAX	183	54	76	49	56	184	59	159	224	116	81	87	116	119	24	129	104	87	78	202	109	94	102	71			
HOURLY AVG	18.9	14.0	14.3	13.1	13.9	27.9	16.2	27.3	32.4	25.0	19.3	13.6	16.2	17.4	10.5	17.6	22.1	21.3	18.8	23.0	19.2	18.6	18.4	16.7			

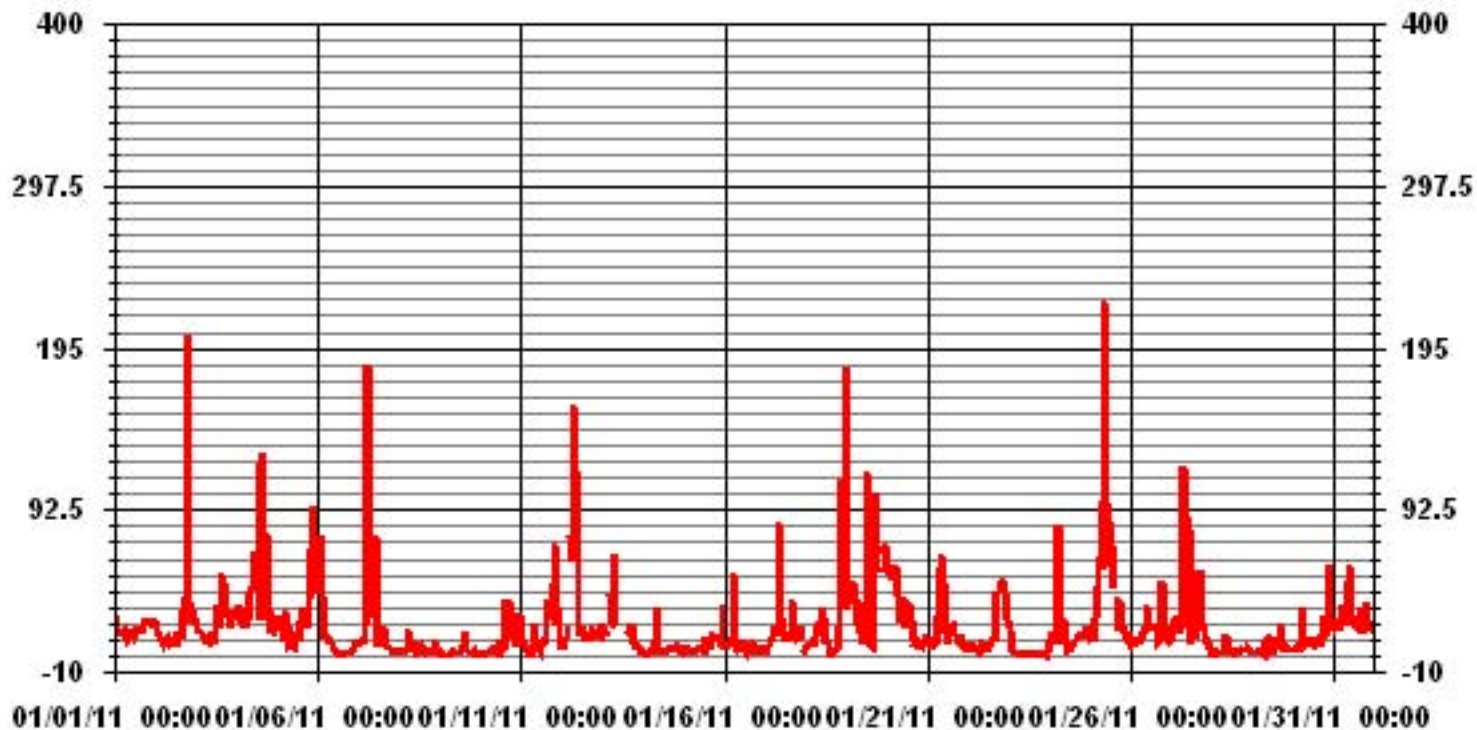
STATUS FLAG CODES

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:	704				
MAXIMUM INSTANTANEOUS VALUE:	224	PPB	@ HOUR(S)	8	ON DAY(S) 25
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION	25.18				

01 Hour Averages



— LICA NOXMAX PPB

LICA
 NOX_ / WD Joint Frequency Distribution (Percent)

January 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	8.39	16.78	9.95	6.54	6.82	3.41	6.25	2.84	1.99	2.84	5.68	9.95	6.11	3.55	3.41	4.40	99.00
< 110	.00	.00	.14	.00	.28	.14	.14	.00	.00	.00	.00	.28	.00	.00	.00	.00	.99
< 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	8.39	16.78	10.09	6.54	7.11	3.55	6.40	2.84	1.99	2.84	5.68	10.24	6.11	3.55	3.41	4.40	

Calm : .00 %

Total # Operational Hours : 703

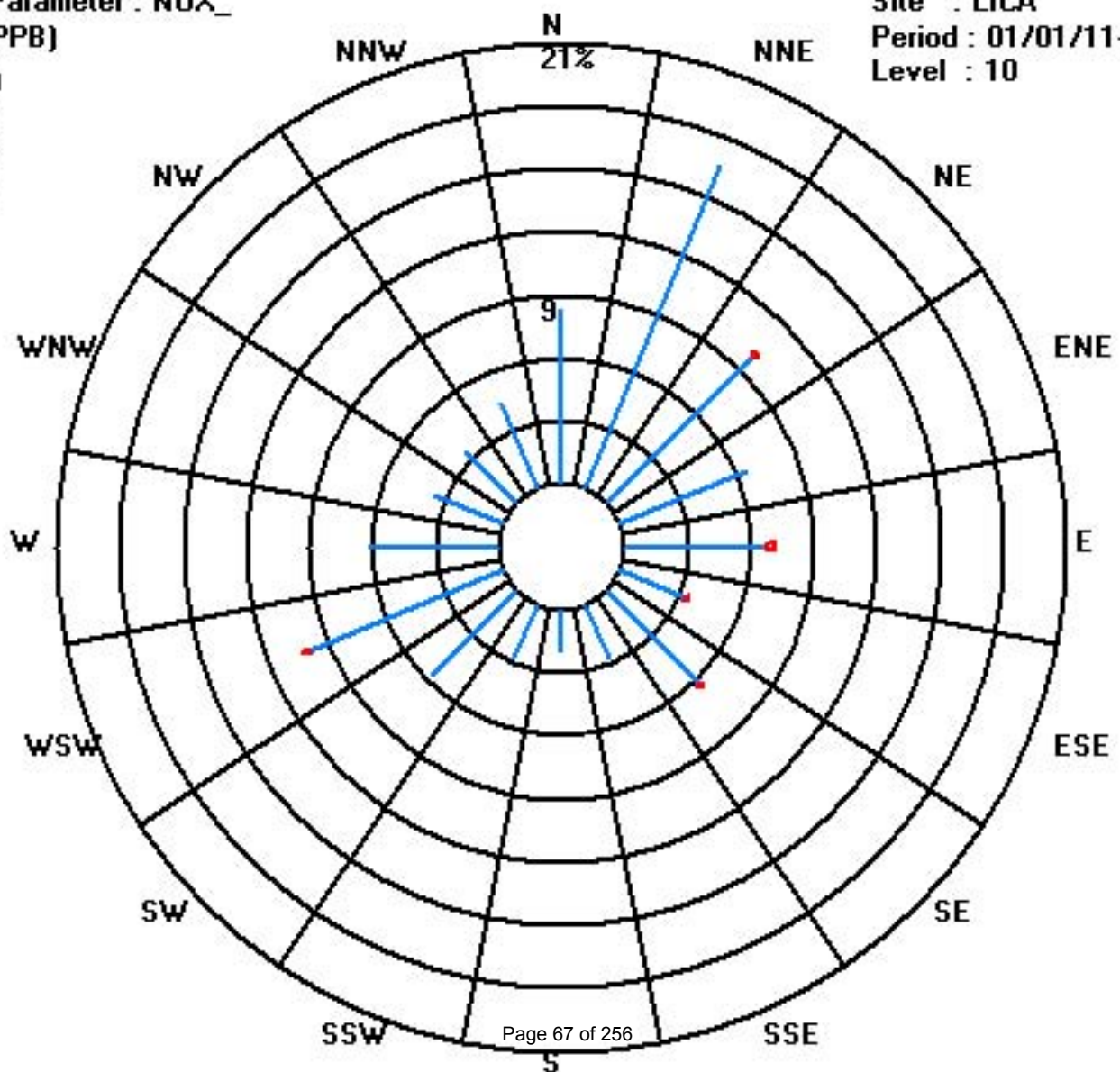
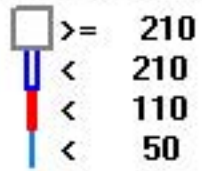
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	59	118	70	46	48	24	44	20	14	20	40	70	43	25	24	31	696
< 110			1		2	1	1					2					7
< 210																	
>= 210																	
Totals	59	118	71	46	50	25	45	20	14	20	40	72	43	25	24	31	

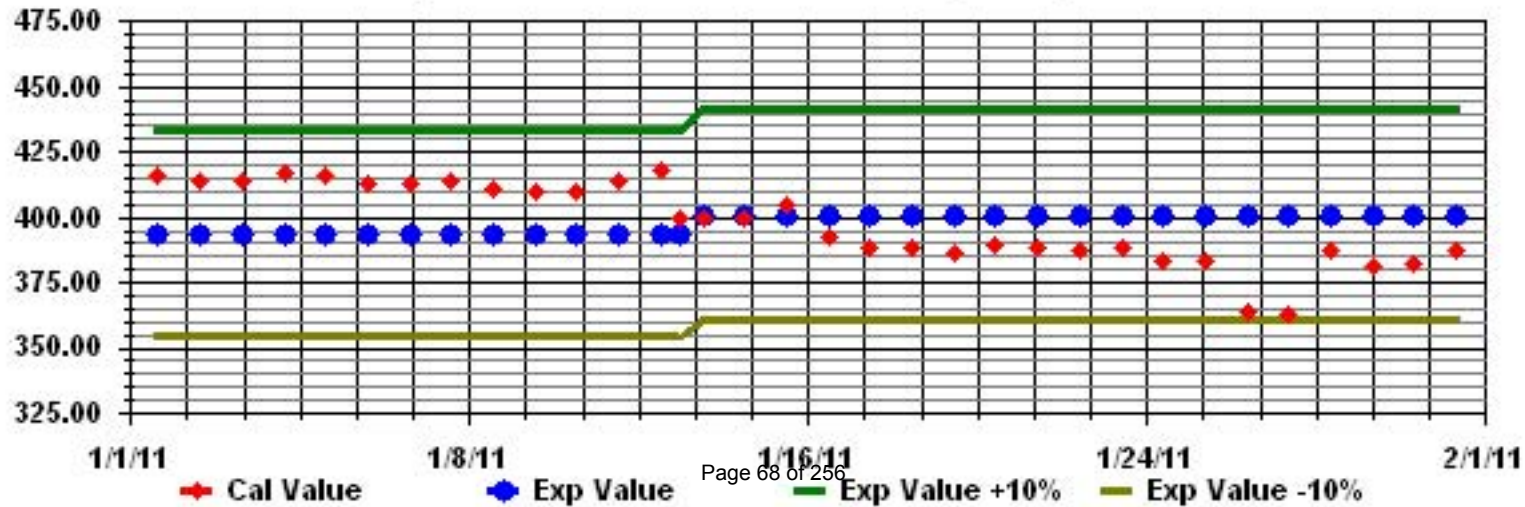
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

OZONE (O₃) hourly averages in ppb

MST

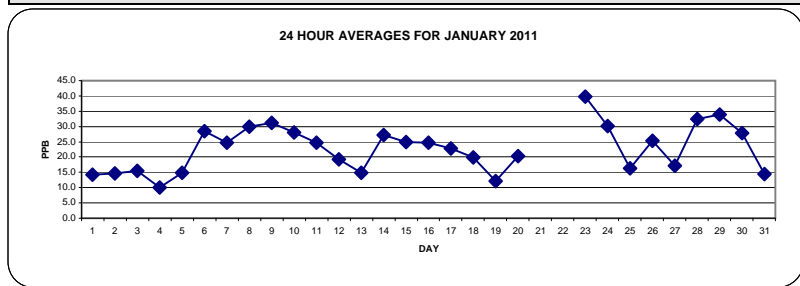
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																												
1	16	17	16	15	13	13	13	17	19	19	16	17	19	19	18	IZS	15	12	10	11	9	9	10	6	19	14.3	24	
2	6	10	11	15	19	21	20	19	21	21	21	22	22	20	IZS	20	18	8	9	13	9	4	3	5	22	14.7	24	
3	4	5	5	11	18	21	27	27	27	26	26	26	25	IZS	24	9	10	8	11	11	15	9	6	3	27	15.4	24	
4	3	2	2	6	13	14	11	15	10	9	8	9	IZS	14	18	13	8	1	2	9	19	21	13	10	21	10.0	24	
5	10	7	11	17	19	16	15	16	18	22	23	IZS	24	23	23	17	15	18	18	11	10	4	1	2	24	14.8	24	
6	3	0	1	14	20	21	23	24	31	38	IZS	40	40	40	39	39	38	37	37	36	35	34	33	31	40	28.4	24	
7	30	28	27	28	22	13	10	3	1	IZS	17	33	34	32	30	29	27	28	29	29	29	30	30	29	34	24.7	24	
8	28	25	24	23	22	23	25	26	IZS	30	31	30	32	33	33	33	34	34	34	35	34	33	33	32	35	29.9	24	
9	33	33	34	34	32	30	31	IZS	32	32	32	31	31	31	30	30	30	30	31	31	31	31	30	30	29	34	31.2	24
10	30	30	29	28	27	27	IZS	28	29	31	32	31	31	31	31	29	28	23	25	27	23	25	25	23	32	28.0	24	
11	23	22	23	30	34	IZS	34	33	31	30	32	33	33	32	31	29	26	14	10	9	8	12	14	26	34	24.7	24	
12	26	25	23	19	IZS	9	8	5	8	10	22	22	22	25	26	25	24	25	26	22	21	19	18	11	26	19.2	24	
13	9	11	11	IZS	11	7	8	3	3	12	15	17	18	C	C	C	C	16	21	23	23	24	25	27	27	14.9	24	
14	27	27	IZS	28	28	28	27	27	28	28	28	28	27	28	28	M	27	27	26	26	26	26	27	27	28	27.2	23	
15	27	IZS	27	26	26	26	26	26	26	26	26	26	26	26	26	26	26	24	20	19	22	22	23	23	27	24.8	24	
16	IZS	24	23	22	23	22	23	24	24	23	24	25	25	24	26	26	26	26	26	26	27	28	27	27	IZS	28	24.8	24
17	27	26	24	23	21	19	18	21	19	19	24	25	25	24	25	23	22	21	24	24	25	25	IZS	20	27	22.8	24	
18	18	18	17	17	17	16	12	9	6	9	12	21	26	31	36	35	34	33	33	26	12	IZS	8	11	36	19.9	24	
19	4	6	4	1	1	5	16	16	17	21	30	28	24	27	27	18	3	2	1	IZS	0	0	0	0	30	12.1	24	
20	0	0	0	0	1	11	24	24	25	26	27	31	32	32	32	32	31	29	30	IZS	N	N	N	N	32	20.4	20	
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	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	N	0
23	N	N	N	N	N	N	N	M	M	M	M	M	M	M	M	C	C	C	C	41	41	40	40	37	41	39.8	9	
24	29	23	24	25	25	19	30	30	28	31	35	38	41	41	41	IZS	35	32	30	31	30	26	26	25	41	30.2	24	
25	25	24	24	19	6	7	1	1	3	3	11	10	11	23	IZS	27	16	16	22	20	21	25	28	31	31	16.3	24	
26	30	32	32	28	23	23	23	24	22	21	23	26	29	IZS	33	33	31	24	7	25	19	28	24	22	33	25.3	24	
27	21	17	11	8	11	10	14	3	6	3	11	23	IZS	20	23	22	9	18	21	22	23	26	34	41	41	17.3	24	
28	42	41	38	21	25	27	30	28	30	31	32	IZS	33	32	33	34	34	33	32	33	33	34	34	34	42	32.3	24	
29	34	34	34	34	35	34	34	33	32	34	IZS	35	35	35	35	34	34	33	33	34	33	34	33	34	33	35	33.9	24
30	32	32	33	33	33	31	32	30	29	IZS	30	31	31	32	31	33	29	28	26	22	19	18	14	10	33	27.8	24	
31	11	10	10	10	10	5	6	3	IZS	9	17	22	24	24	26	28	24	14	9	8	15	18	14	15	28	14.4	24	
HOURLY MAX	42	41	38	34	35	34	34	33	32	38	35	40	41	41	41	39	38	37	37	41	41	40	40	41				
HOURLY AVG	20.3	19.6	19.2	19.8	19.8	18.4	20.0	19.1	20.2	21.7	23.3	26.2	27.7	28.0	29.0	27.2	24.8	22.0	21.6	22.4	22.7	22.3	21.3	20.9				

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:

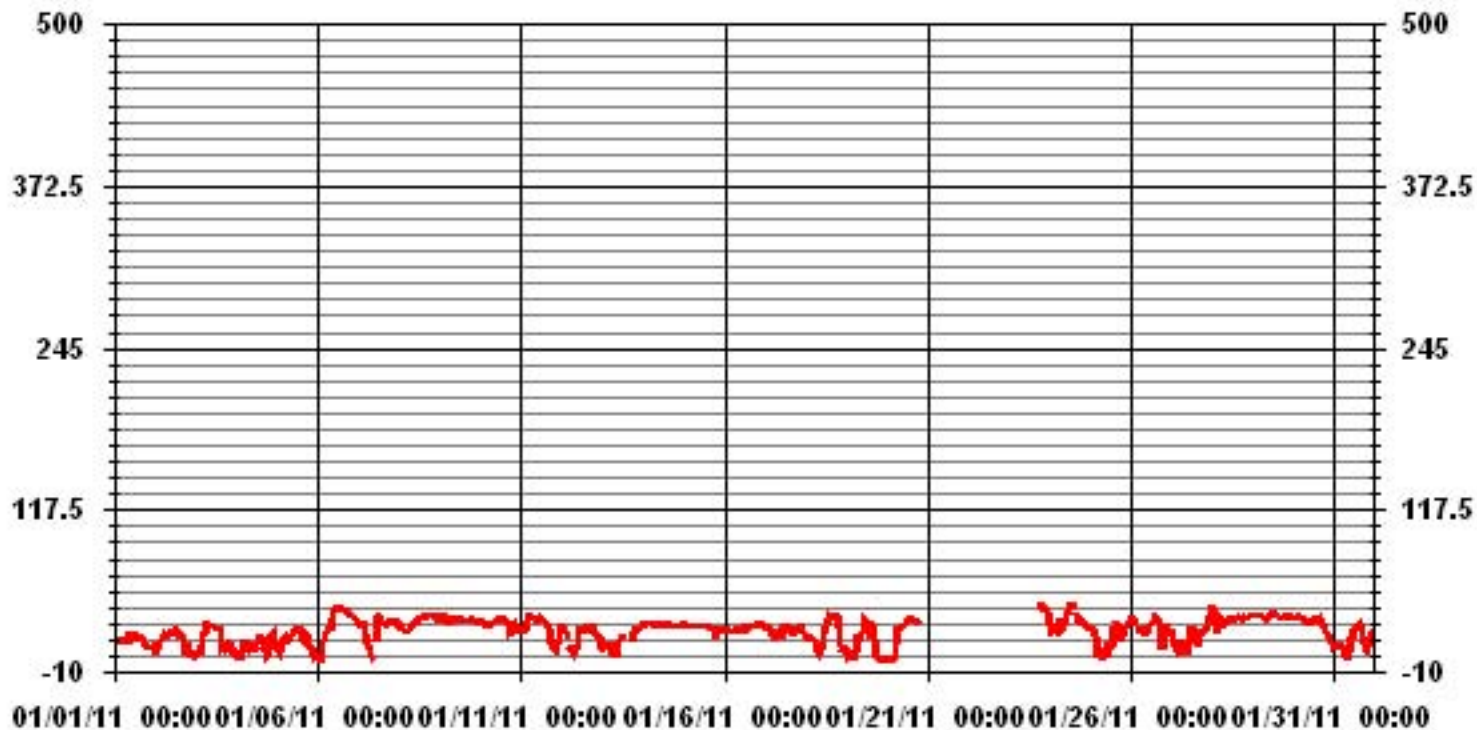
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	631					
MAXIMUM 1-HR AVERAGE:	42	PPB	@ HOUR(S)	0	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	39.8	PPB			ON DAY(S)	23
					VAR-VARIOUS	
IZS CALIBRATION TIME:	29	HRS	OPERATIONAL TIME:	676	HRS	
MONTHLY CALIBRATION TIME:	8	HRS	AMD OPERATION UPTIME	90.9	%	
STANDARD DEVIATION	9.83		MONTHLY AVERAGE	22.31	PPB	

01 Hour Averages



— LICA 03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

OZONE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	20	20	20	19	15	16	15	18	20	20	17	18	19	20	20	IZS	17	13	12	12	11	11	11	10	20	16.3	24	
2	9	11	12	19	20	22	21	20	22	22	23	23	23	22	IZS	21	20	17	18	21	14	9	5	7	23	17.4	24	
3	6	9	9	16	19	26	29	29	30	27	26	26	26	IZS	26	20	13	12	12	14	17	14	8	5	30	18.2	24	
4	4	3	3	9	20	21	16	21	12	12	12	13	IZS	16	21	21	15	1	5	15	23	23	17	13	23	13.7	24	
5	14	12	14	20	20	20	17	17	21	24	24	IZS	25	24	25	24	20	22	21	19	17	14	3	13	25	18.7	24	
6	12	1	1	23	24	23	24	26	37	39	IZS	40	40	40	40	40	38	38	38	37	36	34	35	32	40	30.3	24	
7	32	31	29	29	28	18	15	9	3	IZS	32	35	36	34	42	32	32	31	31	30	30	32	31	30	36	27.9	24	
8	30	27	24	23	23	24	26	27	IZS	31	32	31	33	34	33	34	34	35	35	35	35	34	33	33	35	30.7	24	
9	33	34	35	35	33	31	32	IZS	32	32	32	31	31	31	31	31	31	31	32	32	32	31	31	30	35	31.9	24	
10	30	30	30	28	28	28	IZS	29	31	32	32	32	32	32	32	31	30	27	29	31	32	26	27	27	32	29.8	24	
11	24	23	30	35	35	IZS	35	34	32	32	34	34	33	32	31	31	25	17	17	17	17	26	27	35	28.5	24		
12	27	26	25	22	IZS	14	14	9	12	21	24	23	24	27	28	27	26	28	28	27	23	22	21	15	28	22.3	24	
13	11	14	14	IZS	14	10	10	8	13	14	16	18	18	C	C	C	C	19	23	24	24	26	26	27	27	17.3	24	
14	28	28	IZS	28	29	28	28	28	28	29	28	29	28	28	28	M	28	27	27	27	27	27	27	28	29	27.9	23	
15	28	IZS	27	27	27	27	26	27	26	27	27	27	27	27	27	27	27	26	22	21	24	24	25	25	28	26.0	24	
16	IZS	25	24	24	24	24	24	25	25	24	25	26	25	24	27	27	27	26	27	27	28	29	28	28	IZS	29	25.7	24
17	27	27	26	24	23	21	24	24	23	24	28	27	26	25	26	25	24	23	25	25	26	26	IZS	21	28	24.8	24	
18	19	18	18	18	17	17	14	11	8	12	15	25	27	36	36	36	35	34	34	32	24	IZS	16	20	36	22.7	24	
19	8	12	8	3	2	15	19	18	19	30	31	29	28	28	28	28	8	7	2	IZS	2	1	1	1	31	15.4	24	
20	0	0	0	0	3	25	26	25	26	27	30	32	33	33	33	33	32	31	31	IZS	N	N	N	N	33	22.1	20	
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	M	M	M	M	M	M	M	M	C	C	C	C	C	42	41	41	39	42	40.8	9	
24	34	26	29	29	29	26	32	32	31	35	36	41	43	42	42	IZS	36	34	31	33	32	29	29	28	43	33.0	24	
25	29	28	28	27	28	18	2	5	36	6	14	13	14	29	IZS	29	25	23	24	21	24	27	31	32	36	22.3	24	
26	31	33	33	31	26	25	28	27	24	25	24	27	31	IZS	36	35	34	33	24	28	27	30	27	25	36	28.9	24	
27	24	21	20	15	20	15	23	10	16	4	23	24	IZS	22	25	24	18	23	23	25	24	30	38	43	43	22.2	24	
28	43	42	41	26	28	29	31	30	31	32	34	IZS	33	33	35	35	35	34	33	34	35	35	35	35	43	33.9	24	
29	35	35	35	35	35	36	35	35	35	35	IZS	36	36	37	37	35	35	34	34	35	34	35	35	34	37	35.1	24	
30	33	34	35	35	34	33	33	31	30	IZS	32	32	33	33	33	35	32	33	28	24	23	22	18	18	35	30.2	24	
31	17	14	12	13	12	10	10	9	IZS	15	20	25	29	26	29	31	28	21	14	13	21	20	18	19	31	18.5	24	
HOURLY MAX	43	42	41	35	35	36	35	35	37	39	36	41	43	42	42	40	38	38	38	37	42	41	41	43				
HOURLY AVG	22.5	21.6	21.6	22.7	22.8	22.3	22.6	21.6	24.0	24.2	25.8	27.6	29.0	29.4	30.5	29.7	27.8	25.4	24.5	24.5	24.5	26.0	24.8	23.8	23.6			

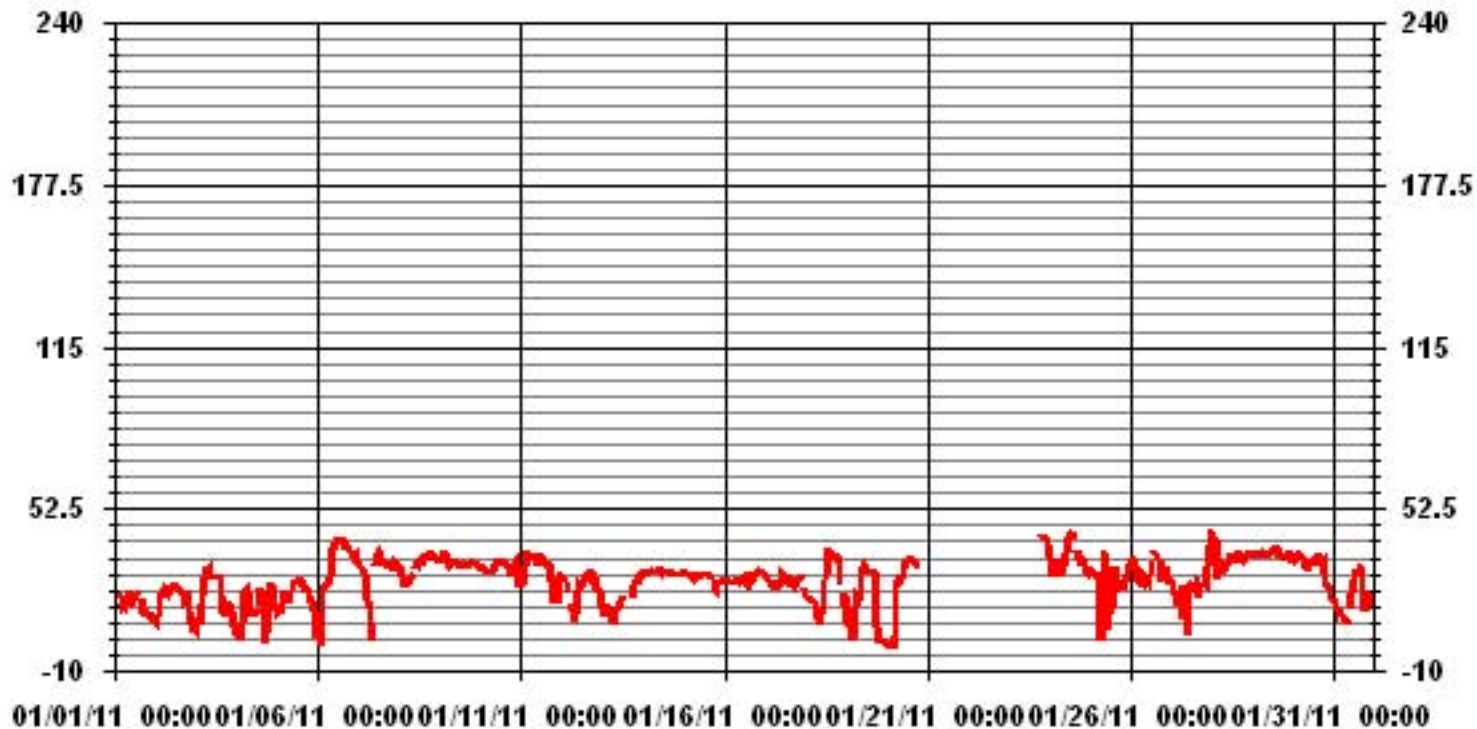
STATUS FLAG CODES

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:	634					
MAXIMUM INSTANTANEOUS VALUE:	43	PPB	@ HOUR(S)	12	ON DAY(S)	24
IZS CALIBRATION TIME:	29	HRS	OPERATIONAL TIME:	676	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	8.88					

01 Hour Averages



— LICA O3MAX PPB

LICA
O3_ / WD Joint Frequency Distribution (Percent)

January 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	6.90	16.79	9.10	6.27	6.59	3.29	6.75	3.13	2.04	3.13	6.12	11.45	5.80	3.92	3.76	4.86	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	6.90	16.79	9.10	6.27	6.59	3.29	6.75	3.13	2.04	3.13	6.12	11.45	5.80	3.92	3.76	4.86	

Calm : .00 %

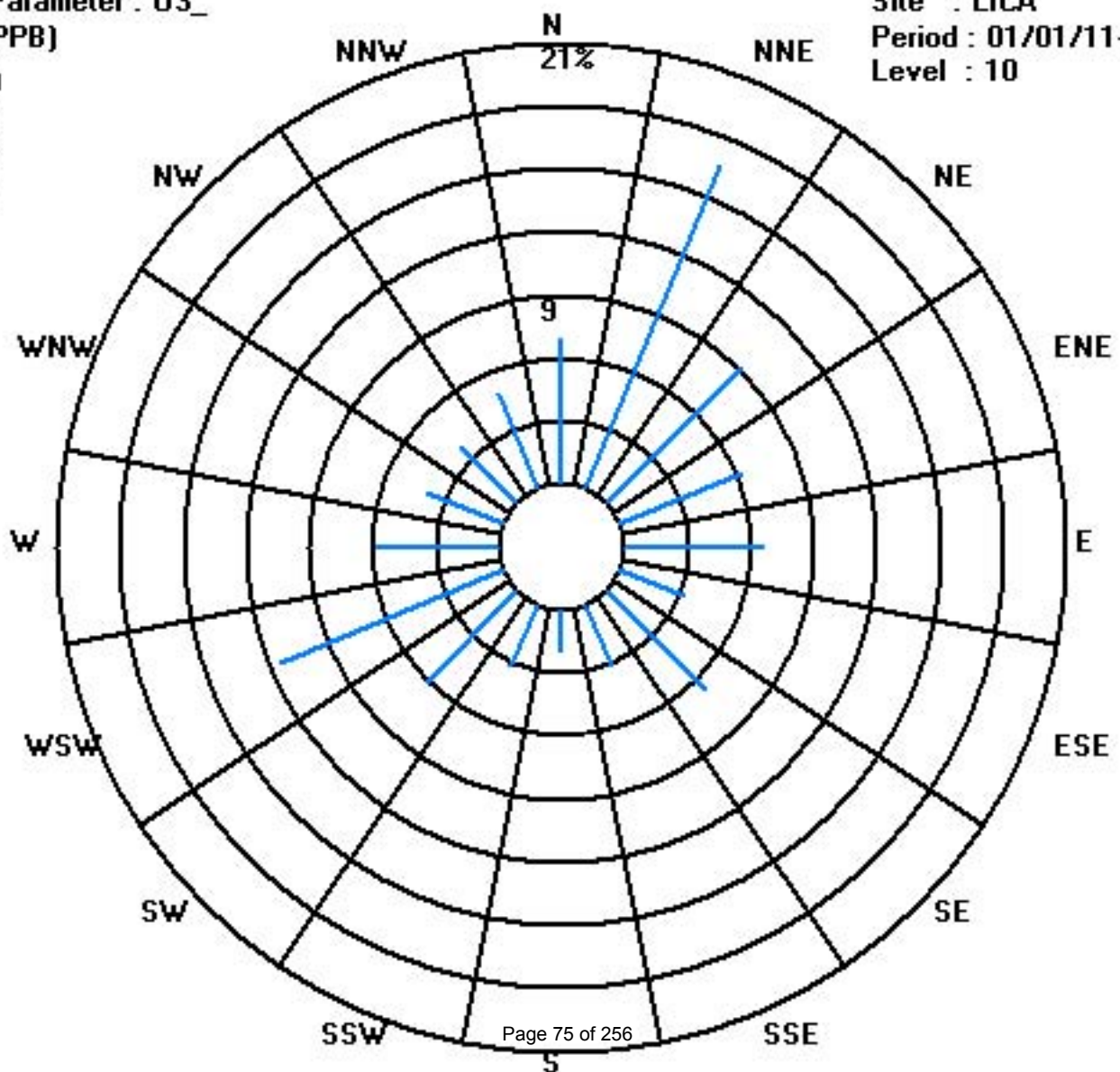
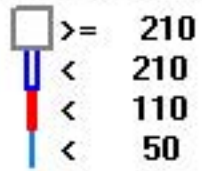
Total # Operational Hours : 637

Distribution By Samples

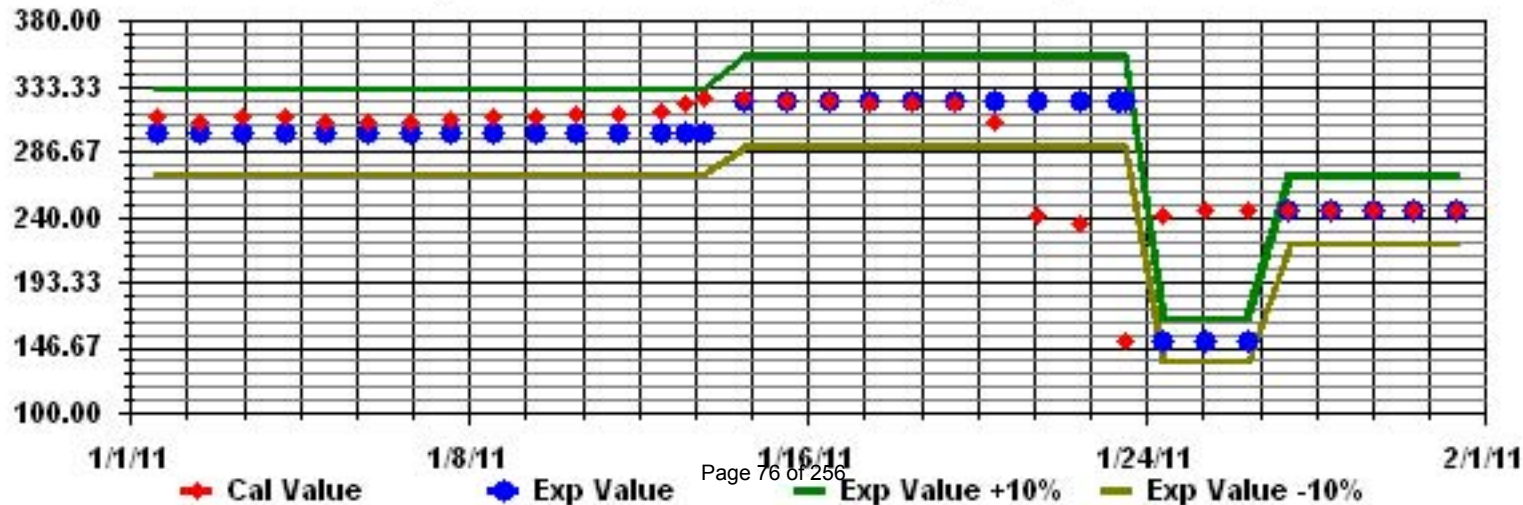
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	44	107	58	40	42	21	43	20	13	20	39	73	37	25	24	31	637
< 110																	
< 210																	
>= 210																	
Totals	44	107	58	40	42	21	43	20	13	20	39	73	37	25	24	31	

Calm : .00 %

Total # Operational Hours : 637



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



Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

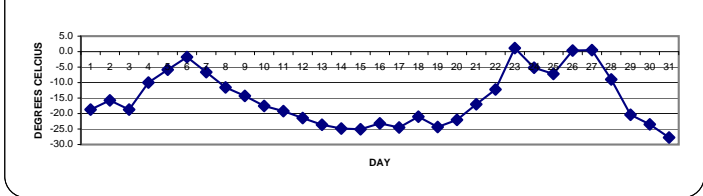
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST																										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	MAX.	AVG.	RDGS.		
1	-24.5	-25	-25.9	-26.8	-27.3	-26.1	-25.2	-23.7	-22.5	-20.9	-20.1	-18.2	-16	-15.3	-14.4	-13.7	-13	-13.1	-13.3	-13.7	-13.3	-12.8	-12.4	-12	-12.0	-18.7	24	
2	-12.3	-12.5	-12.7	-12.2	-12.2	-12.2	-12.6	-13	-14	-14.4	-14.6	-14.1	-13.1	-12	-12.3	-13.6	-15.5	-17.9	-19.5	-19.8	-22.4	-23.9	-25	-26.1	-12.0	-15.7	24	
3	-26.9	-27.5	-27.5	-26.1	-23.7	-22	-20.4	-19.1	-19.2	-19.8	-18.6	-16.6	-14.7	-13.2	-12.3	-12.2	-14.9	-16.3	-15.8	-15.9	-15.4	-16.5	-17.8	-16.9	-12.2	-18.7	24	
4	-14.3	-12.5	-11.5	-10.6	-10.1	-10.7	-12.9	-12.5	-13.2	-14.6	-13.6	-10.8	-8.6	-7.2	-6.7	-7.5	-9.8	-10.4	-8.9	-7.2	-6.6	-6.4	-6.5	-6.7	-6.4	-10.0	24	
5	-6.7	-6.8	-6.7	-6.6	-6.4	-6.5	-6.9	-7.1	-6.7	-6	-5.4	-4.1	-3	-1.8	-0.5	-1.8	-3.7	-4.3	-4.6	-5.8	-7.7	-9.8	-10.8	-10.3	-0.5	-5.8	24	
6	-9.4	-7.6	-6.6	-5.6	-5.1	-4.2	-3.6	-2.7	-1.4	-0.6	0.1	1	1.7	1.5	1	0.7	0.2	0.5	0.5	0.2	-0.1	-0.3	-0.8	-1.7	1.7	-1.8	24	
7	-1.9	-2.1	-2.5	-4.4	-7.3	-9	-9.4	-10.2	-11.7	-10.6	-6.8	-4.2	-3.9	-4.3	-4.6	-5.4	-6.1	-6.7	-7	-7.5	-7.9	-8.3	-8.5	-8.8	-1.9	-6.6	24	
8	-9.1	-9.6	-9.8	-9.9	-10.1	-10.2	-10.4	-10.2	-10.5	-11.9	-12.5	-13	-12.9	-12.9	-12.6	-12.4	-12.2	-12	-12	-12	-12.2	-12.6	-13.1	-13.3	-9.1	-11.6	24	
9	-13.4	-13.3	-13.2	-13.3	-13.6	-14.1	-14.5	-14.8	-14.8	-14.6	-14.3	-14.4	-14.3	-14.1	-13.9	-13.8	-14	-14.2	-14.3	-14.4	-14.8	-15.2	-15.7	-16	-13.2	-14.3	24	
10	-16	-16	-16.3	-16.7	-16.8	-16.9	-16.8	-16.8	-16.9	-17.2	-17.4	-17.4	-17.4	-17.4	-17.5	-17.7	-18.3	-19.7	-19.4	-18.7	-18.3	-18.4	-18.4	-18.4	-18.4	-16.0	-17.5	24
11	-18.6	-18.8	-18.7	-18.3	-18.5	-18.8	-19.2	-19.2	-19.3	-19.4	-19	-18.6	-17.8	-17	-16.8	-16.7	-17.1	-18.7	-21	-22.4	-23.1	-23	-21.2	-19.7	-16.7	-19.2	24	
12	-19.8	-20.3	-21.5	-23.8	-25.4	-26.6	-27.6	-27.6	-26.5	-24.1	-21.9	-20.9	-19.8	-18.9	-18.2	-18.3	-18.3	-18.1	-17.8	-18.1	-18.9	-20.1	-21.1	-21.2	-17.8	-21.5	24	
13	-22.3	-23.4	-24.6	-25	-26	-26.2	-25.3	-26.9	-27.3	-25.2	-23.2	-21.9	-21.4	-20.7	-20.9	-21.5	-22	-22.2	-22.2	-22.9	-23.4	-23.7	-24.1	-24.3	-20.7	-23.6	24	
14	-24.4	-24.7	-25	-25.2	-25.3	-25.4	-25.2	-25.3	-25.3	-25.4	-25.3	-25	-24.7	-24.4	-24.4	-24.1	-23.9	-24	-24.2	-24.4	-24.7	-25	-25.2	-25.6	-23.9	-24.8	24	
15	-26	-26.2	-26.2	-26.4	-26.5	-26.4	-26.3	-26.3	-26.3	-26.1	-25.6	-24.9	-23.9	-24	-23.6	-23.8	-23.8	-24	-23.9	-24	-24.3	-24.6	-24.4	-24.3	-23.6	-25.1	24	
16	-24.1	-24	-24.1	-24.1	-24.2	-24.1	-23.8	-23.7	-23.5	-23.2	-22.7	-22.5	-22.1	-21.8	-21.6	-21.7	-22.3	-22.2	-22.4	-22.9	-23.3	-23.6	-24	-24	-21.6	-23.2	24	
17	-23.7	-23.9	-24.5	-25.5	-26.5	-27.3	-28	-27.3	-27.2	-27	-26	-25.3	-24.6	-24.1	-23.4	-23.1	-23	-22.9	-23	-22.7	-22.5	-22.4	-22.1	-22	-22.0	-24.5	24	
18	-21.9	-22.9	-24	-24.1	-23.6	-23.9	-23.4	-22.9	-22.4	-22	-20.5	-16.5	-15.1	-14	-13.6	-14.7	-16.2	-17.7	-18.1	-20.9	-23.9	-25.8	-27	-29	-13.6	-21.0	24	
19	-29	-29.4	-29.8	-27.4	-24.6	-22.9	-22.1	-21.5	-21	-19.6	-18.2	-19	-18.9	-18.5	-18	-18	-20	-23.9	-26.4	-28.5	-30	-31.4	-32.6	-33.5	-18.0	-24.3	24	
20	-34.4	-34.4	-35.3	-35.4	-34	-28.3	-24.7	-24.1	-23.2	-22.4	-21.6	-20.5	-19.2	-17.9	-16.6	-15.9	-15.7	-15.6	-15.4	-15.1	-14.8	-14.6	-14.6	-15.2	-14.6	-22.0	24	
21	-15.6	-14.6	-14.7	-15.1	-15.7	-17	-18.5	-19	-18.7	-17.8	-17.2	-16.8	-16.5	-16.5	-16.6	-16.7	-17.2	-17.8	-17.9	-17.9	-18.1	-17.9	-17.7	-17.7	-14.6	-17.0	24	
22	-17.6	-17.4	-17.1	-17	-16.7	-16.4	-16.2	-15.8	-15.2	-14	-12.1	-10.3	-8.2	-6.9	-5.8	-5	-7	-10.6	-12.1	-12.2	-11.1	-10.6	-10.4	-7.6	-5.0	-12.2	24	
23	-4.2	-1.7	2.5	1.3	2.5	3.4	2.2	2.4	2.1	2	2.7	3.4	3.1	2.8	3	2.8	2.6	2.1	1.4	0.5	-0.3	-1.6	-3	-4.5	3.4	1.1	24	
24	-6.5	-8.3	-9.8	-10.1	-9.7	-9.8	-8.6	-7.8	-7.6	-6.3	-4.1	-1.9	0	0.5	0.2	-0.3	-1.2	-2.4	-3.1	-3.4	-4	-5.6	-6.9	-8.2	0.5	-5.2	24	
25	-8.6	-9.5	-9.4	-10.3	-10.7	-11.6	-12.7	-13.8	-14.3	-12	-8.2	-7.4	-5.4	-3.6	M	M	M	-3.3	-1.7	-1.6	-1.6	-1.5	-1.8	-2.2	-1.5	-7.2	21	
26	-2.8	-2.7	-1.5	-1.7	-2.3	-1.4	-0.8	-0.5	0	0.4	1.2	1.8	3	3.5	3.7	3.8	3.1	1.8	0	0.4	-0.2	1.2	0	-1.6	3.8	0.4	24	
27	-3.2	-1.6	-3.1	-5.2	-5.1	-4.3	-1.9	-2.1	-0.6	0	1.3	2.6	3	3.8	4.7	4.9	1.8	1.7	1.5	2.1	1.9	2.5	3.7	3.4	4.9	0.5	24	
28	2.9	2.8	2.1	-0.8	-4.9	-6.3	-7.1	-7.6	-8.4	-8.9	-9.8	-10.5	-10.9	-11.3	-12	-12.4	-12.6	-13.1	-13.5	-13.9	-14.2	-14.7	-15.1	-15.5	2.9	-9.0	24	
29	-16	-16.6	-17.2	-18	-19.6	-20.8	-21.7	-22.7	-23.2	-23.3	-23	-22.7	-22.5	-21.6	-20.5	-20.2	-20.1	-19.9	-19.9	-19.9	-19.7	-19.6	-20.2	-20.4	-16.0	-20.4	24	
30	-20.9	-21.4	-21.8	-22.1	-22.5	-22.6	-23.5	-25.3	-26.1	-25.4	-24.6	-24	-22.5	-21.9	-21.3	-21.4	-21.6	-22.5	-23.2	-23.6	-24.4	-25.6	-27.2	-28.5	-20.9	-23.5	24	
31	-29.6	-30.3	-31.3	-32.1	-32.8	-33.1	-34.3	-34.6	-34.7	-31.8	-28.8	-24.7	-23	-19.9	-19	-19.1	-20.2	-23.5	-25.9	-27.4	-27.3	-26.7	-27.5	-28	-19.0	-27.7	24	
HOURLY MAX	2.9	2.8	2.5	1.3	2.5	3.4	2.2	2.4	2.1	2.0	2.7	3.4	3.1	3.8	4.7	4.9	3.1	2.1	1.5	2.1	1.9	2.5	3.7	3.4				
HOURLY AVG	-16.2	-16.2	-16.4	-16.7	-16.9	-16.8	-16.8	-16.8	-16.8	-16.2	-15.2	-14.1	-13.2	-12.6	-12.5	-12.6	-13.4	-13.9	-14.3	-14.6	-15.0	-15.4	-15.9	-16.1				

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

24 HOUR AVERAGES FOR JANUARY 2011



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-35.4 °C	@ HOUR(S)	3	ON DAY(S)	20
MAXIMUM 1-HR AVERAGE:	4.9 °C	@ HOUR(S)	15	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	1.1 °C			ON DAY(S)	23
VAR-VARIOUS					
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	741 HRS		
		AMD OPERATION UPTIME:	99.6 %		
STANDARD DEVIATION:	9.20	MONTHLY AVERAGE:	-15.20 °C		

* Outside detection limits of sensor.

01 Hour Averages



— LICA TPX DGC

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

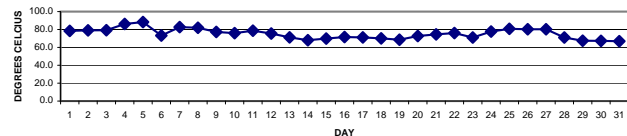
RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	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.
1	74	74	74	72	71	71	72	73	78	78	77	78	79	81	81	81	82	83	83	83	83	82	82	83	82	83	83	78.5	24
2	84	84	84	87	86	85	85	84	81	80	79	74	73	71	75	77	80	80	78	78	74	74	72	71	87	79.0	24		
3	71	71	72	77	78	77	78	79	79	78	79	81	83	84	84	84	82	81	81	81	81	80	79	80	84	79.2	24		
4	83	84	85	87	88	87	85	85	84	82	83	85	86	86	86	87	87	86	87	89	89	89	89	89	89	89	89	86.2	24
5	89	89	89	90	89	90	90	90	90	91	90	91	90	82	77	83	90	90	90	90	90	89	88	86	86	91	88.3	24	
6	87	89	90	91	90	91	87	79	68	61	57	55	54	59	64	66	68	67	67	71	76	76	72	73	91	73.3	24		
7	74	76	78	79	85	87	86	86	86	78	80	76	75	78	79	81	82	84	86	88	90	91	90	89	91	82.7	24		
8	89	89	88	85	85	83	84	85	84	80	76	77	76	78	80	81	81	81	81	81	81	81	81	81	80	89	81.9	24	
9	79	79	79	80	80	79	78	79	78	79	75	76	75	74	73	75	78	78	78	77	77	76	76	76	80	77.3	24		
10	77	77	77	78	78	78	77	77	76	75	74	72	71	71	71	71	73	77	79	78	79	79	79	79	79	79	75.9	24	
11	77	77	78	80	82	81	81	80	79	79	79	79	80	80	80	80	80	80	78	77	75	75	75	77	78	82	78.6	24	
12	77	77	76	74	73	73	72	72	73	75	76	77	77	77	76	75	76	77	77	78	77	77	77	75	75	78	75.5	24	
13	74	73	73	73	73	73	73	72	72	72	71	69	67	66	68	70	72	73	70	70	71	71	71	71	71	74	71.2	24	
14	70	71	70	71	70	70	69	69	68	67	66	63	63	63	63	65	69	70	70	70	69	69	69	69	69	71	68.0	24	
15	69	69	69	70	70	70	70	71	70	70	69	68	66	66	66	68	69	71	72	73	73	73	73	72	73	72	69.9	24	
16	72	72	72	72	72	72	72	72	72	73	72	71	71	70	70	71	72	72	72	72	72	72	71	71	71	73	71.5	24	
17	71	72	71	72	72	72	72	72	71	70	70	69	68	68	68	69	70	71	72	73	73	74	74	74	73	74	71.1	24	
18	73	74	74	74	74	74	74	74	74	74	73	73	67	60	54	56	62	65	66	74	74	74	74	73	71	74	70.0	24	
19	71	71	70	74	75	74	75	74	74	71	64	61	60	57	56	58	65	73	73	72	71	70	69	68	75	68.6	24		
20	67	69	67	67	69	73	73	73	73	73	73	73	73	75	75	73	73	73	73	74	76	76	76	77	77	72.7	24		
21	79	79	78	78	77	76	77	78	77	72	71	70	70	70	71	72	73	74	74	75	75	75	74	74	79	74.5	24		
22	74	75	74	76	78	77	78	78	78	77	75	70	65	63	64	66	74	84	85	83	82	82	84	83	85	76.0	24		
23	81	74	77	91	79	68	80	77	78	75	69	64	65	67	63	63	62	61	63	63	67	70	72	76	91	71.0	24		
24	81	86	87	88	88	88	89	89	88	85	76	65	56	55	61	63	67	70	73	76	78	82	86	88	89	77.7	24		
25	89	87	88	87	87	86	85	83	81	79	80	81	78	81	M	M	M	81	74	74	74	73	73	74	89	80.7	21		
26	76	76	74	77	80	77	76	76	72	69	67	76	76	76	77	78	84	89	93	92	93	89	90	93	83	80.3	24		
27	94	92	91	91	91	90	90	92	91	93	88	79	80	74	70	67	79	75	73	71	74	71	60	50	94	80.3	24		
28	54	61	74	76	74	74	77	76	74	73	73	70	69	68	70	72	72	71	71	71	71	71	71	72	77	71.0	24		
29	74	74	77	75	70	70	71	72	73	70	66	65	64	61	57	58	62	63	64	65	65	66	68	69	77	67.5	24		
30	68	70	70	71	71	72	71	72	72	70	67	64	59	57	54	55	60	62	68	69	72	74	74	73	74	67.3	24		
31	72	70	69	68	68	68	67	67	66	65	65	67	63	55	53	56	61	70	73	72	73	73	73	72	73	66.9	24		
HOURLY MAX	94	92	91	91	91	91	90	92	91	93	90	91	90	86	86	87	90	90	93	92	93	91	90	93					
HOURLY AVG	76.5	76.8	77.2	78.4	78.2	77.6	77.9	77.8	76.8	75.2	73.5	72.3	71.0	70.1	69.5	70.7	73.5	75.2	75.6	76.1	76.5	76.5	76.1	75.9					

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

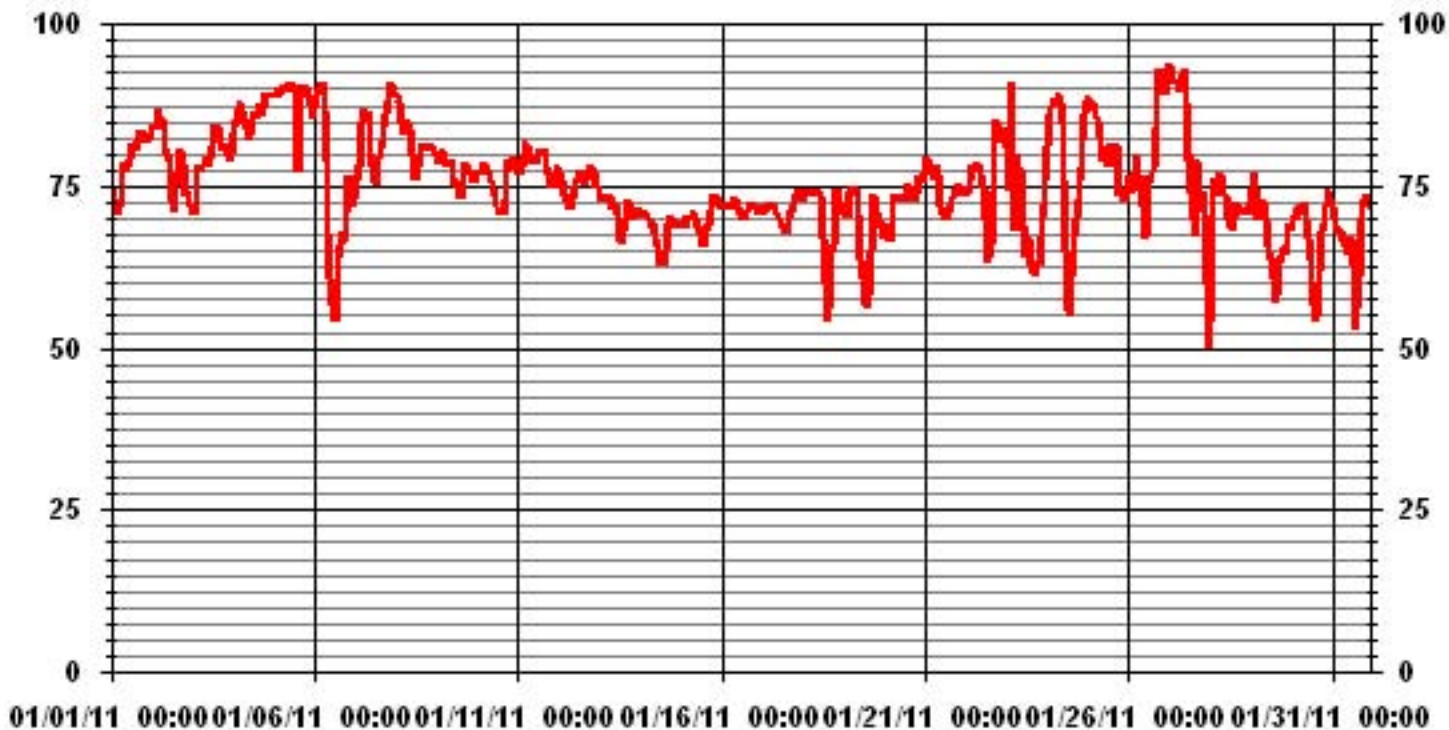
24 HOUR AVERAGES FOR JANUARY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	94.0	%	@ HOUR(S)	0	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	88.3	%			ON DAY(S)	5
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	741	HRS	
STANDARD DEVIATION:	7.86		AMD OPERATION UPTIME:	99.6	%	
			MONTHLY AVERAGE:	75.22	%	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 2011

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
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.		
1		0.8	0.4	1.2	0.9	1.4	0.7	0.5	0.6	2.3	2.3	3.4	2.8	2.3	2.6	1.2	1.5	0.2	1.4	2.3	1.7	0.7	1.5	0.5	0.8	3.4	0.4	24	
2		1.3	2.4	2.6	5.2	4	2.4	3.1	2.9	3.6	3.3	3.7	2.1	1	3	2.3	4.7	3.2	0.6	2.6	1.4	0.9	0.3	0.6	0.5	5.2	1.8	24	
3		0.4	0.4	0.1	4.3	4.2	2.9	0.7	3.1	3.2	3.3	2.4	1.3	1.1	0.8	0.3	1.2	1.8	0.4	1.8	0.7	0.7	1.7	4.5	1.7	4.5	0.9	24	
4		1.4	0.5	0	3.3	2.3	0.6	1.9	2.1	0.6	0.1	0.4	0.3	2.6	1.2	3.4	0.2	1.7	1.6	2.1	3.8	3.9	1.6	0	0.7	3.9	1.3	24	
5		0.2	0.6	0.5	1.9	1.3	1.8	5.4	4.9	4.3	5.3	4.6	3.6	5	5.4	4	4.3	4.9	5	1.7	3.2	1.7	0.4	0.2	5.4	3.1	24		
6		0.7	0.6	1.4	2.5	1.8	2.1	5.2	6.9	9.4	10.1	11.3	15.6	20.5	22.4	22.6	18.9	13.4	14.4	15.4	10.5	7.3	3.1	4.2	4.8	22.6	9.4	24	
7		2.3	0.4	1.4	2.9	1.6	1	0.8	0.4	0.6	0.8	3.8	5.2	6.1	7.1	8.4	9.1	9.2	9.5	9.4	11	10.9	11.6	10.3	9.8	11.6	5.6	24	
8		9.3	10.3	9	9.2	7.5	7.6	7.4	7.8	10.4	10.4	10.9	11.8	10.8	10.4	10.3	9.7	10.2	10.3	9.4	10.2	9.8	8.9	9.8	11.8	9.5	24		
9		8.4	10.1	11.3	11.7	10.9	10.9	11.7	11.1	8.7	7.6	10.1	10.8	10.8	9.7	7.3	7.4	8.8	8.6	7.7	5.1	6.5	5.1	6.5	5.5	11.7	8.8	24	
10		4.9	4.8	5.4	5.2	4.7	4.2	5.2	4.7	6.2	7.2	7.3	7.2	7	5.3	4.5	4.1	2.3	1.9	1.3	0.8	0.7	1.8	1.6	1.1	7.3	4.1	24	
11		1.6	1.3	0.5	2.1	1.7	2.6	3.4	2.3	3.3	4.4	4.7	5.9	3.9	1.5	1.4	3.2	3.5	1.6	0.9	0.7	0.5	0.5	2.1	4.9	5.9	2.4	24	
12		5.3	4.1	1.1	1	0.9	0.1	0.6	1.2	0.7	1.7	3.8	5.2	3.7	6.6	6.8	7	6.8	4.5	3.4	2.3	1.2	0.6	0.7	0.4	7.0	2.9	24	
13		1.6	2.2	1.5	3.6	1.9	5.1	3.9	2.3	5.5	4.3	5.2	6.6	6.3	3	4.6	5.9	3.2	2.9	6.8	7.2	7.7	8	8.3	8.6	8.6	4.8	24	
14		7.6	7.2	7.5	7.9	8.2	6.8	8	7.6	7.4	7.3	6	6.7	7.1	6.1	5.7	5.2	6.2	6.2	7.2	6.7	6.4	6.3	6.5	6.8	8.2	6.9	24	
15		6.5	5.6	5.3	5.7	5.4	5.5	5.4	4.8	5	4.9	5.5	4.9	3.7	4.3	2	2.1	1.5	0.7	2.2	1.5	2	3.1	4.6	4.4	6.5	4.0	24	
16		3.5	3.4	3.5	4.8	3	3.8	4.1	3.8	3.5	4.1	5.1	6.5	5.8	8.4	7.3	7.9	6.7	6.2	8	8.4	7.8	7.6	6.9	6.3	8.4	5.7	24	
17		5.8	4.9	4.2	2.7	2.2	1.9	0.8	2.9	2.1	1	2.8	2.6	2.3	4.1	3.8	3.8	5	4.1	5.6	4	4	3.3	2.9	3.1	5.8	3.3	24	
18		1.8	1.4	0.3	1.4	3.7	2.7	1.7	2.1	4.1	3.3	6.5	12.4	12.1	11.5	14.5	14	9.7	9.2	7.4	3.8	1.4	0.2	0.4	1.5	14.5	5.3	24	
19		0.3	0	0.4	0.9	0.5	2.4	1.5	1.7	1.8	4.6	10.2	11.3	8.4	8.1	7.1	6.8	2.6	1.6	0.8	0.3	0.3	0.2	0.8	0.8	11.3	3.1	24	
20		0.2	1.1	0.7	0.9	1.3	4	6.8	9.9	10.9	10.4	10.6	13	11.3	9	16.7	5.2	2.3	3.2	1.6	0.8	2.2	1.8	4.7	3.3	16.7	5.5	24	
21		3.2	5.4	5.7	6.4	5.3	3.9	1	0.2	1.7	2.7	4.2	4.2	5.8	2.2	3.5	2.8	3.1	3.3	4.3	11.3	10.9	18.1	14.6	15.1	18.1	5.8	24	
22		13.9	13.8	13.3	13.9	13.3	16.2	15	15.9	17.1	9.9	11.2	19	17	23	26.8	38.7	6.1	2.7	3	2.6	2.6	2.6	2.6	3.1	38.7	12.6	24	
23		2.6	2.5	2.6	3.3	17.6	21.2	15.7	24.6	36.1	23.2	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	36.1	14.9	10
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	N	0
25		N	N	N	N	N	N	N	N	N	N	N	N	N	N	M	M	M	M	5.9	7.7	7.7	7.3	6.6	7.8	7.1	7.8	7.2	7
26		5.1	5.7	5	1.7	3.3	4.4	2.9	3.9	4.6	4.8	6.5	8.2	6.5	7	8	6.7	5.4	0.9	1.3	4.7	3.5	6.4	3.9	4.4	8.2	4.8	24	
27		4.1	6.3	1	2.5	2.9	2.9	2.3	0.4	1.5	1	1.7	5.1	1	1.4	3.2	2.8	2.8	5.1	6.6	8.7	6.6	10.7	13.1	16.9	16.9	4.6	24	
28		15.7	12.5	15.6	18.5	20	15.7	15.5	13.3	14.3	12.9	12.7	11.7	13	11.7	10.7	8.8	8.4	8.1	8	9.6	9.7	10.1	9.6	10.3	20.0	12.4	24	
29		9.5	8.8	7.8	8.4	10.3	8.2	6.4	5	4.4	7.7	7.6	7.4	5.6	5.5	3.8	4.5	5.2	4.6	5.6	5.2	5	4.8	6.6	4.8	10.3	6.4	24	
30		6.6	5.7	5.4	5	5.4	3.7	4.1	5.2	5.4	4.7	4.7	4.3	1.7	2.9	1.1	3	2.6	0.4	0.9	0.4	0.2	0.5	0.2	0.3	6.6	3.1	24	
31		0.4	0.3	0.2	0.6	0.3	0.3	0.6	0.5	1.2	1.2	2.6	3.4	4.5	3.3	4.4	5.8	3.9	1.5	0.9	1.1	1.5	0.3	0.7	2.2	5.8	1.7	24	
HOURLY MAX		15.7	13.8	15.6	18.5	20.0	21.2	15.7	24.6	36.1	23.2	12.7	19.0	20.5	23.0	26.8	38.7	13.4	14.4	15.4	11.3	10.9	18.1	14.6	16.9				
HOURLY AVG		4.3	4.2	3.9	4.8	5.1	5.0	4.9	5.2	6.1	5.7	6.0	7.1	6.7	6.7	7.0	7.0	5.0	4.4	4.8	4.6	4.3	4.5	4.6	4.8				

STATUS FLAG CODES

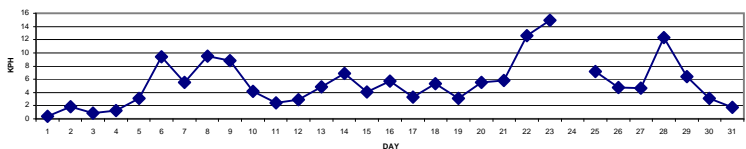
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: November 23, 2010

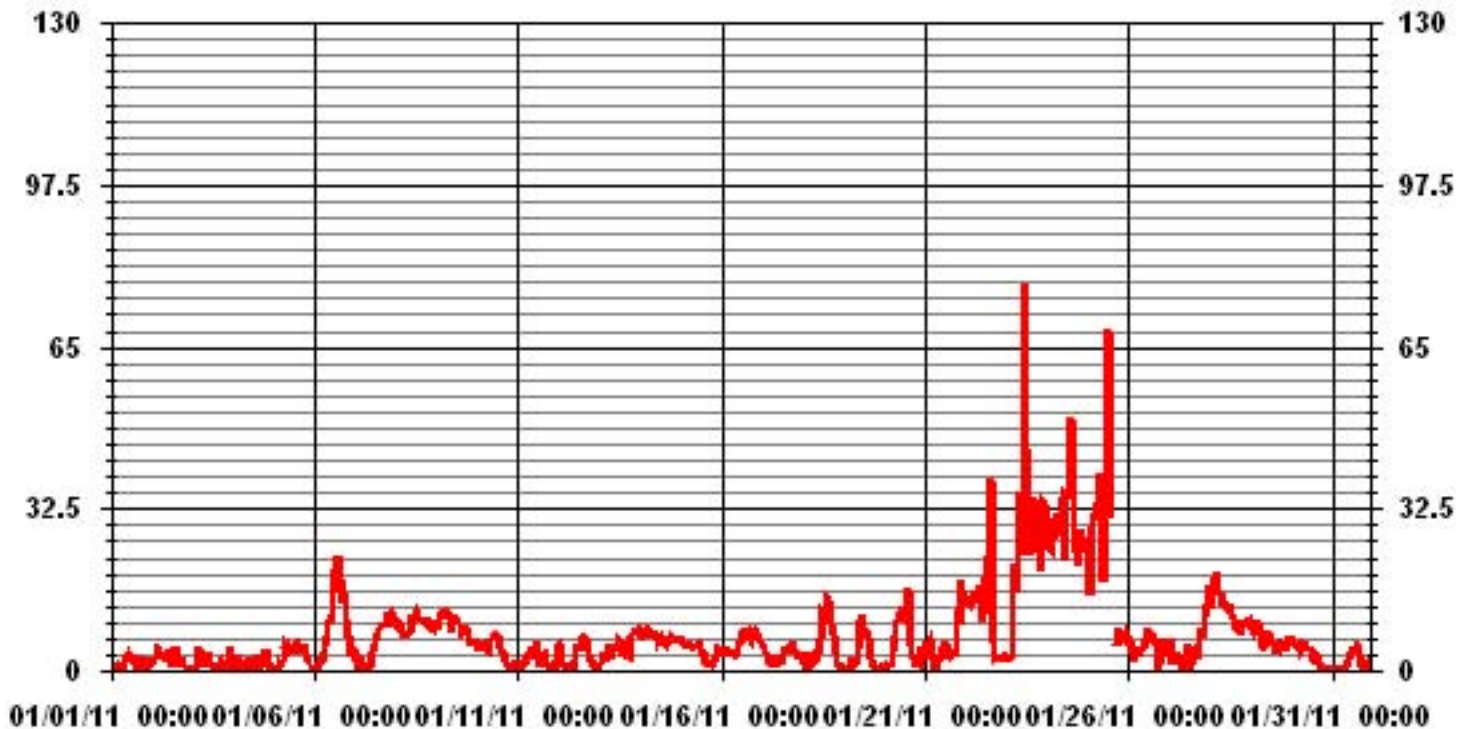
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	38.7 KPH	@ HOUR(S)	15	ON DAY(S)	22
MAXIMUM 24-HR AVERAGE:	14.9 KPH			ON DAY(S)	23
CALMS (≤ 0 KPH)	3.90 %	OPERATIONAL TIME:	689	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	92.6	%	
STANDARD DEVIATION:	4.74	MONTHLY AVERAGE	5.27	KPH	

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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		3.9	2.8	3.6	3.8	5.9	3.3	3.6	2.9	6.7	6.7	5.8	5.4	5.6	4.7	3.1	3.2	1.7	3.7	5.2	4.1	2.4	4.6	1.8	2.2	6.7	
2		3	4.6	4.3	9.2	6.6	5.7	7	4.8	7.6	8.2	6.1	5.6	3.8	7.1	5.9	8.1	6	3.9	7.6	6.5	3.2	2.4	5.3	7.5	9.2	
3		3.3	3.1	2.2	7.4	7.3	5.5	3.9	7.5	7.7	6.8	5.5	6.1	5.5	5.2	3.4	3.3	4.9	2.8	3.4	3.5	2.5	3.4	8	6.2	8	
4		6.3	2.5	1.6	4.8	6.2	1.9	5.9	5.5	2.5	1.8	1.5	3.2	6.1	4.1	6	3.8	3.3	3.9	4.9	5.3	6	5.7	4.2	2.2	6.3	
5		2.5	4	4	5.3	3	4.3	9	8.6	6.9	7.3	8.9	7.6	8.3	8.2	8.7	7.6	6.1	6.3	6.5	5.5	5.7	5.2	4.9	4.7	9	
6		5.2	4.1	5.4	5.7	8.4	8.1	8.7	12.2	15.2	14.7	19	21.9	32.7	32	31	32.1	23.2	21.3	23.1	16.8	13	6	8.4	6.9	32.7	
7		5.9	4.1	7	6.4	4	3.3	3.5	3.5	3	2.6	7	8.1	9.3	10.6	13	13	14.7	15.7	14.3	16.2	17.2	19.9	16.2	15.8	19.9	
8		14.4	16	13.9	13.9	12.4	13	12.3	11.1	13	14.1	13.6	16.4	19.9	17.3	16.3	14.9	15.3	16.1	16	13.3	15.2	15.5	13.7	14.3	19.9	
9		16.5	18.8	15.6	16.9	17.1	16.8	16.9	17.3	15.5	12.1	17.6	17.6	16.7	16.2	11.7	11.8	14.2	13.8	12.3	9.7	9.3	7.8	10	8.2	18.8	
10		8.7	6.4	7.7	6.8	6.2	6.1	7.3	7.1	10.7	11.3	10.9	12.8	10.7	8.1	6.9	6.5	4.6	3.7	3.9	2.4	2.9	2.8	3.8	3.1	12.8	
11		3.6	4	4.1	7.2	4.9	5.4	7.1	5.7	6.2	6.6	7.5	9.4	7.2	4	4.5	6	6.2	4.2	3	1.9	2.7	4.5	6	8.4	9.4	
12		8.7	6.2	4.7	3	4.9	3.2	3.3	2.9	3.1	6.1	6.5	9.2	6.4	13.1	13.5	10.3	10.7	7.9	5.4	4.4	4.4	2.2	2.5	1.8	13.5	
13		3.2	4.3	4.8	6.9	5.1	7.4	5.8	6.2	7.4	8.5	9.2	11.6	9.9	9	6.7	8.8	8.6	7	11.9	11.2	11.9	12.1	12.3	12.1	12.3	
14		12.9	11.9	12	10.9	12	11.1	14.4	10.9	12.2	13.6	8.7	11.3	10.5	9.6	8.8	9.5	11.1	9.9	11.7	10.1	10.2	10.5	10.8	11.8	14.4	
15		8.8	9.1	8	8.9	8.5	8.7	8.5	7.5	7	7.8	8.3	8.6	7.6	8.9	4.2	4.3	3.5	2.8	4.1	3.2	3.8	6.1	7.5	7.2	9.1	
16		6.2	7.5	7	8.7	6.6	6.6	6.4	5.8	6.6	8.1	8	9.3	9.1	12.1	12	13.8	11.5	10.5	12.5	10.8	12.1	11.7	10	11	13.8	
17		10.4	8.5	6.3	5.9	3.3	3.1	3.5	5.5	4.6	3.9	7.2	4.9	7.3	8.9	6.5	8.4	9.7	7.1	8.1	6.8	7.6	7.1	6.2	5.5	10.4	
18		4.7	3.3	4.6	5.2	7.1	9.1	4.7	6.7	7.2	7.2	11.8	16.6	19.3	23	22.9	20.6	18	14.4	16.8	6.4	4.6	3.9	5.1	4.6	23	
19		23.6	3.2	5	3.2	4.5	7.5	4.4	4.7	5.3	14	14.2	15.7	12.5	15.3	12.1	9.9	7.4	3.4	3	4	5.3	13.5	26.1	3.9	26.1	
20		2.7	3.2	3.1	3.9	4.3	9.8	11.7	14.8	15.7	15.8	14.6	18.1	14.7	13.6	72.3	8.5	4	5.1	3.3	4.4	5	5	7.4	6.1	72.3	
21		6.5	10.2	8.9	9.7	10.1	7.6	3.5	3.8	3.2	6.4	7.7	8.5	24.3	6.4	16.1	7.2	8.3	15.9	20.6	18.5	25.9	26.5	31.7	29.2	31.7	
22		30.8	30.4	26.8	31	29.4	30.3	30.7	32.1	29.8	22.3	31.3	34.6	34	36.7	45.4	56.3	22.7	5.8	11.3	2.7	2.7	2.8	2.9	6.6	56.3	
23		3.2	2.6	3.5	21.9	33.1	43.8	37.9	52.6	59.9	72.9	N	N	N	N	N	N	N	N	N	N	N	N	N	N	72.9	
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	
25		N	N	N	N	N	N	N	N	N	N	N	N	N	M	M	M	M	10	13.1	10.3	9.4	8.9	10.5	9.3	13.1	
26		8.3	8.6	8.6	5.4	5.1	7.1	5.9	7.8	7.4	8	10.4	10.8	10.3	11.8	13.5	10.7	9.3	5.9	5.9	7.1	7.2	9.1	8.5	6.1	13.5	
27		6.5	8.4	4.5	4.2	5	6.6	6	3.9	6.1	2.6	6	7.8	5.3	7.1	7.3	6.3	5.2	8.3	10.9	15.2	10	15.6	22.5	25.1	25.1	
28		22.9	18.8	22.9	27.4	29.4	23.1	22.9	21.4	23.3	21.8	19.8	16.8	16.7	15.9	17.7	13.2	15.9	12.1	17.5	15.6	15.9	16.1	16.1	16.1	29.4	
29		15.9	13.9	12	11.7	15.3	13.9	12.2	8	7.3	12.8	11.2	11	10.4	9.4	7.5	8.7	7.6	7.4	8.7	8	7.6	8.1	9.6	8.9	15.9	
30		12.6	10.1	10.1	10.2	8.6	7.3	9.3	8.9	8.5	7.4	9	9	6.1	7	5.4	6.5	5.4	4.3	2.6	2.5	3	3.1	2.7	8.1	12.6	
31		10.8	3	1.8	2.5	5.7	7.3	3.4	2.7	3.1	2.9	4.3	8.8	9.3	6.8	7.4	9.7	8.2	3.5	2.9	3.7	3.8	3.2	3.3	5.4	10.8	
PEAK		30.8	30.4	26.8	31.0	33.1	43.8	37.9	52.6	59.9	72.9	31.3	34.6	34.0	36.7	72.3	56.3	23.2	21.3	23.1	18.5	25.9	26.5	31.7	29.2		

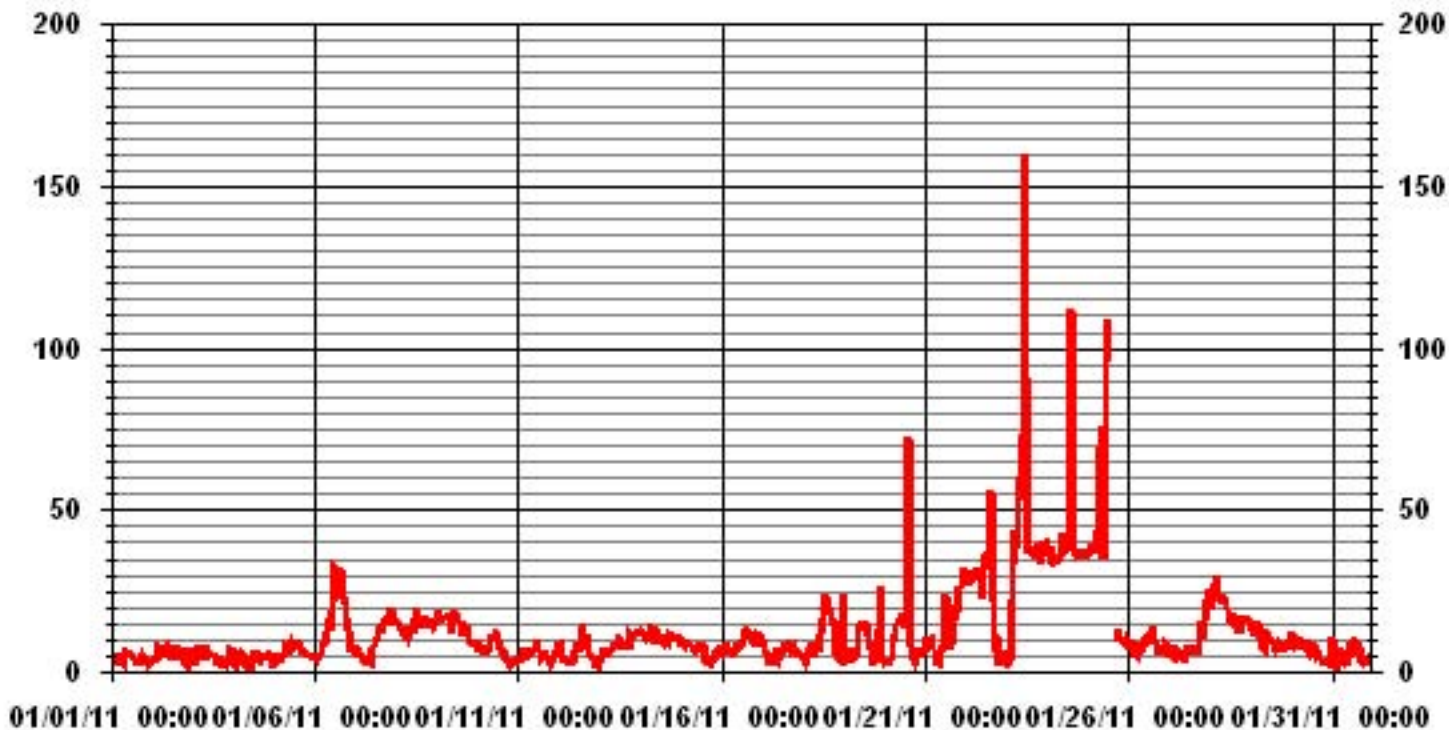
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	72.9	KPH	@ HOUR(S)	9
			ON DAY(S)	23

01 Hour Averages



— LICA WSMAX KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

January 2011

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

	Direction																	
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 6.0	5.80	5.80	4.93	2.61	2.90	2.61	5.51	2.61	1.74	2.75	4.78	8.99	4.78	2.17	2.17	1.88	62.11	
< 12.0	2.75	11.03	1.59	.58	2.90	.14	.87	.00	.00	.00	1.01	1.88	.43	.43	.72	1.88	26.26	
< 20.0	.29	.58	1.45	.29	.00	.00	.14	.14	.00	.00	.00	.00	.87	.72	.43	.87	5.80	
< 29.0	.00	.00	.00	.00	.43	.29	.00	.00	.00	.00	.00	.00	.00	.43	.00	.14	1.30	
< 39.0	.00	.00	.00	.00	.00	.14	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29	
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	8.85	17.41	7.98	3.48	6.24	3.19	6.67	2.75	1.74	2.75	5.80	10.88	6.09	3.77	3.33	4.78		

Calm : 4.20 %

Total # Operational Hours : 689

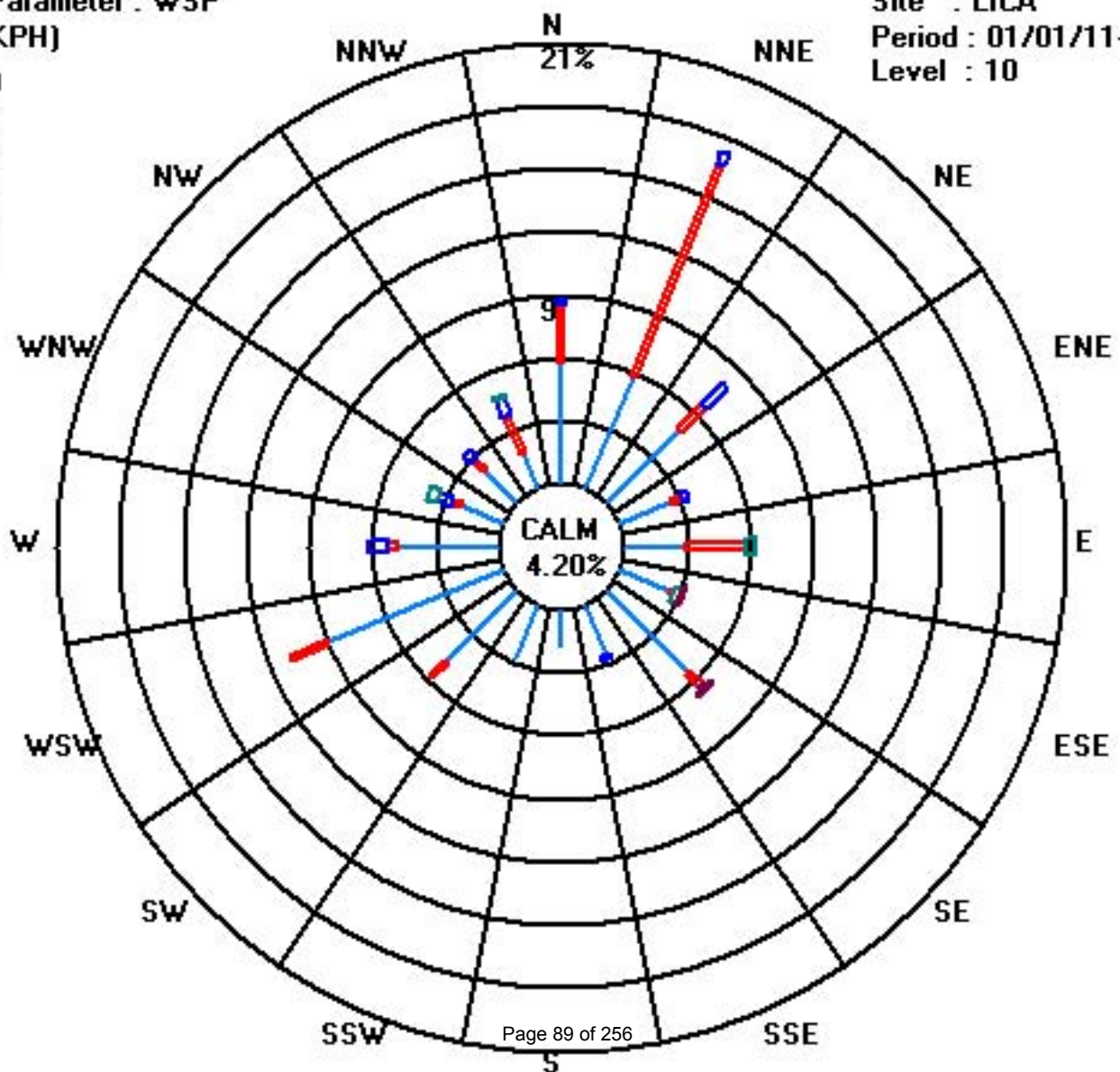
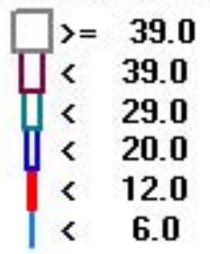
Distribution By Samples

	Direction																	
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 6.0	40	40	34	18	20	18	38	18	12	19	33	62	33	15	15	13	428	
< 12.0	19	76	11	4	20	1	6				7	13	3	3	5	13	181	
< 20.0	2	4	10	2			1	1					6	5	3	6	40	
< 29.0					3	2								3		1	9	
< 39.0						1	1										2	
>= 39.0																		
Totals	61	120	55	24	43	22	46	19	12	19	40	75	42	26	23	33		

Calm : 4.20 %

Total # Operational Hours : 689

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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	153	156	239	201	262	188	284	235	156	259	242	250	167	117	97	127	103	348	342	352	6	263	252	266	230	SW	24	
2	325	349	357	35	31	5	32	43	15	46	28	25	268	269	11	3	339	350	320	318	211	232	227	207	6	N	24	
3	231	218	115	238	242	229	194	200	167	134	133	167	199	220	21	47	356	21	308	50	263	229	259	269	224	SW	24	
4	265	265	147	262	235	227	261	274	257	252	72	293	286	283	250	277	261	244	247	262	288	257	284	167	260	WSW	24	
5	5	180	139	133	175	89	134	140	136	136	137	222	252	257	256	223	222	233	242	230	236	222	232	270	198	SSW	24	
6	317	81	101	139	173	227	212	242	275	261	263	271	283	292	294	298	303	306	314	329	327	299	264	251	287	WN W	24	
7	247	171	197	230	152	131	212	226	243	68	119	115	98	95	89	83	83	82	79	89	85	84	84	83	91	E	24	
8	82	85	82	77	71	66	57	51	42	32	26	22	21	27	22	21	20	20	20	22	26	27	18	21	25	37	NE	24
9	28	23	22	23	21	18	11	13	20	20	11	12	10	14	14	10	13	15	2	353	340	337	333	339	11	NNE	24	
10	344	331	323	318	315	319	342	350	358	10	7	13	22	20	26	42	10	354	356	287	205	320	340	249	353	N	24	
11	247	264	251	166	180	150	147	159	138	140	133	131	130	113	91	116	73	57	91	79	248	297	128	133	133	SE	24	
12	137	131	123	107	119	204	32	53	2	114	106	69	53	82	90	85	84	64	65	62	277	357	241	240	85	E	24	
13	256	243	241	257	255	250	250	246	245	256	253	290	329	300	245	231	260	357	16	22	19	29	25	29	310	NW	24	
14	31	16	20	26	16	8	9	8	0	345	348	327	321	346	334	358	10	11	10	21	31	20	19	30	7	N	24	
15	28	26	29	31	22	22	20	22	26	21	23	5	346	12	355	32	349	10	29	64	149	130	126	106	30	NNE	24	
16	125	109	74	81	78	60	60	52	39	61	37	28	34	15	26	16	14	15	22	22	28	43	41	40	38	NE	24	
17	31	34	39	41	46	33	47	46	48	54	124	102	91	90	29	86	92	113	133	126	141	135	164	196	85	E	24	
18	190	148	216	173	187	179	168	200	268	261	252	262	271	282	293	299	316	314	311	289	235	193	147	249	278	W	24	
19	155	73	320	85	286	357	17	273	300	332	346	357	1	343	327	315	308	240	263	254	0	327	262	257	335	NNW	24	
20	324	48	287	306	78	120	127	128	127	121	124	129	131	136	158	140	143	128	177	263	336	257	262	268	137	SE	24	
21	261	281	274	292	24	32	96	86	131	91	107	40	22	2	9	4	4	6	12	20	27	36	39	41	23	NNE	24	
22	36	31	29	30	31	36	38	39	39	21	29	49	48	86	108	127	34	0	1	359	359	359	359	1	52	NE	24	
23	359	359	0	7	60	95	70	111	118	86	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	80	E	10
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	M	M	M	223	231	243	232	233	234	242	87	E	7
26	236	237	243	216	233	223	235	245	233	234	235	250	253	238	232	241	240	248	240	245	238	241	245	239	239	WSW	24	
27	252	249	279	242	248	239	243	219	202	125	142	132	104	212	212	205	237	241	245	243	243	234	267	273	243	WSW	24	
28	276	284	312	338	337	342	339	333	336	347	359	347	350	351	1	15	21	26	26	18	26	28	27	30	348	NNW	24	
29	40	38	25	35	40	33	13	22	37	26	23	21	21	12	23	34	41	35	34	32	45	40	34	51	31	NNE	24	
30	86	78	84	85	69	96	66	33	44	41	25	28	95	8	101	117	52	30	49	140	224	315	280	91	62	ENE	24	
31	20	17	186	248	20	89	282	256	235	295	312	278	290	255	248	239	226	187	157	207	193	153	127	209	247	WSW	24	
HOURLY AVG	359	359	357	338	337	357	342	350	358	347	359	357	350	351	355	358	356	357	356	359	359	359	359	339				

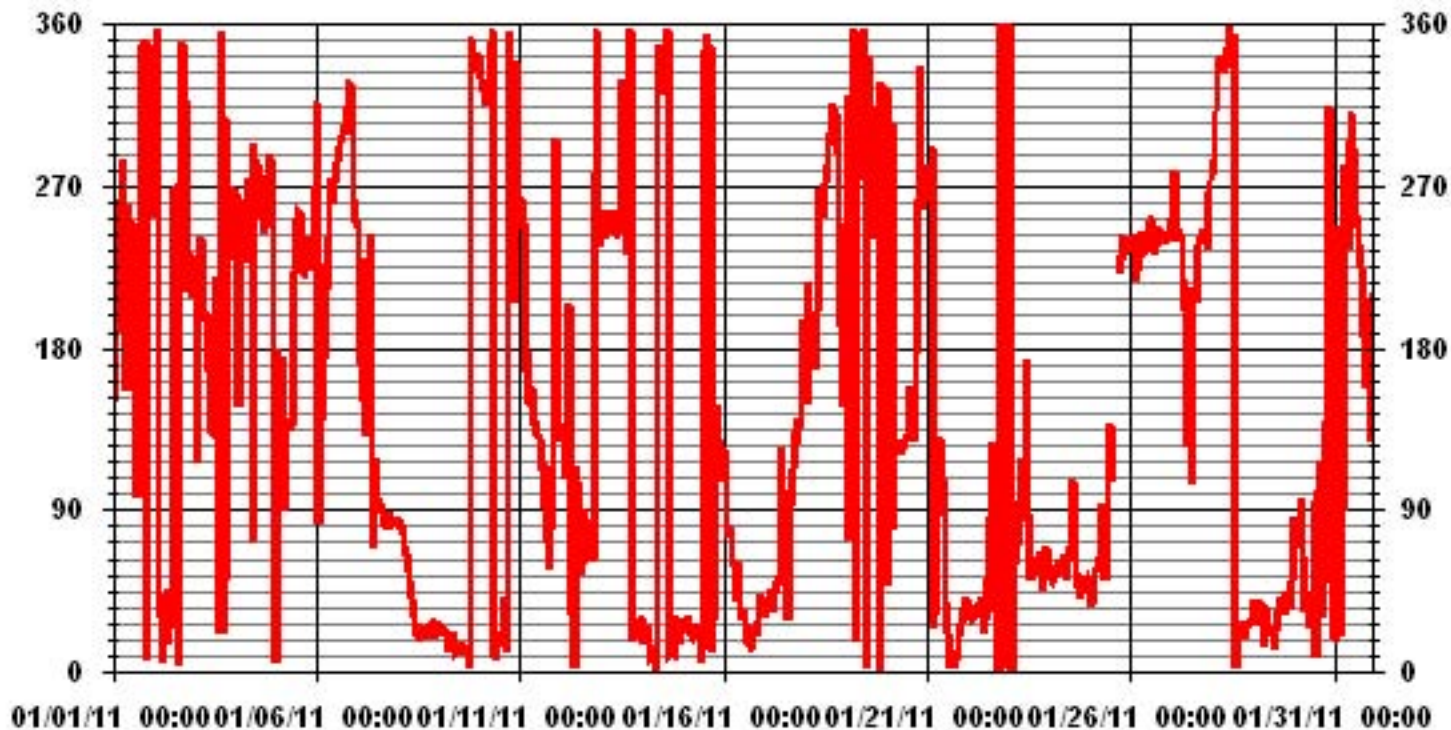
STATUS FLAG CODES

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 :	NA

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	689 HRS
STANDARD DEVIATION	114.13	AMD OPERATION UPTIME	92.6 %
		MONTHLY AVERAGE	18 DEG

01 Hour Averages



— LICA WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JANUARY 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	71	80	50	43	36	64	70	54	38	46	25	28	24	24	30	26	65	33	19	24	53	44	35	49	
2	23	23	21	21	21	25	21	23	18	24	23	33	61	35	37	18	18	59	32	48	51	57	54	51	
3	55	55	59	19	19	25	57	31	33	29	55	41	63	44	62	42	29	72	19	42	46	34	15	48	
4	52	54	74	18	20	40	33	38	52	69	60	53	24	51	20	50	23	46	27	15	15	45	62	28	
5	64	46	58	29	44	22	12	21	18	15	30	26	21	19	21	13	15	13	8	56	29	43	39	41	
6	41	67	51	48	56	49	22	20	20	16	18	19	20	18	16	16	14	14	14	16	13	25	17	13	
7	57	55	51	30	47	34	64	56	58	34	18	19	20	19	18	17	17	17	18	18	17	18	17	18	
8	18	19	18	19	19	18	16	14	17	18	19	18	18	19	18	19	19	18	18	19	19	20	19	20	
9	21	18	19	18	18	17	18	19	20	20	18	18	20	19	19	16	17	19	16	18	14	14	14	15	
10	16	12	11	12	11	12	14	18	19	17	18	19	18	19	20	19	24	26	52	43	47	12	30	51	
11	29	60	64	40	43	39	27	35	22	14	17	14	27	43	47	23	22	31	54	55	57	61	48	15	
12	15	18	43	51	46	42	61	38	47	38	26	22	22	21	22	19	19	19	26	24	49	54	36	50	
13	26	26	29	40	64	22	25	46	22	27	23	20	18	32	19	16	30	19	18	19	17	20	19	18	
14	21	18	17	18	18	18	18	20	19	18	20	21	18	22	19	23	17	19	17	18	19	20	18	19	
15	19	19	19	18	19	19	18	19	19	20	20	23	32	28	49	29	34	65	25	47	25	23	22	27	
16	25	31	31	27	36	27	24	23	25	18	19	20	18	20	18	18	18	20	16	17	19	18	18	18	
17	23	19	18	21	25	19	54	32	25	45	41	40	44	35	27	28	26	26	16	22	26	15	35	31	
18	41	53	88	57	32	49	61	47	26	32	19	17	17	18	17	15	13	11	12	19	38	45	42	38	
19	58	73	65	49	60	42	50	27	33	28	17	15	17	19	18	16	35	29	47	66	46	63	65	67	
20	69	52	64	52	59	36	19	16	16	19	18	15	14	14	22	20	31	20	32	54	29	55	18	20	
21	27	19	18	16	28	20	47	77	28	33	31	33	7	1	5	3	2	4	5	7	10	11	15	14	
22	16	11	13	13	14	14	15	14	14	9	10	17	24	20	12	10	10	1	2	0	0	0	0	1	
23	1	0	1	5	16	15	22	21	24	32	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	M	M	M	14	16	16	14	14	13	14
26	13	13	15	38	11	15	32	23	16	13	17	15	18	17	18	17	16	53	38	10	16	13	11	11	
27	8	10	32	13	15	20	45	59	43	41	62	20	34	38	34	34	29	14	12	17	15	17	18	19	
28	18	19	14	14	14	17	16	15	15	19	17	16	16	18	18	23	20	18	19	18	20	18	19	18	
29	18	19	18	18	17	19	18	20	20	20	20	20	23	24	34	26	19	19	18	19	19	18	18	22	
30	25	27	26	29	25	30	32	19	19	17	21	22	59	39	66	39	29	68	38	62	58	78	64	66	
31	72	79	72	58	63	57	54	54	48	51	28	35	30	39	31	24	23	29	39	47	49	79	64	46	

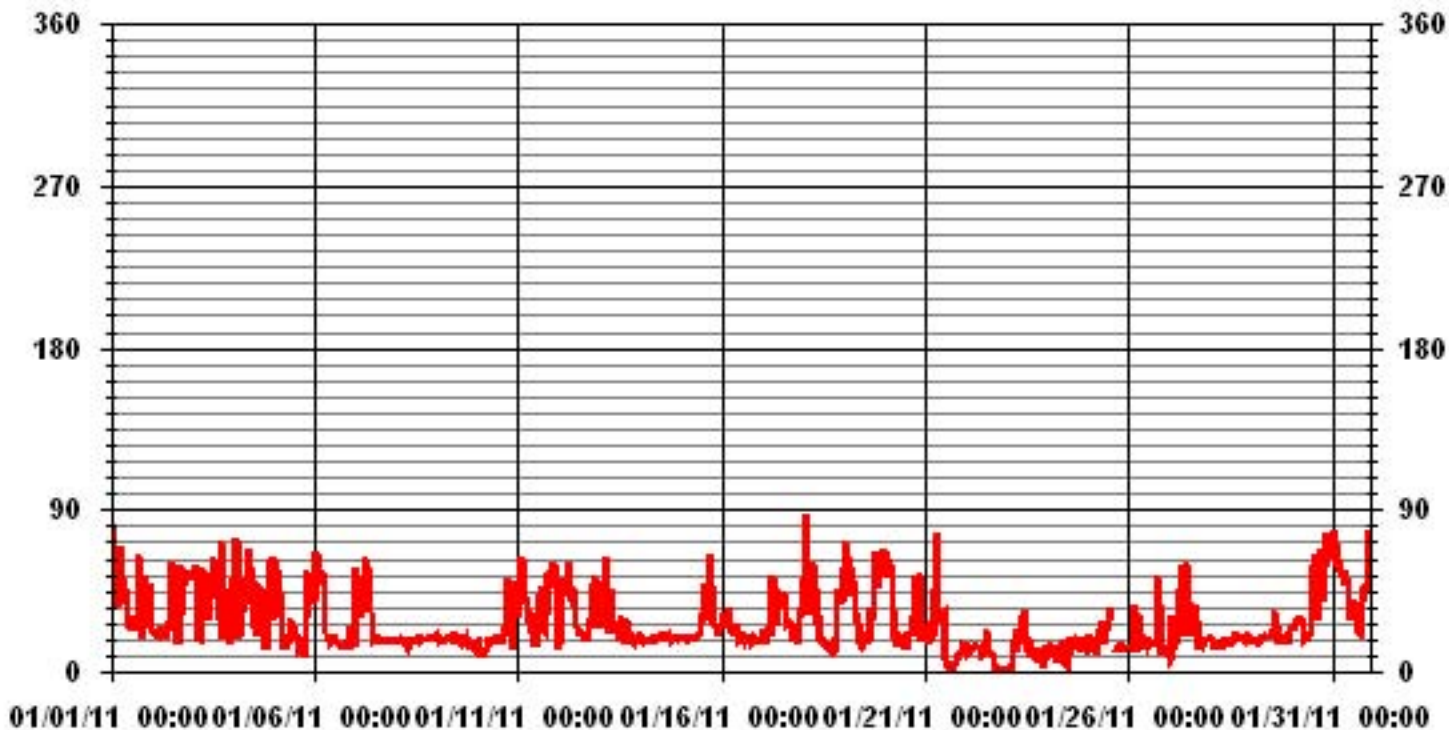
STATUS FLAG CODES

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: 741 HRS

01 Hour Averages



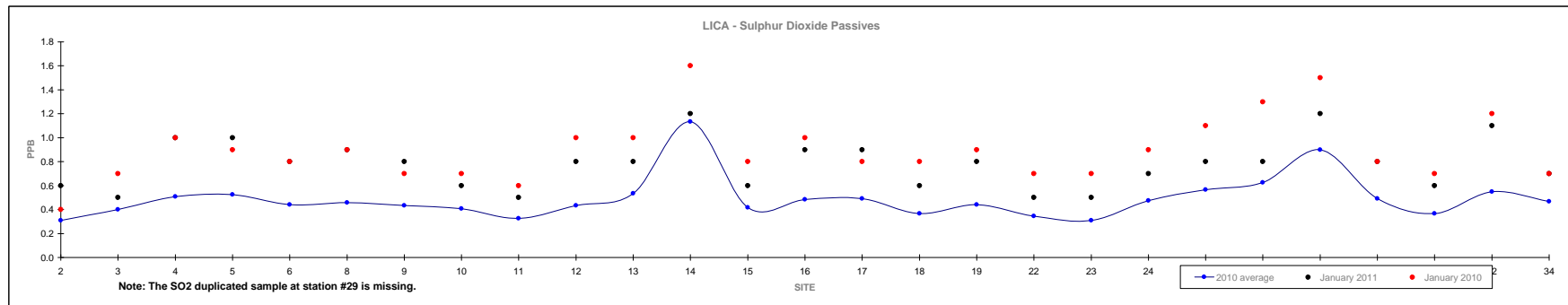
— LICA STDWDIR DEG

Non-Continuous Monitoring

Passive Summary Results for January 2011

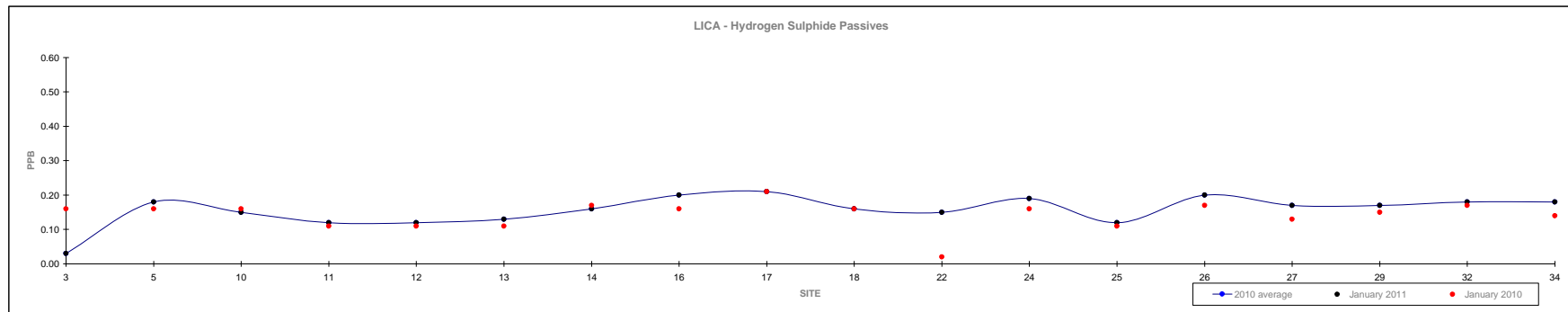
Lakeland Industry & Community Association

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



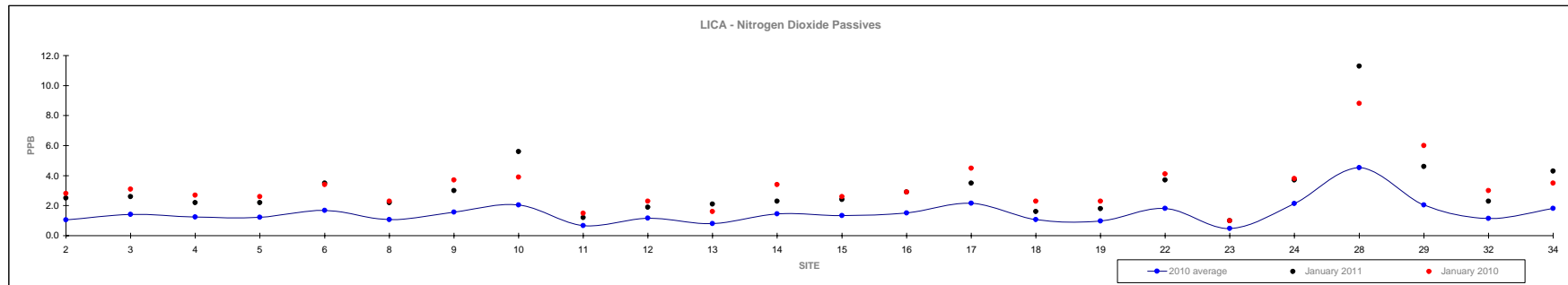
Passive Summary Results for January 2011 Lakeland Industry & Community Association

	Hydrogen Sulphide ppb																	January 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	0.16	-
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	0.03	#3
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	0.21	#17



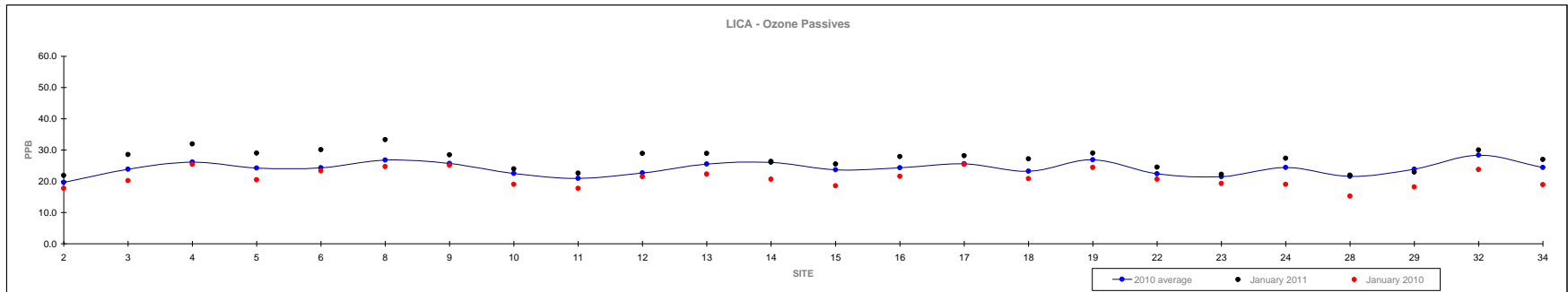
Passive Summary Results for January 2011 Lakeland Industry & Community Association

	Nitrogen Dioxide ppb																								January 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	3.1	-
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	1.0	#23
Maximum	2.8	3.5	3.1	2.8	3.4	2.8	3.7	3.9	1.5	2.8	1.7	3.4	2.6	3.2	4.5	2.3	2.3	4.4	1.1	4.5	9.6	6.0	3.0	4.6	11.3	#28



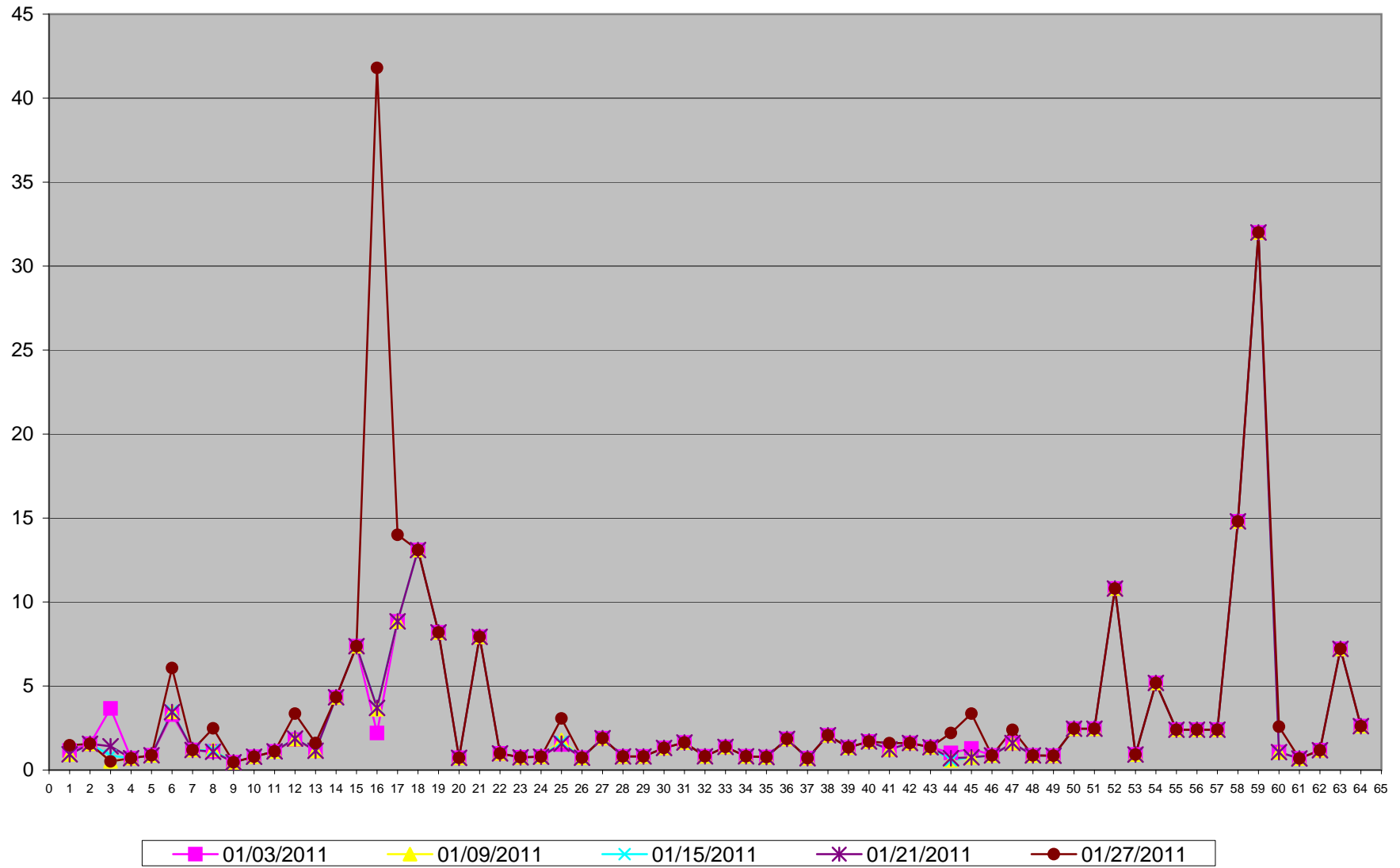
Passive Summary Results for January 2011 Lakeland Industry & Community Association

	Ozone ppb																												January 2011	
	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	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	27.0	-				
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	21.8	#2				
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	33.3	#8				



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)

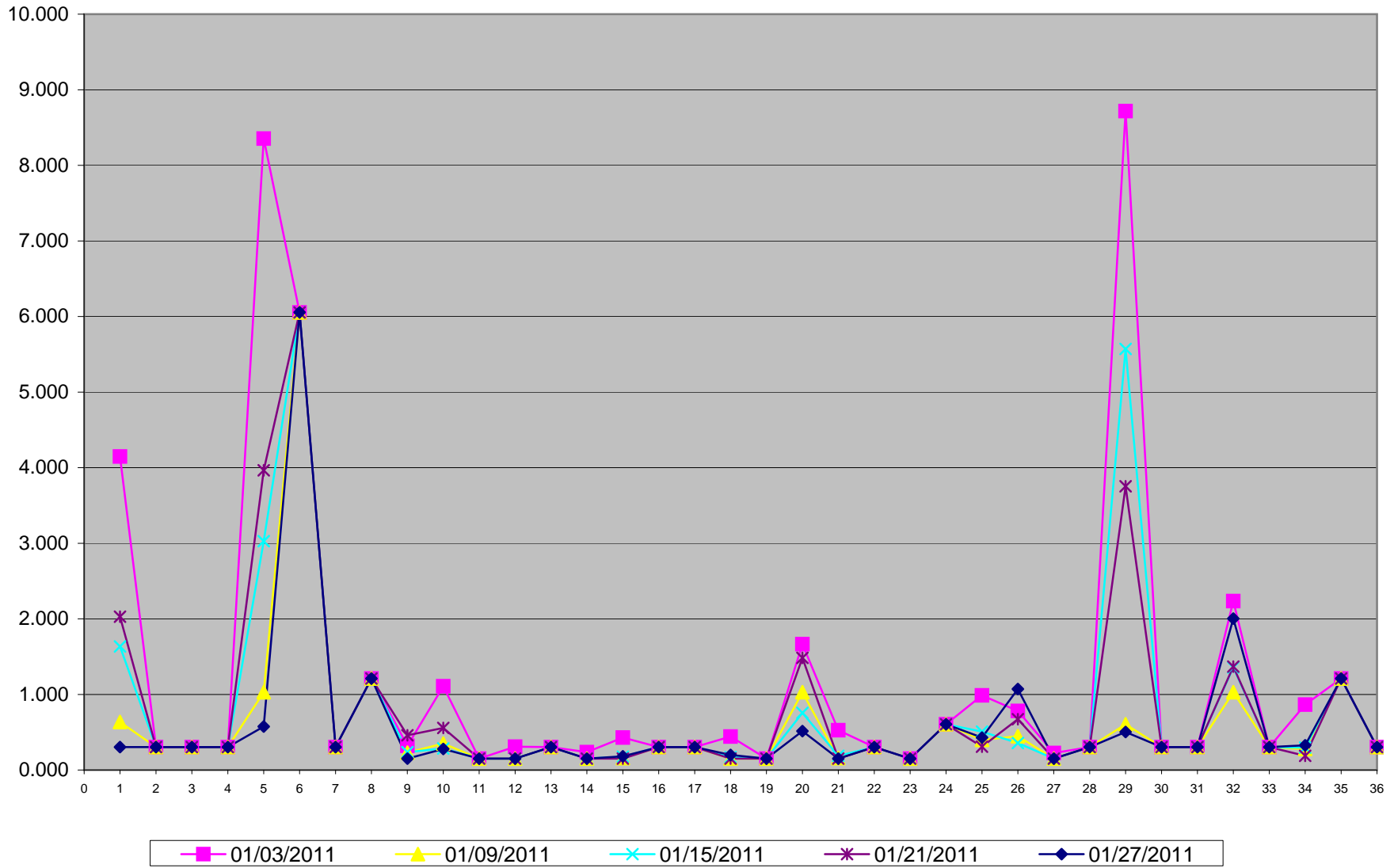
Polycyclic Aromatic Hydrocarbons

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

PAHs	01/03/2011	01/09/2011	01/15/2011	01/21/2011	01/27/2011
Sample Volume (unit: m3)	330.36	330.35	330.34	330.34	330.33
1 1-Methylnaphthalene	4.147	0.636	1.635	2.028	0.303
2 1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3 2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4 2-Methylantracene	0.303	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	8.355	1.029	3.027	3.966	0.575
6 3-Methylcholanthrene	6.054	6.054	6.054	6.054	6.055
7 7,12-Dimethylbenzo(a)anthracene	0.303	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	1.211	1.211	1.211	1.211	1.211
9 Acenaphthene	0.321	0.230	0.236	0.460	0.151
10 Acenaphthylene	1.108	0.351	0.285	0.557	0.279
11 Anthracene	0.151	0.151	0.151	0.151	0.151
12 Benzo(a)anthracene	0.309	0.151	0.151	0.151	0.151
13 Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303
14 Benzo(a)pyrene	0.236	0.151	0.151	0.151	0.151
15 Benzo(b)fluoranthene	0.430	0.157	0.176	0.151	0.182
16 Benzo(b)fluorene	0.303	0.303	0.303	0.303	0.303
17 Benzo(e)pyrene	0.303	0.303	0.303	0.303	0.303
18 Benzo(g,h,i)perylene	0.442	0.151	0.170	0.151	0.200
19 Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20 Biphenyl	1.665	1.029	0.757	1.483	0.515
21 Chrysene	0.527	0.157	0.188	0.151	0.151
22 Coronene	0.303	0.303	0.303	0.303	0.303
23 Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24 Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25 Fluoranthene	0.987	0.400	0.509	0.309	0.430
26 Fluorene	0.781	0.448	0.357	0.672	1.072
27 Indeno(1,2,3-cd)pyrene	0.224	0.151	0.151	0.151	0.151
28 m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29 Naphthalene	8.718	0.605	5.570	3.754	0.503
30 o-Terphenyl	0.303	0.303	0.303	0.303	0.303
31 Perylene	0.303	0.303	0.303	0.303	0.303
32 Phenanthrene	2.234	1.029	1.356	1.368	2.004
33 p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34 Pyrene	0.866	0.278	0.297	0.188	0.327
35 Quinoline	1.211	1.211	1.211	1.211	1.211
36 Tetralin	0.303	0.303	0.303	0.303	0.303

Note: - values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
- Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.

PAHs in ng/m3 Site: LICA - Cold Lake South



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

Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	January 14, 2011	Previous Calibration	December 3, 2010
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	12:10	End Time (MST)	15:44
Reason:	Monthly Calibration		
Barometric Pressure	1 atm	Station Temperature	22 Deg C
Cal Gas	51.4 ppm	Cal Gas Expiry date	5/8/2012
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	Thermon 43i	S/N :	806528242	Method:	UV absorbtion
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	EnviroNICS 6100	S/N :	4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Flow Meter:	EnviroNICS 6100	S/N :	4760		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb		
Sample Flow / Box Temp	455 ccm, 29 Deg C	456 ccm, 29.6 Deg C	
HVPS / Lamp Setting	-631, 752	-631, 753	
PMT / RxCell Temp	OK, 45.1 Deg C	OK, 45.1 Deg C	
Converter / IZS Temp	NA, 45.0 Deg C	NA, 45.0 Deg C	
Offset / Slope	5.4, 1.026	5.2, 0.999	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
4956	38.8	399	408	0.9786
4956	38.8	399	399	1.0007
4975	19.4	200	203	0.9835
4981	14.6	150	154	0.9755
4996	0	0	0	N/A
Sum of Least Squares				0.9950
New Correction Factor				1.0007

Before Calibration

After Calibration

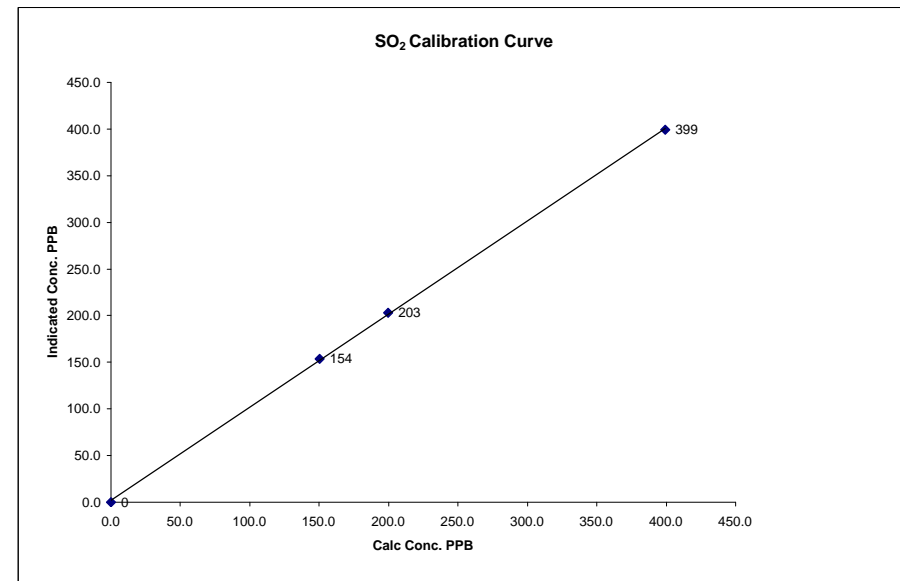
Auto Zero	0.4	0.4
Auto Span	367	354
Sample Lines Connected	YES	
Percent Change from Previous Calibration	1.7%	

Calibration Performed by: Ting Xyu

SO₂ Calibration Curve

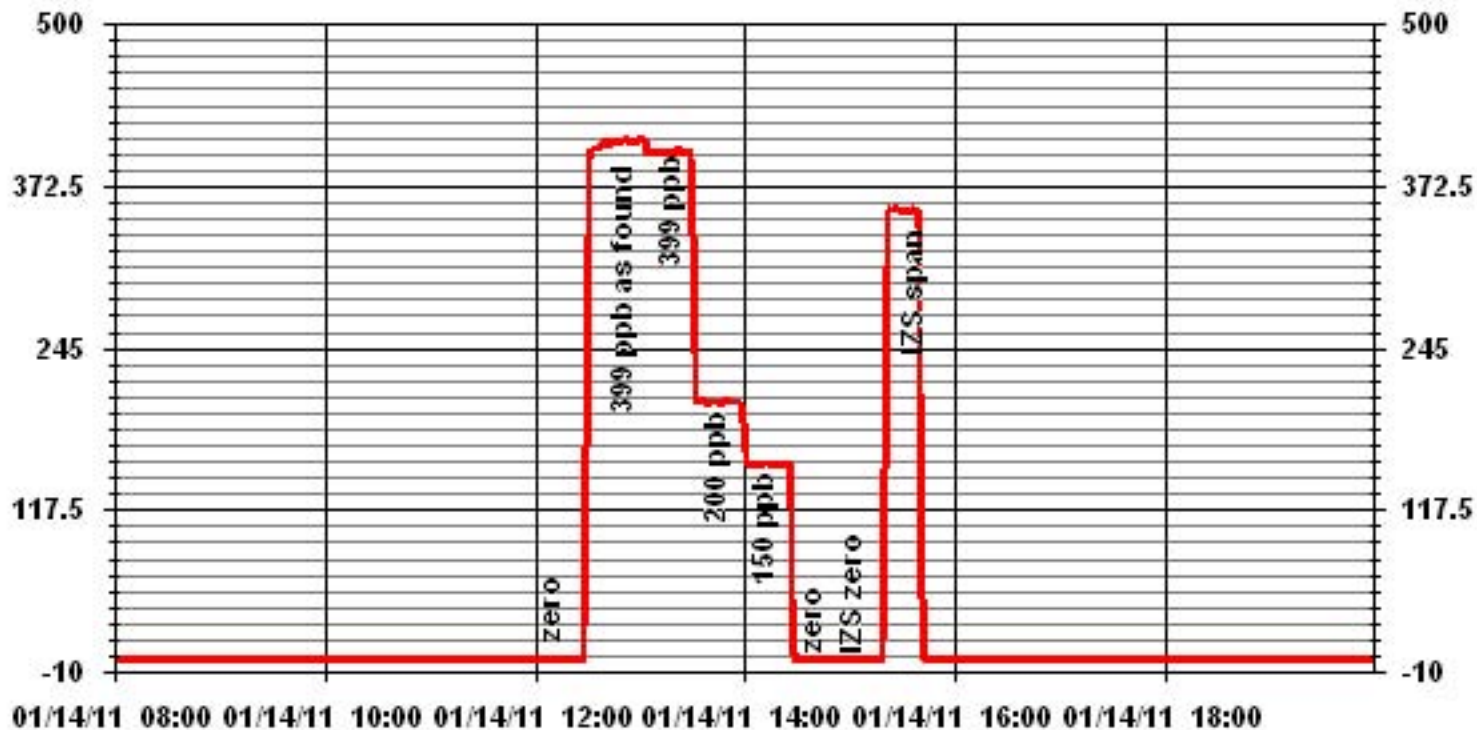
Calibration Date	January 14, 2011
Company	Lakeland Community and Industry Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	12:10
End Time (MST)	15:44

Calculated Conc. (ppb)	Indicated Response (ppb)	Correction Factor	Correlation Coefficient (Slope)	(≥ 0.995)	0.999833
0	0	n/a	Intercept	(0.85 to 1.15)	0.998063
150	154	0.9755		(± 3% F.S.)	2.074014
200	203	0.9835			
399	399	1.0007			



Notes:

01 Minute Averages



— LICA SO2_ PPB

Total Reduced Sulphur

**TRS Calibration Report
Station Information**

Calibration Date	January 13, 2011	Previous Calibration	December 2, 2010
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	11:46	End Time (MST)	17:10
Reason:	As Found		
Barometric Pressure	0.936 atm	Station Temperature	23 Deg C
Cal Gas	10.6 ppm	Cal Gas Expiry date	May 12, 2011
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyser 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		

Analyser Settings

	Before Calibration		After Calibration	
Concentration Range		0 - 100 ppb		
Sample Flow / Box Temp	359 ccm	30.8 Deg C	358 ccm	32.3 Deg C
HVPS / Lamp Setting	-622.7	757	-622.7	758
PMT / RxCell Temp	OK Deg C	45.0 Deg C	OK Deg C	44.9 Deg C
Converter / IZS Temp	852 Deg C	45.0 Deg C	850 Deg C	45.0 Deg C
Offset / Slope	11.2	1.171	11.2	1.171

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4999	0	0	0	N/A
4962	37.7	80	79	1.0118
Sum of Least Squares				1.0118
New Correction Factor				1.0118

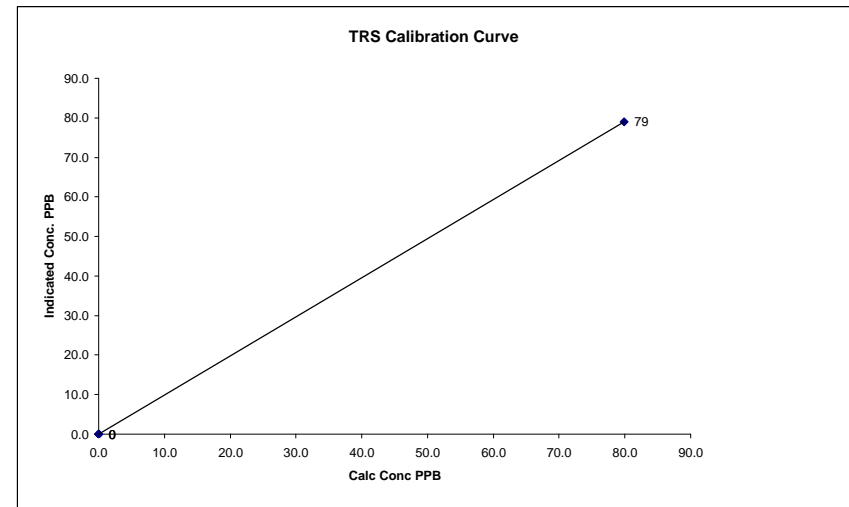
	Before Calibration	After Calibration
Auto Zero	0.2	0.3
Auto Span	32	34
Sample Lines Connected		YES
Percent Change from Previous Calibration		-1.3%

Calibration Performed by: Ting Xu / Shea Beaton

TRS Calibration Curve

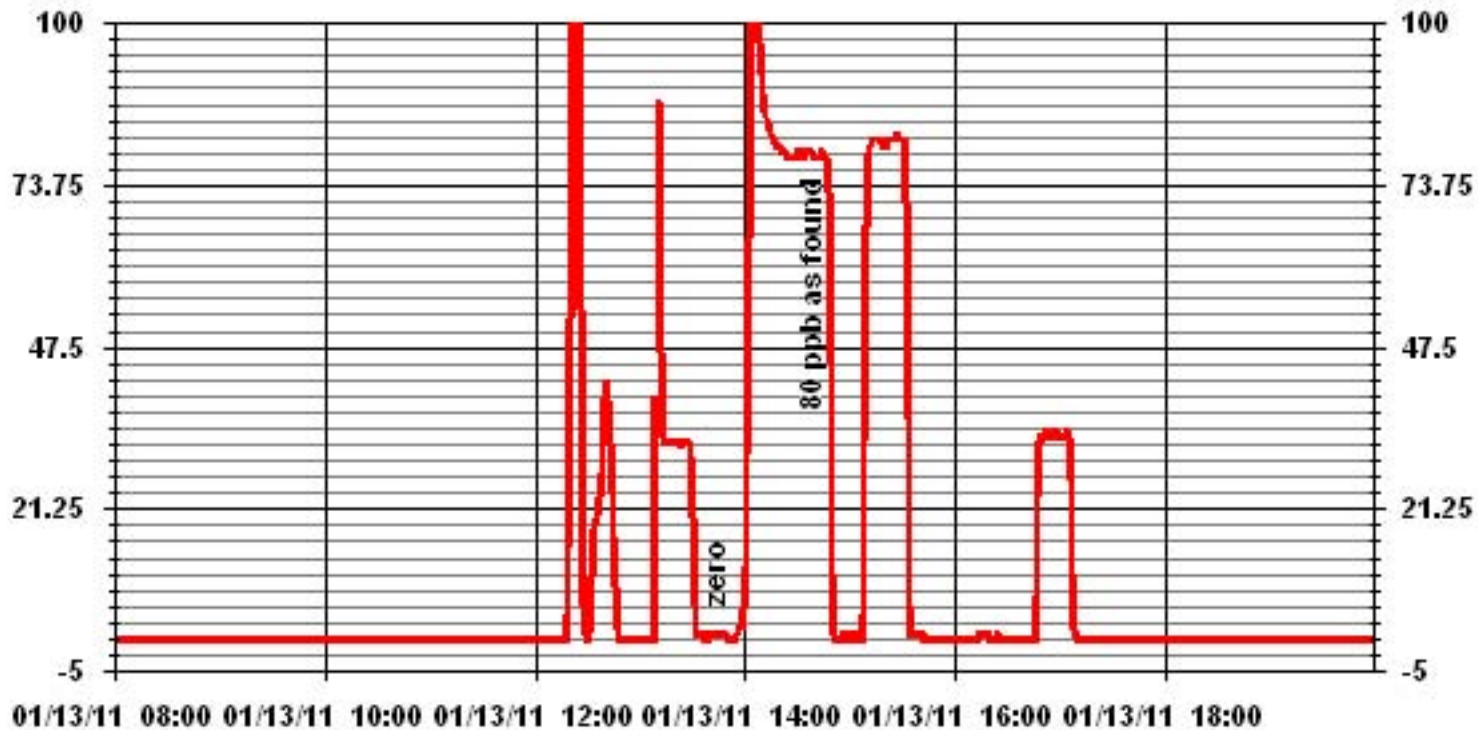
Calibration Date	January 13, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	11:46
End Time (MST)	17:10

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
0	0	n/a	Slope (0.85 to 1.15)	1.000000
0	0	#DIV/0!	Intercept (± 3% F.S.)	0.988380
0	0	#DIV/0!		0.000000
80	79	1.0118		



Notes:

01 Minute Averages



— LICA TRS_ PPB

**TRS Calibration Report
Station Information**

Calibration Date	January 14, 2011	Previous Calibration	January 13, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:25	End Time (MST)	11:42
Reason:	Post Repair Calibration		
Barometric Pressure	704 atm	Station Temperature	23 Deg C
Cal Gas	10.6 ppm	Cal Gas Expiry date	May 12, 2011
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	361 ccm, 30.3 Deg C	362 ccm, 30.6 Deg C	
HVPS / Lamp Setting	-622.3, 758	-622.3, 758	
PMT / RxCell Temp	OK Deg C, 45.0 Deg C	OK Deg C, 45.0 Deg C	
Converter / IZS Temp	850 Deg C, 45.0 Deg C	850 Deg C, 45.0 Deg C	
Offset / Slope	11.2, 1.171	11.3, 1.189	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
4960	37.7	80	79	1.0122
4960	37.7	80	80	0.9995
4982	18.8	40	40	0.9962
4986	10.9	23	23	1.0053
4997	0	0	0	N/A
Sum of Least Squares				0.9993
New Correction Factor				0.9995

Before Calibration

After Calibration

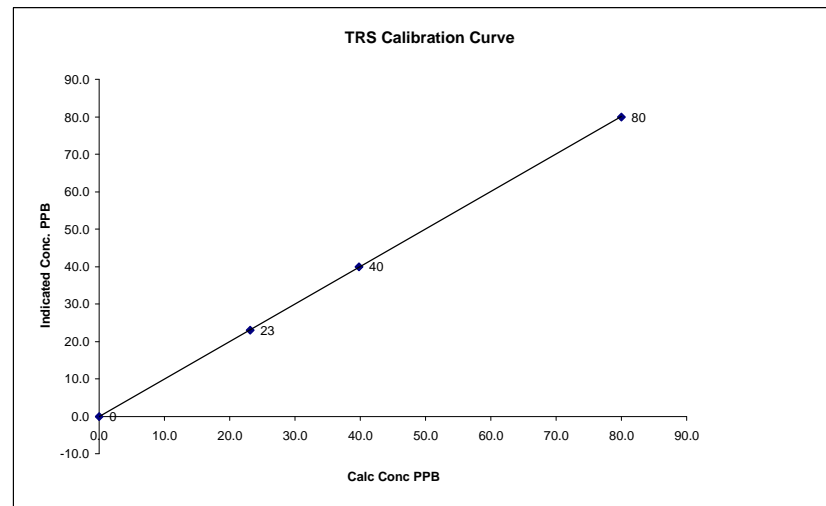
Auto Zero	0.3	0.3
Auto Span	33	34
Sample Lines Connected		YES
Percent Change from Previous Calibration		-

Calibration Performed by: Shea Beaton

TRS Calibration Curve

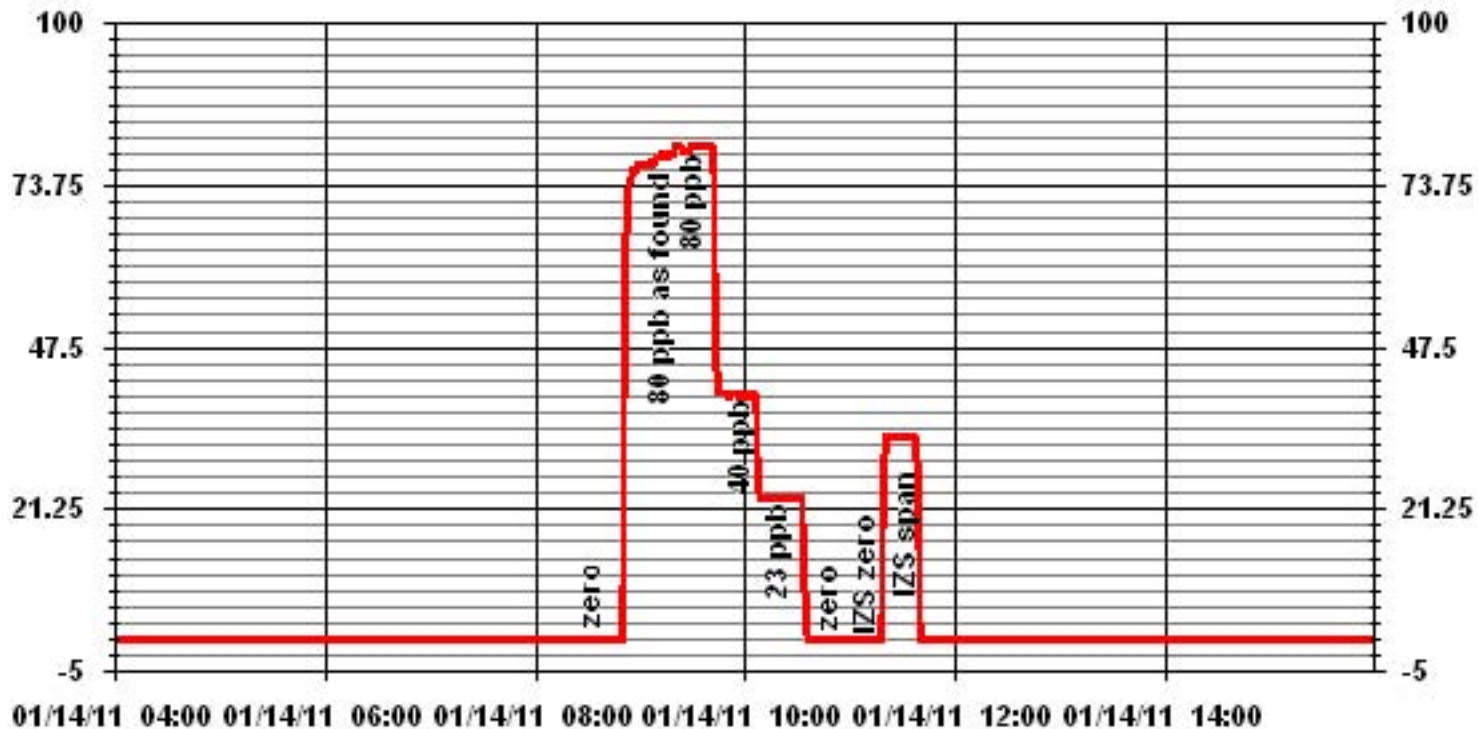
Calibration Date	January 14, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	8:25
End Time (MST)	11:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999990
0	0	n/a	Slope	(0.85 to 1.15)	1.001143
23	23	1.0053	Intercept	(± 3% F.S.)	-0.024027
40	40	0.9962			
80	80	0.9995			



Notes:

01 Minute Averages



TRS Calibration Report
Station Information

Calibration Date	January 18, 2011	Previous Calibration	January 14, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:42	End Time (MST)	13:07
Reason:	Post Repair Calibration		
Barometric Pressure	0.934 atm	Station Temperature	21 Deg C
Cal Gas	10.6 ppm	Cal Gas Expiry date	May 12, 2011
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	355			0 - 100	ppb		
Sample Flow / Box Temp	355 ccm	31.1 Deg C		355 ccm	30.6 Deg C		
HVPS / Lamp Setting	-622.7	756		-622.7	758		
PMT / RxCell Temp	OK Deg C	45.1 Deg C		OK Deg C	45.0 Deg C		
Converter / IZS Temp	850 Deg C	45.0 Deg C		850 Deg C	45.0 Deg C		
Offset / Slope	11.5	1.189		12	1.242		

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	0	N/A
4962	37.7	80	76	1.0517
4962	37.7	80	80	0.9991
4982	18.8	40	40	0.9962
4988	10.9	23	23	1.0049
4997	0	0	0	N/A
Sum of Least Squares				0.9989
New Correction Factor				0.9991

Before Calibration

After Calibration

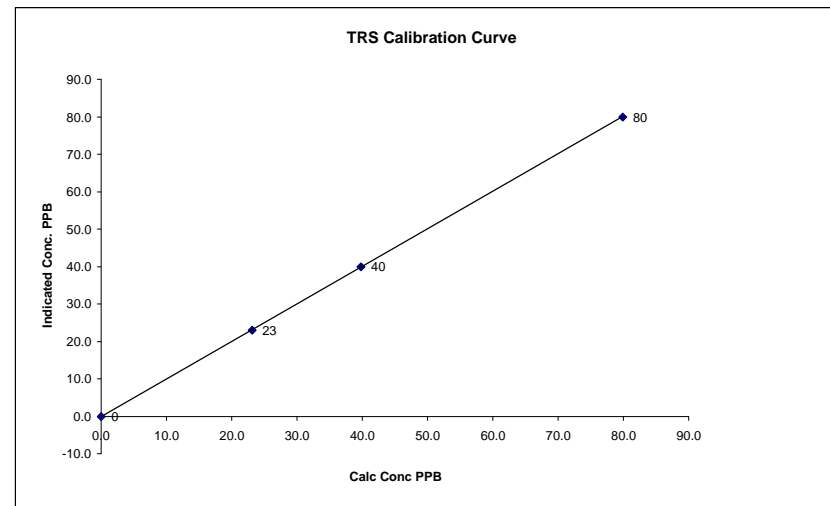
Auto Zero	0.3	0.4
Auto Span	34	36
Sample Lines Connected		YES
Percent Change from Previous Calibration		-

Calibration Performed by: Ting Xu

TRS Calibration Curve

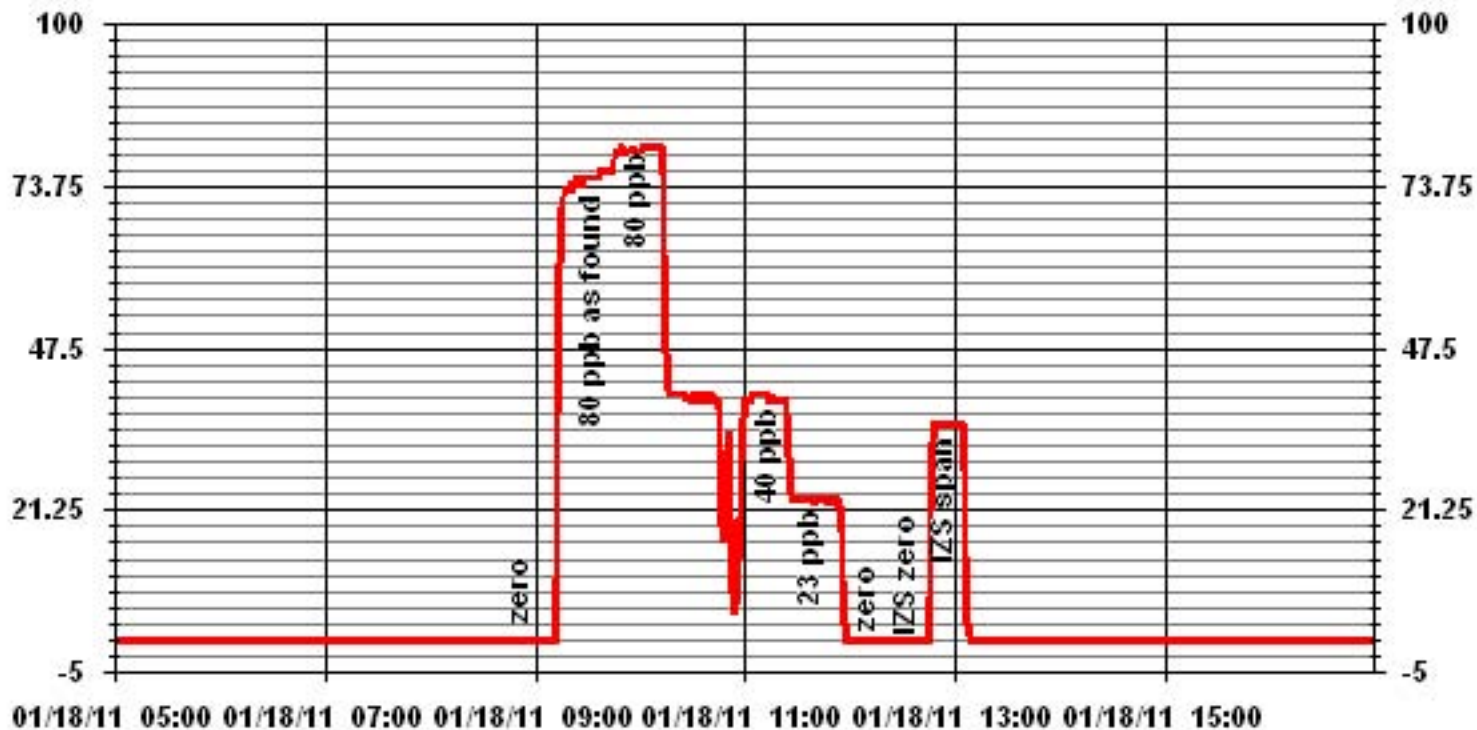
Calibration Date	January 18, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	8:42
End Time (MST)	13:07

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	Slope	Intercept	(≥ 0.995)	(0.85 to 1.15)
0	0	n/a	0.999991				1.001525
23	23	1.0049					(± 3% F.S.) -0.027349
40	40	0.9962					
80	80	0.9991					



Notes: After the second span point was finished, a pressure warning was appeared. Fixed the connection, and re-did the second point.

01 Minute Averages



— LICA TRS_ PPB

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date: January 13, 2011 Previous Calibration: December 2, 2010	
Company: Lakeland Industry and Community Association	
Plant / Location: LICA1/Cold Lake	
Start Time (MST): 8:55	End Time (MST): -
Reason: As Found	
Barometric Pressure: 0.948 atm	Station Temperature: 23 Deg C
Calibrator: API 700	S/N: 831
Cal Gas Concentration: 207Prop/602Meth ppm	Cal Gas Expiry Date: 8/21/2011
DAS make & Model: ESC 8832	S/N: 3485
Output Voltage Range: 0 - 10 VDC	

Analyzer Information

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

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

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0	0.0	0.0	N/A
2000	70	39.6	40.2	0.9853
Correction Factor:			0.0000	

Percent Change

Previous Calibration Correction Factor:	0.9952
Current Correction Factor Before Span Adjust:	0.9853
Percent Change:	1.0%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	-
Auto Span	37.4	-
Sample Lines Connected		YES

Cylinder Pressures

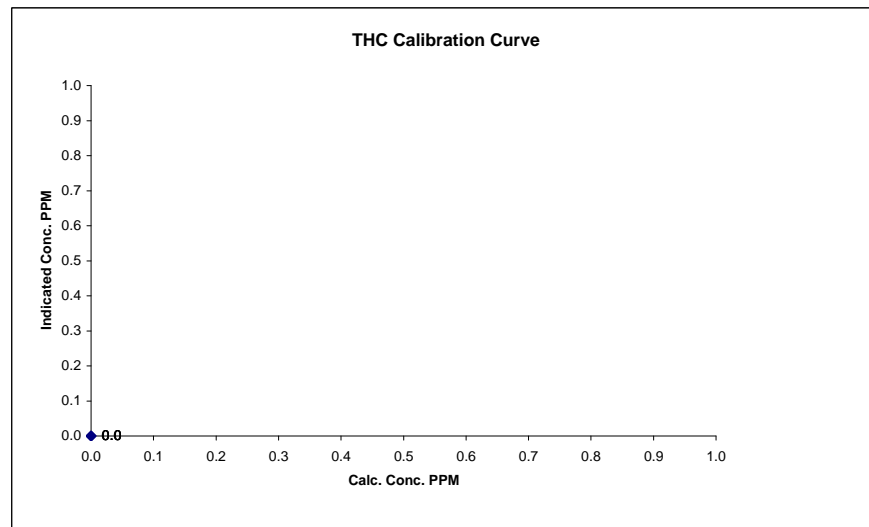
Span	900 psi
Hydrogen	1200 psi
Zero Air	32 psi Maxxam-owned API 701 zero air supply with catalytic oxidizer

Calibration Performed by: Ting Xu

THC Calibration Curve

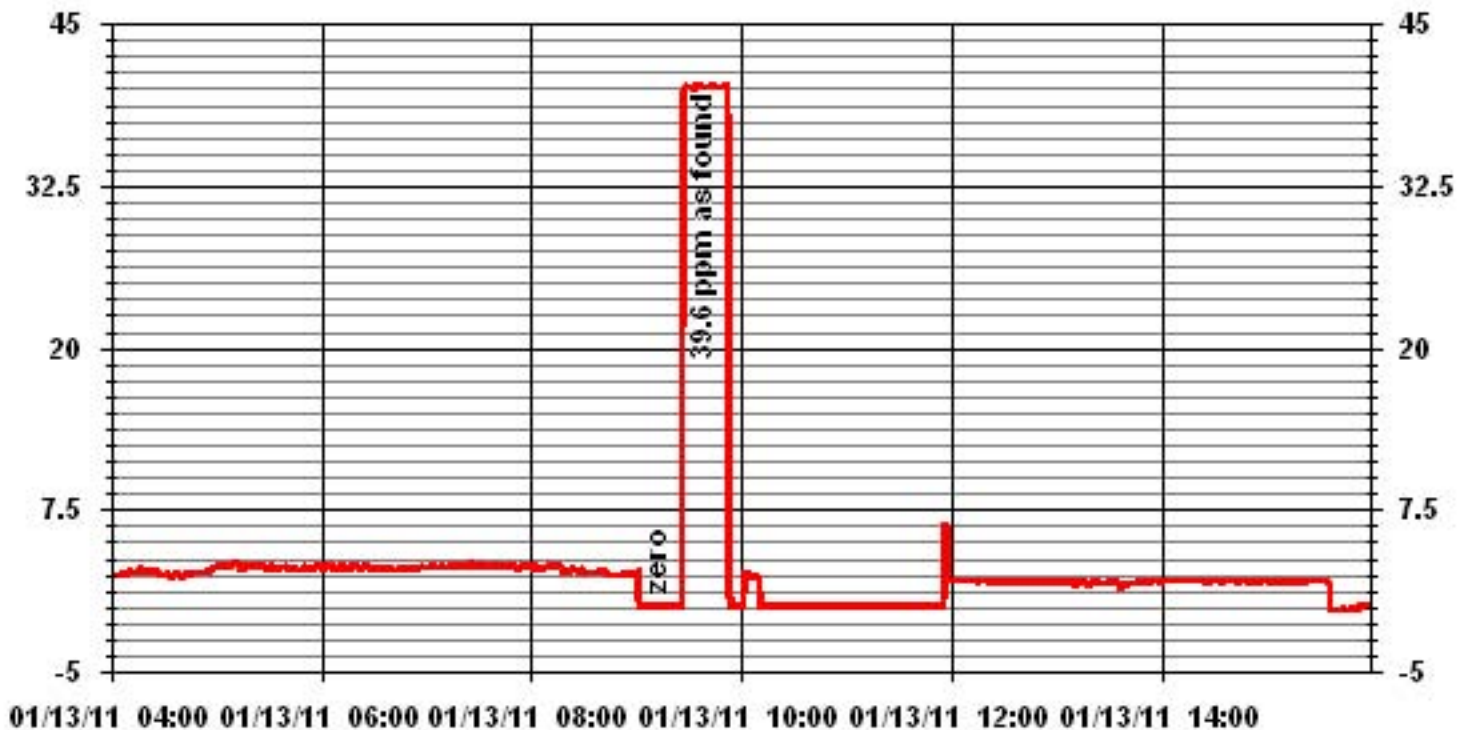
Calibration Date	January 13, 2011		
Company	Lakeland Industry and Community Association		
Plant / Location	LICA1/Cold Lake		
Start Time (MST)	8:55	End Time (MST)	-

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



Notes:

01 Minute Averages



THC Calibration Report

Station Information

Calibration Date:	January 14, 2011	Previous Calibration	January 13, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	12:10	End Time (MST)	15:37
Reason:	Monthly Calibration		
Barometric Pressure:	0.935 atm	Station Temperature:	23 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	207Prop/602Meth	ppm	Cal Gas Expiry Date: 8/21/2011
DAS make & Model:	ESC 8832	S/N :	3485
Output Voltage Range:	0 - 10 VDC		

Analyzer Information

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

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

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0	0.0	0.1	N/A
1998	0	0.0	0.0	N/A
1999	70	39.6	41.0	0.9665
1999	70	39.6	39.9	0.9931
2000	35	20.1	19.9	1.0123
2000	20	11.6	11.3	1.0262
2000	0	0.0	0.0	N/A
			Correction Factor:	0.9931

Percent Change

Previous Calibration Correction Factor:	-
Current Correction Factor Before Span Adjust:	0.9665
Percent Change:	-

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	38.0	37.3
Sample Lines Connected		YES

Cylinder Pressures

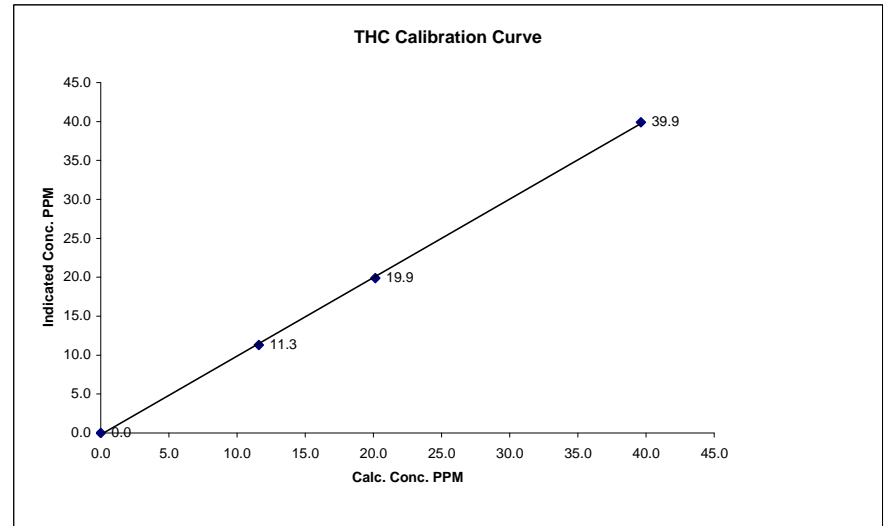
Span	1200 psi
Hydrogen	900 psi
Zero Air	32 psi Maxxam-owned API 701 zero air supply with catalytic oxidizer

Calibration Performed by: Ting Xu

THC Calibration Curve

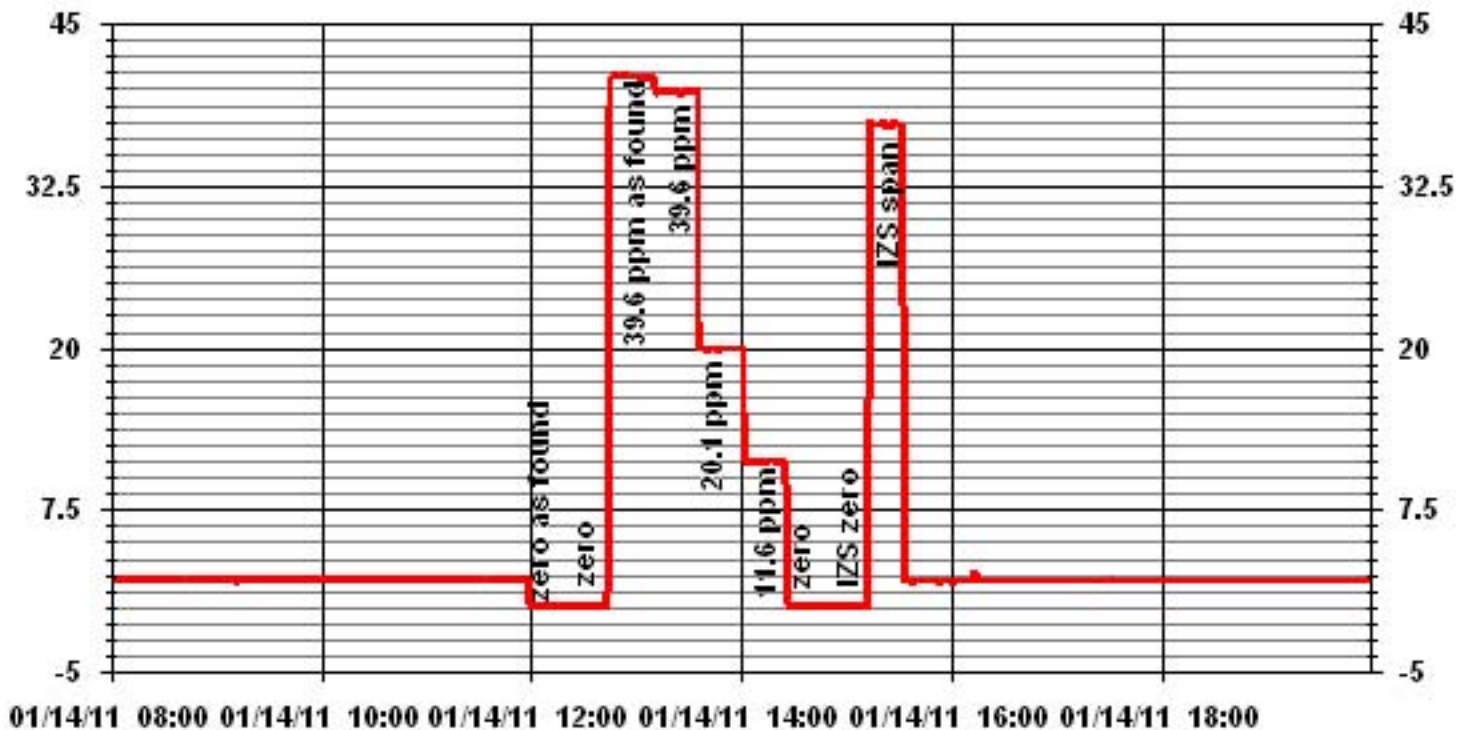
Calibration Date	January 14, 2011
Company	Lakeland Industry and Community Association
Plant / Location	LICA1/Cold Lake
Start Time (MST)	12:10
End Time (MST)	15:37

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999834
0.0	0.0		Intercept	(0.85 to 1.15)	1.008653
11.6	11.3	1.0262		(± 3% F.S.)	-0.221269
20.1	19.9	1.0123			
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:	January 13, 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 (%)	34.8%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-25.0
		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	0.011	Warnings	None
Pump Vacuum <0.40atm	0.37		
Temperature/Pressure			
Measured Temp (± 2 °C)	-24.8	D °C	-0.2
Measured Press (± 0.01atm)	0.949	D ATM	0.001
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	1.76%
Measured Main Flow (l/min)	2.97	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	3.92%
Measured Bypass Flow (l/min)	13.73	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: 9:35 **Finish Time:** 11:00

Sample Inlet Cleaned: Yes **New Filters Installed:** YES
New Filter Loading %: 21.4%

Comments:

Auditor/s: Shea Beaton / Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	January 13, 2011	Previous Calibration	December 2, 2010
Company	LICA	Plant/Location	LICA 1 - Cold Lake South
Start Time (MST)	8:31	End Time (MST)	14:14
Reason:	Monthly Calibration		Other
Barometric Pressure	0.948 atm	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 50.8 ppm	NO 50.4 ppm	Cal Gas Expiry date 05-Aug-12
DAS Output Voltage	0 - 10	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	720	ccm	317	Deg C	714	ccm	317.0
Ozone Flow / Vacuum	OK	ccm	181.6	"Hg-A	OK	ccm	180.2
HVPS / A ZERO	-821	Volts	NA	MV	-821	Volts	NA
Rx/ Temp / PMT Temp	49.9	Deg C	-2.5	Deg C	49.9	Deg C	-2.5
Box Temp / IZS Temp	26.4	Deg C	OK	Deg C	26.2	Deg C	OK
Offset	3.9	NOx	3.6	NO	3.7	NOx	3.4
Slope	1.006	NOx	0.922	NO	1.008	NOx	0.888
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	----	----
4956	39.6	----	403	400	----	417	415	2	0.9657	0.9627
4956	39.6	----	403	400	----	403	400	3	0.9992	0.9988
4975	19.8	----	201	200	----	204	203	1	0.9871	0.9842
4984	9.9	----	101	100	----	106	105	1	0.9501	0.9516
4996	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		
4957	39.6	----	403	399	----	402	399	3	----	----
4956	39.6	350	403	----	339	401	63	338	1.0089	99.70%
4956	39.6	150	403	----	149	402	253	149	1.0136	100.00%
4956	39.6	75	403	----	76	401	326	75	1.0411	98.63%

Linearity	Sum of Least Squares		NOx= 0.994	NO= 0.994	NO2= 1.003
OK?	Yes	No	Correction Factors: NOx= 0.9992	NO= 0.9988	NO2= 1.0089
			Average Converter Efficiency= 99.44%		

Before Calibration				After Calibration			
Auto Zero	0.1	NOx	0.1	NO2	0.1	NOx	0.1
Auto Span	419	NOx	417	NO2	401	NOx	399
Sample Lines Connected				YES			
Percent Change from Previous Calibration		NOx	3.5%	NO	3.8%	NO2	0.0%

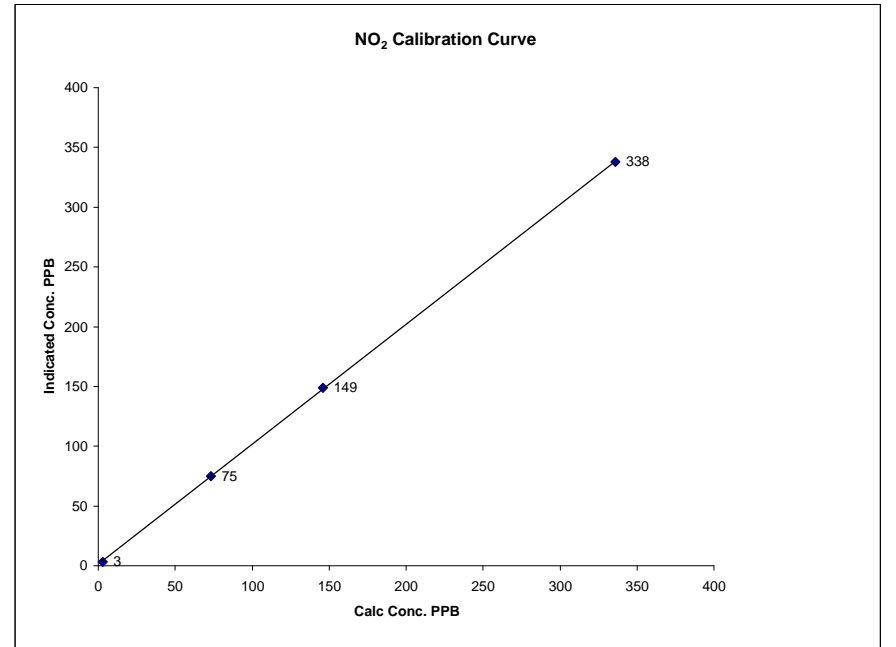
Notes: When did first point of GPT, wrong concentration was input causing the reading high. Corrected the issue and re-did the point.

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	January 13, 2011	LICA	
Company	LICA 1 - Cold Lake South		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:31	End Time (MST)	14:14

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	Slope (0.85 to 1.15)	Intercept (± 3% F.S.)
3	3	N/A	0.999944	1.004529	1.11816
73	75	0.9733			
146	149	0.9799			
336	338	0.9941			

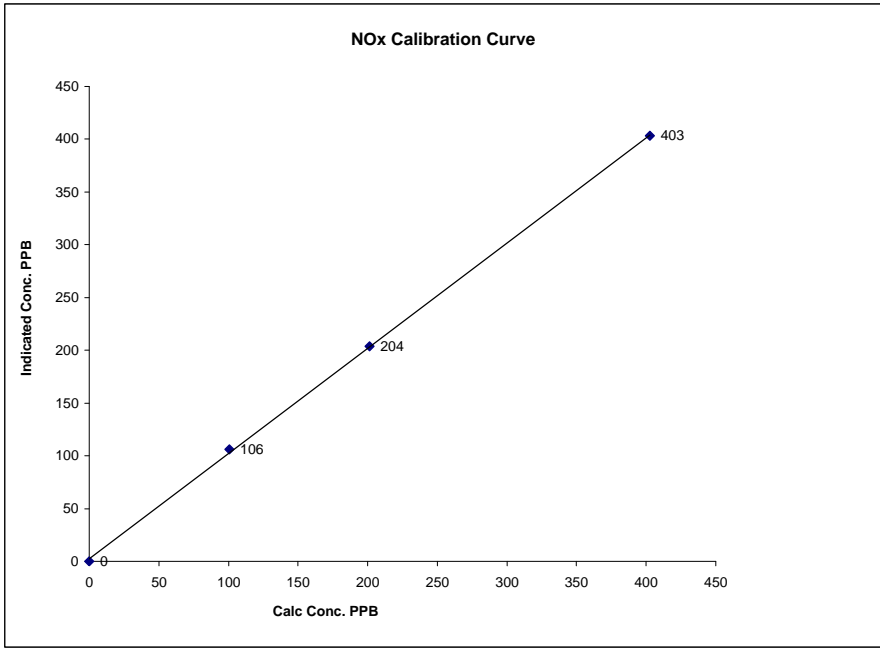


Notes:

NOx Calibration Curve

Calibration Date January 13, 2011
 Company LICA
 Plant / Location LICA 1 - Cold Lake South
 Start Time (MST) 8:31 End Time (MST) 14:14

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999804
0	0	N/A	Slope	(0.85 to 1.15)	0.997030
101	106	0.9501	Intercept	(± 3% F.S.)	2.57966
201	204	0.9871			
403	403	0.9992			

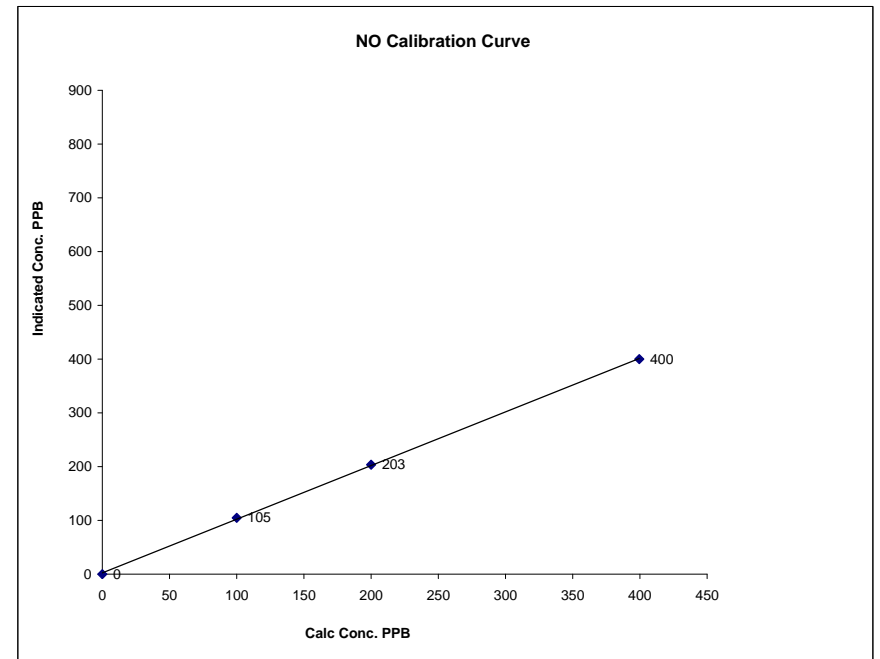


Notes:

NO Calibration Curve

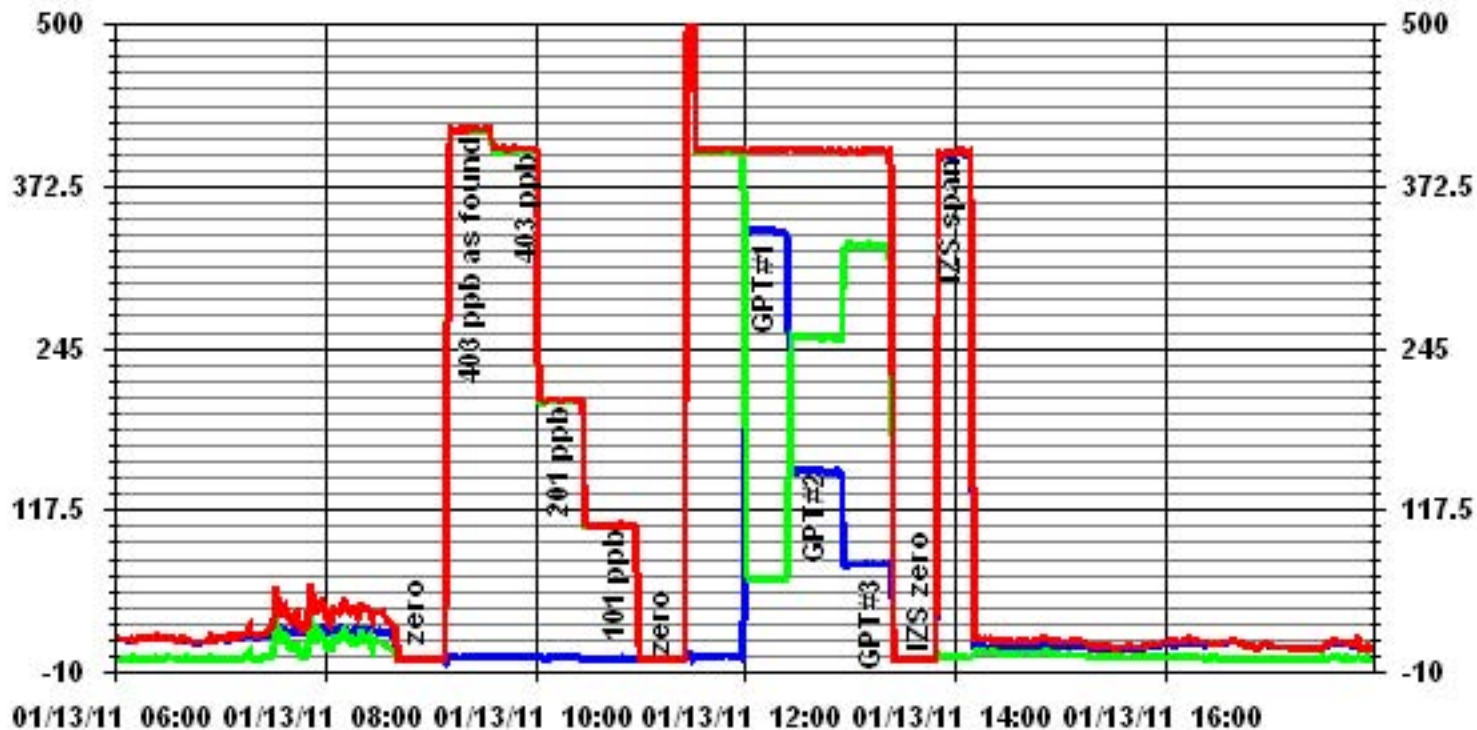
Calibration Date January 13, 2011
 Company LICA
 Plant / Location LICA 1 - Cold Lake South
 Start Time (MST) 8:31 End Time (MST) 14:14

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient	(≥ 0.995)	0.999808
0	0	N/A	Slope	(0.85 to 1.15)	0.984872
100	105	0.9516	Intercept	(± 3% F.S.)	5.9369
200	203	0.9842			
400	400	0.9988			



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	January 13, 2011	Previous Calibration	December 3, 2010
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	13:29	End Time (MST)	16:49
Reason:	Monthly Calibration		
Barometric Pressure	0.947 atm	Station Temperature	23 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	TEI 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	731 ccm	745 ccm	748 ccm	763 ccm
Pressure	693 mmHg		720 mmHg	
Bench Lamp Temp	53.5 Deg C		53.5 Deg C	
O ₃ Lamp/Box Temp	67.6 Deg C	27.6 Deg C	67.5 Deg C	27.3 Deg C
Offset / Slope	0.7	0.996	0.7	0.996

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
4996	350	336	337	0.9970
4996	150	146	146	1.0000
4996	75	72	72	1.0000
4996	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.9970

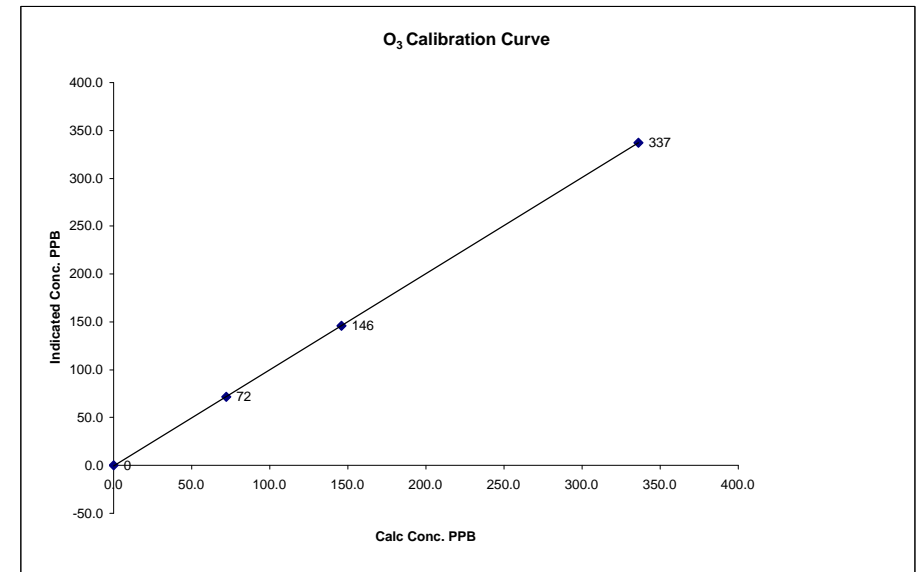
	Before Calibration	After Calibration
Auto Zero	0	-0.007
Auto Span	317	323
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.6%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

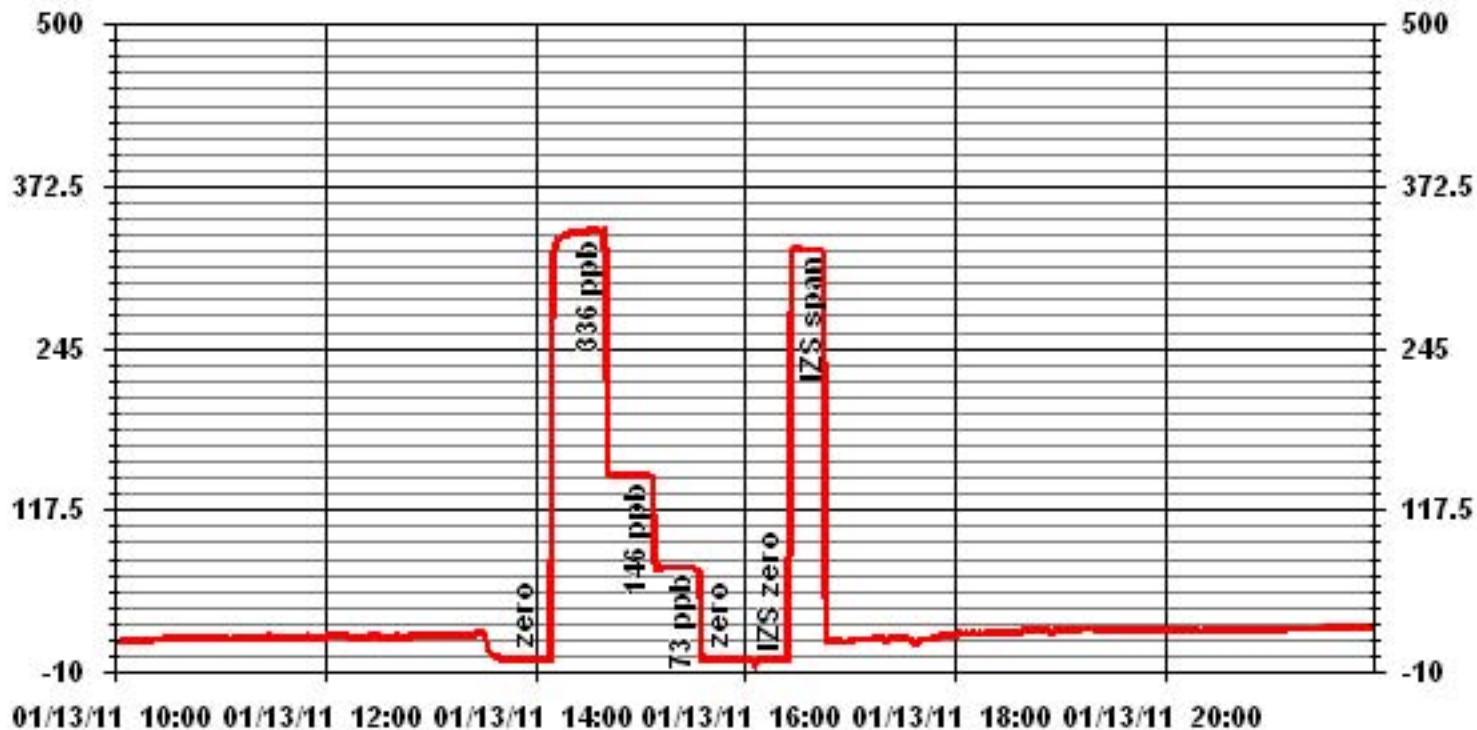
Calibration Date	January 13, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	13:29
End Time (MST)	16:49

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999998
0	0	n/a	Intercept	(± 3% F.S.)	-0.186494
72	72	1.0000			
146	146	1.0000			
336	337	0.9970			



Notes:

01 Minute Averages



O₃ Calibration Report

Station Information

Calibration Date	January 23, 2011	Previous Calibration	January 13, 2010
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	15:16	End Time (MST)	19:04
Reason:	Installation Calibration		
Barometric Pressure	0.929 atm	Station Temperature	23 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	API 400A	S/N :	446	Method:	Fluorescent
Calibrator Make / Model:	EnviroNics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	3485		

Analyzer Settings

	Before Calibration			After Calibration		
Concentration Range	0 - 500 ppb					
Cell A Flow/ Cell B Flow	796 ccm	NA ccm	802 ccm	NA ccm	NA ccm	
Pressure	NA mmHg	mmHg	NA mmHg	mmHg		
Bench Lamp Temp	52 Deg C	Deg C	52 Deg C	Deg C		
O ₃ Lamp/Box Temp	48.2 Deg C	28.8 Deg C	48.1 Deg C	27.2 Deg C		
Offset / Slope	0.7	0.996	-5.3	0.961		

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	2	NA
4996	0	0	0	N/A
4996	350	336	335	1.0030
4996	150	146	146	1.0000
4996	75	73	73	1.0000
4996	0	0	1	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0030

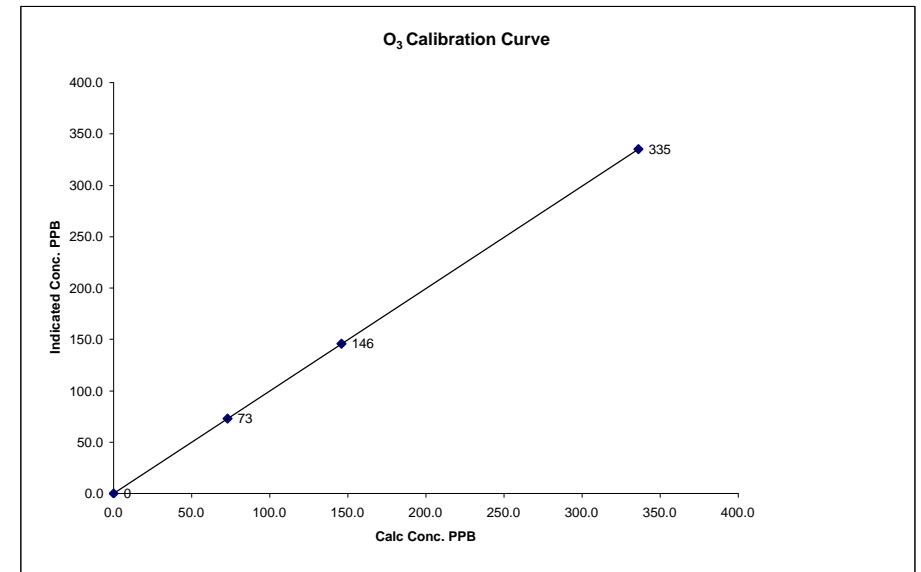
	Before Calibration	After Calibration
Auto Zero	-	0.5
Auto Span	-	152
Sample Lines Connected		YES
Percent Change from Previous Calibration		-

Calibration Performed by: Ting Xu

O₃ Calibration Curve

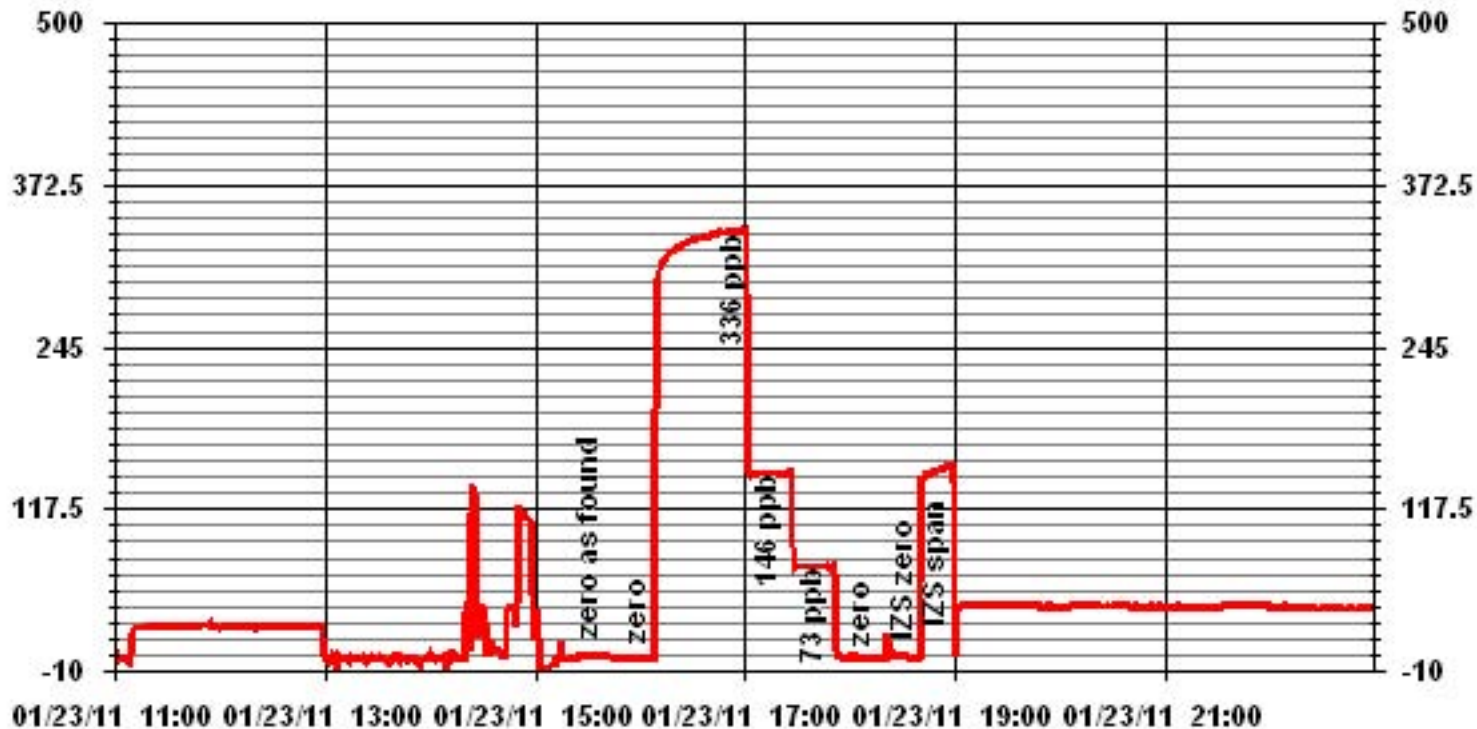
Calibration Date	January 23, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	15:16	End Time (MST)	19:04

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995) (0.85 to 1.15)	0.999998
0	0	n/a	Intercept (± 3% F.S.)	0.187652
73	73	1.0000		
146	146	1.0000		
336	335	1.0030		



Notes:

01 Minute Averages



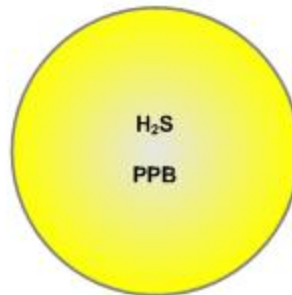
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

JANUARY 2011

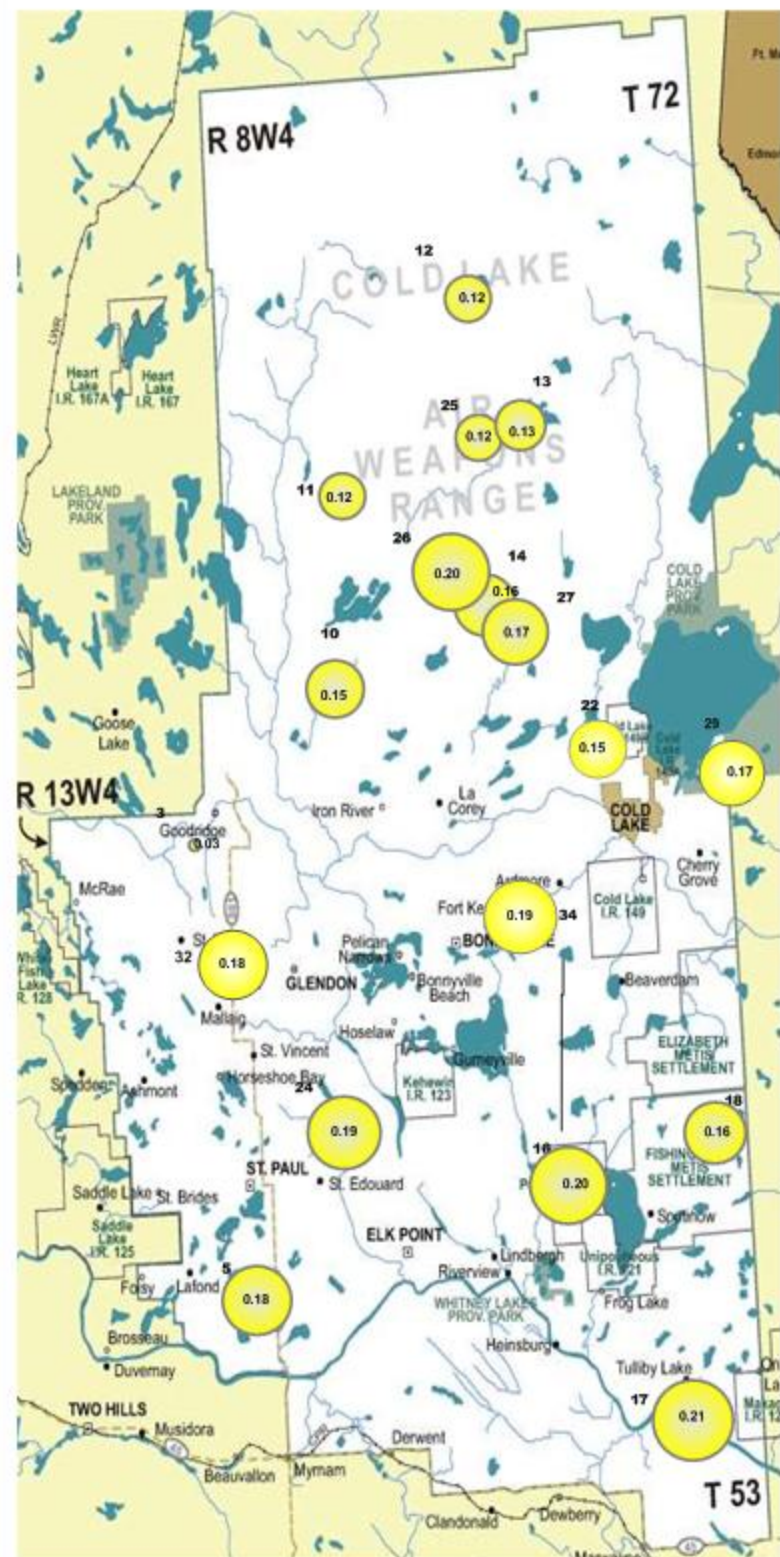
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.03 PPB	NA
5 – Lake Eliza	0.19 PPB	0.17 PPB
10 – La Corey	0.16 PPB	0.13 PPB
11 – Wolf Lake	0.12 PPB	NA
12 – Foster Creek	0.12 PPB	0.12 PPB
13 – Primrose	0.13 PPB	NA
14 – Maskwa	0.16 PPB	0.15 PPB
16 – Frog Lake	0.20 PPB	NA
17 – Clear Range	0.20 PPB	0.21 PPB
18 – Fishing Lake	0.16 PPB	NA
22 – Cold Lake South	0.15 PPB	NA
24 – Fort George	0.20 PPB	0.18 PPB
25 – Burnt Lake	0.12 PPB	NA
26 – Mahihkan	0.20 PPB	0.19 PPB
27 – Mahkeses	0.17 PPB	NA
29 – Cold Lake South 2	0.17 PPB	0.16 PPB
32 – St. Lina	0.18 PPB	NA
34 – Portable	0.19 PPB	NA



Summary

Minimum : 0.03 PPB – Therien
Maximum: 0.21 PPB – Clear Range
Average: 0.16 PPB *Includes Duplicates



Lakeland Industry & Community Association NO₂ Passive Bubble Map

JANUARY 2011

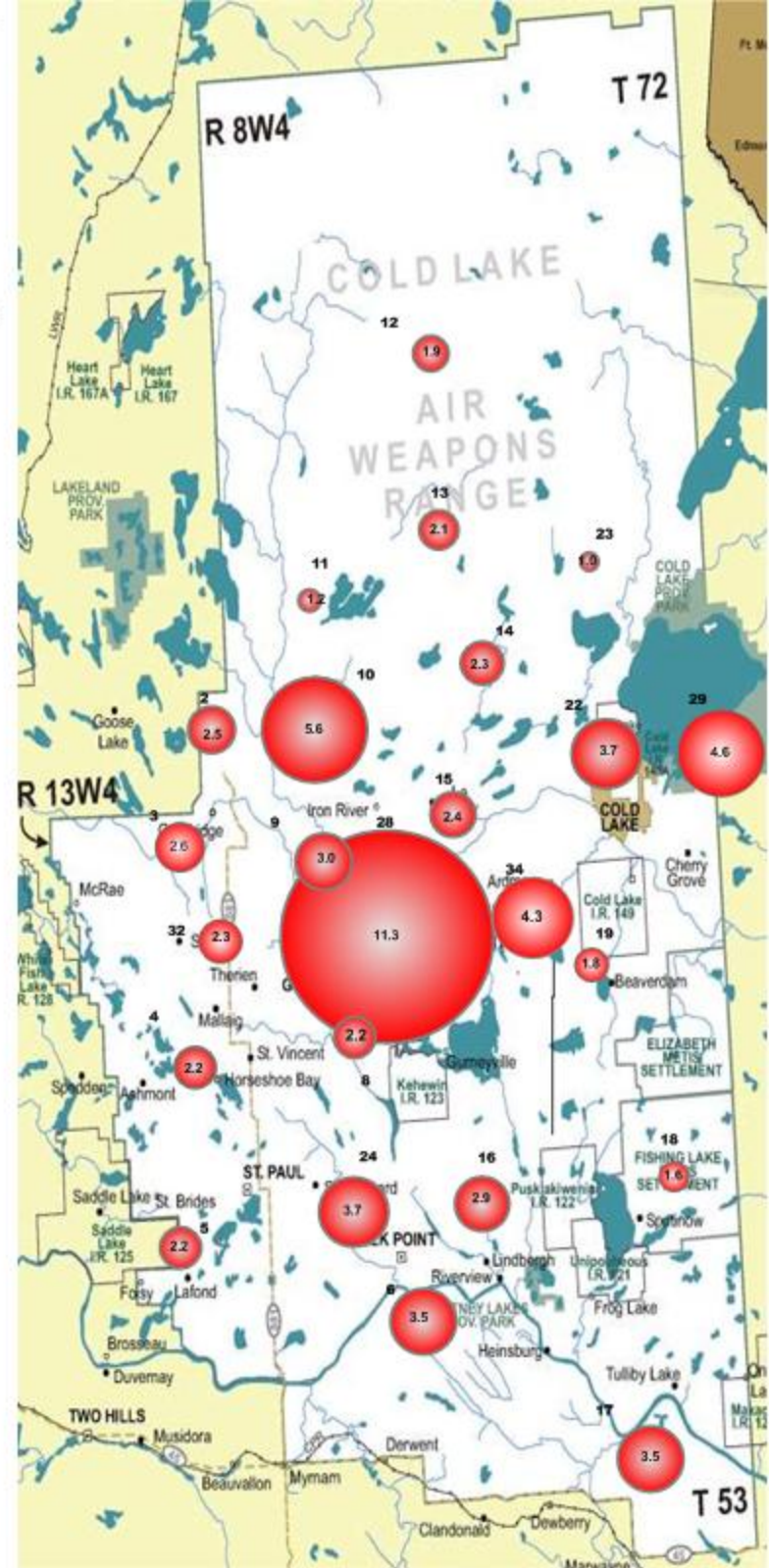
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	2.5 PPB	NA
3 – Therien	2.4 PPB	2.8 PPB
4 – Flat Lake	2.2 PPB	NA
5 – Lake Eliza	2.1 PPB	2.2 PPB
6 – Telegraph Creek	3.5 PPB	NA
8 – Muriel-Kehewin	2.4 PPB	1.9 PPB
9 – Dupre	3.0 PPB	NA
10 – La Corey	5.6 PPB	5.6 PPB
11 – Wolf Lake	1.2 PPB	NA
12 – Foster Creek	1.8 PPB	2.0 PPB
13 – Primrose	2.1 PPB	NA
14 – Maskwa	2.4 PPB	2.1 PPB
15 – Ardmore	2.4 PPB	NA
16 – Frog Lake	3.1 PPB	2.6 PPB
17 – Clear Range	3.5 PPB	NA
18 – Fishing Lake	1.6 PPB	1.6 PPB
19 – Beaverdam	1.8 PPB	NA
22 – Cold Lake South	3.7 PPB	NA
23 – Medley-Martineau	1.0 PPB	1.0 PPB
24 – Fort George	3.7 PPB	NA
28 – Town of Bonnyville	9.6 PPB	12.9 PPB
29 – Cold Lake South 2	4.6 PPB	NA
32 – St. Lina	2.3 PPB	NA
34 – Portable	4.3 PPB	NA



Summary

Minimum : 1.0 PPB – Medley-Martineau
 Maximum: 11.3 PPB – Town of Bonnyville
 Average: 3.1 PPB *Includes Duplicates

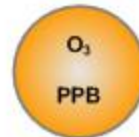


Lakeland Industry & Community Association O₃ Passive Bubble Map

JANUARY 2011

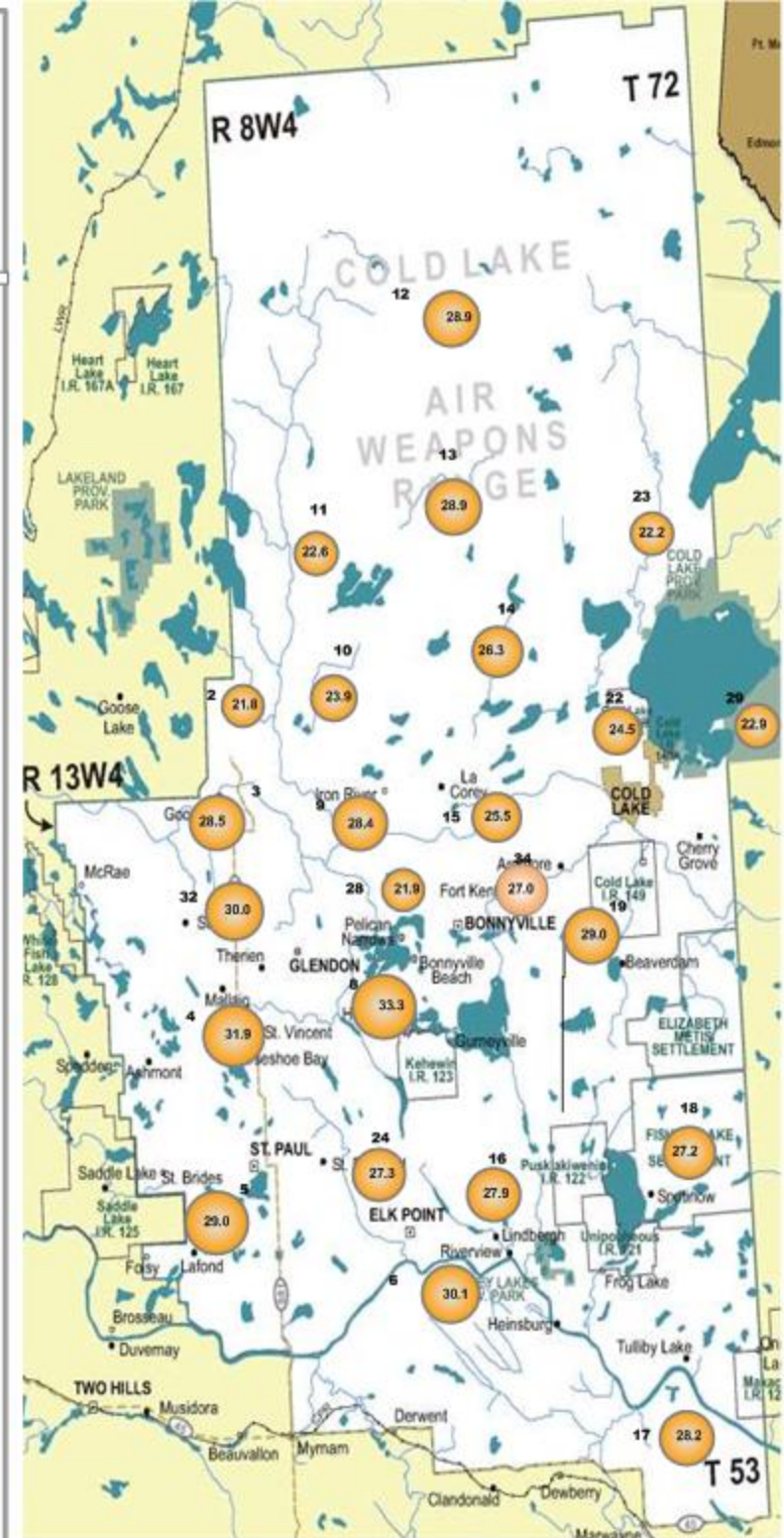
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	21.8 PPB	NA
3 – Therien	28.8 PPB	28.2 PPB
4 – Flat Lake	31.9 PPB	NA
5 – Lake Eliza	28.0 PPB	30.0 PPB
6 – Telegraph Creek	30.1 PPB	NA
8 – Muriel-Kehewin	33.3 PPB	33.2 PPB
9 – Dupre	28.4 PPB	NA
10 – La Corey	23.6 PPB	24.1 PPB
11 – Wolf Lake	22.6 PPB	NA
12 – Foster Creek	27.2 PPB	30.5 PPB
13 – Primrose	28.9 PPB	NA
14 – Maskwa	26.4 PPB	26.1 PPB
15 – Ardmore	25.5 PPB	NA
16 – Frog Lake	27.4 PPB	28.3 PPB
17 – Clear Range	28.2 PPB	NA
18 – Fishing Lake	26.7 PPB	27.7 PPB
19 – Beaverdam	29.0 PPB	NA
22 – Cold Lake South	24.5 PPB	NA
23 – Medley-Martineau	21.8 PPB	22.6 PPB
24 – Fort George	27.3 PPB	NA
28 – Town of Bonnyville	21.4 PPB	22.4 PPB
29 – Cold Lake South 2	22.9 PPB	NA
32 – St. Lina	30.0 PPB	NA
34 – Portable	27.0 PPB	NA



Summary

Minimum : 21.8 PPB –Sand River
 Maximum: 33.3 PPB –Muriel-Kehewin
 Average: 27.0 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

JANUARY 2011

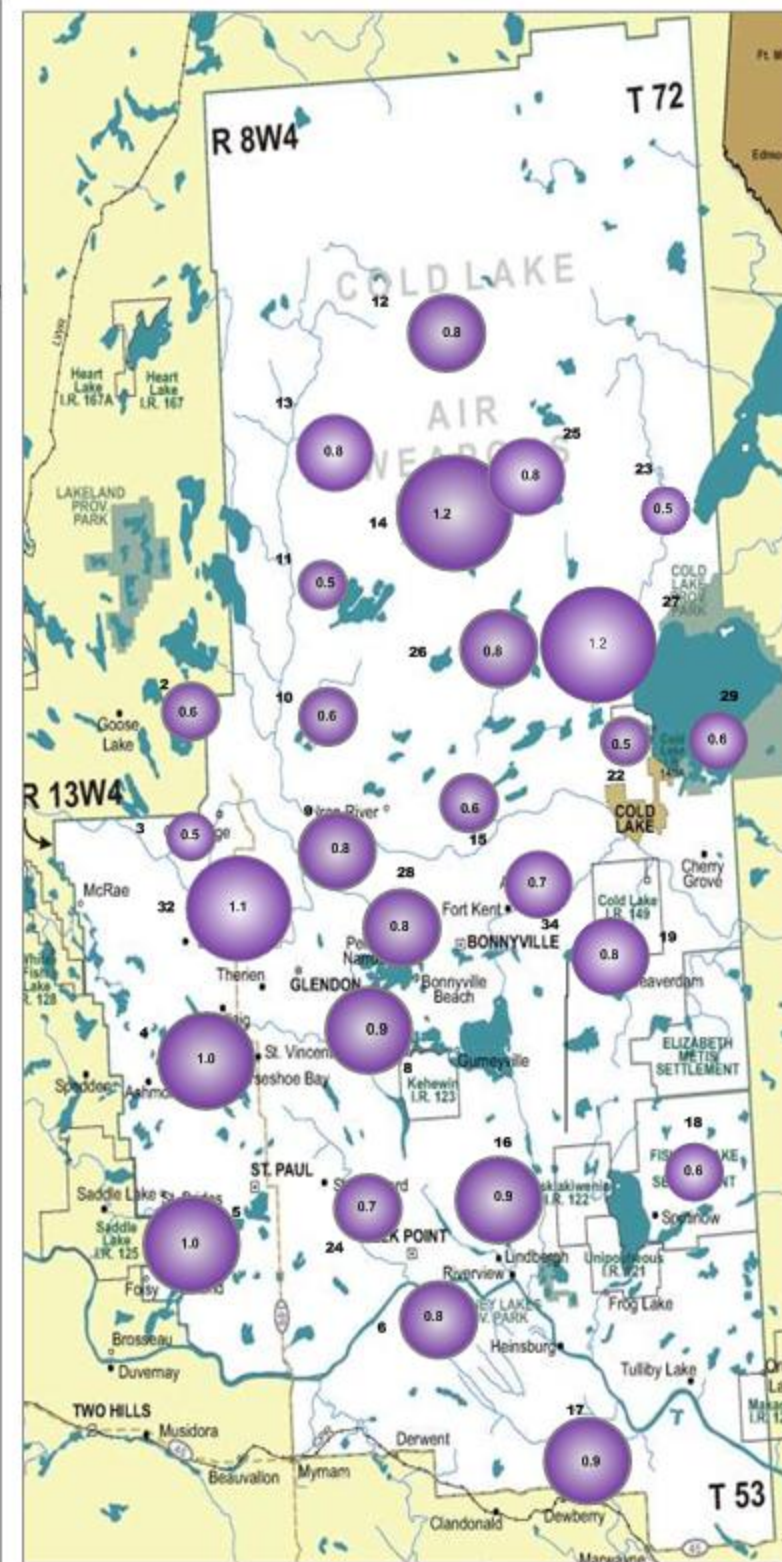
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	0.6 PPB	NA
3 – Therien	<0.1 PPB	0.8 PPB
4 – Flat Lake	1.0 PPB	NA
5 – Lake Eliza	0.9 PPB	1.0 PPB
6 – Telegraph Creek	0.8 PPB	NA
8 – Muriel-Kehewin	1.0 PPB	0.8 PPB
9 – Dupre	0.8 PPB	NA
10 – La Corey	0.6 PPB	0.6 PPB
11 – Wolf Lake	0.5 PPB	NA
12 – Foster Creek	0.7 PPB	0.8 PPB
13 – Primrose	0.8 PPB	NA
14 – Maskwa	1.1 PPB	1.2 PPB
15 – Ardmore	0.6 PPB	NA
16 – Frog Lake	1.0 PPB	0.8 PPB
17 – Clear Range	0.9 PPB	NA
18 – Fishing Lake	0.6 PPB	0.6 PPB
19 – Beaverdam	0.8 PPB	NA
22 – Cold Lake South	0.5 PPB	NA
23 – Medley-Martineau	0.5 PPB	0.4 PPB
24 – Fort George	0.7 PPB	NA
25 – Burnt Lake	0.8 PPB	0.8 PPB
26 – Mahikan	0.8 PPB	NA
27 – Mahkeses	1.2 PPB	1.1 PPB
28 – Town of Bonnyville	0.8 PPB	NA
29 – Cold Lake South 2	0.5 PPB	0.6 PPB
32 – St. Lina	1.1 PPB	NA
34 – Portable	0.7 PPB	NA



Summary

Minimum : 0.5 PPB –VARIOUS
 Maximum: 1.2 PPB –Maskwa and Mahkeses
 Average: 0.78 PPB *Includes Duplicates



Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	12/30/10	11:44	01/27/11		
2A (Dup)	NA	NA	NA	NA	NA	
3	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	10:56	01/27/11		H2S, So2 samples were found in the snow.
3A (Dup)	H ₂ S	12/30/10	10:56	01/27/11		
4	SO ₂ /NO ₂ /O ₃	12/31/10	14:22	01/28/11		
4A (Dup)	NA	NA	NA	NA	NA	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/10	13:28	01/28/11		
5A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/10	13:28	01/28/11		
6	SO ₂ /NO ₂ /O ₃	12/31/10	11:50	01/28/11		
6A (Dup)	NA	NA	NA	NA	NA	
8	SO ₂ /NO ₂ /O ₃	12/31/10	15:24	01/28/11		
8A (Dup)	SO ₂ /NO ₂ /O ₃	12/31/10	15:24	01/28/11		
9	SO ₂ /NO ₂ /O ₃	12/30/10	08:37	01/27/11		
9A (Dup)	NA	NA	NA	NA	NA	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	12:29	01/27/11		
10A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	12:29	01/27/11		
11	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	13:15	01/27/11		
11A (Dup)	NA	NA	NA	NA	NA	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	14:52	02/01/11		
12A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	14:52	02/01/11		
13	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	16:29	02/01/11		
13A (Dup)	NA	NA	NA	NA	NA	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	17:30	02/01/11		
14A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	17:30	02/01/11		
15	SO ₂ /NO ₂ /O ₃	12/30/10	07:16	02/01/11		
15A (Dup)	NA	NA	NA	NA	NA	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	09:59	01/28/11		
16A (Dup)	SO ₂ /NO ₂ /O ₃	12/30/10	09:59	01/28/11		

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/10	10:54	01/28/11		
17A (Dup)	H ₂ S	12/31/10	10:54	01/28/11		
18	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/10	09:08	01/28/11		
18A (Dup)	SO ₂ /NO ₂ /O ₃	12/31/10	09:08	01/28/11		
19	SO ₂ /NO ₂ /O ₃	12/31/10	07:55	01/28/11		
19A (Dup)	NA	NA	NA	NA	NA	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/10	17:35	01/31/11		
22A (Dup)	NA	NA	NA	NA	NA	
23	SO ₂ /NO ₂ /O ₃	12/29/10	16:50	01/26/11		
23A (Dup)	SO ₂ /NO ₂ /O ₃	12/29/10	16:50	01/26/11		
24	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/10	12:28	01/28/11		
24A (Dup)	H ₂ S	12/31/10	12:28	01/28/11		
25	H ₂ S/SO ₂	12/30/10	16:07	02/01/11		
25A (Dup)	SO ₂	12/30/10	16:07	02/01/11		
26	H ₂ S/SO ₂	12/30/10	17:05	02/01/11		
26A (Dup)	H ₂ S	12/30/10	17:05	02/01/11		
27	H ₂ S/SO ₂	12/30/10	17:51	02/01/11		
27A (Dup)	SO ₂	12/30/10	17:51	02/01/11		
28	SO ₂ /NO ₂ /O ₃	12/30/10	07:50	01/27/11		
28A (Dup)	NO ₂ /O ₃	12/30/10	07:50	01/27/11		
29	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/10	17:49	01/31/11		
29A (Dup)	H ₂ S/SO ₂	12/31/10	17:49	01/31/11		
32	H ₂ S/SO ₂ /NO ₂ /O ₃	12/30/10	09:55	01/27/11		
32A(Dup)	NA	NA	NA	NA	NA	
34	H ₂ S/SO ₂ /NO ₂ /O ₃	12/31/10	16:31	01/26/11		
34A(Dup)	NA	NA	NA	NA	NA	

Passive Network Laboratory Analysis



Your Project #: 2010/12/30 - 2011/01/27
Site:LICA

Attention: MICHAEL BISAGA

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

Report Date: 2011/02/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B108894

Received: 2011/02/04, 10:29

Sample Matrix: Air
Samples Received: 43

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
H2S Passive Analysis (l)	26	2011/02/10	2011/02/10	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (l)	34	2011/02/09	2011/02/10	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (l)	34	2011/02/08	2011/02/10	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (l)	39	2011/02/09	2011/02/10	EINDSOP-00149	Tang Passive SO2 in

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

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

Encryption Key

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

LEVI MANCHAK,
Email: LManchak@maxxam.ca
Phone# (780) 378-8500

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

Total cover pages: 1



Maxxam Job #: B108894
Report Date: 2011/02/10

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2010/12/30 - 2011/01/27
Site Reference: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		Z72395	Z72397	Z72398	Z72399	Z72401		
Sampling Date		2010/12/30 11:44	2010/12/30 10:56	2010/12/30 10:56	2010/12/31 14:22	2010/12/31 13:28		
	Units	2	3	3A (DUP)	4	5	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.03			0.19	0.02	4624539
Calculated NO2	ppb	2.5	2.4	2.8	2.2	2.1	0.1	4621439
Calculated O3	ppb	21.8	28.8	28.2	31.9	28.0	0.1	4618245
Calculated SO2	ppb	0.6	<0.1	0.8	1.0	0.9	0.1	4621448

RDL = Reportable Detection Limit

Maxxam ID		Z72402	Z72403	Z72404	Z72405	Z72406		
Sampling Date		2010/12/31 13:28	2010/12/31 11:50	2010/12/31 15:24	2010/12/31 15:24	2010/12/30 08:37		
	Units	5A (DUP)	6	8	8A (DUP)	9	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.17					0.02	4624539
Calculated NO2	ppb	2.2	3.5	2.4	1.9	3.0	0.1	4621439
Calculated O3	ppb	30.0	30.1	33.3	33.2	28.4	0.1	4618245
Calculated SO2	ppb	1.0	0.8	1.0	0.8	0.8	0.1	4621448

RDL = Reportable Detection Limit

Maxxam ID		Z72407	Z72408	Z72409	Z72410	Z72411		
Sampling Date		2010/12/30 12:29	2010/12/30 12:29	2010/12/30 13:15	2010/12/30 14:52	2010/12/30 14:52		
	Units	10	10A (DUP)	11	12	12A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.16	0.13	0.12	0.12	0.12	0.02	4624539
Calculated NO2	ppb	5.6	5.6	1.2	1.8	2.0	0.1	4621439
Calculated O3	ppb	23.6	24.1	22.6	27.2	30.5	0.1	4618245
Calculated SO2	ppb	0.6	0.6	0.5	0.7	0.8	0.1	4621448

RDL = Reportable Detection Limit



Maxxam Job #: B108894
 Report Date: 2011/02/10

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2010/12/30 - 2011/01/27
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		Z72412		Z72413	Z72414		Z72415		
Sampling Date		2010/12/30 16:29		2010/12/30 17:30	2010/12/30 17:30		2010/12/30 07:16		
	Units	13	QC Batch	14	14A (DUP)	QC Batch	15	RDL	QC Batch

Passive Monitoring									
Calculated H2S	ppb	0.13	4624539	0.16	0.15	4624539		0.02	4624539
Calculated NO2	ppb	2.1	4621439	2.4	2.1	4621439	2.4	0.1	4621441
Calculated O3	ppb	28.9	4618245	26.4	26.1	4618249	25.5	0.1	4618249
Calculated SO2	ppb	0.8	4621448	1.1	1.2	4621448	0.6	0.1	4621449

RDL = Reportable Detection Limit

Maxxam ID		Z72416	Z72417	Z72418	Z72419	Z72420		
Sampling Date		2010/12/31 09:59	2010/12/31 09:59	2010/12/31 10:54	2010/12/31 10:54	2010/12/31 09:08		
	Units	16	16A (DUP)	17	17A (DUP)	18	RDL	QC Batch

Passive Monitoring									
Calculated H2S	ppb	0.20		0.20	0.21	0.16	0.02	4624539	
Calculated NO2	ppb	3.1	2.6	3.5		1.6	0.1	4621441	
Calculated O3	ppb	27.4	28.3	28.2		26.7	0.1	4618249	
Calculated SO2	ppb	1.0	0.8	0.9		0.6	0.1	4621449	

RDL = Reportable Detection Limit

Maxxam ID		Z72421	Z72422	Z72424	Z72425	Z72426		
Sampling Date		2010/12/31 09:08	2010/12/31 07:55	2010/12/31 17:35	2010/12/29 16:50	2010/12/29 16:50		
	Units	18A (DUP)	19	22	23	23A (DUP)	RDL	QC Batch

Passive Monitoring									
Calculated H2S	ppb			0.15			0.02	4624539	
Calculated NO2	ppb	1.6	1.8	3.7	1.0	1.0	0.1	4621441	
Calculated O3	ppb	27.7	29.0	24.5	21.8	22.6	0.1	4618249	
Calculated SO2	ppb	0.6	0.8	0.5	0.5	0.4	0.1	4621449	

RDL = Reportable Detection Limit



Maxxam Job #: B108894
 Report Date: 2011/02/10

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2010/12/30 - 2011/01/27
 Site Reference: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		Z72427	Z72428	Z72429	Z72430	Z72431		
Sampling Date		2010/12/31 12:28	2010/12/30 16:07	2010/12/30 16:07	2010/12/30 17:05	2010/12/30 17:05		
	Units	24	25	25A (DUP)	26	26A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.20	0.12		0.20	0.19	0.02	4624539
Calculated NO2	ppb	3.7					0.1	4621441
Calculated O3	ppb	27.3					0.1	4618249
Calculated SO2	ppb	0.7	0.8	0.8	0.8		0.1	4621449
RDL = Reportable Detection Limit								

Maxxam ID		Z72432	Z72433	Z72434	Z72435	Z72436		
Sampling Date		2010/12/30 17:51	2010/12/30 17:51	2010/12/30 07:50	2010/12/30 07:50	2010/12/31 17:49		
	Units	27	27A (DUP)	28	28A (DUP)	29	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.17				0.17	0.02	4624539
Calculated NO2	ppb			9.6	12.9	4.6	0.1	4621441
Calculated O3	ppb			21.4	22.4	22.9	0.1	4618249
Calculated SO2	ppb	1.2	1.1	0.8		0.5	0.1	4621449
RDL = Reportable Detection Limit								

Maxxam ID		Z72437	Z72438	Z72439	Z73343		
Sampling Date		2010/12/31 17:49	2010/12/30 09:55	2010/12/31 16:31	2010/12/31 12:28		
	Units	29A (DUP)	32	34	24A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.16	0.18	0.19	0.18	0.02	4624539	
Calculated NO2	ppb		2.3	4.3		0.1	4621441	
Calculated O3	ppb		30.0	27.0		0.1	4618249	
Calculated SO2	ppb	0.6	1.1	0.7		0.1	4621449	
RDL = Reportable Detection Limit								



Maxxam Job #: B108894
Report Date: 2011/02/10

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2010/12/30 - 2011/01/27
Site Reference: LICA
Sampler Initials: SB

General Comments

H2S Sample Z72397: Sample returned with a broken diffusion barrier and damage to the passive filter. TM

Results relate only to the items tested.



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Attention: MICHAEL BISAGA
 Client Project #: 2010/12/30 - 2011/01/27
 P.O. #:
 Site Reference: LICA

Quality Assurance Report
 Maxxam Job Number: PB108894

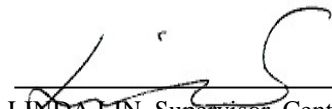
QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4618245 OZ	Calibration Check	Calculated O3	2011/02/08		102	%	91 - 107
	Spiked Blank	Calculated O3	2011/02/08		101	%	N/A
	Method Blank	Calculated O3	2011/02/08	<0.1		ppb	
4618249 OZ	Calibration Check	Calculated O3	2011/02/08		103	%	91 - 107
	Spiked Blank	Calculated O3	2011/02/08		100	%	N/A
	Method Blank	Calculated O3	2011/02/08	<0.1		ppb	
4621439 DF4	Calibration Check	Calculated NO2	2011/02/09		100	%	76 - 118
	Spiked Blank	Calculated NO2	2011/02/09		99	%	N/A
	Method Blank	Calculated NO2	2011/02/09	<0.1		ppb	
4621441 DF4	Calibration Check	Calculated NO2	2011/02/09		98	%	76 - 118
	Spiked Blank	Calculated NO2	2011/02/09		99	%	N/A
	Method Blank	Calculated NO2	2011/02/09	<0.1		ppb	
4621448 DF4	Calibration Check	Calculated SO2	2011/02/09		101	%	95 - 105
	Spiked Blank	Calculated SO2	2011/02/09		96	%	N/A
	Method Blank	Calculated SO2	2011/02/09	<0.1		ppb	
4621449 DF4	Calibration Check	Calculated SO2	2011/02/09		99	%	95 - 105
	Spiked Blank	Calculated SO2	2011/02/09		99	%	N/A
	Method Blank	Calculated SO2	2011/02/09	<0.1		ppb	
4624539 TM5	Calibration Check	Calculated H2S	2011/02/10		102	%	80 - 120
	Spiked Blank	Calculated H2S	2011/02/10		100	%	N/A

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 #: B108894

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

A handwritten signature in black ink, appearing to read "Linda Lin", written over a horizontal line.

LINDA LIN, Supervisor, Centre for Passive Sampling Technology

=====

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

Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7817
Station ID: Lica 1 Canister Installation Date/Time: Dec 31, 2010 @ 17:55 mst
Field Sample ID: LICA VOC/ CLS /Jan 03, 11 Canister Removal Date/Time: Jan 04, 2011 @ 9:12 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
03-Jan-11	03/01/2011 0:00	04/01/2011 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 # 06470

Technician Signiture: Ting Xu



Your C.O.C. #: 06470

Attention: Michael Bisaga

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

Report Date: 2011/01/07

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B101203

Received: 2011/01/06, 09:29

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/01/06	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/01/06	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

=====

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Total cover pages: 1

Maxxam Job #: B101203
 Report Date: 2011/01/07

RESULTS OF ANALYSES OF AIR

Maxxam ID		IH6735	IH6736	
Sampling Date		2011/01/03	2011/01/03	
COC Number		06470	06470	
	Units	LICA	LICA	QC Batch
		VOC\CLS\JAN	VOC\PORT\JAN	
		03,11 - 7817	03,11 - 7859	

Volatile Organics				
Pressure on Receipt	psig	21	21	2375125

QC Batch = Quality Control Batch

Maxxam Job #: B101203
 Report Date: 2011/01/07

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IH6735			IH6736				
Sampling Date		2011/01/03			2011/01/03				
COC Number		06470			06470				
	Units	LICA VOC\CLS\JAN 03,11 - 7817	ug/m3	DL (ug/m3)	LICA VOC\PORT\JAN 03,11 - 7859	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatiles Organics									
2,2,4-Trimethylpentane	ppbv	0.25	1.16	0.934	<0.20	0.20	<0.934	0.934	2375300
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2375300
Propene	ppbv	2.13	3.67	0.516	1.60	0.30	2.76	0.516	2375300
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2375300
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2375300
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	3.30	0.989	0.68	0.20	3.37	0.989	2375300
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2375300
Chloromethane	ppbv	0.54	1.11	0.620	0.59	0.30	1.22	0.620	2375300
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2375300
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2375300
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2375300
Trichlorofluoromethane (FREON 11)	ppbv	0.32	1.81	1.12	0.31	0.20	1.76	1.12	2375300
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2375300
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2375300
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2375300
2-Propanone	ppbv	0.92	2.20	1.90	0.92	0.80	2.18	1.90	2375300
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2375300
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2375300
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2375300
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2375300
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2375300
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2375300
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2375300
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2375300
Methylene Chloride(Dichloromethane)	ppbv	0.44	1.52	1.04	0.42	0.30	1.47	1.04	2375300
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2375300
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2375300
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2375300
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2375300
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2375300
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2375300

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B101203
 Report Date: 2011/01/07

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IH6735			IH6736				
Sampling Date		2011/01/03			2011/01/03				
COC Number		06470			06470				
	Units	LICA VOC\CLS\JAN 03,11 - 7817	ug/m3	DL (ug/m3)	LICA VOC\PORT\JAN 03,11 - 7859	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	2375300
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2375300
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2375300
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2375300
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2375300
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2375300
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2375300
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2375300
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2375300
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2375300
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2375300
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2375300
Benzene	ppbv	0.32	1.02	0.575	0.21	0.18	0.660	0.575	2375300
Toluene	ppbv	0.34	1.28	0.753	<0.20	0.20	<0.753	0.753	2375300
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2375300
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2375300
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2375300
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2375300
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2375300
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2375300
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2375300
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2375300
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2375300
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2375300
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2375300
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2375300
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2375300
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2375300
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2375300
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.55	0.20	1.88	0.688	2375300
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2375300
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2375300
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2375300
QC Batch = Quality Control Batch									

Maxxam Job #: B101203
 Report Date: 2011/01/07

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IH6735			IH6736				
Sampling Date		2011/01/03			2011/01/03				
COC Number		06470			06470				
	Units	LICA	ug/m3	DL (ug/m3)	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC\CLS\JAN			VOC\PORT\JAN				
		03,11 - 7817			03,11 - 7859				

Surrogate Recovery (%)									
Bromochloromethane	%	89	N/A	N/A	89		N/A	N/A	2375300
D5-Chlorobenzene	%	87	N/A	N/A	88		N/A	N/A	2375300
Difluorobenzene	%	91	N/A	N/A	91		N/A	N/A	2375300

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

Maxxam Job #: B101203
 Report Date: 2011/01/07

Test Summary

Maxxam ID IH6735
Sample ID LICA VOC\CLS\JAN 03,11 - 7817
Matrix AIR
Collected 2011/01/03
Shipped
Received 2011/01/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2375125	N/A	2011/01/06	LSY
Volatile Organics in Air (TO-15)	GC/MS	2375300	N/A	2011/01/06	LSY

Maxxam ID IH6736
Sample ID LICA VOC\PORT\JAN 03,11 - 7859
Matrix AIR
Collected 2011/01/03
Shipped
Received 2011/01/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2375125	N/A	2011/01/06	LSY
Volatile Organics in Air (TO-15)	GC/MS	2375300	N/A	2011/01/06	LSY

Maxxam Job #: B101203
Report Date: 2011/01/07

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: GB101203

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375300 LSY	Spiked Blank	Bromochloromethane	2011/01/06		101	%	60 - 140
		D5-Chlorobenzene	2011/01/06		100	%	60 - 140
		Difluorobenzene	2011/01/06		103	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/06		87	%	70 - 130
		Carbon Disulfide	2011/01/06		84	%	70 - 130
		Propene	2011/01/06		83	%	70 - 130
		Vinyl Acetate	2011/01/06		93	%	70 - 130
		Vinyl Bromide	2011/01/06		87	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/01/06		89	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/01/06		100	%	70 - 130
		Chloromethane	2011/01/06		87	%	70 - 130
		Vinyl Chloride	2011/01/06		85	%	70 - 130
		Chloroethane	2011/01/06		82	%	70 - 130
		1,3-Butadiene	2011/01/06		74	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/01/06		89	%	70 - 130
		Trichlorotrifluoroethane	2011/01/06		86	%	70 - 130
		Ethanol	2011/01/06		74	%	70 - 130
		2-propanol	2011/01/06		81	%	70 - 130
		2-Propanone	2011/01/06		87	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/01/06		94	%	70 - 130
		Methyl Isobutyl Ketone	2011/01/06		82	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/01/06		79	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/01/06		86	%	70 - 130
		Ethyl Acetate	2011/01/06		88	%	70 - 130
		1,1-Dichloroethylene	2011/01/06		85	%	70 - 130
		cis-1,2-Dichloroethylene	2011/01/06		84	%	70 - 130
		trans-1,2-Dichloroethylene	2011/01/06		87	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/01/06		78	%	70 - 130
		Chloroform	2011/01/06		88	%	70 - 130
		Carbon Tetrachloride	2011/01/06		111	%	70 - 130
		1,1-Dichloroethane	2011/01/06		85	%	70 - 130
		1,2-Dichloroethane	2011/01/06		89	%	70 - 130
		Ethylene Dibromide	2011/01/06		88	%	70 - 130
		1,1,1-Trichloroethane	2011/01/06		95	%	70 - 130
		1,1,2-Trichloroethane	2011/01/06		87	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/01/06		76	%	70 - 130
		cis-1,3-Dichloropropene	2011/01/06		95	%	70 - 130
		trans-1,3-Dichloropropene	2011/01/06		99	%	70 - 130
		1,2-Dichloropropane	2011/01/06		84	%	70 - 130
		Bromomethane	2011/01/06		81	%	70 - 130
		Bromoform	2011/01/06		126	%	70 - 130
		Bromodichloromethane	2011/01/06		104	%	70 - 130
		Dibromochloromethane	2011/01/06		122	%	70 - 130
		Heptane	2011/01/06		86	%	70 - 130
		Trichloroethylene	2011/01/06		85	%	70 - 130
		Tetrachloroethylene	2011/01/06		87	%	70 - 130
		Benzene	2011/01/06		83	%	70 - 130
		Toluene	2011/01/06		85	%	70 - 130
		Ethylbenzene	2011/01/06		84	%	70 - 130
		p+m-Xylene	2011/01/06		83	%	70 - 130
		o-Xylene	2011/01/06		83	%	70 - 130
		Styrene	2011/01/06		85	%	70 - 130
		1,3,5-Trimethylbenzene	2011/01/06		75	%	70 - 130
		1,2,4-Trimethylbenzene	2011/01/06		71	%	70 - 130
		4-ethyltoluene	2011/01/06		79	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB101203

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375300 LSY	Spiked Blank	Chlorobenzene	2011/01/06		85	%	70 - 130
		Benzyl chloride	2011/01/06		96	%	70 - 130
		1,3-Dichlorobenzene	2011/01/06		75	%	70 - 130
		1,4-Dichlorobenzene	2011/01/06		77	%	70 - 130
		1,2-Dichlorobenzene	2011/01/06		68 (1)	%	70 - 130
		1,2,4-Trichlorobenzene	2011/01/06		90	%	70 - 130
		Hexachlorobutadiene	2011/01/06		95	%	70 - 130
		Hexane	2011/01/06		79	%	70 - 130
		Cyclohexane	2011/01/06		85	%	70 - 130
		Tetrahydrofuran	2011/01/06		85	%	70 - 130
		1,4-Dioxane	2011/01/06		73	%	70 - 130
	Method Blank	Bromochloromethane	2011/01/06		90	%	60 - 140
		D5-Chlorobenzene	2011/01/06		84	%	60 - 140
		Difluorobenzene	2011/01/06		91	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/06	<0.20		ppbv	
		Carbon Disulfide	2011/01/06	<0.50		ppbv	
		Propene	2011/01/06	<0.30		ppbv	
		Vinyl Acetate	2011/01/06	<0.20		ppbv	
		Vinyl Bromide	2011/01/06	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/01/06	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/01/06	<0.17		ppbv	
		Chloromethane	2011/01/06	<0.30		ppbv	
		Vinyl Chloride	2011/01/06	<0.18		ppbv	
		Chloroethane	2011/01/06	<0.30		ppbv	
		1,3-Butadiene	2011/01/06	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/01/06	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/01/06	<0.15		ppbv	
		Ethanol	2011/01/06	<2.3		ppbv	
		2-propanol	2011/01/06	<3.0		ppbv	
		2-Propanone	2011/01/06	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/01/06	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/01/06	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/01/06	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/01/06	<0.20		ppbv	
		Ethyl Acetate	2011/01/06	<2.2		ppbv	
		1,1-Dichloroethylene	2011/01/06	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/01/06	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/01/06	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/01/06	0.55, RDL=0.30		ppbv	
		Chloroform	2011/01/06	<0.15		ppbv	
		Carbon Tetrachloride	2011/01/06	<0.30		ppbv	
		1,1-Dichloroethane	2011/01/06	<0.20		ppbv	
		1,2-Dichloroethane	2011/01/06	<0.20		ppbv	
		Ethylene Dibromide	2011/01/06	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/01/06	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/01/06	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/01/06	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/01/06	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/01/06	<0.17		ppbv	
		1,2-Dichloropropane	2011/01/06	<0.40		ppbv	
		Bromomethane	2011/01/06	<0.18		ppbv	
		Bromoform	2011/01/06	<0.20		ppbv	
		Bromodichloromethane	2011/01/06	<0.20		ppbv	
		Dibromochloromethane	2011/01/06	<0.20		ppbv	
		Heptane	2011/01/06	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB101203

QA/QC Batch			Date Analyzed					
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2375300	LSY	Method Blank	2011/01/06	<0.30		ppbv		
		Trichloroethylene	2011/01/06	<0.20		ppbv		
		Tetrachloroethylene	2011/01/06	<0.18		ppbv		
		Benzene	2011/01/06	<0.20		ppbv		
		Toluene	2011/01/06	<0.20		ppbv		
		Ethylbenzene	2011/01/06	<0.37		ppbv		
		p+m-Xylene	2011/01/06	<0.20		ppbv		
		o-Xylene	2011/01/06	<0.20		ppbv		
		Styrene	2011/01/06	<0.50		ppbv		
		1,3,5-Trimethylbenzene	2011/01/06	<0.50		ppbv		
		1,2,4-Trimethylbenzene	2011/01/06	<2.2		ppbv		
		4-ethyltoluene	2011/01/06	<1.0		ppbv		
		Chlorobenzene	2011/01/06	<0.40		ppbv		
		Benzyl chloride	2011/01/06	<0.40		ppbv		
		1,3-Dichlorobenzene	2011/01/06	<0.40		ppbv		
		1,4-Dichlorobenzene	2011/01/06	<2.0		ppbv		
		1,2-Dichlorobenzene	2011/01/06	<3.0		ppbv		
		1,2,4-Trichlorobenzene	2011/01/06	<0.30		ppbv		
		Hexachlorobutadiene	2011/01/06	<0.20		ppbv		
		Hexane	2011/01/06	<0.40		ppbv		
		Cyclohexane	2011/01/06	<2.0		ppbv		
		Tetrahydrofuran	2011/01/06	<2.0		ppbv		
		1,4-Dioxane	2011/01/06	<0.60		ppbv		
		Xylene (Total)	2011/01/06			ppbv		

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

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

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

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

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7870
Station ID: Lica 1 Canister Installation Date/Time: Jan 07, 2011 @ 14:04 mst
Field Sample ID: LICA VOC/ CLS /Jan 09, 11 Canister Removal Date/Time: Jan 10, 2011 @ 8:30 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
09-Jan-11	09/01/2011 0:00	10/01/2011 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 # 5219

Technician Signiture: Ting Xu



Your C.O.C. #: 5219

Attention: Ting Xu

Lakeland Industry & Community Assoc.
 P.O. Box 8237
 Bonnyville, AB
 CANADA T9N 2J5

Report Date: 2011/01/14

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B104596

Received: 2011/01/13, 09:09

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/01/13	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/01/13	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 #: B104596
 Report Date: 2011/01/14

RESULTS OF ANALYSES OF AIR

Maxxam ID		IJ3788	IJ3789	
Sampling Date		2011/01/09 00:00	2011/01/09 00:00	
COC Number		5219	5219	
	Units	LICA VOC \ CLS\ JAN09,11 #7870	LICA VOC \PORT\JAN09,11 #S2019	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2379812
QC Batch = Quality Control Batch				

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3788				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC \ CLS\ JAN09,11 #7870	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2380312
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2380312
Propene	ppbv	<0.30	0.30	<0.516	0.516	2380312
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2380312
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2380312
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	0.20	3.46	0.989	2380312
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2380312
Chloromethane	ppbv	0.59	0.30	1.21	0.620	2380312
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2380312
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2380312
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2380312
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.84	1.12	2380312
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2380312
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2380312
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2380312
2-Propanone	ppbv	1.52	0.80	3.62	1.90	2380312
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2380312
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2380312
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2380312
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2380312
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2380312
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2380312
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2380312
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2380312
Methylene Chloride(Dichloromethane)	ppbv	0.51	0.30	1.78	1.04	2380312
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2380312
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2380312
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2380312
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2380312
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2380312
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2380312

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3788				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC \ CLS\ JAN09,11 #7870	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2380312
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2380312
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2380312
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2380312
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2380312
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2380312
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2380312
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2380312
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2380312
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2380312
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2380312
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2380312
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2380312
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2380312
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2380312
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2380312
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2380312
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2380312
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2380312
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2380312
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2380312
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2380312
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2380312
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2380312
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2380312
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2380312
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2380312
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2380312
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2380312
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2380312
QC Batch = Quality Control Batch						

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3788				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC \ CLS\ JAN09,11 #7870	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	87		N/A	N/A	2380312
D5-Chlorobenzene	%	82		N/A	N/A	2380312
Difluorobenzene	%	88		N/A	N/A	2380312
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3789				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC PORT/JAN09,11 #S2019	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2380312
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2380312
Propene	ppbv	0.89	0.30	1.54	0.516	2380312
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2380312
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2380312
Dichlorodifluoromethane (FREON 12)	ppbv	0.72	0.20	3.57	0.989	2380312
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2380312
Chloromethane	ppbv	0.62	0.30	1.29	0.620	2380312
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2380312
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2380312
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2380312
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.89	1.12	2380312
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2380312
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2380312
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2380312
2-Propanone	ppbv	1.12	0.80	2.66	1.90	2380312
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2380312
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2380312
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2380312
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2380312
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2380312
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2380312
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2380312
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2380312
Methylene Chloride(Dichloromethane)	ppbv	0.52	0.30	1.81	1.04	2380312
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2380312
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2380312
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2380312
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2380312
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2380312
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3789				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC PORT/JAN09,11 #S2019	RDL	ug/m3	DL (ug/m3)	QC Batch

1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2380312
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2380312
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2380312
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2380312
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2380312
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2380312
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2380312
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2380312
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2380312
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2380312
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2380312
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2380312
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2380312
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2380312
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2380312
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2380312
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2380312
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2380312
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2380312
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2380312
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2380312
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2380312
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2380312
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2380312
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2380312
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2380312
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2380312
Cyclohexane	ppbv	0.20	0.20	0.699	0.688	2380312
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2380312

QC Batch = Quality Control Batch

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3789				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC PORTJAN09,11 #S2019	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2380312
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2380312
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2380312
D5-Chlorobenzene	%	82		N/A	N/A	2380312
Difluorobenzene	%	88		N/A	N/A	2380312
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B104596
 Report Date: 2011/01/14

Test Summary

Maxxam ID IJ3788
Sample ID LICA VOC \ CLS\ JAN09,11 #7870
Matrix AIR
Collected 2011/01/09
Shipped
Received 2011/01/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2379812	N/A	2011/01/13	LSY
Volatile Organics in Air (TO-15)	GC/MS	2380312	N/A	2011/01/13	LSY

Maxxam ID IJ3789
Sample ID LICA VOC \PORT\JAN09,11 #S2019
Matrix AIR
Collected 2011/01/09
Shipped
Received 2011/01/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2379812	N/A	2011/01/13	LSY
Volatile Organics in Air (TO-15)	GC/MS	2380312	N/A	2011/01/13	LSY

Maxxam ID IJ3789 Dup
Sample ID LICA VOC \PORT\JAN09,11 #S2019
Matrix AIR
Collected 2011/01/09
Shipped
Received 2011/01/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2380312	N/A	2011/01/13	LSY

Maxxam Job #: B104596
Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Volatile Organics in Air (TO-15): Reference Standard

3 compounds exceed 70 to 130% recovery criteria. Compounds meet %RSD criteria in the continuing calibration standard. They are not found in the test. The failure of these 3 compounds is not believed to have an effect on the integrity of the results, therefore the data was accepted.

Results relate only to the items tested.

Lakeland Industry & Community Assoc.
 Attention: Ting Xu
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB104596

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2380312 LSY	Spiked Blank	Bromochloromethane	2011/01/13		105	%	60 - 140
		D5-Chlorobenzene	2011/01/13		102	%	60 - 140
		Difluorobenzene	2011/01/13		106	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/13		97	%	70 - 130
		Carbon Disulfide	2011/01/13		95	%	70 - 130
		Propene	2011/01/13		96	%	70 - 130
		Vinyl Acetate	2011/01/13		108	%	70 - 130
		Vinyl Bromide	2011/01/13		100	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/01/13		97	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/01/13		111	%	70 - 130
		Chloromethane	2011/01/13		99	%	70 - 130
		Vinyl Chloride	2011/01/13		97	%	70 - 130
		Chloroethane	2011/01/13		95	%	70 - 130
		1,3-Butadiene	2011/01/13		86	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/01/13		96	%	70 - 130
		Trichlorotrifluoroethane	2011/01/13		94	%	70 - 130
		Ethanol	2011/01/13		92	%	70 - 130
		2-propanol	2011/01/13		92	%	70 - 130
		2-Propanone	2011/01/13		101	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/01/13		108	%	70 - 130
		Methyl Isobutyl Ketone	2011/01/13		93	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/01/13		88	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/01/13		96	%	70 - 130
		Ethyl Acetate	2011/01/13		102	%	70 - 130
		1,1-Dichloroethylene	2011/01/13		95	%	70 - 130
		cis-1,2-Dichloroethylene	2011/01/13		95	%	70 - 130
		trans-1,2-Dichloroethylene	2011/01/13		99	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/01/13		89	%	70 - 130
		Chloroform	2011/01/13		97	%	70 - 130
		Carbon Tetrachloride	2011/01/13		119	%	70 - 130
		1,1-Dichloroethane	2011/01/13		96	%	70 - 130
		1,2-Dichloroethane	2011/01/13		99	%	70 - 130
		Ethylene Dibromide	2011/01/13		94	%	70 - 130
		1,1,1-Trichloroethane	2011/01/13		103	%	70 - 130
		1,1,2-Trichloroethane	2011/01/13		94	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/01/13		81	%	70 - 130
		cis-1,3-Dichloropropene	2011/01/13		105	%	70 - 130
		trans-1,3-Dichloropropene	2011/01/13		108	%	70 - 130
		1,2-Dichloropropane	2011/01/13		94	%	70 - 130
		Bromomethane	2011/01/13		89	%	70 - 130
		Bromoform	2011/01/13		134 (1)	%	70 - 130
		Bromodichloromethane	2011/01/13		115	%	70 - 130
		Dibromochloromethane	2011/01/13		131 (1)	%	70 - 130
		Heptane	2011/01/13		99	%	70 - 130
		Trichloroethylene	2011/01/13		90	%	70 - 130
		Tetrachloroethylene	2011/01/13		91	%	70 - 130
		Benzene	2011/01/13		92	%	70 - 130
		Toluene	2011/01/13		93	%	70 - 130
		Ethylbenzene	2011/01/13		90	%	70 - 130
		p+m-Xylene	2011/01/13		89	%	70 - 130
		o-Xylene	2011/01/13		89	%	70 - 130
		Styrene	2011/01/13		88	%	70 - 130
		1,3,5-Trimethylbenzene	2011/01/13		79	%	70 - 130
		1,2,4-Trimethylbenzene	2011/01/13		74	%	70 - 130
		4-ethyltoluene	2011/01/13		84	%	70 - 130

Lakeland Industry & Community Assoc.
 Attention: Ting Xu
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB104596

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2380312 LSY	Spiked Blank	Chlorobenzene	2011/01/13		89	%	70 - 130
		Benzyl chloride	2011/01/13		95	%	70 - 130
		1,3-Dichlorobenzene	2011/01/13		73	%	70 - 130
		1,4-Dichlorobenzene	2011/01/13		73	%	70 - 130
		1,2-Dichlorobenzene	2011/01/13		66 (1)	%	70 - 130
		1,2,4-Trichlorobenzene	2011/01/13		73	%	70 - 130
		Hexachlorobutadiene	2011/01/13		91	%	70 - 130
		Hexane	2011/01/13		91	%	70 - 130
		Cyclohexane	2011/01/13		96	%	70 - 130
		Tetrahydrofuran	2011/01/13		99	%	70 - 130
		1,4-Dioxane	2011/01/13		83	%	70 - 130
	Method Blank	Bromochloromethane	2011/01/13		91	%	60 - 140
		D5-Chlorobenzene	2011/01/13		88	%	60 - 140
		Difluorobenzene	2011/01/13		93	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/13	<0.20		ppbv	
		Carbon Disulfide	2011/01/13	<0.50		ppbv	
		Propene	2011/01/13	<0.30		ppbv	
		Vinyl Acetate	2011/01/13	<0.20		ppbv	
		Vinyl Bromide	2011/01/13	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/01/13	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/01/13	<0.17		ppbv	
		Chloromethane	2011/01/13	<0.30		ppbv	
		Vinyl Chloride	2011/01/13	<0.18		ppbv	
		Chloroethane	2011/01/13	<0.30		ppbv	
		1,3-Butadiene	2011/01/13	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/01/13	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/01/13	<0.15		ppbv	
		Ethanol	2011/01/13	<2.3		ppbv	
		2-propanol	2011/01/13	<3.0		ppbv	
		2-Propanone	2011/01/13	0.88, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/01/13	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/01/13	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/01/13	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/01/13	<0.20		ppbv	
		Ethyl Acetate	2011/01/13	<2.2		ppbv	
		1,1-Dichloroethylene	2011/01/13	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/01/13	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/01/13	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/01/13	0.40, RDL=0.30		ppbv	
		Chloroform	2011/01/13	<0.15		ppbv	
		Carbon Tetrachloride	2011/01/13	<0.30		ppbv	
		1,1-Dichloroethane	2011/01/13	<0.20		ppbv	
		1,2-Dichloroethane	2011/01/13	<0.20		ppbv	
		Ethylene Dibromide	2011/01/13	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/01/13	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/01/13	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/01/13	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/01/13	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/01/13	<0.17		ppbv	
		1,2-Dichloropropane	2011/01/13	<0.40		ppbv	
		Bromomethane	2011/01/13	<0.18		ppbv	
		Bromoform	2011/01/13	<0.20		ppbv	
		Bromodichloromethane	2011/01/13	<0.20		ppbv	
		Dibromochloromethane	2011/01/13	<0.20		ppbv	
		Heptane	2011/01/13	<0.30		ppbv	

Lakeland Industry & Community Assoc.
 Attention: Ting Xu
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB104596

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2380312 LSY	Method Blank	Trichloroethylene	2011/01/13	<0.30		ppbv	
		Tetrachloroethylene	2011/01/13	<0.20		ppbv	
		Benzene	2011/01/13	<0.18		ppbv	
		Toluene	2011/01/13	<0.20		ppbv	
		Ethylbenzene	2011/01/13	<0.20		ppbv	
		p+m-Xylene	2011/01/13	<0.37		ppbv	
		o-Xylene	2011/01/13	<0.20		ppbv	
		Styrene	2011/01/13	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/01/13	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/01/13	<0.50		ppbv	
		4-ethyltoluene	2011/01/13	<2.2		ppbv	
		Chlorobenzene	2011/01/13	<0.20		ppbv	
		Benzyl chloride	2011/01/13	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/01/13	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/01/13	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/01/13	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/01/13	<2.0		ppbv	
		Hexachlorobutadiene	2011/01/13	<3.0		ppbv	
		Hexane	2011/01/13	<0.30		ppbv	
		Cyclohexane	2011/01/13	<0.20		ppbv	
		Tetrahydrofuran	2011/01/13	<0.40		ppbv	
		1,4-Dioxane	2011/01/13	<2.0		ppbv	
		Xylene (Total)	2011/01/13	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/01/13	NC		%	25
		Carbon Disulfide	2011/01/13	NC		%	25
		Propene	2011/01/13	NC		%	25
		Vinyl Acetate	2011/01/13	NC		%	25
		Vinyl Bromide	2011/01/13	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/01/13	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/01/13	NC		%	25
		Chloromethane	2011/01/13	NC		%	25
		Vinyl Chloride	2011/01/13	NC		%	25
		Chloroethane	2011/01/13	NC		%	25
		1,3-Butadiene	2011/01/13	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/01/13	NC		%	25
		Trichlorotrifluoroethane	2011/01/13	NC		%	25
		Ethanol	2011/01/13	NC		%	25
		2-propanol	2011/01/13	NC		%	25
		2-Propanone	2011/01/13	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/01/13	NC		%	25
		Methyl Isobutyl Ketone	2011/01/13	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/01/13	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/01/13	NC		%	25
		Ethyl Acetate	2011/01/13	NC		%	25
		1,1-Dichloroethylene	2011/01/13	NC		%	25
		cis-1,2-Dichloroethylene	2011/01/13	NC		%	25
		trans-1,2-Dichloroethylene	2011/01/13	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/01/13	NC		%	25
		Chloroform	2011/01/13	NC		%	25
		Carbon Tetrachloride	2011/01/13	NC		%	25
		1,1-Dichloroethane	2011/01/13	NC		%	25
		1,2-Dichloroethane	2011/01/13	NC		%	25
		Ethylene Dibromide	2011/01/13	NC		%	25

Lakeland Industry & Community Assoc.
 Attention: Ting Xu
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB104596

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2380312 LSY	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/01/13	NC		%	25
		1,1,2-Trichloroethane	2011/01/13	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/01/13	NC		%	25
		cis-1,3-Dichloropropene	2011/01/13	NC		%	25
		trans-1,3-Dichloropropene	2011/01/13	NC		%	25
		1,2-Dichloropropane	2011/01/13	NC		%	25
		Bromomethane	2011/01/13	NC		%	25
		Bromoform	2011/01/13	NC		%	25
		Bromodichloromethane	2011/01/13	NC		%	25
		Dibromochloromethane	2011/01/13	NC		%	25
		Heptane	2011/01/13	NC		%	25
		Trichloroethylene	2011/01/13	NC		%	25
		Tetrachloroethylene	2011/01/13	NC		%	25
		Benzene	2011/01/13	NC		%	25
		Toluene	2011/01/13	NC		%	25
		Ethylbenzene	2011/01/13	NC		%	25
		p+m-Xylene	2011/01/13	NC		%	25
		o-Xylene	2011/01/13	NC		%	25
		Styrene	2011/01/13	NC		%	25
		1,3,5-Trimethylbenzene	2011/01/13	NC		%	25
		1,2,4-Trimethylbenzene	2011/01/13	NC		%	25
		4-ethyltoluene	2011/01/13	NC		%	25
		Chlorobenzene	2011/01/13	NC		%	25
		Benzyl chloride	2011/01/13	NC		%	25
		1,3-Dichlorobenzene	2011/01/13	NC		%	25
		1,4-Dichlorobenzene	2011/01/13	NC		%	25
		1,2-Dichlorobenzene	2011/01/13	NC		%	25
		1,2,4-Trichlorobenzene	2011/01/13	NC		%	25
		Hexachlorobutadiene	2011/01/13	NC		%	25
		Hexane	2011/01/13	NC		%	25
		Cyclohexane	2011/01/13	NC		%	25
		Tetrahydrofuran	2011/01/13	NC		%	25
		1,4-Dioxane	2011/01/13	NC		%	25
		Xylene (Total)	2011/01/13	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: 7791
Station ID: Lica 1 Canister Installation Date/Time: Jan 14, 2011 @ 11:09 mst
Field Sample ID: LICA VOC/ CLS /Jan 15, 11 Canister Removal Date/Time: Jan 17, 2011 @ 9:03 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
15-Jan-11	15/01/2011 0:00	16/01/2011 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 # 4804

Technician Signiture: Ting Xu

Your C.O.C. #: 4804

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

Report Date: 2011/01/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B107498****Received: 2011/01/19, 10:25**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/01/19	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/01/19	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

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Maxxam Job #: B107498
 Report Date: 2011/01/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		IK6849	IK6850	
Sampling Date		2011/01/15	2011/01/15	
COC Number		4804	4804	
	Units	LICA VOC/CLS/JAN15, 2011 - 7791	LICA VOC/PORT/JAN15, 2011 - 7805	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2385786

QC Batch = Quality Control Batch

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6849				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA VOC/CLS/JAN15, 2011 - 7791	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2385788
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2385788
Propene	ppbv	0.50	0.30	0.863	0.516	2385788
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2385788
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2385788
Dichlorodifluoromethane (FREON 12)	ppbv	0.71	0.20	3.51	0.989	2385788
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2385788
Chloromethane	ppbv	0.57	0.30	1.18	0.620	2385788
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2385788
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2385788
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2385788
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.88	1.12	2385788
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2385788
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2385788
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2385788
2-Propanone	ppbv	1.56	0.80	3.71	1.90	2385788
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2385788
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2385788
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2385788
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2385788
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2385788
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2385788
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2385788
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2385788
Methylene Chloride(Dichloromethane)	ppbv	0.48	0.30	1.67	1.04	2385788
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2385788
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2385788
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2385788
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2385788
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2385788
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2385788
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6849				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA VOC/CLS/JAN15, 2011 - 7791	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2385788
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2385788
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2385788
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2385788
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2385788
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2385788
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2385788
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2385788
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2385788
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2385788
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2385788
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2385788
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2385788
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2385788
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2385788
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2385788
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2385788
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2385788
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2385788
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2385788
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2385788
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2385788
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2385788
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2385788
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2385788
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2385788
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2385788
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2385788
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2385788
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2385788
QC Batch = Quality Control Batch						

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6849				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA VOC/CLS/JAN15, 2011 - 7791	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2385788
D5-Chlorobenzene	%	78		N/A	N/A	2385788
Difluorobenzene	%	82		N/A	N/A	2385788

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

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6850				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN15, 2011 - 7805				

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2385788
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2385788
Propene	ppbv	0.75	0.30	1.29	0.516	2385788
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2385788
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2385788
Dichlorodifluoromethane (FREON 12)	ppbv	0.72	0.20	3.56	0.989	2385788
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2385788
Chloromethane	ppbv	0.60	0.30	1.23	0.620	2385788
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2385788
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2385788
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2385788
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.88	1.12	2385788
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2385788
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2385788
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2385788
2-Propanone	ppbv	1.03	0.80	2.45	1.90	2385788
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2385788
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2385788
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2385788
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2385788
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2385788
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2385788
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2385788
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2385788
Methylene Chloride(Dichloromethane)	ppbv	0.46	0.30	1.60	1.04	2385788
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2385788
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2385788
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2385788
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2385788
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2385788
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2385788

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6850				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN15, 2011 - 7805				
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2385788
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2385788
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2385788
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2385788
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2385788
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2385788
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2385788
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2385788
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2385788
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2385788
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2385788
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2385788
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2385788
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2385788
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2385788
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2385788
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2385788
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2385788
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2385788
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2385788
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2385788
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2385788
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2385788
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2385788
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2385788
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2385788
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2385788
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2385788
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2385788
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2385788
QC Batch = Quality Control Batch						

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6850				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN15, 2011 - 7805				

Surrogate Recovery (%)						
Bromochloromethane	%	80		N/A	N/A	2385788
D5-Chlorobenzene	%	77		N/A	N/A	2385788
Difluorobenzene	%	81		N/A	N/A	2385788

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

Maxxam Job #: B107498
 Report Date: 2011/01/24

Test Summary

Maxxam ID IK6849
Sample ID LICA VOC/CLS/JAN15, 2011 - 7791
Matrix AIR
Collected 2011/01/15
Shipped
Received 2011/01/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2385786	N/A	2011/01/19	LSY
Volatile Organics in Air (TO-15)	GC/MS	2385788	N/A	2011/01/19	LSY

Maxxam ID IK6850
Sample ID LICA VOC/PORT/JAN15, 2011 - 7805
Matrix AIR
Collected 2011/01/15
Shipped
Received 2011/01/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2385786	N/A	2011/01/19	LSY
Volatile Organics in Air (TO-15)	GC/MS	2385788	N/A	2011/01/19	LSY

Maxxam Job #: B107498
Report Date: 2011/01/24

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: GB107498

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2385788 LSY	Spiked Blank	Bromochloromethane	2011/01/19		100	%	60 - 140
		D5-Chlorobenzene	2011/01/19		100	%	60 - 140
		Difluorobenzene	2011/01/19		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/19		89	%	70 - 130
		Carbon Disulfide	2011/01/19		87	%	70 - 130
		Propene	2011/01/19		89	%	70 - 130
		Vinyl Acetate	2011/01/19		102	%	70 - 130
		Vinyl Bromide	2011/01/19		94	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/01/19		91	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/01/19		103	%	70 - 130
		Chloromethane	2011/01/19		93	%	70 - 130
		Vinyl Chloride	2011/01/19		91	%	70 - 130
		Chloroethane	2011/01/19		88	%	70 - 130
		1,3-Butadiene	2011/01/19		81	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/01/19		89	%	70 - 130
		Trichlorotrifluoroethane	2011/01/19		87	%	70 - 130
		Ethanol	2011/01/19		96	%	70 - 130
		2-propanol	2011/01/19		86	%	70 - 130
		2-Propanone	2011/01/19		99	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/01/19		102	%	70 - 130
		Methyl Isobutyl Ketone	2011/01/19		86	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/01/19		82	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/01/19		88	%	70 - 130
		Ethyl Acetate	2011/01/19		96	%	70 - 130
		1,1-Dichloroethylene	2011/01/19		89	%	70 - 130
		cis-1,2-Dichloroethylene	2011/01/19		89	%	70 - 130
		trans-1,2-Dichloroethylene	2011/01/19		93	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/01/19		83	%	70 - 130
		Chloroform	2011/01/19		90	%	70 - 130
		Carbon Tetrachloride	2011/01/19		109	%	70 - 130
		1,1-Dichloroethane	2011/01/19		89	%	70 - 130
		1,2-Dichloroethane	2011/01/19		94	%	70 - 130
		Ethylene Dibromide	2011/01/19		89	%	70 - 130
		1,1,1-Trichloroethane	2011/01/19		94	%	70 - 130
		1,1,2-Trichloroethane	2011/01/19		86	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/01/19		75	%	70 - 130
		cis-1,3-Dichloropropene	2011/01/19		99	%	70 - 130
		trans-1,3-Dichloropropene	2011/01/19		107	%	70 - 130
		1,2-Dichloropropane	2011/01/19		86	%	70 - 130
		Bromomethane	2011/01/19		84	%	70 - 130
		Bromoform	2011/01/19		125	%	70 - 130
		Bromodichloromethane	2011/01/19		105	%	70 - 130
		Dibromochloromethane	2011/01/19		121	%	70 - 130
		Heptane	2011/01/19		91	%	70 - 130
		Trichloroethylene	2011/01/19		83	%	70 - 130
		Tetrachloroethylene	2011/01/19		82	%	70 - 130
		Benzene	2011/01/19		83	%	70 - 130
		Toluene	2011/01/19		84	%	70 - 130
		Ethylbenzene	2011/01/19		82	%	70 - 130
		p+m-Xylene	2011/01/19		82	%	70 - 130
		o-Xylene	2011/01/19		82	%	70 - 130
		Styrene	2011/01/19		83	%	70 - 130
		1,3,5-Trimethylbenzene	2011/01/19		76	%	70 - 130
		1,2,4-Trimethylbenzene	2011/01/19		70	%	70 - 130
		4-ethyltoluene	2011/01/19		78	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB107498

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2385788 LSY	Spiked Blank	Chlorobenzene	2011/01/19		84	%	70 - 130
		Benzyl chloride	2011/01/19		97	%	70 - 130
		1,3-Dichlorobenzene	2011/01/19		73	%	70 - 130
		1,4-Dichlorobenzene	2011/01/19		76	%	70 - 130
		1,2-Dichlorobenzene	2011/01/19		66 (1)	%	70 - 130
		1,2,4-Trichlorobenzene	2011/01/19		89	%	70 - 130
		Hexachlorobutadiene	2011/01/19		93	%	70 - 130
		Hexane	2011/01/19		84	%	70 - 130
		Cyclohexane	2011/01/19		88	%	70 - 130
		Tetrahydrofuran	2011/01/19		91	%	70 - 130
		1,4-Dioxane	2011/01/19		75	%	70 - 130
	Method Blank	Bromochloromethane	2011/01/19		85	%	60 - 140
		D5-Chlorobenzene	2011/01/19		82	%	60 - 140
		Difluorobenzene	2011/01/19		87	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/19	<0.20		ppbv	
		Carbon Disulfide	2011/01/19	<0.50		ppbv	
		Propene	2011/01/19	<0.30		ppbv	
		Vinyl Acetate	2011/01/19	<0.20		ppbv	
		Vinyl Bromide	2011/01/19	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/01/19	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/01/19	<0.17		ppbv	
		Chloromethane	2011/01/19	<0.30		ppbv	
		Vinyl Chloride	2011/01/19	<0.18		ppbv	
		Chloroethane	2011/01/19	<0.30		ppbv	
		1,3-Butadiene	2011/01/19	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/01/19	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/01/19	<0.15		ppbv	
		Ethanol	2011/01/19	<2.3		ppbv	
		2-propanol	2011/01/19	<3.0		ppbv	
		2-Propanone	2011/01/19	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/01/19	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/01/19	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/01/19	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/01/19	<0.20		ppbv	
		Ethyl Acetate	2011/01/19	<2.2		ppbv	
		1,1-Dichloroethylene	2011/01/19	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/01/19	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/01/19	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/01/19	0.39, RDL=0.30		ppbv	
		Chloroform	2011/01/19	<0.15		ppbv	
		Carbon Tetrachloride	2011/01/19	<0.30		ppbv	
		1,1-Dichloroethane	2011/01/19	<0.20		ppbv	
		1,2-Dichloroethane	2011/01/19	<0.20		ppbv	
		Ethylene Dibromide	2011/01/19	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/01/19	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/01/19	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/01/19	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/01/19	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/01/19	<0.17		ppbv	
		1,2-Dichloropropane	2011/01/19	<0.40		ppbv	
		Bromomethane	2011/01/19	<0.18		ppbv	
		Bromoform	2011/01/19	<0.20		ppbv	
		Bromodichloromethane	2011/01/19	<0.20		ppbv	
		Dibromochloromethane	2011/01/19	<0.20		ppbv	
		Heptane	2011/01/19	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB107498

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2385788 LSY	Method Blank	Trichloroethylene	2011/01/19	<0.30		ppbv	
		Tetrachloroethylene	2011/01/19	<0.20		ppbv	
		Benzene	2011/01/19	<0.18		ppbv	
		Toluene	2011/01/19	<0.20		ppbv	
		Ethylbenzene	2011/01/19	<0.20		ppbv	
		p+m-Xylene	2011/01/19	<0.37		ppbv	
		o-Xylene	2011/01/19	<0.20		ppbv	
		Styrene	2011/01/19	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/01/19	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/01/19	<0.50		ppbv	
		4-ethyltoluene	2011/01/19	<2.2		ppbv	
		Chlorobenzene	2011/01/19	<0.20		ppbv	
		Benzyl chloride	2011/01/19	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/01/19	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/01/19	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/01/19	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/01/19	<2.0		ppbv	
		Hexachlorobutadiene	2011/01/19	<3.0		ppbv	
		Hexane	2011/01/19	<0.30		ppbv	
		Cyclohexane	2011/01/19	<0.20		ppbv	
		Tetrahydrofuran	2011/01/19	<0.40		ppbv	
		1,4-Dioxane	2011/01/19	<2.0		ppbv	
		Xylene (Total)	2011/01/19	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/01/19	NC		%	25
		Carbon Disulfide	2011/01/19	NC		%	25
		Propene	2011/01/19	NC		%	25
		Vinyl Acetate	2011/01/19	NC		%	25
		Vinyl Bromide	2011/01/19	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/01/19	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/01/19	NC		%	25
		Chloromethane	2011/01/19	NC		%	25
		Vinyl Chloride	2011/01/19	NC		%	25
		Chloroethane	2011/01/19	NC		%	25
		1,3-Butadiene	2011/01/19	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/01/19	NC		%	25
		Trichlorotrifluoroethane	2011/01/19	NC		%	25
		Ethanol	2011/01/19	1.2		%	25
		2-propanol	2011/01/19	NC		%	25
		2-Propanone	2011/01/19	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/01/19	NC		%	25
		Methyl Isobutyl Ketone	2011/01/19	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/01/19	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/01/19	NC		%	25
		Ethyl Acetate	2011/01/19	NC		%	25
		1,1-Dichloroethylene	2011/01/19	NC		%	25
		cis-1,2-Dichloroethylene	2011/01/19	NC		%	25
		trans-1,2-Dichloroethylene	2011/01/19	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/01/19	NC		%	25
		Chloroform	2011/01/19	NC		%	25
		Carbon Tetrachloride	2011/01/19	NC		%	25
		1,1-Dichloroethane	2011/01/19	NC		%	25
		1,2-Dichloroethane	2011/01/19	NC		%	25
		Ethylene Dibromide	2011/01/19	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB107498

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2385788 LSY	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/01/19	NC		%	25
		1,1,2-Trichloroethane	2011/01/19	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/01/19	NC		%	25
		cis-1,3-Dichloropropene	2011/01/19	NC		%	25
		trans-1,3-Dichloropropene	2011/01/19	NC		%	25
		1,2-Dichloropropane	2011/01/19	NC		%	25
		Bromomethane	2011/01/19	NC		%	25
		Bromoform	2011/01/19	NC		%	25
		Bromodichloromethane	2011/01/19	NC		%	25
		Dibromochloromethane	2011/01/19	NC		%	25
		Heptane	2011/01/19	NC		%	25
		Trichloroethylene	2011/01/19	NC		%	25
		Tetrachloroethylene	2011/01/19	NC		%	25
		Benzene	2011/01/19	NC		%	25
		Toluene	2011/01/19	NC		%	25
		Ethylbenzene	2011/01/19	NC		%	25
		p+m-Xylene	2011/01/19	NC		%	25
		o-Xylene	2011/01/19	NC		%	25
		Styrene	2011/01/19	NC		%	25
		1,3,5-Trimethylbenzene	2011/01/19	NC		%	25
		1,2,4-Trimethylbenzene	2011/01/19	NC		%	25
		4-ethyltoluene	2011/01/19	NC		%	25
		Chlorobenzene	2011/01/19	NC		%	25
		Benzyl chloride	2011/01/19	NC		%	25
		1,3-Dichlorobenzene	2011/01/19	NC		%	25
		1,4-Dichlorobenzene	2011/01/19	NC		%	25
		1,2-Dichlorobenzene	2011/01/19	NC		%	25
		1,2,4-Trichlorobenzene	2011/01/19	NC		%	25
		Hexachlorobutadiene	2011/01/19	NC		%	25
		Hexane	2011/01/19	NC		%	25
		Cyclohexane	2011/01/19	NC		%	25
		Tetrahydrofuran	2011/01/19	NC		%	25
		1,4-Dioxane	2011/01/19	NC		%	25
		Xylene (Total)	2011/01/19	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.

(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: 7796
Station ID: Lica 1 Canister Installation Date/Time: Jan 20, 2011 @ 17:23 mst
Field Sample ID: LICA VOC/ CLS /Jan 21, 11 Canister Removal Date/Time: Jan 25, 2011 @ 9:23 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
21-Jan-11	21/01/2011 0:00	22/01/2011 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 # 5154

Technician Signiture: Ting Xu



Your C.O.C. #: 5154

Attention: Michael Bisaga

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

Report Date: 2011/02/01

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B111404
Received: 2011/01/27, 09:51

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/01/27	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/01/27	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 #: B111404
 Report Date: 2011/02/01

RESULTS OF ANALYSES OF AIR

Maxxam ID		IM5712	IM5713	
Sampling Date		2011/01/21	2011/01/21	
COC Number		5154	5154	
	Units	LICA VOC\CLS\ JAN 21,2011 - 7796	LICA VOC\PORT\ JAN 21,2011 - 7871	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2392659
QC Batch = Quality Control Batch				

Maxxam Job #: B111404
 Report Date: 2011/02/01

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IM5712			IM5713				
Sampling Date		2011/01/21			2011/01/21				
COC Number		5154			5154				
	Units	LICA VOC\CLS\ JAN 21,2011 - 7796	ug/m3	DL (ug/m3)	LICA VOC\PORT\ JAN 21,2011 - 7871	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	2392662
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2392662
Propene	ppbv	0.82	1.41	0.516	0.80	0.30	1.37	0.516	2392662
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2392662
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2392662
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	3.45	0.989	0.70	0.20	3.48	0.989	2392662
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2392662
Chloromethane	ppbv	0.53	1.09	0.620	0.60	0.30	1.24	0.620	2392662
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2392662
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2392662
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2392662
Trichlorofluoromethane (FREON 11)	ppbv	0.33	1.87	1.12	0.33	0.20	1.88	1.12	2392662
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2392662
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2392662
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2392662
2-Propanone	ppbv	1.56	3.70	1.90	1.24	0.80	2.94	1.90	2392662
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2392662
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2392662
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2392662
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2392662
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2392662
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2392662
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2392662
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2392662
Methylene Chloride(Dichloromethane)	ppbv	0.45	1.57	1.04	0.44	0.30	1.51	1.04	2392662
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2392662
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2392662
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2392662
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2392662
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2392662

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B111404
 Report Date: 2011/02/01

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IM5712			IM5713				
Sampling Date		2011/01/21			2011/01/21				
COC Number		5154			5154				
	Units	LICA VOC\CLS\ JAN 21,2011 - 7796	ug/m3	DL (ug/m3)	LICA VOC\PORT\ JAN 21,2011 - 7871	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	2392662
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2392662
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2392662
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2392662
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2392662
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2392662
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2392662
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2392662
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2392662
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2392662
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2392662
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2392662
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2392662
Benzene	ppbv	0.22	0.700	0.575	<0.18	0.18	<0.575	0.575	2392662
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2392662
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2392662
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2392662
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2392662
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2392662
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2392662
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2392662
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2392662
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2392662
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2392662
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2392662
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2392662
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2392662
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2392662
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2392662
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2392662
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.22	0.20	0.758	0.688	2392662
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2392662
QC Batch = Quality Control Batch									

Maxxam Job #: B111404
 Report Date: 2011/02/01

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IM5712			IM5713				
Sampling Date		2011/01/21			2011/01/21				
COC Number		5154			5154				
	Units	LICA VOC\CLS\ JAN 21,2011 - 7796	ug/m3	DL (ug/m3)	LICA VOC\PORT\ JAN 21,2011 - 7871	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	2392662
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2392662
Surrogate Recovery (%)									
Bromochloromethane	%	86	N/A	N/A	85		N/A	N/A	2392662
D5-Chlorobenzene	%	83	N/A	N/A	84		N/A	N/A	2392662
Difluorobenzene	%	88	N/A	N/A	87		N/A	N/A	2392662
N/A = Not Applicable QC Batch = Quality Control Batch									

Maxxam Job #: B111404
 Report Date: 2011/02/01

Test Summary

Maxxam ID IM5712 **Collected** 2011/01/21
Sample ID LICA VOC\CLS\ JAN 21,2011 - 7796 **Shipped**
Matrix AIR **Received** 2011/01/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2392659	N/A	2011/01/27	LSY
Volatile Organics in Air (TO-15)	GC/MS	2392662	N/A	2011/01/27	LSY

Maxxam ID IM5713 **Collected** 2011/01/21
Sample ID LICA VOC\PORT\ JAN 21,2011 - 7871 **Shipped**
Matrix AIR **Received** 2011/01/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2392659	N/A	2011/01/27	LSY
Volatile Organics in Air (TO-15)	GC/MS	2392662	N/A	2011/01/27	LSY

Maxxam Job #: B111404
Report Date: 2011/02/01

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: GB111404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2392662 LSY	Spiked Blank	Bromochloromethane	2011/01/27		99	%	60 - 140
		D5-Chlorobenzene	2011/01/27		98	%	60 - 140
		Difluorobenzene	2011/01/27		101	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/27		97	%	70 - 130
		Carbon Disulfide	2011/01/27		85	%	70 - 130
		Propene	2011/01/27		94	%	70 - 130
		Vinyl Acetate	2011/01/27		104	%	70 - 130
		Vinyl Bromide	2011/01/27		100	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/01/27		89	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/01/27		103	%	70 - 130
		Chloromethane	2011/01/27		90	%	70 - 130
		Vinyl Chloride	2011/01/27		93	%	70 - 130
		Chloroethane	2011/01/27		90	%	70 - 130
		1,3-Butadiene	2011/01/27		77	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/01/27		90	%	70 - 130
		Trichlorotrifluoroethane	2011/01/27		89	%	70 - 130
		Ethanol	2011/01/27		93	%	70 - 130
		2-propanol	2011/01/27		95	%	70 - 130
		2-Propanone	2011/01/27		91	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/01/27		99	%	70 - 130
		Methyl Isobutyl Ketone	2011/01/27		89	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/01/27		80	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/01/27		104	%	70 - 130
		Ethyl Acetate	2011/01/27		93	%	70 - 130
		1,1-Dichloroethylene	2011/01/27		95	%	70 - 130
		cis-1,2-Dichloroethylene	2011/01/27		98	%	70 - 130
		trans-1,2-Dichloroethylene	2011/01/27		96	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/01/27		81	%	70 - 130
		Chloroform	2011/01/27		91	%	70 - 130
		Carbon Tetrachloride	2011/01/27		95	%	70 - 130
		1,1-Dichloroethane	2011/01/27		89	%	70 - 130
		1,2-Dichloroethane	2011/01/27		94	%	70 - 130
		Ethylene Dibromide	2011/01/27		98	%	70 - 130
		1,1,1-Trichloroethane	2011/01/27		94	%	70 - 130
		1,1,2-Trichloroethane	2011/01/27		92	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/01/27		83	%	70 - 130
		cis-1,3-Dichloropropene	2011/01/27		101	%	70 - 130
		trans-1,3-Dichloropropene	2011/01/27		115	%	70 - 130
		1,2-Dichloropropane	2011/01/27		91	%	70 - 130
		Bromomethane	2011/01/27		86	%	70 - 130
		Bromoform	2011/01/27		112	%	70 - 130
		Bromodichloromethane	2011/01/27		95	%	70 - 130
		Dibromochloromethane	2011/01/27		105	%	70 - 130
		Heptane	2011/01/27		95	%	70 - 130
		Trichloroethylene	2011/01/27		96	%	70 - 130
		Tetrachloroethylene	2011/01/27		98	%	70 - 130
		Benzene	2011/01/27		95	%	70 - 130
		Toluene	2011/01/27		100	%	70 - 130
		Ethylbenzene	2011/01/27		103	%	70 - 130
		p+m-Xylene	2011/01/27		101	%	70 - 130
		o-Xylene	2011/01/27		98	%	70 - 130
		Styrene	2011/01/27		109	%	70 - 130
		1,3,5-Trimethylbenzene	2011/01/27		98	%	70 - 130
		1,2,4-Trimethylbenzene	2011/01/27		94	%	70 - 130
		4-ethyltoluene	2011/01/27		101	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB111404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2392662 LSY	Spiked Blank	Chlorobenzene	2011/01/27		94	%	70 - 130
		Benzyl chloride	2011/01/27		93	%	70 - 130
		1,3-Dichlorobenzene	2011/01/27		91	%	70 - 130
		1,4-Dichlorobenzene	2011/01/27		92	%	70 - 130
		1,2-Dichlorobenzene	2011/01/27		82	%	70 - 130
		1,2,4-Trichlorobenzene	2011/01/27		97	%	70 - 130
		Hexachlorobutadiene	2011/01/27		96	%	70 - 130
		Hexane	2011/01/27		99	%	70 - 130
		Cyclohexane	2011/01/27		98	%	70 - 130
		Tetrahydrofuran	2011/01/27		96	%	70 - 130
		1,4-Dioxane	2011/01/27		81	%	70 - 130
	Method Blank	Bromochloromethane	2011/01/27		88	%	60 - 140
		D5-Chlorobenzene	2011/01/27		87	%	60 - 140
		Difluorobenzene	2011/01/27		90	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/27	<0.20		ppbv	
		Carbon Disulfide	2011/01/27	<0.50		ppbv	
		Propene	2011/01/27	<0.30		ppbv	
		Vinyl Acetate	2011/01/27	<0.20		ppbv	
		Vinyl Bromide	2011/01/27	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/01/27	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/01/27	<0.17		ppbv	
		Chloromethane	2011/01/27	<0.30		ppbv	
		Vinyl Chloride	2011/01/27	<0.18		ppbv	
		Chloroethane	2011/01/27	<0.30		ppbv	
		1,3-Butadiene	2011/01/27	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/01/27	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/01/27	<0.15		ppbv	
		Ethanol	2011/01/27	<2.3		ppbv	
		2-propanol	2011/01/27	<3.0		ppbv	
		2-Propanone	2011/01/27	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/01/27	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/01/27	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/01/27	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/01/27	<0.20		ppbv	
		Ethyl Acetate	2011/01/27	<2.2		ppbv	
		1,1-Dichloroethylene	2011/01/27	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/01/27	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/01/27	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/01/27	0.39, RDL=0.30		ppbv	
		Chloroform	2011/01/27	<0.15		ppbv	
		Carbon Tetrachloride	2011/01/27	<0.30		ppbv	
		1,1-Dichloroethane	2011/01/27	<0.20		ppbv	
		1,2-Dichloroethane	2011/01/27	<0.20		ppbv	
		Ethylene Dibromide	2011/01/27	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/01/27	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/01/27	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/01/27	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/01/27	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/01/27	<0.17		ppbv	
		1,2-Dichloropropane	2011/01/27	<0.40		ppbv	
		Bromomethane	2011/01/27	<0.18		ppbv	
		Bromoform	2011/01/27	<0.20		ppbv	
		Bromodichloromethane	2011/01/27	<0.20		ppbv	
		Dibromochloromethane	2011/01/27	<0.20		ppbv	
		Heptane	2011/01/27	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB111404

QA/QC Batch			Date Analyzed					
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2392662	LSY	Method Blank	2011/01/27	<0.30		ppbv		
		Trichloroethylene	2011/01/27	<0.20		ppbv		
		Tetrachloroethylene	2011/01/27	<0.18		ppbv		
		Benzene	2011/01/27	<0.20		ppbv		
		Toluene	2011/01/27	<0.20		ppbv		
		Ethylbenzene	2011/01/27	<0.37		ppbv		
		p+m-Xylene	2011/01/27	<0.20		ppbv		
		o-Xylene	2011/01/27	<0.20		ppbv		
		Styrene	2011/01/27	<0.50		ppbv		
		1,3,5-Trimethylbenzene	2011/01/27	<0.50		ppbv		
		1,2,4-Trimethylbenzene	2011/01/27	<2.2		ppbv		
		4-ethyltoluene	2011/01/27	<0.20		ppbv		
		Chlorobenzene	2011/01/27	<1.0		ppbv		
		Benzyl chloride	2011/01/27	<0.40		ppbv		
		1,3-Dichlorobenzene	2011/01/27	<0.40		ppbv		
		1,4-Dichlorobenzene	2011/01/27	<0.40		ppbv		
		1,2-Dichlorobenzene	2011/01/27	<2.0		ppbv		
		1,2,4-Trichlorobenzene	2011/01/27	<3.0		ppbv		
		Hexachlorobutadiene	2011/01/27	<0.30		ppbv		
		Hexane	2011/01/27	<0.20		ppbv		
		Cyclohexane	2011/01/27	<0.40		ppbv		
		Tetrahydrofuran	2011/01/27	<2.0		ppbv		
		1,4-Dioxane	2011/01/27	<0.60		ppbv		
		Xylene (Total)	2011/01/27			ppbv		

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

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

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

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7854
Station ID: Lica 1 Canister Installation Date/Time: Jan 26, 2011 @ 11:45 mst
Field Sample ID: LICA VOC/ CLS /Jan 27, 11 Canister Removal Date/Time: Jan 31, 2011 @ 7:44 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
27-Jan-11	27/01/2011 0:00	28/01/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	608	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 # 06612

Technician Signiture: Ting Xu



Your C.O.C. #: 06612

Attention: Michael Bisaga

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

Report Date: 2011/02/10

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B114517

Received: 2011/02/03, 09:29

Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/02/04	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/02/04	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

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

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Total cover pages: 1

Maxxam Job #: B114517
 Report Date: 2011/02/10

RESULTS OF ANALYSES OF AIR

Maxxam ID		IN9333	IN9334	
Sampling Date		2011/01/27	2011/01/27	
COC Number		06612	06612	
	Units	LICA VOC\CLS\ JAN 27,11 - 7854	LICA VOC\PORT\JAN 27,11 - 7788	QC Batch

Volatile Organics				
Pressure on Receipt	psig	20	20	2398057
QC Batch = Quality Control Batch				

Maxxam Job #: B114517
 Report Date: 2011/02/10

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IN9333			IN9334				
Sampling Date		2011/01/27			2011/01/27				
COC Number		06612			06612				
	Units	LICA VOC\CLS JAN 27,11 - 7854	ug/m3	DL (ug/m3)	LICA VOC\PORTJAN 27,11 - 7788	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatiles Organics									
2,2,4-Trimethylpentane	ppbv	0.31	1.47	0.934	<0.20	0.20	<0.934	0.934	2398059
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2398059
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2398059
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2398059
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2398059
Dichlorodifluoromethane (FREON 12)	ppbv	1.23	6.07	0.989	1.29	0.20	6.38	0.989	2398059
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2398059
Chloromethane	ppbv	1.20	2.48	0.620	1.23	0.30	2.55	0.620	2398059
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2398059
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2398059
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2398059
Trichlorofluoromethane (FREON 11)	ppbv	0.60	3.36	1.12	0.64	0.20	3.59	1.12	2398059
Trichlorotrifluoroethane	ppbv	0.21	1.61	1.15	0.21	0.15	1.64	1.15	2398059
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2398059
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2398059
2-Propanone	ppbv	17.6	41.8	1.90	4.40	0.80	10.4	1.90	2398059
Methyl Ethyl Ketone (2-Butanone)	ppbv	4.7	14.0	8.85	<3.0	3.0	<8.85	8.85	2398059
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2398059
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2398059
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2398059
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2398059
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2398059
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2398059
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2398059
Methylene Chloride(Dichloromethane)	ppbv	0.88	3.07	1.04	0.77	0.30	2.66	1.04	2398059
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2398059
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2398059
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2398059
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2398059
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2398059

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B114517
 Report Date: 2011/02/10

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IN9333			IN9334				
Sampling Date		2011/01/27			2011/01/27				
COC Number		06612			06612				
	Units	LICA VOC\CLS\ JAN 27,11 - 7854	ug/m3	DL (ug/m3)	LICA VOC\PORTJAN 27,11 - 7788	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	2398059
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2398059
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2398059
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2398059
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2398059
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2398059
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2398059
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2398059
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2398059
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2398059
Heptane	ppbv	0.39	1.60	1.23	<0.30	0.30	<1.23	1.23	2398059
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2398059
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2398059
Benzene	ppbv	0.69	2.20	0.575	0.34	0.18	1.07	0.575	2398059
Toluene	ppbv	0.89	3.36	0.753	0.25	0.20	0.933	0.753	2398059
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2398059
p+m-Xylene	ppbv	0.55	2.39	1.61	<0.37	0.37	<1.61	1.61	2398059
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2398059
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2398059
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2398059
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2398059
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2398059
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2398059
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2398059
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2398059
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2398059
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2398059
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2398059
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2398059
Hexane	ppbv	0.73	2.58	1.06	0.45	0.30	1.59	1.06	2398059
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2398059
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2398059

QC Batch = Quality Control Batch

Maxxam Job #: B114517
 Report Date: 2011/02/10

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IN9333			IN9334				
Sampling Date		2011/01/27			2011/01/27				
COC Number		06612			06612				
	Units	LICA VOC\CLS\ JAN 27,11 - 7854	ug/m3	DL (ug/m3)	LICA VOC\PORTJAN 27,11 - 7788	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	2398059
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2398059
Surrogate Recovery (%)									
Bromochloromethane	%	74	N/A	N/A	72		N/A	N/A	2398059
D5-Chlorobenzene	%	73	N/A	N/A	69		N/A	N/A	2398059
Difluorobenzene	%	72	N/A	N/A	70		N/A	N/A	2398059

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

Maxxam Job #: B114517
 Report Date: 2011/02/10

Test Summary

Maxxam ID IN9333
Sample ID LICA VOC\CLS\ JAN 27,11 - 7854
Matrix AIR
Collected 2011/01/27
Shipped
Received 2011/02/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2398057	N/A	2011/02/04	MMU
Volatile Organics in Air (TO-15)	GC/MS	2398059	N/A	2011/02/04	MMU

Maxxam ID IN9334
Sample ID LICA VOC\PORT\JAN 27,11 - 7788
Matrix AIR
Collected 2011/01/27
Shipped
Received 2011/02/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2398057	N/A	2011/02/04	MMU
Volatile Organics in Air (TO-15)	GC/MS	2398059	N/A	2011/02/04	MMU

Maxxam Job #: B114517
Report Date: 2011/02/10

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: GB114517

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2398059 MMU	Spiked Blank	Bromochloromethane	2011/02/04		113	%	60 - 140
		D5-Chlorobenzene	2011/02/04		109	%	60 - 140
		Difluorobenzene	2011/02/04		112	%	60 - 140
		2,2,4-Trimethylpentane	2011/02/04		91	%	70 - 130
		Carbon Disulfide	2011/02/04		84	%	70 - 130
		Propene	2011/02/04		88	%	70 - 130
		Vinyl Acetate	2011/02/04		99	%	70 - 130
		Vinyl Bromide	2011/02/04		92	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/02/04		97	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/02/04		110	%	70 - 130
		Chloromethane	2011/02/04		101	%	70 - 130
		Vinyl Chloride	2011/02/04		101	%	70 - 130
		Chloroethane	2011/02/04		100	%	70 - 130
		1,3-Butadiene	2011/02/04		104	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/02/04		97	%	70 - 130
		Trichlorotrifluoroethane	2011/02/04		95	%	70 - 130
		Ethanol	2011/02/04		72	%	70 - 130
		2-propanol	2011/02/04		98	%	70 - 130
		2-Propanone	2011/02/04		102	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/02/04		92	%	70 - 130
		Methyl Isobutyl Ketone	2011/02/04		96	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/02/04		99	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/02/04		91	%	70 - 130
		Ethyl Acetate	2011/02/04		98	%	70 - 130
		1,1-Dichloroethylene	2011/02/04		91	%	70 - 130
		cis-1,2-Dichloroethylene	2011/02/04		97	%	70 - 130
		trans-1,2-Dichloroethylene	2011/02/04		86	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/02/04		86	%	70 - 130
		Chloroform	2011/02/04		92	%	70 - 130
		Carbon Tetrachloride	2011/02/04		83	%	70 - 130
		1,1-Dichloroethane	2011/02/04		95	%	70 - 130
		1,2-Dichloroethane	2011/02/04		100	%	70 - 130
		Ethylene Dibromide	2011/02/04		81	%	70 - 130
		1,1,1-Trichloroethane	2011/02/04		85	%	70 - 130
		1,1,2-Trichloroethane	2011/02/04		82	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/02/04		95	%	70 - 130
		cis-1,3-Dichloropropene	2011/02/04		91	%	70 - 130
		trans-1,3-Dichloropropene	2011/02/04		93	%	70 - 130
		1,2-Dichloropropane	2011/02/04		92	%	70 - 130
		Bromomethane	2011/02/04		94	%	70 - 130
		Bromoform	2011/02/04		95	%	70 - 130
		Bromodichloromethane	2011/02/04		91	%	70 - 130
		Dibromochloromethane	2011/02/04		82	%	70 - 130
		Heptane	2011/02/04		91	%	70 - 130
		Trichloroethylene	2011/02/04		72	%	70 - 130
		Tetrachloroethylene	2011/02/04		77	%	70 - 130
		Benzene	2011/02/04		86	%	70 - 130
		Toluene	2011/02/04		82	%	70 - 130
		Ethylbenzene	2011/02/04		84	%	70 - 130
		p+m-Xylene	2011/02/04		85	%	70 - 130
		o-Xylene	2011/02/04		84	%	70 - 130
		Styrene	2011/02/04		83	%	70 - 130
		1,3,5-Trimethylbenzene	2011/02/04		88	%	70 - 130
		1,2,4-Trimethylbenzene	2011/02/04		90	%	70 - 130
		4-ethyltoluene	2011/02/04		87	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB114517

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2398059 MMU	Spiked Blank	Chlorobenzene	2011/02/04		76	%	70 - 130
		Benzyl chloride	2011/02/04		112	%	70 - 130
		1,3-Dichlorobenzene	2011/02/04		88	%	70 - 130
		1,4-Dichlorobenzene	2011/02/04		89	%	70 - 130
		1,2-Dichlorobenzene	2011/02/04		90	%	70 - 130
		1,2,4-Trichlorobenzene	2011/02/04		104	%	70 - 130
		Hexachlorobutadiene	2011/02/04		98	%	70 - 130
		Hexane	2011/02/04		90	%	70 - 130
		Cyclohexane	2011/02/04		87	%	70 - 130
		Tetrahydrofuran	2011/02/04		91	%	70 - 130
		1,4-Dioxane	2011/02/04		78	%	70 - 130
	Method Blank	Bromochloromethane	2011/02/04		105	%	60 - 140
		D5-Chlorobenzene	2011/02/04		99	%	60 - 140
		Difluorobenzene	2011/02/04		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/02/04	<0.20		ppbv	
		Carbon Disulfide	2011/02/04	<0.50		ppbv	
		Propene	2011/02/04	<0.30		ppbv	
		Vinyl Acetate	2011/02/04	<0.20		ppbv	
		Vinyl Bromide	2011/02/04	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/02/04	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/02/04	<0.17		ppbv	
		Chloromethane	2011/02/04	<0.30		ppbv	
		Vinyl Chloride	2011/02/04	<0.18		ppbv	
		Chloroethane	2011/02/04	<0.30		ppbv	
		1,3-Butadiene	2011/02/04	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/02/04	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/02/04	<0.15		ppbv	
		Ethanol	2011/02/04	<2.3		ppbv	
		2-propanol	2011/02/04	<3.0		ppbv	
		2-Propanone	2011/02/04	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/02/04	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/02/04	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/02/04	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/02/04	<0.20		ppbv	
		Ethyl Acetate	2011/02/04	<2.2		ppbv	
		1,1-Dichloroethylene	2011/02/04	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/02/04	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/02/04	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/02/04	0.84, RDL=0.30		ppbv	
		Chloroform	2011/02/04	<0.15		ppbv	
		Carbon Tetrachloride	2011/02/04	<0.30		ppbv	
		1,1-Dichloroethane	2011/02/04	<0.20		ppbv	
		1,2-Dichloroethane	2011/02/04	<0.20		ppbv	
		Ethylene Dibromide	2011/02/04	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/02/04	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/02/04	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/02/04	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/02/04	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/02/04	<0.17		ppbv	
		1,2-Dichloropropane	2011/02/04	<0.40		ppbv	
		Bromomethane	2011/02/04	<0.18		ppbv	
		Bromoform	2011/02/04	<0.20		ppbv	
		Bromodichloromethane	2011/02/04	<0.20		ppbv	
		Dibromochloromethane	2011/02/04	<0.20		ppbv	
		Heptane	2011/02/04	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB114517

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2398059	MMU	Method Blank					
		Trichloroethylene	2011/02/04	<0.30		ppbv	
		Tetrachloroethylene	2011/02/04	<0.20		ppbv	
		Benzene	2011/02/04	<0.18		ppbv	
		Toluene	2011/02/04	<0.20		ppbv	
		Ethylbenzene	2011/02/04	<0.20		ppbv	
		p+m-Xylene	2011/02/04	<0.37		ppbv	
		o-Xylene	2011/02/04	<0.20		ppbv	
		Styrene	2011/02/04	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/02/04	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/02/04	<0.50		ppbv	
		4-ethyltoluene	2011/02/04	<2.2		ppbv	
		Chlorobenzene	2011/02/04	<0.20		ppbv	
		Benzyl chloride	2011/02/04	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/02/04	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/02/04	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/02/04	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/02/04	<2.0		ppbv	
		Hexachlorobutadiene	2011/02/04	<3.0		ppbv	
		Hexane	2011/02/04	<0.30		ppbv	
		Cyclohexane	2011/02/04	<0.20		ppbv	
		Tetrahydrofuran	2011/02/04	<0.40		ppbv	
		1,4-Dioxane	2011/02/04	<2.0		ppbv	
		Xylene (Total)	2011/02/04	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/02/04	NC		%	25
		Carbon Disulfide	2011/02/04	NC		%	25
		Propene	2011/02/04	NC		%	25
		Vinyl Acetate	2011/02/04	NC		%	25
		Vinyl Bromide	2011/02/04	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/02/04	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/02/04	NC		%	25
		Chloromethane	2011/02/04	NC		%	25
		Vinyl Chloride	2011/02/04	NC		%	25
		Chloroethane	2011/02/04	NC		%	25
		1,3-Butadiene	2011/02/04	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/02/04	NC		%	25
		Trichlorotrifluoroethane	2011/02/04	NC		%	25
		Ethanol	2011/02/04	NC		%	25
		2-propanol	2011/02/04	NC		%	25
		2-Propanone	2011/02/04	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/02/04	NC		%	25
		Methyl Isobutyl Ketone	2011/02/04	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/02/04	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/02/04	NC		%	25
		Ethyl Acetate	2011/02/04	NC		%	25
		1,1-Dichloroethylene	2011/02/04	NC		%	25
		cis-1,2-Dichloroethylene	2011/02/04	NC		%	25
		trans-1,2-Dichloroethylene	2011/02/04	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/02/04	NC		%	25
		Chloroform	2011/02/04	NC		%	25
		Carbon Tetrachloride	2011/02/04	NC		%	25
		1,1-Dichloroethane	2011/02/04	NC		%	25
		1,2-Dichloroethane	2011/02/04	NC		%	25
		Ethylene Dibromide	2011/02/04	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB114517

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2398059 MMU	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/02/04	NC		%	25
		1,1,2-Trichloroethane	2011/02/04	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/02/04	NC		%	25
		cis-1,3-Dichloropropene	2011/02/04	NC		%	25
		trans-1,3-Dichloropropene	2011/02/04	NC		%	25
		1,2-Dichloropropane	2011/02/04	NC		%	25
		Bromomethane	2011/02/04	NC		%	25
		Bromoform	2011/02/04	NC		%	25
		Bromodichloromethane	2011/02/04	NC		%	25
		Dibromochloromethane	2011/02/04	NC		%	25
		Heptane	2011/02/04	NC		%	25
		Trichloroethylene	2011/02/04	NC		%	25
		Tetrachloroethylene	2011/02/04	NC		%	25
		Benzene	2011/02/04	NC		%	25
		Toluene	2011/02/04	NC		%	25
		Ethylbenzene	2011/02/04	NC		%	25
		p+m-Xylene	2011/02/04	NC		%	25
		o-Xylene	2011/02/04	NC		%	25
		Styrene	2011/02/04	NC		%	25
		1,3,5-Trimethylbenzene	2011/02/04	NC		%	25
		1,2,4-Trimethylbenzene	2011/02/04	NC		%	25
		4-ethyltoluene	2011/02/04	NC		%	25
		Chlorobenzene	2011/02/04	NC		%	25
		Benzyl chloride	2011/02/04	NC		%	25
		1,3-Dichlorobenzene	2011/02/04	NC		%	25
		1,4-Dichlorobenzene	2011/02/04	NC		%	25
		1,2-Dichlorobenzene	2011/02/04	NC		%	25
		1,2,4-Trichlorobenzene	2011/02/04	NC		%	25
		Hexachlorobutadiene	2011/02/04	NC		%	25
		Hexane	2011/02/04	NC		%	25
		Cyclohexane	2011/02/04	8.8		%	25
		Tetrahydrofuran	2011/02/04	NC		%	25
		1,4-Dioxane	2011/02/04	NC		%	25
		Xylene (Total)	2011/02/04	NC		%	25

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

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

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

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

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/Jan 03,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Dec 31, 2010 @ 18:02 mst
 Removal Date/Time: Jan 04, 2011 @ 9:21 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
03-Jan-11	03/01/2011 0:00	04/01/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
23-Dec-10	04-Jan-11	04-Jan-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	-17.8	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# 5136

GB0H1766 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 03, 11

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 5136

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

Report Date: 2011/01/13

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B101348****Received: 2011/01/06, 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	2011/01/08	2011/01/11	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

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Maxxam Job #: B101348
 Report Date: 2011/01/13

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

Maxxam ID		IH7508	IH7509		
Sampling Date		2011/01/03	2011/01/03		
COC Number		5136	5136		
	Units	LICA PUFF+QFF/CLS/JAN 03,11	LICA PUFF+QFF/PORT/JAN 03,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	1.37	0.82	0.10	2375782
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2375782
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2375782
2-Methylantracene	ug	<0.10	<0.10	0.10	2375782
2-Methylnaphthalene	ug	2.76	1.47	0.10	2375782
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2375782
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2375782
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2375782
Acenaphthene	ug	0.106	0.104	0.050	2375782
Acenaphthylene	ug	0.366	0.202	0.050	2375782
Anthracene	ug	<0.050	<0.050	0.050	2375782
Benzo(a)anthracene	ug	0.102	<0.050	0.050	2375782
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2375782
Benzo(a)pyrene	ug	0.078	<0.050	0.050	2375782
Benzo(b)fluoranthene	ug	0.142	0.080	0.050	2375782
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2375782
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2375782
Benzo(g,h,i)perylene	ug	0.146	0.066	0.050	2375782
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2375782
Biphenyl	ug	0.55	0.83	0.10	2375782
Chrysene	ug	0.174	0.110	0.050	2375782
Coronene	ug	<0.10	<0.10	0.10	2375782
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2375782
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2375782
Fluoranthene	ug	0.326	0.228	0.050	2375782
Fluorene	ug	0.258	0.330	0.050	2375782
Indeno(1,2,3-cd)pyrene	ug	0.074	<0.050	0.050	2375782
m-Terphenyl	ug	<0.10	<0.10	0.10	2375782
Naphthalene	ug	2.88	1.15	0.072	2375782
o-Terphenyl	ug	<0.10	<0.10	0.10	2375782
Perylene	ug	<0.10	<0.10	0.10	2375782

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B101348
 Report Date: 2011/01/13

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

Maxxam ID		IH7508	IH7509		
Sampling Date		2011/01/03	2011/01/03		
COC Number		5136	5136		
	Units	LICA PUFF+QFF/CLS/JAN 03,11	LICA PUFF+QFF/PORT/JAN 03,11	RDL	QC Batch
Phenanthrene	ug	0.738	0.738	0.050	2375782
p-Terphenyl	ug	<0.10	<0.10	0.10	2375782
Pyrene	ug	0.286	0.156	0.050	2375782
Quinoline	ug	<0.40	<0.40	0.40	2375782
Tetralin	ug	<0.10	<0.10	0.10	2375782
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	72		2375782
D10-Fluoranthene	%	84	82		2375782
D10-Fluorene (FS)	%	70	76		2375782
D10-Phenanthrene	%	78	76		2375782
D12-Benzo(a)anthracene	%	92	92		2375782
D12-Benzo(a)pyrene	%	92	92		2375782
D12-Benzo(b)fluoranthene	%	90	84		2375782
D12-Benzo(ghi)perylene	%	96	96		2375782
D12-Benzo(k)fluoranthene	%	88	96		2375782
D12-Chrysene	%	90	92		2375782
D12-Indeno(1,2,3-cd)pyrene	%	92	92		2375782
D12-Perylene	%	92	92		2375782
D14-Dibenzo(a,h)anthracene	%	92	94		2375782
D14-Terphenyl (FS)	%	83	84		2375782
D8-Acenaphthylene	%	70	76		2375782
D8-Naphthalene	%	64	68		2375782
QC Batch = Quality Control Batch					

Maxxam Job #: B101348
 Report Date: 2011/01/13

Test Summary

Maxxam ID IH7508 **Collected** 2011/01/03
Sample ID LICA PUFF+QFF/CLS/JAN 03,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2375782	2011/01/08	2011/01/11	WZ

Maxxam ID IH7509 **Collected** 2011/01/03
Sample ID LICA PUFF+QFF/PORT/JAN 03,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2375782	2011/01/08	2011/01/11	WZ

Maxxam Job #: B101348
Report Date: 2011/01/13

GENERAL COMMENTS

PAHMS-F

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

Low recovery of Naphthalene in Spike:dup and spike is OK.

Low recovery of surrogate D10-2-Methylnaphthalene, D8-Acenaphthylene and D8-Naphthalene in blank due to low volume on extraction.

Sample IH7508-01: PAHMS-F

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

Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.174ug, which is the value reported for Chrysene.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Searched for ions specific to this compound in the appropriate retention time range with no possible positive detected.

Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to this compounds in the appropriate retention time range, possible positive detected, but would fall below the mdl using Dibenzo(a,h) anthracene calibration.

Sample IH7509-01: PAHMS-F

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

Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.110ug, which is the value reported for Chrysene.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Searched for ions specific to this compound in the appropriate retention time range with no possible positive detected.

Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to this compounds in the appropriate retention time range, possible positive detected, but would fall below the mdl using Dibenzo(a,h) anthracene calibration.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB101348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375782 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/01/11		74	%	50 - 150
		D10-Fluoranthene	2011/01/11		88	%	50 - 150
		D10-Phenanthrene	2011/01/11		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/11		90	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/11		92	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/11		86	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/11		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/11		90	%	50 - 150
		D12-Chrysene	2011/01/11		90	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/01/11		92	%	50 - 150
		D12-Perylene	2011/01/11		90	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/11		94	%	50 - 150
		D8-Acenaphthylene	2011/01/11		74	%	50 - 150
		D8-Naphthalene	2011/01/11		70	%	50 - 150
		Acenaphthene	2011/01/11		72	%	60 - 130
	RPD	Acenaphthene	2011/01/11	11.1		%	50
	Spiked Blank	Acenaphthylene	2011/01/11		75	%	60 - 130
	RPD	Acenaphthylene	2011/01/11	12.1		%	50
	Spiked Blank	Anthracene	2011/01/11		76	%	60 - 130
	RPD	Anthracene	2011/01/11	3.9		%	50
	Spiked Blank	Benzo(a)anthracene	2011/01/11		84	%	60 - 130
	RPD	Benzo(a)anthracene	2011/01/11	1.2		%	50
	Spiked Blank	Benzo(a)pyrene	2011/01/11		76	%	60 - 130
	RPD	Benzo(a)pyrene	2011/01/11	2.7		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/01/11		80	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/01/11	3.1		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/01/11		86	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/01/11	2.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/01/11		88	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/01/11	1.1		%	50
	Spiked Blank	Chrysene	2011/01/11		84	%	60 - 130
	RPD	Chrysene	2011/01/11	3.2		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/01/11		83	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/01/11	0.3		%	50
	Spiked Blank	Fluoranthene	2011/01/11		84	%	60 - 130
	RPD	Fluoranthene	2011/01/11	3.8		%	50
	Spiked Blank	Fluorene	2011/01/11		74	%	60 - 130
	RPD	Fluorene	2011/01/11	5.2		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/01/11		82	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/01/11	0		%	50
	Spiked Blank	Naphthalene	2011/01/11		67	%	60 - 130
	RPD	Naphthalene	2011/01/11	20.0		%	50
	Spiked Blank	Phenanthrene	2011/01/11		73	%	60 - 130
	RPD	Phenanthrene	2011/01/11	0.3		%	50
	Spiked Blank	Pyrene	2011/01/11		78	%	60 - 130
	RPD	Pyrene	2011/01/11	2.5		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/01/11		48 (1)	%	50 - 150
		D10-Fluoranthene	2011/01/11		62	%	50 - 150
		D10-Phenanthrene	2011/01/11		52	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/11		62	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/11		66	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/11		62	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/11		68	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/11		60	%	50 - 150
		D12-Chrysene	2011/01/11		60	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB101348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375782 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/01/11		64	%	50 - 150
		D12-Perylene	2011/01/11		66	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/11		64	%	50 - 150
		D8-Acenaphthylene	2011/01/11		48 (1)	%	50 - 150
		D8-Naphthalene	2011/01/11		46 (1)	%	50 - 150
		1-Methylnaphthalene	2011/01/11	<0.10		ug	
		1-Methylphenanthrene	2011/01/11	<0.10		ug	
		2-Chloronaphthalene	2011/01/11	<0.10		ug	
		2-Methylanthracene	2011/01/11	<0.10		ug	
		2-Methylnaphthalene	2011/01/11	<0.10		ug	
		3-Methylcholanthrene	2011/01/11	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/01/11	<0.10		ug	
		9,10-Dimethylanthracene	2011/01/11	<0.40		ug	
		Acenaphthene	2011/01/11	<0.050		ug	
		Acenaphthylene	2011/01/11	<0.050		ug	
		Anthracene	2011/01/11	<0.050		ug	
		Benzo(a)anthracene	2011/01/11	<0.050		ug	
		Benzo(a)fluorene	2011/01/11	<0.10		ug	
		Benzo(a)pyrene	2011/01/11	<0.050		ug	
		Benzo(b)fluoranthene	2011/01/11	<0.050		ug	
		Benzo(b)fluorene	2011/01/11	<0.10		ug	
		Benzo(e)pyrene	2011/01/11	<0.10		ug	
		Benzo(g,h,i)perylene	2011/01/11	<0.050		ug	
		Benzo(k)fluoranthene	2011/01/11	<0.050		ug	
		Biphenyl	2011/01/11	<0.10		ug	
		Chrysene	2011/01/11	<0.050		ug	
		Coronene	2011/01/11	<0.10		ug	
		Dibenz(a,h)anthracene	2011/01/11	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/01/11	<0.20		ug	
		Fluoranthene	2011/01/11	<0.050		ug	
		Fluorene	2011/01/11	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/01/11	<0.050		ug	
		m-Terphenyl	2011/01/11	<0.10		ug	
		Naphthalene	2011/01/11	<0.072		ug	
		o-Terphenyl	2011/01/11	<0.10		ug	
		Perylene	2011/01/11	<0.10		ug	
		Phenanthrene	2011/01/11	<0.050		ug	
		p-Terphenyl	2011/01/11	<0.10		ug	
		Pyrene	2011/01/11	<0.050		ug	
		Quinoline	2011/01/11	<0.40		ug	
		Tetralin	2011/01/11	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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

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

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

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

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

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

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jan 07 2011 @ 14:12 mst
Removal Date/Time: Jan 10 2011 @ 8:39 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
09-Jan-11	09/01/2011 0:00	10/01/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
06-Jan-11	10-Jan-11	18-Jan-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)
723	229	-13.8	330.35

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

Comments: COC# 5040

GB0H2623 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 09, 11

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 5040

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

Report Date: 2011/01/20

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B106064****Received: 2011/01/17, 08:54**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/01/18	2011/01/19	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 #: B106064
 Report Date: 2011/01/20

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

Maxxam ID		IK0976	IK0977		
Sampling Date		2011/01/09	2011/01/09		
COC Number		5040	5040		
	Units	LICA PUFF+QFF/CLS/JAN 09,2011	LICA PUFF+QFF/PORT/JAN 09,2011	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.19	0.19	0.10	2382872
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2382872
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2382872
2-Methylantracene	ug	<0.10	<0.10	0.10	2382872
2-Methylnaphthalene	ug	0.37	0.30	0.10	2382872
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2382872
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2382872
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2382872
Acenaphthene	ug	<0.050	<0.050	0.050	2382872
Acenaphthylene	ug	<0.050	<0.050	0.050	2382872
Anthracene	ug	<0.050	<0.050	0.050	2382872
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2382872
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2382872
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2382872
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2382872
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2382872
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2382872
Benzo(g,h,i)perylene	ug	<0.050	0.054	0.050	2382872
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2382872
Biphenyl	ug	0.15	0.18	0.10	2382872
Chrysene	ug	<0.050	<0.050	0.050	2382872
Coronene	ug	<0.10	<0.10	0.10	2382872
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2382872
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2382872
Fluoranthene	ug	<0.050	<0.050	0.050	2382872
Fluorene	ug	0.058	0.068	0.050	2382872
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2382872
m-Terphenyl	ug	<0.10	<0.10	0.10	2382872
Naphthalene	ug	0.336	0.384	0.072	2382872
o-Terphenyl	ug	<0.10	<0.10	0.10	2382872
Perylene	ug	<0.10	<0.10	0.10	2382872

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B106064
 Report Date: 2011/01/20

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

Maxxam ID		IK0976	IK0977		
Sampling Date		2011/01/09	2011/01/09		
COC Number		5040	5040		
	Units	LICA PUFF+QFF/CLS/JAN 09,2011	LICA PUFF+QFF/PORT/JAN 09,2011	RDL	QC Batch

Phenanthrene	ug	0.136	0.180	0.050	2382872
p-Terphenyl	ug	<0.10	<0.10	0.10	2382872
Pyrene	ug	<0.050	<0.050	0.050	2382872
Quinoline	ug	<0.40	<0.40	0.40	2382872
Tetralin	ug	<0.10	<0.10	0.10	2382872
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	66		2382872
D10-Fluoranthene	%	86	88		2382872
D10-Fluorene (FS)	%	64	54		2382872
D10-Phenanthrene	%	72	74		2382872
D12-Benzo(a)anthracene	%	84	86		2382872
D12-Benzo(a)pyrene	%	90	92		2382872
D12-Benzo(b)fluoranthene	%	80	82		2382872
D12-Benzo(ghi)perylene	%	92	96		2382872
D12-Benzo(k)fluoranthene	%	88	94		2382872
D12-Chrysene	%	86	88		2382872
D12-Indeno(1,2,3-cd)pyrene	%	86	88		2382872
D12-Perylene	%	96	100		2382872
D14-Dibenzo(a,h)anthracene	%	86	86		2382872
D14-Terphenyl (FS)	%	79	80		2382872
D8-Acenaphthylene	%	74	74		2382872
D8-Naphthalene	%	68	62		2382872

QC Batch = Quality Control Batch

Maxxam Job #: B106064
 Report Date: 2011/01/20

Test Summary

Maxxam ID IK0976 **Collected** 2011/01/09
Sample ID LICA PUFF+QFF/CLS/JAN 09,2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2382872	2011/01/18	2011/01/19	JIW

Maxxam ID IK0977 **Collected** 2011/01/09
Sample ID LICA PUFF+QFF/PORT/JAN 09,2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2382872	2011/01/18	2011/01/19	JIW

Maxxam Job #: B106064
Report Date: 2011/01/20

GENERAL COMMENTS

PAHMS-F(WS:2382872)

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

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene and Triphenylene. An estimated mdl for each of these compounds is 0.10ug.

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

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

Samples received after hold time expired.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB106064

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2382872 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/01/19		68	%	50 - 150
		D10-Fluoranthene	2011/01/19		90	%	50 - 150
		D10-Phenanthrene	2011/01/19		74	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/19		84	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/19		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/19		84	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/19		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/19		90	%	50 - 150
		D12-Chrysene	2011/01/19		90	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/01/19		90	%	50 - 150
		D12-Perylene	2011/01/19		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/19		90	%	50 - 150
		D8-Acenaphthylene	2011/01/19		70	%	50 - 150
		D8-Naphthalene	2011/01/19		68	%	50 - 150
		Acenaphthene	2011/01/19		67	%	60 - 130
	RPD	Acenaphthene	2011/01/19	9.7		%	50
	Spiked Blank	Acenaphthylene	2011/01/19		71	%	60 - 130
	RPD	Acenaphthylene	2011/01/19	9.1		%	50
	Spiked Blank	Anthracene	2011/01/19		82	%	60 - 130
	RPD	Anthracene	2011/01/19	0.3		%	50
	Spiked Blank	Benzo(a)anthracene	2011/01/19		75	%	60 - 130
	RPD	Benzo(a)anthracene	2011/01/19	0.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/01/19		72	%	60 - 130
	RPD	Benzo(a)pyrene	2011/01/19	1.0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/01/19		71	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/01/19	7.4		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/01/19		87	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/01/19	0.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/01/19		93	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/01/19	7.2		%	50
	Spiked Blank	Chrysene	2011/01/19		85	%	60 - 130
	RPD	Chrysene	2011/01/19	0.6		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/01/19		81	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/01/19	5.1		%	50
	Spiked Blank	Fluoranthene	2011/01/19		85	%	60 - 130
	RPD	Fluoranthene	2011/01/19	2.1		%	50
	Spiked Blank	Fluorene	2011/01/19		69	%	60 - 130
	RPD	Fluorene	2011/01/19	2.5		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/01/19		82	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/01/19	5.6		%	50
	Spiked Blank	Naphthalene	2011/01/19		68	%	60 - 130
	RPD	Naphthalene	2011/01/19	15.0		%	50
	Spiked Blank	Phenanthrene	2011/01/19		66	%	60 - 130
	RPD	Phenanthrene	2011/01/19	3.1		%	50
	Spiked Blank	Pyrene	2011/01/19		79	%	60 - 130
	RPD	Pyrene	2011/01/19	5.8		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/01/19		70	%	50 - 150
		D10-Fluoranthene	2011/01/19		96	%	50 - 150
		D10-Phenanthrene	2011/01/19		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/19		84	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/19		92	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/19		82	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/19		94	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/19		92	%	50 - 150
		D12-Chrysene	2011/01/19		88	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB106064

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2382872 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/01/19		90	%	50 - 150
		D12-Perylene	2011/01/19		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/19		86	%	50 - 150
		D8-Acenaphthylene	2011/01/19		78	%	50 - 150
		D8-Naphthalene	2011/01/19		70	%	50 - 150
		1-Methylnaphthalene	2011/01/19	<0.10		ug	
		1-Methylphenanthrene	2011/01/19	<0.10		ug	
		2-Chloronaphthalene	2011/01/19	<0.10		ug	
		2-Methylantracene	2011/01/19	<0.10		ug	
		2-Methylnaphthalene	2011/01/19	<0.10		ug	
		3-Methylcholanthrene	2011/01/19	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/01/19	<0.10		ug	
		9,10-Dimethylantracene	2011/01/19	<0.40		ug	
		Acenaphthene	2011/01/19	<0.050		ug	
		Acenaphthylene	2011/01/19	<0.050		ug	
		Anthracene	2011/01/19	<0.050		ug	
		Benzo(a)anthracene	2011/01/19	<0.050		ug	
		Benzo(a)fluorene	2011/01/19	<0.10		ug	
		Benzo(a)pyrene	2011/01/19	<0.050		ug	
		Benzo(b)fluoranthene	2011/01/19	<0.050		ug	
		Benzo(b)fluorene	2011/01/19	<0.10		ug	
		Benzo(e)pyrene	2011/01/19	<0.10		ug	
		Benzo(g,h,i)perylene	2011/01/19	<0.050		ug	
		Benzo(k)fluoranthene	2011/01/19	<0.050		ug	
		Biphenyl	2011/01/19	<0.10		ug	
		Chrysene	2011/01/19	<0.050		ug	
		Coronene	2011/01/19	<0.10		ug	
		Dibenz(a,h)anthracene	2011/01/19	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/01/19	<0.20		ug	
		Fluoranthene	2011/01/19	<0.050		ug	
		Fluorene	2011/01/19	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/01/19	<0.050		ug	
		m-Terphenyl	2011/01/19	<0.10		ug	
		Naphthalene	2011/01/19	<0.072		ug	
		o-Terphenyl	2011/01/19	<0.10		ug	
		Perylene	2011/01/19	<0.10		ug	
		Phenanthrene	2011/01/19	<0.050		ug	
		p-Terphenyl	2011/01/19	<0.10		ug	
		Pyrene	2011/01/19	<0.050		ug	
		Quinoline	2011/01/19	<0.40		ug	
		Tetralin	2011/01/19	<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/Jan 15,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jan 14, 2011 @ 11:32 mst
 Removal Date/Time: Jan 17, 2011 @ 9:09 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
15-Jan-11	15/01/2011 0:00	16/01/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
13-Jan-11	17-Jan-11	25-Jan-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)
724	229	-24.5	330.34

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

Comments: COC# 4805

GB0H2646 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 15, 11

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 4805

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

Report Date: 2011/01/25

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B107426****Received: 2011/01/19, 09:30**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/01/21	2011/01/24	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

=====

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

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Total cover pages: 1

Page 1 of 7

Page 234 of 256

Maxxam Job #: B107426
 Report Date: 2011/01/25

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

Maxxam ID		IK6494	IK6495		
Sampling Date		2011/01/15	2011/01/15		
COC Number		4805	4805		
	Units	LICA PUFF+QFF/CLS/JAN 15,2011	LICA PUFF+QFF/PORT/JAN 15,2011	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.54	0.47	0.10	2386301
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2386301
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2386301
2-Methylantracene	ug	<0.10	<0.10	0.10	2386301
2-Methylnaphthalene	ug	1.00	0.73	0.10	2386301
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2386301
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2386301
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2386301
Acenaphthene	ug	0.078	<0.050	0.050	2386301
Acenaphthylene	ug	0.094	0.086	0.050	2386301
Anthracene	ug	<0.050	<0.050	0.050	2386301
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2386301
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2386301
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2386301
Benzo(b)fluoranthene	ug	0.058	0.054	0.050	2386301
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2386301
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2386301
Benzo(g,h,i)perylene	ug	0.056	0.064	0.050	2386301
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2386301
Biphenyl	ug	0.25	0.27	0.10	2386301
Chrysene	ug	0.062	0.056	0.050	2386301
Coronene	ug	<0.10	<0.10	0.10	2386301
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2386301
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2386301
Fluoranthene	ug	0.168	0.142	0.050	2386301
Fluorene	ug	0.118	0.122	0.050	2386301
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2386301
m-Terphenyl	ug	<0.10	<0.10	0.10	2386301
Naphthalene	ug	1.84	1.70	0.072	2386301
o-Terphenyl	ug	<0.10	<0.10	0.10	2386301
Perylene	ug	<0.10	<0.10	0.10	2386301

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B107426
 Report Date: 2011/01/25

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

Maxxam ID		IK6494	IK6495		
Sampling Date		2011/01/15	2011/01/15		
COC Number		4805	4805		
	Units	LICA PUFF+QFF/CLS/JAN 15,2011	LICA PUFF+QFF/PORT/JAN 15,2011	RDL	QC Batch

Phenanthrene	ug	0.448	0.358	0.050	2386301
p-Terphenyl	ug	<0.10	<0.10	0.10	2386301
Pyrene	ug	0.098	0.088	0.050	2386301
Quinoline	ug	<0.40	<0.40	0.40	2386301
Tetralin	ug	<0.10	<0.10	0.10	2386301
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	64	78		2386301
D10-Fluoranthene	%	84	88		2386301
D10-Fluorene (FS)	%	68	77		2386301
D10-Phenanthrene	%	72	76		2386301
D12-Benzo(a)anthracene	%	76	82		2386301
D12-Benzo(a)pyrene	%	88	92		2386301
D12-Benzo(b)fluoranthene	%	74	84		2386301
D12-Benzo(ghi)perylene	%	92	96		2386301
D12-Benzo(k)fluoranthene	%	92	92		2386301
D12-Chrysene	%	88	88		2386301
D12-Indeno(1,2,3-cd)pyrene	%	86	88		2386301
D12-Perylene	%	92	100		2386301
D14-Dibenzo(a,h)anthracene	%	82	86		2386301
D14-Terphenyl (FS)	%	78	82		2386301
D8-Acenaphthylene	%	70	82		2386301
D8-Naphthalene	%	62	76		2386301

QC Batch = Quality Control Batch

Maxxam Job #: B107426
 Report Date: 2011/01/25

Test Summary

Maxxam ID IK6494 **Collected** 2011/01/15
Sample ID LICA PUFF+QFF/CLS/JAN 15,2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2386301	2011/01/21	2011/01/24	JIW

Maxxam ID IK6495 **Collected** 2011/01/15
Sample ID LICA PUFF+QFF/PORT/JAN 15,2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2386301	2011/01/21	2011/01/24	JIW

Maxxam Job #: B107426
 Report Date: 2011/01/25

GENERAL COMMENTS

PAHMS-F(WS:2386301)

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

Naphthalene positive found in Blank. Samples should be considered to be possibly contaminated to the level found in the Blank.

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

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

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

Sample IK6494-01: PAHMS-F(WS:2386301)

Since Dibenzo(a,c)anthracene co-elutes with Dibenz(a,h)anthracene it would have a value below the estimated mdl.

Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.062ug, which is the value reported for Chrysene.

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

Sample IK6495-01: PAHMS-F(WS:2386301)

Since Dibenzo(a,c)anthracene co-elutes with Dibenz(a,h)anthracene it would have a value below the estimated mdl.

Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.056ug, which is the value reported for Chrysene.

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

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB107426

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2386301 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/01/24		78	%	50 - 150
		D10-Fluoranthene	2011/01/24		92	%	50 - 150
		D10-Phenanthrene	2011/01/24		76	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/24		80	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/24		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/24		82	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/24		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/24		94	%	50 - 150
		D12-Chrysene	2011/01/24		88	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/01/24		90	%	50 - 150
		D12-Perylene	2011/01/24		100	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/24		88	%	50 - 150
		D8-Acenaphthylene	2011/01/24		82	%	50 - 150
		D8-Naphthalene	2011/01/24		78	%	50 - 150
		Acenaphthene	2011/01/24		78	%	60 - 130
	RPD	Acenaphthene	2011/01/24	3.2		%	50
	Spiked Blank	Acenaphthylene	2011/01/24		83	%	60 - 130
	RPD	Acenaphthylene	2011/01/24	5.9		%	50
	Spiked Blank	Anthracene	2011/01/24		74	%	60 - 130
	RPD	Anthracene	2011/01/24	15.9		%	50
	Spiked Blank	Benzo(a)anthracene	2011/01/24		73	%	60 - 130
	RPD	Benzo(a)anthracene	2011/01/24	2.4		%	50
	Spiked Blank	Benzo(a)pyrene	2011/01/24		70	%	60 - 130
	RPD	Benzo(a)pyrene	2011/01/24	0.4		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/01/24		74	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/01/24	5.2		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/01/24		86	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/01/24	1.5		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/01/24		87	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/01/24	10.1		%	50
	Spiked Blank	Chrysene	2011/01/24		86	%	60 - 130
	RPD	Chrysene	2011/01/24	1.2		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/01/24		76	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/01/24	0		%	50
	Spiked Blank	Fluoranthene	2011/01/24		85	%	60 - 130
	RPD	Fluoranthene	2011/01/24	3.0		%	50
	Spiked Blank	Fluorene	2011/01/24		77	%	60 - 130
	RPD	Fluorene	2011/01/24	3.3		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/01/24		80	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/01/24	1.9		%	50
	Spiked Blank	Naphthalene	2011/01/24		85	%	60 - 130
	RPD	Naphthalene	2011/01/24	10.6		%	50
	Spiked Blank	Phenanthrene	2011/01/24		68	%	60 - 130
	RPD	Phenanthrene	2011/01/24	6.8		%	50
	Spiked Blank	Pyrene	2011/01/24		79	%	60 - 130
	RPD	Pyrene	2011/01/24	3.9		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/01/24		74	%	50 - 150
		D10-Fluoranthene	2011/01/24		96	%	50 - 150
		D10-Phenanthrene	2011/01/24		76	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/24		82	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/24		96	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/24		86	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/24		100	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/24		92	%	50 - 150
		D12-Chrysene	2011/01/24		92	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB107426

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2386301 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/01/24		94	%	50 - 150
		D12-Perylene	2011/01/24		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/24		92	%	50 - 150
		D8-Acenaphthylene	2011/01/24		80	%	50 - 150
		D8-Naphthalene	2011/01/24		74	%	50 - 150
		1-Methylnaphthalene	2011/01/24	<0.10		ug	
		1-Methylphenanthrene	2011/01/24	<0.10		ug	
		2-Chloronaphthalene	2011/01/24	<0.10		ug	
		2-Methylanthracene	2011/01/24	<0.10		ug	
		2-Methylnaphthalene	2011/01/24	<0.10		ug	
		3-Methylcholanthrene	2011/01/24	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/01/24	<0.10		ug	
		9,10-Dimethylanthracene	2011/01/24	<0.40		ug	
		Acenaphthene	2011/01/24	<0.050		ug	
		Acenaphthylene	2011/01/24	<0.050		ug	
		Anthracene	2011/01/24	<0.050		ug	
		Benzo(a)anthracene	2011/01/24	<0.050		ug	
		Benzo(a)fluorene	2011/01/24	<0.10		ug	
		Benzo(a)pyrene	2011/01/24	<0.050		ug	
		Benzo(b)fluoranthene	2011/01/24	<0.050		ug	
		Benzo(b)fluorene	2011/01/24	<0.10		ug	
		Benzo(e)pyrene	2011/01/24	<0.10		ug	
		Benzo(g,h,i)perylene	2011/01/24	<0.050		ug	
		Benzo(k)fluoranthene	2011/01/24	<0.050		ug	
		Biphenyl	2011/01/24	<0.10		ug	
		Chrysene	2011/01/24	<0.050		ug	
		Coronene	2011/01/24	<0.10		ug	
		Dibenz(a,h)anthracene	2011/01/24	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/01/24	<0.20		ug	
		Fluoranthene	2011/01/24	<0.050		ug	
		Fluorene	2011/01/24	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/01/24	<0.050		ug	
		m-Terphenyl	2011/01/24	<0.10		ug	
		Naphthalene	2011/01/24	0.094, RDL=0.072		ug	
		o-Terphenyl	2011/01/24	<0.10		ug	
		Perylene	2011/01/24	<0.10		ug	
		Phenanthrene	2011/01/24	<0.050		ug	
		p-Terphenyl	2011/01/24	<0.10		ug	
		Pyrene	2011/01/24	<0.050		ug	
		Quinoline	2011/01/24	<0.40		ug	
		Tetralin	2011/01/24	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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

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

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

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Jan 21,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jan 20, 2011 @ 17:32 mst
 Removal Date/Time: Jan 25, 2011 @ 9:31 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
21-Jan-11	21/01/2011 0:00	22/01/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
19-Jan-11	25-Jan-11	31-Jan-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	-16.8	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# 5154

GB0H2673 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jan 21, 11

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 5155

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

Report Date: 2011/02/03

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B111432****Received: 2011/01/27, 08:55**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/01/28	2011/02/01	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Maxxam Job #: B111432
 Report Date: 2011/02/03

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

Maxxam ID		IM5796	IM5797		
Sampling Date		2011/01/21	2011/01/21		
COC Number		5155	5155		
	Units	LICA PUFF+QFF/CLS/JAN 21, 2011	LICA PUFF+QFF/PORT/JAN 21, 2011	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.67	0.43	0.10	2391958
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2391958
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2391958
2-Methylantracene	ug	<0.10	<0.10	0.10	2391958
2-Methylnaphthalene	ug	1.31	0.70	0.10	2391958
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2391958
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2391958
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2391958
Acenaphthene	ug	0.152	0.058	0.050	2391958
Acenaphthylene	ug	0.184	0.186	0.050	2391958
Anthracene	ug	<0.050	<0.050	0.050	2391958
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2391958
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2391958
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2391958
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2391958
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2391958
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2391958
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2391958
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2391958
Biphenyl	ug	0.49	0.48	0.10	2391958
Chrysene	ug	<0.050	<0.050	0.050	2391958
Coronene	ug	<0.10	<0.10	0.10	2391958
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2391958
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2391958
Fluoranthene	ug	0.102	0.132	0.050	2391958
Fluorene	ug	0.222	0.242	0.050	2391958
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2391958
m-Terphenyl	ug	<0.10	<0.10	0.10	2391958
Naphthalene	ug	1.24	0.818	0.072	2391958
o-Terphenyl	ug	<0.10	<0.10	0.10	2391958
Perylene	ug	<0.10	<0.10	0.10	2391958

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B111432
 Report Date: 2011/02/03

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

Maxxam ID		IM5796	IM5797		
Sampling Date		2011/01/21	2011/01/21		
COC Number		5155	5155		
	Units	LICA PUFF+QFF/CLS/JAN 21, 2011	LICA PUFF+QFF/PORT/JAN 21, 2011	RDL	QC Batch
Phenanthrene	ug	0.452	0.510	0.050	2391958
p-Terphenyl	ug	<0.10	<0.10	0.10	2391958
Pyrene	ug	0.062	0.086	0.050	2391958
Quinoline	ug	<0.40	<0.40	0.40	2391958
Tetralin	ug	<0.10	<0.10	0.10	2391958
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	70		2391958
D10-Fluoranthene	%	82	86		2391958
D10-Fluorene (FS)	%	68	67		2391958
D10-Phenanthrene	%	76	78		2391958
D12-Benzo(a)anthracene	%	84	88		2391958
D12-Benzo(a)pyrene	%	92	94		2391958
D12-Benzo(b)fluoranthene	%	84	88		2391958
D12-Benzo(ghi)perylene	%	86	90		2391958
D12-Benzo(k)fluoranthene	%	92	90		2391958
D12-Chrysene	%	90	92		2391958
D12-Indeno(1,2,3-cd)pyrene	%	88	92		2391958
D12-Perylene	%	94	94		2391958
D14-Dibenzo(a,h)anthracene	%	86	92		2391958
D14-Terphenyl (FS)	%	78	83		2391958
D8-Acenaphthylene	%	74	76		2391958
D8-Naphthalene	%	64	68		2391958
QC Batch = Quality Control Batch					

Maxxam Job #: B111432
 Report Date: 2011/02/03

Test Summary

Maxxam ID IM5796 **Collected** 2011/01/21
Sample ID LICA PUFF+QFF/CLS/JAN 21, 2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2391958	2011/01/28	2011/02/01	WZ

Maxxam ID IM5797 **Collected** 2011/01/21
Sample ID LICA PUFF+QFF/PORT/JAN 21, 2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2391958	2011/01/28	2011/02/01	WZ

Maxxam Job #: B111432
Report Date: 2011/02/03

GENERAL COMMENTS

PAHMS-F

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

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

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

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

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB111432

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2391958 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/02/01		74	%	50 - 150
		D10-Fluoranthene	2011/02/01		84	%	50 - 150
		D10-Phenanthrene	2011/02/01		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/02/01		92	%	50 - 150
		D12-Benzo(a)pyrene	2011/02/01		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/02/01		94	%	50 - 150
		D12-Benzo(ghi)perylene	2011/02/01		90	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/02/01		84	%	50 - 150
		D12-Chrysene	2011/02/01		88	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/02/01		90	%	50 - 150
		D12-Perylene	2011/02/01		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/02/01		90	%	50 - 150
		D8-Acenaphthylene	2011/02/01		76	%	50 - 150
		D8-Naphthalene	2011/02/01		72	%	50 - 150
		Acenaphthene	2011/02/01		73	%	60 - 130
	RPD	Acenaphthene	2011/02/01	0		%	50
	Spiked Blank	Acenaphthylene	2011/02/01		77	%	60 - 130
	RPD	Acenaphthylene	2011/02/01	0.6		%	50
	Spiked Blank	Anthracene	2011/02/01		75	%	60 - 130
	RPD	Anthracene	2011/02/01	3.7		%	50
	Spiked Blank	Benzo(a)anthracene	2011/02/01		81	%	60 - 130
	RPD	Benzo(a)anthracene	2011/02/01	0.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/02/01		73	%	60 - 130
	RPD	Benzo(a)pyrene	2011/02/01	1.4		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/02/01		82	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/02/01	3.4		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/02/01		80	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/02/01	0.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/02/01		81	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/02/01	0.9		%	50
	Spiked Blank	Chrysene	2011/02/01		83	%	60 - 130
	RPD	Chrysene	2011/02/01	2.4		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/02/01		81	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/02/01	4.1		%	50
	Spiked Blank	Fluoranthene	2011/02/01		80	%	60 - 130
	RPD	Fluoranthene	2011/02/01	7.1		%	50
	Spiked Blank	Fluorene	2011/02/01		77	%	60 - 130
	RPD	Fluorene	2011/02/01	2.0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/02/01		81	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/02/01	3.8		%	50
	Spiked Blank	Naphthalene	2011/02/01		80	%	60 - 130
	RPD	Naphthalene	2011/02/01	0.9		%	50
	Spiked Blank	Phenanthrene	2011/02/01		75	%	60 - 130
	RPD	Phenanthrene	2011/02/01	6.6		%	50
	Spiked Blank	Pyrene	2011/02/01		81	%	60 - 130
	RPD	Pyrene	2011/02/01	7.7		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/02/01		76	%	50 - 150
		D10-Fluoranthene	2011/02/01		84	%	50 - 150
		D10-Phenanthrene	2011/02/01		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/02/01		80	%	50 - 150
		D12-Benzo(a)pyrene	2011/02/01		92	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/02/01		86	%	50 - 150
		D12-Benzo(ghi)perylene	2011/02/01		88	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/02/01		90	%	50 - 150
		D12-Chrysene	2011/02/01		94	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB111432

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2391958 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/02/01		88	%	50 - 150
		D12-Perylene	2011/02/01		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/02/01		88	%	50 - 150
		D8-Acenaphthylene	2011/02/01		78	%	50 - 150
		D8-Naphthalene	2011/02/01		76	%	50 - 150
		1-Methylnaphthalene	2011/02/01	<0.10		ug	
		1-Methylphenanthrene	2011/02/01	<0.10		ug	
		2-Chloronaphthalene	2011/02/01	<0.10		ug	
		2-Methylantracene	2011/02/01	<0.10		ug	
		2-Methylnaphthalene	2011/02/01	<0.10		ug	
		3-Methylcholanthrene	2011/02/01	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/02/01	<0.10		ug	
		9,10-Dimethylantracene	2011/02/01	<0.40		ug	
		Acenaphthene	2011/02/01	<0.050		ug	
		Acenaphthylene	2011/02/01	<0.050		ug	
		Anthracene	2011/02/01	<0.050		ug	
		Benzo(a)anthracene	2011/02/01	<0.050		ug	
		Benzo(a)fluorene	2011/02/01	<0.10		ug	
		Benzo(a)pyrene	2011/02/01	<0.050		ug	
		Benzo(b)fluoranthene	2011/02/01	<0.050		ug	
		Benzo(b)fluorene	2011/02/01	<0.10		ug	
		Benzo(e)pyrene	2011/02/01	<0.10		ug	
		Benzo(g,h,i)perylene	2011/02/01	<0.050		ug	
		Benzo(k)fluoranthene	2011/02/01	<0.050		ug	
		Biphenyl	2011/02/01	<0.10		ug	
		Chrysene	2011/02/01	<0.050		ug	
		Coronene	2011/02/01	<0.10		ug	
		Dibenz(a,h)anthracene	2011/02/01	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/02/01	<0.20		ug	
		Fluoranthene	2011/02/01	<0.050		ug	
		Fluorene	2011/02/01	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/02/01	<0.050		ug	
		m-Terphenyl	2011/02/01	<0.10		ug	
		Naphthalene	2011/02/01	0.102, RDL=0.072		ug	
		o-Terphenyl	2011/02/01	<0.10		ug	
		Perylene	2011/02/01	<0.10		ug	
		Phenanthrene	2011/02/01	<0.050		ug	
		p-Terphenyl	2011/02/01	<0.10		ug	
		Pyrene	2011/02/01	<0.050		ug	
		Quinoline	2011/02/01	<0.40		ug	
		Tetralin	2011/02/01	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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

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

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

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Jan 27,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jan 26, 2011 @ 13:15 mst
 Removal Date/Time: Jan 31, 2011 @ 7:55 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
27-Jan-11	27/01/2011 0:00	28/01/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
25-Jan-11	31-Jan-11	03-Feb-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)
702	229	1.4	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# 06613

GB0H2690 PUFF # 1

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

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 06613

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

Report Date: 2011/02/14

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B114568****Received: 2011/02/03, 09:08**

Sample Matrix: PUF AND FILTER

Samples Received: 2

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

Maxxam Job #: B114568
 Report Date: 2011/02/14

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

Maxxam ID		IN9680	IN9681		
Sampling Date		2011/01/27	2011/01/27		
COC Number		06613	06613		
	Units	LICA PUFF+QFF/CLS/JAN 27, 11	LICA PUFF+QFF/PORT/JAN 27, 11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2397605
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2397605
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2397605
2-Methylantracene	ug	<0.10	<0.10	0.10	2397605
2-Methylnaphthalene	ug	0.19	<0.10	0.10	2397605
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2397605
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2397605
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2397605
Acenaphthene	ug	<0.050	<0.050	0.050	2397605
Acenaphthylene	ug	0.092	<0.050	0.050	2397605
Anthracene	ug	<0.050	<0.050	0.050	2397605
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2397605
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2397605
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2397605
Benzo(b)fluoranthene	ug	0.060	<0.050	0.050	2397605
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2397605
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2397605
Benzo(g,h,i)perylene	ug	0.066	0.058	0.050	2397605
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2397605
Biphenyl	ug	0.17	0.11	0.10	2397605
Chrysene	ug	<0.050	<0.050	0.050	2397605
Coronene	ug	<0.10	<0.10	0.10	2397605
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2397605
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2397605
Fluoranthene	ug	0.142	0.094	0.050	2397605
Fluorene	ug	0.354	0.194	0.050	2397605
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2397605
m-Terphenyl	ug	<0.10	<0.10	0.10	2397605
Naphthalene	ug	0.166	0.080	0.072	2397605
o-Terphenyl	ug	<0.10	<0.10	0.10	2397605
Perylene	ug	<0.10	<0.10	0.10	2397605

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B114568
 Report Date: 2011/02/14

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

Maxxam ID		IN9680	IN9681		
Sampling Date		2011/01/27	2011/01/27		
COC Number		06613	06613		
	Units	LICA PUFF+QFF/CLS/JAN 27, 11	LICA PUFF+QFF/PORT/JAN 27, 11	RDL	QC Batch

Phenanthrene	ug	0.662	0.364	0.050	2397605
p-Terphenyl	ug	<0.10	<0.10	0.10	2397605
Pyrene	ug	0.108	0.050	0.050	2397605
Quinoline	ug	<0.40	<0.40	0.40	2397605
Tetralin	ug	<0.10	<0.10	0.10	2397605
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	60		2397605
D10-Fluoranthene	%	84	64		2397605
D10-Fluorene (FS)	%	16 (1)	12 (1)		2397605
D10-Phenanthrene	%	80	62		2397605
D12-Benzo(a)anthracene	%	80	60		2397605
D12-Benzo(a)pyrene	%	78	60		2397605
D12-Benzo(b)fluoranthene	%	78	66		2397605
D12-Benzo(ghi)perylene	%	84	72		2397605
D12-Benzo(k)fluoranthene	%	92	70		2397605
D12-Chrysene	%	86	72		2397605
D12-Indeno(1,2,3-cd)pyrene	%	86	70		2397605
D12-Perylene	%	92	70		2397605
D14-Dibenzo(a,h)anthracene	%	84	68		2397605
D14-Terphenyl (FS)	%	82	58		2397605
D8-Acenaphthylene	%	70	62		2397605
D8-Naphthalene	%	60	60		2397605

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 #: B114568
 Report Date: 2011/02/14

Test Summary

Maxxam ID IN9680 **Collected** 2011/01/27
Sample ID LICA PUFF+QFF/CLS/JAN 27, 11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/02/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2397605	2011/02/04	2011/02/07	WZ

Maxxam ID IN9681 **Collected** 2011/01/27
Sample ID LICA PUFF+QFF/PORT/JAN 27, 11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/02/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2397605	2011/02/04	2011/02/07	WZ

Maxxam Job #: B114568
Report Date: 2011/02/14

GENERAL COMMENTS

PAHMS-F

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

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

Internal Std area response criteria was high in Spike:dup and Blank. Both vials were rerun with similar results. Original run reported.

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

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

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

Sample IN9680-01: PAHMS-F

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

Sample IN9681-01: 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: GB114568

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2397605 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/02/07		66	%	50 - 150
		D10-Fluoranthene	2011/02/07		86	%	50 - 150
		D10-Phenanthrene	2011/02/07		72	%	50 - 150
		D12-Benzo(a)anthracene	2011/02/07		80	%	50 - 150
		D12-Benzo(a)pyrene	2011/02/07		82	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/02/07		78	%	50 - 150
		D12-Benzo(ghi)perylene	2011/02/07		84	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/02/07		90	%	50 - 150
		D12-Chrysene	2011/02/07		80	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/02/07		86	%	50 - 150
		D12-Perylene	2011/02/07		78	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/02/07		86	%	50 - 150
		RPD	D8-Acenaphthylene	2011/02/07		70	%
	D8-Naphthalene		2011/02/07		68	%	50 - 150
	Spiked Blank	Acenaphthene	2011/02/07		69	%	60 - 130
		Acenaphthene	2011/02/07	1.8		%	50
	RPD	Acenaphthylene	2011/02/07		70	%	60 - 130
		Acenaphthylene	2011/02/07	4.6		%	50
	Spiked Blank	Anthracene	2011/02/07		75	%	60 - 130
		Anthracene	2011/02/07	4.9		%	50
	Spiked Blank	Benzo(a)anthracene	2011/02/07		71	%	60 - 130
		Benzo(a)anthracene	2011/02/07	8.5		%	50
	Spiked Blank	Benzo(a)pyrene	2011/02/07		71	%	60 - 130
		Benzo(a)pyrene	2011/02/07	3.1		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/02/07		69	%	60 - 130
		Benzo(b)fluoranthene	2011/02/07	16.3		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/02/07		79	%	60 - 130
		Benzo(g,h,i)perylene	2011/02/07	5.6		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/02/07		90	%	60 - 130
		Benzo(k)fluoranthene	2011/02/07	9.7		%	50
	Spiked Blank	Chrysene	2011/02/07		81	%	60 - 130
		Chrysene	2011/02/07	0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/02/07		77	%	60 - 130
		Dibenz(a,h)anthracene	2011/02/07	5.7		%	50
	Spiked Blank	Fluoranthene	2011/02/07		81	%	60 - 130
		Fluoranthene	2011/02/07	3.1		%	50
	Spiked Blank	Fluorene	2011/02/07		71	%	60 - 130
		Fluorene	2011/02/07	4.5		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/02/07		77	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/02/07	5.7		%	50
Spiked Blank	Naphthalene	2011/02/07		78	%	60 - 130	
	Naphthalene	2011/02/07	8.0		%	50	
Spiked Blank	Phenanthrene	2011/02/07		66	%	60 - 130	
	Phenanthrene	2011/02/07	7.3		%	50	
Spiked Blank	Pyrene	2011/02/07		83	%	60 - 130	
	Pyrene	2011/02/07	2.7		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/02/07		70	%	50 - 150	
	D10-Fluoranthene	2011/02/07		88	%	50 - 150	
	D10-Phenanthrene	2011/02/07		80	%	50 - 150	
	D12-Benzo(a)anthracene	2011/02/07		76	%	50 - 150	
	D12-Benzo(a)pyrene	2011/02/07		80	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/02/07		84	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/02/07		86	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/02/07		84	%	50 - 150	
	D12-Chrysene	2011/02/07		86	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB114568

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2397605 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/02/07		88	%	50 - 150
		D12-Perylene	2011/02/07		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/02/07		86	%	50 - 150
		D8-Acenaphthylene	2011/02/07		76	%	50 - 150
		D8-Naphthalene	2011/02/07		72	%	50 - 150
		1-Methylnaphthalene	2011/02/07	<0.10		ug	
		1-Methylphenanthrene	2011/02/07	<0.10		ug	
		2-Chloronaphthalene	2011/02/07	<0.10		ug	
		2-Methylantracene	2011/02/07	<0.10		ug	
		2-Methylnaphthalene	2011/02/07	<0.10		ug	
		3-Methylcholanthrene	2011/02/07	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/02/07	<0.10		ug	
		9,10-Dimethylantracene	2011/02/07	<0.40		ug	
		Acenaphthene	2011/02/07	<0.050		ug	
		Acenaphthylene	2011/02/07	<0.050		ug	
		Anthracene	2011/02/07	<0.050		ug	
		Benzo(a)anthracene	2011/02/07	<0.050		ug	
		Benzo(a)fluorene	2011/02/07	<0.10		ug	
		Benzo(a)pyrene	2011/02/07	<0.050		ug	
		Benzo(b)fluoranthene	2011/02/07	<0.050		ug	
		Benzo(b)fluorene	2011/02/07	<0.10		ug	
		Benzo(e)pyrene	2011/02/07	<0.10		ug	
		Benzo(g,h,i)perylene	2011/02/07	<0.050		ug	
		Benzo(k)fluoranthene	2011/02/07	<0.050		ug	
		Biphenyl	2011/02/07	<0.10		ug	
		Chrysene	2011/02/07	<0.050		ug	
		Coronene	2011/02/07	<0.10		ug	
		Dibenz(a,h)anthracene	2011/02/07	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/02/07	<0.20		ug	
		Fluoranthene	2011/02/07	<0.050		ug	
		Fluorene	2011/02/07	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/02/07	<0.050		ug	
		m-Terphenyl	2011/02/07	<0.10		ug	
		Naphthalene	2011/02/07	0.098, RDL=0.072		ug	
		o-Terphenyl	2011/02/07	<0.10		ug	
		Perylene	2011/02/07	<0.10		ug	
		Phenanthrene	2011/02/07	<0.050		ug	
		p-Terphenyl	2011/02/07	<0.10		ug	
		Pyrene	2011/02/07	<0.050		ug	
		Quinoline	2011/02/07	<0.40		ug	
		Tetralin	2011/02/07	<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
January 2011

Prepared By:



February 22, 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: January 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 – January 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	57	0	0	0.58	18	6	17	11.3	307(NW)	2.8	23	99.7
H2S (PPB)	10	3	0	0	0.02	3	23	13	15.6	297(WNW)	0.4	23	99.9
THC (PPM)	-	-	-	-	2.15	3.7	31	22	3.5	215(SSW)	2.7	1	99.9
NOx (PPB)	-	-	-	-	5.20	43	25	8	3.2	78(ENE)	14.9	4	99.9
NO (PPB)	-	-	-	-	0.57	20	25	8	3.2	78(ENE)	3.0	25	99.9
NO ₂ (PPB)	212	106	0	0	4.46	24	4, 25	17, 8	1.1, 3.2	242(WSW), 78(ENE)	11.6	4	99.9
VECTOR WS (KPH)	-	-	-	-	5.19	19.7	30	22	-	98(E)	10.1	8	100.0
VECTOR WD (DEGREES)	-	-	-	-	373(NNW)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	70.79	89	26	VAR	VAR	VAR	83.8	5	100.0
TEMPERATURE (DEG C)	-	-	-	-	-14.99	4.9	27	20	9.6	278(W)	1.6	27	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	941	966	31	VAR	VAR	VAR	964.1	31	100.0
PRECIPITATION (MM)	-	-	-	-	0.02	0.8	23	3	6.1	256(WSW)	1.9	20	100.0

VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – Maskwa

Sulphur Dioxide (PPB)

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

The span went outside of –10% of limited range on January 6th. It was determined that the permeation tube needed to be replaced, and it was replaced on January 6th. The perm tube was allowed time to stabilize and then the expected value was adjusted on January 10th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

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

Total HydroCarbon (PPM)

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

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

General Monthly Summary

AQM STATION – LICA – Maskwa

Nitrogen Dioxide (PPB)

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

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

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

- System make / model - Met One 50.5H, S/N: H10703

The wind system is reported as vector wind speed and vector wind direction. 7 hours of data for wind speed maximum were invalidated this month as they went full scale. It is likely due to frost. The wind system will be taken out for checking and calibration in February.

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues observed during the month.

Precipitation (MM)

- System make / model - Met One 387

No operational issues observed during this month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issue was observed during the month.

Ambient Temperature (DEGC)

- System make / model - Met One 060

No operational issue was observed during the month.

Trailer Temperature (DEG C)

- System make / model – R&R 61

No operational issue was observed during the month.

Standard Deviation Wind Direction (DEG)

- System make / model –Met One 50.5H

No operational issue was observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Datalogger

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

No operational issue was observed during the month.

Trailer

The manifold and inlet pipe were cleaned on January 18th. The throw-away filter in the BARD heater/cooler system was replaced on January 27th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 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	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	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	IZS	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24
2	0	IZS	0	0	0	0	0	0	1	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	2	0.7	24
3	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	1	0.1	24
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	IZS	0	1	0.1	24
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	IZS	0	0	2	0.1	24
6	0	0	0	0	0	1	1	C	0	0	0	0	1	C	M	C	8	18	3	0	IZS	0	1	0	18	1.7	23
7	1	1	0	0	0	0	0	0	0	1	0	0	2	6	1	1	0	1	3	IZS	0	0	0	0	6	0.7	24
8	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
9	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
10	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
11	0	0	0	1	2	0	0	0	C	C	C	C	0	0	0	IZS	0	0	0	0	0	0	0	0	2	0.2	24
12	1	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.1	24
13	0	0	0	0	0	3	1	0	5	5	2	9	1	IZS	1	2	2	2	2	2	1	1	0	0	9	1.7	24
14	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
15	0	0	0	0	0	0	0	0	0	0	0	IZS	3	5	6	2	1	1	0	0	1	1	2	1	6	1.0	24
16	1	1	1	1	1	1	1	1	1	2	IZS	0	1	1	1	1	1	2	3	2	1	1	0	0	3	1.1	24
17	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
18	0	0	0	0	0	0	1	1	IZS	2	1	1	0	1	M	2	10	2	11	4	5	1	3	1	11	2.1	23
19	0	0	0	0	0	0	1	IZS	0	0	1	2	2	2	1	1	0	2	3	1	0	0	0	0	3	0.7	24
20	0	0	0	0	0	0	IZS	0	1	2	1	0	0	0	1	0	0	1	0	0	0	7	5	0	7	0.8	24
21	0	1	3	4	0	IZS	0	0	0	1	1	3	3	3	3	4	3	2	2	1	1	1	1	2	4	1.7	24
22	3	1	1	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	0.4	24
23	1	1	0	IZS	0	0	0	1	2	2	0	2	5	13	14	8	5	9	2	0	0	0	0	0	14	2.8	24
24	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24
25	0	IZS	0	0	3	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	1	0	3	0.4	24
26	IZS	1	1	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	IZS	0	1	0.2	24
28	0	9	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	9	0.5	24
29	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
30	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	IZS	0	0	0	2	0.2	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	1	0.0	24
HOURLY MAX	3	9	3	4	3	3	1	1	5	5	2	9	5	13	14	8	10	18	11	4	5	7	5	2			
HOURLY AVG	0.3	0.6	0.2	0.3	0.2	0.2	0.2	0.2	0.5	0.7	0.3	0.7	0.7	1.2	1.3	0.9	1.1	1.4	1.1	0.4	0.4	0.5	0.5	0.2			

STATUS FLAG CODES

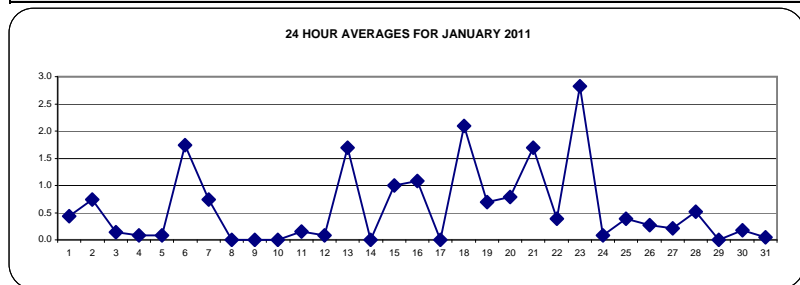
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

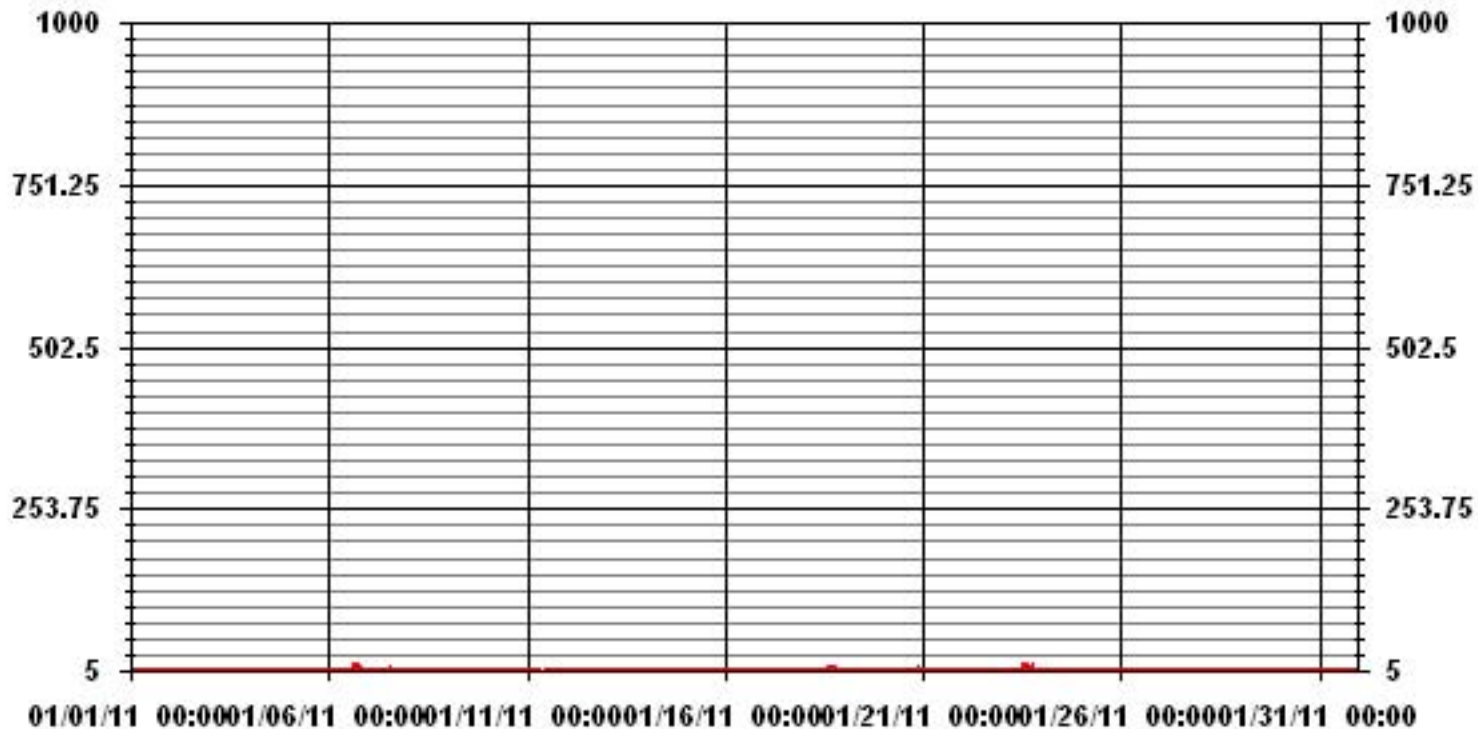
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	188
MAXIMUM 1-HR AVERAGE:	18 PPB @ HOUR(S) 17 ON DAY(S) 6
MAXIMUM 24-HR AVERAGE:	2.8 PPB ON DAY(S) 23
IZS CALIBRATION TIME:	33 HRS
OPERATIONAL TIME:	742 HRS
MONTHLY CALIBRATION TIME:	7 HRS
AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	1.60
MONTHLY AVERAGE:	0.58 PPB



01 Hour Averages



— LICA30 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

JANUARY 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	2	1	IZS	1	2	2	2	1	1	3	3	1	1	1	1	1	1	1	1	1	0	1	1	1	1	3	1.3	24	
2	0	IZS	0	0	0	0	0	1	2	3	3	2	6	6	4	3	3	1	1	0	0	1	1	0	0	6	1.6	24	
3	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	4	2	IZS	4	0.5	24		
4	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	3	4	1	5	4	IZS	1	5	1.2	24		
5	1	0	1	1	1	0	0	0	0	0	0	1	1	0	5	1	1	0	0	1	0	0	1	IZS	0	0	5	0.6	24
6	0	0	1	1	1	2	2	C	0	1	0	0	7	C	M	C	C	30	20	2	IZS	4	6	0	30	4.3	23		
7	7	3	1	0	0	0	0	1	1	4	0	1	10	10	3	2	2	2	5	7	IZS	0	0	0	0	10	2.5	24	
8	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	
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	0	1	0	1	0.2	24	
10	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	0.6	24	
11	1	0	1	1	3	2	0	0	C	C	C	C	C	1	0	IZS	1	0	0	0	0	0	1	1	1	3	0.7	24	
12	2	1	2	2	1	1	1	1	1	1	1	1	1	1	IZS	1	0	0	0	0	0	0	0	0	0	2	0.8	24	
13	0	0	0	1	1	13	9	0	20	18	13	20	2	IZS	2	2	3	2	3	2	2	2	2	1	1	20	5.1	24	
14	0	1	1	0	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
15	0	1	1	0	1	1	1	1	1	1	1	1	IZS	6	11	9	5	2	2	1	1	1	2	4	2	11	2.4	24	
16	2	2	2	2	1	2	1	2	2	3	IZS	1	1	2	1	1	2	4	4	3	1	1	1	1	1	4	1.8	24	
17	1	1	0	0	0	0	0	0	0	IZS	0	0	0	1	1	1	1	0	0	1	1	1	0	0	1	0.4	24		
18	0	0	0	0	0	1	1	2	IZS	3	2	4	3	4	M	8	23	8	30	10	12	6	7	1	30	5.7	23		
19	1	0	0	0	0	1	5	IZS	0	1	2	2	3	4	2	3	1	6	8	6	1	0	0	0	8	2.0	24		
20	0	0	0	0	0	0	IZS	1	1	6	6	1	1	1	1	1	1	1	1	1	1	1	26	24	1	26	3.3	24	
21	1	9	16	13	1	IZS	1	1	1	2	2	6	7	4	5	6	4	3	3	2	3	1	1	5	16	4.2	24		
22	7	4	5	2	IZS	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	7	1.7	24		
23	2	2	1	IZS	1	1	1	2	4	4	2	5	11	18	19	19	15	17	10	1	0	1	1	0	19	6.0	24		
24	1	1	IZS	0	0	0	0	0	0	1	1	1	1	1	2	1	1	1	1	1	0	0	0	0	0	2	0.6	24	
25	0	IZS	1	0	14	1	0	0	1	0	0	0	0	1	1	1	1	1	2	2	1	1	2	1	14	1.3	24		
26	IZS	2	2	1	1	1	1	2	2	1	0	0	0	1	1	0	0	0	0	0	1	1	1	1	IZS	2	0.8	24	
27	0	0	1	1	0	1	1	1	0	0	0	1	1	1	1	1	1	2	2	1	0	0	IZS	0	2	0.7	24		
28	1	38	2	1	0	1	1	2	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	38	2.3	24		
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	0.1	24	
30	1	0	0	0	0	1	1	1	1	1	1	1	3	7	0	5	2	1	1	IZS	0	1	1	0	7	1.3	24		
31	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	IZS	0	1	1	1	1	1	0.6	24		
HOURLY MAX	7	38	16	13	14	13	9	2	20	18	13	20	11	18	19	19	23	30	30	10	12	26	24	5					
HOURLY AVG	1.1	2.3	1.3	0.9	1.0	1.1	1.0	0.8	1.6	2.1	1.5	1.8	2.4	2.7	2.2	2.3	2.3	3.0	3.6	1.3	1.3	2.2	2.1	0.7					

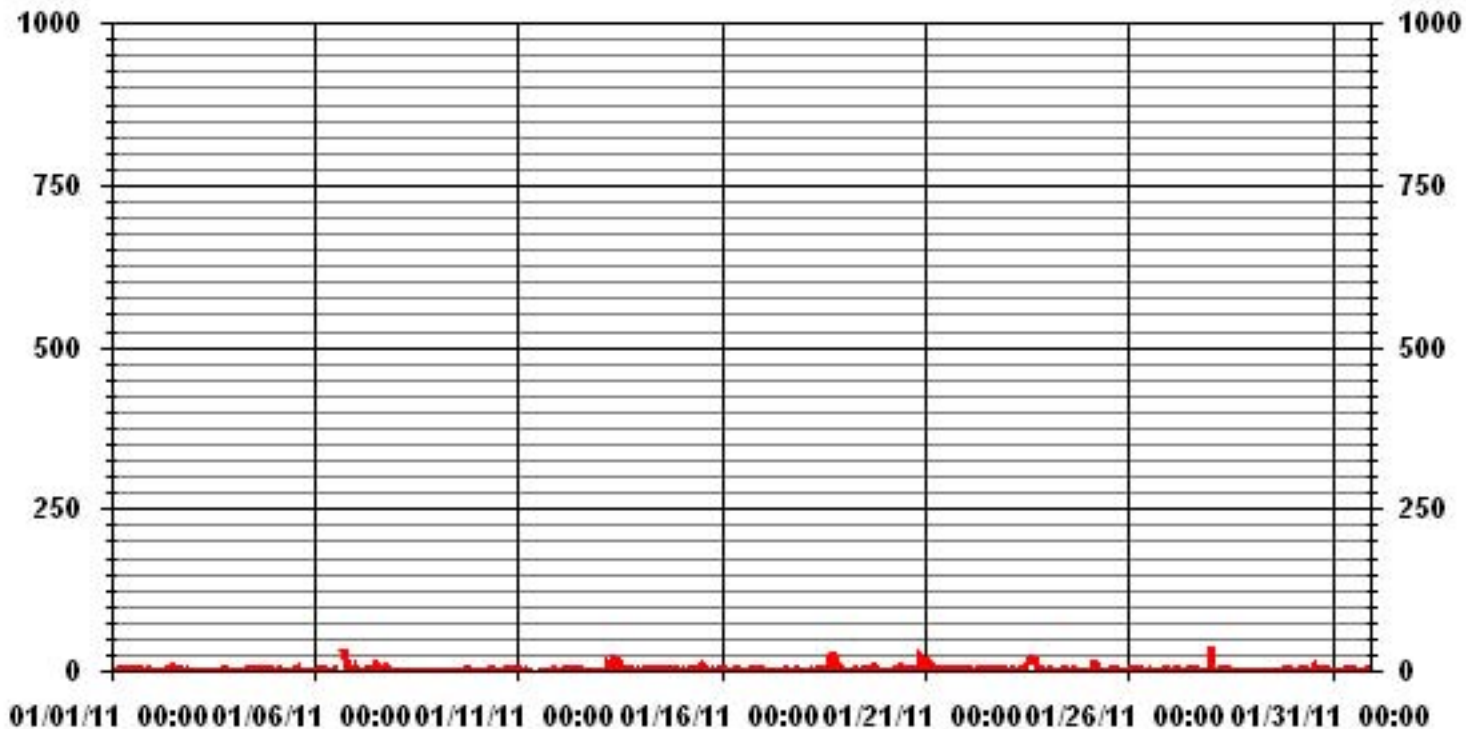
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	441
MAXIMUM INSTANTANEOUS VALUE:	38 PPB @ HOUR(S) 1 ON DAY(S) 28
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	9 HRS
OPERATIONAL TIME:	742 HRS
STANDARD DEVIATION:	3.80

01 Hour Averages



— LICA30 SO2MAX PPB

LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

January 2011

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
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	8.54	11.82	9.68	3.98	4.98	2.84	4.13	2.27	4.84	15.24	10.82	3.27	3.98	3.98	5.55	3.98	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	8.54	11.82	9.68	3.98	4.98	2.84	4.13	2.27	4.84	15.24	10.82	3.27	3.98	3.98	5.55	3.98	

Calm : .00 %

Total # Operational Hours : 702

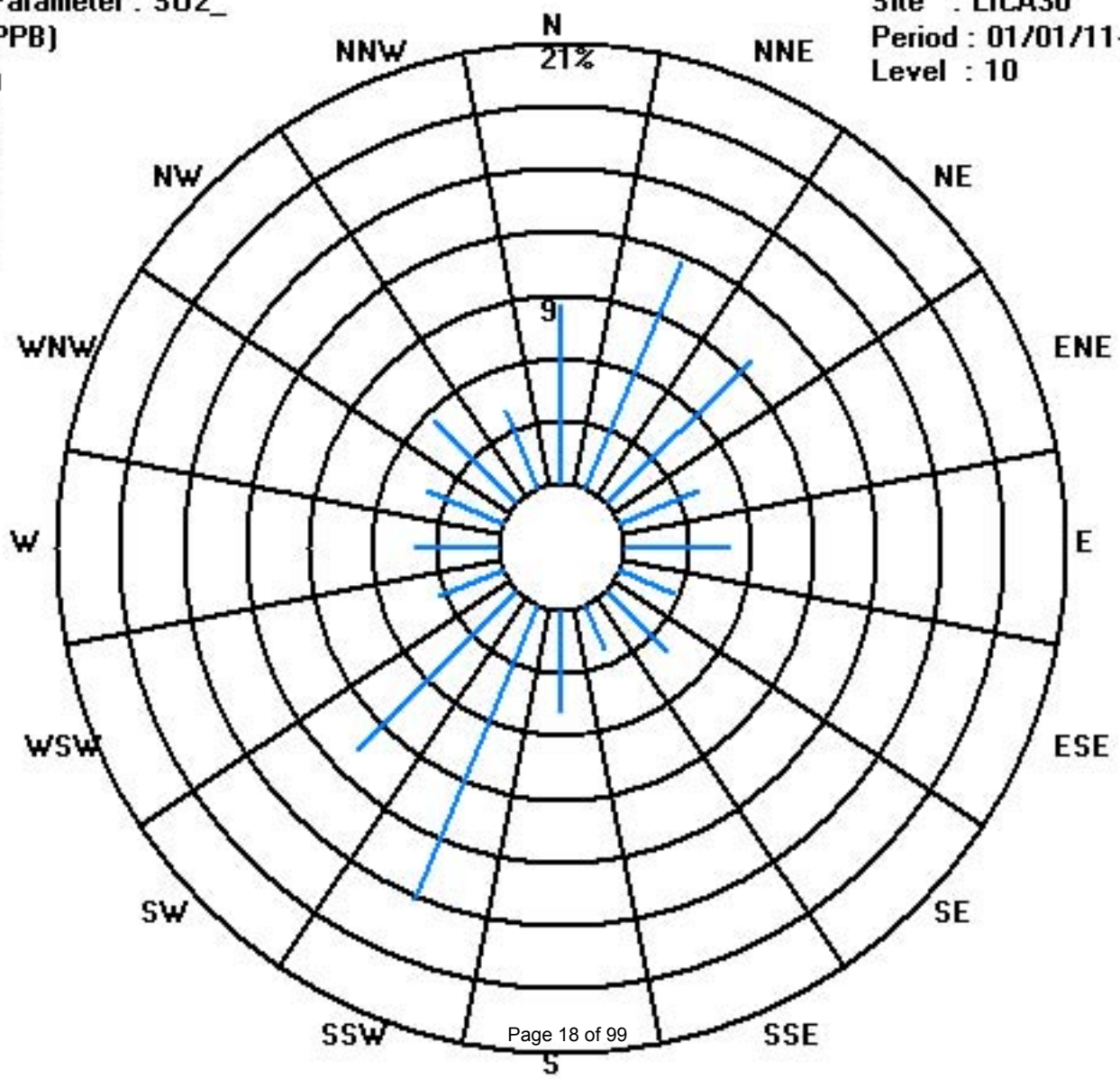
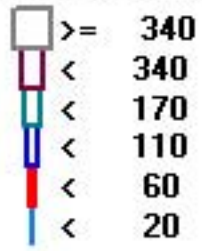
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	60	83	68	28	35	20	29	16	34	107	76	23	28	28	39	28	702
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	60	83	68	28	35	20	29	16	34	107	76	23	28	28	39	28	

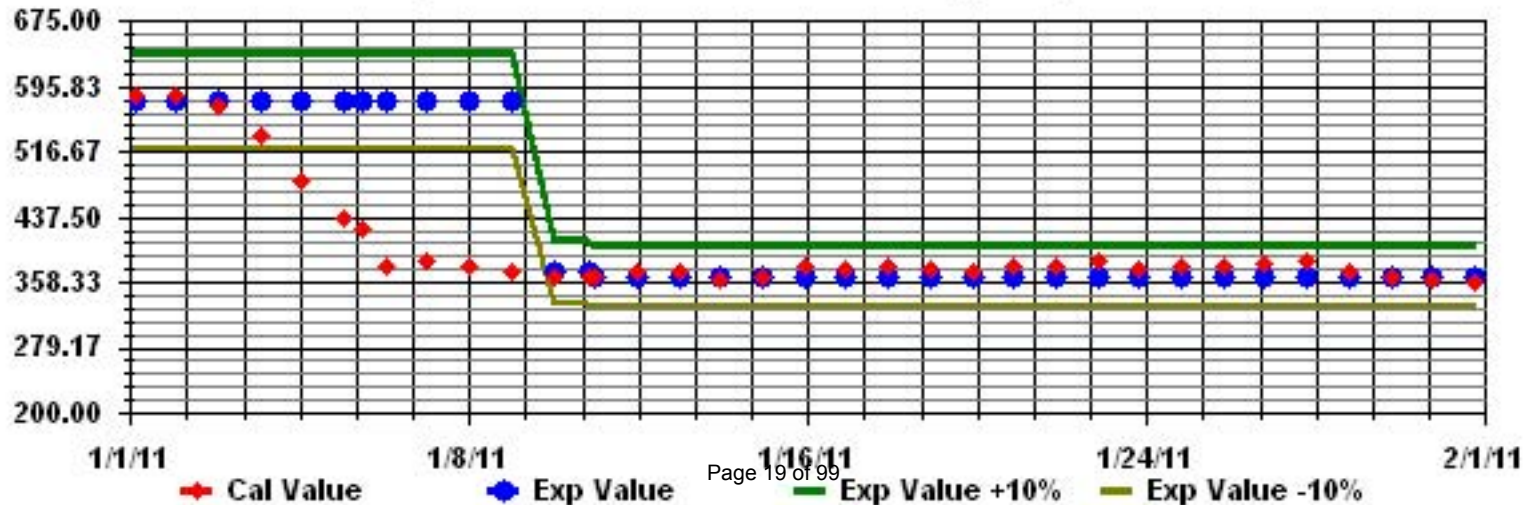
Calm : .00 %

Total # Operational Hours : 702

Class Limits (PPB)



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



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 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	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
2	2	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
3	3	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
4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	IZS	0	1	0.0	24	
5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24
6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24	
7	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	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	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	10	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0.0	24
11	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	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	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	14	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
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	0	0	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	0	0	0	0	0.0	24
17	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	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	23
19	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	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	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	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	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	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	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	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	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	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	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	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	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	0	0	0	1	1	1	1	2	3	2	0	1	0	0	0	0	0	0	0	0	0	0	0
HOURLY AVG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	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

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

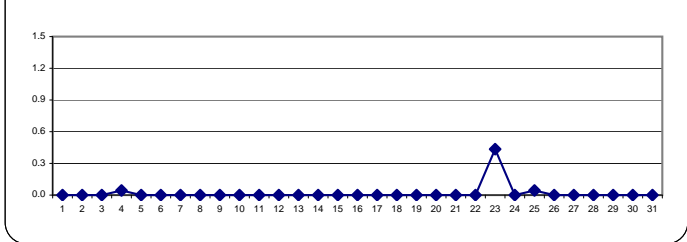
OBJECTIVE LIMIT:

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

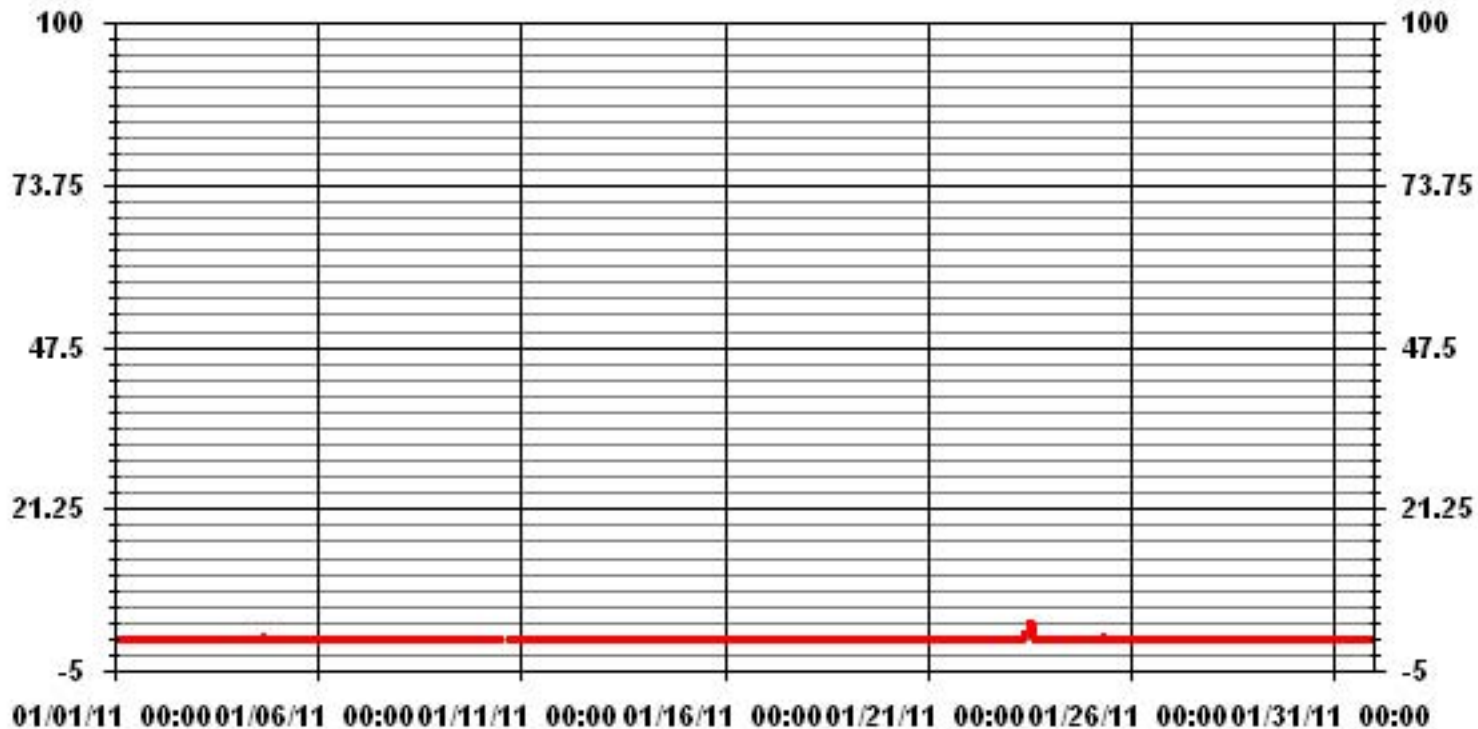
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	8
MAXIMUM 1-HR AVERAGE:	3 PPB @ HOUR(S) 13 ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	0.4 PPB ON DAY(S) 23
	VAR-VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.18
MONTHLY AVERAGE:	0.02 PPB

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA30 H2S_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

JANUARY 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	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	3	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	0.2	24	
2	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
3	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	IZS	1	0.1	24	
4	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	1	1	1	0	1	0	0	IZS	1	1	0.3	24	
5	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	0.2	24
6	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0	IZS	0	0	0	1	0.2	24	
7	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	
8	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	
9	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	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	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	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24	
13	0	0	0	0	0	0	0	0	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
14	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	
15	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	
16	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	
17	0	0	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
18	0	0	0	0	0	0	0	0	0	IZS	0	1	0	0	0	M	0	0	1	1	0	0	0	0	0	0	1	0.1	23
19	0	0	0	0	1	1	1	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.0	24	
21	1	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
22	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0.1	24	
23	0	1	0	IZS	0	1	1	1	1	1	1	2	3	4	3	2	0	1	0	0	0	0	0	0	0	4	1.0	24	
24	1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.1	24	
25	0	IZS	0	0	0	0	0	0	2	1	0	0	0	0	1	1	1	0	1	1	0	0	1	0	1	0	2	0.4	24
26	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	1	0.0	24
27	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	IZS	0	1	0.2	24
28	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	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	IZS	0	0	0	0	0	0.0	24
HOURLY MAX	3	1	1	1	1	1	1	1	2	1	1	2	3	4	3	2	1	1	1	1	1	1	1	1	1	1			
HOURLY AVG	0.3	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.2	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0				

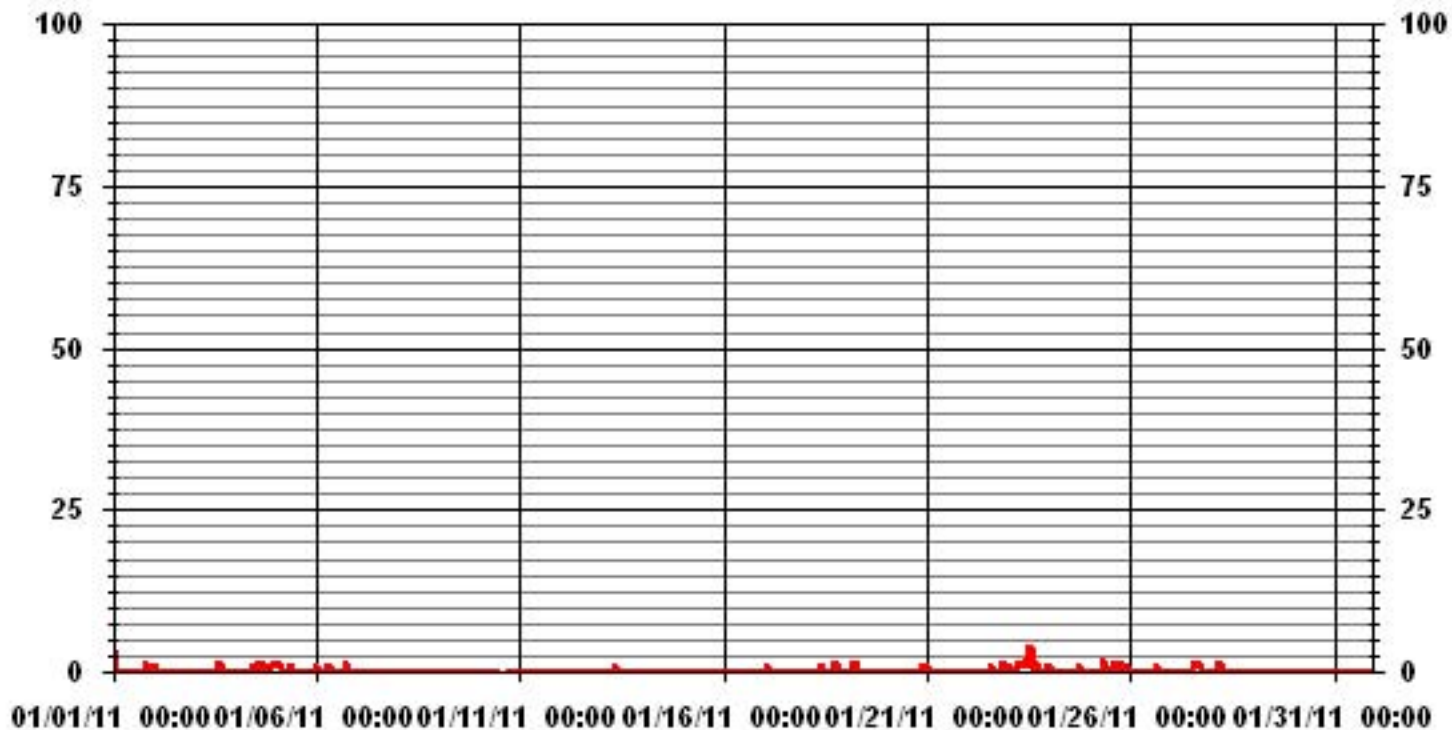
STATUS FLAG CODES

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 INSTANTANEOUS VALUE:	4	PPB	@ HOUR(S)	13	ON DAY(S)	23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.39					

01 Hour Averages



— LICA30 H2S MAX PPB

LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

January 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	8.20	11.59	9.61	3.96	4.95	2.82	4.10	2.54	5.09	15.13	10.74	3.25	4.10	4.24	5.51	3.96	99.85
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.14
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	8.20	11.59	9.61	3.96	4.95	2.82	4.10	2.54	5.09	15.13	10.74	3.25	4.10	4.38	5.51	3.96	

Calm : .00 %

Total # Operational Hours : 707

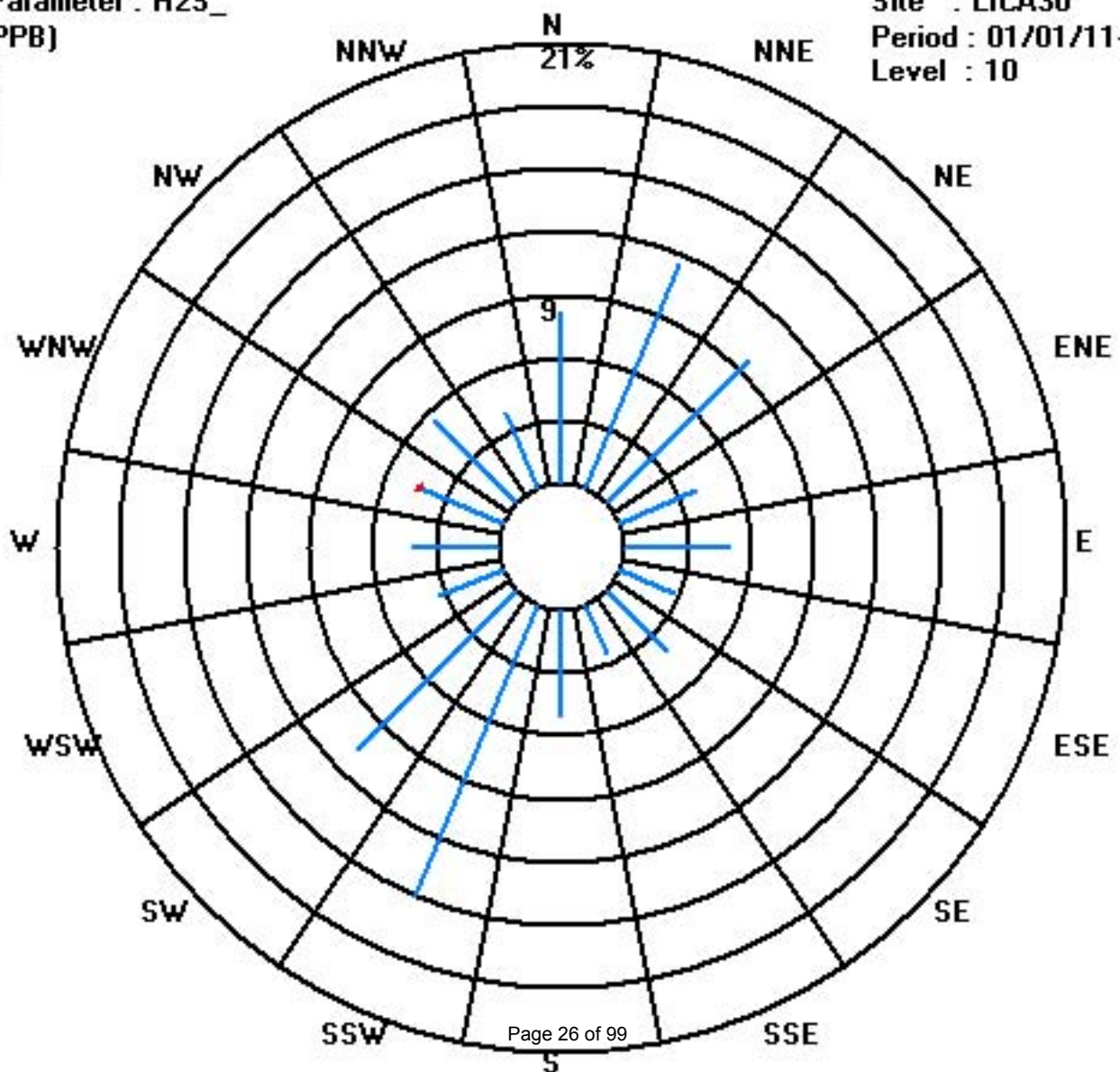
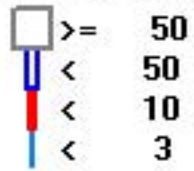
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	58	82	68	28	35	20	29	18	36	107	76	23	29	30	39	28	706
< 10														1			1
< 50																	
>= 50																	
Totals	58	82	68	28	35	20	29	18	36	107	76	23	29	31	39	28	

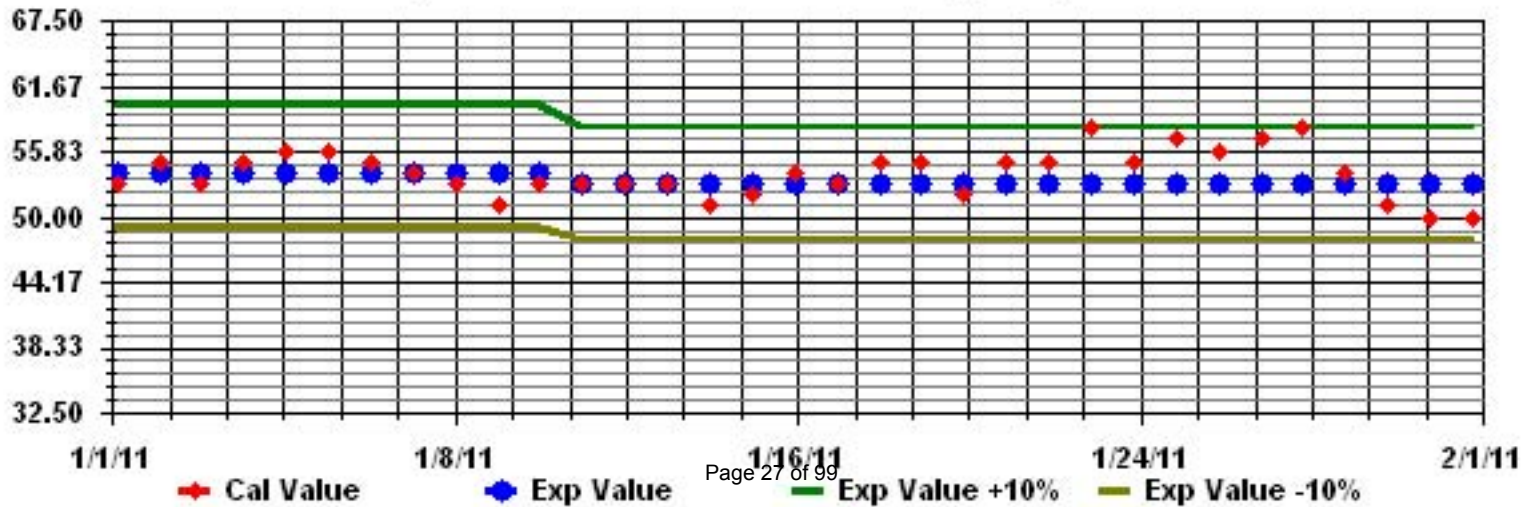
Calm : .00 %

Total # Operational Hours : 707

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

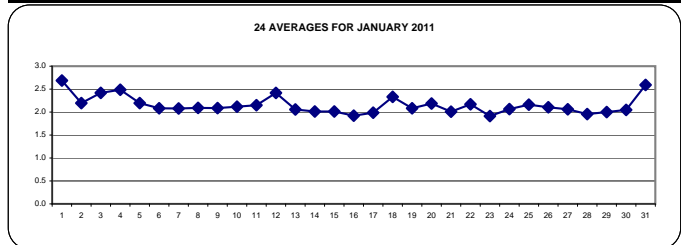
JANUARY 2011

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

STATUS FLAG CODES

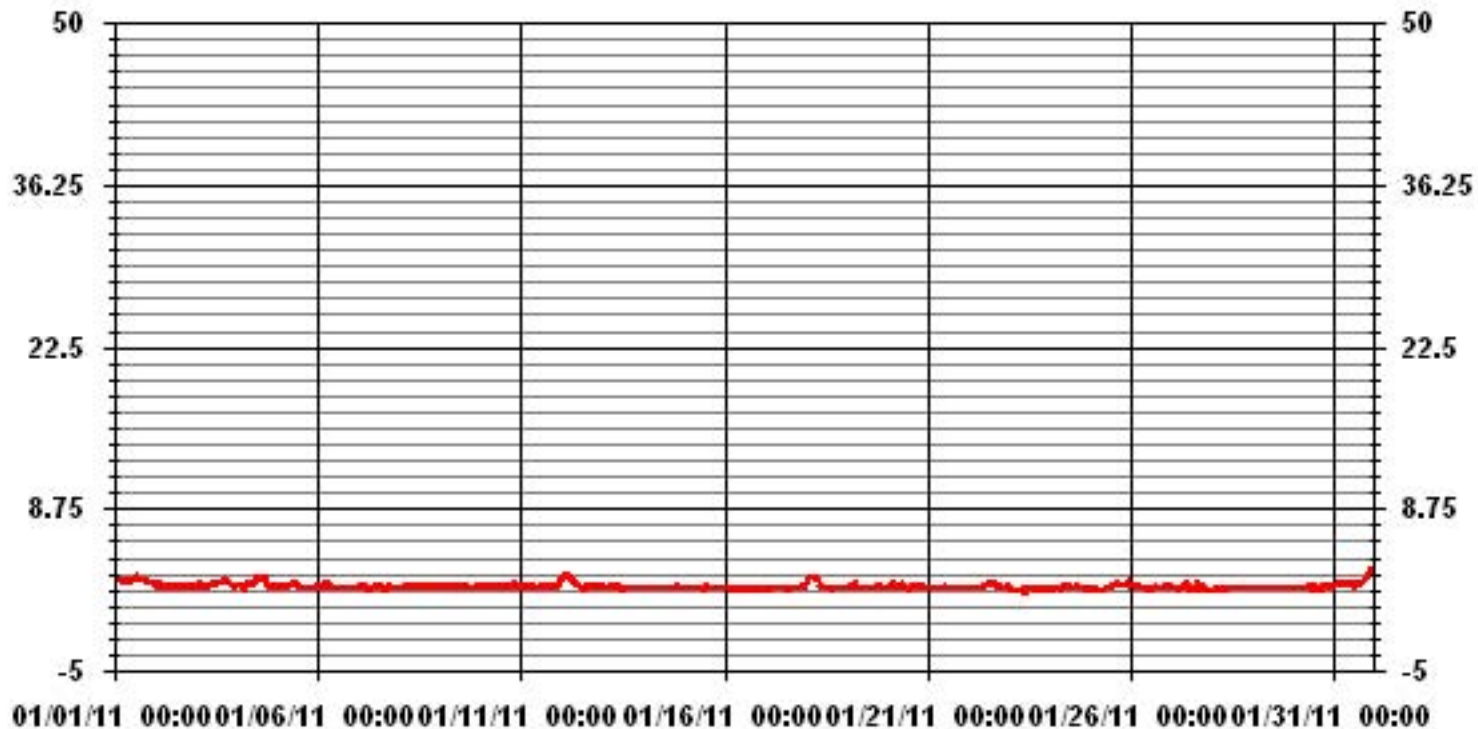
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	705					
MAXIMUM 1-HR AVERAGE:	3.7	PPM	@ HOUR(S)	22	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	2.7	PPM			ON DAY(S)	1
					VAR- VARIOUS	
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.25		MONTHLY AVERAGE:	2.15	PPM	

01 Hour Averages



— LICA30 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 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	2.8	2.8	IZS	2.8	2.8	2.8	2.8	2.7	2.6	2.6	2.8	2.9	3	2.9	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.5	2.5	3	2.7	24	
2	2.5	IZS	2.4	2.5	2.5	2.2	2.2	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	2.5	2.3	24	
3	IZS	2.3	2.3	2.4	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.4	IZS	2.8	2.5	24	
4	2.5	2.5	2.4	2.2	2.3	2.4	2.6	2.6	2.5	2.7	2.8	2.8	3	3	3	3.1	3.2	2.8	2.1	2.3	2.1	IZS	2.1	3.2	2.6	24		
5	2.1	2.2	2.2	2.2	2.3	2.4	2.4	2.4	2.5	2.4	2.4	2.5	2.5	2.3	2.2	2	2	2	2	2	2	2.1	IZS	2.4	2.4	2.5	24	
6	2.4	2.2	2.2	2.3	2.8	2.8	2.3	2.3	2	2	2	2	2.1	2.1	2.1	2.1	2	2.1	2	2	2	IZS	2	2	2	2.8	24	
7	2.2	2.2	2.1	2.1	2.2	2.2	2.1	2.2	2.3	2.3	2.1	2.1	2.3	2.3	2.2	2.2	2.1	2.3	2.3	IZS	2	2	2	2	2.3	2.2	24	
8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	24	
9	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.2	2.2	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
10	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	4	2.2	2.2	2.6	2.4	2.2	2.1	4	2.2	24	
11	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	C	C	C	C	C	2.1	2.1	IZS	2.2	2.1	2.1	2.1	2.1	2.1	2.6	2.8	2.8	2.2	24	
12	2.9	3	3	3.1	3.1	3.1	2.9	2.9	2.7	2.6	2.3	2.3	2.2	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	3.1	2.5	24	
13	2.1	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.2	2.3	2.2	2.1	2.1	IZS	2	2	2	2	2.1	2	2	2	2	2	2.3	2.1	24	
14	2	2	2	2	2	2	2	2	2	2	2	2	2.1	IZS	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2	2.1	2.0	24	
15	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.1	2	2	2.1	2.0	24
16	2	2	2	2	2	2	2	2	2	2	2	IZS	1.9	2	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.0	24	
17	1.9	2	2	2	2	2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.2	24	
18	2.6	2.9	3	3.1	3.1	3.1	2.9	2.9	IZS	2.4	2.3	2.1	2.1	2	M	2	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2	3.1	2.4	23	
19	2	2.2	2.2	2.2	2.4	2.9	2.3	IZS	2	2	2	2	2	2	2	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.9	2.1	24	
20	2.2	2.3	2.3	2.3	2.3	2.2	IZS	2.2	2.3	2.4	2.4	2.3	2.2	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.3	2.2	2.4	2.3	24	
21	2.1	2	2	2.1	2	IZS	2	2.1	2	2.1	2.1	2.3	2.1	2	2	2.1	2.1	2	2	2	2	2	2	2	2.3	2.0	24	
22	2.1	2	2	2	IZS	2	2	2	2.1	2.2	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.4	2.2	24	
23	2.2	2.1	1.9	IZS	1.8	1.8	1.8	2	2.1	2.2	1.9	2.7	2.3	2.3	3.9	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	3.9	2.1	24	
24	1.9	1.9	IZS	2	2	2.1	2.1	2.1	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2	2	2	1.9	1.9	2.3	24	
25	1.9	IZS	1.9	1.9	2.2	2	2	2	2.1	2.2	2	2	2.2	2.3	2.4	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.7	2.5	2.7	2.2	24	
26	IZS	2.5	2.2	2.3	2.2	2.2	2.2	2.2	2	1.9	1.8	1.9	2.1	2.2	2.2	2	2.1	2	2	2.5	2.6	2.3	IZS	2.6	2.2	2.2	24	
27	2.2	2	2.1	2	2	2	2.1	2.1	2.5	2.5	2.3	2.1	2.2	2.2	3.2	2.3	2.2	2.3	2.1	1.8	1.8	IZS	1.8	3.2	2.2	24		
28	1.8	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	24	
29	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	IZS	2	2	2	2	24	
30	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2	2.1	2.2	2	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.2	2.2	2.1	24	
31	2.3	2.3	2.3	2.3	2.4	2.3	2.3	2.4	2.4	2.6	2.5	2.4	2.5	2.6	2.5	2.5	2.6	2.7	IZS	3.1	3.7	3.7	3.7	3.6	3.7	2.7	24	
HOURLY MAX	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	3	3	4	3	3	4	4	4	4				
HOURLY AVG	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	2.3	2.2	2.2	2.2	2.2	2.2				

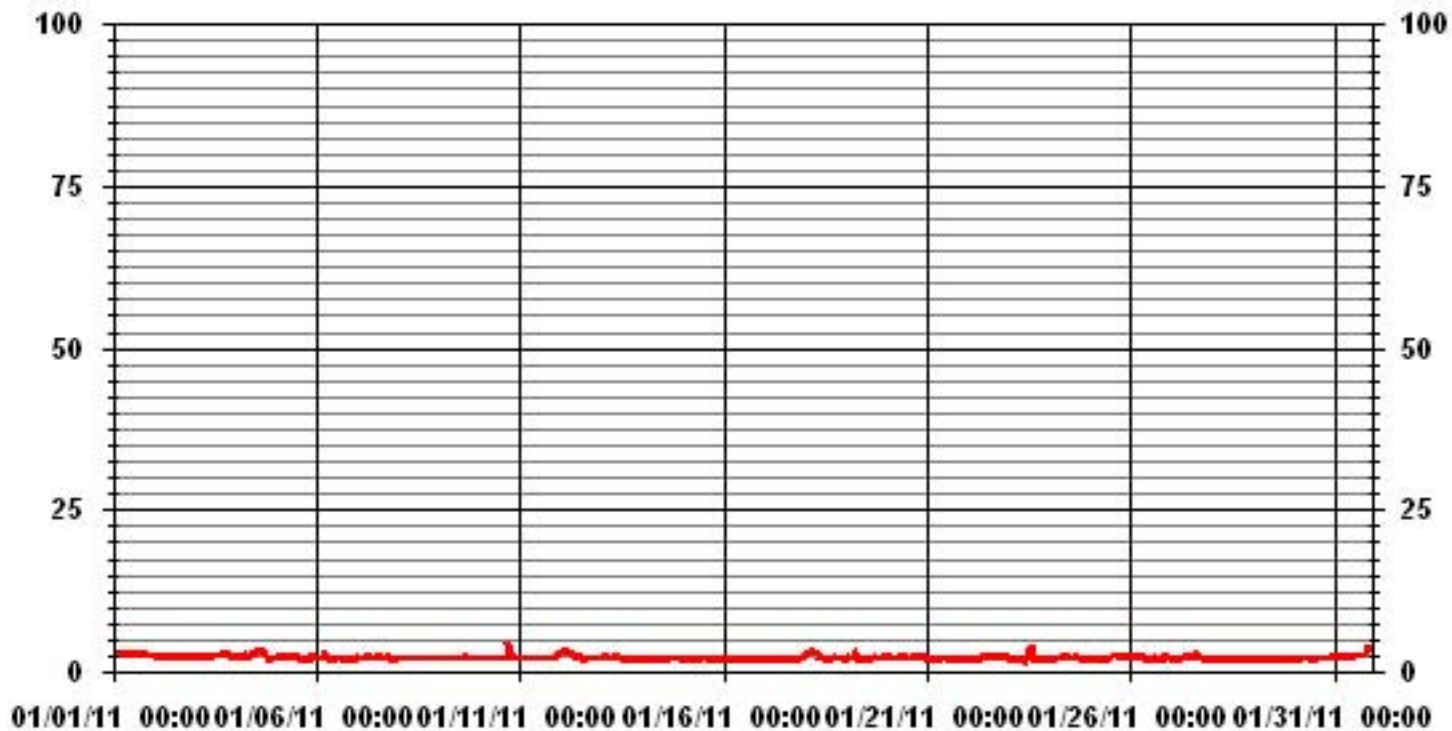
STATUS FLAG CODES

S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- 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:	705					
MAXIMUM INSTANTANEOUS VALUE:	4.0	PPM	@ HOUR(S)	17	ON DAY(S)	10
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.30					

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

January 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	8.51	11.77	9.50	3.97	4.82	2.69	3.97	2.26	4.53	14.04	10.63	3.12	4.11	4.39	5.53	3.97	97.87
< 10.0	.00	.00	.14	.00	.14	.14	.14	.00	.14	1.13	.14	.14	.00	.00	.00	.00	2.12
< 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	8.51	11.77	9.64	3.97	4.96	2.83	4.11	2.26	4.68	15.17	10.78	3.26	4.11	4.39	5.53	3.97	

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	60	83	67	28	34	19	28	16	32	99	75	22	29	31	39	28	690
< 10.0			1		1	1	1		1	8	1	1					15
< 50.0																	
>= 50.0																	
Totals	60	83	68	28	35	20	29	16	33	107	76	23	29	31	39	28	

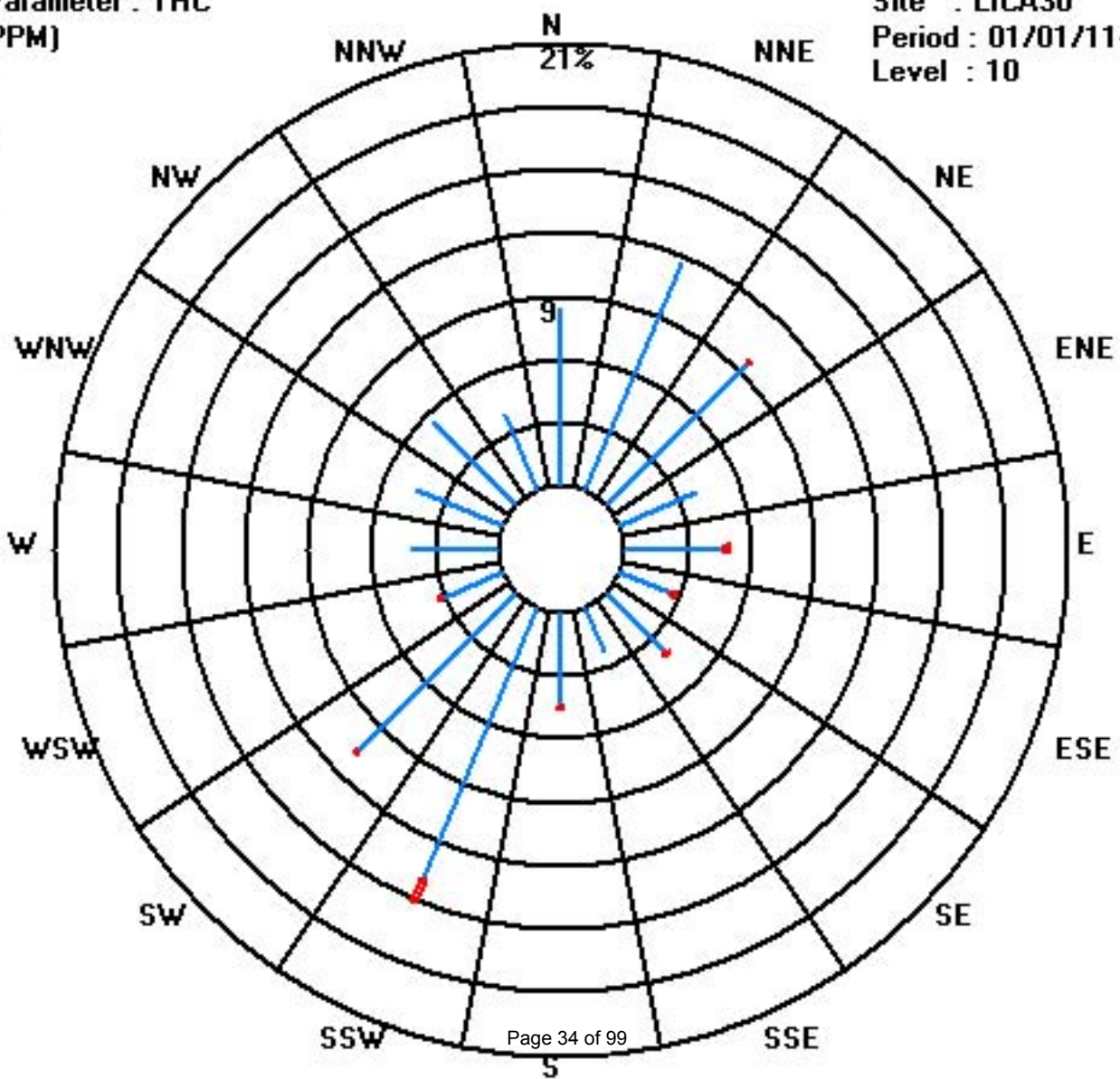
Calm : .00 %

Total # Operational Hours : 705

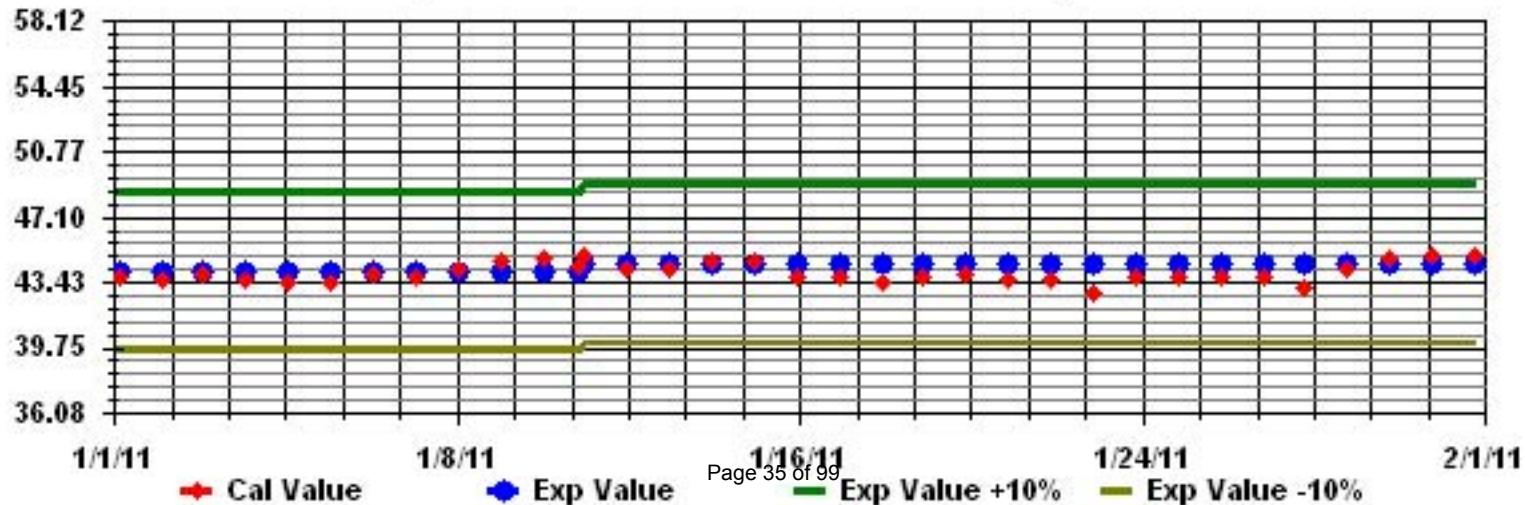
Class Limits (PPM)

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

Level : 10



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2011

NITROGEN DIOXIDE hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
HOUR END	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00					
DAY																												
1	10	9	IZS	7	8	9	11	11	11	12	11	11	11	12	13	14	16	16	16	16	12	10	8	7	16	11.3	24	
2	6	IZS	6	6	4	3	3	5	5	5	3	3	5	3	7	8	6	3	3	2	3	5	4	3	8	4.4	24	
3	IZS	5	6	6	7	5	5	5	5	4	4	4	4	5	5	6	10	9	9	10	10	9	IZS	10	6.5	24		
4	6	6	7	7	3	6	11	15	21	19	20	13	16	14	19	23	24	11	3	3	2	IZS	3	24	11.6	24		
5	3	3	2	3	7	6	7	7	13	5	6	5	6	3	8	5	10	7	5	6	5	IZS	5	9	13	5.9	24	
6	6	5	5	9	11	6	8	6	2	1	1	1	4	7	8	17	7	14	3	1	IZS	1	2	1	17	5.5	24	
7	2	3	3	2	2	1	1	2	11	10	2	2	3	8	3	2	2	2	5	IZS	0	0	0	0	11	2.9	24	
8	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	1	1	1	IZS	1	1	0	0	0	1	0.4	24	
9	1	1	1	1	1	0	1	2	1	1	1	1	1	0	0	1	0	IZS	0	1	1	2	2	1	2	0.9	24	
10	2	2	2	2	2	2	2	2	2	3	3	2	2	C	C	C	C	C	C	5	5	4	4	5	5	2.8	24	
11	5	4	3	2	5	3	2	4	4	2	3	4	3	3	5	IZS	5	4	4	4	2	2	4	6	6	3.6	24	
12	7	7	7	9	8	6	5	7	9	8	2	2	1	1	IZS	1	1	1	1	1	1	1	1	1	9	3.8	24	
13	2	2	3	5	4	6	4	6	10	11	7	9	5	IZS	4	7	9	8	8	6	4	3	3	2	11	5.6	24	
14	1	1	3	2	2	2	1	1	1	2	1	3	IZS	4	3	4	4	4	4	4	2	2	1	4	2.4	24		
15	1	1	1	1	0	1	0	1	1	1	1	1	IZS	3	4	7	3	4	3	5	4	3	5	2	7	2.4	24	
16	1	2	1	1	0	0	0	1	0	0	IZS	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0.3	24	
17	0	0	0	0	0	1	0	1	1	IZS	1	1	1	1	1	1	1	1	1	2	2	3	3	5	5	1.2	24	
18	4	9	11	8	7	8	11	13	IZS	12	6	4	3	3	M	3	11	10	13	8	7	7	7	3	13	7.6	23	
19	5	6	6	5	7	8	9	IZS	2	2	3	3	3	3	2	3	5	5	8	7	5	5	4	9	4.8	24		
20	4	5	6	6	5	5	IZS	4	4	7	4	2	2	2	3	3	5	4	6	4	5	13	7	3	13	4.7	24	
21	2	2	3	5	3	IZS	5	6	7	7	7	5	4	3	3	4	5	4	3	2	2	1	1	3	7	3.8	24	
22	5	3	3	5	IZS	4	3	2	4	3	4	3	3	3	5	5	8	7	8	7	6	6	6	7	8	4.8	24	
23	6	5	2	IZS	0	0	1	4	10	11	1	5	7	15	16	9	5	10	2	0	0	1	1	1	16	4.9	24	
24	3	5	IZS	3	2	2	3	4	4	3	4	5	5	5	7	8	11	12	7	4	5	4	2	1	12	4.7	24	
25	1	IZS	1	1	9	7	7	15	24	14	7	4	6	8	10	11	14	18	17	18	14	13	14	9	24	10.5	24	
26	IZS	10	8	6	5	7	6	11	12	7	3	2	2	4	5	6	7	6	4	4	7	6	5	IZS	12	6.0	24	
27	3	2	3	2	2	2	5	9	7	8	6	5	6	6	5	6	8	11	10	3	0	0	IZS	0	11	4.7	24	
28	1	9	2	2	1	2	2	3	2	2	2	1	2	1	1	1	1	1	1	1	1	1	IZS	0	9	1.7	24	
29	0	0	0	1	1	0	1	3	1	1	0	0	0	0	0	1	0	1	0	0	0	IZS	0	0	0	3	0.4	24
30	0	0	0	0	0	0	0	4	4	2	1	1	1	2	1	1	1	0	1	IZS	1	1	2	2	4	1.1	24	
31	1	1	1	3	2	2	6	7	16	12	13	5	2	2	2	2	3	7	IZS	12	14	14	15	15	16	6.8	24	
HOURLY MAX	10	10	11	9	11	9	11	15	24	19	20	13	16	15	16	19	23	24	17	18	14	14	15	15				
HOURLY AVG	3.0	3.7	3.3	3.7	3.6	3.5	4.0	5.4	6.5	5.8	4.3	3.5	3.7	4.2	4.9	5.3	6.1	6.7	5.5	4.7	4.2	4.1	4.0	3.2				

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

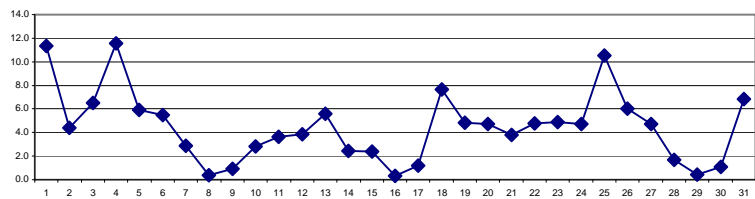
OBJECTIVE LIMIT:

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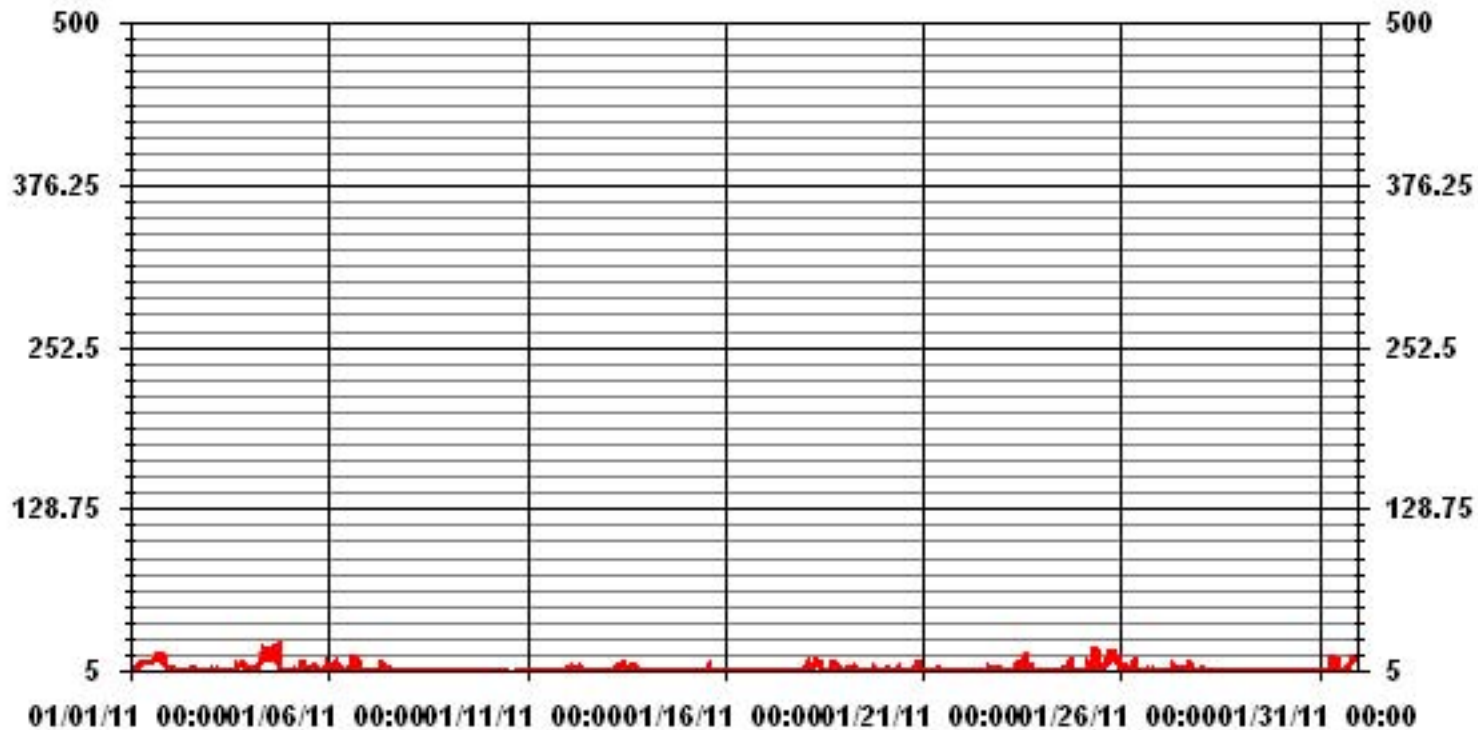
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	625
MAXIMUM 1-HR AVERAGE:	24 PPB @ HOUR(S) 17, 8 ON DAY(S) 4, 25
MAXIMUM 24-HR AVERAGE:	11.6 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:	4.16
MONTHLY AVERAGE:	4.46 PPB

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA30 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2011

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	11	11	IZS	8	8	10	13	12	12	14	13	12	12	13	14	16	17	17	17	17	15	11	9	8	17	12.6	24	
2	8	IZS	7	6	6	4	4	6	6	6	4	5	9	6	9	9	8	5	4	3	4	7	5	4	9	5.9	24	
3	IZS	6	6	7	9	9	6	6	6	5	5	6	5	7	6	7	15	10	12	12	12	13	14	IZS	15	8.4	24	
4	7	7	15	17	5	9	19	19	42	29	23	16	18	17	18	33	35	28	20	4	6	4	IZS	4	42	17.2	24	
5	3	3	3	5	11	8	9	14	16	7	8	7	14	6	14	14	14	12	7	7	9	IZS	9	10	16	9.1	24	
6	8	5	7	13	12	7	11	13	4	2	2	1	10	11	13	24	16	22	14	2	IZS	4	5	2	24	9.0	24	
7	7	4	4	3	3	2	1	6	16	16	4	3	10	14	5	4	4	8	13	IZS	1	1	1	1	1	16	5.7	24
8	1	1	1	1	1	2	2	1	1	1	1	1	1	1	2	2	2	2	IZS	2	1	1	1	1	2	1.3	24	
9	1	2	2	1	1	1	1	4	2	2	2	2	1	1	1	1	1	IZS	1	1	2	2	2	2	4	1.6	24	
10	2	3	3	3	2	2	3	3	3	4	6	3	C	C	C	C	C	C	C	7	6	5	5	5	7	3.8	24	
11	5	5	4	3	7	5	3	9	7	3	4	5	4	6	6	IZS	6	5	5	5	3	3	6	7	9	5.0	24	
12	7	8	8	10	9	9	8	9	12	23	4	3	2	2	IZS	2	2	2	2	1	2	2	2	2	23	5.7	24	
13	3	3	4	6	5	11	9	16	18	18	12	14	6	IZS	5	9	11	10	8	7	6	4	3	3	18	8.3	24	
14	2	2	4	3	3	2	2	2	2	4	11	4	IZS	5	4	7	5	5	5	5	5	3	2	2	11	3.9	24	
15	1	1	1	1	1	1	1	1	1	2	2	IZS	5	9	9	7	6	4	6	5	4	5	10	3	10	3.7	24	
16	2	3	2	2	1	1	1	2	1	1	IZS	1	1	1	1	3	1	1	1	1	1	1	1	1	3	1.3	24	
17	1	1	1	1	1	1	1	3	2	IZS	2	2	2	2	2	2	2	2	2	2	2	3	4	6	8	8	2.3	24
18	5	11	14	10	8	10	13	16	IZS	14	13	7	8	11	M	7	21	19	24	12	13	11	12	5	24	12.0	23	
19	7	7	10	6	13	13	13	IZS	4	3	4	4	5	4	3	5	21	10	12	12	6	5	6	5	21	7.7	24	
20	5	6	7	7	6	6	IZS	6	5	12	10	3	3	3	4	6	6	7	9	4	7	24	23	5	24	7.6	24	
21	3	7	11	11	3	IZS	11	11	10	9	10	7	7	5	5	6	7	5	4	3	3	2	2	7	11	6.5	24	
22	9	6	6	7	IZS	6	7	4	8	6	7	4	4	4	14	8	9	9	8	7	7	7	7	8	14	7.0	24	
23	7	7	4	IZS	1	1	2	10	14	15	4	10	13	25	22	22	15	19	12	1	1	3	2	2	25	9.2	24	
24	5	10	IZS	4	2	2	4	6	6	5	6	6	6	6	9	11	14	14	10	5	6	5	4	2	14	6.4	24	
25	2	IZS	4	3	21	9	10	34	33	20	11	8	9	12	21	26	17	33	20	31	14	23	28	14	34	17.5	24	
26	IZS	13	36	8	6	7	7	14	15	41	6	12	3	5	6	9	11	8	5	8	29	7	6	IZS	41	11.9	24	
27	4	3	4	3	3	5	8	15	10	10	8	10	10	24	6	9	10	13	12	9	1	1	IZS	1	24	7.8	24	
28	6	26	5	3	2	3	4	4	3	4	3	2	2	2	2	3	2	1	2	2	IZS	1	1	1	26	3.7	24	
29	1	1	1	1	1	1	3	6	3	2	1	1	1	1	1	2	1	2	2	2	IZS	1	1	1	6	1.6	24	
30	1	1	1	1	1	1	2	6	8	4	3	2	3	6	2	5	3	1	2	IZS	1	2	3	3	8	2.7	24	
31	2	1	6	6	4	3	14	15	21	17	18	12	3	3	4	3	5	9	IZS	13	16	15	15	16	21	9.6	24	
HOURLY MAX	11	26	36	17	21	13	19	34	42	41	23	16	18	25	22	33	35	33	24	31	29	24	28	16				
HOURLY AVG	4.3	5.7	6.2	5.3	5.2	5.0	6.4	9.1	9.7	10.0	6.9	5.8	6.1	7.3	7.4	9.0	9.6	9.8	8.5	6.6	6.4	6.1	6.6	4.6				

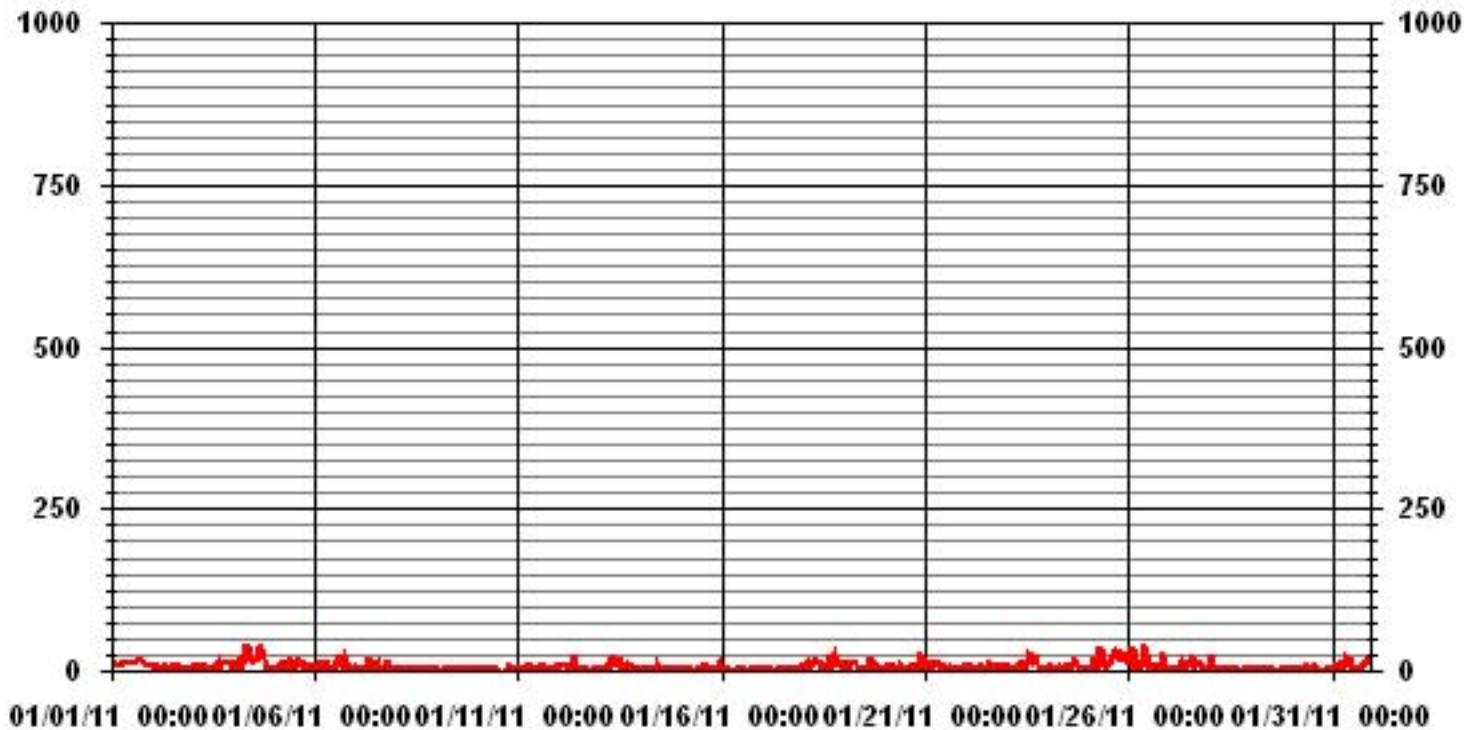
STATUS FLAG CODES

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:	704					
MAXIMUM INSTANTANEOUS VALUE:	42	PPB	@ HOUR(S)	8	ON DAY(S)	4
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	6.37					

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

January 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	8.22	11.63	9.64	3.97	4.96	2.83	4.11	2.55	5.10	15.17	10.63	3.26	4.11	4.25	5.53	3.97	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	8.22	11.63	9.64	3.97	4.96	2.83	4.11	2.55	5.10	15.17	10.63	3.26	4.11	4.25	5.53	3.97	

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	58	82	68	28	35	20	29	18	36	107	75	23	29	30	39	28	705
< 110																	
< 210																	
>= 210																	
Totals	58	82	68	28	35	20	29	18	36	107	75	23	29	30	39	28	

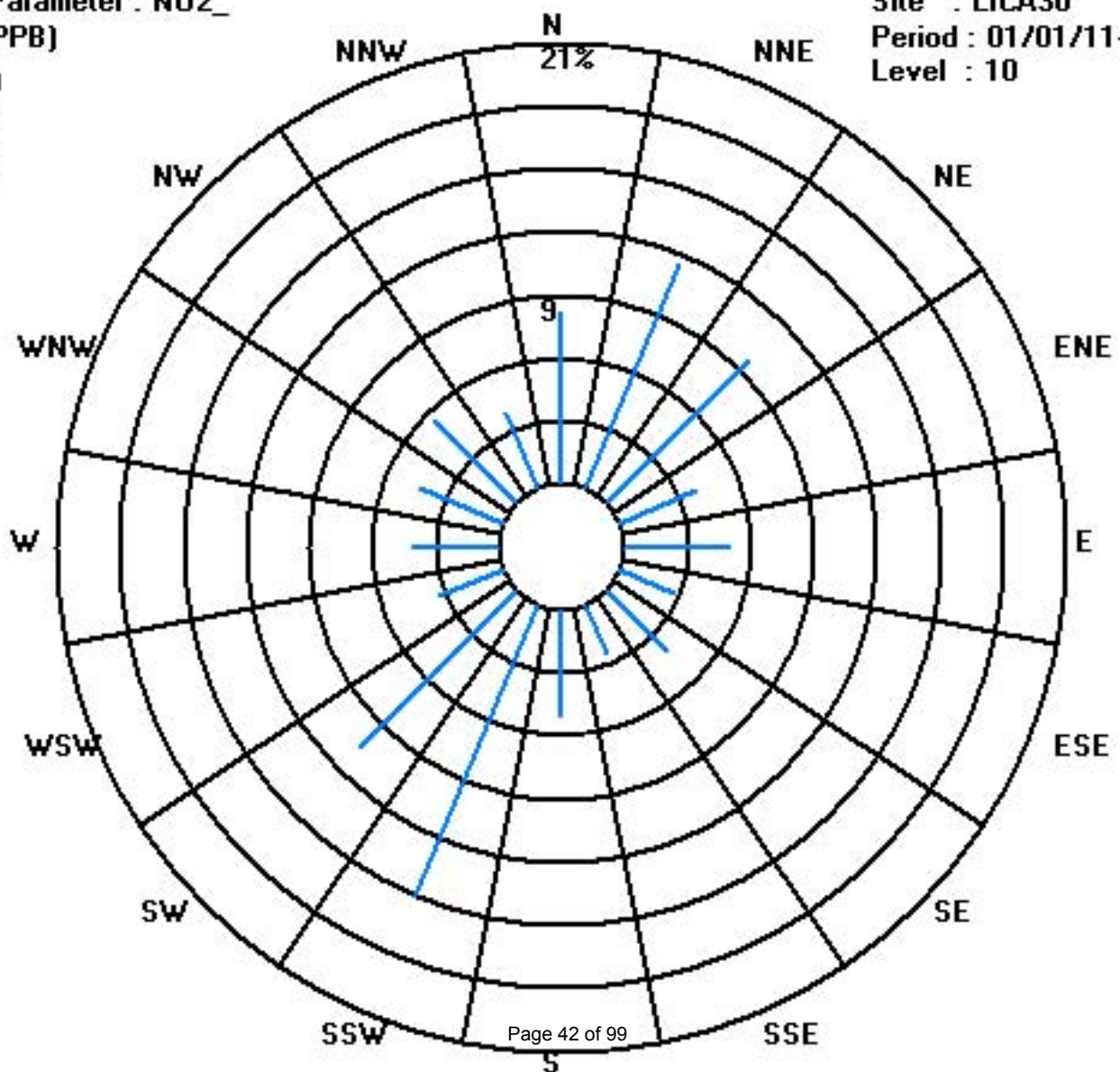
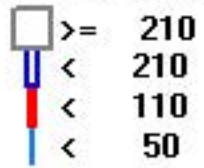
Calm : .00 %

Total # Operational Hours : 705

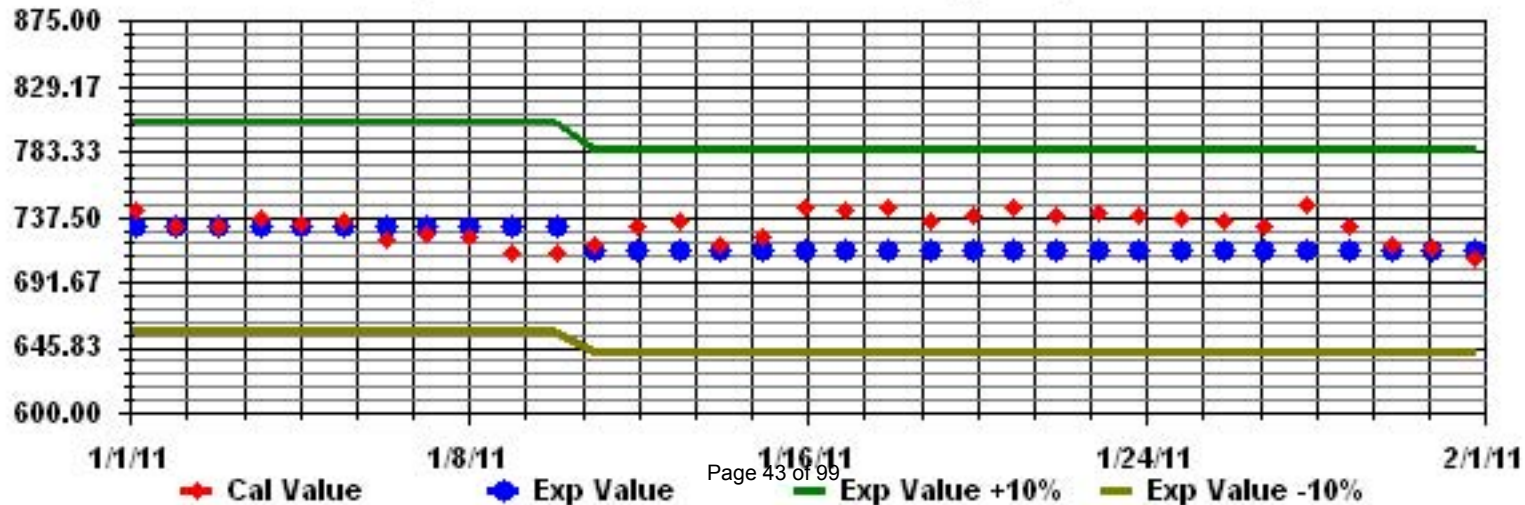
Class Limits (PPB)

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

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2011

NITRIC OXIDE hourly averages in ppb

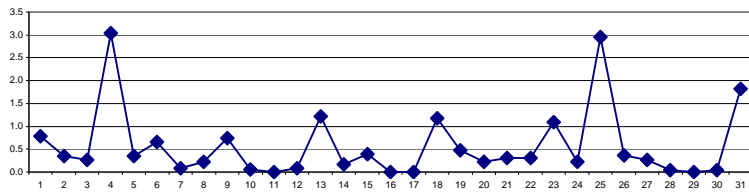
MST

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	IZS	0	0	0	0	0	0	1	3	4	4	3	2	1	0	0	0	0	0	0	0	0	4	0.8	24	
2	0	IZS	0	0	0	0	0	0	0	0	1	1	2	1	2	1	0	0	0	0	0	0	0	0	2	0.3	24	
3	IZS	0	0	0	0	0	0	0	0	0	0	1	1	2	1	0	1	0	0	0	0	0	0	IZS	2	0.3	24	
4	0	0	0	0	0	0	1	1	6	7	17	4	5	4	6	5	8	6	0	0	0	0	IZS	0	17	3.0	24	
5	0	0	0	0	0	0	0	0	0	0	1	1	3	0	2	1	0	0	0	0	0	0	IZS	0	3	0.3	24	
6	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	6	1	3	0	0	IZS	0	0	6	0.7	24		
7	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	IZS	0	0	0	1	0.1	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	0.2	24
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	0	0	1	0.7	24	
10	0	0	0	0	0	0	0	0	0	0	1	0	0	C	C	C	C	C	C	0	0	0	0	0	1	0.1	24	
11	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
12	0	0	0	0	0	0	0	0	0	2	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	2	0.1	24	
13	0	0	0	0	0	1	0	1	2	6	4	9	3	IZS	1	1	0	0	0	0	0	0	0	0	9	1.2	24	
14	0	0	0	0	0	0	0	0	0	0	0	1	IZS	1	1	1	0	0	0	0	0	0	0	0	1	0.2	24	
15	0	0	0	0	0	0	0	0	0	0	0	IZS	2	3	3	1	0	0	0	0	0	0	0	0	3	0.4	24	
16	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	
17	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	
18	0	0	0	0	0	0	0	1	IZS	5	4	3	2	2	M	1	4	0	3	1	0	0	0	0	5	1.2	23	
19	0	0	0	0	0	0	1	IZS	0	0	1	2	2	2	0	1	2	0	0	0	0	0	0	0	2	0.5	24	
20	0	0	0	0	0	0	IZS	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0.2	24	
21	0	0	0	0	0	IZS	0	0	0	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	2	0.3	24	
22	0	0	0	0	IZS	0	0	0	0	0	1	1	1	1	2	1	0	0	0	0	0	0	0	0	2	0.3	24	
23	0	0	0	IZS	0	0	0	0	0	1	0	1	3	7	7	3	1	2	0	0	0	0	0	0	7	1.1	24	
24	0	0	IZS	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0	0	0	1	0.2	24	
25	0	IZS	1	0	1	1	1	2	20	10	5	3	2	3	3	4	2	3	1	2	1	1	1	1	20	3.0	24	
26	IZS	0	2	0	0	0	0	0	0	1	0	0	0	1	1	1	1	0	0	0	1	0	0	0	2	0.4	24	
27	0	0	0	0	0	0	0	0	0	0	1	0	1	2	1	1	0	0	0	0	0	0	0	IZS	0	0.3	24	
28	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	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	IZS	0	0	0	0.0	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	IZS	0	0	0	1	0.0	24	
31	0	0	0	0	0	0	0	0	7	10	17	5	1	1	1	0	0	0	0	IZS	0	0	0	0	17	1.8	24	
HOURLY MAX	1	1	2	1	1	1	1	2	20	10	17	9	5	7	7	6	8	6	3	2	1	2	1	1				
HOURLY AVG	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.2	1.2	1.6	2.0	1.3	1.2	1.4	1.3	1.1	0.7	0.5	0.1	0.1	0.1	0.1	0.1	0.1				

STATUS FLAG CODES

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

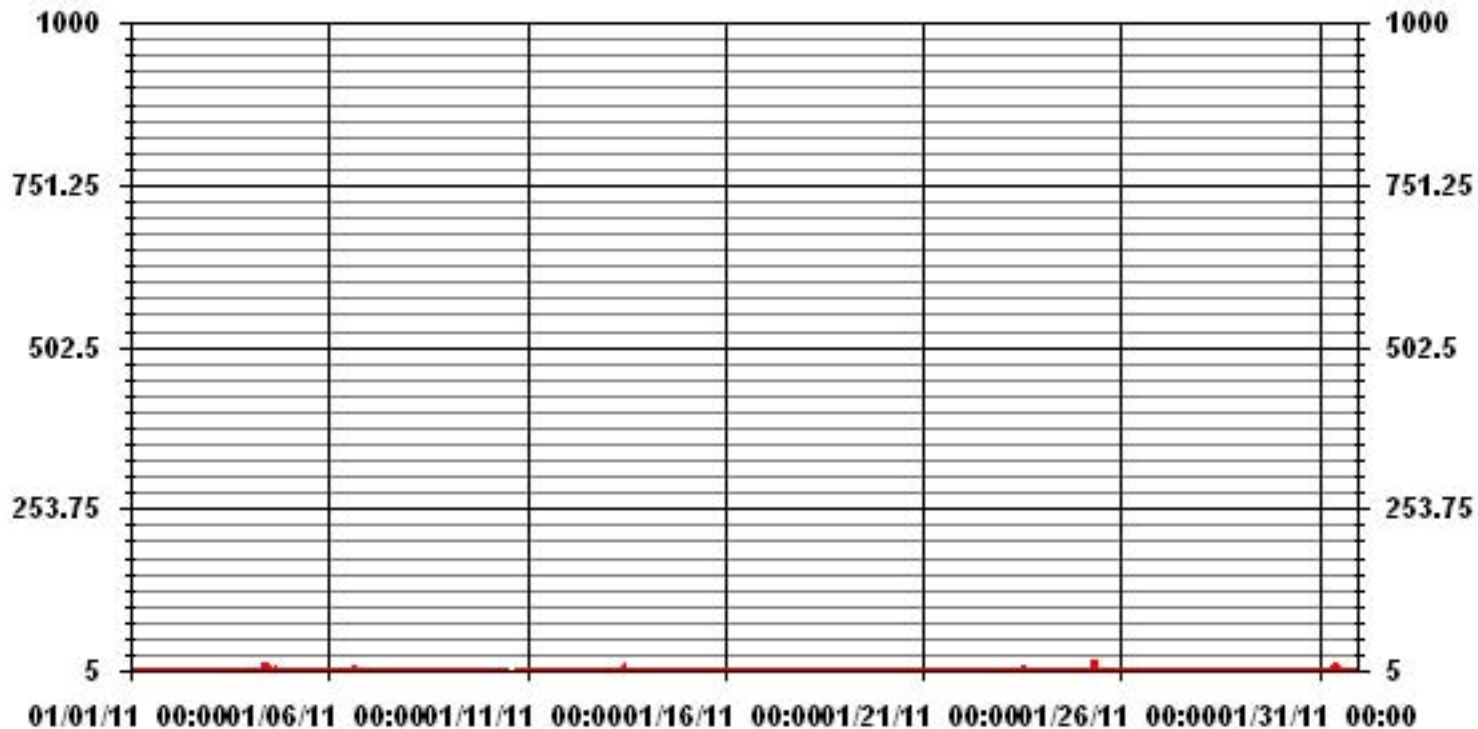
24 HOUR AVERAGES FOR JANUARY 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	171
MAXIMUM 1-HR AVERAGE:	20 PPB @ HOUR(S) 8 ON DAY(S) 25
MAXIMUM 24-HR AVERAGE:	3.0 PPB ON DAY(S) 25
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	1.71
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	0.57 PPB

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 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	0	0	IZS	1	0	0	1	0	1	2	4	5	5	4	3	2	1	1	1	1	1	0	0	0	5	1.4	24	
2	0	IZS	0	0	0	0	1	1	0	1	1	2	4	3	3	2	0	1	0	1	1	0	0	0	4	0.9	24	
3	IZS	0	1	1	1	1	0	0	1	1	1	2	5	6	1	1	5	0	0	1	0	0	0	IZS	6	1.3	24	
4	1	0	1	1	0	2	19	3	30	26	26	8	7	7	12	11	59	13	1	0	0	0	IZS	0	59	9.9	24	
5	0	0	0	0	0	0	1	1	1	0	2	2	11	3	6	28	2	2	0	0	0	IZS	1	0	28	2.6	24	
6	0	0	0	0	0	0	1	2	0	0	1	0	4	5	5	11	4	7	3	0	IZS	0	0	0	11	1.9	24	
7	0	0	0	0	0	0	0	0	3	2	0	1	3	4	1	0	0	1	2	IZS	0	0	0	0	4	0.7	24	
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	0.2	24
9	1	1	1	1	1	1	1	2	1	1	2	2	1	1	1	1	1	IZS	0	0	0	0	0	0	2	0.9	24	
10	0	0	0	0	0	0	1	0	0	0	3	1	C	C	C	C	C	C	C	C	0	0	0	0	0	3	0.3	24
11	0	0	0	0	1	0	0	2	1	0	0	1	1	9	2	IZS	1	0	0	0	0	0	0	0	0	9	0.8	24
12	1	1	0	0	0	0	1	0	1	20	1	1	1	1	IZS	1	0	0	0	1	0	0	0	0	20	1.3	24	
13	0	0	0	0	1	5	4	19	11	20	8	16	4	IZS	3	3	2	1	1	1	1	0	0	0	20	4.3	24	
14	0	1	0	0	1	0	1	1	1	2	16	3	IZS	2	2	3	1	0	0	0	1	0	0	0	16	1.5	24	
15	0	0	0	0	1	0	0	0	0	0	0	IZS	3	7	6	3	1	1	1	0	0	0	0	7	1.0	24		
16	0	1	0	0	0	0	0	0	0	0	IZS	0	1	0	0	1	1	0	0	0	0	1	0	0	1	0.2	24	
17	0	0	0	1	1	0	0	0	0	IZS	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0.3	24
18	0	0	1	0	1	1	1	2	IZS	7	13	5	6	7	M	4	20	5	10	3	3	1	0	0	20	4.1	23	
19	1	1	1	1	0	0	2	IZS	0	1	2	2	3	3	2	2	15	2	1	1	0	0	1	0	15	1.8	24	
20	0	0	0	1	1	0	IZS	1	0	3	3	1	1	1	1	0	1	0	0	1	0	10	8	0	10	1.4	24	
21	0	2	3	2	1	IZS	3	2	1	3	4	3	2	2	1	1	1	0	0	0	0	0	0	1	4	1.4	24	
22	1	0	0	1	IZS	0	0	0	1	1	3	2	3	2	10	4	1	0	0	0	0	1	0	0	10	1.3	24	
23	0	0	0	IZS	0	0	1	0	1	2	1	4	5	18	11	8	5	6	3	0	0	0	0	0	18	2.8	24	
24	0	0	IZS	0	0	0	0	1	1	1	2	2	1	2	2	1	2	2	0	0	0	0	0	0	2	0.7	24	
25	0	IZS	1	1	2	1	2	24	46	21	7	5	3	5	11	22	4	26	2	20	1	25	20	1	46	10.9	24	
26	IZS	1	31	0	0	0	0	1	2	45	2	17	1	2	2	2	4	0	0	2	38	0	0	IZS	45	6.8	24	
27	0	0	0	0	0	1	0	3	0	1	2	2	2	54	2	5	1	0	0	0	0	0	0	IZS	0	54	3.2	24
28	0	9	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	IZS	1	0	9	0.6	24
29	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	IZS	0	0	0	1	0.1	24
30	1	0	0	0	0	0	0	0	1	1	1	1	1	3	1	1	0	0	0	IZS	1	1	1	0	3	0.6	24	
31	0	0	0	1	1	0	4	1	14	19	32	14	2	2	3	1	1	0	IZS	1	1	1	1	1	32	4.3	24	
HOURLY MAX	1	9	31	2	2	5	19	24	46	45	32	17	11	54	12	28	59	26	10	20	38	25	20	1				
HOURLY AVG	0.2	0.6	1.4	0.4	0.4	0.4	1.5	2.2	3.9	6.1	4.6	3.4	2.8	5.3	3.4	4.1	4.4	2.3	0.9	1.2	1.7	1.4	1.2	0.1				

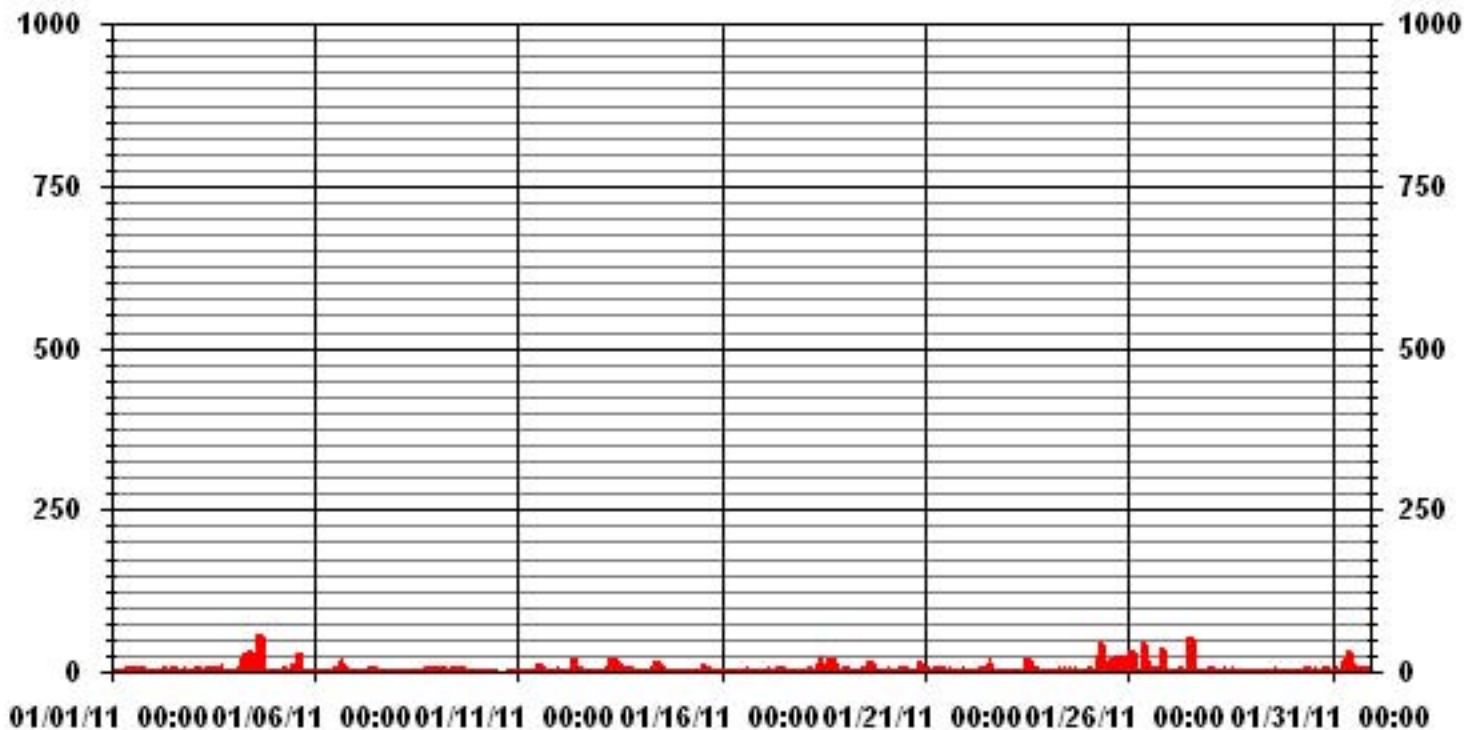
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	365					
MAXIMUM INSTANTANEOUS VALUE:	59	PPB	@ HOUR(S)	16	ON DAY(S)	4
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	5.93					

01 Hour Averages



— LICA30 — NOMAX — PPB

LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

January 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	8.22	11.63	9.64	3.97	4.96	2.83	4.11	2.55	5.10	15.17	10.63	3.26	4.11	4.25	5.53	3.97	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	8.22	11.63	9.64	3.97	4.96	2.83	4.11	2.55	5.10	15.17	10.63	3.26	4.11	4.25	5.53	3.97	

Calm : .00 %

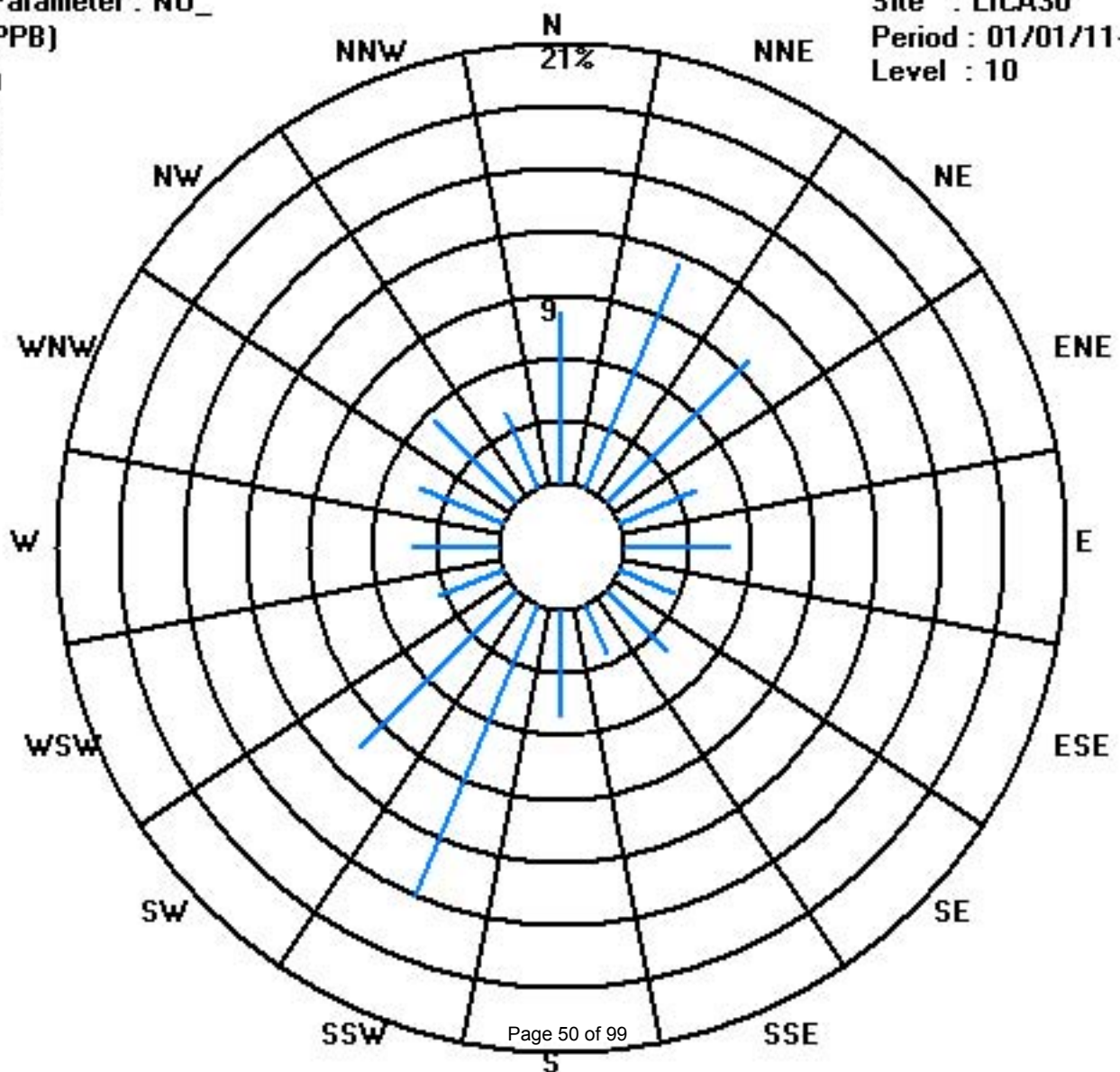
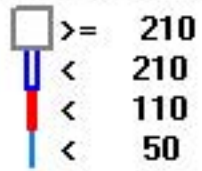
Total # Operational Hours : 705

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	58	82	68	28	35	20	29	18	36	107	75	23	29	30	39	28	705
< 110																	
< 210																	
>= 210																	
Totals	58	82	68	28	35	20	29	18	36	107	75	23	29	30	39	28	

Calm : .00 %

Total # Operational Hours : 705



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
JANUARY 2011
OXIDES OF NITROGEN hourly averages in ppb

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	9	8	IZS	7	8	9	11	11	11	14	15	15	16	16	16	16	17	16	16	16	13	10	9	8	17	12.5	24	
2	7	IZS	6	6	4	3	3	5	5	5	4	5	7	5	9	9	7	4	3	3	3	5	4	3	9	5.0	24	
3	IZS	5	6	6	7	5	5	5	5	5	5	5	6	7	6	7	11	9	9	11	10	10	10	IZS	11	7.0	24	
4	7	6	7	7	3	6	12	16	27	26	37	18	21	19	21	25	31	31	11	3	3	2	IZS	4	37	14.9	24	
5	2	3	2	3	7	6	7	8	13	5	8	7	9	4	11	7	11	8	5	6	5	IZS	5	8	13	6.5	24	
6	6	4	4	8	10	6	7	6	1	0	0	0	4	8	10	22	8	17	2	0	IZS	1	2	1	22	5.5	24	
7	3	3	3	2	2	1	1	2	12	11	3	2	4	11	3	2	2	2	6	IZS	0	0	0	0	0	12	3.3	24
8	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	1	IZS	1	1	0	0	0	0	1	0.3	24
9	1	1	1	1	1	0	1	2	0	1	1	1	1	0	0	1	0	IZS	1	1	1	2	2	2	2	2	1.0	24
10	2	2	2	2	2	2	2	2	2	3	4	3	2	C	C	C	C	C	C	6	5	4	4	5	6	3.0	24	
11	5	4	3	2	5	3	2	5	4	2	4	6	4	5	6	IZS	5	4	4	4	2	2	4	6	6	4.0	24	
12	7	7	7	9	8	6	5	7	9	10	3	2	1	1	IZS	2	1	1	1	1	1	1	1	1	1	10	4.0	24
13	1	2	3	5	4	7	5	7	13	17	12	18	8	IZS	6	8	10	8	8	6	5	3	3	2	18	7.0	24	
14	1	2	3	3	2	2	2	1	1	2	2	4	IZS	5	4	5	5	4	4	4	4	3	2	1	5	2.9	24	
15	1	1	0	0	0	0	0	0	1	1	1	1	IZS	5	7	10	4	4	3	5	5	3	3	5	2	10	2.7	24
16	1	2	1	1	0	0	0	1	0	0	IZS	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0.3	24
17	0	0	0	0	1	0	0	1	1	IZS	1	2	1	1	1	1	1	1	1	1	2	3	4	5	5	1.2	24	
18	4	10	12	8	7	8	11	14	IZS	18	12	9	6	6	M	5	16	12	17	10	9	9	8	4	18	9.8	23	
19	6	7	7	7	8	9	11	IZS	3	2	5	5	6	5	3	4	7	6	8	7	5	5	5	4	11	5.9	24	
20	4	5	6	6	6	5	IZS	5	4	8	5	3	3	4	4	5	5	6	4	5	15	8	3	15	5.3	24		
21	2	3	4	5	3	IZS	5	7	7	9	9	7	5	4	4	5	5	4	3	2	2	1	2	3	9	4.4	24	
22	5	3	3	5	IZS	4	3	2	4	4	5	5	5	5	7	6	8	8	8	7	6	6	6	7	8	5.3	24	
23	6	5	2	IZS	1	0	1	4	11	13	2	7	11	23	24	13	7	13	2	0	0	1	1	1	24	6.4	24	
24	3	5	IZS	3	2	2	3	4	4	4	5	6	5	6	8	9	12	13	7	4	5	4	3	1	13	5.1	24	
25	1	IZS	2	1	9	7	8	17	43	23	12	6	8	11	13	14	15	20	18	19	14	14	15	10	43	13.0	24	
26	IZS	10	10	6	6	7	6	11	13	9	3	3	2	5	7	7	8	6	4	4	8	6	5	IZS	13	6.6	24	
27	3	2	3	3	2	2	6	10	7	8	8	6	8	9	7	9	8	11	10	3	0	0	IZS	0	11	5.4	24	
28	1	11	3	2	1	2	2	2	3	2	2	2	2	1	1	2	1	1	1	1	1	1	IZS	1	0	11	2.0	24
29	0	0	0	0	0	0	1	3	1	1	0	0	0	0	0	1	0	1	0	0	IZS	0	0	0	3	0.3	24	
30	0	0	0	0	0	0	0	4	5	3	2	1	2	3	1	1	1	0	1	IZS	1	1	2	2	5	1.3	24	
31	1	1	1	4	3	2	7	8	23	23	31	10	4	3	3	2	3	7	IZS	13	15	15	15	15	31	9.1	24	
HOURLY MAX	9	11	12	9	10	9	12	17	43	26	37	18	21	23	24	25	31	31	18	19	15	15	15	15				
HOURLY AVG	3.1	3.9	3.5	3.7	3.7	3.5	4.3	5.7	7.7	7.7	6.7	5.3	5.2	6.0	6.6	6.7	7.0	7.4	5.8	4.9	4.4	4.3	4.3	3.4				

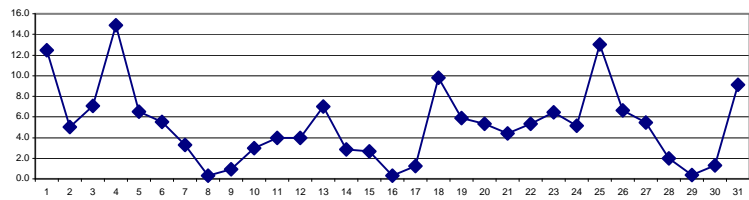
STATUS FLAG CODES

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

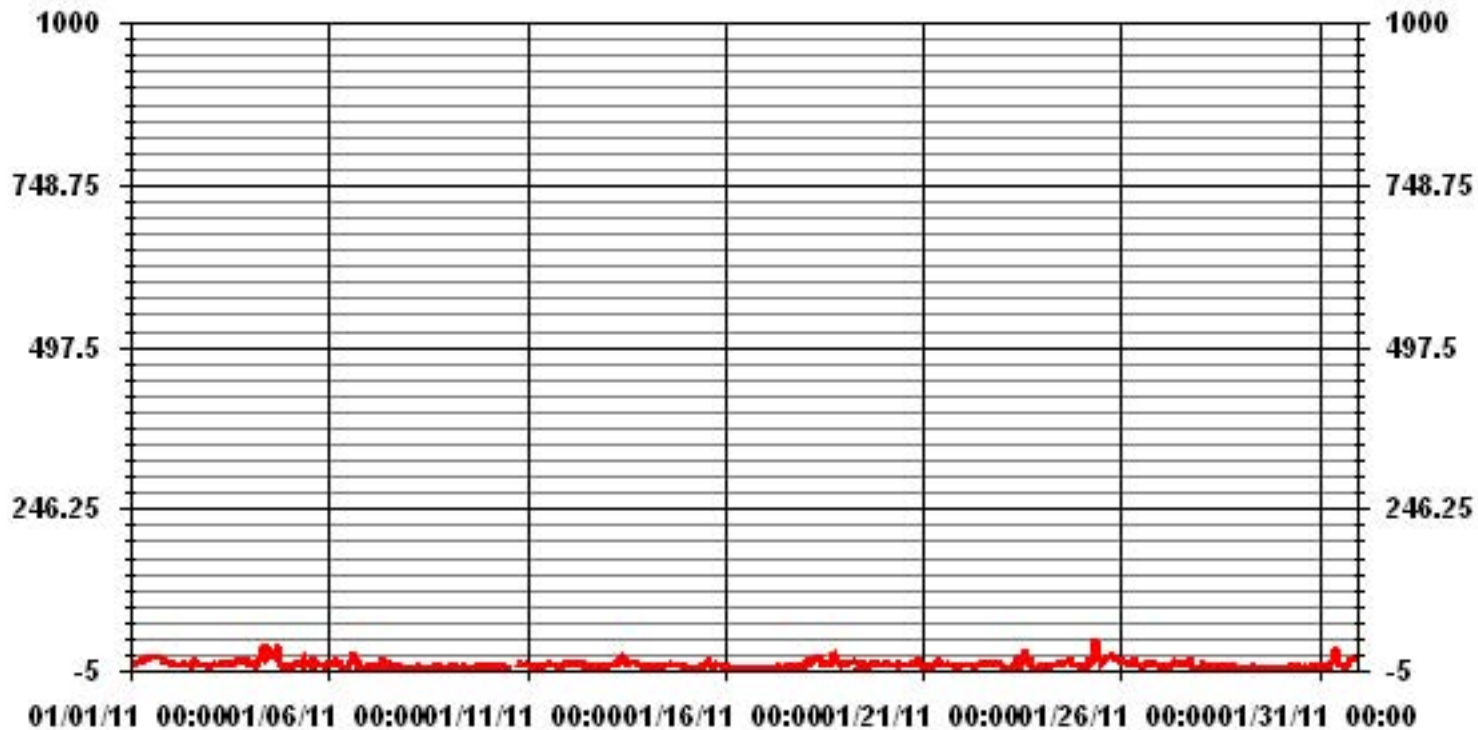
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	615					
MAXIMUM 1-HR AVERAGE:	43	PPB	@ HOUR(S)	8	ON DAY(S)	25
MAXIMUM 24-HR AVERAGE:	14.9	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:	5.39		MONTHLY AVERAGE:	5.20	PPB	

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA30 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 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	10	11	IZS	8	9	10	12	13	13	15	16	16	17	17	17	17	18	17	17	18	16	12	10	9	18	13.8	24	
2	9	IZS	7	7	6	4	4	7	6	7	6	7	13	8	12	11	9	5	4	3	4	7	5	4	13	6.7	24	
3	IZS	6	7	8	10	10	6	7	7	6	6	8	10	14	7	8	20	10	12	13	13	14	IZS	IZS	20	9.8	24	
4	7	7	16	19	4	12	34	21	66	52	49	23	25	24	30	44	86	40	20	5	6	5	IZS	5	86	26.1	24	
5	4	4	3	5	12	8	10	14	17	7	10	9	25	9	18	38	15	14	7	8	9	IZS	8	10	38	11.5	24	
6	8	4	6	12	12	7	11	15	4	2	2	1	13	15	17	35	20	28	17	1	IZS	4	5	2	35	10.5	24	
7	7	4	4	3	3	3	2	6	17	17	5	3	13	17	7	5	4	9	15	IZS	1	1	1	1	1	17	6.4	24
8	1	1	1	1	1	2	2	1	2	1	2	1	1	1	2	2	2	2	IZS	2	2	1	1	2	2	2	1.4	24
9	2	2	2	2	1	1	1	5	2	2	2	2	2	1	1	2	1	IZS	1	1	2	2	3	2	5	1.8	24	
10	2	3	3	3	2	2	3	3	4	4	9	4	C	C	C	C	C	C	C	8	6	5	5	6	9	4.2	24	
11	5	5	4	3	8	6	3	12	10	4	6	7	5	14	8	IZS	7	5	5	6	3	3	6	7	14	6.2	24	
12	8	8	8	10	9	9	9	9	12	42	4	4	2	2	IZS	3	2	2	2	2	2	2	2	2	42	6.7	24	
13	3	3	4	6	6	16	13	34	28	33	20	29	10	IZS	8	11	12	11	9	7	6	4	4	3	34	12.2	24	
14	2	2	4	4	3	2	2	2	2	6	26	7	IZS	7	5	10	6	5	5	5	5	3	2	2	26	5.1	24	
15	1	2	1	1	1	1	1	1	1	1	1	1	IZS	8	16	15	10	6	4	6	6	4	5	10	3	16	4.6	24
16	2	3	2	2	1	1	1	2	1	1	1	IZS	1	1	1	3	2	1	1	1	1	1	1	0	3	1.3	24	
17	1	1	1	1	1	1	1	3	2	IZS	2	3	2	2	3	2	2	2	2	2	2	3	4	6	8	8	2.4	24
18	5	12	15	10	8	10	13	18	IZS	21	27	13	16	18	M	11	42	24	35	16	17	12	13	6	42	16.5	23	
19	8	8	12	7	14	14	16	IZS	4	5	5	6	8	7	5	7	34	11	12	12	6	6	5	34	9.5	24		
20	5	6	7	7	7	6	IZS	7	6	15	13	3	3	4	5	7	6	7	10	5	7	33	31	5	33	8.9	24	
21	3	9	14	13	4	IZS	14	13	10	12	14	9	9	6	6	7	8	5	4	3	3	2	2	8	14	7.7	24	
22	10	6	6	7	IZS	7	8	4	9	7	9	6	7	6	24	13	10	9	9	8	7	7	7	7	24	8.4	24	
23	7	7	4	IZS	1	1	1	10	15	17	6	14	18	39	32	31	20	26	15	0	1	3	2	2	39	11.8	24	
24	5	11	IZS	5	2	3	4	7	6	6	8	8	6	8	11	13	15	16	11	5	6	5	4	2	16	7.3	24	
25	2	IZS	4	3	22	9	12	57	76	39	18	13	12	16	28	42	19	58	20	47	15	42	44	14	76	26.6	24	
26	IZS	13	67	8	7	8	7	15	18	85	7	29	4	7	9	12	15	8	5	10	65	7	6	IZS	85	18.7	24	
27	5	3	4	4	3	6	8	17	11	11	10	12	12	59	7	15	10	13	12	9	1	1	IZS	1	59	10.2	24	
28	6	35	5	3	2	3	3	4	3	4	3	3	3	3	3	3	2	2	2	2	2	2	IZS	1	1	35	4.3	24
29	0	0	1	1	2	1	3	6	3	2	1	1	1	1	3	1	2	2	2	2	IZS	0	1	1	6	1.6	24	
30	1	1	1	1	1	0	2	7	9	4	3	2	5	9	2	5	3	2	1	IZS	1	2	3	3	9	3.0	24	
31	2	2	6	7	4	3	17	16	34	36	50	26	5	4	6	4	6	9	IZS	14	16	16	16	16	50	13.7	24	
HOURLY MAX	10	35	67	19	22	16	34	57	76	85	50	29	25	59	32	44	86	58	35	47	65	42	44	16				
HOURLY AVG	4.5	6.2	7.6	5.7	5.5	5.5	7.4	11.2	13.3	15.5	11.3	9.0	8.8	11.6	10.3	12.9	13.5	12.0	9.3	7.6	7.9	7.2	7.6	4.7				

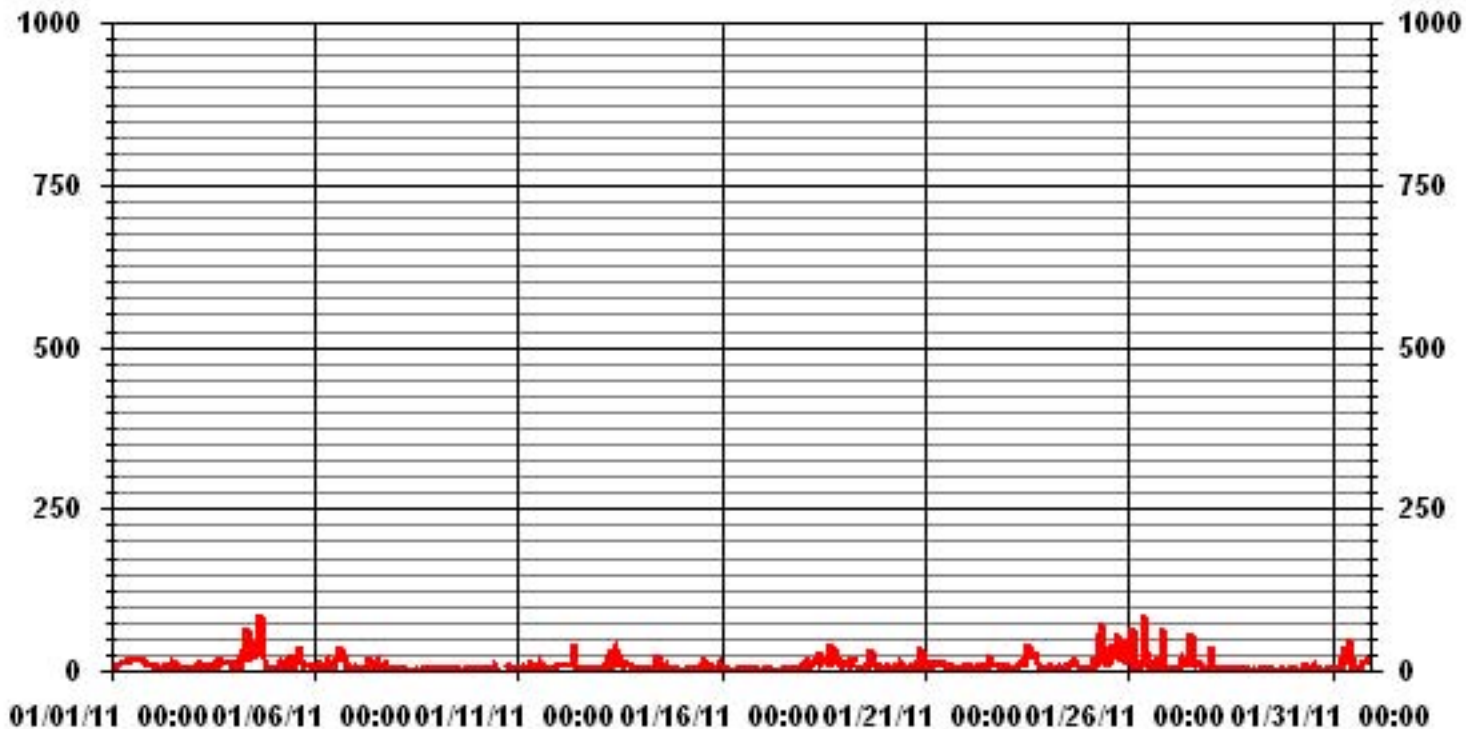
STATUS FLAG CODES

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:	698
MAXIMUM INSTANTANEOUS VALUE:	86 PPB @ HOUR(S) 16 ON DAY(S) 4
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION	10.87
OPERATIONAL TIME:	743 HRS

01 Hour Averages



— LICA30 NOxMAX PPB

LICA30
 NOX_ / WDR Joint Frequency Distribution (Percent)

January 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	8.22	11.63	9.64	3.97	4.96	2.83	4.11	2.55	5.10	15.17	10.63	3.26	4.11	4.25	5.53	3.97	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	8.22	11.63	9.64	3.97	4.96	2.83	4.11	2.55	5.10	15.17	10.63	3.26	4.11	4.25	5.53	3.97	

Calm : .00 %

Total # Operational Hours : 705

Distribution By Samples

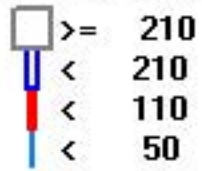
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	58	82	68	28	35	20	29	18	36	107	75	23	29	30	39	28	705
< 110																	
< 210																	
>= 210																	
Totals	58	82	68	28	35	20	29	18	36	107	75	23	29	30	39	28	

Calm : .00 %

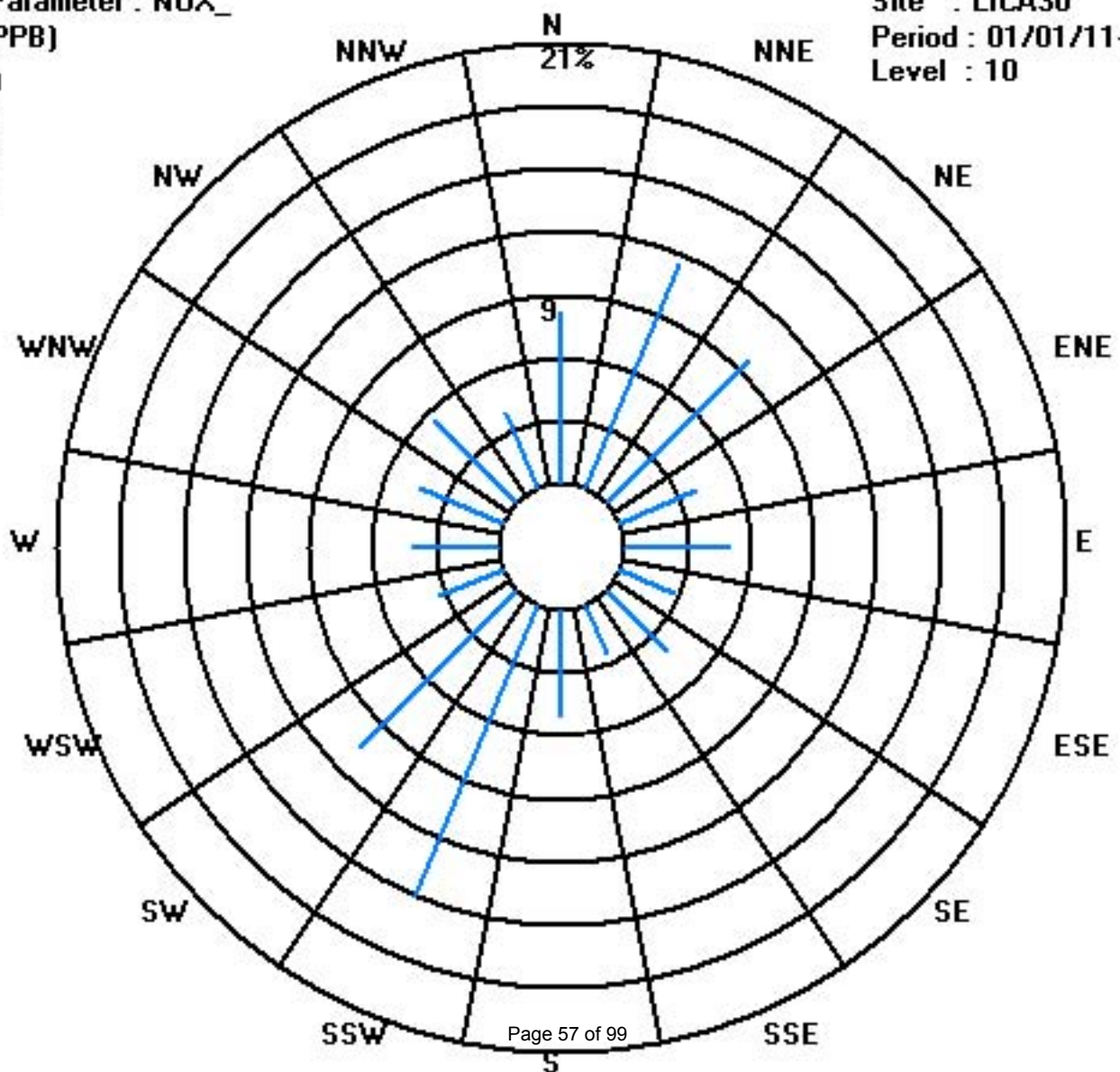
Total # Operational Hours : 705

Class Limits (PPB)

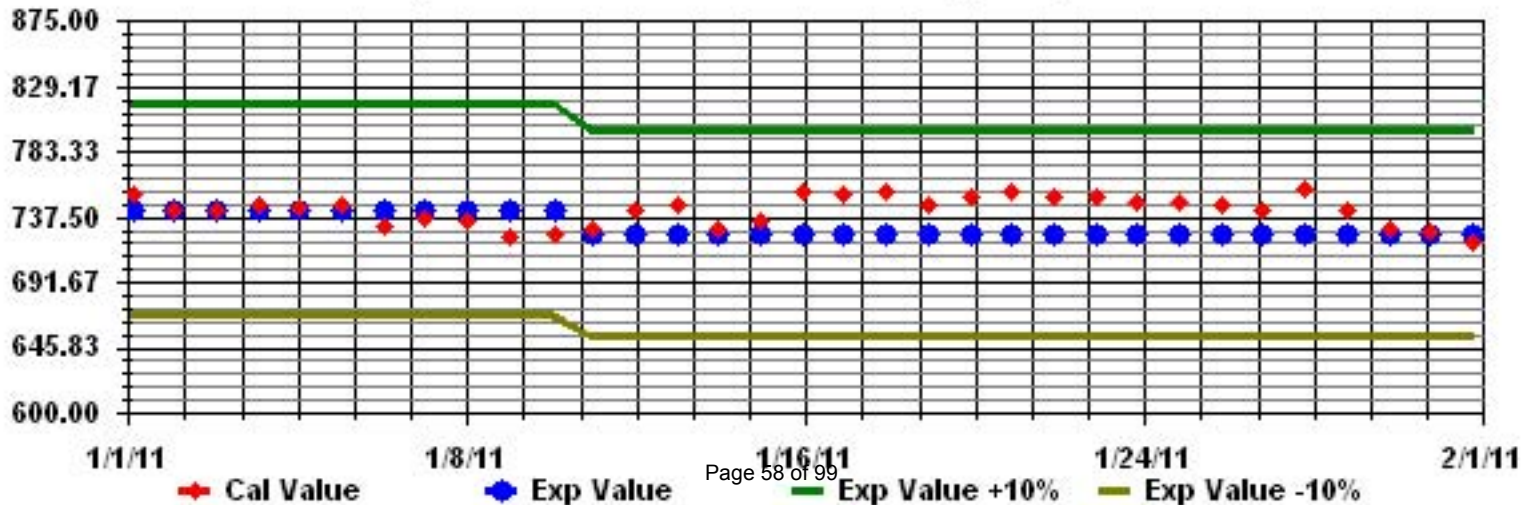
Period : 01/01/11-01/31/11



Level : 10



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



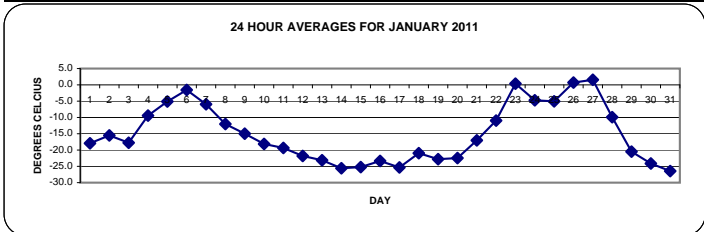
Temperature

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY	24-HOUR		
DAY	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		-23.3	-24.1	-24.8	-24.5	-23.7	-24.2	-23.5	-22.6	-21.8	-20.7	-18.7	-17.5	-16.9	-15.5	-14.6	-14.1	-14	-13.7	-13.7	-13.9	-12.1	-11.1	-10.6	-10.6	-10.6	-17.9	24		
2		-10.7	-12.6	-12.7	-12.3	-11.9	-11.8	-12.8	-13.3	-13.6	-14	-13.5	-12.7	-11.8	-11.3	-12.2	-15.1	-17	-18.7	-20	-21.3	-22.2	-22.4	-23.8	-24.5	-10.7	-15.5	24		
3		-24.3	-25.2	-26.2	-26.7	-26.9	-23.3	-21.7	-20.6	-18.5	-17.4	-16.3	-14.9	-13.2	-11.4	-11.9	-13.7	-15.5	-14.5	-14.3	-15.6	-14.8	-14.7	-13.5	-11.1	-11.1	-17.8	24		
4		-11.1	-10.7	-10.5	-9.5	-10.5	-10.9	-10.9	-10.8	-12.2	-12.5	-11.6	-8.8	-8.3	-7.5	-8.1	-10.1	-10.9	-9.6	-7.9	-6.9	-6.7	-6.7	-6.7	-6.8	-6.7	-9.4	24		
5		-6.8	-7	-7.2	-7.2	-7.2	-7.2	-7	-7	-6.8	-6.2	-5.7	-4.6	-1.4	0.2	0.2	-2.2	-3.2	-3.6	-4.2	-4.9	-5.2	-6.1	-7.2	-5.3	0.2	-5.1	24		
6		-5.4	-5.1	-4.6	-4.3	-4.5	-4.2	-3.4	-2.4	-1.4	-0.7	0.6	1.4	1.7	1.5	0.5	0	-0.5	-0.3	-0.3	-0.7	-0.9	-1.1	-1.6	-1.9	1.7	-1.6	24		
7		-1.9	-2.3	-2.9	-5.1	-6.8	-7.5	-6	-6.4	-8.9	-7.6	-4.1	-2.8	-3.7	-4.2	-5.1	-5.7	-6.4	-6.7	-7.2	-7.7	-8	-8.3	-8.7	-9	-1.9	-6.0	24		
8		-9.2	-9.5	-10.1	-10.8	-11.1	-11.4	-11.7	-12	-12.7	-13.4	-13.1	-12.5	-12.4	-12.4	-12.2	-12.3	-12.3	-12.6	-12.6	-12.5	-12.6	-12.8	-13.1	-13.3	-9.2	-12.0	24		
9		-13.4	-13.5	-13.8	-14	-14.4	-14.7	-14.9	-15	-15.1	-15.2	-14.9	-14.6	-14.2	-14	-14.1	-14.2	-14.9	-15.6	-15.8	-15.9	-16.3	-16.8	-17	-17.1	-13.4	-15.0	24		
10		-17.5	-17.6	-17.8	-18	-17.6	-17.7	-17.9	-18.1	-18.4	-18.6	-18.2	-17.6	-17.2	-16.8	-17.1	-17.6	-19.1	-19.8	-19.2	-19	-18.9	-18.7	-18.5	-18.4	-16.8	-18.1	24		
11		-18.4	-18.7	-19.3	-19.2	-19.1	-19.5	-19.7	-19.8	-19.9	-19.5	-18.6	-18	-17.3	-16.6	-16.6	-17.1	-18.2	-20.2	-22.3	-23.4	-22.8	-21.2	-19.9	-19.2	-16.6	-19.4	24		
12		-19.4	-20.6	-23.2	-24.8	-26.2	-26.5	-27.5	-27.1	-26.2	-24.2	-22.1	-20.4	-19.6	-18.7	-17.8	-17.7	-18.5	-18.4	-18.6	-19.8	-20.7	-22.2	-21.7	-21.6	-17.7	-21.8	24		
13		-22.5	-23.4	-23.6	-23	-23.9	-23.6	-23.5	-24.6	-25.1	-24.2	-23.4	-21.5	-20	-20.1	-20.6	-21.7	-22.8	-23.2	-23.4	-23.8	-23.9	-24.1	-24.4	-24.7	-20.0	-23.1	24		
14		-24.9	-25.2	-25.3	-25.4	-25.8	-26.2	-26.6	-26.8	-27	-26.8	-27	-26.8	-25.7	-24.8	-24.9	-24.7	-24.3	-24.5	-24.7	-25.1	-25.4	-25.6	-26	-26.1	-26	-26.2	-24.3	-25.6	24
15		-26.6	-26.8	-26.8	-26.9	-27.1	-27	-27.1	-27.1	-27.1	-26.4	-26.1	-24.5	-22.7	-20.9	-21.5	-23	-23.9	-24.6	-24.5	-24.9	-25.3	-25.3	-24.7	-24.6	-20.9	-25.2	24		
16		-24.4	-24.3	-24.4	-24.6	-24.5	-24.4	-24.4	-24.2	-24	-23.5	-23.1	-22.5	-21.8	-21.3	-21.1	-21.8	-22.4	-22.6	-22.8	-23.1	-23.3	-23.8	-24.1	-23.9	-21.1	-23.3	24		
17		-24	-24.8	-26.3	-27.8	-29.1	-30.2	-29.9	-28.5	-29.1	-28.7	-26.2	-24.9	-23.5	-22.6	-22.8	-23.7	-24	-23.6	-23.3	-23.1	-23.2	-23.1	-23.1	-23.1	-22.6	-25.3	24		
18		-23.7	-24.6	-24.6	-24.8	-25.5	-25.5	-24.5	-23.9	-22.5	-20.9	-16.3	-14.1	-13.6	-14.1	-15.7	-17.3	-18.3	-19.1	-19.2	-20.2	-21.4	-23.6	-24.8	-24.8	-13.6	-21.0	24		
19		-24.8	-24.8	-26.8	-25.3	-22.4	-20.9	-19.8	-18.1	-18.3	-18.9	-18.3	-18.5	-18.1	-17.5	-17.1	-19.1	-21.4	-22.9	-24.6	-26.7	-28.3	-30.1	-31.4	-33	-17.1	-22.8	24		
20		-33.8	-34.5	-34.4	-34.2	-32.8	-30.3	-27.3	-24.7	-23.6	-22.7	-21.5	-21.1	-20	-18.3	-17.3	-16.7	-16.4	-16.3	-16.2	-15.8	-15	-14.4	-15.2	-14.4	-22.5	24			
21		-15.2	-15.5	-15.9	-16.5	-17.1	-18	-18.9	-18.8	-19.3	-17.9	-16.5	-15	-15.2	-15.8	-16.3	-16.8	-17	-17.3	-17.4	-17.5	-17.6	-17.8	-17.7	-17.5	-15.0	-17.0	24		
22		-17.3	-17.1	-16.8	-16.8	-16.8	-16.6	-16.4	-16.2	-15.5	-14.6	-13.4	-11.2	-8.1	-7	-5.9	-6.7	-8.4	-7.9	-6.8	-6.3	-5.2	-4.5	-4.4	-3.3	-3.3	-11.0	24		
23		-2.5	0.8	0.9	0.8	1.9	1.4	1	1	0.9	1.4	2.6	3.3	2.7	2.7	2.6	2.3	1.5	1	0	-0.7	-1.9	-3.3	-4.9	-6.7	3.3	0.4	24		
24		-7.8	-9	-9.4	-9	-8.3	-7.2	-6.8	-8.9	-6.9	-5	-4	-2.7	-2.5	-1.4	-0.2	-0.3	-1.6	-2.7	-2.7	-2.6	-2.9	-3.4	-4.1	-4.2	-0.2	-4.7	24		
25		-4.4	-4.3	-3.9	-3.6	-4.7	-6.7	-8	-9.5	-12.1	-9.9	-8	-5.6	-4.4	-3.9	-3.1	-2.5	-3.7	-4.3	-3.5	-3	-2.5	-2.9	-3.2	-3.7	-2.5	-5.1	24		
26		-4.1	-3.8	-2.6	-1.9	-2	-1.9	-1.4	-1	-0.5	1.8	3.1	3.9	4.5	4.2	4.7	4.7	3	1.9	1.6	1.3	0.7	0.5	0	0	4.7	0.7	24		
27		0	0.2	-0.6	-1.1	-1	-0.8	0	0.1	0.6	0.5	1.2	2.1	1.9	2.7	3.9	3.2	2	1.1	1.8	4.4	4.9	4.3	3.3	2.5	4.9	1.6	24		
28		2.1	1.7	0.2	-3.6	-6.1	-7.4	-8.2	-8.9	-9.4	-9.7	-10.3	-11.2	-11.6	-11.7	-12.6	-13	-13.5	-14	-14.4	-14.6	-14.9	-15.2	-15.6	-16.1	2.1	-9.9	24		
29		-16.7	-17.4	-17.8	-18.3	-19.7	-21.5	-22.8	-23.8	-24.1	-23	-22.5	-20.6	-19.1	-17.8	-17.6	-19	-20.2	-20.7	-20.7	-20.7	-21	-21.5	-22.3	-22.9	-16.7	-20.5	24		
30		-23.5	-23.9	-24.1	-24.3	-24.4	-24.7	-25.6	-26.5	-26.8	-26	-23.9	-23.1	-21.6	-20.5	-20.5	-20.2	-21.3	-22.6	-23.7	-24.3	-24.8	-26	-27.4	-29.3	-20.2	-24.1	24		
31		-30.4	-31.2	-32.1	-32.5	-33.2	-33.7	-33.9	-34.3	-33.8	-28.1	-22.3	-20	-18.7	-17.7	-18	-18.4	-20.8	-23	-24.3	-24.8	-25.1	-25.6	-26.6	-26.2	-17.7	-26.4	24		
HOURLY MAX		2.1	1.7	0.9	0.8	1.9	1.4	1.0	1.0	0.9	1.8	3.1	3.9	4.5	4.2	4.7	4.7	3.0	1.9	1.8	4.4	4.9	4.3	3.3	2.5					
HOURLY AVG		-15.7	-16.0	-16.4	-16.6	-16.9	-16.9	-16.8	-16.8	-16.7	-15.9	-14.5	-13.4	-12.6	-12.0	-12.0	-12.7	-13.7	-14.2	-14.4	-14.7	-14.8	-15.1	-15.4	-15.5					

STATUS FLAG CODES

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



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-34.5 °C	@ HOUR(S)	1	ON DAY(S)	20
MAXIMUM 1-HR AVERAGE:	4.9 °C	@ HOUR(S)	20	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	1.6 °C			ON DAY(S)	27
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
STANDARD DEVIATION:	9.31	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	-14.99 °C		

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2011

PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	TOTAL	RDGS.	
1		0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0.4	0.3	0.1	0	0	0	0	0.1	0.2	0.1	0.4	1.4	24	
2		0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
5		0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	24	
6		0	0	0.1	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	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	0.2	0.1	0.4	0.3	0.1	0	0	0	0	0.4	0	0	0.1	0.1	0	0	0	0	0	0	0	0	0.1	0.4	1.8	24
9		0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0.3	0.4	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	0.2	0	0.1	0	0	0	0	0	0.2	0.3	24	
13		0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
14		0.1	0	0.1	0.1	0	0.3	0	0.1	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0	0.1	0	0.3	1.0	24	
15		0.1	0	0	0	0.1	0	0.2	0.1	0.1	0	0.1	0.1	0	0	0.1	0	0	0	0	0	0	0	0.1	0	0.2	1.0	24	
16		0.1	0	0.1	0	0	0	0	0.1	0.1	0	0	0.1	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0.1	0.7	24	
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	0.4	0	0	0.4	0.8	24	
18		0	0	0	0	0	0	0	0	0.1	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	24	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
20		0	0	0	0	0	0	0	0.1	0.2	0.1	0.2	0.4	0.3	0	0	0	0	0	0.2	0.4	0	0	0	0	0.4	1.9	24	
21		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0.1	0.1	0.3	24	
22		0	0.2	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.3	24	
23		0	0	0.5	0.8	0	0.3	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	1.7	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	0.4	0	0	0	0	0	0	0	0	0	0	0.4	0.4	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	0.1	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	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		0.1	0.3	0.5	0.8	0.4	0.3	0.2	0.1	0.3	0.1	0.2	0.4	0.3	0.4	0.4	0.3	0.2	0.1	0.2	0.4	0.3	0.4	0.2	0.1				

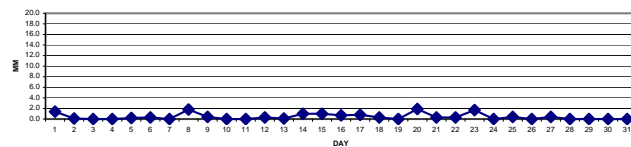
STATUS FLAG CODES

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

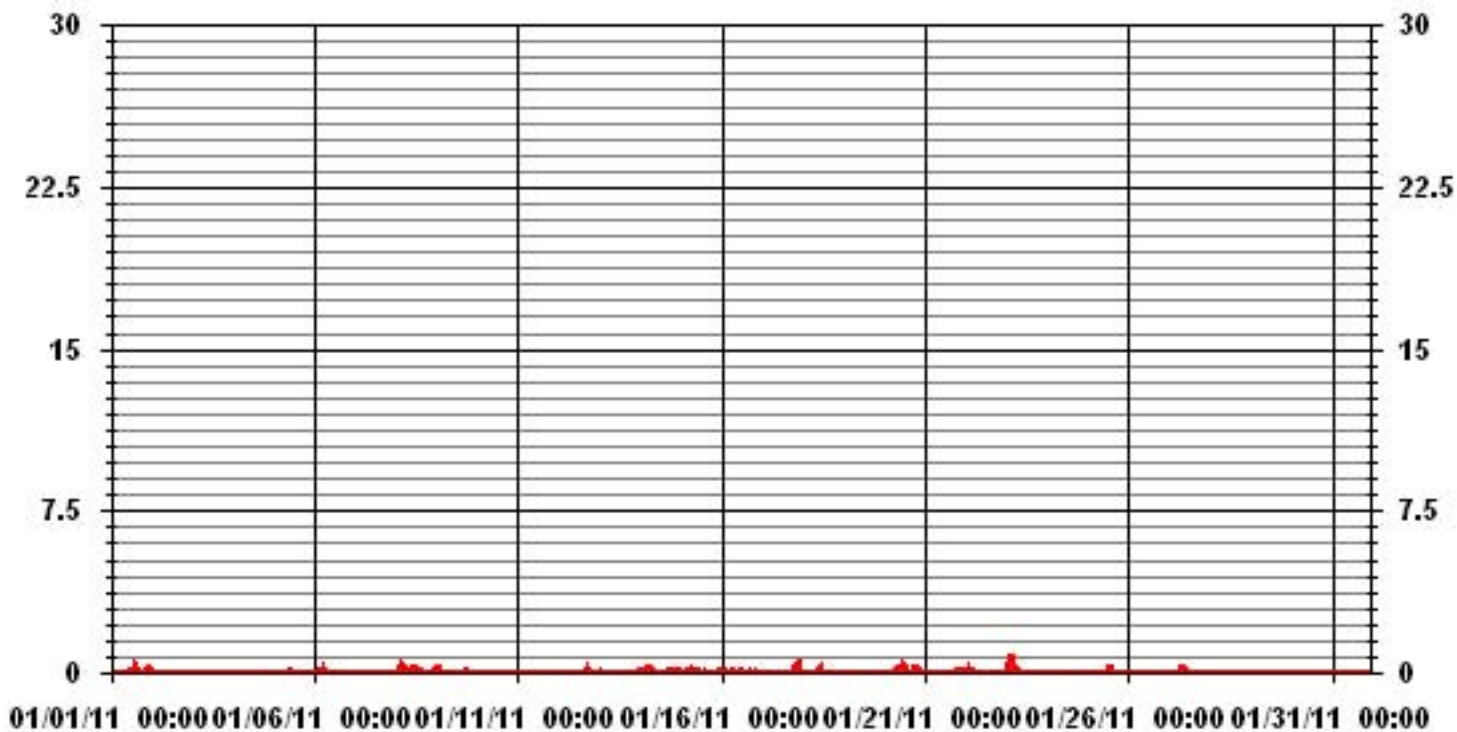
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.8	MM	HOUR(S)	3	ON DAY(S)	23
MAXIMUM DAILY TOTAL	1.9	MM			ON DAY(S)	20
MONTHLY TOTAL	13.4	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.07		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.02	MM	

DAILY TOTALS FOR JANUARY 2011



01 Hour Averages



— LICA30 PRECIP MM

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 2011

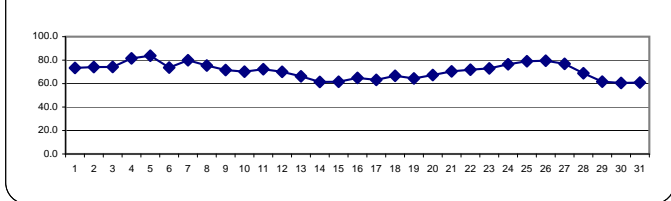
RELATIVE HUMIDITY hourly averages (%)

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	70	70	69	68	68	69	70	70	71	72	73	73	74	75	76	76	77	77	77	78	79	79	80	80	80	80	73.4	24
2	2	80	79	79	79	80	78	78	77	76	75	72	70	67	66	66	71	74	76	76	74	73	72	70	70	70	80	74.1	24
3	3	69	67	67	67	67	71	72	72	74	74	75	76	76	76	77	77	77	77	78	77	78	78	79	80	80	80	74.2	24
4	4	80	80	81	82	81	81	81	81	80	79	79	81	81	81	81	81	81	81	82	83	84	84	84	84	84	84	81.5	24
5	5	84	84	84	84	85	84	84	84	84	84	83	83	77	73	75	84	87	87	87	87	87	87	87	86	86	87	83.8	24
6	6	84	84	85	86	85	85	82	76	70	68	62	57	58	62	68	71	74	72	70	74	75	72	73	75	86	73.7	24	
7	7	76	77	78	83	86	85	83	83	84	83	76	70	72	74	77	79	80	80	80	80	81	82	83	83	83	86	79.9	24
8	8	82	82	81	80	80	79	79	78	77	76	73	67	69	72	73	75	74	73	73	73	73	73	74	74	73	82	75.4	24
9	9	73	72	73	73	72	72	72	73	72	70	69	69	68	68	69	71	72	73	73	72	73	73	73	73	73	73	71.6	24
10	10	74	73	74	74	72	72	72	72	71	70	68	65	64	62	64	67	71	73	71	71	71	71	71	71	71	74	70.2	24
11	11	72	72	74	75	75	74	73	72	72	72	72	72	72	71	71	72	73	73	71	70	71	71	72	72	72	75	72.3	24
12	12	72	71	70	69	67	68	66	68	67	68	69	69	70	71	70	71	72	72	72	73	72	71	72	71	73	70.0	24	
13	13	71	70	70	70	69	70	69	69	68	67	65	62	59	61	61	64	66	67	66	66	65	65	65	64	71	66.2	24	
14	14	64	64	63	64	63	63	62	62	62	60	57	55	56	58	59	61	63	63	63	63	62	62	62	63	64	61.4	24	
15	15	62	63	62	63	62	62	62	62	63	61	60	57	53	50	54	60	63	65	65	66	66	66	66	65	66	61.6	24	
16	16	65	65	65	65	65	66	66	66	66	64	63	62	61	61	62	64	66	66	66	66	67	67	66	66	67	64.8	24	
17	17	64	65	67	67	66	65	65	64	64	63	61	59	57	56	58	58	62	63	63	64	65	66	67	67	67	63.2	24	
18	18	68	68	69	69	68	68	68	68	69	70	66	58	55	56	61	63	66	68	68	70	71	72	71	70	72	66.7	24	
19	19	69	69	66	67	68	70	71	72	71	64	58	56	54	52	52	57	65	68	70	69	68	65	63	62	72	64.4	24	
20	20	61	60	60	60	60	62	65	67	67	67	67	67	67	68	68	70	70	71	71	71	72	75	77	76	77	67.3	24	
21	21	75	75	74	73	73	73	73	72	72	70	67	63	64	64	67	69	70	70	71	71	71	71	71	71	71	75	70.4	24
22	22	71	71	70	71	71	72	72	73	73	72	72	70	64	63	63	68	74	76	77	78	77	76	77	73	78	71.8	24	
23	23	71	65	83	85	76	80	84	83	82	77	71	67	70	68	65	65	64	65	68	70	72	75	80	85	85	73.0	24	
24	24	84	84	85	84	83	84	85	81	84	79	73	67	66	63	61	62	67	72	75	76	77	80	82	81	85	76.5	24	
25	25	81	80	78	76	80	85	86	84	81	78	77	72	75	79	77	80	82	80	78	76	78	78	79	86	79.0	24		
26	26	80	79	76	74	75	75	74	73	72	75	79	77	76	74	76	83	86	87	87	88	89	89	89	89	89	79.5	24	
27	27	87	85	86	87	87	86	84	84	86	84	82	79	82	78	74	77	79	79	75	65	58	54	52	54	87	76.8	24	
28	28	60	69	80	73	72	73	74	72	70	70	68	67	65	63	65	66	66	67	68	68	68	68	69	71	80	68.8	24	
29	29	71	72	72	70	68	67	67	68	68	63	60	54	50	47	47	51	57	60	60	60	61	62	62	63	72	61.7	24	
30	30	63	64	64	64	64	64	64	64	64	63	59	58	55	53	50	48	53	56	59	62	64	66	67	65	67	60.5	24	
31	31	65	64	63	62	61	61	60	60	55	47	54	56	53	54	51	60	65	68	68	69	68	68	68	68	69	60.9	24	
HOURLY MAX		87	85	86	87	87	86	86	84	86	84	83	83	82	81	81	84	87	87	87	87	88	89	89	89	89			
HOURLY AVG		72.5	72.4	73.2	73.0	72.5	73.0	73.0	72.6	72.2	70.7	68.3	66.4	65.6	65.1	65.7	67.7	70.5	71.7	71.9	71.9	72.0	72.2	72.4	72.4				

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

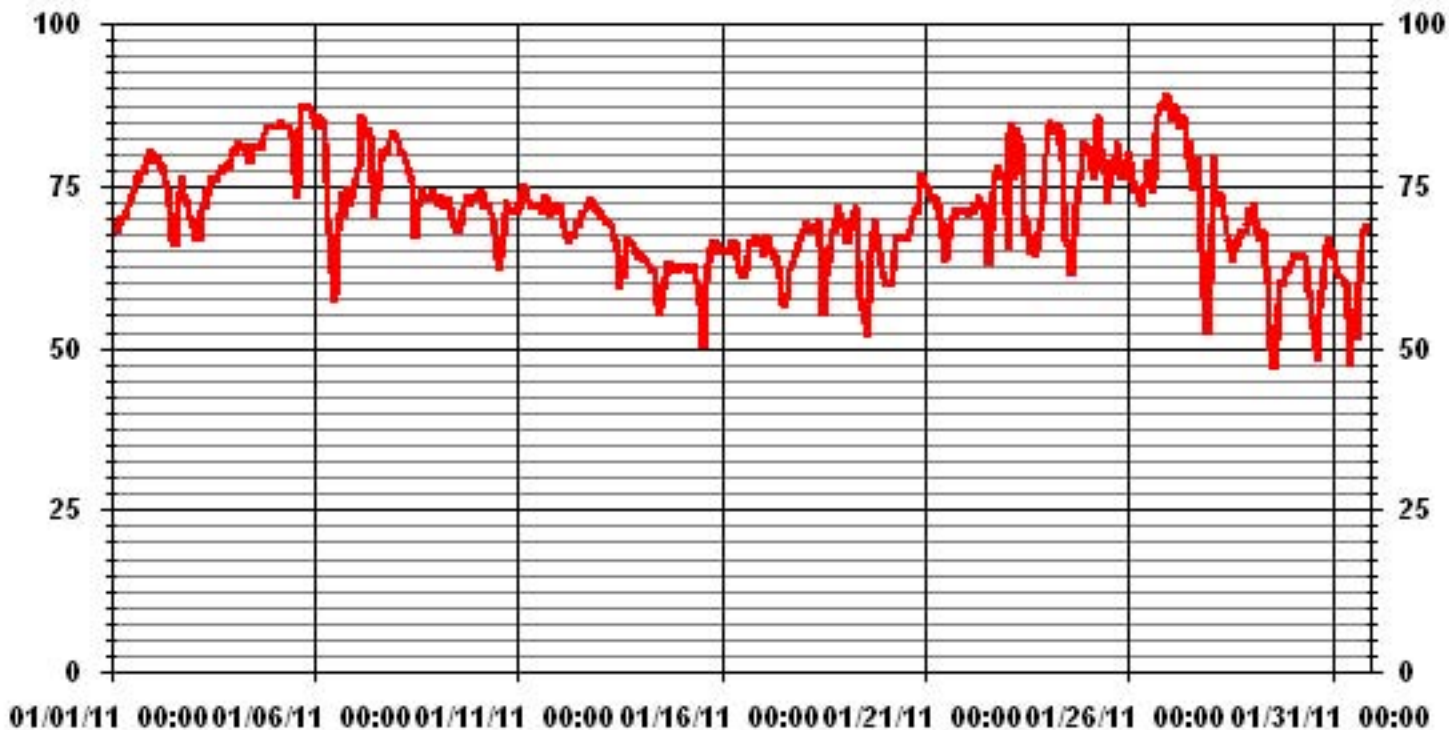
24 HOUR AVERAGES FOR JANUARY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	89	%	@ HOUR(S)	VAR	ON DAY(S)	26
MAXIMUM 24-HR AVERAGE:	83.8	%			ON DAY(S)	5
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	8.15		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	70.79	%	

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

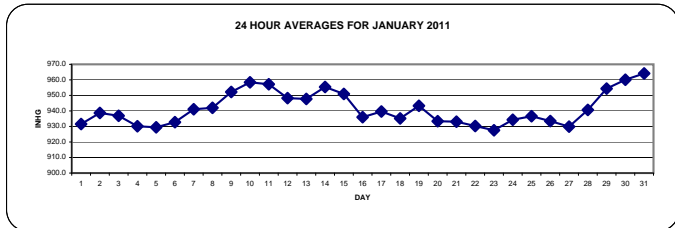
JANUARY 2011

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	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		937	937	936	936	935	935	934	933	932	932	931	930	929	929	928	928	928	928	928	928	929	929	930	931	931	937	931.5	24	
2		932	933	933	934	935	936	937	937	938	939	939	939	939	940	940	941	941	942	942	942	942	943	943	942	943	942	943	938.7	24
3		942	942	942	942	942	941	940	940	939	938	938	937	935	935	934	934	933	933	933	933	933	933	933	933	933	942	936.9	24	
4		932	932	932	932	931	931	931	930	930	930	930	929	929	929	929	929	929	929	929	930	930	930	930	930	932	930.1	24		
5		930	930	930	930	930	930	929	929	929	929	928	928	929	929	929	930	930	930	930	930	930	930	930	929	929	930	929.5	24	
6		929	929	929	929	928	928	928	928	928	928	929	930	930	931	933	934	936	937	938	939	940	941	942	942	942	942	932.8	24	
7		943	943	943	944	943	943	943	943	942	942	942	941	941	941	941	941	940	940	939	938	938	938	938	944	941.1	24			
8		938	938	938	938	939	939	939	940	940	941	942	942	942	942	943	944	944	945	945	945	945	946	946	947	947	942.0	24		
9		947	948	949	949	949	949	950	950	951	952	952	952	952	952	953	954	955	955	955	955	955	956	956	957	957	952.2	24		
10		957	957	958	958	958	958	958	959	959	959	959	959	958	958	959	959	958	958	959	959	959	959	959	959	959	959	958.4	24	
11		958	958	958	958	958	958	958	958	958	958	957	957	957	957	957	957	957	956	956	956	956	956	956	956	958	957.2	24		
12		955	955	955	955	954	954	953	952	951	950	949	948	946	945	944	944	944	943	943	943	943	944	944	944	955	948.3	24		
13		945	945	946	947	946	947	947	947	948	949	949	948	947	947	947	948	949	949	949	949	949	949	949	950	950	950	947.7	24	
14		950	951	951	952	953	953	954	955	956	957	957	957	957	956	956	957	957	957	957	957	957	957	958	958	958	955.4	24		
15		957	957	956	956	955	955	955	954	954	954	953	952	951	950	950	950	949	948	947	946	945	944	943	941	957	950.9	24		
16		941	940	939	938	937	936	935	935	935	935	935	934	934	934	933	934	935	935	935	935	936	936	937	937	937	941	936.0	24	
17		938	938	939	940	940	940	940	940	940	940	940	940	939	939	939	939	940	940	940	940	940	940	940	940	940	940	939.6	24	
18		940	939	939	938	937	936	935	933	933	933	933	933	933	933	934	935	935	935	935	935	935	936	935	936	940	935.2	24		
19		936	935	936	936	935	936	936	937	939	941	943	943	944	945	946	947	948	949	950	951	952	952	951	951	952	943.3	24		
20		951	950	948	947	945	942	940	937	935	933	931	929	927	926	925	925	925	925	925	925	926	927	928	929	951	933.4	24		
21		931	932	933	934	934	935	935	936	936	936	936	936	935	933	933	933	932	931	931	930	930	930	931	931	936	933.1	24		
22		932	932	933	933	933	934	933	933	933	933	932	931	932	931	931	931	930	929	928	927	926	925	923	922	934	930.3	24		
23		922	922	922	921	921	921	921	921	922	923	925	925	925	927	928	930	931	933	934	936	937	937	938	939	939	927.5	24		
24		939	939	939	938	937	937	935	935	934	933	932	932	931	930	931	932	932	933	933	933	934	934	935	935	939	934.3	24		
25		935	936	936	937	937	937	937	937	938	938	938	938	938	937	936	936	936	936	936	936	936	936	936	936	938	936.6	24		
26		935	935	935	934	934	934	933	933	933	933	933	933	933	933	933	933	933	933	933	934	933	933	933	934	935	933.5	24		
27		934	934	934	934	934	934	934	933	933	932	931	930	929	929	928	927	927	926	926	926	926	925	925	926	934	929.9	24		
28		927	928	931	933	935	937	938	939	940	941	942	942	943	943	943	944	945	945	945	945	945	946	947	948	948	948	940.6	24	
29		949	950	950	951	951	952	953	953	954	954	955	955	955	955	955	956	957	957	957	957	957	958	958	958	958	954.4	24		
30		958	959	959	959	959	959	959	960	960	960	960	960	960	960	960	960	960	960	961	961	961	962	962	963	963	960.1	24		
31		963	964	964	964	965	965	966	966	966	966	965	964	964	964	963	964	964	964	964	964	964	963	963	963	966	964.1	24		
HOURLY MAX		963	964	964	964	965	965	966	966	966	966	965	964	964	964	963	964	964	964	964	964	964	963	963	963	966	964.1	24		
HOURLY AVG		941	942	942	942	942	942	941	941	941	942	942	941	941	941	941	941	941	941	941	941	941	942	942	942	942	942			

STATUS FLAG CODES

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



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	966	MB	@ HOUR(S)	VAR	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	964.1	MB			ON DAY(S)	31
				VAR-VARIOUS		
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	10.94		MONTHLY AVERAGE:	941	MB	

01 Hour Averages



Vector Wind Speed

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

JANUARY 2011

WIND SPEED hourly averages (km/hr)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		4.6	3.6	2.6	2.3	4.1	4.2	4.2	6.3	6.1	3.2	3.7	5.9	5.8	2.5	1.9	2.1	2.1	1.3	1.2	1.2	2.1	2.3	1.7	2.9	6.3	1.8	24	
2		4	1.9	1.9	1.6	3.6	5.5	3.5	3	4	4.7	4.9	4	4.3	5.3	5.2	4.1	3.3	2.4	1.7	1.4	1.5	0.9	1.7	2.1	5.5	2.4	24	
3		1.8	1.2	0.4	2	2.5	1.9	0.5	2.2	4.7	4.2	4.1	4.4	6.4	3.6	3.8	1.8	1.1	1.8	2.4	1.3	1.3	1.1	2.1	0.9	6.4	2.1	24	
4		0.4	0.1	2.4	3.6	3.8	4	3.9	4.1	2.6	2.1	2.6	4	3.6	0.9	4	1.4	1.8	1.1	2.5	1.7	1.3	0.7	1.2	1.5	4.1	1.9	24	
5		2.7	2.8	2.7	2.5	2.7	2	3.3	4.9	4.4	3.6	4.5	3.2	3.7	6.7	6	3.5	3.8	3.5	3.2	3.1	4.5	2.6	2.8	5.9	6.7	2.7	24	
6		4.8	4.2	5	3.8	3.2	6.3	6.5	7.7	11.8	15.4	13.8	16.8	19.1	18.3	17.4	14.5	10.9	11.3	9.6	6	3.7	4.9	4.6	2.3	19.1	7.7	24	
7		2.1	0.6	3	1.7	3	2.7	6.1	5.1	0.7	4.1	5.8	6.9	7.5	6.8	7.3	8.5	8.7	7.4	8.3	9	7	7.3	8.6	8.4	9	4.8	24	
8		9.4	8.3	8.2	8.8	8.1	7.4	8.3	10.2	11.7	10.5	10.4	12.1	14.4	14.2	12	11.3	11.7	11.1	9.8	11.8	10.4	11.5	10.7	11.5	14.4	10.1	24	
9		10.2	11.5	10	10.7	10.9	10.2	10.2	8	8.5	9.8	9.5	10.8	9.5	7.5	6.4	4.9	7.3	7.6	8.1	6.1	5.9	4.8	4.4	4.7	11.5	8.1	24	
10		3.8	5.1	4.3	4.2	4.8	4.5	5.1	5.7	5.9	6	5.4	4.6	4.9	4.5	4.7	4.3	1.5	0.7	1.2	0.6	1.9	0.1	0.4	0.7	6	3.2	24	
11		0.1	0.6	1.1	3.3	4.1	3.7	3.4	2.8	2.8	2.5	3.2	4.9	3.5	2.2	2.9	3.3	2.6	0.6	0.6	1.5	1.6	0.7	2	3.4	4.9	2.1	24	
12		3	2.1	0.3	1.1	0.5	1	1	1.9	5.7	3.4	4	5.5	5.5	6	7	6.1	5	3.3	0.7	1.1	0.9	1.2	0.3	0.3	7	1.9	24	
13		0.7	2.6	1.3	2.8	2.1	3.8	3.5	1.8	3.3	4.3	5.2	5.4	5.2	5.5	4.7	2.6	4.4	4.3	7.2	6	7.1	9.3	8.4	9.2	9.3	3.5	24	
14		8.4	7.1	6.8	6.3	6.7	6.7	8.4	7.7	5	3.8	4.9	4.3	4.7	5.4	4.2	6.2	5.8	7.6	6.5	3.3	8.3	5.9	6.1	1.3	8.4	5.6	24	
15		7	5.9	5.7	4.8	4.7	1.8	3.7	4.5	18.8	5.1	0.8	2.7	1.7	1.6	0.4	2.2	1.6	2.6	1	1.7	2.8	2.7	3.9	3.4	18.8	0.6	24	
16		1	1.4	4	1.8	2.1	4.3	4.3	4.5	5.9	5.7	6.1	6.7	6.2	6.7	6	6	4.3	4.5	5.5	4.6	4.6	3.5	3.8	5	6.7	3.8	24	
17		7	2.5	0.9	1.5	0.6	0.4	3.6	11.6	3.5	6.4	3.6	3.8	2.5	4.3	2.7	4.4	1.8	3.5	0.9	2.3	3.7	3.6	5.2	5.8	11.6	1.2	24	
18		5.8	6.6	6.4	7.9	7.2	7.3	9.1	6.4	4.1	5.2	8.6	16.1	10.5	10.6	8.3	6.1	7.6	7.2	7.1	4.8	2.6	1	0.9	1.9	16.1	4.7	24	
19		4.2	3.1	1.9	0.5	5.3	0.3	2.6	5.4	5.3	8.7	8.4	8.5	7.5	6.3	5.9	4.7	3.3	2.7	0.5	1.3	2	1.3	1.9	0.7	8.7	2.1	24	
20		0.7	0.7	1.1	2.5	3.1	2.3	2.9	3.1	6.8	9.1	8.8	8.5	7.3	6.1	5.3	6.5	4.1	2.7	2.4	2.6	1.7	2.9	3.6	5.6	9.1	1.8	24	
21		5.8	5.3	4.8	4.7	3.3	1.6	0.7	0.4	0.9	1.1	1.5	3.3	4.8	5.6	4.8	7.2	7.4	7.5	9.2	8.5	9.1	8.5	8	7.5	9.2	3.3	24	
22		5	4.7	5.4	4.5	5.1	3	6.5	2.8	4.5	5.4	6.9	5.4	5.1	6.3	5.2	6.4	6.5	7.4	9.3	8.5	8.4	8.8	7.5	7.6	9.3	5	24	
23		5.8	6.3	7	6.1	11.2	12.9	12.9	15.1	13.9	11.7	14	16.3	18.4	15.6	16	14.4	12.5	13.1	12	9.9	9.6	6.1	4.7	3.3	18.4	10	24	
24		1.5	2.8	3.6	4.2	4.2	5.1	5.3	0.2	4.9	6.2	7.4	7.9	8.8	6.8	4.7	3.9	4.9	4.4	5.6	4.9	4.4	4.4	3.9	5.3	8.8	4.1	24	
25		5.6	6.7	7.8	7.3	0.5	1.8	1.9	2	3.2	2.3	2.1	1	4.8	6.3	5.8	6.4	5.8	5.3	7	6	6.2	5.4	6.8	6.3	7.8	3.5	24	
26		5.5	6.1	4.8	5.7	4.8	3.7	3.9	5.4	3.7	4.5	5.4	4.5	4.2	5.6	4.5	3.4	2.8	3.1	3.3	4.1	4.7	5	5.2	5	6.1	4.2	24	
27		4	3.9	4.3	3.6	3.7	4.7	6.1	3	4.8	5.8	5.4	3.2	5.5	5.6	7.3	4.8	6.7	6.2	5.9	9	9.6	10.6	14.9	14.4	14.9	5.3	24	
28		15.4	11.1	9.6	13.3	9.8	10.2	9.8	9	8.9	9.3	10.7	12.5	11.3	10.1	11.5	9.4	9	10.4	9.2	9.5	9.7	10.1	11.3	10.4	15.4	9.3	24	
29		10.7	10.3	7.6	8.1	8.5	6.9	6.1	1.4	4.7	5.7	7.5	6.3	5.1	5	5.6	5.7	5.3	5.6	6.2	5.9	7.1	6.5	6.9	6	10.7	6	24	
30		6	0.5	5.3	1.9	4.9	4.6	4.9	2.2	2.9	4	5	5.7	4.1	2.7	2.8	4	3.1	1.2	1.8	0.1	0.6	19.7	0.7	19.7	2.1	24		
31		0.8	0.7	0.5	0.3	0.3	0.4	0.7	0.5	0.9	0	0.3	4.2	6	5.9	8.2	4.8	5.5	3.4	3.6	4.2	6.5	5.1	3.5	7.5	8.2	2.9	24	
HOURLY MAX		15.4	11.5	10.0	13.3	11.2	12.9	12.9	15.1	18.8	15.4	14.0	16.8	19.1	18.3	17.4	14.5	12.5	13.1	12.0	11.8	10.4	11.5	19.7	14.4				
HOURLY AVG		4.8	4.2	4.2	4.3	4.5	4.4	4.9	4.8	5.6	5.6	6.0	6.8	6.8	6.5	6.2	5.6	5.2	5.0	4.9	4.6	4.8	4.5	5.4	4.9				

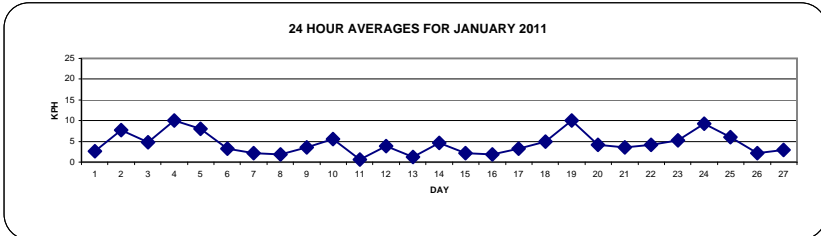
STATUS FLAG CODES

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

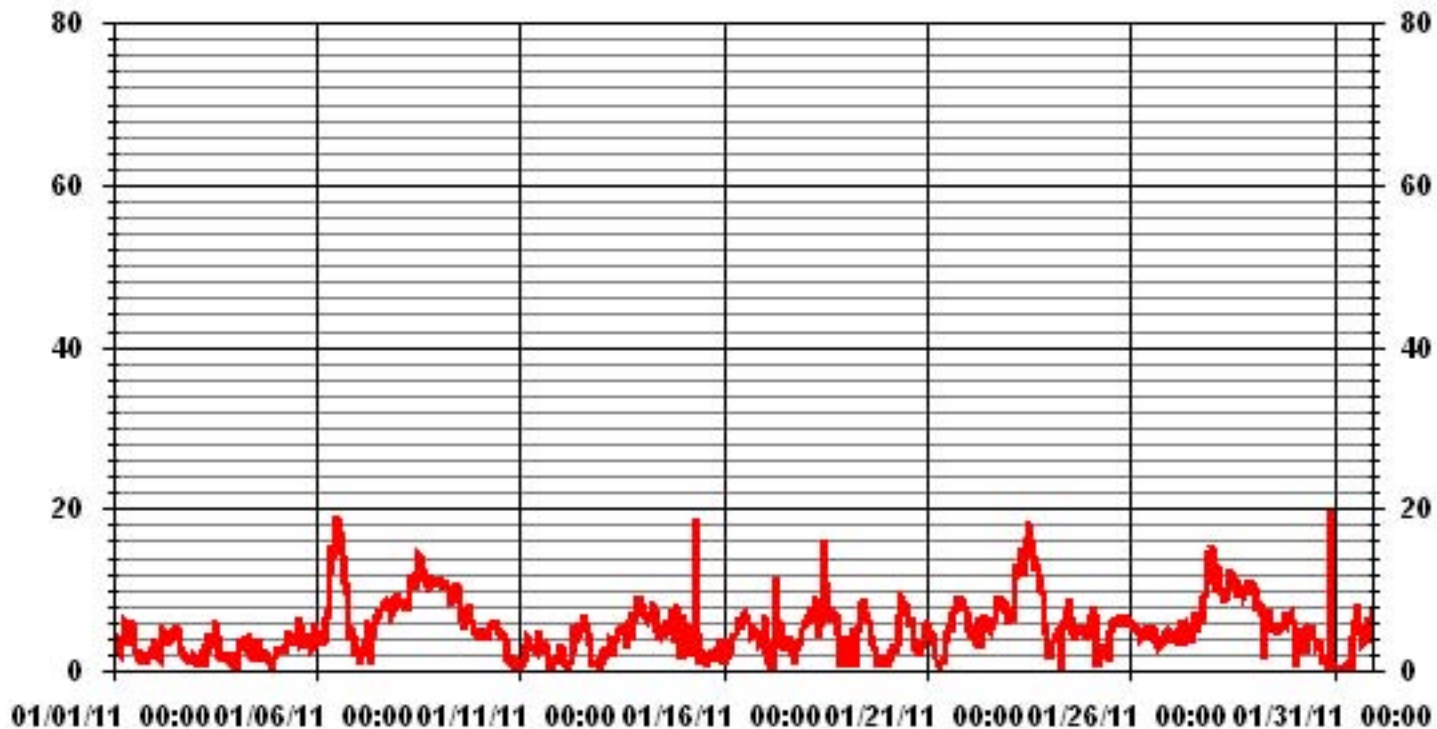
LAST CALIBRATION: February 4, 2009

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	19.7 KPH	@ HOUR(S)	22	ON DAY(S)	30
MAXIMUM 24-HR AVERAGE:	10.1 KPH			ON DAY(S)	8
CALMS (≤ 1 KPH)	6.85 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	3.47	MONTHLY AVERAGE	5.19	KPH	



01 Hour Averages



— LICA30 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 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	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	
HOUR END																										
DAY																										
1	16.6	15.6	29.6	43.4	26.5	26.1	18.6	19.7	55.9	18.4	30	14.7	29.8	18.8	28.2	23.7	18.5	21.8	30.2	32.6	12.3	29.3	12.7	33.2	55.9	
2	18.3	67.2	33.8	28.7	16.4	17.9	31.7	13.4	34.2	17	14.2	14.7	17.5	17.9	17.4	22.4	29.3	18.6	16.6	70.3	33.4	97.9	26.1	29.3	97.9	
3	20.1	65.3	40.6	39.7	21.6	59.1	67.1	83.4	17.5	15.5	16.4	13	16	15.1	13.4	33.6	56.7	55.2	11.4	21.1	10.4	10.6	17.5	17	83.4	
4	42.9	9.1	11.9	9.1	9.5	8.8	11.7	11.9	11	12.7	13.6	11.7	11.2	9.9	10.1	11	10.1	11.4	13.8	12.5	11.6	10.1	10.4	17.7	42.9	
5	14.7	13.2	17.7	11	9.5	10.4	12.3	12.3	14.9	11.4	11.6	14.7	21.5	26.1	24.1	15.5	13.6	16	13.6	13.3	14.2	14.9	57.9	16.6	57.9	
6	16	11.6	15.3	12.3	15.5	20.5	23.5	40.1	43.9	62.4	52.1	56.8	67.2	60.1	54.9	50.6	34.9	39.6	39.4	25	20.1	20.3	17.2	11.6	67.2	
7	13.2	14.9	12.3	28.2	16.8	18.3	16.6	15.7	16.6	13.4	17.2	22	20.7	26.3	23.9	29.7	28.4	24.6	26.1	34.5	22.9	26.5	28.6	27.8	34.5	
8	28	29.3	25.4	28.9	24.7	20.3	28	23.1	31.5	26.3	25.2	28.7	30	30	27.1	23.9	25.9	27.8	23.5	29.8	24.6	23.9	23.1	27.8	31.5	
9	23.7	27	28.4	25.4	27.8	23.3	24.6	22.8	25.7	25.9	23.7	28.5	23.5	24.8	20.5	16	21.1	24.7	30.4	23.9	26.7	17	17.7	19.2	30.4	
10	38.4	30.6	60.6	27.4	31.5	16.4	41.8	20.1	18.1	80.4	18.8	16.4	16	16.2	19.9	83	104.3	43.8	73.3	71.2	88.8	62.3	74.8	20.4	104.3	
11	54.3	28.5	71.6	17.9	39.5	19	24.6	14	12.7	12.7	17.9	14	13.2	22.9	17.5	55	50.9	86.2	91	84.7	89.2	19.2	64.7	17	91	
12	16.2	22	43.4	N	85.8	54.8	52.4	44.4	49	22.4	53.9	40.1	38.2	23.1	21.6	28	28.5	77.2	21.9	77.6	106.3	24.4	67.5	34.9	106.3	
13	39.1	60.2	47.9	73.6	43.1	29.3	38	46.6	30.9	25.9	16.6	19	20.2	18.6	56.3	56.7	38.6	34.5	23.5	16.9	18.2	20.1	18.4	24	73.6	
14	21.6	24.8	19.4	18.6	28.3	24.1	22.7	22.7	19.2	104	37.5	20.7	18.4	22.4	52.4	16.9	15.8	19.4	29.8	55.9	19.9	16.6	47.9	43.6	104	
15	15.1	13	21.8	25	30.2	89.1	43.6	23.3	116.5	N	50.9	N	74	74.8	82.6	85	60	42.7	32.2	24.7	52.8	19.2	40.1	92.1	116.5	
16	53.9	52.8	36.6	55.2	56.3	37.5	35.4	31.1	25.9	15.7	37.5	17.3	18.5	40.1	27.6	26.1	68.6	60.2	28.9	27.6	55.2	61.7	42.1	25.5	68.6	
17	16.6	23.1	22.4	53.7	116.3	42.3	137.8	77	48.8	52.2	29.8	33	31.3	52	71.8	75.3	53.7	40.1	104.6	51.1	56.3	74	16.4	19.6	137.8	
18	29.6	20.5	17.3	18.6	18.4	18.8	27.8	28	47	31.9	44.4	49.6	35.4	39.5	38.8	66.8	34.5	46.6	24.8	72.4	87.7	33	34.5	35.8	87.7	
19	15.3	40.1	53.5	N	79.1	87.3	93.1	20.3	23.7	34.9	29.1	28.5	24.2	23.7	22.7	79	83	53.9	46	31.3	41	71.8	11.7	148.6	148.6	
20	N	114.4	137.9	112.2	110.9	109.8	35.6	54.1	27.8	32	49.8	27.6	25.3	20.7	17.9	17	17.7	16.6	42.5	63.6	81.5	39.9	19	26.5	137.9	
21	21.3	21.1	20.3	16.2	19.4	57.1	68.1	77	69.6	25.7	84.7	57.1	22.9	42	28.9	37.5	27.2	28.5	33	28.3	30.2	28.3	29.1	30.6	84.7	
22	36.4	84.2	18.6	15.5	23.7	53.6	22.2	53.7	16	15.3	17.9	14.9	19.4	13.2	13.4	12.9	14.1	16.6	20.5	19.4	20.5	21.5	17.9	20.7	84.2	
23	20.3	33	30.8	31.4	48.9	46.7	48.4	50.8	45.4	44.4	45.4	62	61.4	56.4	49.5	53.4	53	49.3	46.1	34.9	41.5	27.3	22	11.8	62	
24	26.1	45	12.3	13.8	14	16	14	18.1	12.7	17.5	20.5	22	20.5	19.4	18.7	15.5	19.4	16.4	15.5	18.1	19.8	16.2	16.6	19.5	45	
25	23.9	26.5	25.6	23.7	20.7	9.3	13.8	16.6	30.4	30.6	43.5	11.6	15.1	14.7	14.2	16.6	17.7	16	18.6	19.4	20	12.7	14.7	15.3	43.5	
26	16.2	15.1	15.3	16.6	15.9	13.1	12.3	12.3	14	21.9	21.3	25	20.9	16.6	20.7	17.2	16.4	13.8	15.5	13.1	12.9	12.3	10	12	25	
27	19.8	17.9	16.2	15.5	12.9	12.9	15.1	13.6	15.3	13.6	13.5	16.6	15.3	15.3	13.6	13.8	26.9	15.3	26.3	43.7	38.5	51.4	50.3	56.8	56.8	
28	49.1	40.3	46.3	50.4	50	37.5	36.4	35.8	34.6	31.5	33.4	32.6	35.8	31.9	31.1	27	23.9	29.5	25.2	24.6	26.7	24.6	24.8	22.2	50.4	
29	25.4	22.7	18.6	20.5	20.8	27.2	34.7	57.4	15.1	26.3	18.1	37.5	40.1	47	41	33.4	59.7	19.6	27.8	50.9	20.9	79.3	19.6	41.6	79.3	
30	17.5	49	39.2	51.8	33.5	32.1	27.8	53.3	51.1	26.5	31.5	25.2	81	79.3	69.6	77	73.5	54.6	36	39.2	24.8	32.4	53.1	34.3	81	
31	47	108.7	N	106.1	46.6	102.5	36.9	N	76.4	114.1	85.4	44	37.5	16.4	21.6	19.6	17	12.7	13.8	14	29.1	15.5	23.7	19.2	114.1	
PEAK	54.3	114.4	137.9	112.2	116.3	109.8	137.8	83.4	116.5	114.1	85.4	62.0	81.0	79.3	82.6	85.0	104.3	86.2	104.6	84.7	106.3	97.9	74.8	148.6		

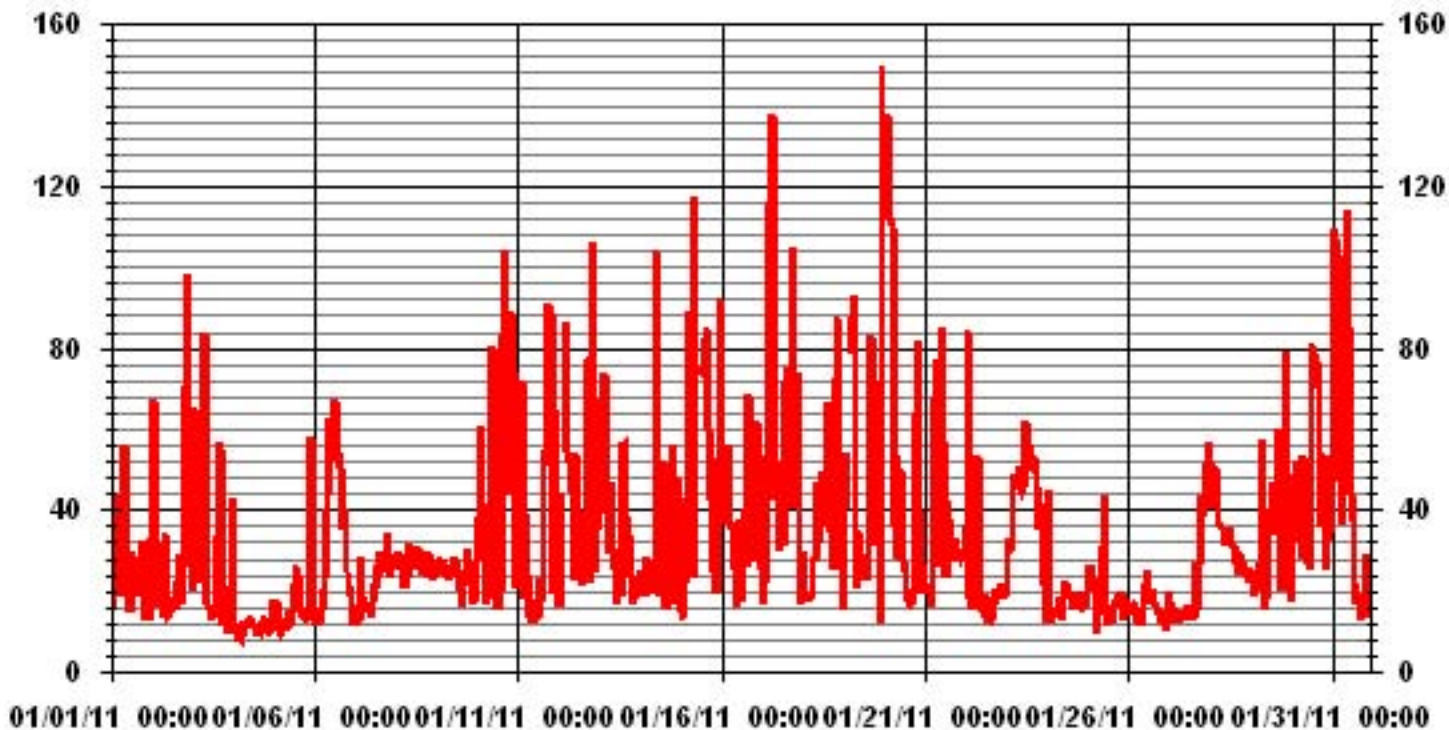
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	148.6	KPH	@ HOUR(S)	23
			ON DAY(S)	19

01 Hour Averages



— LICA30 WSMAX KPH

LICA30
WSP / WDR Joint Frequency Distribution (Percent)

January 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	6.18	2.68	7.12	2.41	2.68	2.28	3.36	2.41	4.16	10.75	9.54	2.82	1.61	1.47	4.16	2.55	66.26
< 12.0	2.28	8.06	2.55	1.61	2.15	.53	.80	.00	.80	4.03	1.34	.40	1.61	1.07	.53	1.47	29.30
< 20.0	.13	.67	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.94	1.74	.67	.00	4.30
< 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	8.60	11.42	9.67	4.03	4.83	2.82	4.16	2.41	4.97	14.78	11.02	3.22	4.16	4.30	5.37	4.03	

Calm : .13 %

Total # Operational Hours : 744

Distribution By Samples

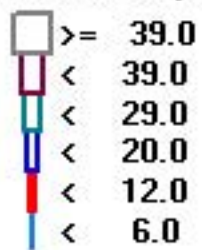
	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 6.0	46	20	53	18	20	17	25	18	31	80	71	21	12	11	31	19	493
< 12.0	17	60	19	12	16	4	6		6	30	10	3	12	8	4	11	218
< 20.0	1	5									1		7	13	5		32
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	64	85	72	30	36	21	31	18	37	110	82	24	31	32	40	30	

Calm : .13 %

Total # Operational Hours : 744

Logger : 30 Parameter : WSP

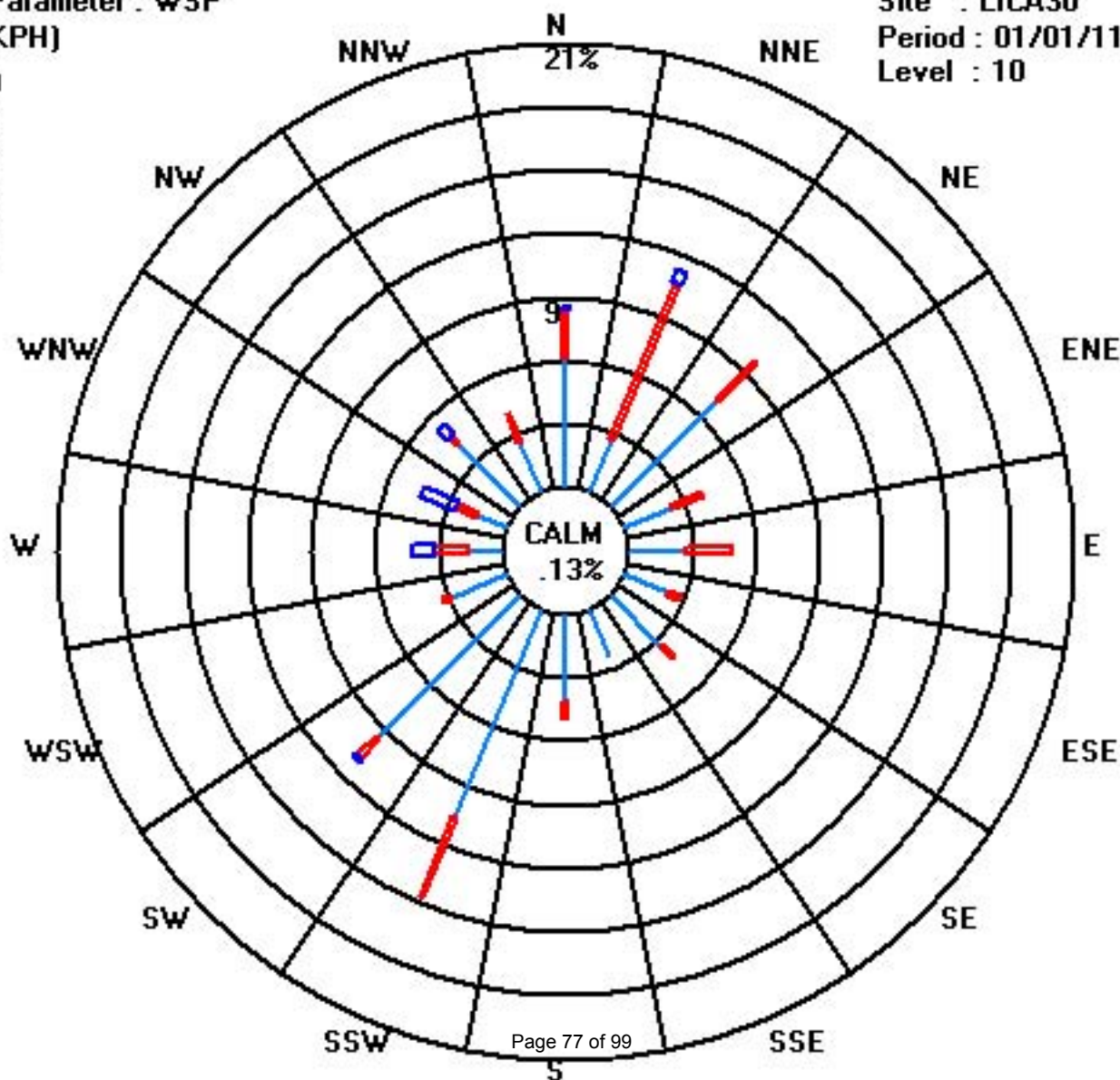
Class Limits (KPH)



Site : LICA30

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

Level : 10



Vector Wind Direction

IMPERIAL OIL RESOURCES LTD. - COLD LAKE - MASKWA

JANUARY 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		190	203	202	217	215	214	203	204	53	215	202	203	205	205	196	212	214	213	59	18	350	315	13	16	206	SSW	24
2		38	64	78	34	17	354	3	351	347	14	15	356	325	314	322	314	327	341	343	334	315	183	210	206	350	N	24
3		213	230	214	217	223	251	239	219	202	202	203	205	205	219	206	228	250	239	225	76	139	207	243	231	214	SSW	24
4		199	173	219	212	215	214	218	210	210	215	209	207	212	207	180	204	242	302	321	331	294	219	129	217	209	SSW	24
5		101	134	101	169	192	174	179	192	185	171	201	222	259	275	275	233	227	229	225	218	208	209	205	206	209	SSW	24
6		213	209	192	203	221	215	230	267	278	281	278	281	288	294	294	303	311	307	322	340	337	323	315	333	285	WNW	24
7		314	103	210	135	100	95	136	153	294	153	139	128	114	100	93	93	90	93	98	89	72	74	75	70	100	E	24
8		73	77	62	58	56	45	42	40	44	41	37	32	31	29	24	26	23	18	18	22	23	20	19	34	NE	24	
9		23	22	21	22	22	26	24	15	13	17	16	16	15	4	5	354	4	3	10	4	5	2	356	6	14	NNE	24
10		355	359	2	0	3	357	1	8	5	13	11	3	3	359	11	18	2	236	293	343	153	101	326	329	3	N	24
11		61	220	165	181	193	191	186	199	170	154	160	178	186	197	151	133	122	117	86	109	128	100	140	160	165	SSE	24
12		165	138	34	114	95	81	80	77	221	40	49	54	47	59	78	73	50	56	39	97	245	18	75	311	69	ENE	24
13		345	137	278	297	338	308	317	322	285	308	311	306	351	3	353	316	353	10	22	28	30	31	31	31	357	N	24
14		28	21	24	13	7	4	10	13	7	352	357	329	337	3	3	17	9	16	14	7	26	27	24	263	10	N	24
15		30	31	39	62	48	272	51	47	225	242	208	47	54	51	228	56	159	210	201	140	71	149	136	319	66	ENE	24
16		108	83	61	38	208	55	52	44	34	40	42	31	43	38	53	56	55	49	45	50	218	50	51	35	46	NE	24
17		31	36	42	45	29	62	215	220	214	213	44	30	15	117	50	119	127	131	132	121	163	161	187	193	150	SSE	24
18		191	186	183	194	202	200	205	220	232	227	270	286	283	286	292	318	296	282	292	289	289	254	14	210	253	WSW	24
19		177	193	308	301	147	31	275	321	351	353	344	349	352	338	322	321	326	349	311	223	197	169	124	150	333	NNW	24
20		234	251	0	4	22	37	52	93	107	109	123	126	131	139	158	179	171	194	218	225	262	293	335	337	127	SE	24
21		334	320	321	311	344	2	338	138	140	68	207	110	103	123	82	90	89	86	84	86	90	79	84	93	75	ENE	24
22		95	115	114	129	116	129	140	163	152	179	193	205	207	195	208	201	204	204	203	205	205	204	202	207	182	S	24
23		218	256	243	258	277	277	278	287	288	288	284	290	294	297	303	311	315	310	319	332	338	345	350	17	296	WNW	24
24		354	126	189	184	180	177	185	118	180	182	182	203	197	214	232	230	226	232	229	233	236	230	244	264	207	SSW	24
25		269	272	275	275	309	220	240	197	78	47	35	358	199	189	201	206	211	216	218	228	225	214	208	213	227	SW	24
26		222	218	220	207	214	215	211	211	227	266	273	270	257	221	238	239	244	240	243	224	213	212	210	222	228	SW	24
27		240	238	225	238	204	206	204	217	198	199	183	203	204	208	198	213	213	216	230	269	272	278	278	280	235	SW	24
28		286	300	341	353	352	347	343	339	347	357	6	13	12	6	12	17	15	21	21	19	21	22	26	30	0	N	24
29		29	29	29	23	19	8	13	11	28	42	31	56	47	36	85	73	82	53	66	53	41	39	48	51	40	NE	24
30		43	91	52	217	44	41	40	57	232	45	47	31	41	62	68	82	130	139	60	135	20	44	310	98	34	NE	24
31		120	134	266	185	173	322	171	291	221	195	235	208	210	209	209	228	217	212	214	213	205	208	215	208	210	SSW	24
HOURLY AVG		355	359	341	353	352	357	343	351	351	357	357	358	352	359	353	354	353	349	343	343	350	345	356	337			

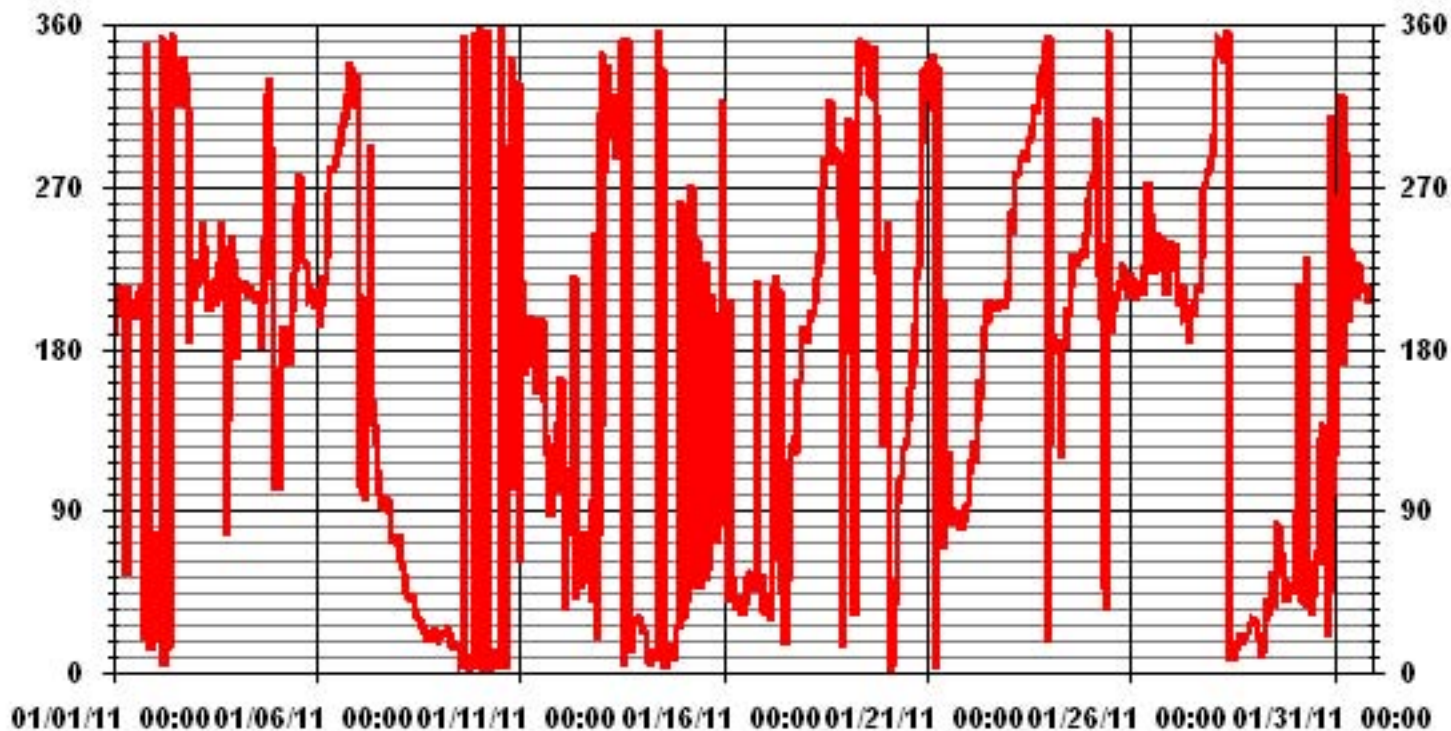
STATUS FLAG CODES

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:	February 4, 2009
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION	107.21	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	373 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JANUARY 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	21	22	32	35	27	21	17	18	55	37	20	17	35	31	22	23	38	36	47	24	21	24	12		
2	16	25	35	35	36	26	24	30	30	22	21	32	36	37	34	32	36	31	24	32	26	34	31	22	
3	22	36	62	32	21	38	49	32	25	32	27	27	20	25	18	44	47	24	29	26	28	46	31	49	
4	53	43	31	17	15	13	16	14	15	29	33	23	21	44	27	47	39	56	37	39	51	51	59	25	
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13	44	55	38	32	35	31	36	44	39	31	24	27	31	28	30	41	26	22	16	14	14	15	14	12	
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15	14	12	19	25	25	60	30	24	77	73	42	47	61	58	59	45	36	31	37	23	43	22	27	55	
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17	12	38	38	32	54	59	64	44	47	37	29	22	32	32	52	28	44	27	47	39	25	21	20	19	
18	15	14	14	14	16	18	19	30	31	26	32	23	24	26	27	34	28	25	25	28	43	52	45	51	
19	26	34	52	65	51	52	39	35	29	28	31	30	30	34	37	34	29	49	61	34	38	21	22	44	
20	54	53	33	37	23	35	31	44	26	25	25	23	23	25	28	23	23	23	29	30	43	41	34	32	
21	33	35	33	30	32	36	39	49	44	45	57	42	37	28	32	26	25	26	23	24	23	22	25	25	
22	27	27	23	22	26	30	21	49	23	22	17	25	22	16	18	14	14	14	13	14	14	13	15	17	
23	27	35	31	31	25	25	25	23	22	23	21	23	23	25	26	31	33	31	34	34	35	32	31	26	
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25	21	23	20	21	44	26	29	19	24	29	34	43	27	17	18	18	24	20	18	20	17	13	12	14	
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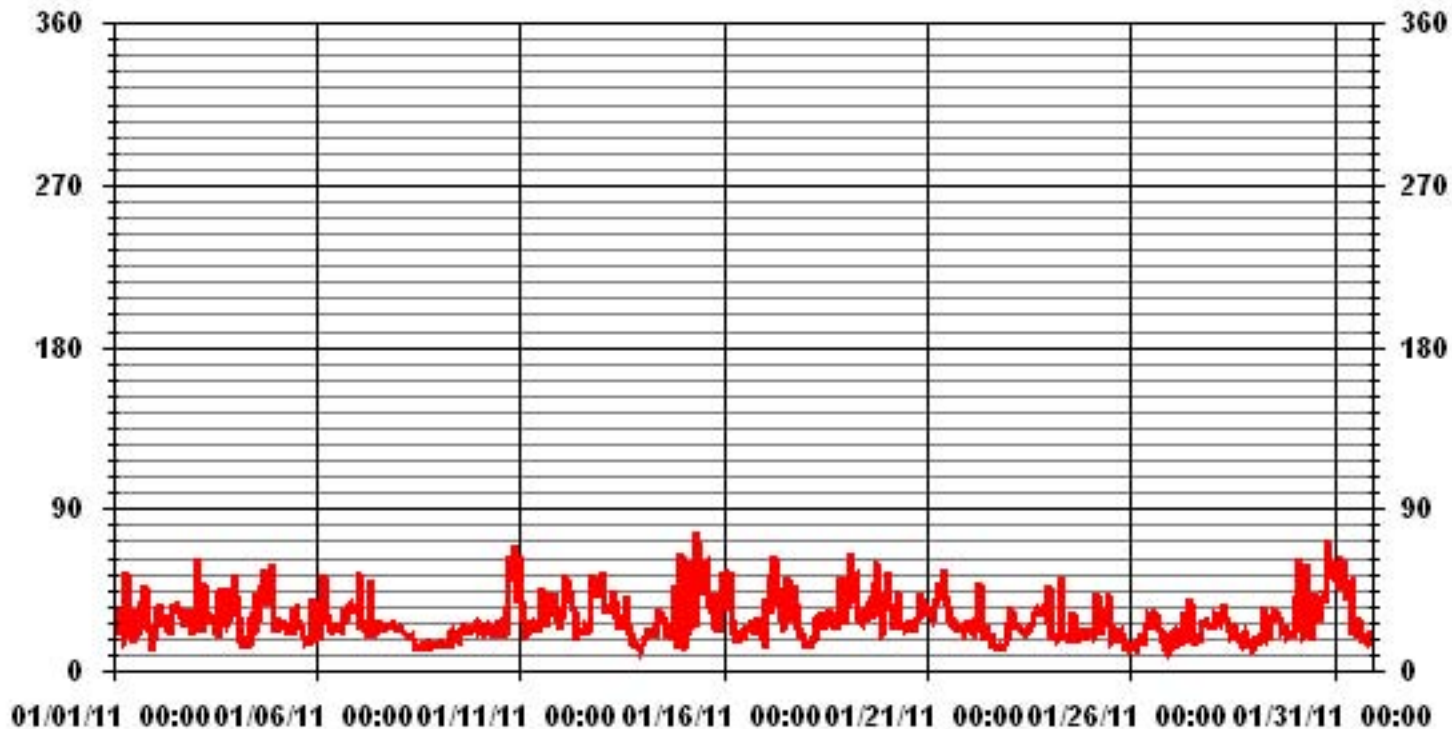
STATUS FLAG CODES

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

LAST CALIBRATION: February 4, 2009

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages

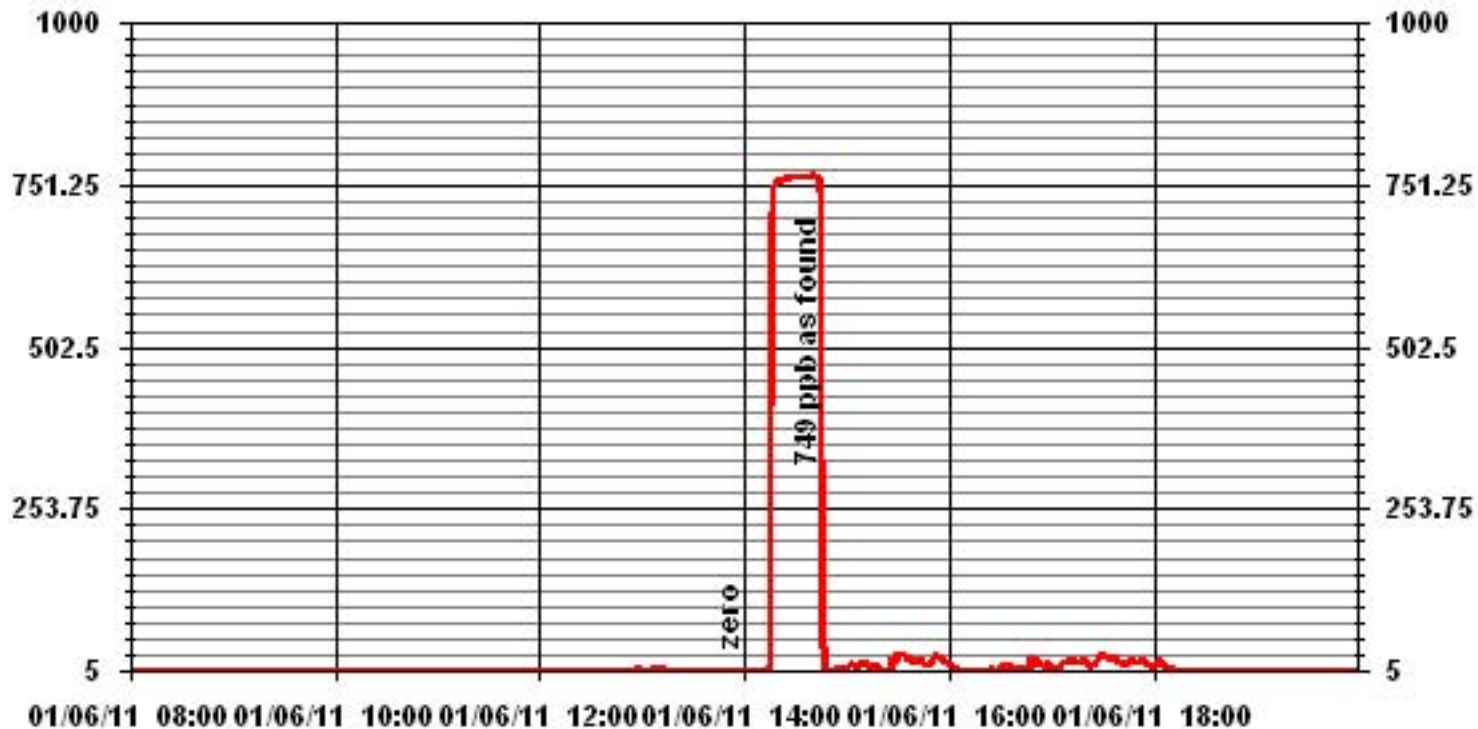


— LICA30 STDWDIR DEG

Calibration Reports

Sulphur Dioxide

01 Minute Averages



SO₂ Calibration Report

Station Information

Calibration Date	January 11, 2011	Previous Calibration	January 6, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:44	End Time (MST)	12:01
Reason:	Monthly Calibration		
Barometric Pressure	959 mBar	Station Temperature	22 Deg C
Cal Gas	51.4 ppm	Cal Gas Expiry date	August 5, 2012
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:	Enviroics 6000		4760	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Flow Meter:	Enviroics 6000	S/N :	4760		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	0 - 1000	ppb
Sample Flow / Box Temp	609 ccm 30.4 Deg C	601 ccm 29.9 Deg C	
HVPS / Lamp Setting	494 3115	494 3116	
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	7.7 Deg C 45 Deg C	
Offset / Slope	37.5 0.98	37.5 0.98	
38			

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	0	N/A
4922	72.8	749	749	1.0002
4956	38.8	399	402	0.9932
4976	16.5	170	174	0.9763
4995	0	0	0	N/A
Sum of Least Squares				0.9978
New Correction Factor				1.0002

Before Calibration

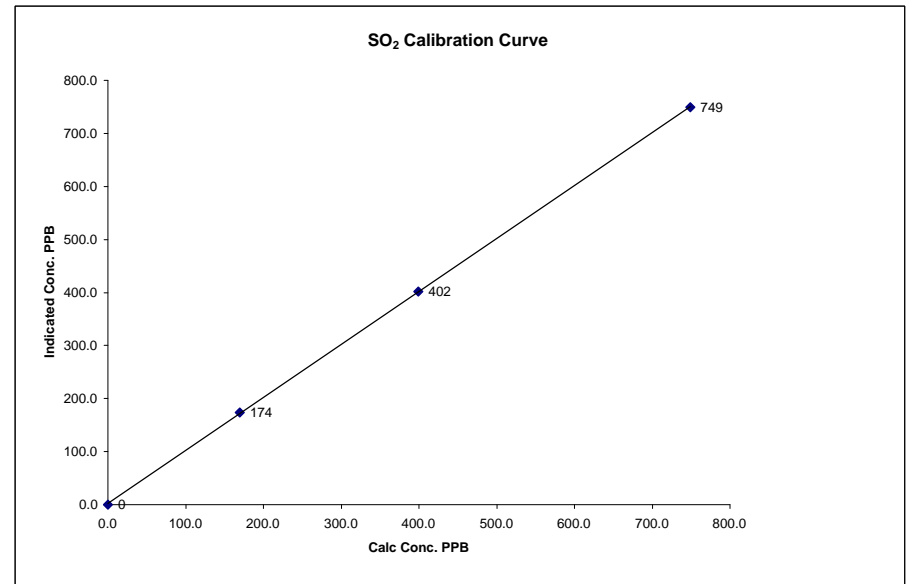
Auto Zero	0.6	After Calibration	0.5
Auto Span	367		366
Sample Lines Connected			YES
Percent Change from Previous Calibration			-

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

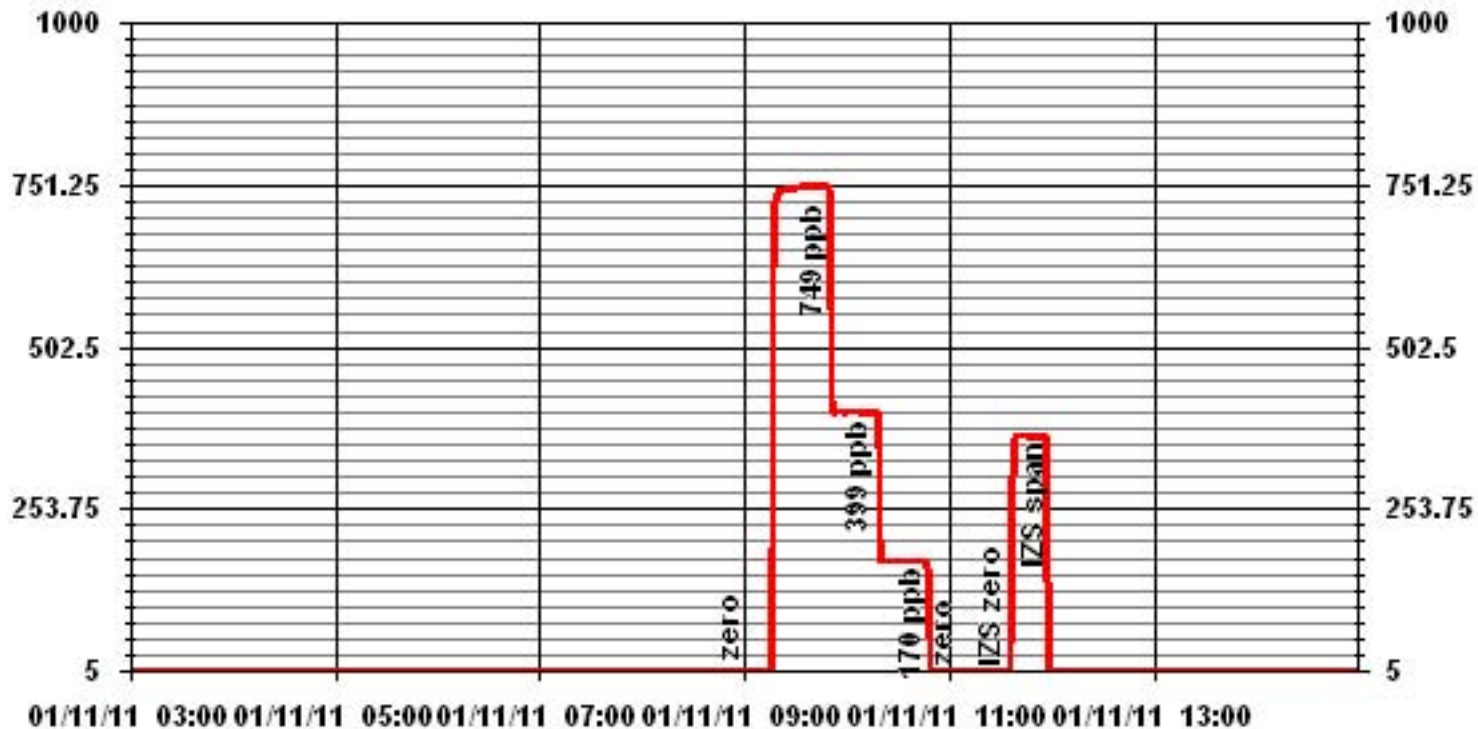
Calibration Date	January 11, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:44	End Time (MST)	12:01

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999961
0	0	n/a	Intercept	(0.85 to 1.15)	0.998293
170	174	0.9763			
399	402	0.9932			
749	749	1.0002			2.233141



Notes:

01 Minute Averages



Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	January 10, 2011	Previous Calibration	December 9, 2010
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	12:50	End Time (MST)	16:28
Reason:	Monthly Calibration		
Barometric Pressure	959 mBar	Station Temperature	21 Deg C
Cal Gas	10.6 ppm	Cal Gas Install date	05/12/2011
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	
Sample Flow / Box Temp	543 ccm	30.4 Deg C	544 ccm	30.8 Deg C	
HVPS / Lamp Setting	552	2184	552	2183	
PMT / RxCell Temp	7.9 Deg C	50 Deg C	7.9 Deg C	50 Deg C	
Converter / IZS Temp	315.8 Deg C	45 Deg C	315.9 Deg C	45 Deg C	
Offset / Slope	30	0.975	30	1.003	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4998	0	0	0	N/A
4962	37.7	80	78	1.0127
4962	37.7	80	80	1.0000
4982	18.8	40	40	0.9756
4986	10.9	23	24	1.0000
4998	0	0	0	N/A
Sum of Least Squares				0.9963
New Correction Factor				1.0000

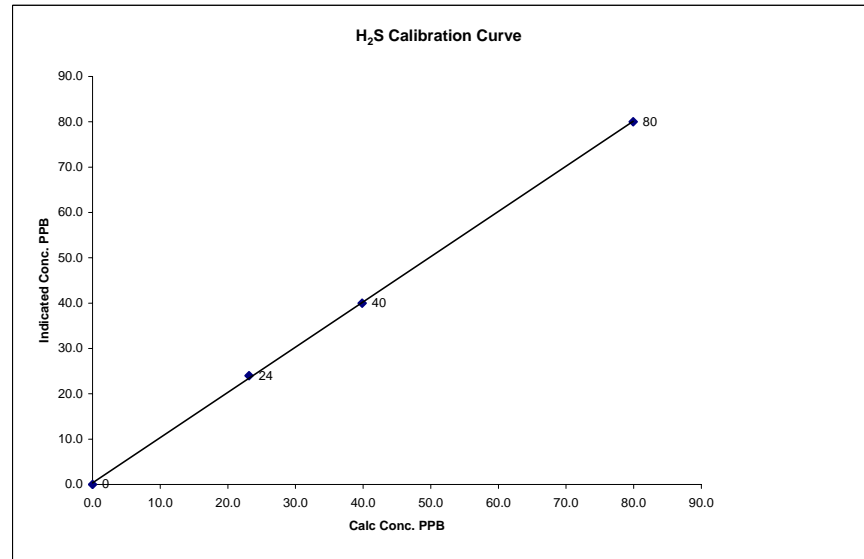
		Before Calibration	After Calibration
Auto Zero		-0.6	-0.2
Auto Span		52	53
Sample Lines Connected			YES
Percent Change from Previous Calibration			-1.3%

Calibration Performed by: Ting Xu

H₂S Calibration Curve

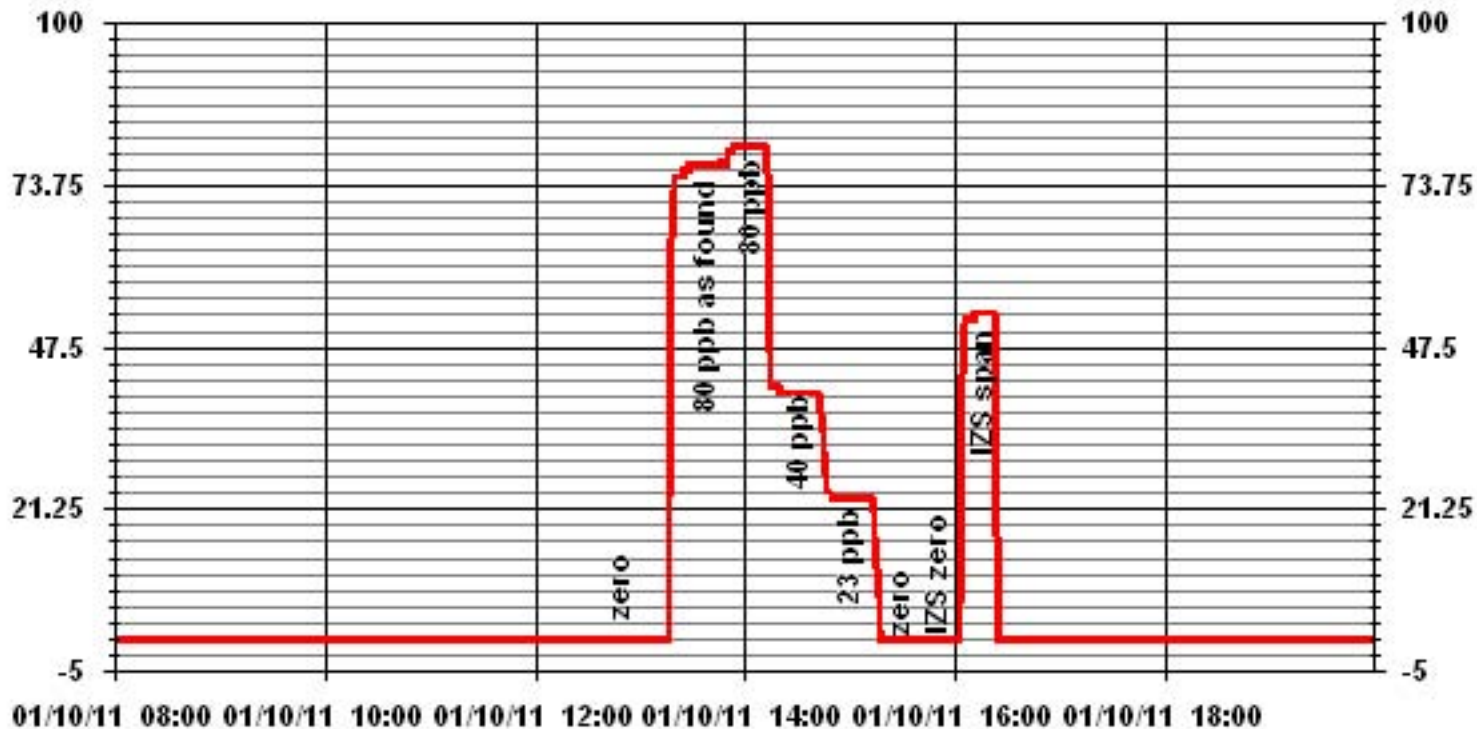
Calibration Date	January 10, 2011
Company	Lakelnad Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	12:50
End Time (MST)	16:28

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999858
0	0	n/a	Intercept	(± 3% F.S.)	0.351308
23	24	0.9634			
40	40	0.9962			
80	80	0.9991			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	January 11, 2011	Previous Calibration	December 10, 2010
Company:	Lakeland Industry & Community Association		
Plant / Location:	Cold Lake - Maskwa		
:	(MST) 8:51	End Time	(MST) 12:27
Reason:	Monthly Calibration		
Barometric Pressure:	959 mBar	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	207 Prop/ 602 Meth/1171.25THC	ppm	Cal Gas Expiry Date: August 21, 2011
DAS make & Model:	ESC 8832	S/N :	AO 791
Output Voltage Range:	0 - 10	VDC	

Analyzer Information

Make / Model	TECO 51C-LT	S/N :	436609738	Method	Flame Ionization
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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
1999	0.0	0.0	0.1	N/A
1999	0.0	0.0	0.0	N/A
1999	70.0	39.6	39.8	0.9956
1998	35.0	20.2	20.1	1.0032
1998	20.0	11.6	11.4	1.0182
1998	0	0.0	0.0	N/A
Correction Factor:				0.9956

Previous Calibration Correction Factor:	0.9907
Current Correction Factor Before Span Adjust:	0.9956
Percent Change:	-0.50%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	44.9	44.5
Sample Lines Connected		YES

Cylinder Pressures

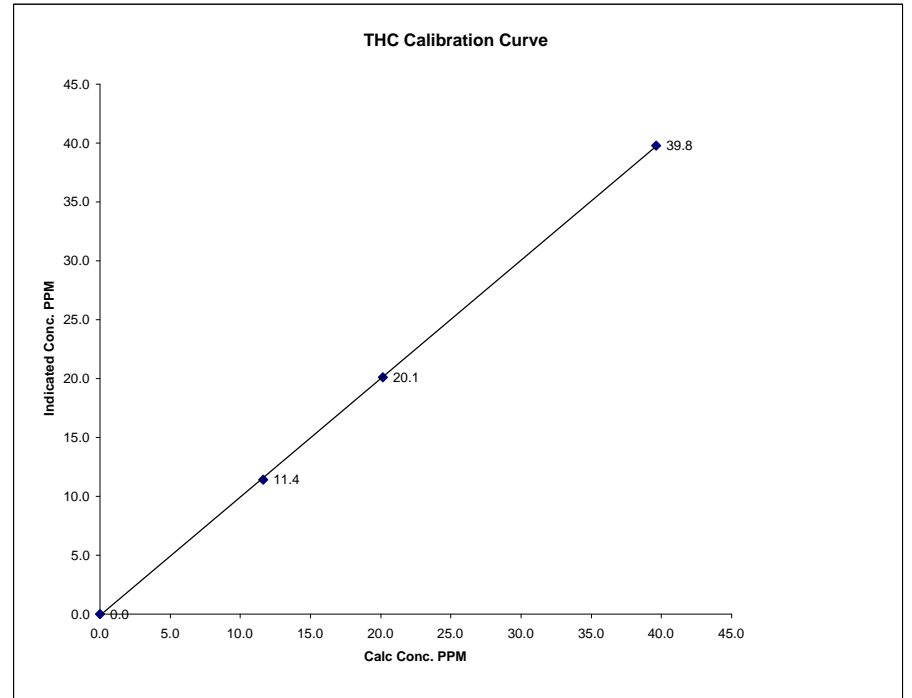
Span	1500	psi
Hydrogen	1000	psi
Zero Air	32	psi

Calibration Performed by: Ting Xu

THC Calibration Curve

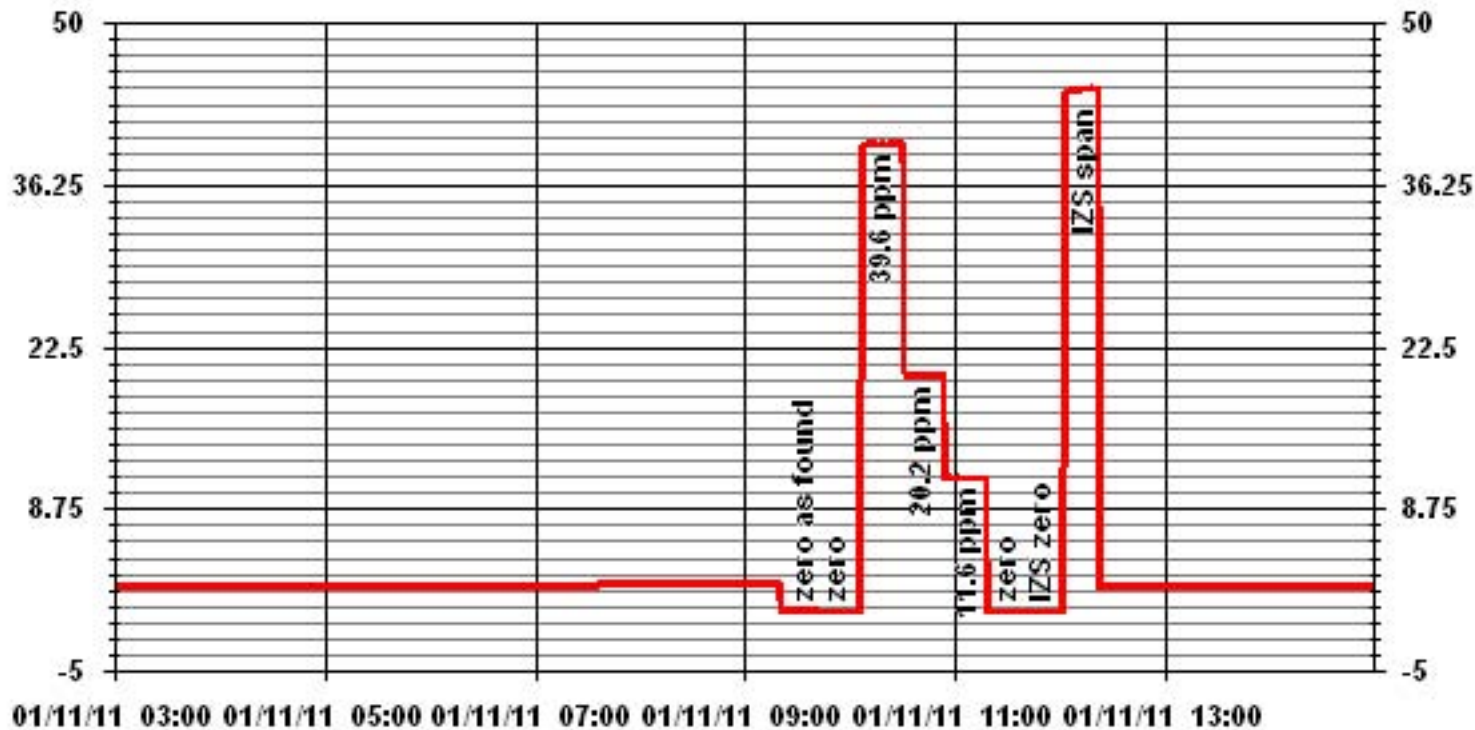
Calibration Date	January 11, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	8:51	End Time (MST)	12:27

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999946
0.0	0.0		Intercept	(± 3% F.S.)	-0.129724
11.6	11.4	1.0182			
20.2	20.1	1.0032			
39.6	39.8	0.9956			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report

Station Information

Calibration Date	January 10, 2011	Previous Calibration	December 9, 2010
Company	LICA	Plant/Location	Maskwa
Start Time (MST)	12:48	End Time (MST)	18:30
Reason:	Monthly Calibration	Other	
Barometric Pressure	959 mmHg	Station Temperature	21 Deg C
Cal Gas Concentration	NOx 50.8 ppm	NO 50.4 ppm	Cal Gas Expiry date 05-Aug-12
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:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 791		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	EnviroNics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	469 ccm	316.9 Deg C		462 ccm	315.1 Deg C		
Ozone Flow / Vacuum	80 ccm	5.9 "Hg-A		70 ccm	5.9 "Hg-A		
HVPS / A ZERO	767 Volts	16.6 MV		767 Volts	16.5 MV		
Rx/ Temp / PMT Temp	50.1 Deg C	6.5 Deg C		50.0 Deg C	6.5 Deg C		
Box Temp / IZS Temp	28.9 Deg C	45.4 Deg C		30.3 Deg C	45.1 Deg C		
Offset	1.5 NOx	0.5 NO		1.5 NOx	0.5 NO		
Slope	1.083 NOx	1.074 NO		1.099 NOx	1.093 NO		
NO2 COEF / Conv Efficiency	NA NO2	0.994		NA NO2	0.994		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4995	0.0	----	0	0	0	0	1	0	----	----
4919	74.2	----	755	749	----	744	737	8	1.0146	1.0176
4919	74.2	----	755	749	----	756	751	5	0.9985	0.9986
4959	34.6	----	352	349	----	357	354	3	0.9860	-0.9118
4974	19.8	----	201	200	----	207	205	2	0.9730	-0.3756
4995	0.0	----	0	0	0	0	1	0	----	----

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4919	74.2	----	755	749	----	756	753	3	----	----
4919	74.2	600	755	----	573	754	183	571	1.0035	99.65%
4919	74.2	300	755	----	291	755	465	290	1.0034	99.65%
4919	74.2	150	755	----	99	755	657	99	1.0000	100.00%

Linearity	Sum of Least Squares	NOx= 0.995	NO= 0.994	NO2= 1.003	
OK?	Yes No	Correction Factors:	NOx= 0.9985	NO= 0.9986	NO2= 1.0035
		Average Converter Efficiency= 99.77%			

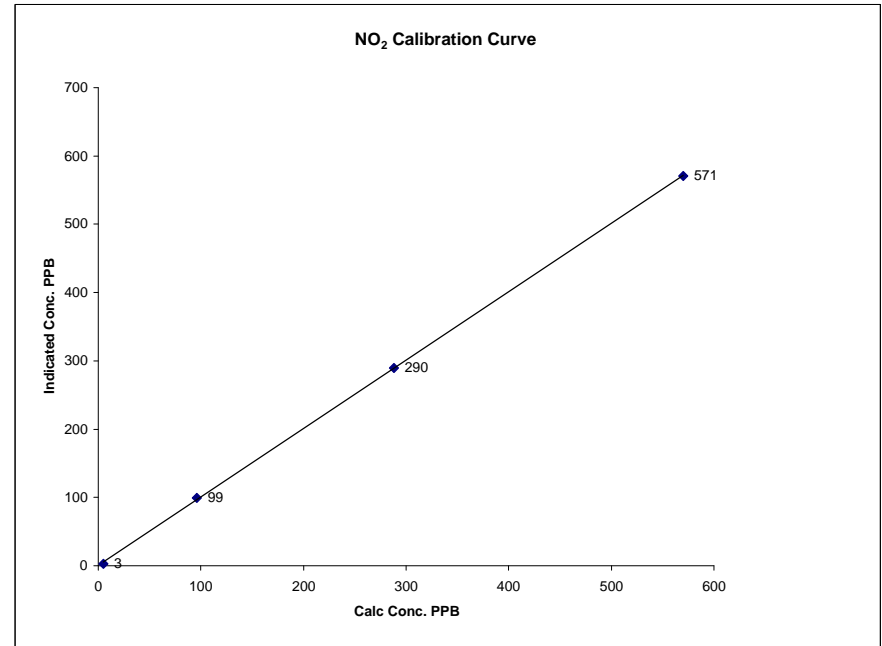
Before Calibration				After Calibration			
Auto Zero	0.5 NOx	0.6 NO2		1.0 NOx	0.0 NO2		
Auto Span	724 NOx	713 NO2		726 NOx	714 NO2		
Sample Lines Connected				YES			
Percent Change from Previous Calibration		NOx -1.7%	NO -1.9%	NO2 -0.2%			

Notes

NO2 Calibration Curve

Calibration Date	January 10, 2011	LICA	
Company		Maskwa	
Plant / Location		End Time (MST)	18:30
Start Time (MST)	12:48		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
5	3	N/A	Slope (0.85 to 1.15)	0.999932
96	99	0.9697	Intercept (± 3% F.S.)	1.002484
288	290	0.9931		0.40435
570	571	0.9982		



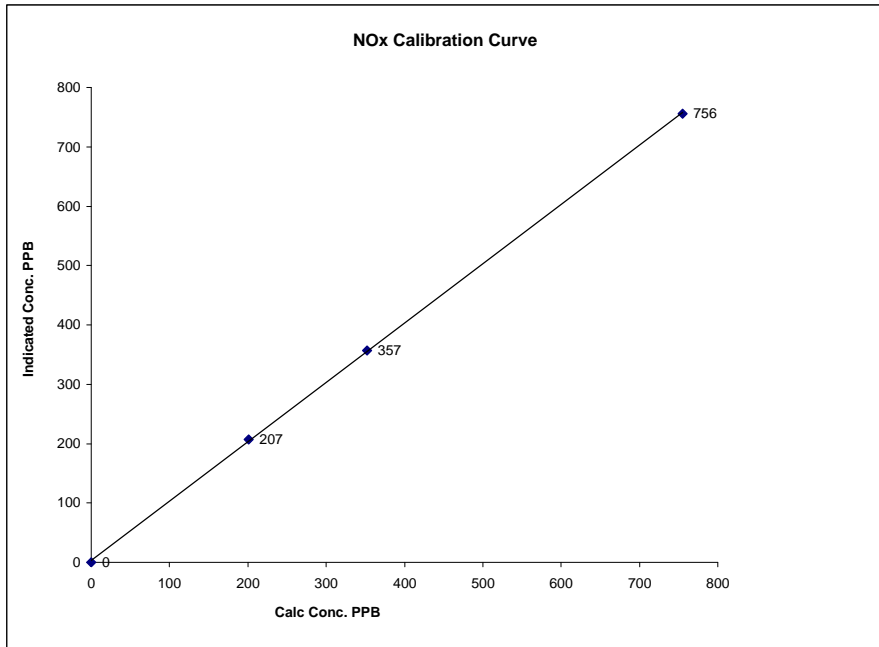
Notes: No CE gain adjustment.

Calibration Performed by: Ting Xu

NOx Calibration Curve

Calibration Date January 10, 2011
 Company LICA
 Plant / Location Maskwa
 Start Time (MST) 12:48 End Time (MST) 18:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999924
0	0	N/A	Slope (0.85 to 1.15)	0.999656
201	207	0.9730	Intercept (± 3% F.S.)	3.03675
352	357	0.9860		
755	756	0.9985		

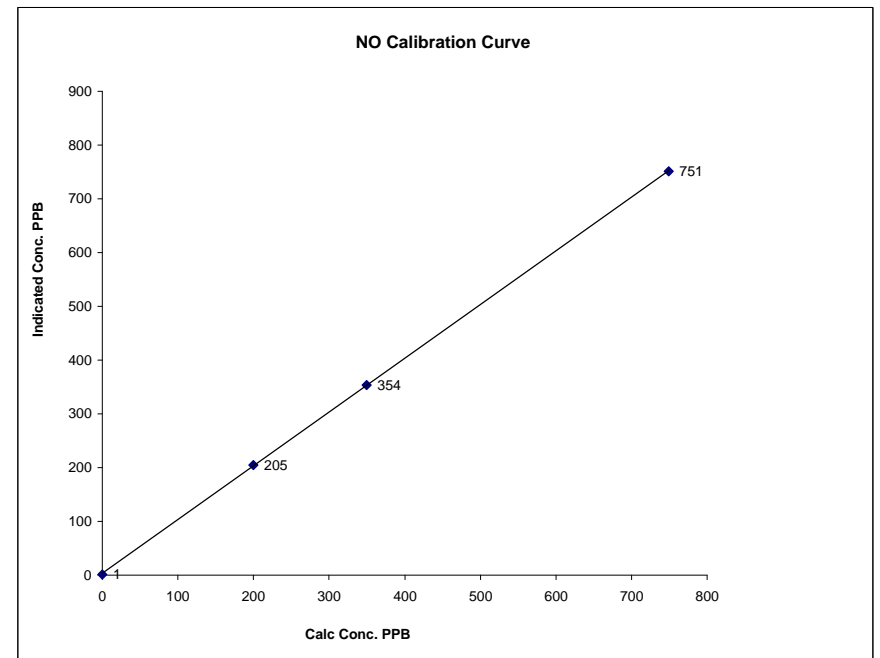


Notes:

NO Calibration Curve

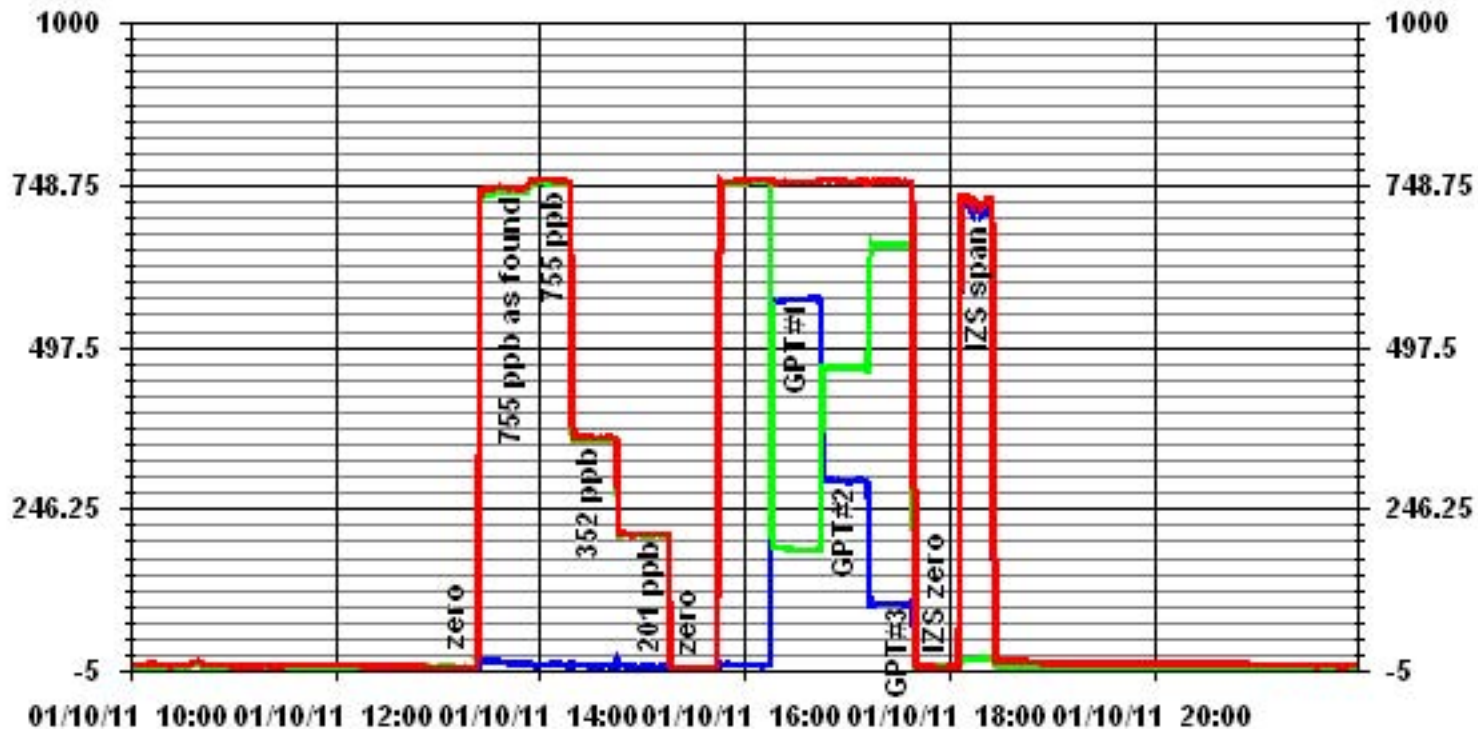
Calibration Date January 10, 2011
 Company LICA
 Plant / Location Maskwa
 Start Time (MST) 12:48 End Time (MST) 18:30

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999958
0	1	N/A	Slope (0.85 to 1.15)	0.994072
200	205	0.9748	Intercept (± 3% F.S.)	7.1783
349	354	0.9865		
749	751	0.9973		



Notes:

01 Minute Averages



Lakeland Industry & Community Association

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

Ambient Air Monitoring Data Report

For

January 2011

Prepared By:



February 24, 2011

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

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Introduction

The following Ambient Air Monitoring report was prepared for:

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

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

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABEL / DEVON WELLSITE 13-16-62-5 W4M SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				EXCEEDENCES		MONTHLY AVERAGE	
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY		
SO ₂ (PPB)	172	57	0	0	0.30	5	16	20	6.7	47(NE)	1.9	16	99.9
H ₂ S (PPB)	10	3	-	-	0.17	1	VAR	VAR	VAR	VAR	1.0	20	99.6
THC (PPM)	-	-	-	-	2.63	7.7	2	1	4.1	1(N)	4.9	31	99.9
NO ₂ (PPB)	212	106	0	0	5.92	29	3, 19	20, 20	4.6, 3.7	299(WNW)	15.0	1	99.9
NO (PPB)	-	-	-	-	0.64	25	31	12	0.3	147(SE)	4.8	31	99.9
NO _x (PPB)	-	-	-	-	6.84	46	2	1	4.1	1(N)	20.0	31	99.9
O ₃ (PPB)	82	-	0	-	24.15	44	23	2, 3	18.8, 21.8	257(WSW), 277(W)	41.0	23	99.7
PM 2.5 (UG/M ³)	-	30	-	0	4.51	33.2	2	0	3.7	359(N)	14.0	1	90.9
VECTOR WS (KPH)	-	-	-	-	8.61	36.3	23	12	-	295(WNW)	23.8	23	100.0
VECTOR WD (DEGREES)	-	-	-	-	326(NW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

Xontech Model 910A – January 3, 2010

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

Xontech Model 910A – January 9, 2010

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

Xontech Model 910A – January 15, 2010

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

Xontech Model 910A – January 21, 2010

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

Xontech Model 910A – January 27, 2010

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

PUF cartridge – January 3, 2010

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

PUF cartridge – January 9, 2010

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

PUF cartridge – January 15, 2010

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

PUF cartridge – January 21, 2010

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

PUF cartridge – January 27, 2010

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.055	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 started. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

No operational issues observed during the month. The inlet filter was replaced before the monthly calibration was started. The scrubber material was replaced and the pump on the analyzer was rebuilt following the as found points on January 12th. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

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

General Monthly Summary

AQM STATION – LICA – PORTABLE

Ozone (PPB)

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

The inlet filter was changed before the monthly calibration was started. The pump on the zero/span system started failing on January 3rd. The pump was replaced following the as points on January 8th. Because the result of the as found points was well within the +/- 15% of the limited range, the analyzer can be determined that it was functioning properly and data between January 3rd and January 11th were valid. The gauge on the internal regulator was replaced on January 11th. The post-repair calibration was performed on January 12th. Data was corrected using daily zero information, except data between January 3rd and January 10th.

THC (PPM)

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

No operational issues observed during the month. The inlet filter was replaced before the monthly calibration was started. The CH4 gas cylinder was replaced on January 12th. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m³)

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

A routine Teom audit attempted to be performed on January 26th. The FDMS filter was changed after the audit was completed. 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. 68 hours of data were invalidated as they were below -3.0 ug/m³. The Teom 1405F unit output provides hourly average, but no instantaneous output. As a result, no hourly maximum value is recorded.

General Monthly Summary

AQM STATION – LICA – PORTABLE

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

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

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

Datalogger

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

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

Trailer

No issue was observed this month. The manifold was cleaned on January 12th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. One hour of AQI values recorded in January 2011 was in the Fair range, and it was due to PM2.5. Others were within the Good range. The highest hourly concentration of PM2.5 was 33.2ug/m³ and an AQI value of 27, hour 0 on January 2nd. The highest hourly concentration of Ozone was 44 ppb and an AQI value of 22 on January 23rd, in various hours.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Volatile Organics (VOCs)

The volatile organics were sampled from January 3rd to January 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. A flow verification on the Xontech was performed on January 26th. The result of the verification was good.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs were sampled from January 3rd to January 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. A temperature/ pressure check and a flow calibration on the PUF were performed on January 26th. The results of the verification were good.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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	1	1	0	0	0	1	1	1	1	1	1	1	1	1	2	2	2	1	IZS	0	0	0	0	0	0	2	0.8	24
2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	2	IZS	2	1	1	1	0	0	2	0.5	24	
3	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	0.0	24
4	0	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	1	0.3	24	
5	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
6	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
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	0.0	24
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	0	0	0	0	0	1	0.0	24
9	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
10	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
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	M	0	0	0	0	0	0	0	0.0	23
13	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	2	1	2	2	2	2	1	0	2	0.9	24	
14	0	1	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0.2	24		
15	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	
16	1	1	1	0	0	0	1	1	1	1	1	1	2	2	3	3	3	3	3	3	3	5	3	2	2	5	1.9	24
17	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0.3	24	
18	1	IZS	0	1	1	1	1	2	3	3	2	1	1	1	0	0	0	0	0	0	0	1	0	0	3	0.9	24	
19	IZS	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	1	0.3	24	
20	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
21	0	0	0	0	1	0	0	0	0	0	1	1	3	4	4	4	4	3	3	2	1	IZS	0	0	4	1.3	24	
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	IZS	2	2	1	2	0.3	24	
23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	0.0	24	
24	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	IZS	0	0	0	0	0	1	0.3	24	
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	IZS	1	1	0	0	0	0	2	0.2	24	
26	0	0	0	0	1	1	2	1	2	2	1	0	0	0	0	0	0	IZS	0	0	0	0	0	0	2	0.4	24	
27	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	IZS	1	1	1	1	1	0	0	0	1	0.3	24	
28	0	0	0	0	0	0	0	2	1	0	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	2	0.3	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
HOURLY MAX	1	1	1	1	1	1	2	2	3	3	2	1	3	4	4	4	4	3	3	3	5	3	2	2				
HOURLY AVG	0.2	0.1	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.5	0.6	0.6	0.6	0.7	0.4	0.4	0.4	0.4	0.4	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

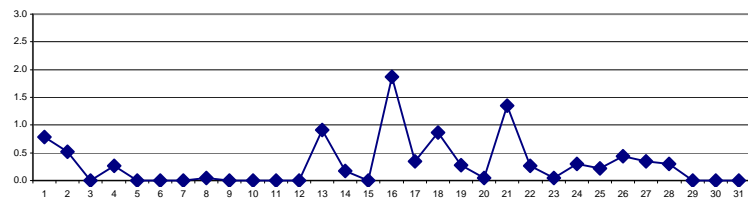
OBJECTIVE LIMIT:

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

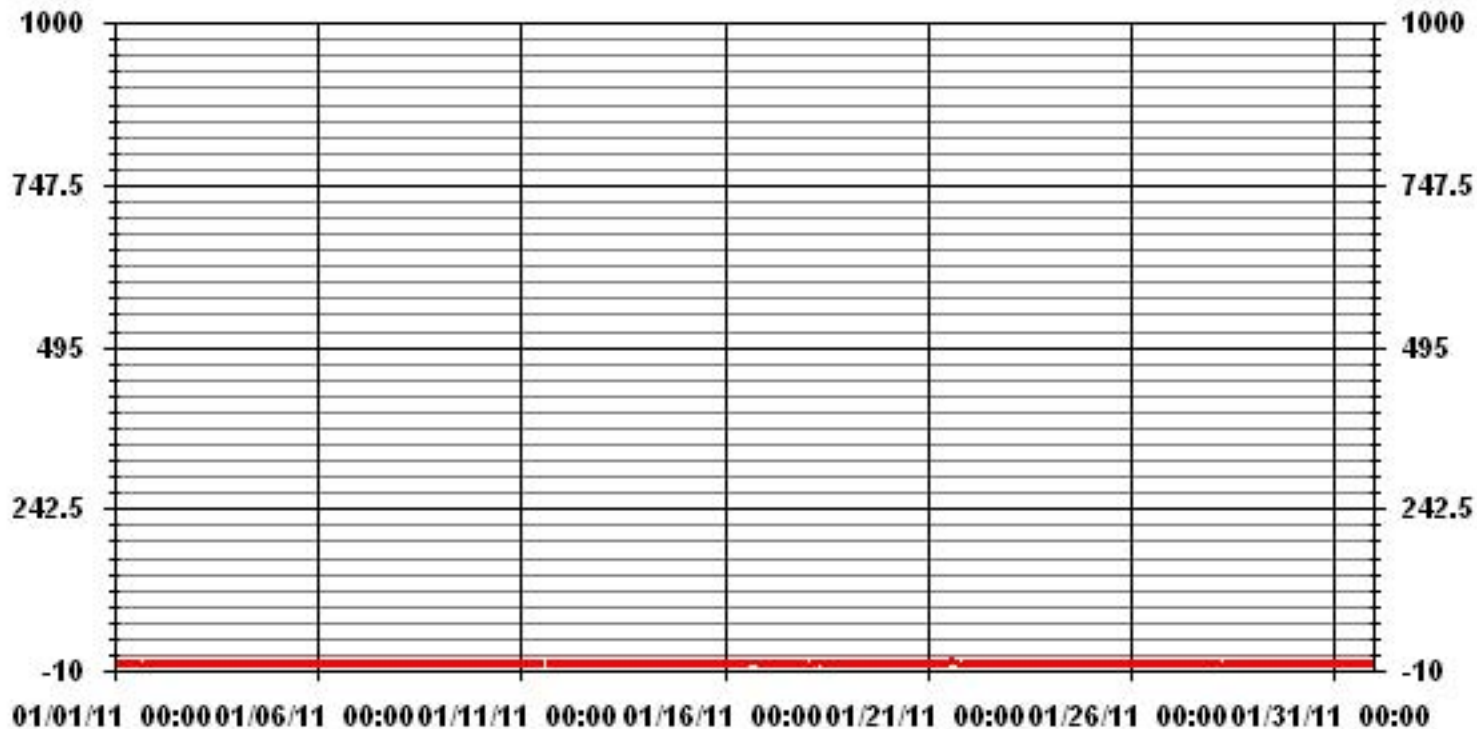
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	146		
MAXIMUM 1-HR AVERAGE:	5 PPB @ HOUR(S) 20 ON DAY(S) 16		
MAXIMUM 24-HR AVERAGE:	1.9 PPB ON DAY(S) 16		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.70	MONTHLY AVERAGE:	0.30 PPB

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA33 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLE SITE

JANUARY 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	DAY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	1	2	2	2	1	1	2	2	2	3	2	2	2	2	2	3	3	3	2	IZS	0	1	1	1	1	1	3	1.8	24
2	2	1	1	1	0	0	0	0	0	0	1	1	2	2	2	3	3	IZS	IZS	3	2	2	2	1	2	3	1.3	24	
3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	IZS	1	1	1	2	2	1	1	2	1.1	24		
4	4	1	1	1	2	2	1	1	1	2	2	2	2	2	2	IZS	0	0	1	1	1	1	1	1	0	2	1.3	24	
5	5	1	1	1	0	1	1	1	0	1	1	1	1	1	IZS	0	1	0	1	1	1	0	1	1	1	1	0.8	24	
6	6	1	1	1	1	1	1	1	1	0	1	0	1	1	IZS	1	0	0	0	0	0	0	0	0	0	1	0.5	24	
7	7	0	0	0	0	3	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	3	0.1	24	
8	8	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	2	1	1	1	1	1	1	1	2	0.6	24	
9	9	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1.0	24	
10	10	1	1	0	0	1	0	0	0	0	IZS	1	1	1	0	0	1	0	1	1	1	0	0	0	0	1	0.4	24	
11	11	0	0	0	0	0	0	0	0	IZS	0	0	0	0	C	C	C	C	0	1	0	0	1	1	1	1	0.2	24	
12	12	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	M	1	1	1	1	1	1	1	1	1.0	23	
13	13	1	1	1	1	1	1	IZS	1	1	1	2	2	3	3	3	3	3	2	3	3	3	3	2	1	3	2.0	24	
14	14	1	2	2	2	1	IZS	1	1	1	2	0	1	0	1	1	1	1	1	1	2	2	1	1	1	2	1.2	24	
15	15	1	1	0	0	IZS	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	0.8	24	
16	16	2	1	1	IZS	1	3	2	2	2	2	2	3	3	4	4	4	4	4	5	6	5	3	3	6	3.0	24		
17	17	2	2	IZS	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	1.4	24	
18	18	2	IZS	2	2	2	2	3	4	4	4	3	2	2	3	2	2	2	2	1	1	1	2	2	1	4	2.2	24	
19	19	IZS	1	2	2	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1	IZS	2	1.4	24
20	20	0	0	0	0	1	1	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	IZS	1	2	0.9	24	
21	21	1	1	1	1	2	1	1	1	1	2	2	2	4	5	5	5	5	4	4	3	2	IZS	1	2	5	2.4	24	
22	22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	2	2	IZS	3	3	2	3	1.3	24	
23	23	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	1	0	2	0.9	24	
24	24	0	0	0	0	1	1	0	1	0	1	1	2	2	2	2	2	2	2	IZS	1	1	1	1	1	2	1.0	24	
25	25	1	1	1	1	1	0	1	1	1	1	1	1	1	2	1	3	3	IZS	2	2	1	1	1	1	3	1.3	24	
26	26	1	1	1	1	2	2	3	2	3	3	2	2	1	2	1	1	IZS	1	1	1	1	1	1	1	3	1.5	24	
27	27	1	1	1	1	1	1	1	1	1	1	2	2	2	2	IZS	2	2	2	2	2	2	2	1	1	2	1.4	24	
28	28	1	1	1	1	1	2	2	3	2	2	3	3	2	2	IZS	1	1	1	1	0	0	0	0	0	3	1.3	24	
29	29	0	2	0	0	0	0	0	1	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	2	0.6	24	
30	30	1	0	1	1	1	1	1	1	1	1	1	1	1	IZS	1	0	1	1	1	1	1	1	1	0	1	0.9	24	
31	31	0	0	0	0	0	0	0	0	0	0	1	IZS	1	1	1	0	0	0	1	1	1	1	1	2	2	0.5	24	
HOURLY MAX		2	2	2	2	3	3	3	4	4	4	3	3	4	5	5	5	5	4	4	5	6	5	3	3				
HOURLY AVG		0.9	0.9	0.8	0.8	1.1	0.9	1.0	1.0	1.0	1.2	1.2	1.3	1.4	1.6	1.5	1.5	1.6	1.1	1.4	1.3	1.2	1.2	1.1	1.0				

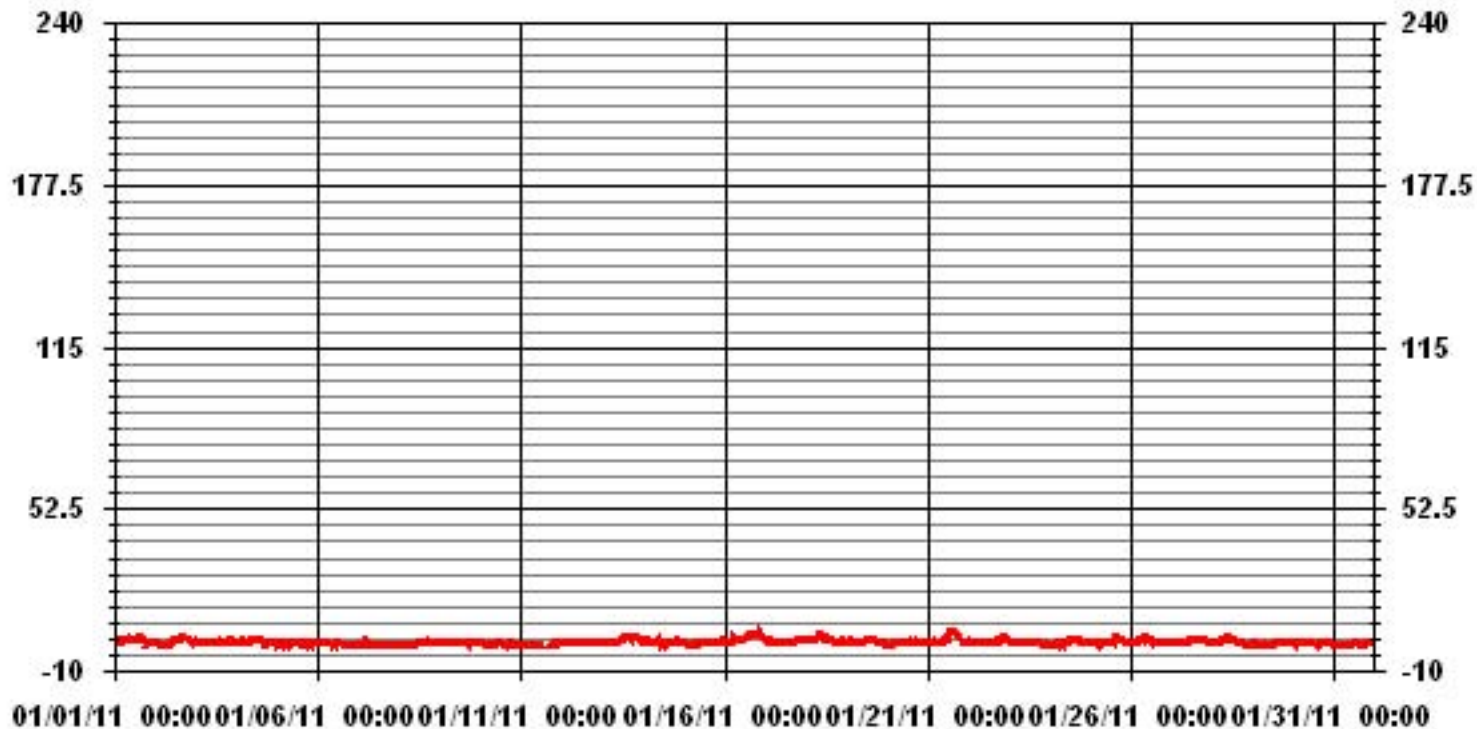
STATUS FLAG CODES

S - OUT OF SERVICE	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:	566					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	20	ON DAY(S)	16
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.93					

01 Hour Averages



— LICA33 SO2MAX PPB

LICA33
SO2_ / WDR Joint Frequency Distribution (Percent)

January 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	5.51	5.94	5.65	5.79	11.17	5.09	4.38	4.24	4.38	2.68	9.05	7.77	5.94	7.63	6.50	8.20	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.51	5.94	5.65	5.79	11.17	5.09	4.38	4.24	4.38	2.68	9.05	7.77	5.94	7.63	6.50	8.20	

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	39	42	40	41	79	36	31	30	31	19	64	55	42	54	46	58	707
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	39	42	40	41	79	36	31	30	31	19	64	55	42	54	46	58	

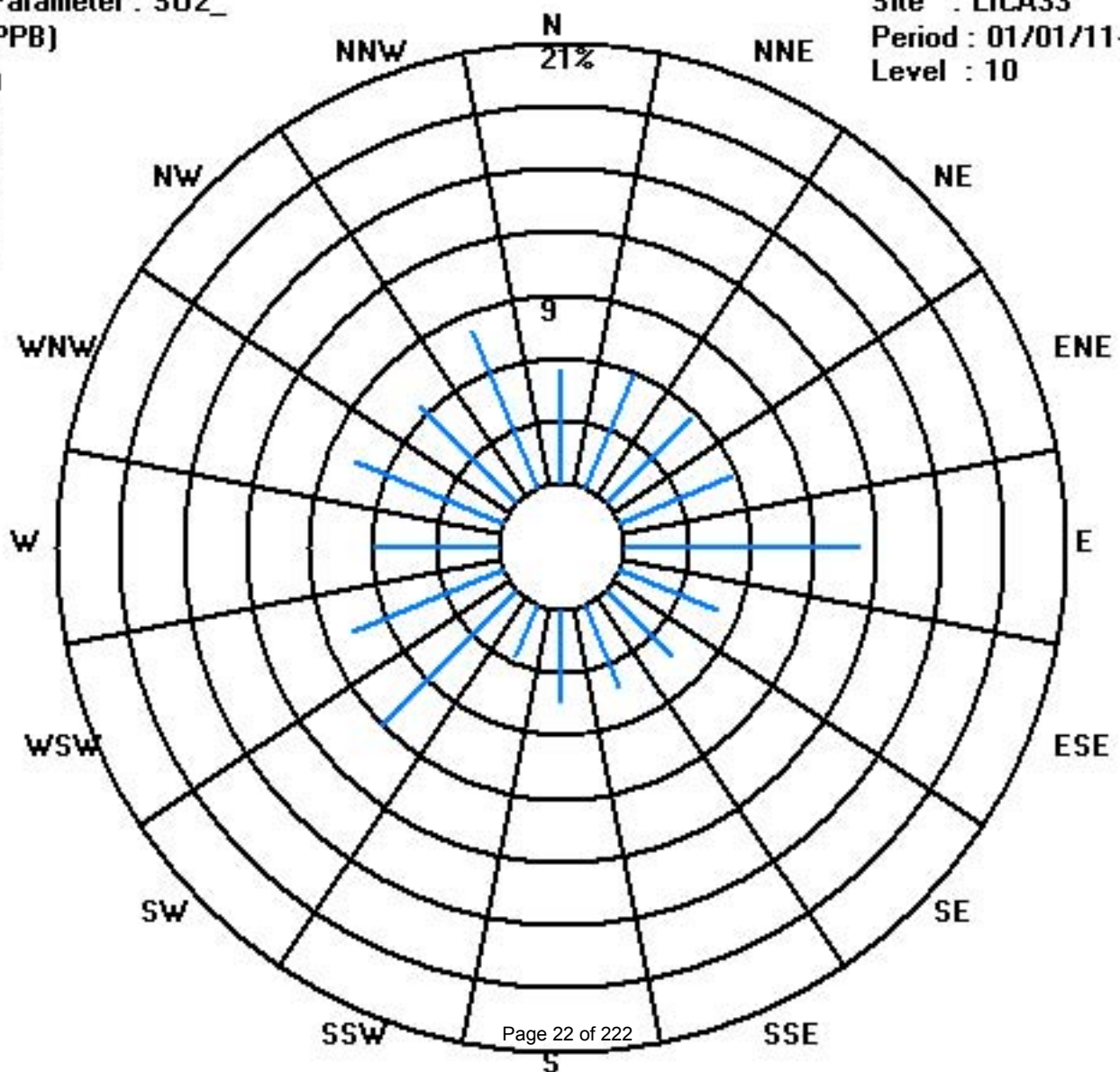
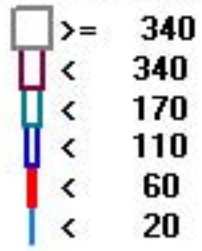
Calm : .00 %

Total # Operational Hours : 707

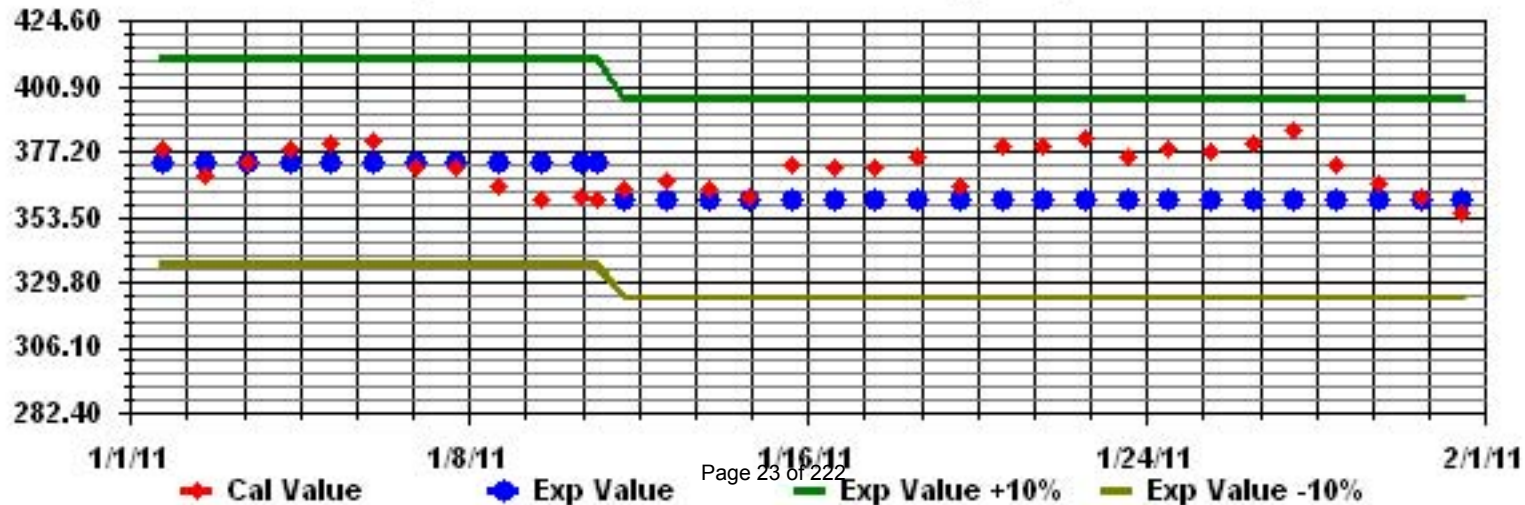
Class Limits (PPB)

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

Level : 10



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



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

JANUARY 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR				
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	1	1	0.8	24		
2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.1	24		
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0	1	0	0	0	1	0.1	24		
4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.0	24		
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	0.0	24		
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	0	1	0	0	1	1	0	1	0.3	24		
7	1	1	0	0	1	0	0	1	1	1	1	1	1	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.3	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	0.0	24		
9	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		
10	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		
11	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		
12	0	0	0	0	0	0	0	0	IZS	C	C	C	M	M	M	C	C	C	C	C	0	0	0	0	0	0	0.0	21		
13	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		
14	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		
15	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		
16	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
17	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		
18	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24		
19	IZS	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.1	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	IZS	0	1	1.0	24
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24		
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	IZS	0	0	0	1	0.0	24	
23	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	IZS	0	0	0	1	0.1	24	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0.0	24	
25	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	IZS	1	0	0	0	0	0	1	0.3	24		
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	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	IZS	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	1	0	0	1	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	1	IZS	1	1	1	0	0	0	0	0	0	0	0	0	1	0.2	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		0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1				

STATUS FLAG CODES

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

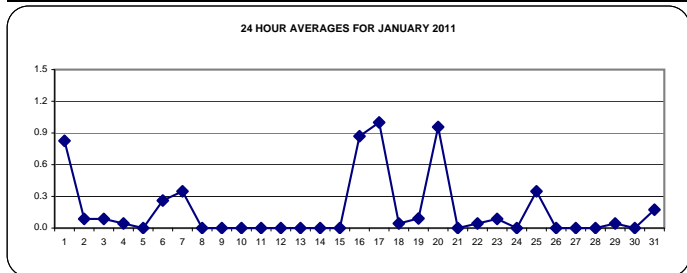
OBJECTIVE LIMIT:

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

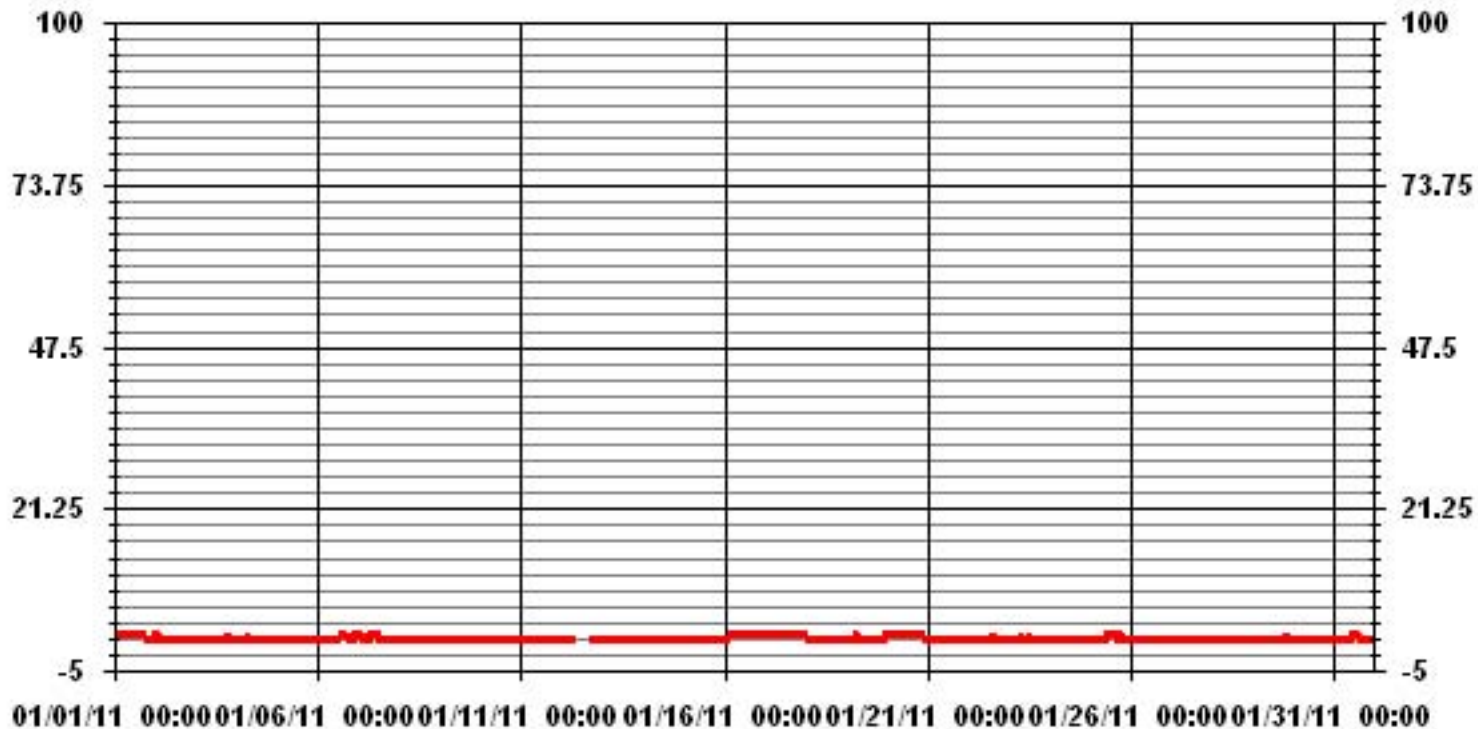
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	122				
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	1.0	PPB			20
				VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.6	%
STANDARD DEVIATION:	0.38		MONTHLY AVERAGE:	0.17	PPB

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA33 H2S_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 2011

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

MST

DAY	HOUR																								DAILY 24-HOUR				
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	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	2	2	2	2	2	1	1	1	1	1	1	2	IZS	1	1	1	1	1	1	2	1.3	24	
2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	IZS	0	1	0	1	0	1	1	1	0.3	24	
3	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	IZS	0	1	1	1	1	0	1	1	1	0.3	24	
4	1	0	0	1	1	0	0	1	1	0	0	1	0	0	0	0	IZS	0	0	0	1	0	1	1	0	1	0.4	24	
5	0	0	0	0	0	1	1	1	0	0	0	1	1	0	IZS	0	0	0	1	0	1	1	1	1	1	1	0.4	24	
6	1	0	1	1	1	1	1	0	1	0	0	0	0	IZS	1	1	1	1	1	1	1	3	1	1	1	3	0.8	24	
7	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	1	0	0	2	0	0	0	0	0	0	2	0.7	24	
8	0	0	0	0	0	0	0	0	1	1	0	IZS	1	1	1	1	1	1	1	1	1	1	0	0	1	1	0.5	24	
9	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	0	0	0	0	1	0	0	1	1	0	1	1	0.3	24	
10	0	0	0	0	0	1	0	0	1	IZS	0	0	0	1	0	1	1	0	0	0	0	0	1	1	1	1	0.3	24	
11	1	1	1	0	1	0	0	0	IZS	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0.3	24	
12	0	0	1	1	1	1	1	IZS	C	C	C	M	M	M	C	C	C	C	0	0	0	0	0	0	0	1	0.4	21	
13	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	
14	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	
15	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	
16	0	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.0	24	
17	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	
18	1	IZS	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.4	24	
19	IZS	1	1	1	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.3	24
20	2	2	1	2	1	1	1	1	1	2	1	1	1	2	2	2	2	2	2	2	1	2	2	IZS	0	2	1.5	24	
21	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		
22	0	0	0	0	1	1	1	0	0	1	1	1	1	1	1	1	1	1	1	0	IZS	1	1	1	1	1	0.7	24	
23	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	IZS	0	0	0	0	1	1	0.7	24	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	1	1	1	1	1	0.1	24	
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	IZS	1	1	1	0	1	1	2	1.0	24		
26	0	1	1	1	1	1	1	1	1	1	1	0	0	1	0	1	IZS	0	0	0	0	0	0	0	0	1	0.5	24	
27	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	
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	0.0	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	0	0	0	1	1	1	0	1	0.2	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	1	0.1	24	
31	0	1	1	1	1	1	1	0	0	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	24	
HOURLY MAX	2	2	1	2	1	1	2	2	2	2	2	1	1	2	2	2	2	2	2	1	2	3	1	2					
HOURLY AVG	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.4	0.5	0.4	0.4	0.5	0.6	0.4	0.5					

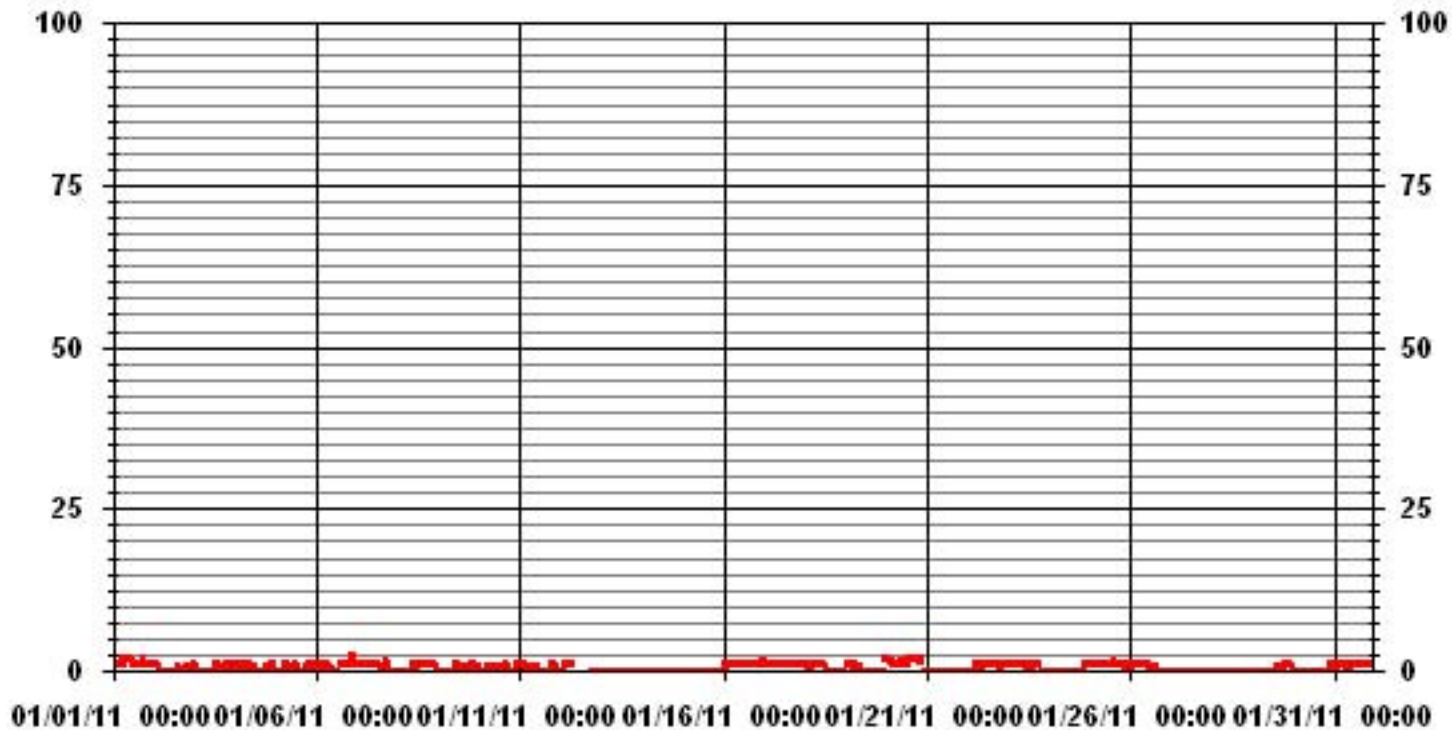
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	304					
MAXIMUM INSTANTANEOUS VALUE:	3	PPB	@ HOUR(S)	21	ON DAY(S)	6
	VAR - VARIOUS					
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.56					

01 Hour Averages



— LICA33 H2S MAX PPB

LICA33
H2S_ / WDR Joint Frequency Distribution (Percent)

January 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	5.55	5.98	5.69	5.84	10.39	5.27	4.41	4.27	4.41	2.70	9.11	7.83	5.98	7.69	6.55	8.26	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	5.55	5.98	5.69	5.84	10.39	5.27	4.41	4.27	4.41	2.70	9.11	7.83	5.98	7.69	6.55	8.26	

Calm : .00 %

Total # Operational Hours : 702

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	39	42	40	41	73	37	31	30	31	19	64	55	42	54	46	58	702
< 10																	
< 50																	
>= 50																	
Totals	39	42	40	41	73	37	31	30	31	19	64	55	42	54	46	58	

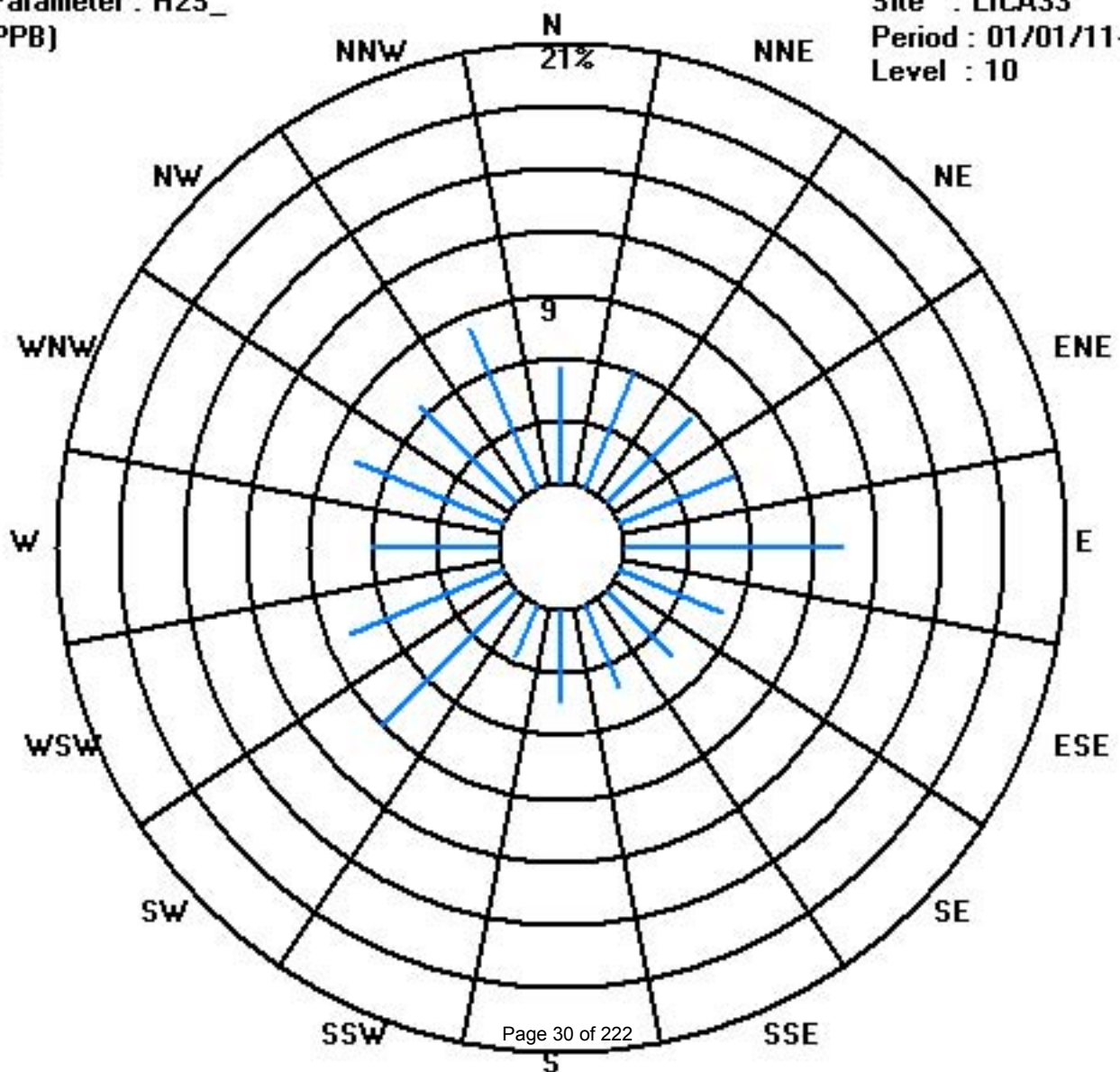
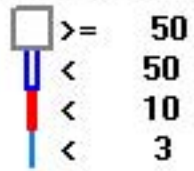
Calm : .00 %

Total # Operational Hours : 702

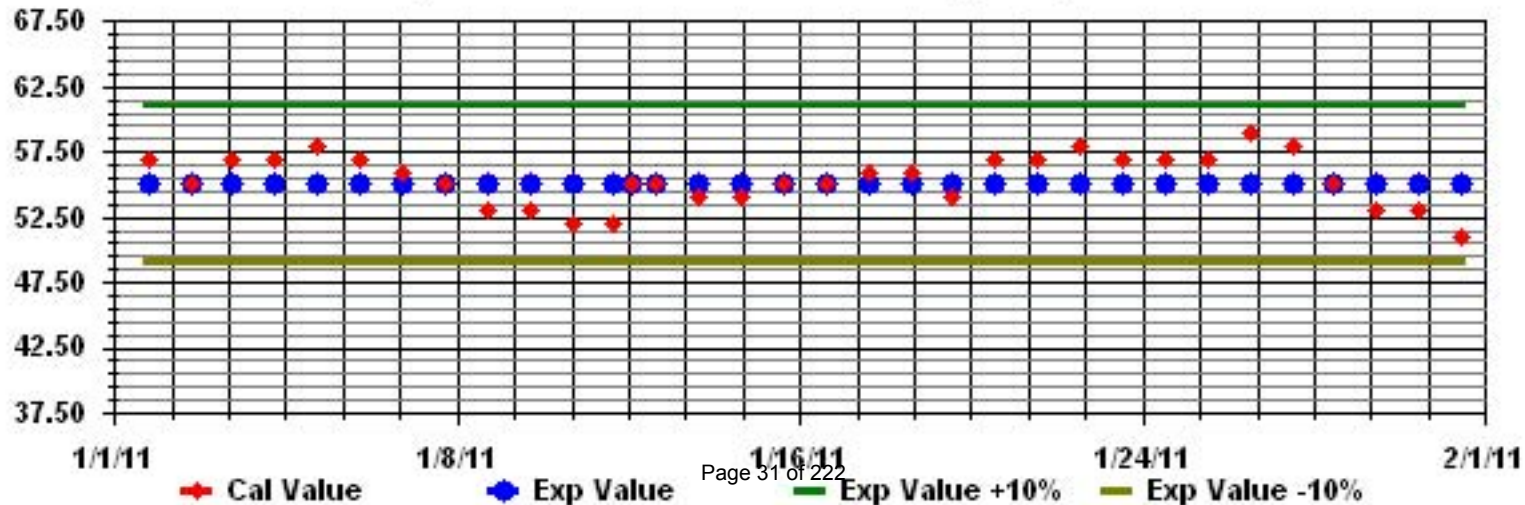
Class Limits (PPB)

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

Level : 10



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 2011

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

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																													
1	10.7	11.2	12.2	11.7	10.7	10.7	12.2	12.2	9.2	15.7	19.2	17.2	25.7	16.2	18.7	14.2	4.7	13.7	16.2	17.2	14.2	15.7	13.2	12.2	25.7	14.0	24		
2	33.2	25.2	21.2	16.7	6.2	13.2	7.2	0	N	N	2.7	15.2	12.2	11.2	2.2	4.7	2.2	11.7	2.7	11.2	1.2	5.2	9.2	3.2	33.2	9.9	22		
3	7.7	8.7	4.2	5.2	9.2	4.7	0	7.2	5.2	3.2	4.7	1.7	10.7	5.7	0.2	5.2	11.7	12.7	16.2	14.7	4.7	4.2	9.7	0	16.2	6.6	24		
4	7.7	5.7	4.7	2.2	3.2	3.7	8.2	4.2	6.2	1.7	0	4.2	2.7	N	7.2	N	11.2	4.2	4.2	7.2	0	5.1	0	2.2	11.2	4.4	22		
5	11.7	0	0	12.2	5.2	12.7	14.7	0.7	7.7	3.7	9.2	5.7	6.2	7.7	3.2	1.2	1.7	0.2	5.2	1.7	6.2	0	0	0.2	14.7	4.9	24		
6	10.7	11.2	13.7	16.7	5.7	19.2	5.1	0	0.2	N	0	0	0	0	0.2	1.7	1.7	0	3.7	0.2	N	3.2	0	12.7	19.2	4.8	22		
7	0	N	N	N	N	0	3.2	6.2	0	6.7	3.2	3.7	1.7	N	6.2	3.2	N	7.2	6.7	0.7	N	N	5.2	6.2	7.2	3.8	16		
8	6.2	3.2	1.7	0	1.7	2.2	6.2	8.7	0.7	N	0	4.2	8.2	3.7	N	N	7.7	N	1.2	2.2	0	5.1	0	1.7	8.7	3.2	20		
9	0	0	8.7	0	2.2	1.7	0	6.2	N	2.2	0	N	6.2	0	5.1	0	1.2	3.7	1.1	0	2.7	0	2.7	2.7	8.7	2.1	22		
10	2.7	0.7	2.7	3.7	2.2	0.7	5.7	0	0	1.7	7.7	N	0.2	8.2	N	3.2	0	1.7	0.7	0	N	5.2	0.7	2.7	8.2	2.4	21		
11	0.7	0	5.1	N	9.2	N	4.7	0.7	0	2.7	0.2	2.7	3.6	N	1.2	N	1.2	0.2	0	6.2	0	6.2	4.2	4.7	9.2	2.7	20		
12	4.7	0.2	3.2	3.7	4.2	4.7	0	0	4.7	8.2	4.2	5.2	1.7	11.2	5.7	6.2	5.2	7.7	3.2	11.7	0	7.7	1.7	9.2	11.7	4.8	24		
13	0	6.7	7.2	5.7	4.7	5.7	4.2	1.7	3.2	10.2	5.2	8.2	N	1.2	10.7	4.7	3.2	4.2	3.6	0	5.2	7.2	0	1.7	10.7	4.5	23		
14	6.7	0	2.2	10.7	4.2	3.7	7.2	5.2	10.7	4.7	1.2	N	N	0	9.7	N	10.2	0	5.2	12.7	2.2	N	5.7	4.2	12.7	5.3	20		
15	9.2	5.1	2.2	3.2	1.2	N	N	N	N	N	10.7	2.2	4.2	0	3.2	N	6.7	N	7.2	0	11.7	0	9.2	N	11.7	4.8	16		
16	1.7	10.2	N	10.7	8.2	N	12.7	0	8.7	3.7	1.7	N	3.7	N	5.7	0	4.7	5.2	N	7.2	0	3.7	0	4.2	12.7	4.8	19		
17	N	8.7	0	8.2	4.7	N	N	0	N	N	0	2.7	0.2	6.2	0.2	1.2	3.7	0.2	3.2	3.7	3.7	3.2	0	6.7	8.7	3.0	19		
18	3.2	6.2	4.7	0	3.2	8.2	1.2	1.7	10.2	4.2	10.2	5.7	4.2	1.7	9.2	9.2	4.2	0.2	2.2	0	5.7	0	N	0.2	10.2	4.2	23		
19	1.7	4.2	0.7	2.2	5.7	2.2	6.7	0	0	6.7	4.7	0	2.7	0	N	5.7	5.2	0	5.7	3.6	8.6	7.2	6.2	6.7	8.6	3.8	23		
20	9.7	7.2	6.2	3.7	0	3.7	10.2	4.7	2.2	N	1.7	0	1.2	5.2	0.7	N	3.2	5.1	5.7	0	7.2	0.7	4.2	2.2	10.2	3.9	22		
21	5.2	1.7	1.7	0	0	0	6.2	1.7	0	2.2	0	2.7	1.7	7.2	0	1.7	1.7	4.2	3.7	5.7	5.2	2.7	1.7	5.7	7.2	2.6	24		
22	0.2	4.2	6.7	6.7	0.7	3.7	0	11.7	13.2	2.7	7.7	12.7	6.2	4.7	9.2	3.2	10.2	2.2	2.2	3.7	4.7	0	0.2	0	13.2	4.9	24		
23	6.2	0	4.2	1.7	0.7	0	N	0	N	2.2	0.2	0	0	0.2	N	1.2	0.2	0.2	2.2	2.2	3.2	1.7	2.2	5.7	6.2	1.6	21		
24	5.7	8.2	0	0	2.2	6.7	4.7	1.7	10.1	6.7	0	1.7	4.2	1.2	3.2	0.7	2.2	3.6	3.7	N	0	3.2	8.7	10.1	10.1	3.8	23		
25	7.2	1.2	N	N	0	5.7	0	0	9.2	11.2	10.1	8.2	16.2	5.2	7.7	8.6	9.7	11.2	3.2	8.2	5.2	2.7	4.2	0.7	16.2	6.2	22		
26	7.2	4.2	1.7	4.2	6.7	9.2	6.7	5.2	C	C	1.7	0.2	6.7	1.2	1.2	5.7	0.2	0	3.2	0.2	0	0.2	6.2	4.2	9.2	3.5	24		
27	3.2	4.7	1.2	4.7	1.2	1.2	4.7	1.7	1.2	2.2	7.7	3.2	1.2	2.6	3.2	10.2	3.2	1.7	0.2	4.7	0.2	4.2	8.2	2.7	10.2	3.3	24		
28	1.7	0.7	0	4.7	0	1.2	0	0	0.7	1.2	3.2	0	0	0	N	N	7.2	N	9.2	2.2	0	1.7	4.7	N	9.2	1.9	20		
29	0.7	4.2	0	0	2.2	0	0	4.2	10.7	2.7	0	4.7	0	1.7	N	8.2	0.7	4.7	2.2	4.7	1.7	5.2	0.2	2.7	10.7	2.7	23		
30	N	3.2	0	7.7	N	0	8.7	5.7	0	N	0	0	6.7	0	1.2	0.7	3.2	0	3.2	10.7	15.2	9.2	9.7	2.2	15.2	4.2	21		
31	4.7	3.2	5.2	1.7	6.2	5.7	5.2	6.2	3.2	0	5.1	4.2	2.2	0	7.7	7.2	7.2	8.7	6.7	11.2	6.2	10.7	10.7	8.7	11.2	5.7	24		
HOURLY MAX	33	25	21	17	11	19	15	12	13	16	19	17	26	16	19	14	12	14	16	17	15	16	13	13					
HOURLY AVG	5.9	5.0	4.3	5.3	3.8	4.8	5.2	3.3	4.7	4.6	3.9	4.3	4.8	3.8	4.9	4.5	4.5	4.1	4.5	5.1	4.1	4.2	4.3	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

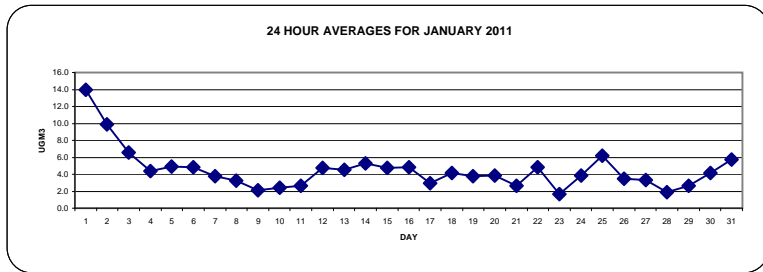
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:

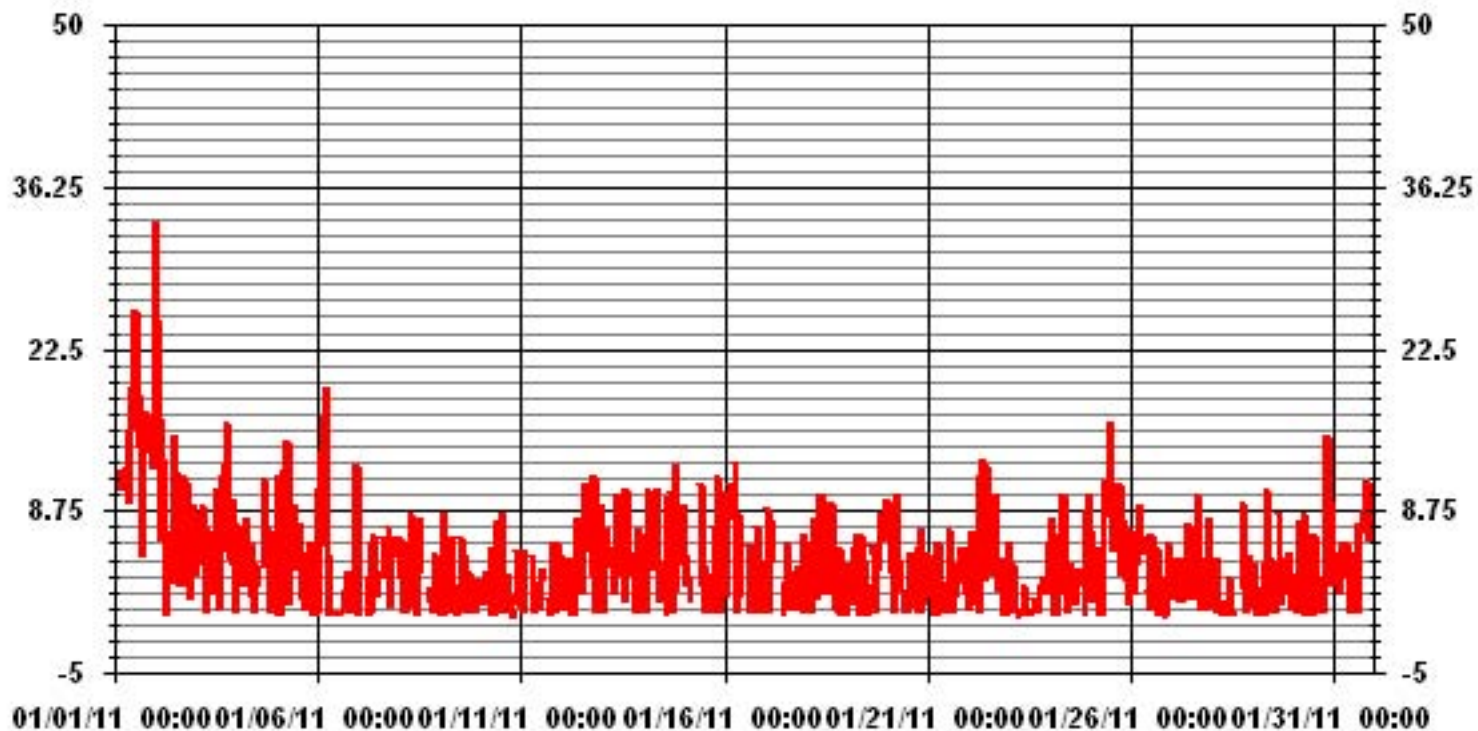
1-HR	-	PPB	24-HR	30	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-
NUMBER OF 24-HR EXCEEDENCES:	0 PROPOSED CANADA WIDE GUIDELINE
NUMBER OF NON-ZERO READINGS:	556
MAXIMUM 1-HR AVERAGE:	33.2 UG/M ³ @ HOUR(S) 0 ON DAY(S) 2
MAXIMUM 24-HR AVERAGE:	14.0 UG/M ³ ON DAY(S) 1
IZS CALIBRATION TIME:	0 HRS
MONTHLY CALIBRATION TIME:	2 HRS
STANDARD DEVIATION:	4.38
OPERATIONAL TIME:	676 HRS
AMD OPERATION UPTIME:	90.9 %
MONTHLY AVERAGE:	4.51 UG/M ³



01 Hour Averages



— LICA33 PM2 UG/M3

LICA33
 PM2 / WDR Joint Frequency Distribution (Percent)

January 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 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	4.89	5.48	4.74	6.08	10.97	5.19	4.00	4.59	4.74	2.81	9.79	7.86	5.63	8.01	6.82	8.16	99.85
< 60.0	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
< 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	5.04	5.48	4.74	6.08	10.97	5.19	4.00	4.59	4.74	2.81	9.79	7.86	5.63	8.01	6.82	8.16	

Calm : .00 %

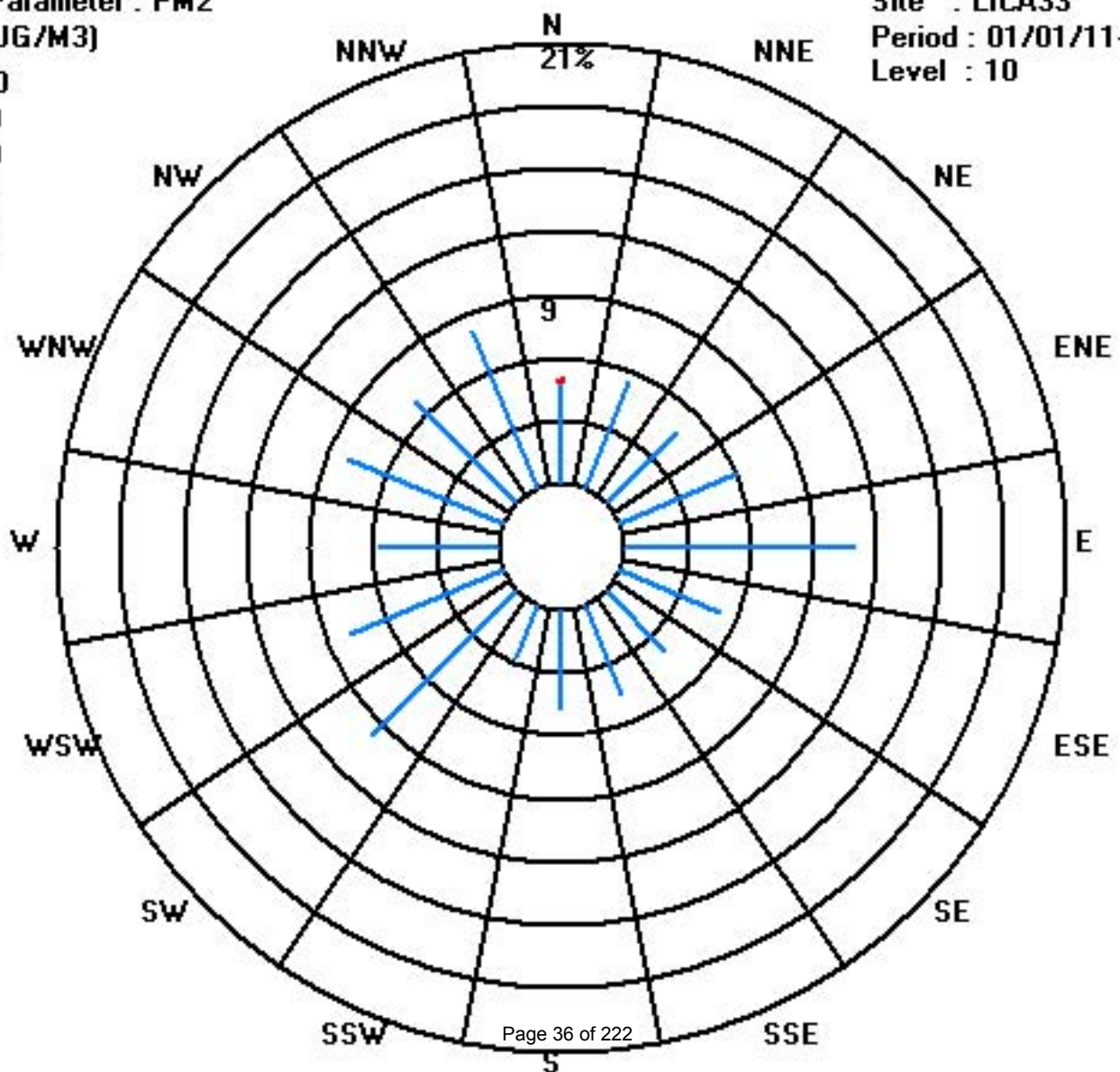
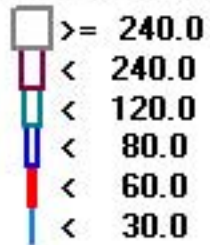
Total # Operational Hours : 674

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	33	37	32	41	74	35	27	31	32	19	66	53	38	54	46	55	673
< 60.0	1																1
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	34	37	32	41	74	35	27	31	32	19	66	53	38	54	46	55	

Calm : .00 %

Total # Operational Hours : 674



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 2011

NITROGEN DIOXIDE hourly averages in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	10	10	10	10	11	11	14	12	15	12	10	9	10	10	13	14	17	19	IZS	23	27	26	26	26	27	15.0	24	
2	26	26	21	18	18	19	11	5	7	8	5	4	3	4	5	10	19	IZS	15	14	20	28	24	21	28	14.4	24	
3	16	13	7	6	5	5	2	5	5	4	4	4	4	5	7	8	IZS	17	21	23	29	25	24	19	29	11.2	24	
4	15	8	6	5	6	8	9	10	11	10	9	6	6	5	7	IZS	7	11	10	18	10	5	3	9	18	8.4	24	
5	14	13	8	5	10	10	8	5	5	6	5	4	5	3	IZS	4	5	5	6	6	3	3	7	5	14	6.3	24	
6	6	7	7	8	6	16	9	4	1	1	0	0	0	IZS	0	0	1	0	1	1	3	2	2	3	16	3.4	24	
7	4	5	6	3	2	4	4	6	12	10	8	6	IZS	1	0	1	1	1	0	0	0	0	0	0	12	3.2	24	
8	0	0	0	0	0	0	0	0	1	0	1	IZS	1	1	1	1	2	1	1	0	1	3	2	3	3	0.8	24	
9	1	1	2	2	1	1	1	2	2	1	IZS	2	2	3	2	2	2	1	2	4	4	6	4	5	6	2.3	24	
10	5	3	3	5	4	2	2	3	5	IZS	4	4	2	2	2	4	7	8	16	11	7	11	10	5	16	5.4	24	
11	4	5	5	3	1	0	1	4	IZS	1	2	2	1	1	2	3	8	8	7	7	7	9	11	10	11	4.4	24	
12	10	10	12	13	13	10	9	IZS	C	C	C	C	C	C	C	C	M	2	2	3	5	9	11	16	16	8.5	23	
13	25	26	19	13	11	10	IZS	9	10	8	5	4	3	4	4	6	8	9	7	9	8	8	4	3	26	9.3	24	
14	4	5	5	4	5	IZS	6	4	3	2	2	2	1	2	2	4	5	6	6	5	5	6	6	6	6	4.0	24	
15	5	1	1	0	IZS	0	1	1	1	1	0	0	0	0	1	0	2	2	3	3	3	3	4	3	5	1.5	24	
16	3	5	5	IZS	0	1	2	2	1	0	0	0	0	1	2	1	2	1	3	3	2	1	1	0	5	1.6	24	
17	0	0	IZS	0	0	2	4	2	3	4	2	0	1	1	1	2	2	2	1	1	0	2	3	4	4	1.6	24	
18	6	IZS	8	11	11	8	11	13	10	10	11	6	3	1	1	1	2	3	10	8	9	11	11	13	7.2	24		
19	IZS	16	17	22	12	21	25	23	19	1	0	1	0	0	1	4	5	8	21	20	29	19	16	IZS	29	12.7	24	
20	25	25	25	14	11	9	5	6	6	4	2	2	2	2	3	4	4	4	5	7	10	IZS	9	25	8.1	24		
21	8	6	5	7	3	3	5	10	8	5	2	3	2	2	3	5	6	4	2	2	IZS	1	1	10	4.1	24		
22	1	1	1	1	0	1	3	3	3	3	4	3	3	4	5	8	13	12	5	5	IZS	4	3	2	13	3.8	24	
23	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	1	1	4	4	0.4	24	
24	7	4	3	4	5	5	5	10	10	11	8	3	3	3	4	8	9	10	IZS	7	4	3	4	4	11	5.8	24	
25	4	6	8	7	4	3	5	13	14	12	19	14	13	13	11	10	12	IZS	15	13	8	6	4	4	19	9.5	24	
26	3	3	4	5	7	8	8	8	9	14	8	6	4	3	5	3	IZS	3	2	3	3	3	2	2	14	5.0	24	
27	2	4	4	3	4	3	3	6	5	7	7	6	6	6	5	IZS	8	10	11	9	6	5	0	0	11	5.2	24	
28	0	0	1	3	1	1	1	1	1	1	1	2	2	1	IZS	1	3	6	3	3	1	2	0	1	6	1.6	24	
29	1	2	2	1	2	2	2	3	3	4	1	0	1	IZS	0	0	1	2	2	9	9	9	5	0	9	2.7	24	
30	0	0	0	0	0	0	2	1	0	0	0	0	IZS	1	1	2	3	2	6	6	5	7	15	10	15	2.7	24	
31	14	10	12	15	13	15	17	17	16	12	12	IZS	12	12	12	9	13	23	23	14	16	17	14	15	23	14.5	24	
HOURLY MAX	26	26	25	22	18	21	25	23	19	14	19	14	13	13	13	14	19	23	23	23	29	28	26	26				
HOURLY AVG	7.4	7.2	6.9	6.3	5.5	5.9	5.8	6.3	6.4	5.2	4.6	3.3	3.2	3.3	3.5	3.9	5.9	6.2	6.9	7.9	7.7	8.0	7.3	6.7				

STATUS FLAG CODES

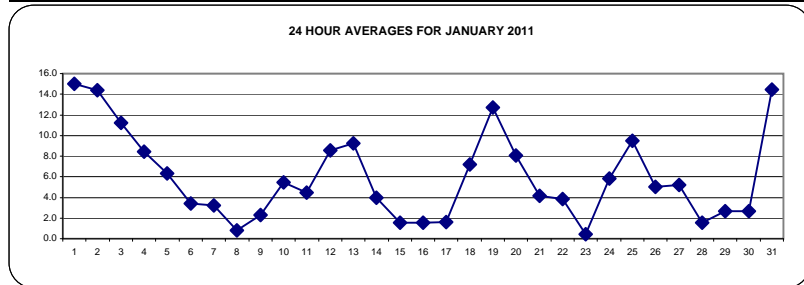
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

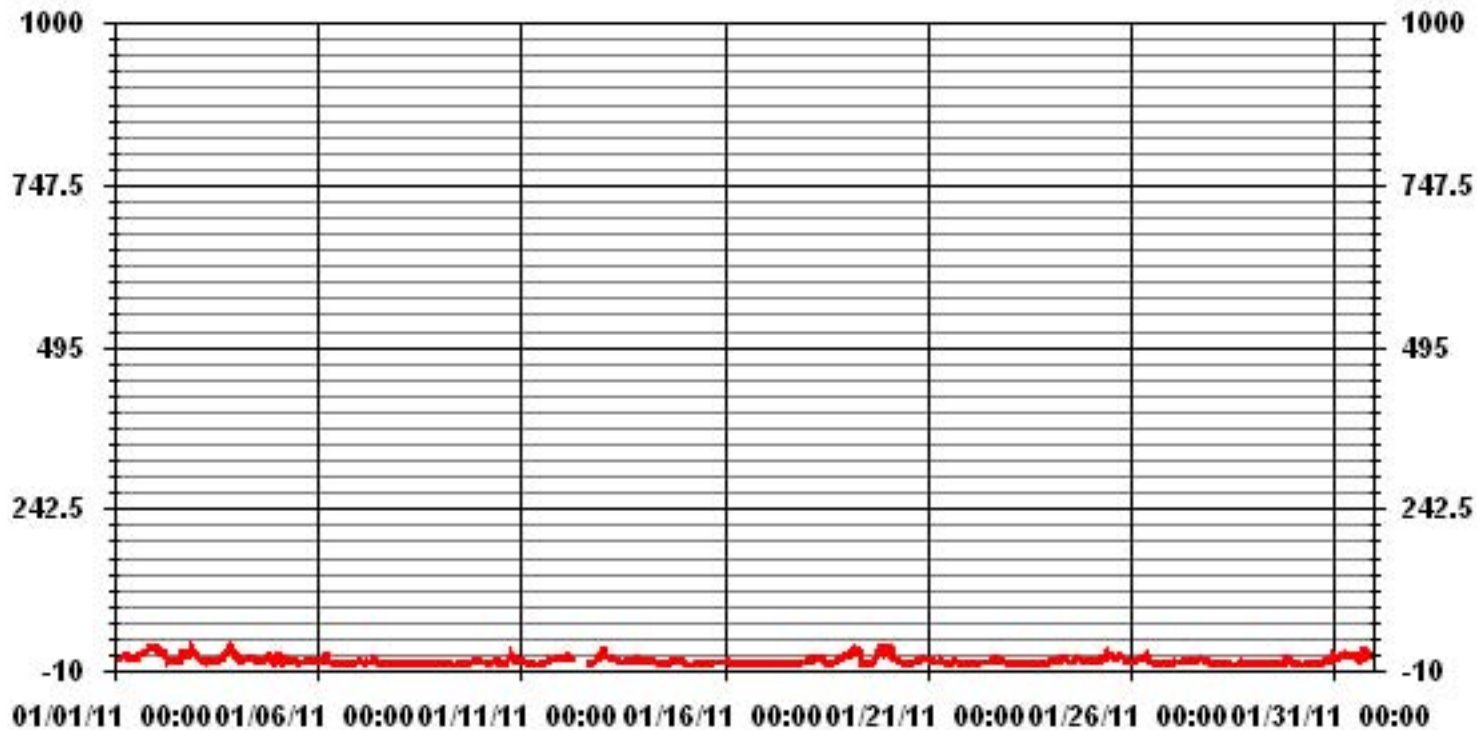
ALBERTA ENVIRONMENT:	1-HR	212	PPB	24-HR	106	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	621		
MAXIMUM 1-HR AVERAGE:	29 PPB @ HOUR(S) 20, 20 ON DAY(S) 3, 19		
MAXIMUM 24-HR AVERAGE:	15.0 PPB ON DAY(S) 1		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	743 HRS
MONTHLY CALIBRATION TIME:	7 HRS	AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	5.96	MONTHLY AVERAGE:	5.92 PPB



01 Hour Averages



— LICA33 H02_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 2011

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	11	11	11	11	12	12	15	14	20	16	12	11	11	11	16	16	20	25	IZS	26	28	27	27	31	31	17.1	24
2	28	27	24	22	20	21	18	7	16	17	6	6	4	4	7	19	23	IZS	18	30	30	30	28	23	30	18.6	24
3	21	15	8	8	6	7	4	7	6	6	6	5	6	7	8	11	IZS	22	22	28	31	28	26	23	31	13.5	24
4	16	12	8	6	10	10	10	11	14	14	11	9	14	8	10	IZS	12	18	16	23	18	8	5	12	23	12.0	24
5	17	23	10	6	14	14	11	7	6	8	7	7	7	5	IZS	5	8	12	13	8	4	5	10	8	23	9.3	24
6	7	8	8	11	7	23	16	5	4	2	1	1	1	IZS	1	1	11	2	2	2	5	3	3	4	23	5.6	24
7	6	8	9	7	5	9	8	11	19	17	9	8	IZS	5	1	3	2	2	1	1	1	1	0	0	19	5.8	24
8	0	0	0	0	0	0	1	1	3	3	2	IZS	2	1	1	2	3	2	2	1	3	6	3	4	6	1.7	24
9	3	2	3	3	3	2	2	4	3	2	IZS	3	12	14	4	3	3	3	4	6	6	8	7	8	14	4.7	24
10	9	4	4	7	9	3	4	5	9	IZS	6	5	3	3	3	6	11	14	22	16	12	14	14	10	22	8.4	24
11	6	6	6	5	2	1	2	6	IZS	C	C	C	C	C	C	4	16	17	9	8	10	11	16	12	17	6.7	24
12	11	11	20	20	19	15	11	IZS	C	C	C	C	C	C	C	4	M	3	4	7	8	11	13	18	20	11.7	23
13	27	27	24	17	12	12	IZS	11	22	9	7	8	4	5	12	7	10	13	8	11	10	9	7	4	27	12.0	24
14	6	8	7	5	7	IZS	8	7	4	4	4	2	3	3	3	4	5	7	7	7	6	6	7	7	8	5.5	24
15	6	3	2	2	IZS	1	2	2	2	2	1	1	1	1	1	2	2	3	4	4	4	4	6	5	6	2.7	24
16	6	6	6	IZS	1	2	3	3	2	1	1	1	1	3	3	3	3	4	6	6	3	3	2	1	6	3.0	24
17	2	1	IZS	0	3	7	10	3	22	21	3	2	2	2	2	3	3	3	2	2	1	3	4	6	22	4.7	24
18	8	IZS	11	12	12	12	14	17	14	14	28	9	4	5	2	1	1	3	6	19	12	16	22	21	28	11.4	24
19	IZS	21	20	29	19	30	31	30	29	1	1	2	2	1	2	16	15	18	25	26	33	27	22	IZS	33	18.2	24
20	28	27	27	20	14	12	10	8	7	6	3	3	3	3	3	4	5	4	5	7	13	11	IZS	10	28	10.1	24
21	10	12	8	11	6	6	11	19	12	7	3	4	3	3	3	4	6	7	6	3	2	IZS	3	2	19	6.6	24
22	3	2	3	2	1	4	4	4	4	3	31	3	4	5	8	14	15	15	10	6	IZS	5	4	3	31	6.7	24
23	3	2	2	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	IZS	1	2	3	15	15	1.4	24
24	12	7	4	6	6	6	31	23	17	18	5	5	16	6	10	14	14	IZS	12	6	5	8	9	31	10.7	24	
25	11	9	17	12	11	5	8	27	27	17	21	16	15	14	13	11	15	IZS	17	15	11	7	5	5	27	13.4	24
26	4	3	6	6	12	11	10	28	19	17	14	8	6	4	10	4	IZS	4	4	8	8	8	6	4	28	8.9	24
27	4	6	9	4	7	5	8	9	9	9	7	7	7	8	IZS	10	10	18	11	8	9	2	0	18	7.7	24	
28	0	0	3	5	2	2	2	1	3	3	2	2	2	3	IZS	2	5	7	4	4	3	3	2	2	7	2.7	24
29	4	4	3	3	4	3	4	4	7	7	4	2	2	IZS	0	1	4	4	5	22	11	10	11	1	22	5.2	24
30	1	1	2	1	1	2	4	2	2	1	0	1	IZS	1	2	3	5	5	11	8	7	13	24	16	24	4.9	24
31	17	12	15	16	15	18	19	20	19	17	13	IZS	14	14	14	12	22	26	26	16	17	19	15	20	26	17.2	24
HOURLY MAX	28	27	27	29	20	30	31	31	29	21	31	16	15	16	16	19	23	26	26	30	33	30	28	31			
HOURLY AVG	9.6	9.3	9.3	8.6	8.0	8.5	8.5	10.2	11.2	8.4	7.9	4.9	5.0	5.4	5.3	6.0	8.9	9.2	9.6	11.4	10.4	10.4	10.2	9.5			

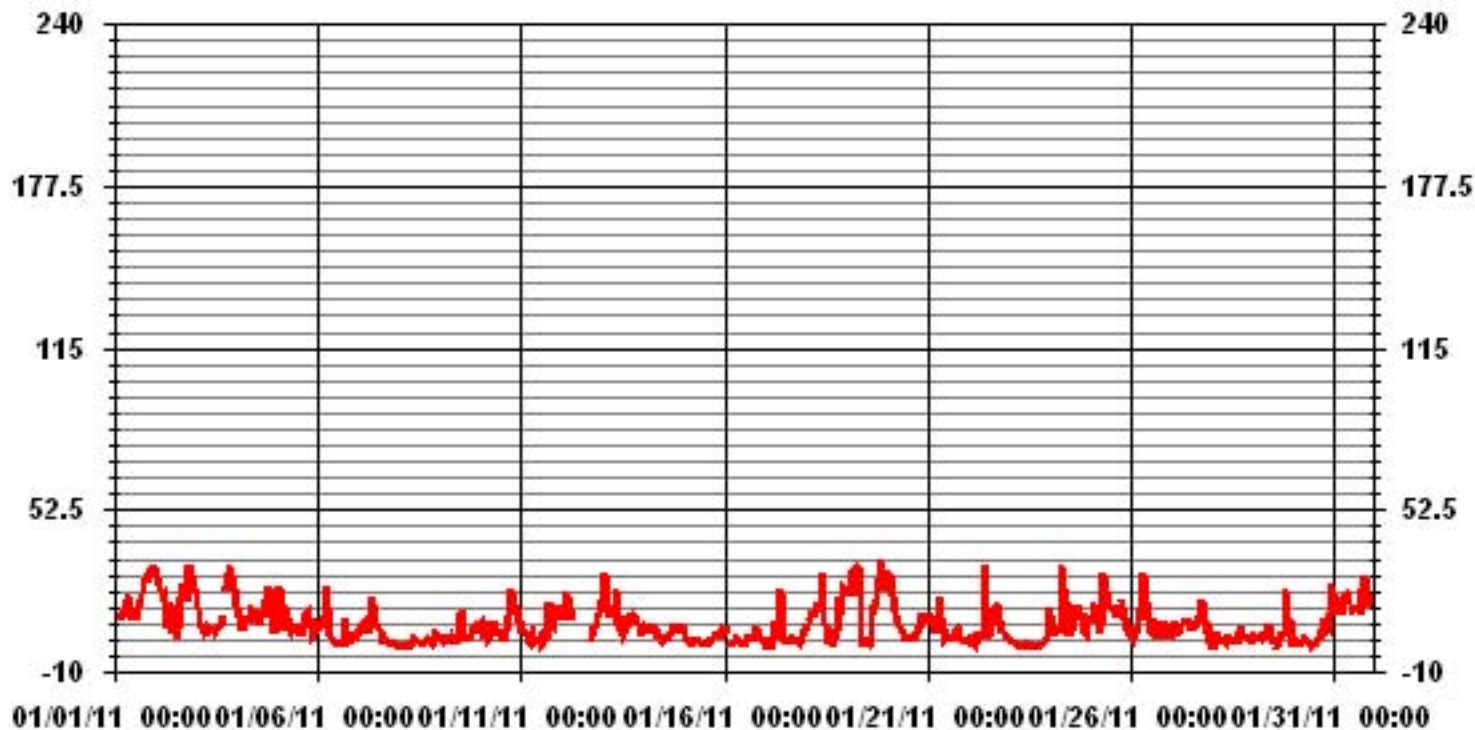
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678					
MAXIMUM INSTANTANEOUS VALUE:	33	PPB	@ HOUR(S)	20	ON DAY(S)	19
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	7.41					

01 Hour Averages



— LICA33 H02MAX PPB

LICA33
 NO2_ / WDR Joint Frequency Distribution (Percent)

January 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	5.53	5.96	5.68	5.82	10.65	5.25	4.40	4.26	4.40	2.69	9.09	7.81	5.96	7.67	6.53	8.23	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	5.53	5.96	5.68	5.82	10.65	5.25	4.40	4.26	4.40	2.69	9.09	7.81	5.96	7.67	6.53	8.23	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	39	42	40	41	75	37	31	30	31	19	64	55	42	54	46	58	704
< 110																	
< 210																	
>= 210																	
Totals	39	42	40	41	75	37	31	30	31	19	64	55	42	54	46	58	

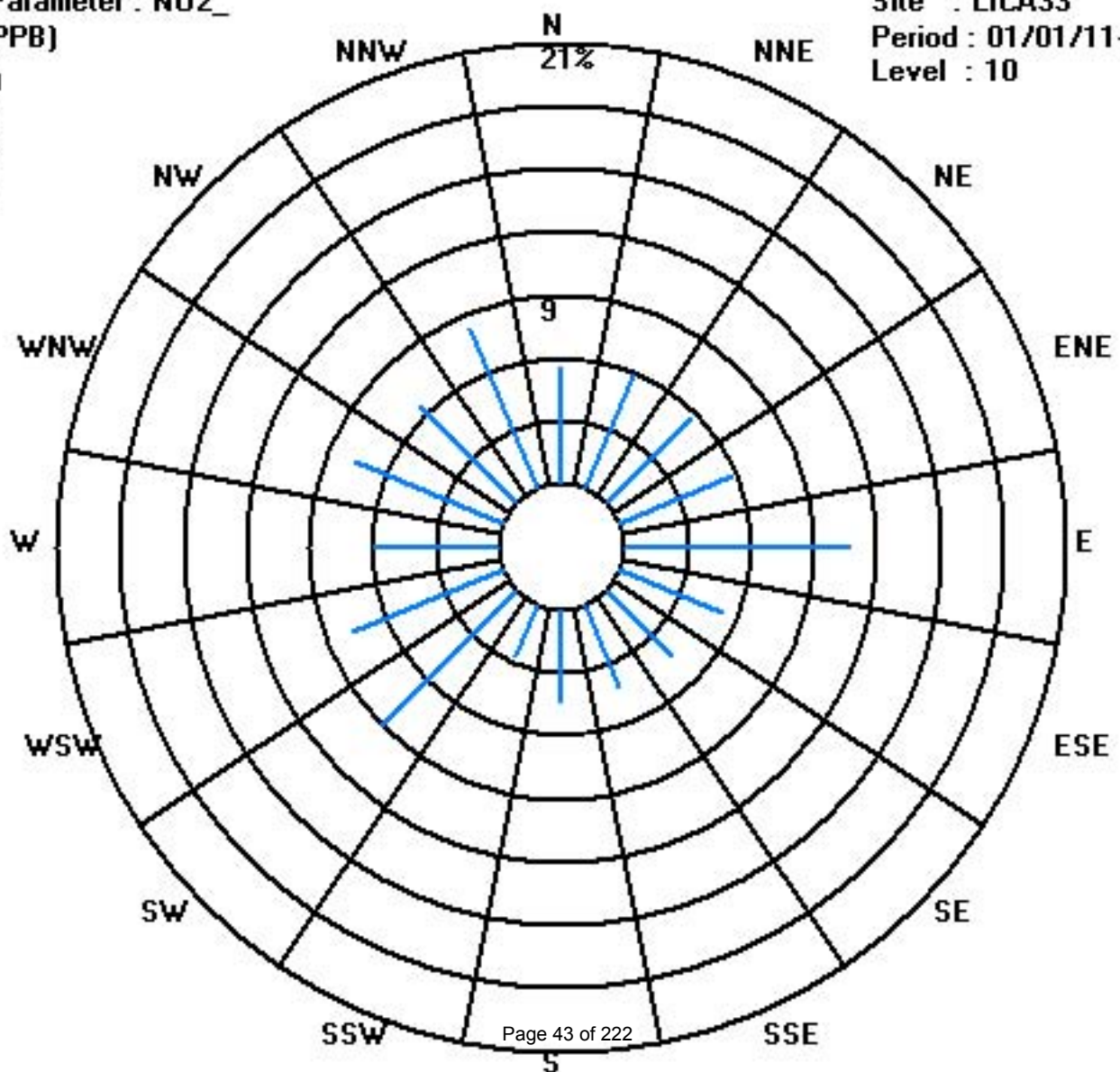
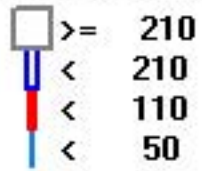
Calm : .00 %

Total # Operational Hours : 704

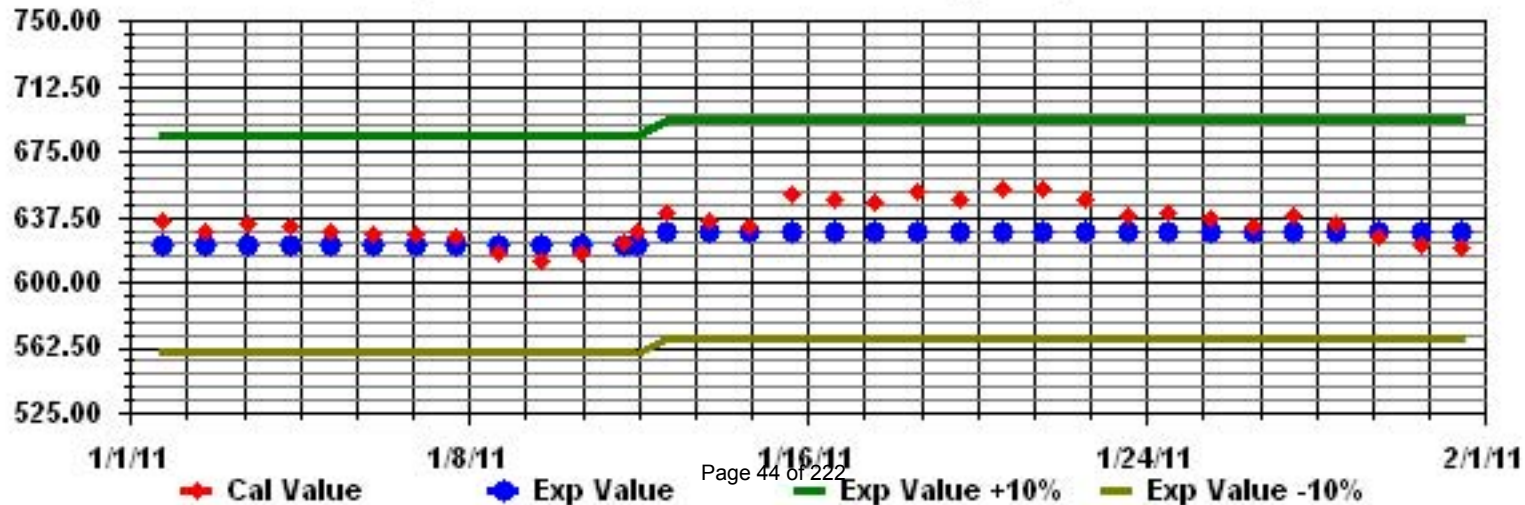
Class Limits (PPB)

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

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 2011

NITRIC OXIDE hourly averages in ppb

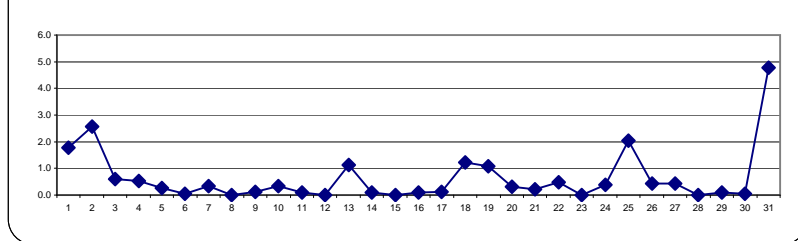
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY 24-HOUR			
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	0	0	0	0	0	0	1	2	3	4	4	3	3	2	0	0	IZS	1	2	3	3	10	10	1.8	24	
2	15	20	3	1	0	1	0	0	0	1	1	1	1	1	1	1	1	IZS	0	0	2	6	3	0	20	2.6	24	
3	0	0	0	0	0	0	0	0	0	0	1	1	1	2	1	0	IZS	0	0	0	7	1	0	0	7	0.6	24	
4	0	0	0	0	0	0	0	0	0	1	4	2	2	1	1	IZS	1	0	0	0	0	0	0	0	4	0.5	24	
5	0	0	0	0	0	0	0	0	0	0	1	1	3	1	IZS	0	0	0	0	0	0	0	0	0	3	0.3	24	
6	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
7	0	0	0	0	0	0	0	0	0	2	3	3	IZS	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
8	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	
9	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
10	0	0	0	0	0	0	0	0	0	IZS	2	2	1	1	1	0	0	0	1	0	0	0	0	0	2	0.3	24	
11	0	0	0	0	0	0	0	0	IZS	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
12	0	0	0	0	0	0	0	IZS	C	C	C	C	C	C	C	0	M	0	0	0	0	0	0	0	0	0.0	23	
13	0	1	0	0	0	0	IZS	0	1	3	5	5	4	3	2	1	0	0	0	0	0	1	0	0	5	1.1	24	
14	0	0	0	0	0	IZS	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
15	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	
16	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.1	24	
17	0	0	IZS	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
18	0	IZS	0	0	0	0	0	1	1	4	13	6	1	1	0	0	0	0	0	0	0	0	0	1	13	1.2	24	
19	IZS	0	0	3	0	4	6	1	3	0	0	0	0	0	0	2	1	0	0	0	4	0	0	IZS	6	1.1	24	
20	2	2	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	0	2	0.3	24
21	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	IZS	0	1	0.2	24	
22	0	0	0	0	0	0	0	0	0	0	2	1	1	2	2	1	0	0	0	0	IZS	0	0	0	2	0.5	24	
23	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	
24	0	0	0	0	0	0	0	1	0	3	3	0	0	0	1	1	0	0	IZS	0	0	0	0	0	3	0.4	24	
25	0	0	1	0	0	0	0	0	0	4	12	8	7	7	5	2	1	IZS	0	0	0	0	0	0	12	2.0	24	
26	0	0	0	0	0	0	0	1	0	3	2	2	1	0	1	0	IZS	0	0	0	0	0	0	0	3	0.4	24	
27	0	0	0	0	0	0	0	0	0	0	2	2	2	2	1	IZS	1	0	0	0	0	0	0	0	2	0.4	24	
28	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	
29	0	0	0	0	0	0	0	0	0	1	0	0	1	IZS	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0	1	0.0	24	
31	0	0	0	0	0	0	0	1	5	13	19	IZS	25	21	16	6	3	1	0	0	0	0	0	0	25	4.8	24	
HOURLY MAX	15	20	3	3	0	4	6	1	5	13	19	8	25	21	16	6	3	1	1	1	7	6	3	10				
HOURLY AVG	0.6	0.8	0.2	0.1	0.0	0.2	0.2	0.2	0.4	1.3	2.6	1.5	2.1	1.8	1.3	0.6	0.3	0.0	0.0	0.0	0.5	0.4	0.2	0.4				

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

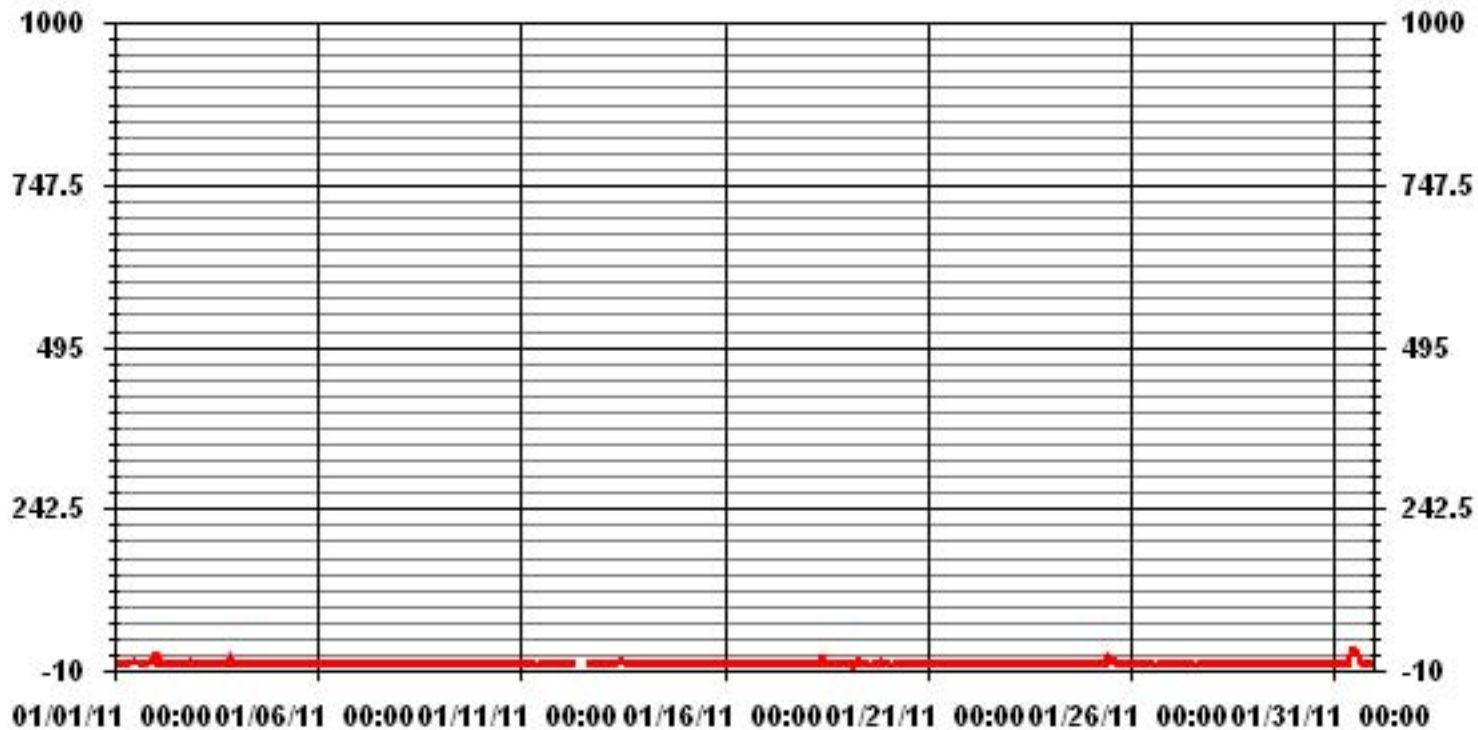
24 HOUR AVERAGES FOR JANUARY 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	150
MAXIMUM 1-HR AVERAGE:	25 PPB @ HOUR(S) 12 ON DAY(S) 31
MAXIMUM 24-HR AVERAGE:	4.8 PPB ON DAY(S) 31
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	2.24
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	0.64 PPB

01 Hour Averages



— LICA33 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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	0	0	0	0	0	0	1	0	4	3	5	6	5	4	4	3	1	3	IZS	2	4	11	12	57	57	5.4	24	
2	37	28	13	8	2	3	1	0	3	3	5	3	2	2	3	3	4	IZS	1	22	7	10	6	1	37	7.3	24	
3	1	1	0	0	0	0	0	0	0	1	1	2	2	4	3	1	IZS	1	1	2	27	2	1	0	27	2.2	24	
4	0	0	0	0	0	0	0	2	2	3	5	5	11	3	2	IZS	5	4	0	3	0	0	0	0	11	2.0	24	
5	0	1	0	0	0	0	0	0	0	1	2	4	7	2	IZS	1	2	1	0	0	0	0	0	0	7	0.9	24	
6	0	0	0	0	0	5	0	0	0	0	0	0	0	IZS	0	0	11	0	0	0	0	0	0	0	11	0.7	24	
7	0	0	0	0	0	0	0	1	2	5	5	4	IZS	2	0	0	0	0	0	0	0	0	0	0	5	0.8	24	
8	0	0	0	0	0	0	0	0	1	1	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24	
9	0	0	0	0	0	0	0	0	0	0	0	IZS	1	14	15	2	0	0	0	0	0	0	0	0	15	1.4	24	
10	0	0	0	0	0	0	0	1	1	IZS	3	2	2	1	1	1	2	1	3	0	1	1	0	0	3	0.9	24	
11	0	0	0	0	0	0	0	0	0	IZS	1	2	2	1	1	1	1	1	1	0	0	0	0	0	2	0.5	24	
12	0	0	3	3	1	0	0	IZS	C	C	C	C	C	C	C	0	M	0	0	0	0	0	0	0	3	0.5	23	
13	1	2	1	0	0	0	IZS	4	32	5	6	7	5	4	19	2	1	1	0	0	0	1	2	0	32	4.0	24	
14	1	1	1	1	0	IZS	1	1	0	1	1	1	1	2	1	1	1	0	0	0	0	0	0	0	2	0.7	24	
15	0	0	0	0	IZS	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24	
16	0	0	0	IZS	1	0	0	1	0	0	0	0	1	2	2	1	0	1	1	1	0	0	0	0	2	0.5	24	
17	0	0	IZS	0	0	0	1	0	25	12	1	1	1	2	1	2	0	0	0	0	0	0	0	0	25	2.0	24	
18	0	IZS	1	0	0	0	1	3	3	10	48	9	3	3	1	0	0	0	0	6	1	2	4	6	48	4.4	24	
19	IZS	1	2	8	3	16	13	6	13	0	0	1	1	1	1	10	11	2	2	2	12	2	2	IZS	16	5.0	24	
20	5	4	4	2	1	1	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	IZS	1	5	1.1	24
21	1	1	1	0	0	0	1	2	1	2	1	2	2	1	1	1	0	0	0	0	0	0	IZS	1	0	0.8	24	
22	0	0	0	0	0	0	0	0	0	1	48	2	2	3	6	3	3	0	0	0	IZS	0	0	0	48	3.0	24	
23	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	
24	0	0	0	0	0	0	0	22	3	9	9	1	1	18	1	2	1	0	IZS	0	0	0	1	0	22	3.0	24	
25	1	1	4	2	1	0	0	5	2	9	15	11	10	9	6	4	2	IZS	1	0	0	0	0	0	15	3.6	24	
26	0	0	0	0	0	0	1	35	2	7	4	2	3	2	3	0	IZS	1	0	0	0	0	0	0	35	2.6	24	
27	0	0	0	0	0	0	1	0	0	1	3	3	2	3	3	IZS	2	1	1	0	0	0	0	0	3	0.9	24	
28	0	0	0	0	0	0	0	0	0	0	0	1	1	1	IZS	1	1	1	0	0	0	0	0	0	1	0.3	24	
29	0	0	0	0	0	0	0	1	2	2	2	1	2	IZS	0	0	0	0	0	1	0	0	0	0	2	0.5	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	0	0	0	0	0	4	0	4	0.3	24
31	0	0	0	0	0	1	4	6	11	21	22	IZS	29	25	22	12	4	3	1	0	0	0	0	3	29	7.1	24	
HOURLY MAX	37	28	13	8	3	16	13	35	32	21	48	11	29	25	22	12	11	4	3	22	27	11	12	57				
HOURLY AVG	1.6	1.3	1.0	0.8	0.3	0.9	0.8	3.0	3.7	3.4	6.6	2.6	4.0	4.1	3.1	1.8	1.9	0.7	0.4	1.3	1.7	1.0	1.1	2.3				

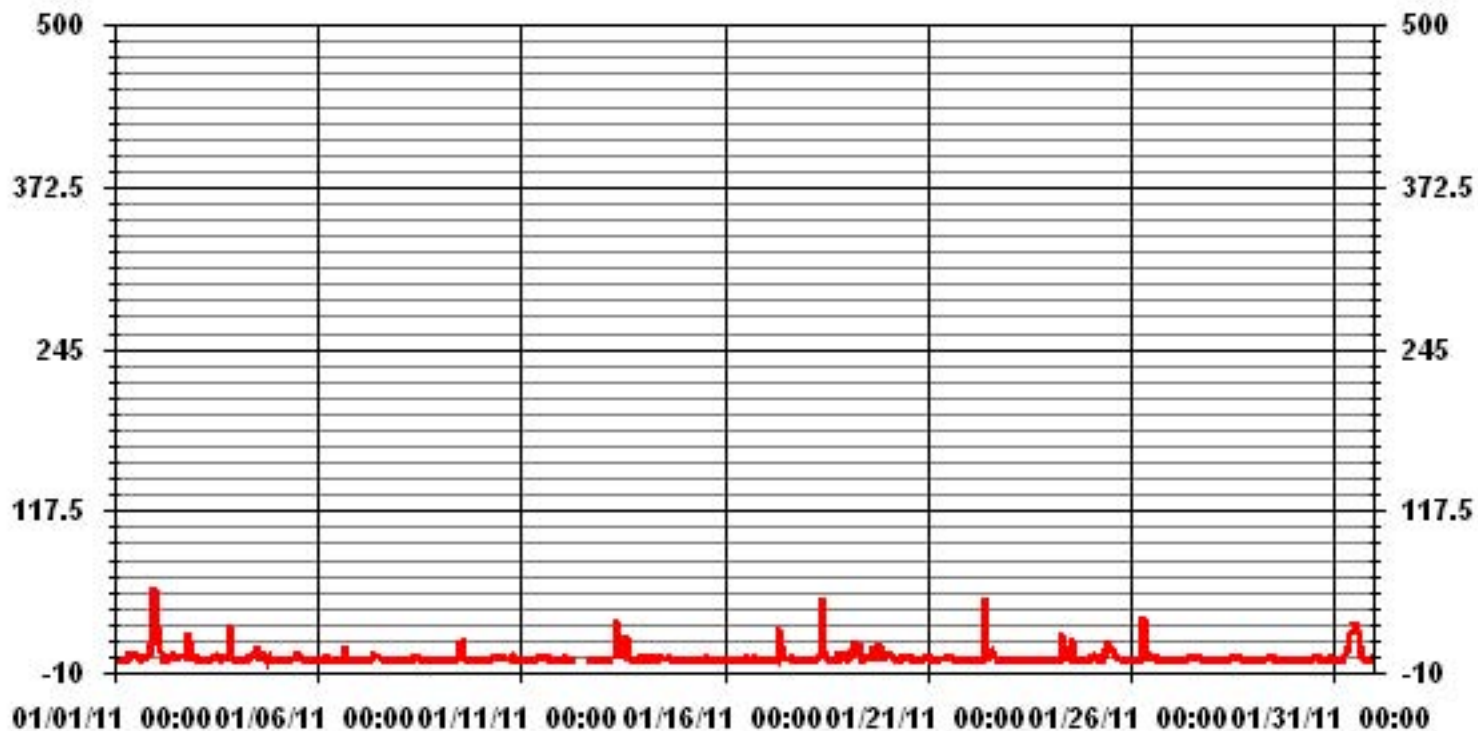
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	318					
MAXIMUM INSTANTANEOUS VALUE:	57	PPB	@ HOUR(S)	23	ON DAY(S)	1
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	5.42					

01 Hour Averages



LICA33
 NO_ / WDR Joint Frequency Distribution (Percent)

January 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	5.53	5.96	5.68	5.82	10.65	5.25	4.40	4.26	4.40	2.69	9.09	7.81	5.96	7.67	6.53	8.23	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	5.53	5.96	5.68	5.82	10.65	5.25	4.40	4.26	4.40	2.69	9.09	7.81	5.96	7.67	6.53	8.23	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	39	42	40	41	75	37	31	30	31	19	64	55	42	54	46	58	704
< 110																	
< 210																	
>= 210																	
Totals	39	42	40	41	75	37	31	30	31	19	64	55	42	54	46	58	

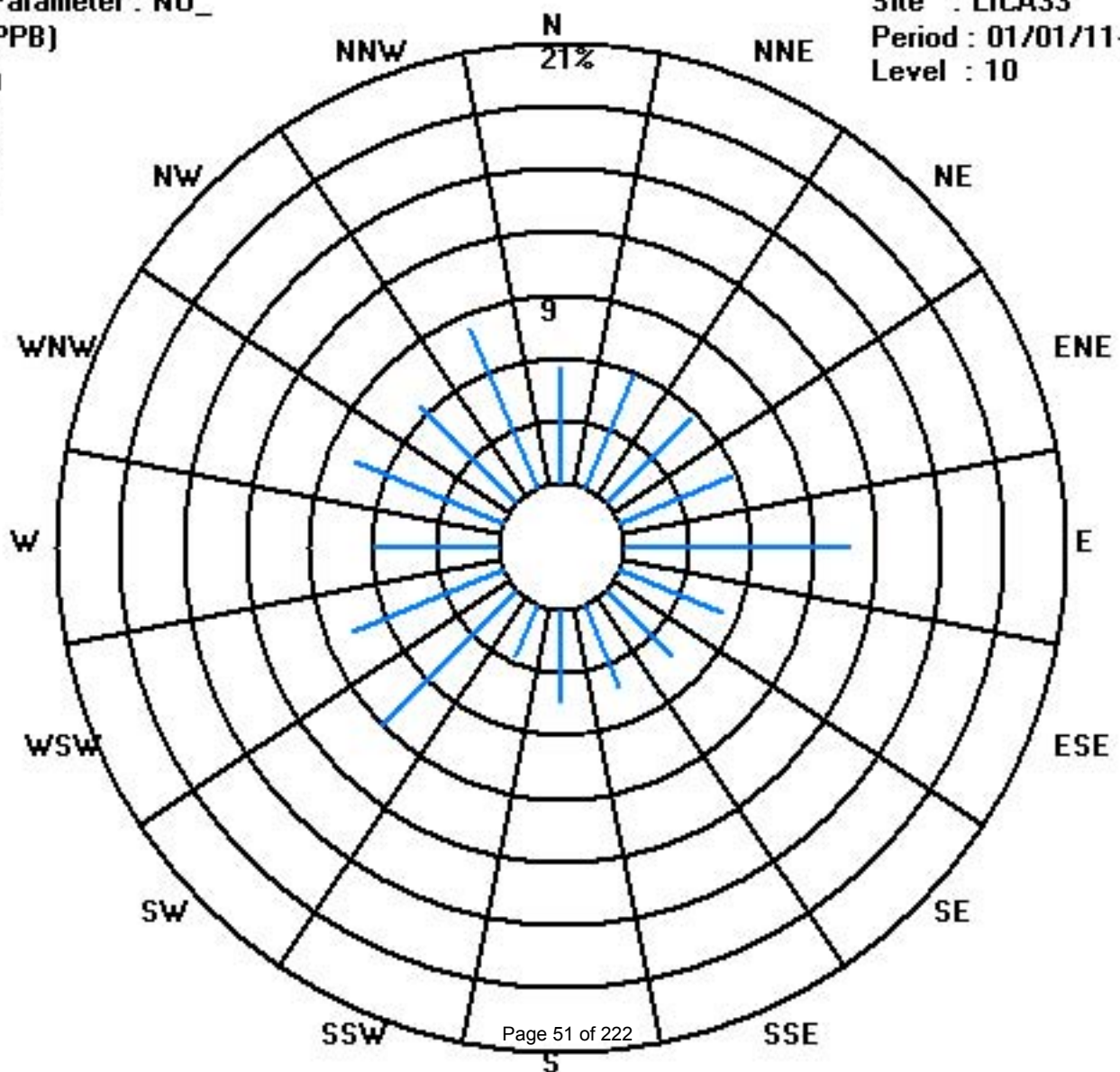
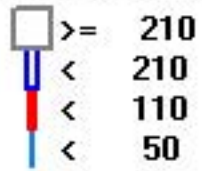
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)

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

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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	10	10	10	10	12	12	14	13	16	15	14	14	14	14	16	16	18	20	IZS	24	30	29	30	37	37	17.3	24	
2	42	46	25	19	18	20	11	6	7	10	6	6	5	6	7	12	20	IZS	16	15	23	35	28	22	46	17.6	24	
3	17	14	7	6	5	6	2	5	5	5	6	6	6	8	9	9	IZS	17	21	24	37	26	25	19	37	12.4	24	
4	15	9	6	5	6	8	9	10	12	12	14	8	8	6	9	IZS	8	12	10	19	10	5	3	9	19	9.3	24	
5	14	13	8	5	10	10	8	5	5	7	7	6	9	4	IZS	4	6	5	6	6	3	3	7	5	14	6.8	24	
6	6	7	7	8	6	18	9	4	1	1	1	0	0	IZS	0	0	1	0	1	1	3	2	2	3	18	3.5	24	
7	4	5	6	3	2	4	4	6	12	13	12	10	IZS	2	0	1	1	1	0	0	0	0	0	0	13	3.7	24	
8	0	0	0	0	0	0	0	0	1	0	2	IZS	2	1	1	1	2	1	1	0	1	3	2	2	3	0.9	24	
9	1	1	2	2	1	1	1	2	2	2	IZS	3	3	4	3	2	2	1	2	4	4	6	5	5	6	2.6	24	
10	5	3	3	4	4	2	2	3	5	IZS	7	6	4	3	3	5	8	8	17	12	8	11	11	5	17	6.0	24	
11	5	6	5	3	1	0	1	4	IZS	2	3	4	1	2	3	4	8	8	7	7	7	10	11	10	11	4.9	24	
12	10	10	13	14	14	11	9	IZS	C	C	C	C	C	C	C	2	M	1	2	2	4	8	11	15	15	8.4	23	
13	26	27	18	13	10	9	IZS	10	12	12	11	9	8	7	7	8	9	10	7	9	9	9	5	3	27	10.8	24	
14	4	6	6	4	5	IZS	6	5	3	3	3	3	2	3	2	3	4	5	6	6	5	5	6	6	6	4.4	24	
15	5	1	0	0	IZS	0	1	1	1	1	0	0	1	1	1	2	2	3	3	2	3	2	3	4	3	5	1.6	24
16	3	5	4	IZS	1	1	2	2	1	0	0	1	1	2	3	1	2	1	4	4	2	1	1	0	5	1.8	24	
17	0	0	IZS	0	0	2	4	2	4	5	3	1	2	2	2	3	2	2	1	0	0	2	3	4	5	1.9	24	
18	6	IZS	8	11	12	8	11	15	12	15	24	12	4	3	1	1	1	2	3	11	9	10	11	12	24	8.8	24	
19	IZS	16	17	26	13	26	32	24	23	1	1	1	1	1	1	7	7	9	22	21	34	20	17	IZS	34	14.5	24	
20	28	28	27	15	12	10	6	7	6	5	3	3	3	3	3	3	4	4	4	5	7	10	IZS	10	28	9.0	24	
21	8	7	5	7	3	3	5	10	9	6	4	5	4	3	3	4	5	6	4	2	1	IZS	2	1	10	4.7	24	
22	1	1	1	1	0	1	2	3	3	3	6	4	5	6	8	11	14	13	5	5	IZS	4	3	2	14	4.4	24	
23	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	4	4	0.5	24	
24	7	4	2	4	5	5	5	11	11	14	11	4	4	4	6	9	10	10	IZS	8	5	3	4	4	14	6.5	24	
25	5	6	9	7	4	3	5	14	15	17	32	23	21	20	16	13	14	IZS	16	13	8	6	4	4	32	12.0	24	
26	3	2	4	5	7	8	8	10	10	18	10	8	6	4	6	3	IZS	3	3	3	3	3	2	2	18	5.7	24	
27	2	4	4	3	4	3	3	6	5	8	10	8	8	8	7	IZS	9	10	11	9	6	5	0	0	11	5.8	24	
28	0	0	1	2	1	1	1	1	0	1	2	2	2	2	2	IZS	2	3	7	3	2	1	2	0	1	7	1.6	24
29	1	2	2	1	2	2	2	3	4	5	1	1	2	IZS	0	0	1	1	2	9	9	9	5	0	9	2.8	24	
30	0	0	0	0	0	0	2	1	0	0	0	0	IZS	1	1	3	4	2	6	6	5	7	17	10	17	2.8	24	
31	14	10	12	15	14	16	18	18	22	27	32	IZS	38	34	29	16	16	25	24	15	16	17	15	16	38	20.0	24	
HOURLY MAX	42	46	27	26	18	26	32	24	23	27	32	23	38	34	29	16	20	25	24	24	37	35	30	37				
HOURLY AVG	8.1	8.1	7.1	6.4	5.7	6.3	6.1	6.7	7.1	7.2	7.8	5.3	5.9	5.5	5.3	5.0	6.5	6.4	7.1	8.2	8.4	8.5	7.8	7.1				

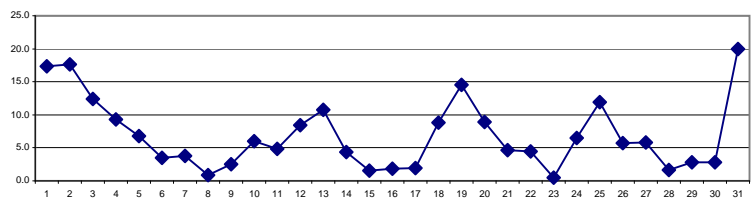
STATUS FLAG CODES

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

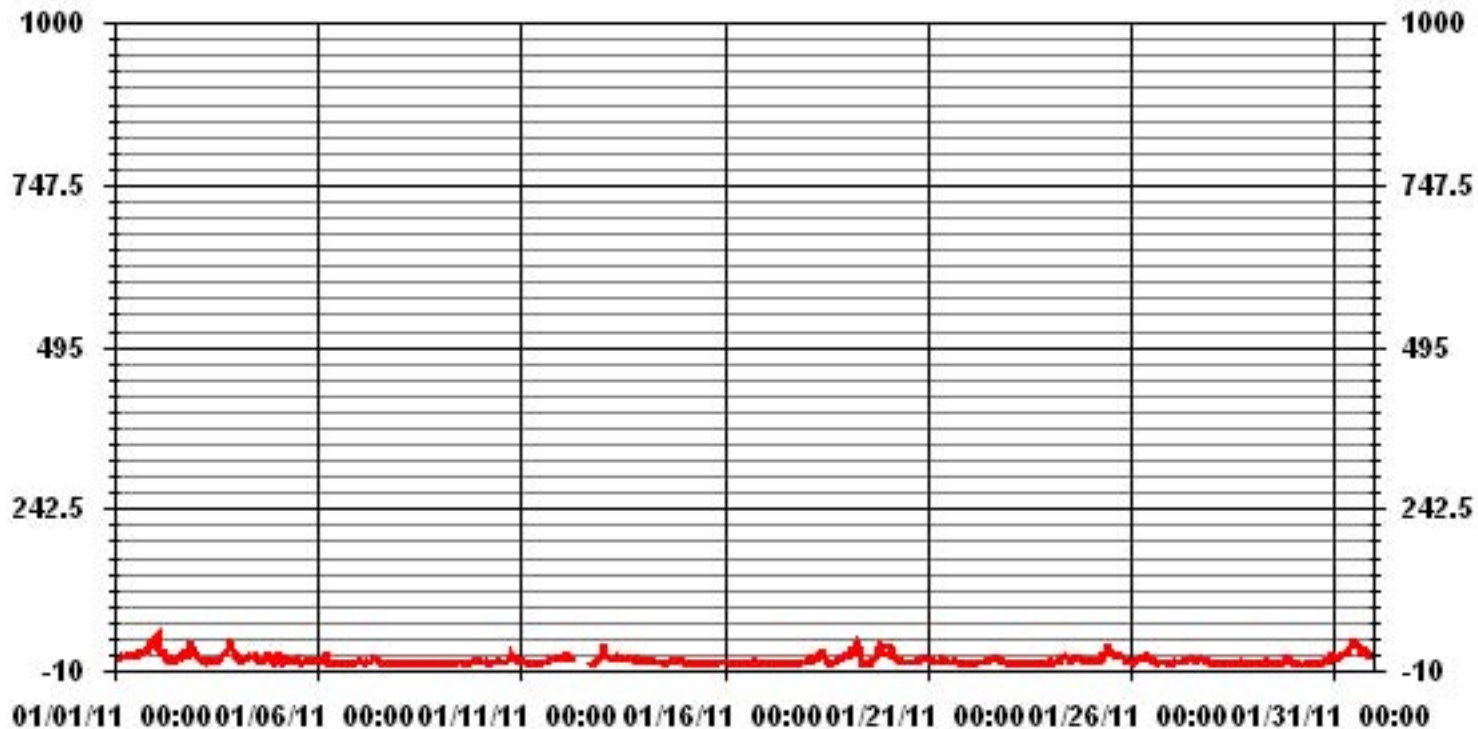
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	631
MAXIMUM 1-HR AVERAGE:	46 PPB @ HOUR(S) 1 ON DAY(S) 2
MAXIMUM 24-HR AVERAGE:	20.0 PPB ON DAY(S) 31
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	7 HRS
STANDARD DEVIATION:	7.25
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	6.84 PPB

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA33 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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	11	11	11	11	13	13	16	14	25	18	17	16	15	15	20	20	20	28	IZS	28	32	38	39	84	84	22.4	24
2	66	56	37	30	22	23	19	8	19	20	11	10	6	7	8	23	26	IZS	19	52	37	41	34	25	66	26.0	24
3	22	16	9	8	6	7	4	7	5	7	7	7	8	11	9	11	IZS	22	23	30	59	30	26	23	59	15.5	24
4	17	12	8	6	10	10	10	14	16	16	15	14	23	11	12	IZS	17	20	16	26	18	7	5	12	26	13.7	24
5	17	24	10	6	14	14	11	6	6	9	9	11	14	7	IZS	6	10	12	13	8	4	4	10	8	24	10.1	24
6	7	8	8	11	7	29	15	6	4	3	1	1	1	IZS	1	1	21	1	2	2	5	3	3	3	29	6.2	24
7	6	8	9	7	5	9	8	12	20	23	14	12	IZS	6	1	4	2	2	2	1	1	0	0	0	23	6.6	24
8	0	0	0	0	0	0	1	2	4	4	3	IZS	3	2	2	2	3	2	2	1	3	6	3	4	6	2.0	24
9	3	2	3	3	3	2	2	4	3	2	IZS	4	23	29	6	3	3	3	4	6	6	8	7	8	29	6.0	24
10	9	4	4	7	9	3	4	6	10	IZS	9	8	5	4	4	6	13	15	25	16	12	15	15	11	25	9.3	24
11	6	7	6	5	2	1	3	6	IZS	3	5	6	2	2	5	5	17	18	9	8	10	11	16	12	18	7.2	24
12	11	11	24	24	21	15	11	IZS	C	C	C	C	C	C	C	C	M	2	3	6	7	10	12	17	24	11.9	23
13	28	29	26	17	11	11	IZS	14	54	13	12	16	10	9	25	9	11	14	8	12	10	11	9	4	54	15.8	24
14	7	9	8	5	7	IZS	9	8	4	6	6	4	4	6	4	4	7	7	7	7	6	6	7	7	9	6.3	24
15	6	3	2	2	IZS	1	2	2	2	2	2	1	1	2	2	2	3	4	4	4	4	4	6	5	6	2.8	24
16	6	6	6	IZS	2	2	2	4	3	2	2	1	2	5	5	4	3	5	8	7	3	3	2	1	8	3.7	24
17	2	0	IZS	0	3	7	12	3	45	33	4	3	4	4	4	5	3	3	2	1	1	3	4	6	45	6.6	24
18	8	IZS	11	13	13	12	14	21	17	23	75	19	7	9	3	2	2	3	6	25	13	17	27	25	75	15.9	24
19	IZS	22	22	37	23	46	45	36	42	2	2	3	3	3	3	26	26	21	27	28	46	30	25	IZS	46	23.5	24
20	34	32	30	22	14	13	10	9	8	7	4	4	4	4	4	5	5	5	5	7	13	12	IZS	11	34	11.3	24
21	12	14	9	11	7	7	13	20	13	9	5	7	6	5	4	5	6	7	6	3	2	IZS	3	3	20	7.7	24
22	3	2	2	2	1	3	4	5	4	4	80	5	6	8	15	17	16	15	10	6	IZS	5	4	3	80	9.6	24
23	3	2	3	1	1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	IZS	2	2	3	16	16	1.6	24
24	13	7	4	6	6	6	6	54	27	27	27	6	6	32	7	13	16	14	IZS	13	6	5	9	10	54	13.9	24
25	12	10	22	15	12	5	7	32	30	27	36	27	26	23	19	15	16	IZS	17	15	11	7	5	5	36	17.1	24
26	4	3	6	6	12	11	10	58	21	25	18	10	8	6	13	5	IZS	4	4	8	8	9	7	5	58	11.3	24
27	5	7	9	3	7	5	8	10	10	10	12	11	9	10	10	IZS	12	11	19	11	8	9	1	0	19	8.6	24
28	0	0	3	5	2	1	2	2	1	3	3	3	3	4	IZS	3	6	8	5	4	3	3	2	2	8	3.0	24
29	4	4	3	2	4	4	4	5	9	10	6	3	4	IZS	1	1	4	4	4	23	11	10	11	1	23	5.7	24
30	0	1	2	1	1	2	5	2	2	1	1	1	IZS	3	2	4	5	5	11	7	7	14	28	16	28	5.3	24
31	17	13	16	17	15	18	23	26	31	39	35	IZS	43	37	36	24	26	27	28	16	18	20	16	24	43	24.6	24
HOURLY MAX	66	56	37	37	23	46	45	58	54	39	80	27	43	37	36	26	26	28	28	52	59	41	39	84			
HOURLY AVG	11.3	10.8	10.4	9.4	8.4	9.3	9.3	13.2	15.0	12.0	14.6	7.6	8.8	9.4	8.0	7.9	10.6	9.7	9.9	12.7	12.2	11.4	11.3	11.7			

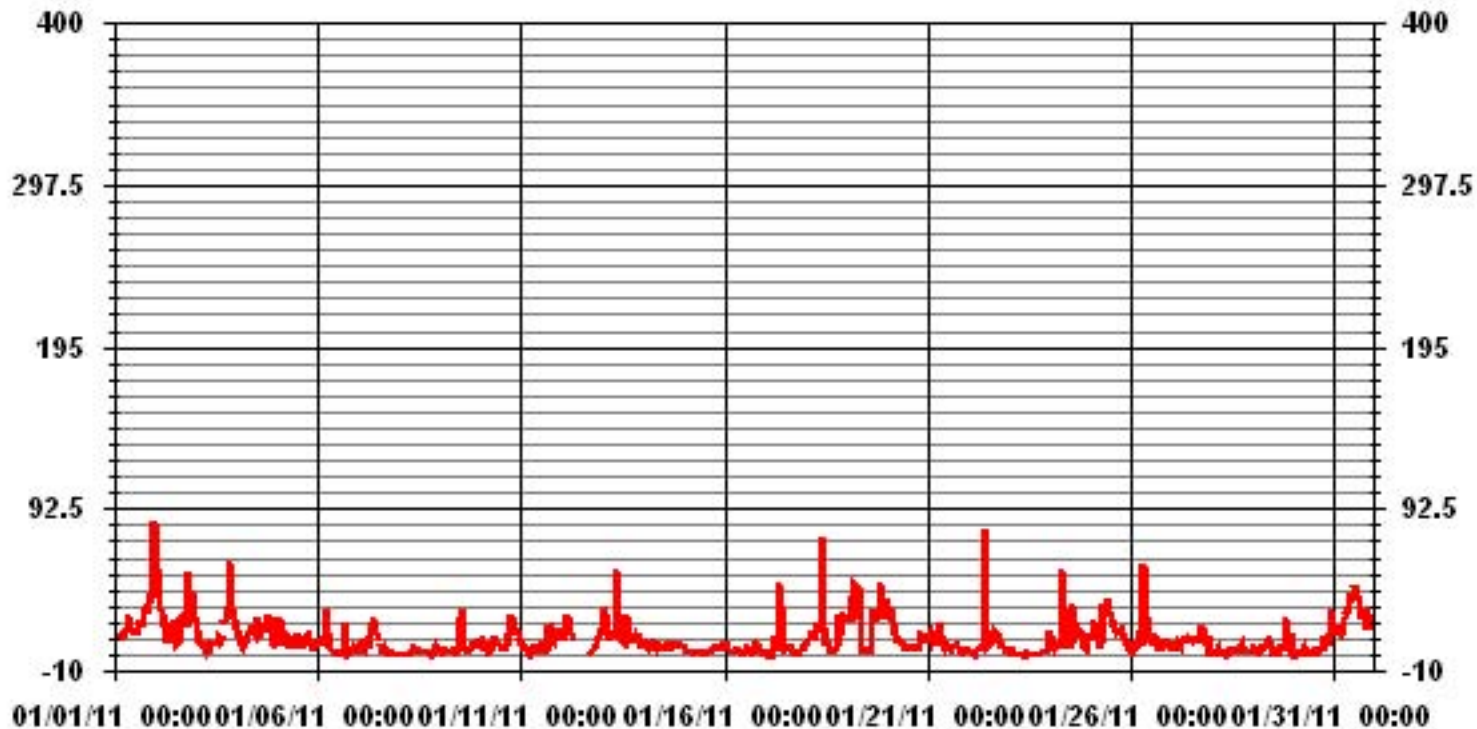
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	678					
MAXIMUM INSTANTANEOUS VALUE:	84	PPB	@ HOUR(S)	23	ON DAY(S)	1
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	11.13					

01 Hour Averages



— LICA33 NOxMAX PPB

LICA33
 NOX_ / WDR Joint Frequency Distribution (Percent)

January 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	5.53	5.96	5.68	5.82	10.65	5.25	4.40	4.26	4.40	2.69	9.09	7.81	5.96	7.67	6.53	8.23	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	5.53	5.96	5.68	5.82	10.65	5.25	4.40	4.26	4.40	2.69	9.09	7.81	5.96	7.67	6.53	8.23	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	39	42	40	41	75	37	31	30	31	19	64	55	42	54	46	58	704
< 110																	
< 210																	
>= 210																	
Totals	39	42	40	41	75	37	31	30	31	19	64	55	42	54	46	58	

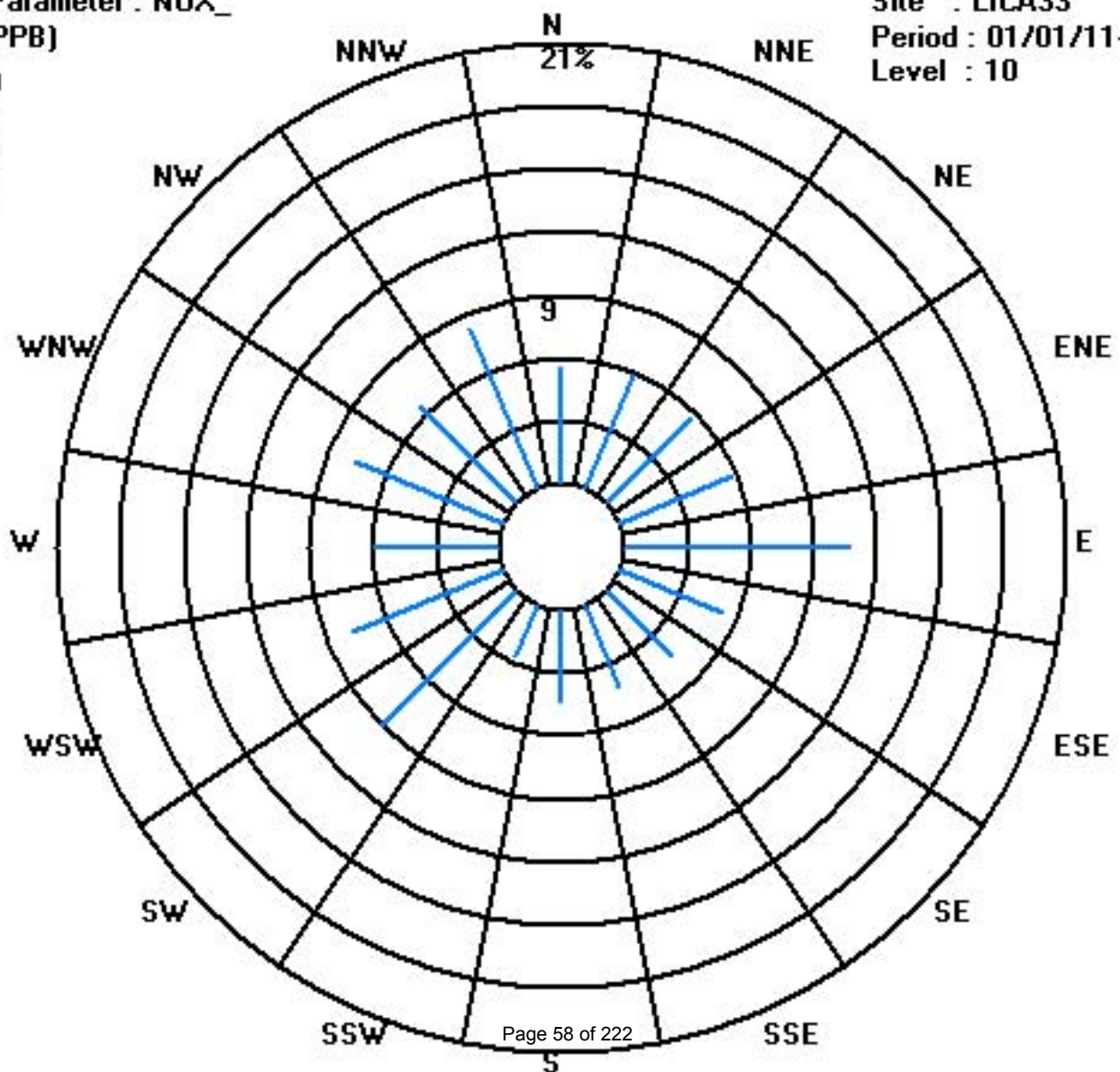
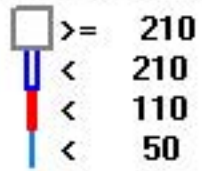
Calm : .00 %

Total # Operational Hours : 704

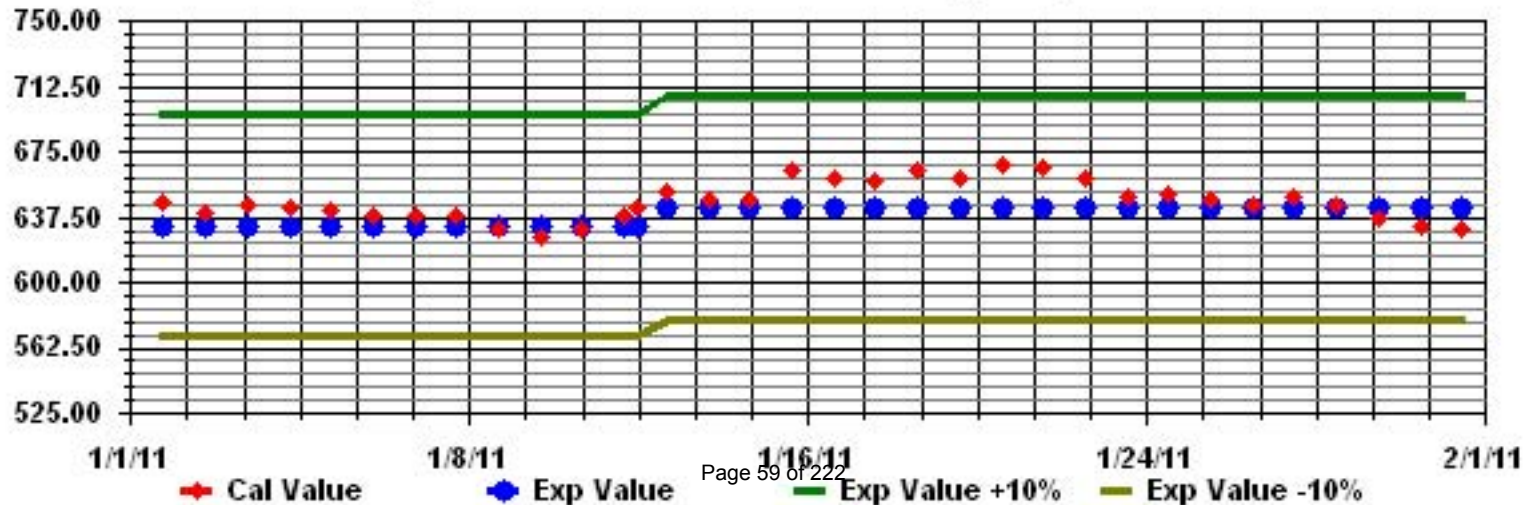
Class Limits (PPB)

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

Level : 10



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 2011

OZONE (O₃) hourly averages in ppb

MST

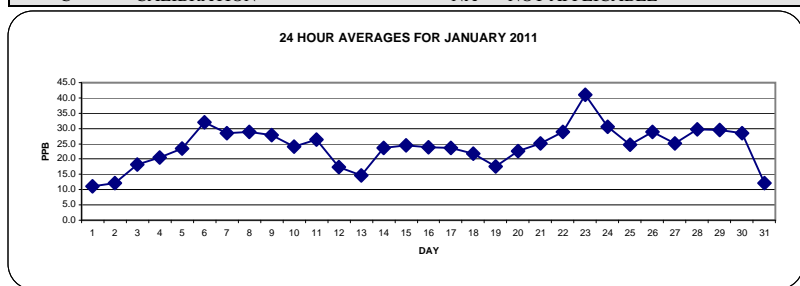
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																												
1	15	14	13	11	10	11	9	12	11	14	17	19	19	19	18	18	14	8	IZS	3	1	1	0	0	19	11.2	24	
2	0	1	4	5	4	3	15	21	19	19	20	21	22	26	26	20	12	IZS	14	14	6	1	1	5	26	12.1	24	
3	8	11	20	20	22	25	30	27	26	27	27	28	28	27	25	23	IZS	13	9	5	1	4	4	8	30	18.2	24	
4	13	19	20	21	20	17	16	C	15	16	16	26	27	28	25	IZS	26	21	18	14	22	27	28	18	28	20.6	24	
5	14	15	20	22	17	17	20	24	24	24	24	23	24	28	IZS	29	28	28	26	26	28	27	24	26	29	23.4	24	
6	25	22	23	21	24	10	22	33	40	40	40	40	40	IZS	39	38	37	38	37	36	33	34	34	32	40	32.1	24	
7	30	28	26	30	30	28	27	23	18	17	22	25	IZS	35	36	35	35	32	31	31	29	29	30	30	36	28.6	24	
8	30	29	26	25	24	23	23	23	25	29	C	IZS	31	33	33	31	30	30	31	33	32	31	31	31	33	28.8	24	
9	32	33	31	29	29	29	30	29	29	29	IZS	27	27	27	27	27	27	27	28	27	25	26	24	25	24	33	27.9	24
10	24	25	25	23	24	26	27	28	26	IZS	C	27	29	29	28	27	23	22	15	19	21	18	18	27	29	24.1	24	
11	27	26	27	29	32	33	31	27	IZS	31	30	31	32	C	C	M	M	C	22	22	22	18	17	17	33	26.3	22	
12	16	16	12	12	11	13	15	IZS	17	19	21	23	25	C	C	C	C	C	25	24	21	18	15	11	25	17.4	24	
13	2	1	7	11	13	13	IZS	12	11	12	15	18	20	20	20	18	16	16	18	16	16	18	21	23	23	14.7	24	
14	22	21	22	23	22	IZS	21	23	25	25	26	26	27	27	27	27	25	23	22	22	22	22	21	21	27	23.6	24	
15	21	26	26	26	IZS	26	25	25	25	25	26	26	26	26	26	25	24	23	23	23	23	22	21	22	26	24.5	24	
16	22	20	21	IZS	24	24	23	23	24	25	25	25	26	24	24	25	24	25	22	22	25	25	26	27	27	24.0	24	
17	27	27	IZS	27	26	23	21	23	23	23	25	25	25	25	24	23	23	23	24	24	25	22	20	18	27	23.7	24	
18	16	IZS	14	11	11	13	10	8	13	15	16	21	28	34	34	34	35	34	33	25	25	24	23	22	35	21.7	24	
19	IZS	15	14	10	17	7	5	8	14	31	31	30	30	30	30	27	27	22	10	9	2	9	10	IZS	31	17.6	24	
20	4	3	3	13	15	18	24	22	23	26	30	31	32	32	31	31	30	30	29	27	25	22	IZS	21	32	22.7	24	
21	23	24	25	22	28	27	24	19	20	23	26	26	27	28	27	26	24	22	24	27	29	IZS	28	29	29	25.1	24	
22	28	28	28	29	29	28	27	27	27	28	26	28	28	28	27	25	21	24	34	34	IZS	36	37	38	38	28.9	24	
23	42	43	44	44	43	43	43	42	41	41	42	42	42	42	41	41	41	40	IZS	39	38	37	32	44	41.0	41.0	24	
24	28	30	31	29	27	27	26	23	24	20	29	37	38	39	37	33	32	30	IZS	31	33	34	33	32	39	30.6	24	
25	31	29	28	28	30	30	27	19	20	21	17	21	22	22	24	25	22	IZS	18	20	25	28	29	30	31	24.6	24	
26	32	32	30	29	26	24	24	24	22	17	27	31	33	35	32	34	IZS	32	32	31	30	30	30	29	35	29.0	24	
27	28	26	24	25	24	25	24	20	21	21	21	23	23	23	24	IZS	24	23	22	23	25	28	40	41	25.1	24		
28	40	39	32	21	25	25	27	28	31	31	30	30	30	31	IZS	31	29	26	29	29	30	29	31	30	40	29.7	24	
29	30	30	30	31	30	30	30	30	29	29	31	32	32	IZS	33	33	32	31	30	23	23	23	27	32	33	29.6	24	
30	32	32	32	31	31	31	29	30	31	31	31	31	IZS	31	32	31	30	31	26	25	25	22	13	17	32	28.5	24	
31	12	15	13	10	10	7	6	5	7	11	14	IZS	15	16	17	21	17	8	8	15	13	12	14	13	21	12.1	24	
HOURLY MAX	42	43	44	44	43	43	43	42	41	41	42	42	42	42	41	41	41	41	41	40	36	39	38	40	41			
HOURLY AVG	22.5	22.7	22.4	22.3	22.6	21.9	22.7	22.7	22.7	24.0	25.2	27.3	27.9	28.3	28.4	28.1	26.3	25.4	24.1	22.6	22.6	22.5	22.9	23.5				

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

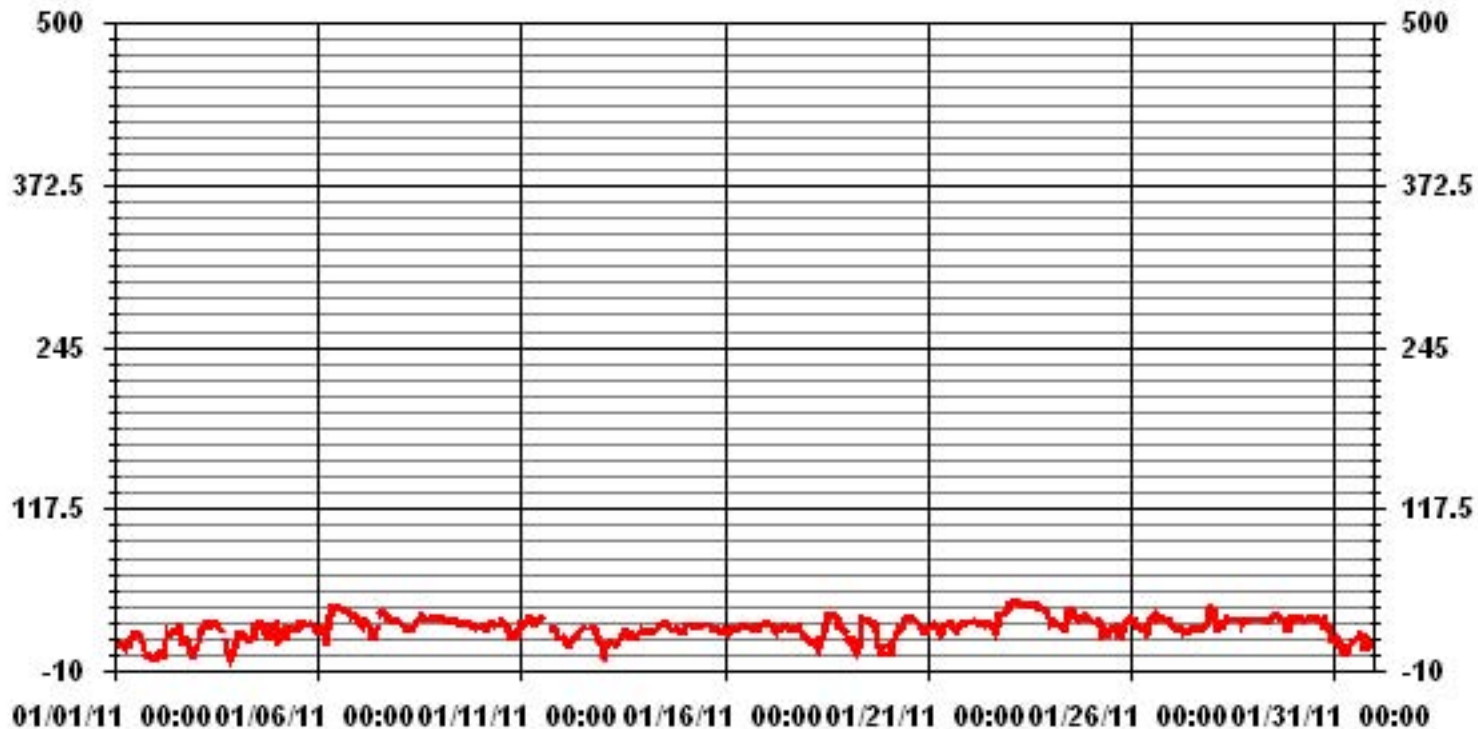
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	696				
MAXIMUM 1-HR AVERAGE:	44	PPB	@ HOUR(S)	2, 3	ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	41.0	PPB			ON DAY(S) 23
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME	99.7	%
STANDARD DEVIATION	8.39		MONTHLY AVERAGE	24.15	PPB

01 Hour Averages



— LICA33_03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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	17	16	14	13	11	13	14	15	15	16	18	19	19	19	20	19	17	12	IZS	6	1	2	1	1	20	13.0	24
2	0	5	8	8	9	6	23	23	21	23	22	22	24	28	27	25	16	IZS	17	16	15	2	4	7	28	15.3	24
3	13	21	23	24	24	28	32	31	27	27	28	29	29	29	27	25	IZS	20	11	8	2	8	7	12	32	21.1	24
4	19	24	24	23	22	19	18	C	C	21	19	31	30	30	27	IZS	28	26	21	21	28	29	29	25	31	24.5	24
5	16	18	23	23	22	20	24	26	25	26	26	24	26	31	IZS	31	32	32	31	28	29	29	27	27	32	25.9	24
6	27	23	24	23	26	24	31	39	41	41	41	41	40	IZS	39	39	38	38	38	36	35	35	34	33	41	34.2	24
7	32	30	29	32	32	31	29	25	25	21	24	26	IZS	36	37	37	35	35	33	33	30	31	31	30	37	30.6	24
8	30	30	27	25	24	24	24	24	27	C	C	IZS	32	34	34	32	31	30	33	33	33	32	32	32	34	29.7	24
9	33	34	33	30	31	30	31	31	31	30	IZS	29	28	28	28	29	28	29	29	27	28	26	26	25	34	29.3	24
10	26	26	25	24	26	27	27	29	29	IZS	C	29	30	30	29	28	25	23	21	23	24	22	21	29	30	26.0	24
11	30	27	30	33	33	34	33	30	IZS	32	32	33	33	C	C	M	C	C	23	23	24	19	21	18	34	28.2	22
12	17	16	16	14	14	15	17	IZS	19	21	23	25	26	C	C	C	C	C	26	26	25	19	17	15	26	19.5	24
13	8	2	8	13	14	15	IZS	13	12	14	17	19	21	21	21	19	18	19	19	18	18	20	24	24	24	16.4	24
14	23	23	25	24	24	IZS	24	25	26	27	27	27	27	28	28	28	26	25	24	22	23	22	22	22	28	24.9	24
15	24	27	27	27	IZS	27	26	26	26	26	26	26	26	26	26	27	25	25	24	24	24	22	22	23	27	25.3	24
16	23	20	21	IZS	25	24	24	25	25	25	25	26	26	26	25	26	25	26	25	24	26	26	27	28	28	24.9	24
17	28	28	IZS	28	27	25	24	24	23	25	26	26	26	26	25	24	23	24	24	25	25	24	21	19	28	24.8	24
18	17	IZS	16	13	11	14	12	12	16	19	19	25	31	35	35	35	35	35	35	30	28	28	26	27	35	24.1	24
19	IZS	23	18	18	20	17	13	13	32	32	31	31	31	31	30	29	28	21	16	8	15	13	IZS	32	22.8	24	
20	6	5	9	15	17	26	27	27	25	30	31	31	32	32	32	32	31	31	31	29	29	23	IZS	23	32	25.0	24
21	25	27	27	27	29	29	27	23	24	26	27	27	28	29	28	26	25	23	26	28	29	IZS	29	29	29	26.9	24
22	29	29	28	29	29	29	29	28	28	28	28	29	29	29	29	27	23	29	35	35	IZS	37	37	40	40	30.1	24
23	44	44	45	45	44	43	43	43	42	42	42	42	43	42	42	42	42	41	41	IZS	40	39	39	37	45	42.0	24
24	31	33	33	30	29	28	27	28	29	29	38	38	40	40	39	36	34	33	IZS	34	34	35	35	35	40	33.4	24
25	34	33	32	31	33	32	30	28	27	26	20	23	23	24	25	27	25	IZS	19	23	27	29	30	32	34	27.5	24
26	32	33	32	30	28	26	27	26	25	20	30	33	35	36	35	35	IZS	33	33	33	32	31	31	30	36	30.7	24
27	29	29	26	26	26	26	26	23	24	22	23	24	24	26	26	IZS	25	25	23	28	26	36	41	41	41	27.2	24
28	41	40	37	24	26	26	28	31	33	33	32	31	31	31	IZS	32	31	29	31	31	31	31	32	31	41	31.4	24
29	31	32	31	32	31	31	32	31	32	31	33	33	33	IZS	34	33	33	33	32	29	24	24	33	33	34	31.3	24
30	33	33	33	32	32	32	31	31	31	32	32	31	IZS	32	32	32	31	32	30	26	27	26	19	21	33	30.0	24
31	15	16	17	10	11	9	7	6	10	13	16	IZS	17	17	19	23	22	11	16	18	14	14	15	14	23	14.3	24
HOURLY MAX	44	44	45	45	44	43	43	42	42	42	42	42	43	42	42	42	42	41	41	36	40	39	41	41			
HOURLY AVG	24.4	24.9	24.7	24.2	24.3	24.3	25.3	25.4	25.9	26.1	27.0	28.6	29.0	29.5	29.6	29.6	27.9	27.7	26.6	25.1	24.6	24.5	24.9	25.4			

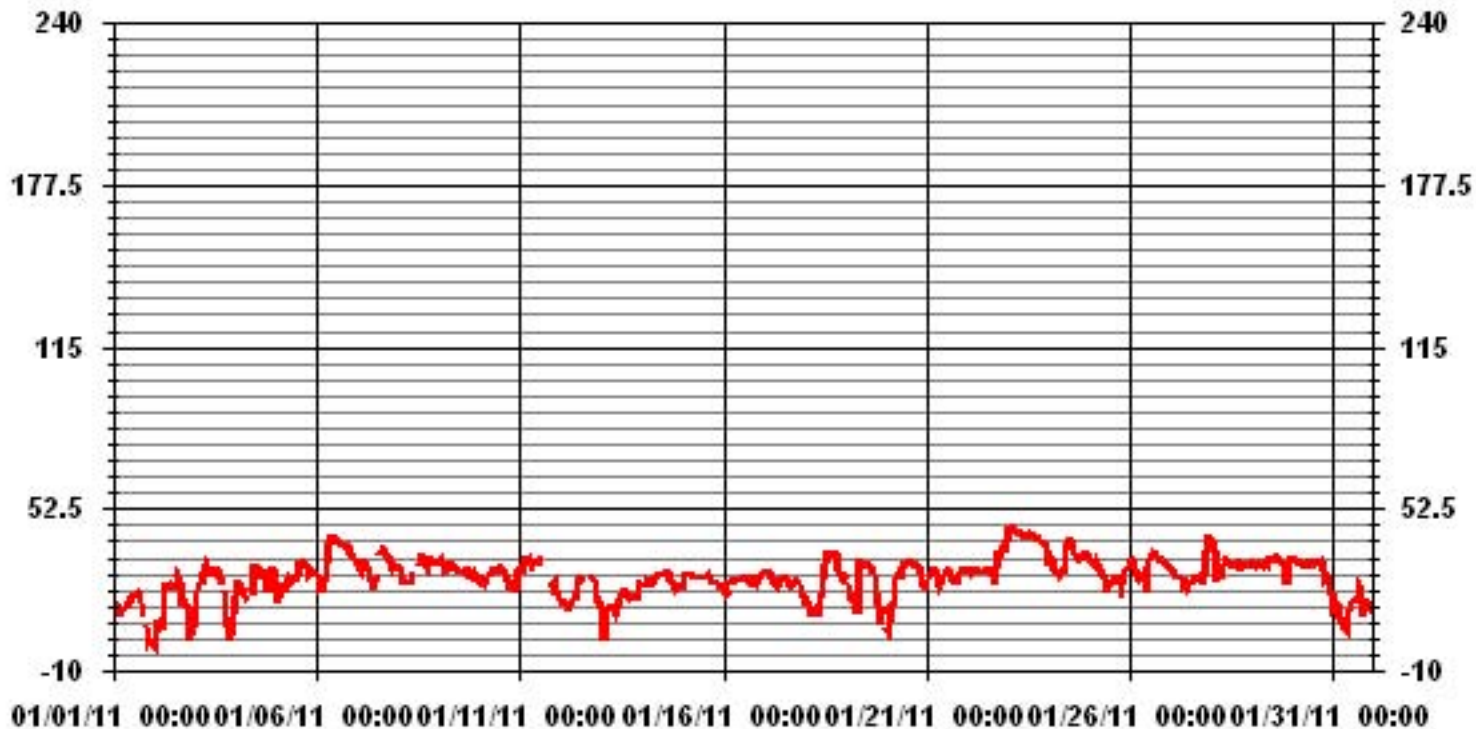
STATUS FLAG CODES

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:	696				
MAXIMUM INSTANTANEOUS VALUE:	45	PPB	@ HOUR(S)	2, 3	ON DAY(S) 23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742 HRS	
MONTHLY CALIBRATION TIME:	13	HRS			
STANDARD DEVIATION	7.86				

01 Hour Averages



— LICA33 O3MAX PPB

LICA33
 O3_ / WDR Joint Frequency Distribution (Percent)

January 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	5.57	5.86	5.72	5.86	10.72	5.00	4.43	4.29	4.43	2.71	9.01	7.86	6.00	7.72	6.58	8.15	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	5.57	5.86	5.72	5.86	10.72	5.00	4.43	4.29	4.43	2.71	9.01	7.86	6.00	7.72	6.58	8.15	

Calm : .00 %

Total # Operational Hours : 699

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	39	41	40	41	75	35	31	30	31	19	63	55	42	54	46	57	699
< 110																	
< 210																	
>= 210																	
Totals	39	41	40	41	75	35	31	30	31	19	63	55	42	54	46	57	

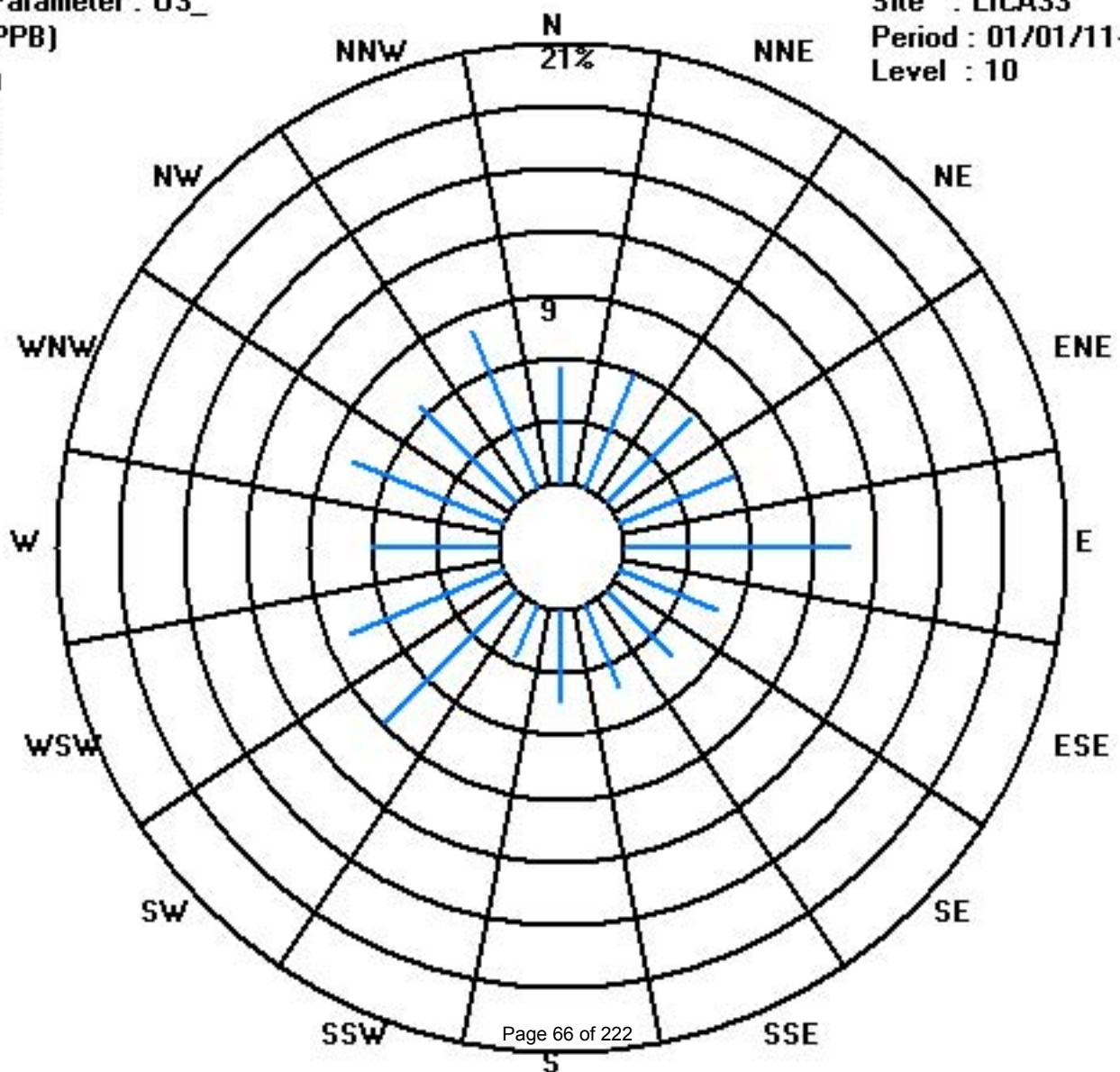
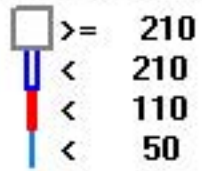
Calm : .00 %

Total # Operational Hours : 699

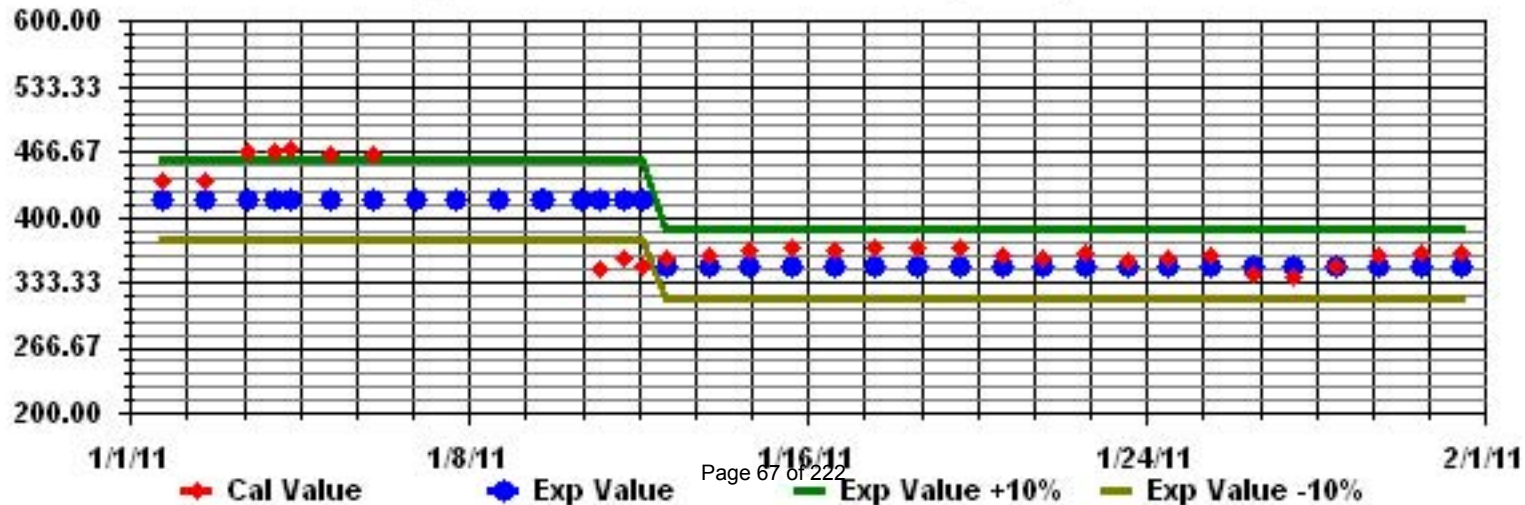
Class Limits (PPB)

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

Level : 10



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

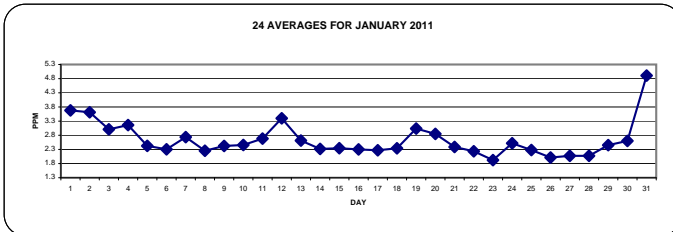
JANUARY 2011

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	4.8	4.9	4.9	4.6	4.9	4.3	4.8	3.7	3.5	2.7	2.4	2.4	2.5	2.5	2.4	2.3	2.5	4	IZS	3.4	3.6	4.3	4	5.2	5.2	3.7	24	
2	7.3	7.7	4.1	4.3	4.3	4.8	3.9	2.4	2.7	3.2	2.7	2.8	2.4	2.3	2.2	2.5	4	IZS	3	3	3.1	3.3	4.1	3	7.7	3.6	24	
3	3.1	3.5	2.7	2.6	2.8	2.3	2.1	2.2	2.5	2.4	2.5	2.5	2.5	2.4	2.5	IZS	3	3.7	3.8	6.2	3.8	3.8	3.8	6.2	3.0	24		
4	3.1	3.3	2.9	2.9	2.4	3.3	5.2	2.8	2.6	3.1	6.4	3.2	2.4	2.2	2.6	IZS	2.3	2.3	4.2	4.8	3.1	2.6	2.1	2.9	6.4	3.2	24	
5	3	2.9	2.7	2.3	2.6	3.1	3.4	2.6	2.7	2.5	2.6	2.4	2.3	2.1	IZS	2.1	2.2	2	2.1	2	2	2.1	2	2.1	3.4	2.4	24	
6	2.2	2.6	2.3	3.1	2.5	4.8	2.9	2	1.9	1.9	1.9	2	1.9	IZS	1.9	2	2	2	2.1	2.2	2.2	2.3	2.3	4.8	2.3	24		
7	2.3	2.4	2.7	2.2	2.6	3.3	2.6	2.8	3.3	7	4.6	3.6	IZS	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	7.0	2.7	24	
8	2.1	2.1	2.1	2.1	2.1	2.3	2.4	2.2	2.2	2.1	2.2	IZS	2.2	2.3	2.3	2.3	2.2	2.4	2.3	2.2	2.4	2.5	2.5	2.3	2.5	2.3	24	
9	2.5	2.2	2.3	2.3	2.2	2.3	2.8	2.4	2.5	2.4	IZS	2.3	2.3	2.4	2.2	2.3	2.2	2.1	2.3	2.4	2.7	3.1	2.7	2.8	3.1	2.4	24	
10	2.4	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.8	IZS	2.6	2.2	2.1	2.1	2.1	2.1	2.2	2.2	4.4	4.1	2.2	2.4	2.6	2.4	4.4	2.5	24	
11	2.2	2.2	2.2	2.2	2.3	2.2	2.5	IZS	2.4	2.4	2.6	2.8	2.6	2.9	2.8	2.7	2.6	2.9	3.5	3.8	3.6	3.7	3.8	2.7	2.4	24		
12	4.1	4.8	4.8	4.6	4.8	4.6	4.5	IZS	3.5	3.4	C	C	C	C	2	2.3	M	2.2	2.2	2.6	2.6	2.3	2.7	3.2	4.8	3.4	23	
13	3.6	3.9	3.8	3.2	3.3	3.1	IZS	2.8	2.6	2.6	2.4	2.2	2.1	2.1	2.1	2.1	2.2	2.7	2.3	2.3	2.2	2.1	2.1	3.9	2.6	24		
14	2.4	2.2	2.3	2.2	2.2	IZS	2.5	2.3	2.2	2.4	2.2	2.1	2.1	2.2	2.2	2.4	2.6	2.7	2.3	2.4	2.3	2.5	2.4	2.7	2.3	24		
15	2.6	2.5	2.6	2.4	IZS	2.2	2.1	2.2	2.2	2.6	2.5	2.5	2.1	2.2	2.1	2.2	2.2	2.1	2.5	2.4	2.3	2.4	2.6	2.4	2.6	2.3	24	
16	2.4	2.5	2.3	IZS	2.5	2.5	2.6	2.1	2.2	2.1	2.1	2.2	2.1	2.1	2	2.1	2.3	2.4	2.4	2.2	2.2	2.6	2.4	2.6	2.6	2.3	24	
17	2.4	2.2	IZS	1.9	2.6	2.8	2.7	2.5	2.4	2.3	2.2	2.2	2.2	2.3	2.1	2.1	2	2.1	2.2	2.2	2	2.1	2.2	2.5	2.8	2.3	24	
18	2.6	IZS	2.9	2.8	2.8	2.8	2.8	2.7	2.2	2.3	2.5	2.4	2	1.8	1.8	1.8	1.9	1.9	2	2.3	2.5	2.3	2.3	2.4	2.9	2.3	24	
19	IZS	2.9	3.8	4.2	3.4	6.6	6	3.5	3.2	2	2.1	2.2	2.2	2	2.1	2.1	2.1	2.3	2.5	2.5	2.8	2.9	3.4	IZS	6.6	3.0	24	
20	3.5	5.6	5.7	4.2	3.3	3	2.6	2.5	2.4	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.5	2.5	2.5	2.6	IZS	3	5.7	2.8	24	
21	2.5	2.4	2.6	3.2	2.5	2.6	2.2	2.7	3	3	2.4	2.5	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2	2.1	3.2	2.4	24	
22	2	2	2.1	2.2	2.1	2.3	2.2	2.4	2.3	2.3	2.4	2.3	2.5	2.5	2.6	2.6	2.8	2.2	1.9	1.9	IZS	1.9	2	1.9	2.8	2.2	24	
23	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2	2.1	2.9	2.9	1.9	24
24	3.1	2.6	2.4	2.9	3	2.8	3	3	3.5	4	2.9	2.2	2	2	2	2	2	2	IZS	2	2	2.2	2.3	2	4.0	2.5	24	
25	2.1	2.2	2.3	2.3	2.4	2.1	2.1	2.1	2.1	2.5	2.7	3	3.2	2.6	2.6	2.3	2.1	IZS	2	2	2	1.9	1.9	1.9	3.2	2.3	24	
26	1.8	1.8	1.9	1.9	2.1	2	2	2.2	2.5	2.8	2.3	2	1.9	1.8	1.8	1.8	IZS	1.9	1.9	1.9	2	2	2	2	2.8	2.0	24	
27	2	2	2	2	2	2	2	2.8	2.1	2	2	2.8	2.2	2.1	2.2	IZS	2	2	2	2	2	1.9	1.8	1.8	2.8	2.1	24	
28	1.8	1.8	1.9	2	1.9	2	2	2	2.1	2.3	2.3	2.3	2.3	2.1	IZS	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2	2.1	2.3	2.1	24	
29	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.5	2.3	2.4	IZS	2.1	2.1	2.1	2.9	2.4	3.4	3.9	3	2.7	2.5	3.9	2.5	24	
30	2.5	2.1	2.4	2.5	2.3	2.4	2.2	2.2	2.3	2.3	2.1	2.3	IZS	2.3	2.4	2.5	2.3	2.3	2.8	2.8	2.5	3.1	5.4	3.8	5.4	2.6	24	
31	4.3	4.6	4.4	5.4	5.8	5.7	6.4	6.9	6.9	7.5	7.6	IZS	6.7	5.1	4.8	3.4	3.3	3.1	3.2	3.4	3.6	3.4	3.6	3.8	7.6	4.9	24	
HOURLY MAX	7.3	7.7	5.7	5.4	5.8	6.6	6.4	6.9	6.9	7.5	7.6	3.6	6.7	5.1	4.8	3.4	4.0	4.0	4.4	4.8	6.2	4.3	5.4	5.2				
HOURLY AVG	2.8	2.9	2.9	2.8	2.8	3.0	2.9	2.6	2.7	2.8	2.7	2.4	2.4	2.3	2.3	2.2	2.3	2.3	2.5	2.6	2.6	2.6	2.7	2.7				

STATUS FLAG CODES

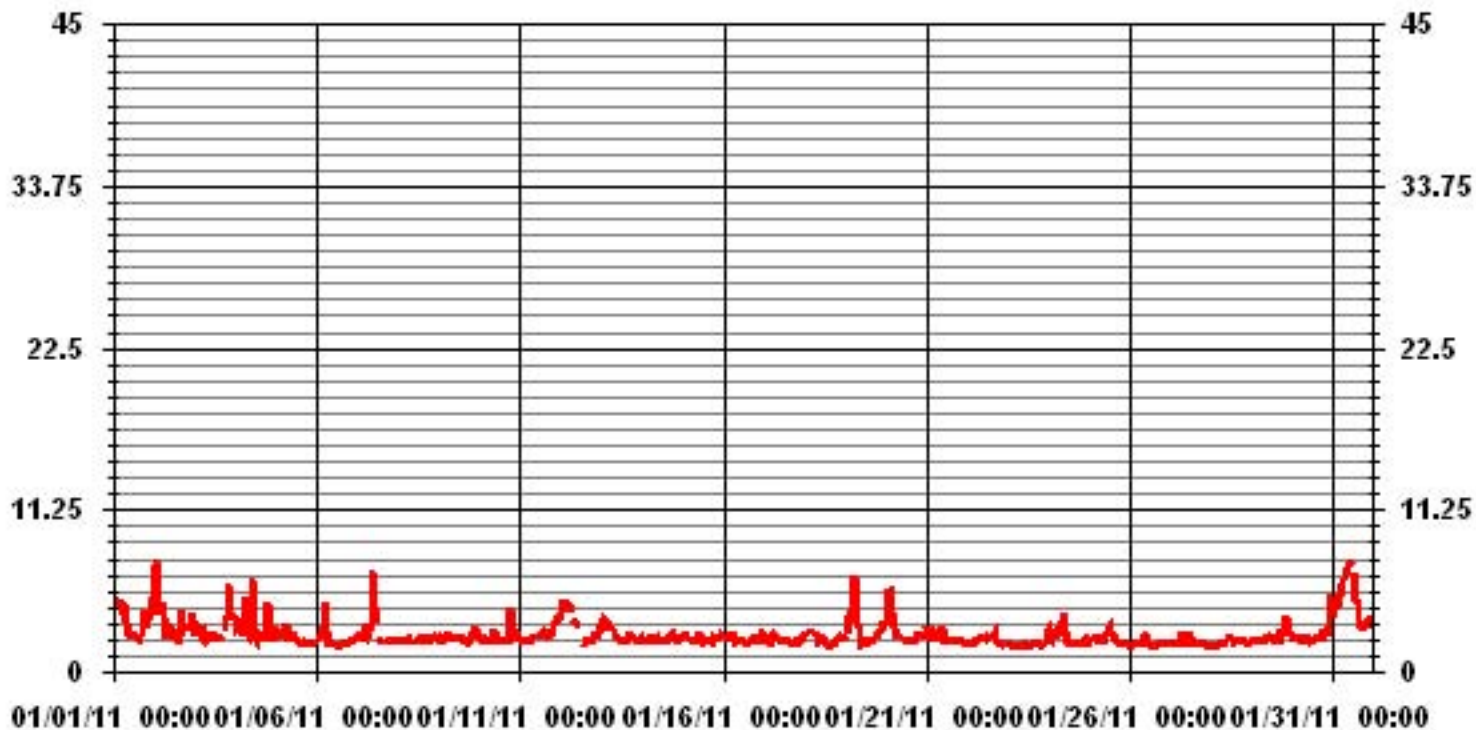
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707		
MAXIMUM 1-HR AVERAGE:	7.7	PPM @ HOUR(S)	1 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	4.9	PPM	31 ON DAY(S)
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:
STANDARD DEVIATION:	0.92		MONTHLY AVERAGE:
			743 HRS
			99.9 %
			2.63 PPM

01 Hour Averages



— LICA33 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	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	6.1	7.3	15.1	5.7	9.6	7.3	8.4	7.9	5.6	3.4	2.6	2.5	2.6	2.5	3	2.3	4	6.2	IZS	3.5	6.3	10.8	7	11.9	15.1	6.2	24		
2	9.7	10.5	7.5	7.8	5.5	6.2	7.2	3.2	3.4	7	4.6	6.9	2.6	2.4	2.3	5.8	6.7	IZS	4.5	4.8	7	4.4	13.3	6.2	13.3	6.1	24		
3	7	11.3	9.2	7.3	10.9	3	2.3	3.6	2.6	2.6	3.8	3.8	3.5	3.6	2.7	2.6	IZS	7.8	3.9	4.3	12	4.2	4.4	10.7	12	5.5	24		
4	4.9	12.5	5.1	11.9	4	12.6	54.1	9.3	11.3	9.1	26.2	10.8	3.2	2.4	3.2	IZS	4.7	3.5	22.6	8.9	4.5	4.2	2.4	3.1	54.1	10.2	24		
5	3.9	3.8	3	2.6	5.6	7.6	7.4	2.9	2.7	4.1	3.8	3	2.9	2.3	IZS	3	3.7	2.2	2.3	2.1	2.1	4	2.1	2.1	7.6	3.4	24		
6	3.5	12.4	3.2	7.4	11.7	9.3	5	2.5	2.2	2	2	2	2	IZS	2	2	2.1	2	2.1	2.2	2.3	2.2	2.3	2.3	12.4	3.8	24		
7	2.7	3	9.2	2.4	8.5	8.3	4.2	5.1	7	15.2	6.1	8.3	IZS	2.8	2.5	2.4	2.3	2.5	2.5	2.2	2.7	2.3	2.2	2.4	15.2	4.6	24		
8	2.9	2.4	2.6	3	2.7	3.1	3.5	2.4	2.6	3.1	2.3	IZS	2.8	4.9	3.5	3.3	2.3	3.6	3.7	2.6	3.6	3.1	4.6	2.5	4.9	3.1	24		
9	4.1	2.4	3	2.6	2.4	3.9	9.6	2.7	2.8	2.6	IZS	2.5	3.1	6.2	2.8	3	2.8	2.2	3	4	3.7	3.8	4.1	3.9	9.6	3.5	24		
10	4.2	2.3	2.3	2.4	2.3	2.3	2.4	2.8	3.9	IZS	3.6	2.7	2.2	2.2	2.2	2.2	2.3	3.7	6.1	6.9	2.6	2.7	3	11.1	11.1	3.4	24		
11	2.3	2.3	2.6	3.5	3.6	3.4	2.7	2.6	IZS	3.4	3.9	4.2	8.2	9.2	5.7	7	5.6	3.7	3.7	3.7	6.1	4.6	3.9	9.2	4.4	24			
12	4.2	15.3	7.4	7.6	7.1	6.9	7.4	IZS	5.7	5.5	C	C	C	C	C	4.4	M	3	3.2	5.1	3.8	2.5	3	3.4	15.3	5.6	23		
13	3.8	4.4	4.3	3.4	3.4	3.2	IZS	3	3.5	2.7	2.6	2.4	2.2	2.2	2.1	2.2	2.4	3.9	3.8	3.8	3.7	3.2	2.8	4.1	4.4	3.2	24		
14	4.9	2.6	2.6	3.4	2.8	IZS	3.6	3.2	2.4	3.6	3	2.2	2.6	3.1	3.9	3.2	3.3	3.4	3.4	3.1	4	3	4.9	3.7	4.9	3.3	24		
15	5.3	4	5.3	4.1	IZS	4.3	3.6	3.5	4	5.2	5.2	7.6	2.8	3.9	5	3.5	4.5	3	7.1	4.9	2.4	4.9	4	3.2	7.6	4.4	24		
16	4.6	4.5	4.1	IZS	4.2	4.9	4.1	3.1	3.5	3.4	3.1	3.9	3.3	2.7	2.7	4.4	6.9	6.8	7.4	2.9	3.9	4.2	3.7	4.5	7.4	4.2	24		
17	4.7	5.9	IZS	2.5	6.2	4.3	4.2	5.3	3.9	5.1	3	4	5.8	4.5	4	4	2.5	2.8	2.7	3.7	2.2	2.2	2.4	2.6	6.2	3.8	24		
18	2.8	IZS	3.8	2.9	2.9	3	4.6	4.7	2.8	2.7	2.8	2.8	2.1	1.9	1.8	1.9	1.9	2	2.2	5.2	3.9	2.9	5.7	5.4	5.7	3.2	24		
19	IZS	5.4	8.4	8	7.3	13.8	9.8	4.1	3.7	2.2	2.1	3.2	3	2.1	2.5	2.1	2.2	3	4.5	3.2	3.9	8.1	8.5	IZS	13.8	5.1	24		
20	6	7.9	7.5	7.5	5.6	4.8	3.2	3	2.7	2.7	2.5	2.3	2.2	2.1	2.2	2.1	5.2	5.1	6.6	8.7	4.3	4.3	IZS	3.1	8.7	4.4	24		
21	2.6	2.6	9.7	6.3	3.4	4.3	2.3	13	5.3	10.3	3.3	3.6	2.7	2.5	2.5	3	2.7	3	2.4	2.3	2.2	IZS	2.2	2.4	13	4.1	24		
22	2.1	2.3	2.5	2.7	2.5	4.4	4.8	2.4	2.4	2.4	2.4	3.4	3.8	3.8	5	5.5	3.2	2	1.9	IZS	2	2	2	5.5	3.0	24			
23	2.3	2.1	2.1	2.1	1.9	1.8	1.8	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	IZS	2	2.2	3.7	6.5	6.5	2.2	24			
24	4.1	4.1	3.7	3.2	14.4	5.5	14.1	6.2	7.6	8.5	6	2.3	2.2	2.1	2.1	2.1	2.1	IZS	2.4	2.5	3.2	3.2	2.9	14.4	4.6	24			
25	3	3.3	3.3	3.1	6.5	3.3	2.5	2.1	6.1	7.2	6.8	11.3	10.1	3.7	3.8	3.3	2.3	IZS	2.1	2.1	2	2	2	2	11.3	4.1	24		
26	1.9	1.9	1.9	1.9	2.7	2.3	3	4	4.1	3.8	3	2.2	1.9	1.9	1.9	1.8	IZS	2.1	1.9	1.9	3.1	2.8	3.2	3.3	4.1	2.5	24		
27	2.6	2.6	2.2	2.1	2	2.1	3.5	6.5	4.2	2.1	2.1	26.3	4	2.8	5.3	IZS	2.3	2	3	2.5	2.6	2.4	1.8	1.8	26.3	3.9	24		
28	1.8	1.9	1.9	2.3	2	2	2.2	2.6	3	3	3	3	2.7	IZS	2.3	2.4	2.5	2.3	2.3	2.2	2.3	2.3	2.4	3	2.4	2.4	24		
29	2.5	2.6	2.8	2.8	3.1	3.1	3	2.8	3.2	3.8	6.3	5	4.9	IZS	2.9	2.1	3.9	30	3.5	5.1	5	3.6	4.1	4.1	30	4.8	24		
30	4.7	3.4	3.7	3.6	4	4	3.6	3.1	3.7	3.7	3.6	4	IZS	4.1	4.5	4.5	3.4	4.4	8.6	8	2.9	5.2	10.1	14.7	14.7	5.0	24		
31	11.8	11.7	5.7	8.3	11.7	6.6	10.4	10.3	13.7	10.1	19.2	IZS	10.8	6.6	6.6	6	9.5	4.4	7.2	3.8	4.1	5.5	5.4	9.7	19.2	8.7	24		
HOURLY MAX	12	15	15	12	14	14	54	13	14	15	26	26	11	9	7	7	10	30	23	9	12	11	13	15					
HOURLY AVG	4.2	5.3	4.9	4.5	5.4	5.1	6.6	4.3	4.4	4.7	4.9	4.9	3.6	3.3	3.2	3.2	3.6	4.3	4.5	3.9	3.8	3.8	4.2	4.7					

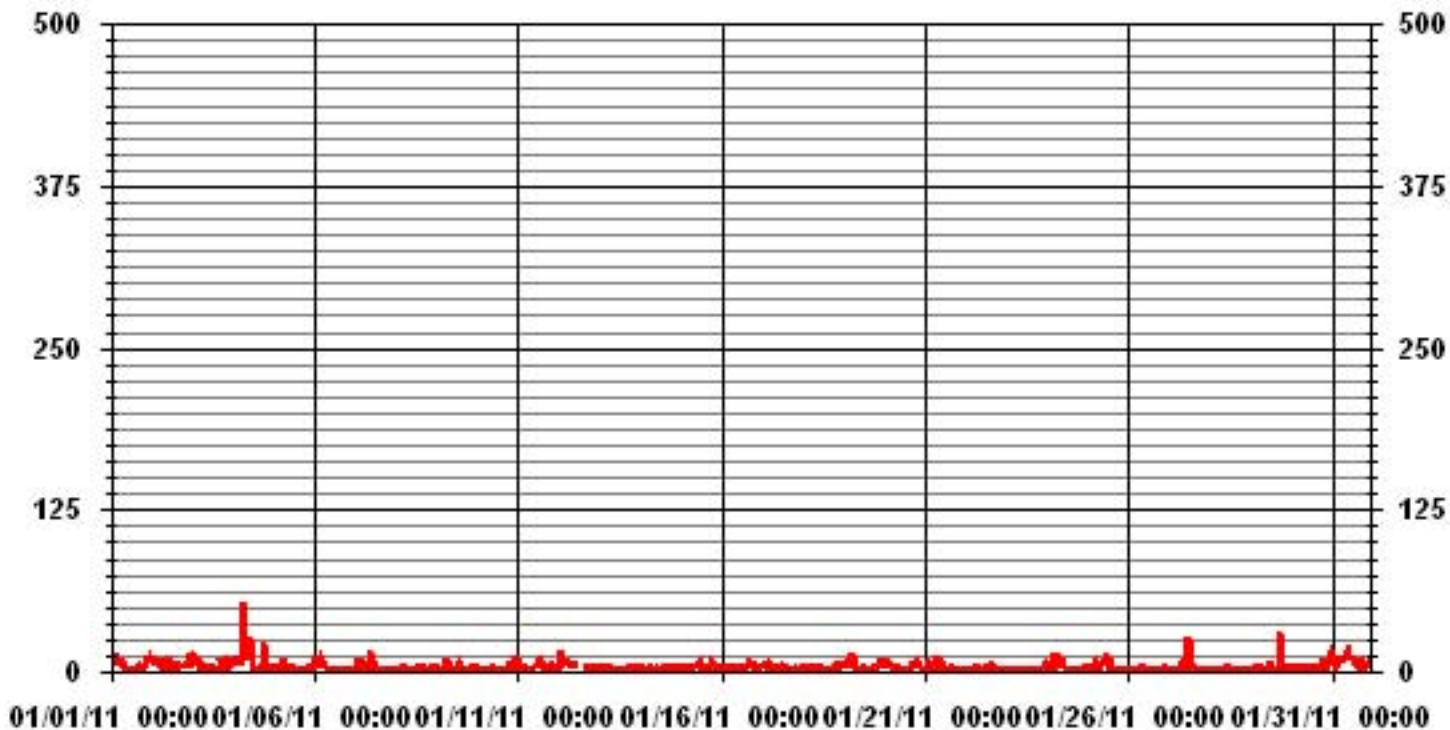
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706
MAXIMUM INSTANTANEOUS VALUE:	54.1 PPB @ HOUR(S) 6 ON DAY(S) 4
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	5 HRS
STANDARD DEVIATION	3.62
OPERATIONAL TIME:	743 HRS

01 Hour Averages



— LICA33 THCMAX PPM

LICA33
 THC / WDR Joint Frequency Distribution (Percent)

January 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	3.96	5.51	5.09	4.80	9.05	3.25	4.10	2.68	3.53	2.40	7.35	6.36	4.95	6.08	4.95	6.50	80.62
< 10.0	1.55	.42	.56	1.13	1.83	1.98	.28	1.55	.84	.28	1.69	1.41	.99	1.55	1.55	1.69	19.37
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	5.51	5.94	5.65	5.94	10.89	5.23	4.38	4.24	4.38	2.68	9.05	7.77	5.94	7.63	6.50	8.20	

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	28	39	36	34	64	23	29	19	25	17	52	45	35	43	35	46	570
< 10.0	11	3	4	8	13	14	2	11	6	2	12	10	7	11	11	12	137
< 50.0																	
>= 50.0																	
Totals	39	42	40	42	77	37	31	30	31	19	64	55	42	54	46	58	

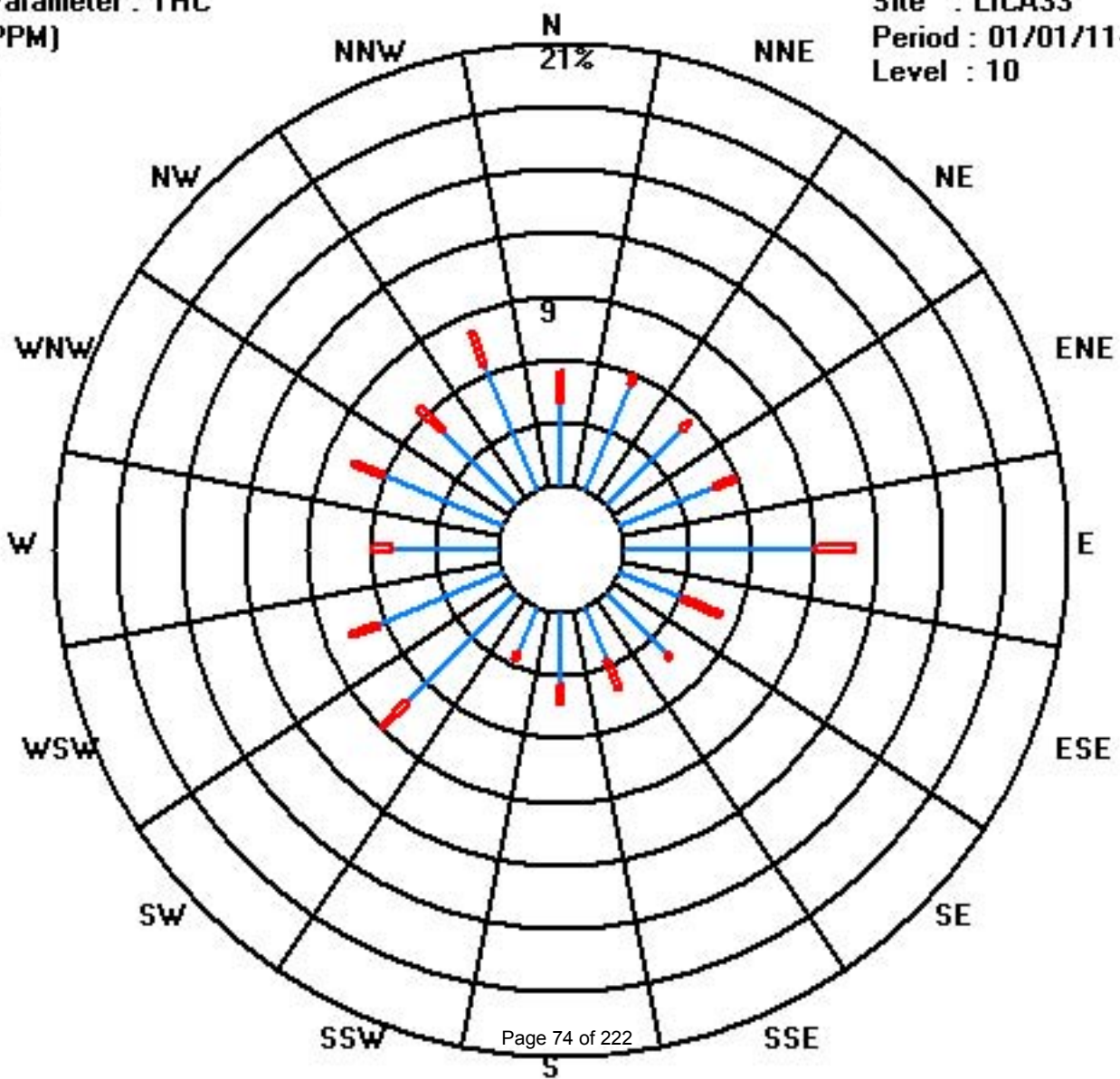
Calm : .00 %

Total # Operational Hours : 707

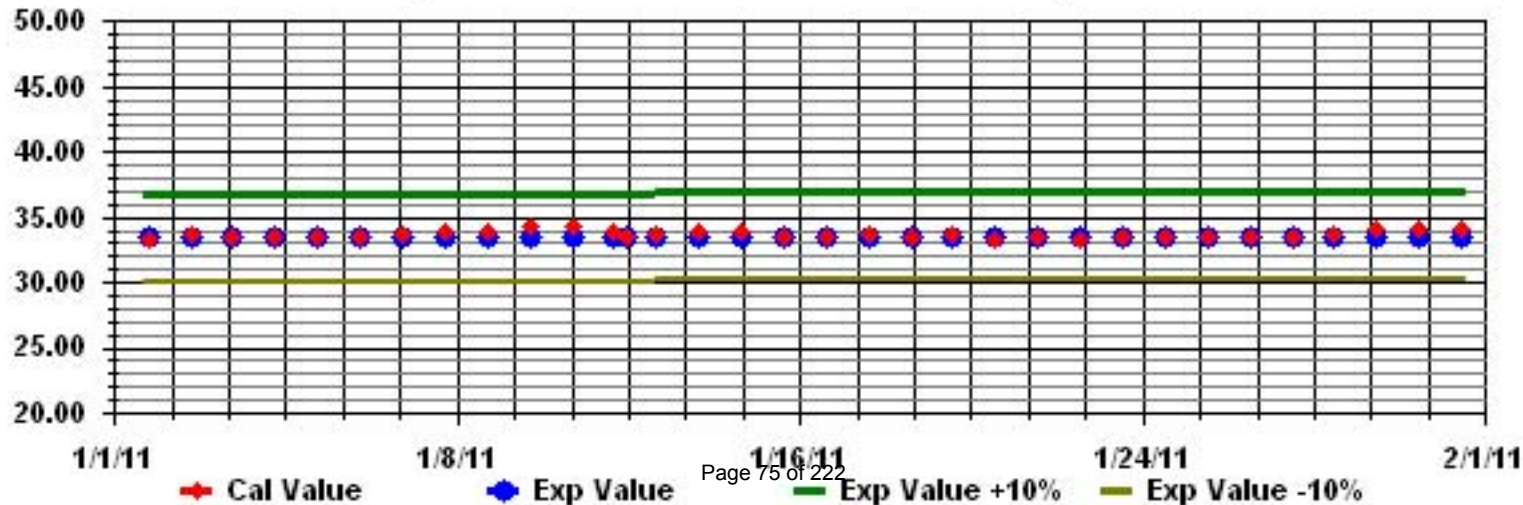
Class Limits (PPM)

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

Level : 10



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



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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		2.3	2.4	0.6	0.8	0.4	0.6	0.3	1.6	2.6	4.8	5.9	4.8	4.4	2.5	6.1	7.7	5.1	4.4	2.8	4.5	2	1.1	3.7	1.7	7.7	1.8	24	
2		3.7	4.1	4.2	3.1	1.3	3.3	3.9	4.7	6.2	6.5	4.8	2.3	4.8	11.5	10.4	7.5	5	5.6	3.8	2.6	3	1.7	2.5	3	11.5	3.6	24	
3		1.9	3.1	1.6	0.3	1	2.1	5	3.4	3.8	2.4	2.9	3.1	3	3.7	4	4.1	3	3.7	4.3	3.8	4.6	6.3	1.6	1	6.3	1.7	24	
4		3.2	2	2.2	1.9	1.7	1.4	0.5	1.1	2.7	1.2	0.5	3.9	4.6	4.5	5.8	7.3	4.4	2.3	4.2	5.5	6.2	3.6	3.2	2.8	7.3	1.9	24	
5		3.9	4.7	2.1	1.9	2.2	3.7	6.6	5.2	4.6	3.9	3.6	10.6	12.8	11.5	8.6	5.3	11.7	10.6	8.5	9.2	7.7	5.1	6.9	4.9	12.8	6.5	24	
6		2.8	4.2	4.9	4.7	2.8	2.6	9.4	21.7	23.1	21.9	26.6	28.2	34.6	33.7	26.5	23.2	20	19.8	16.5	14.7	13.4	15.6	11.6	9.6	34.6	16.3	24	
7		5.3	4	4.8	10.4	1.7	2.9	5.7	3.5	1.4	3.6	4.1	6.3	9.7	15.6	15.8	17.9	18.7	18.1	19.2	19.6	19.4	19.2	19.4	19.8	19.8	11.1	24	
8		19.2	20.2	20.9	20.5	18.6	19.7	15.8	14.9	15.9	17.7	18.5	18.1	18.3	18.5	16.5	16.4	13.6	13.6	14.6	13.4	10.9	9.8	10.5	11.2	20.9	16.1	24	
9		10.4	11.1	12.9	13.2	15	10.8	10.8	12.1	12	10.9	13.2	12.5	10.8	9.4	8	9.3	9.4	9.8	8.6	8.1	8.3	10.4	10.3	7.8	15.0	10.6	24	
10		6.5	6.3	5.6	5.6	4.6	5.7	6.7	5.8	6.5	7.6	7.1	7.1	7.4	8.1	6.8	5.3	5.1	6.5	7.5	3.6	4.5	2.9	1.3	1.6	8.1	5.7	24	
11		3.1	2.2	1.4	3.2	4.3	4.2	4.5	2.5	3.4	3.5	3.1	2.1	1	1.3	3.4	5.8	4.9	3.5	4	4.7	3.9	2.6	5.3	6.1	6.1	3.5	24	
12		6.3	4.5	2.4	1.9	3.4	3	3	4	4.7	3.6	4.8	5.3	5.8	11.2	13.5	10.8	8.4	8	5.9	3	4	5.3	6.3	6.6	13.5	5.7	24	
13		5.8	5	5.2	8.6	8.2	10.3	9	5.6	7.4	8.2	11.5	12.6	9	9.6	10.4	8.6	7.1	7.9	9.6	7.7	8.9	9.6	9.7	8.1	12.6	8.5	24	
14		7	9.3	10.4	10.3	8.6	7.3	8.3	7.5	7.5	7.5	8.6	8.7	10	8	6.9	6.5	6.3	6.5	6.1	9	7.7	6.7	7.5	7.3	10.4	7.9	24	
15		5.9	8.6	9	8.2	6.2	5.3	5.5	6.2	6.8	5.7	7.3	3.1	3.5	2.7	1.1	1.7	0.5	2.1	1.8	4.5	4.5	4	6.1	7.4	9.0	4.9	24	
16		6.8	7.4	8.3	11	8.3	10.2	10.3	9	7.7	8.7	8.9	8.3	8.2	9.1	11.1	9.6	6.3	6.3	7.9	7.8	6.7	9.2	10.4	9.6	11.1	8.6	24	
17		7.2	3.3	1.4	0.7	1.6	4.7	5.6	7.5	6.3	7.4	9.1	7.7	6.1	7.3	8.7	8.6	9.1	9.2	9.8	6	5.1	4.2	5.3	5	9.8	6.1	24	
18		4.4	4.8	5.4	5.4	5.5	7.1	3.4	3.8	13.2	12.6	11.6	16.3	17.6	23	21.6	19.9	16	11.1	8.7	5	5	4.8	5.3	1.6	23.0	9.7	24	
19		5	1	2.3	2.1	1.1	3.5	5.3	6.9	11.5	15.6	14.7	12.2	9.4	11.5	10.1	9.6	8.4	4.5	3.1	2	3.7	3.3	3.7	3.4	15.6	6.4	24	
20		4.7	4.4	4.7	5.5	6	8.9	12.4	13.4	13	14.7	17.2	18.6	17.8	14.3	13.3	8.7	5.4	4.8	2.6	2.6	6.3	4.8	6.9	6.6	18.6	9.1	24	
21		7.7	4.6	4.1	4.1	8.3	5.4	6.4	2.3	3.9	3.1	8.7	11.4	13.7	15.3	14.4	15.7	17.6	16.2	20.6	20	18.6	20.8	19.5	16.7	20.8	11.6	24	
22		16.5	14.4	13.3	12.6	12.4	9.6	10.7	5.6	7.7	7.8	6.7	4.6	4.9	5.7	5.6	5.3	4.4	9.3	14.6	12.8	11.2	15	15.3	19.5	19.5	10.2	24	
23		18.5	24.5	18.8	21.8	25.8	28.4	31.6	31.6	25.2	26.8	28	30.7	36.3	34.2	30.7	30.1	30.1	25.2	24.5	20.7	13.1	5.3	5	3.4	36.3	23.8	24	
24		1.8	5.8	5	6.2	3.9	3.5	2.8	1.1	5	4.2	3.1	9.9	9.9	15.1	14	12.1	14	14.3	14.2	15.8	13.3	12.7	12.3	12.5	15.8	8.9	24	
25		10.3	9.9	12.4	13.5	5.3	6.7	6.9	8.7	7.9	2.4	3.1	1.6	2.5	6.3	3.9	6.2	8.2	8.1	14.1	17	18.1	15.7	12.2	12.9	18.1	8.9	24	
26		12.4	12.3	9.1	8	5.3	4.8	6.9	7.5	8.5	9.2	9	7.5	8.4	10.6	8.6	13	13.5	13.8	14.5	12.9	7.5	10.5	11.5	9.6	14.5	9.8	24	
27		10.7	7.9	9.6	13.2	10	12.4	8.2	0.6	4.2	4.6	7.1	3.3	1.6	3.9	4.6	5.8	10.3	11.2	11.3	14.2	15.4	19.7	29.9	28	29.9	10.3	24	
28		30.9	27.7	21.9	19.3	19.4	20.1	15	17	18	16.2	15.1	15.3	15.9	16.1	14.3	11.8	10.8	11.3	13	12	14.3	12.9	12.9	13.5	30.9	16.4	24	
29		11.2	10.7	9.9	10.9	10.7	11.6	12.3	13.3	9	7	5.8	6.9	6.2	4.3	6.5	5.4	5.8	1.9	1.3	2.6	2.4	2.6	6.3	8.7	13.3	7.2	24	
30		10.3	9.8	10.6	11.7	9.9	8.4	7.6	8.8	10.2	10.1	10	8.8	7.9	6.9	5.6	4.4	4.3	3.6	2.7	1.2	4.4	3.5	3.4	1.1	11.7	6.9	24	
31		1.8	1.5	2.2	1.8	0.2	1.6	1.2	0.9	2.1	0.9	1.1	1.2	0.3	3	2.6	2.9	2.1	2.8	5	4.7	4.1	4	1.6	4.7	5.0	2.3	24	
HOURLY MAX		30.9	27.7	21.9	21.8	25.8	28.4	31.6	31.6	25.2	26.8	28.0	30.7	36.3	34.2	30.7	30.1	30.1	25.2	24.5	20.7	19.4	20.8	29.9	28.0				
HOURLY AVG		8.0	7.8	7.3	7.8	6.9	7.4	7.8	7.7	8.5	8.4	9.1	9.5	9.9	10.9	10.3	9.9	9.3	8.9	9.2	8.7	8.3	8.2	8.6	8.2				

STATUS FLAG CODES

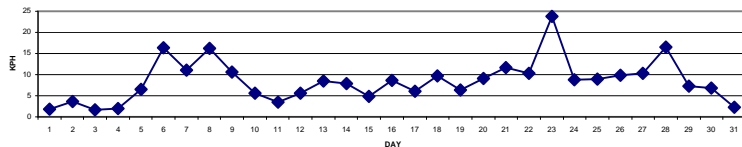
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: September 24, 2009

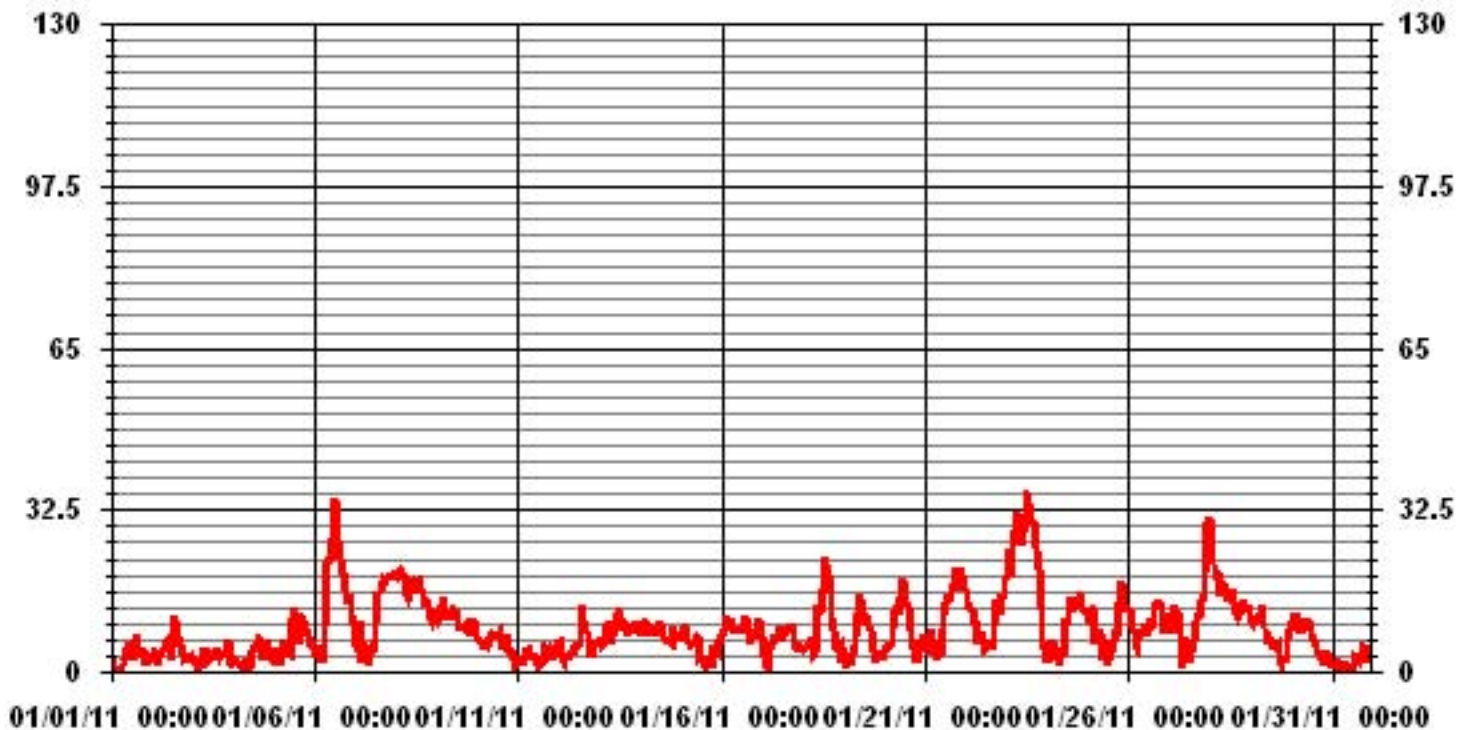
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	36.3 KPH	@ HOUR(S)	12	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	23.8 KPH			ON DAY(S)	23
CALMS (≤ 0 KPH)	0.54 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION:	6.35	MONTHLY AVERAGE	8.61	KPH	

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA33 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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	3.8	4.7	4.2	3.5	3.1	3	2.7	6.6	12.1	11.2	10.7	11.4	12.3	5.7	12.6	12.7	9.1	6.7	5.5	7	5.7	4.1	5.7	6.3	12.7
2	5.9	7.1	6.6	5.8	3.9	5.7	8.4	8.9	12.5	11.5	8.1	6.7	13	20.2	18.8	15.7	9.2	9.2	7.7	5.5	6.1	4.4	4.5	4.4	20.2
3	4.1	4.6	4	2.1	4.5	4.8	10	6.9	7.2	4.5	6	6.6	6.4	9.5	7.7	9.6	7.2	7.8	7	7.1	7.5	9.4	5.1	5.4	10
4	7.2	5.7	5	5.7	4	3.2	2.5	5.5	6.1	4.1	2.3	7.9	9.3	11.2	10.6	15	8.5	5.2	6.7	8.9	10.9	8.2	5.2	5.4	15
5	8.6	7.5	7.3	5.1	5.3	5.9	11.8	8.4	7.5	7.2	14.2	19.5	23.9	17.7	17.5	12.1	17.2	15.3	15.3	14.5	12.5	12	11	10.7	23.9
6	11.1	10.3	9	11	14	14.5	24.7	42.1	48.2	37	43.8	46.4	61.6	55.7	53.3	37.8	35.4	36.6	31.7	23	21.8	25.9	17.7	13.9	61.6
7	8.7	7.4	9.6	13.7	7.1	8.1	8.1	6.9	5.2	5.8	6.3	10.2	15.1	21.5	21.2	26.3	26.4	26.6	27.8	28.4	30.7	29.9	28.5	29.9	30.7
8	28.1	29.4	30.6	32.3	27.9	29.4	24.4	23.1	25	29.1	28.2	27.6	29.1	29.6	24.8	29.5	23.6	23.6	26.8	21.9	18.2	15.4	20.5	18.9	32.3
9	19.2	17.5	22.5	21.1	23.9	18.5	20.2	20.6	19.1	17.1	21.2	20.7	17.4	16.7	16.2	18.3	20	17.9	16.4	17.7	15.1	16.9	19.7	15.8	23.9
10	11.3	12.4	9.2	10.7	8.4	12	11.8	10.7	12	15	13.3	12.9	13.6	11.8	11.6	8.7	8.5	13.8	12.6	9.5	7.8	7.2	3.8	4.1	15
11	5.9	4.9	6.2	6.7	8.7	9.2	8.2	4.3	4.5	5.3	4.6	3.8	3	3.7	5.7	8.1	7	5.9	6.8	7.8	5.4	6.4	7.9	7.9	9.2
12	8.4	6.6	5.6	4	4.8	5.5	4.8	6.4	7.2	7.1	7	7.5	8.2	20.2	18.9	18.2	14.5	12	10.8	6.4	7.6	7.4	7.4	8.2	20.2
13	7.3	8.3	8.8	11.6	16.3	17.2	14.5	8.3	11.7	13.1	18.7	20.3	18	15.3	14.9	12.8	12.4	13.1	15.4	13.8	17	16.6	16.3	11.6	20.3
14	13.1	14.5	19.1	19.2	15	13.6	15.9	13.5	13.5	15.1	15.8	17.8	18.2	14.1	14	10.4	10.3	11.1	10.8	13.9	12.1	11	12.3	11.5	19.2
15	10.7	11.2	11.4	11.9	10	8.3	9.4	8.7	9.8	8.9	11.1	6.7	4.9	4.9	4.3	4.6	2.8	5.1	3.7	6.7	7.8	6.7	8.9	9.7	11.9
16	9.2	10.7	11.2	15	11.3	14.5	14.1	13.1	12.7	12.7	12.9	13.5	12.7	15.4	19.4	17.7	11.9	9.2	17.7	13.7	9.5	12.7	14.6	15	19.4
17	10.8	7.6	3.5	2.3	5.5	7.3	7.7	11	10	11.2	13.7	11.7	12.3	12.5	11.9	11.4	12.9	12.9	12.7	12	8.2	9.6	9.2	8.7	13.7
18	8	9.8	11.6	15	12.7	12.3	8.5	22.4	24.1	24.7	18.6	27	28.5	40.7	38.8	30.9	28.6	17.5	13.8	8.1	14.4	12.5	9.9	5.9	40.7
19	9.4	4.4	6.1	4.5	5.6	16.4	10.9	14	27	31.5	29	21.4	17.7	22.1	22.9	18	17.4	9.5	5.6	6.9	8.6	6	6.3	8.4	31.5
20	7.1	5.8	6.2	8.3	8.8	28.5	23.7	21.3	17	24.9	24.4	29.8	27.5	25.3	19.3	14.9	10	8.5	7.6	7.4	10.5	10.2	11.8	9.9	29.8
21	12.2	10	8.5	21.9	16.5	13.1	10.3	7.4	8.6	11.9	12.4	16	18.2	20.8	20	22.1	24.4	25.6	29.8	28.7	25.4	29.1	27.9	22.1	29.8
22	22.9	20.2	18.8	18.3	17	13.8	23.3	13	13.6	13.3	14.9	16.7	8.4	8.2	7.2	7.7	9.8	17.6	19.1	19.5	19	26.5	26.7	45.2	45.2
23	36.3	49.1	42.5	53	53.9	48.3	54.6	59.3	42.6	43.1	46.4	47.1	64.5	57.8	55.8	57	61.8	47.8	46.2	39.9	29.3	10.7	8	9	64.5
24	9.4	11	10.1	8.8	8.6	5.6	5.7	6	8.2	6.3	17.6	22.7	22.8	24.6	24.1	18.9	18.5	20	18.7	22.3	18.8	17.5	16.6	17.5	24.6
25	15.4	15.7	16.6	19.4	13.3	12.7	12.9	12.1	12.8	8.2	8.8	5.6	6.9	9.4	7.8	13.3	12.4	15	20.7	21.9	22	21.2	16.5	15.7	22
26	16.2	21.3	17.5	11.3	8.9	9.6	15.7	11.6	12.6	13.4	13.3	12.8	14.9	15.2	11.8	18.3	19.4	18.2	20.1	24.9	13.7	16.9	18.4	15.4	24.9
27	16.7	12.1	12.9	17	17.7	17.7	17.1	7.7	11.1	10.7	11.9	17	9	10.4	9.5	18.4	15.4	15.2	20.7	22.4	27.7	43.9	50.3	50	50.3
28	56.3	47.4	42.5	38.1	38.5	38.9	36.5	33.8	35.4	33.2	29	26.8	28.9	25.5	23.1	18.3	17.8	17	22.8	21.2	22.9	19.3	20.7	23.5	56.3
29	18.7	18.8	15.6	18.2	16.8	19.7	21.3	20.4	14.1	11.2	9.2	10.9	10.5	11.7	9	8.3	9.4	4.6	3.3	5.6	5	5.1	12.8	15.1	21.3
30	15	14.5	14.6	15	14.8	12.3	10.7	11.7	13.1	14.7	14.5	12.3	10.4	9.9	8.5	7.3	5.8	6.1	5.4	4.7	6.4	5.8	6.3	3.5	15
31	3.4	4.2	4.8	3.6	3.1	4.2	4	2.3	4.2	3.3	3.8	4.7	3.9	5.6	5.8	7.6	5.7	7	9	10	12.5	11.4	10	10.6	12.5
PEAK	56.3	49.1	42.5	53.0	53.9	48.3	54.6	59.3	48.2	43.1	46.4	47.1	64.5	57.8	55.8	57.0	61.8	47.8	46.2	39.9	30.7	43.9	50.3	50.0	

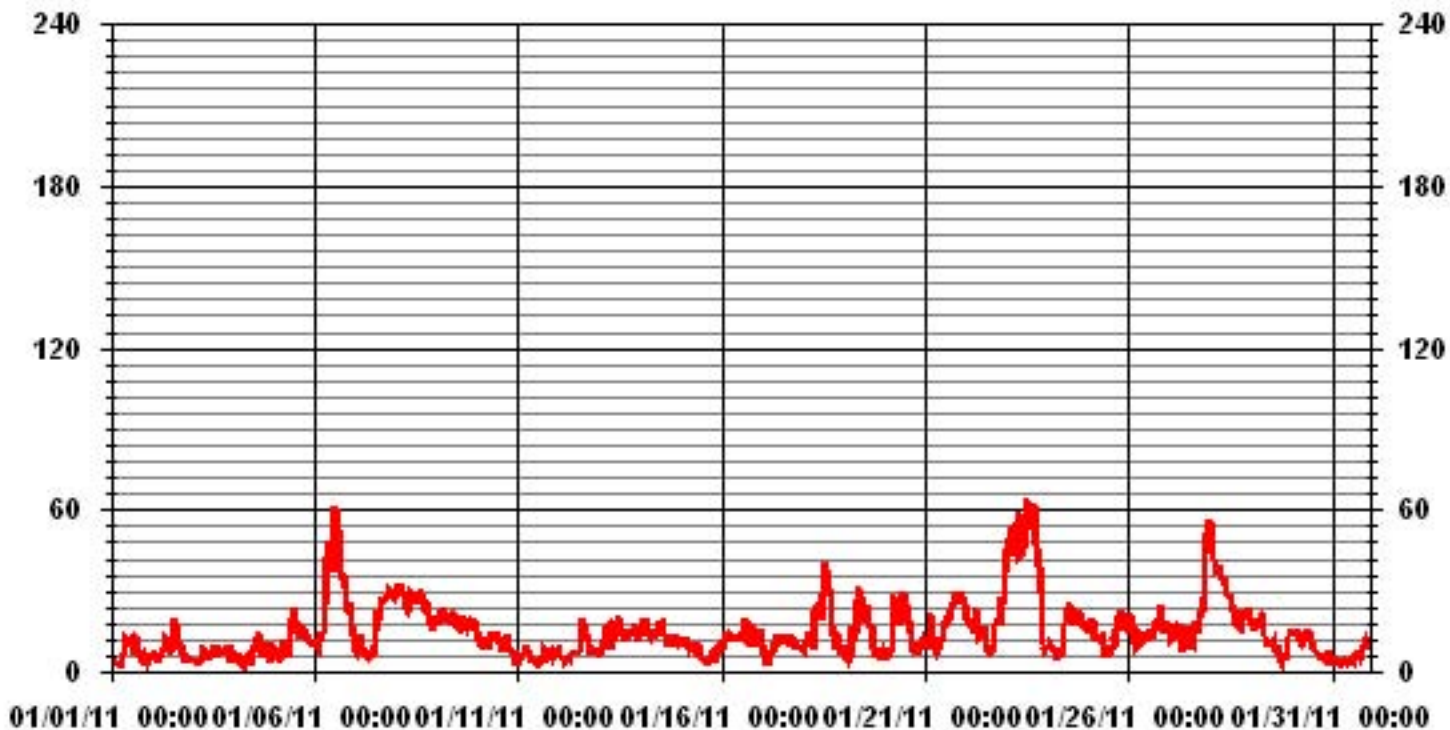
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	64.5	KPH	@ HOUR(S)	12
			ON DAY(S)	23

01 Hour Averages



LICA33
WSP / WDR Joint Frequency Distribution (Percent)

January 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	1.34	.94	1.07	2.01	4.03	3.89	3.22	3.62	4.03	2.41	3.89	2.82	1.88	2.15	2.82	2.28	42.47	
< 12.0	2.82	2.28	4.03	2.95	3.49	.94	.40	.40	.26	.26	2.55	2.95	1.74	2.15	2.15	4.56	34.00	
< 20.0	1.34	2.55	.40	.80	3.49	.26	.53	.13	.00	.00	2.82	1.88	1.07	.80	.67	1.07	17.87	
< 29.0	.00	.00	.00	.40	.40	.00	.00	.00	.00	.00	.00	.00	1.20	1.34	.53	.13	4.03	
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	1.07	.40	.00	1.61	
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	5.51	5.77	5.51	6.18	11.42	5.10	4.16	4.16	4.30	2.68	9.27	7.66	6.04	7.52	6.58	8.06		

Calm : .00 %

Total # Operational Hours : 744

Distribution By Samples

	Direction																	
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 6.0	10	7	8	15	30	29	24	27	30	18	29	21	14	16	21	17	316	
< 12.0	21	17	30	22	26	7	3	3	2	2	19	22	13	16	16	34	253	
< 20.0	10	19	3	6	26	2	4	1			21	14	8	6	5	8	133	
< 29.0				3	3								9	10	4	1	30	
< 39.0													1	8	3		12	
>= 39.0																		
Totals	41	43	41	46	85	38	31	31	32	20	69	57	45	56	49	60		

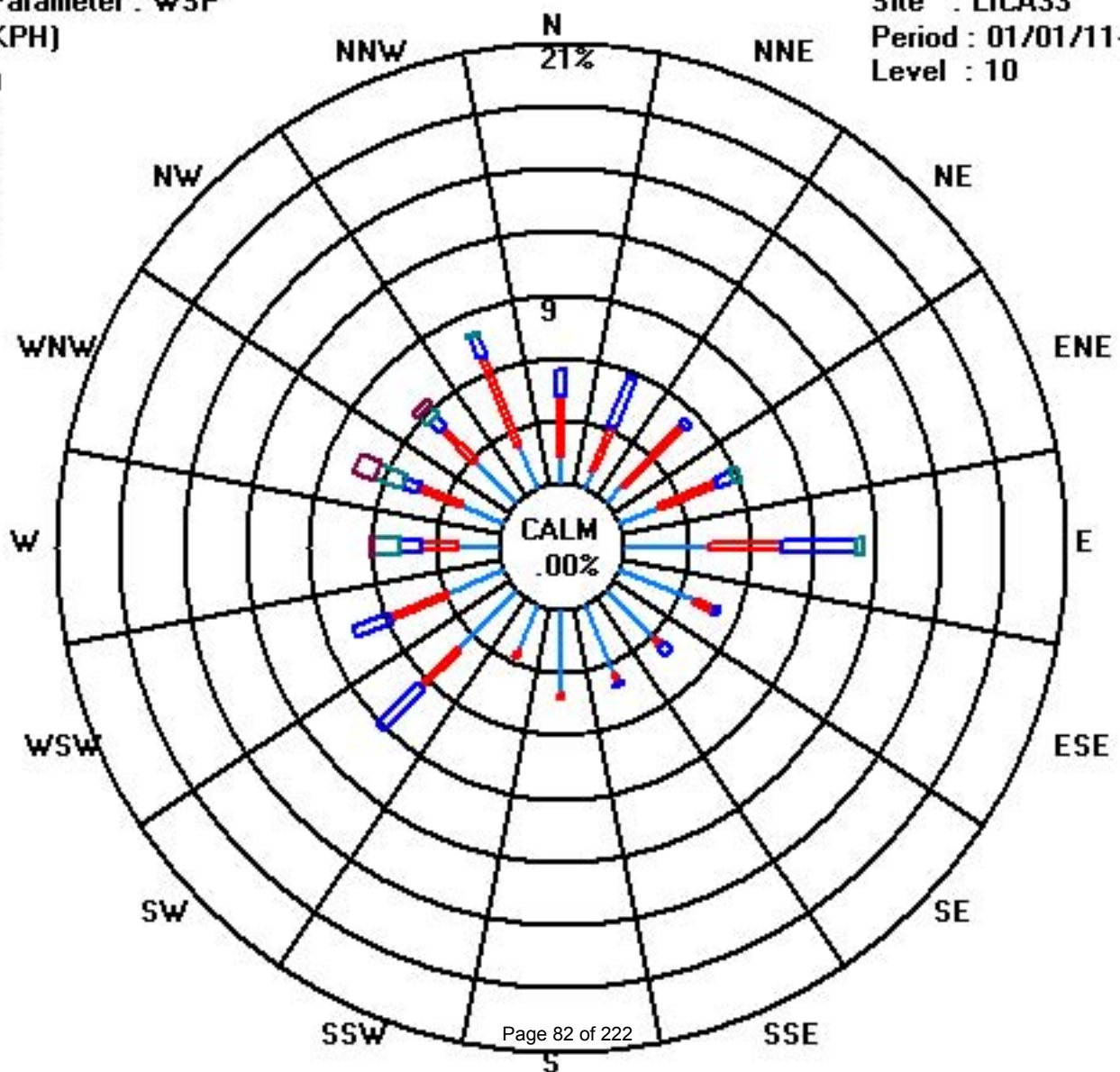
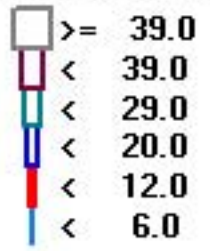
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

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

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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																									
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	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	150	148	50	235	201	91	242	156	243	260	231	178	198	185	242	231	253	350	322	283	299	314	263	344	241	WSW	24																								
2	359	1	17	50	359	320	330	329	339	2	32	28	311	314	323	339	343	315	338	308	243	248	233	228	332	NNW	24																								
3	228	229	232	202	169	214	227	161	163	148	133	139	149	191	175	177	220	300	312	283	299	276	271	150	218	SW	24																								
4	224	216	195	212	144	176	214	216	220	243	249	230	258	251	264	251	256	267	352	351	3	334	281	274	265	W	24																								
5	237	231	209	213	114	81	103	134	146	156	226	269	268	280	285	261	249	242	243	228	227	209	221	213	236	SW	24																								
6	180	222	120	118	209	337	241	264	271	268	276	284	290	295	297	296	290	306	294	287	276	285	283	276	282	W	24																								
7	252	254	231	228	196	104	122	139	87	92	87	96	93	94	99	95	91	80	79	81	83	80	80	77	91	E	24																								
8	75	78	76	74	74	69	57	48	46	47	32	30	26	27	24	23	17	8	16	17	6	4	6	6	40	NE	24																								
9	16	4	5	4	17	24	9	0	359	359	359	354	352	338	330	333	323	329	332	335	336	342	345	343	353	N	24																								
10	328	328	323	329	326	327	333	331	341	343	337	330	324	320	321	317	314	328	342	342	280	289	238	153	326	NW	24																								
11	148	213	184	127	122	116	130	144	115	105	95	107	86	103	86	81	57	113	132	105	112	102	106	122	111	ESE	24																								
12	113	94	75	66	72	85	69	78	76	85	97	81	81	81	85	88	83	87	81	49	310	307	291	291	76	ENE	24																								
13	286	273	256	286	280	286	277	286	261	283	289	310	320	290	283	285	308	344	3	2	21	36	43	49	311	NW	24																								
14	39	35	36	19	353	339	337	331	325	330	321	327	328	338	343	357	348	345	351	25	26	19	8	9	355	N	24																								
15	27	63	65	58	40	48	41	44	52	61	68	93	125	127	124	105	125	128	98	93	134	122	92	96	73	ENE	24																								
16	82	83	82	72	72	68	59	45	41	45	42	43	28	30	34	47	49	51	31	39	47	59	57	63	52	NE	24																								
17	56	74	94	193	70	70	89	85	96	83	98	94	81	86	78	83	88	99	100	98	133	172	174	170	94	E	24																								
18	164	182	188	191	184	171	186	239	250	259	277	277	287	296	291	286	286	287	283	291	308	289	222	250	270	W	24																								
19	147	139	44	44	15	332	317	288	308	329	326	335	332	324	329	315	313	288	279	227	222	125	176	224	316	NW	24																								
20	103	102	93	91	74	105	122	98	85	101	124	142	143	151	143	146	120	90	76	19	299	289	278	289	119	ESE	24																								
21	305	292	301	5	355	340	316	326	110	82	105	85	98	97	88	80	78	79	81	84	84	90	89	99	79	ENE	24																								
22	86	87	94	100	104	85	110	183	167	168	181	202	121	123	99	147	179	217	224	223	229	230	225	227	162	SSE	24																								
23	250	273	257	277	274	279	282	290	289	288	287	289	295	298	304	305	305	307	309	307	311	287	288	349	290	WNW	24																								
24	152	150	177	133	172	143	156	116	97	70	190	213	213	234	247	240	244	245	241	244	251	253	260	273	231	SW	24																								
25	245	252	270	265	242	226	221	227	218	163	206	127	105	116	155	217	222	221	229	230	232	231	230	228	229	SW	24																								
26	231	234	237	231	257	215	239	247	263	266	256	261	229	237	231	228	234	234	235	232	240	248	256	255	240	WSW	24																								
27	260	252	243	235	242	236	238	182	162	184	165	171	197	233	169	208	229	232	250	237	242	249	280	280	243	WSW	24																								
28	285	289	308	330	329	327	322	328	333	338	345	352	350	14	0	359	10	34	22	15	14	19	21	26	341	NNW	24																								
29	28	31	22	12	13	10	13	29	31	39	82	47	25	67	126	146	132	148	337	327	326	320	47	59	34	NE	24																								
30	60	50	63	59	55	52	37	45	57	69	81	72	67	78	90	95	117	115	38	152	118	21	356	323	63	ENE	24																								
31	355	306	312	245	76	241	330	265	230	278	332	264	147	129	159	164	168	190	220	215	189	193	164	177	205	SSW	24																								
HOURLY AVG	359	328	323	330	359	340	337	331	359	359	359	354	352	338	343	359	348	350	352	351	336	342	356	349																											

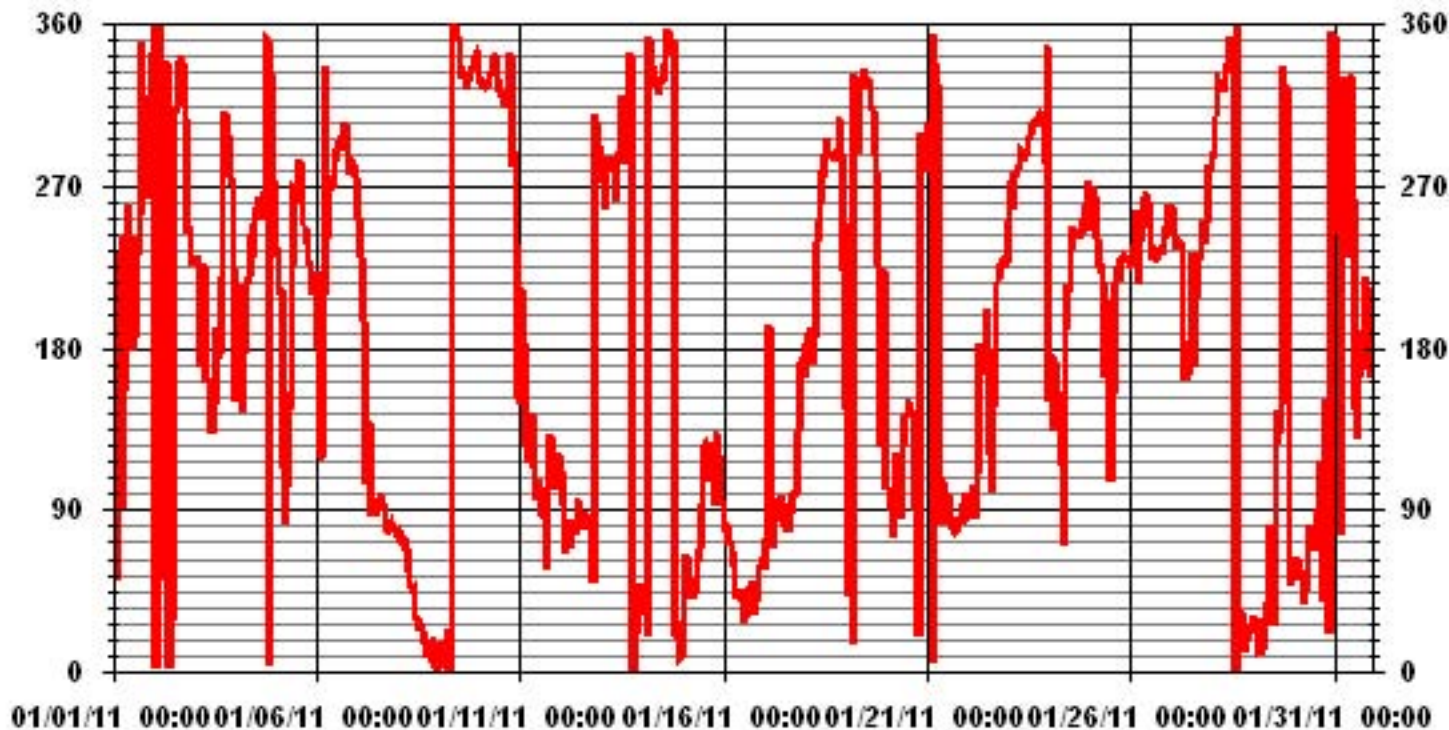
STATUS FLAG CODES

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	106.35	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	326 DEG

01 Hour Averages



— LICA33 WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JANUARY 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	10	9	28	33	23	41	37	38	26	12	14	19	23	21	17	7	17	10	14	6	18	28	8	11	
2	7	7	10	13	22	11	13	8	11	12	11	28	14	11	11	11	10	7	27	15	33	8	4	7	
3	5	5	8	9	36	13	13	18	13	15	13	11	10	23	17	48	14	15	9	9	10	6	14	24	
4	16	19	28	12	24	11	13	18	13	20	24	21	17	23	14	9	9	13	12	9	12	14	6	11	
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6	33	20	29	21	55	45	19	8	9	8	8	8	9	9	9	8	8	11	8	7	7	7	6	5	
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17	8	6	11	9	47	7	9	6	8	8	8	10	11	12	6	7	6	6	5	8	9	19	9	10	
18	8	13	14	18	16	10	24	39	10	14	10	9	9	9	8	7	7	5	3	9	18	19	14	23	
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24	57	17	12	11	13	13	17	40	12	11	23	20	22	9	8	6	5	5	4	5	4	3	5	4	
25	5	5	5	5	14	7	8	4	11	15	23	35	25	8	22	20	14	21	3	4	3	3	3	3	
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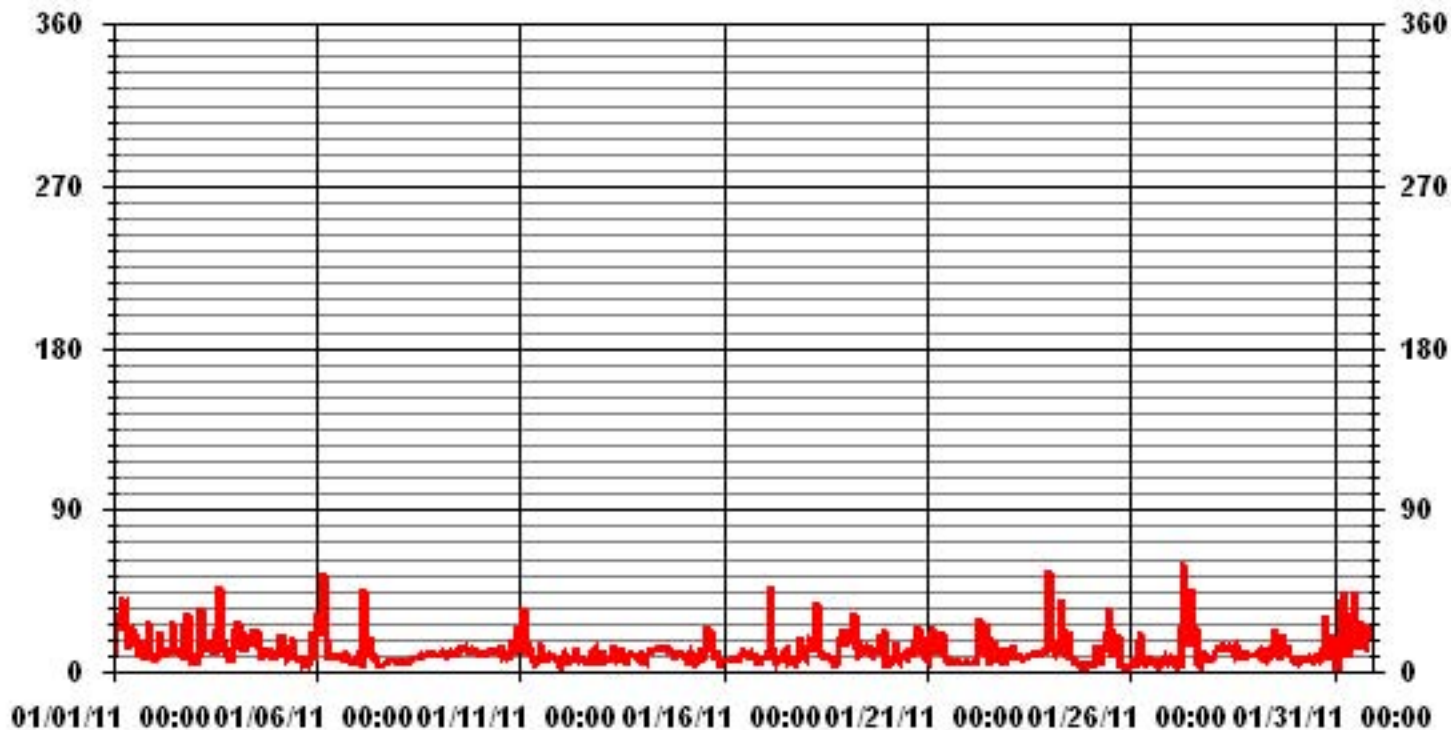
STATUS FLAG CODES

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

LAST CALIBRATION: September 24, 2009

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

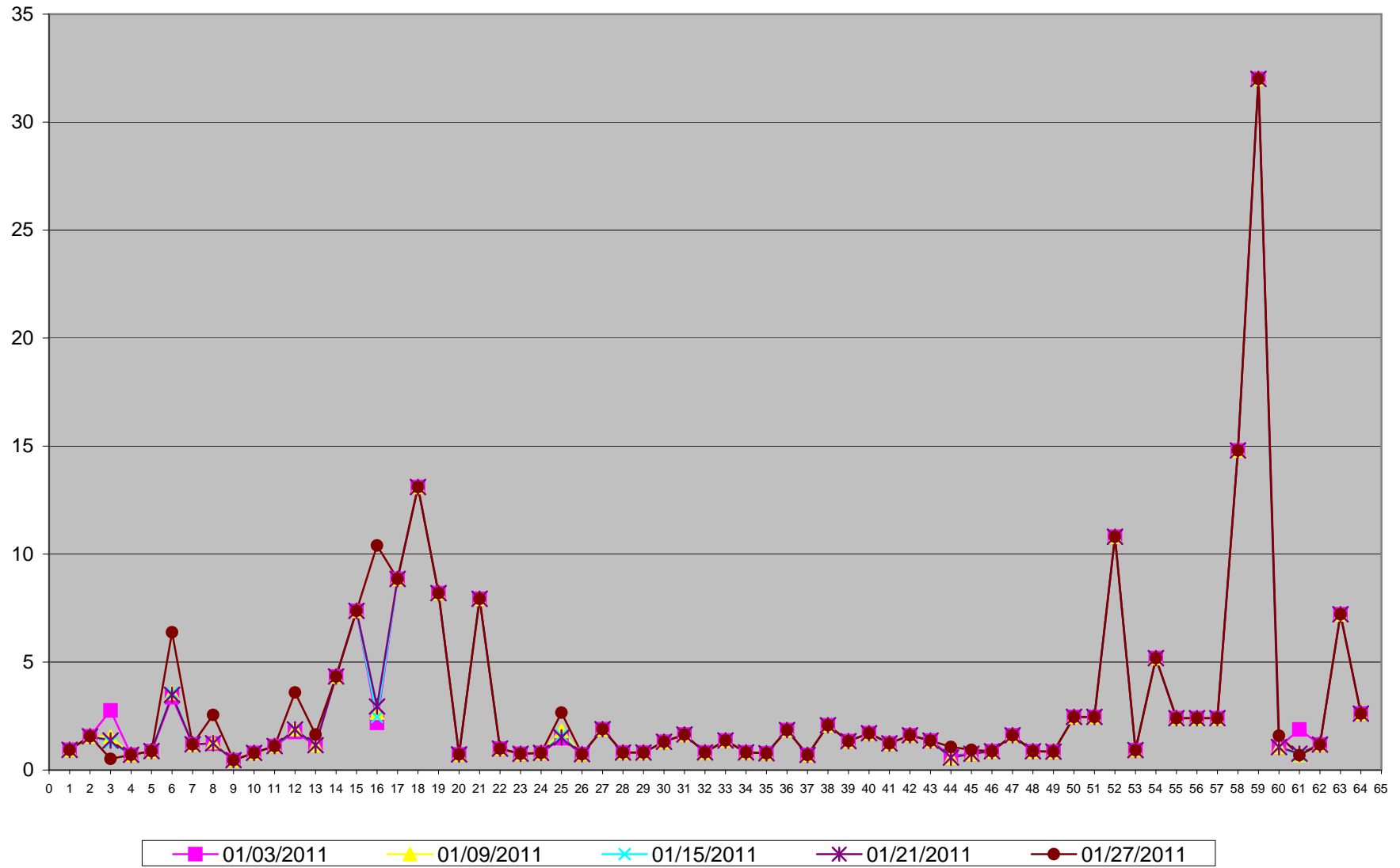
01 Hour Averages



— LICA33 STDWDIR DEG

Volatile Organics

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



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

Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for January 2011

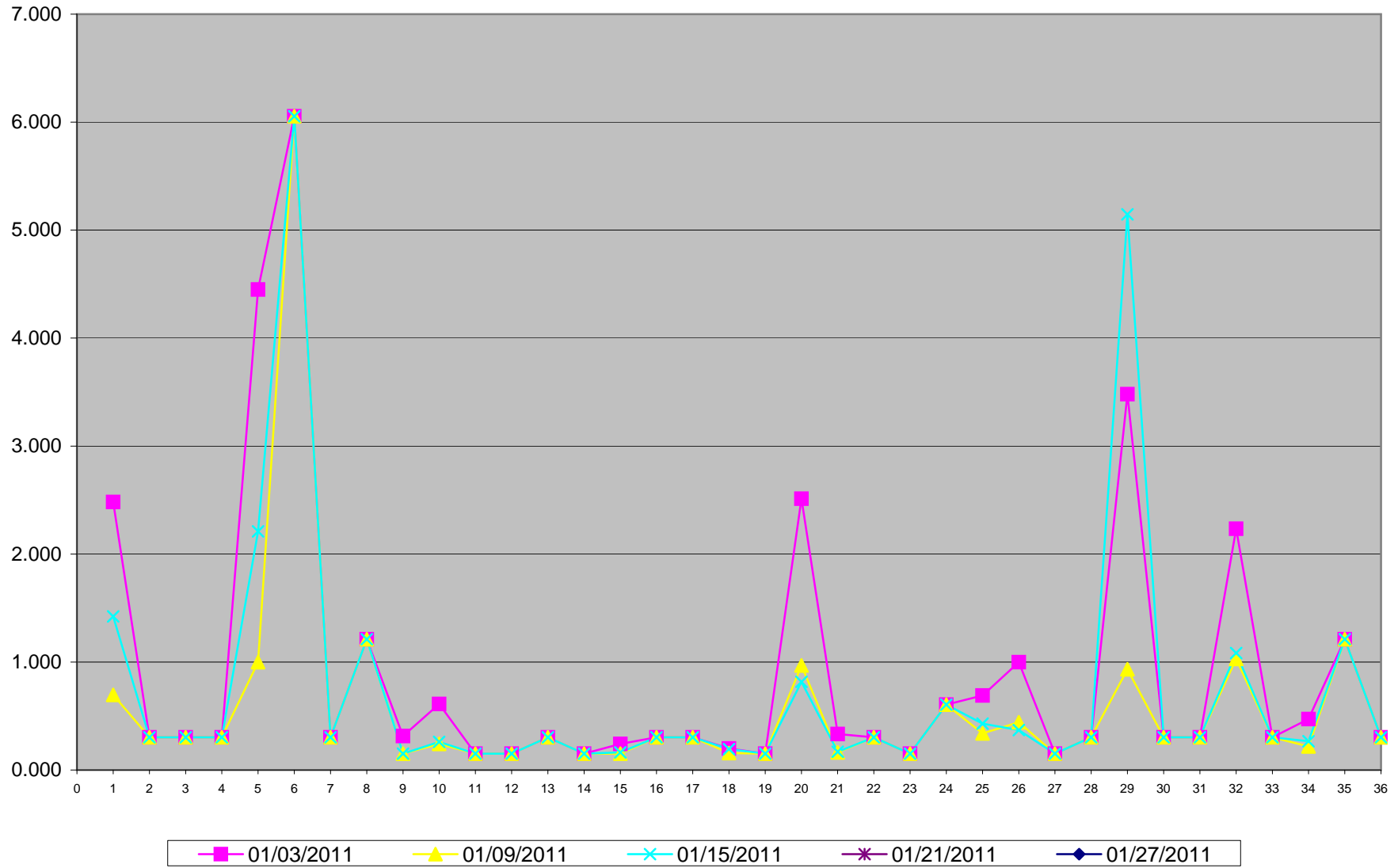
LICA- Portable Site

Unit: ng/m³

PAHs	01/03/2011	01/09/2011	01/15/2011	01/21/2011	01/27/2011
Sample Volume (unit: m3)	330.35	330.34	330.36	330.38	330.33
1 1-Methylnaphthalene	2.482	0.696	1.423	1.302	0.303
2 1-Methylphenanthrene	0.303	0.303	0.303	0.303	0.303
3 2-Chloronaphthalene	0.303	0.303	0.303	0.303	0.303
4 2-Methylantracene	0.303	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	4.450	0.999	2.210	2.119	0.303
6 3-Methylcholanthrene	6.054	6.054	6.054	6.054	6.055
7 7,12-Dimethylbenzo(a)anthracene	0.303	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	1.211	1.211	1.211	1.211	1.211
9 Acenaphthene	0.315	0.151	0.151	0.176	0.151
10 Acenaphthylene	0.611	0.242	0.260	0.563	0.151
11 Anthracene	0.151	0.151	0.151	0.151	0.151
12 Benzo(a)anthracene	0.151	0.151	0.151	0.151	0.151
13 Benzo(a)fluorene	0.303	0.303	0.303	0.303	0.303
14 Benzo(a)pyrene	0.151	0.151	0.151	0.151	0.151
15 Benzo(b)fluoranthene	0.242	0.151	0.163	0.151	0.151
16 Benzo(b)fluorene	0.303	0.303	0.303	0.303	0.303
17 Benzo(e)pyrene	0.303	0.303	0.303	0.303	0.303
18 Benzo(g,h,i)perylene	0.200	0.157	0.194	0.151	0.176
19 Benzo(k)fluoranthene	0.151	0.151	0.151	0.151	0.151
20 Biphenyl	2.512	0.969	0.817	1.453	0.333
21 Chrysene	0.333	0.163	0.170	0.151	0.151
22 Coronene	0.303	0.303	0.303	0.303	0.303
23 Dibenz(a,h)anthracene	0.151	0.151	0.151	0.151	0.151
24 Dibenzo(a,e)pyrene	0.605	0.605	0.605	0.605	0.605
25 Fluoranthene	0.690	0.339	0.430	0.400	0.285
26 Fluorene	0.999	0.442	0.369	0.732	0.587
27 Indeno(1,2,3-cd)pyrene	0.151	0.151	0.151	0.151	0.151
28 m-Terphenyl	0.303	0.303	0.303	0.303	0.303
29 Naphthalene	3.481	0.932	5.146	2.476	0.242
30 o-Terphenyl	0.303	0.303	0.303	0.303	0.303
31 Perylene	0.303	0.303	0.303	0.303	0.303
32 Phenanthrene	2.234	1.029	1.084	1.544	1.102
33 p-Terphenyl	0.303	0.303	0.303	0.303	0.303
34 Pyrene	0.472	0.218	0.266	0.260	0.151
35 Quinoline	1.211	1.211	1.211	1.211	1.211
36 Tetralin	0.303	0.303	0.303	0.303	0.303

Note: - values were calculated by the formula of [reading (ug) x 1000 / sample volume (m3)].
 - Where the analytical results are less than the minimum detection limit (MDL), the MDL has been used in calculations.
 - See analytical for details.

PAHs in ng/m3 Site: LICA - Portable Site



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

Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	January 11, 2011	Previous Calibration	December 8, 2010
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	13:37	End Time (MST)	16:50
Reason:	Monthly Calibration		
Barometric Pressure	0.934 atm	Station Temperature	22 Deg C
Cal Gas	51.4 ppm	Cal Gas Expiry date	5/8/2010
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	595 ccm, 30.7 Deg C	579 ccm, 33.5 Deg C	
HVPS / Lamp Setting	604, 2228	604, 2227	
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	71.3, 0.956	71.3, 0.956	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4998	0	0	0	N/A
4925	73	751	751	0.9997
4962	38.9	400	399	1.0021
4982	16.5	170	169	1.0040
4998	0	0	0	N/A
Sum of Least Squares				0.2509
New Correction Factor				0.9997

Before Calibration

After Calibration

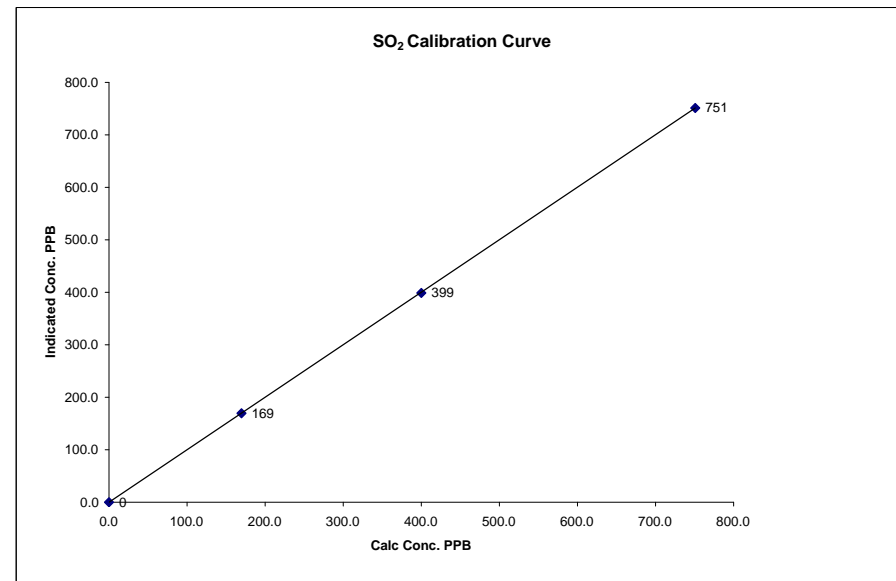
Auto Zero	0.0	-0.1
Auto Span	361	360
Sample Lines Connected	YES	
Percent Change from Previous Calibration	-0.7%	

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

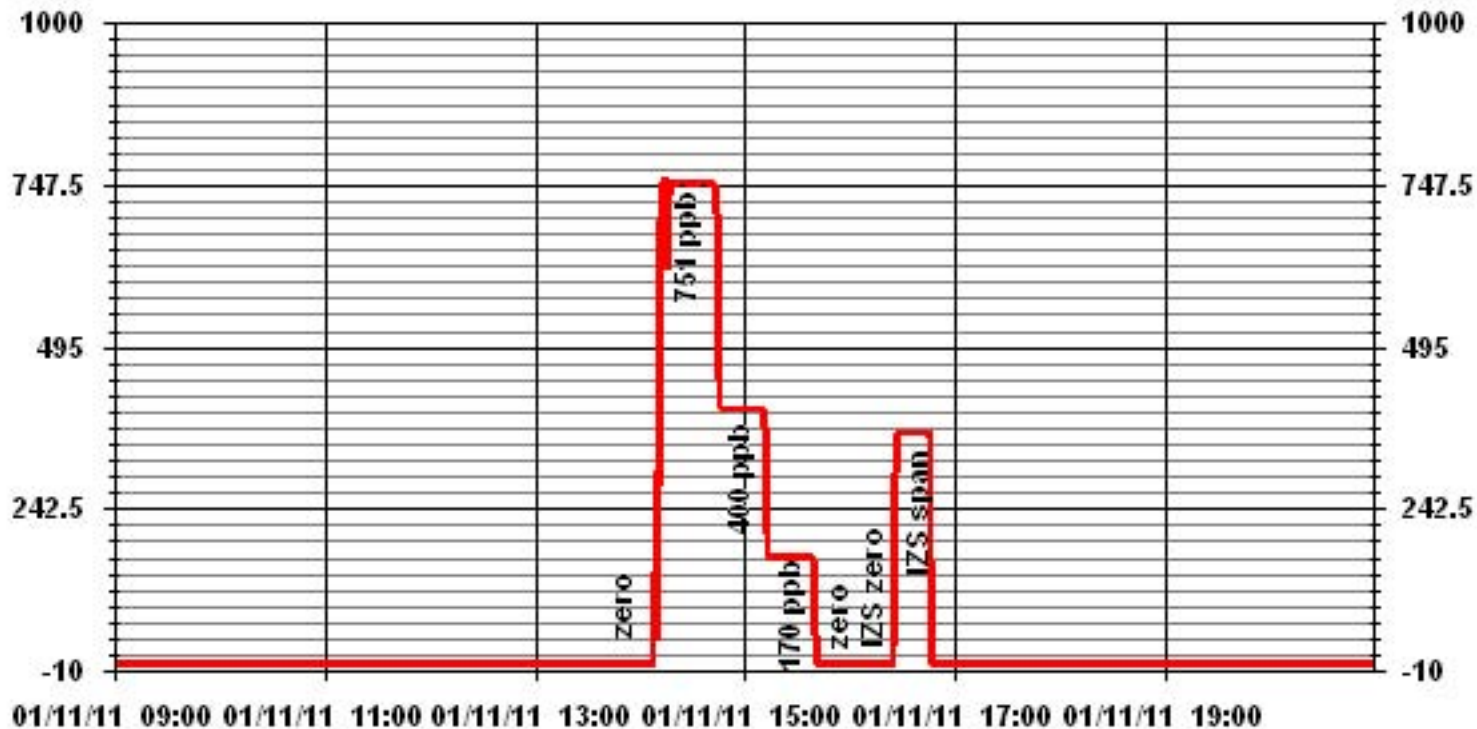
Calibration Date	January 11, 2011
Company	Lakeland Community and Industry Association
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M
Start Time (MST)	13:37
End Time (MST)	16:50

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	0.999998	1.000504
170	169	1.0040		-0.474294
400	399	1.0021		
751	751	0.9997		



Notes: When did span point, found out the gas flow rate was not correct, stopped and edited the concentration of the cal gas from the calibrator, re-did the point.

01 Minute Averages



— LICA33 SO2_ PPB

Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	January 12, 2011	Previous Calibration	December 7, 2010
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M		
Start Time (MST)	8:03	End Time (MST)	17:48
Reason:	Monthly Calibration		
Barometric Pressure	0.948 atm	Station Temperature	22 Deg C
Cal Gas	10.6 ppm	Cal Gas Expiry date	05/12/2011
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	539 ccm	33.7 Deg C	530	34.1	Deg C
HVPS / Lamp Setting	528	2232	528	2232	
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	314.7 Deg C	45 Deg C	
Offset / Slope	52	0.966	51.8	0.942	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4998	0	0	1	N/A
4998	0	0	0	N/A
4961	37.7	80	77	1.0382
4998	0	0	0	N/A
4961	37.7	80	82	0.9749
4961	37.7	80	80	1.0000
4981	18.9	40	40	1.0017
4987	10.9	23	23	1.0051
4998	0	0	1	N/A
Sum of Least Squares				1.0001
New Correction Factor				1.0000

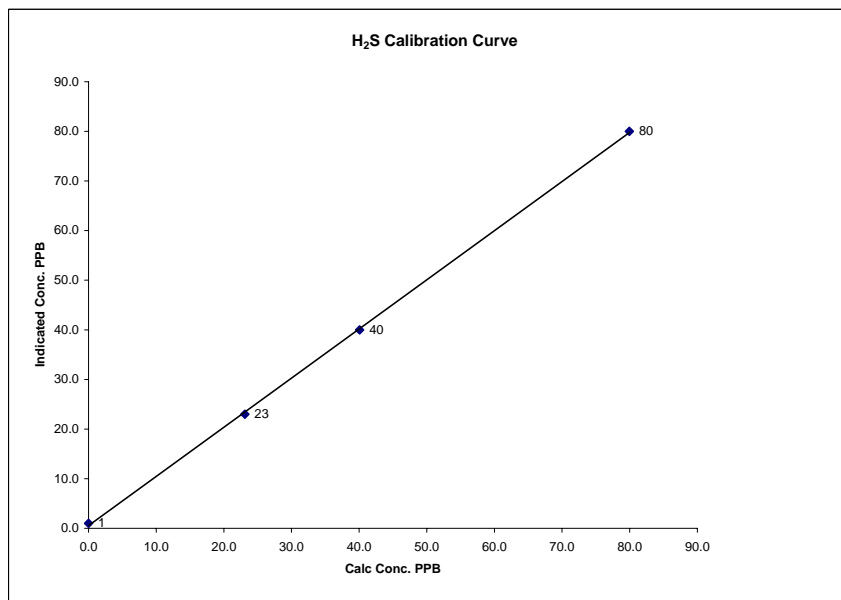
		Before Calibration	After Calibration
Auto Zero		0.7	1.2
Auto Span		53	55
Sample Lines Connected			YES
Percent Change from Previous Calibration			-3.7%

Calibration Performed by: Ting Xu

H₂S Calibration Curve

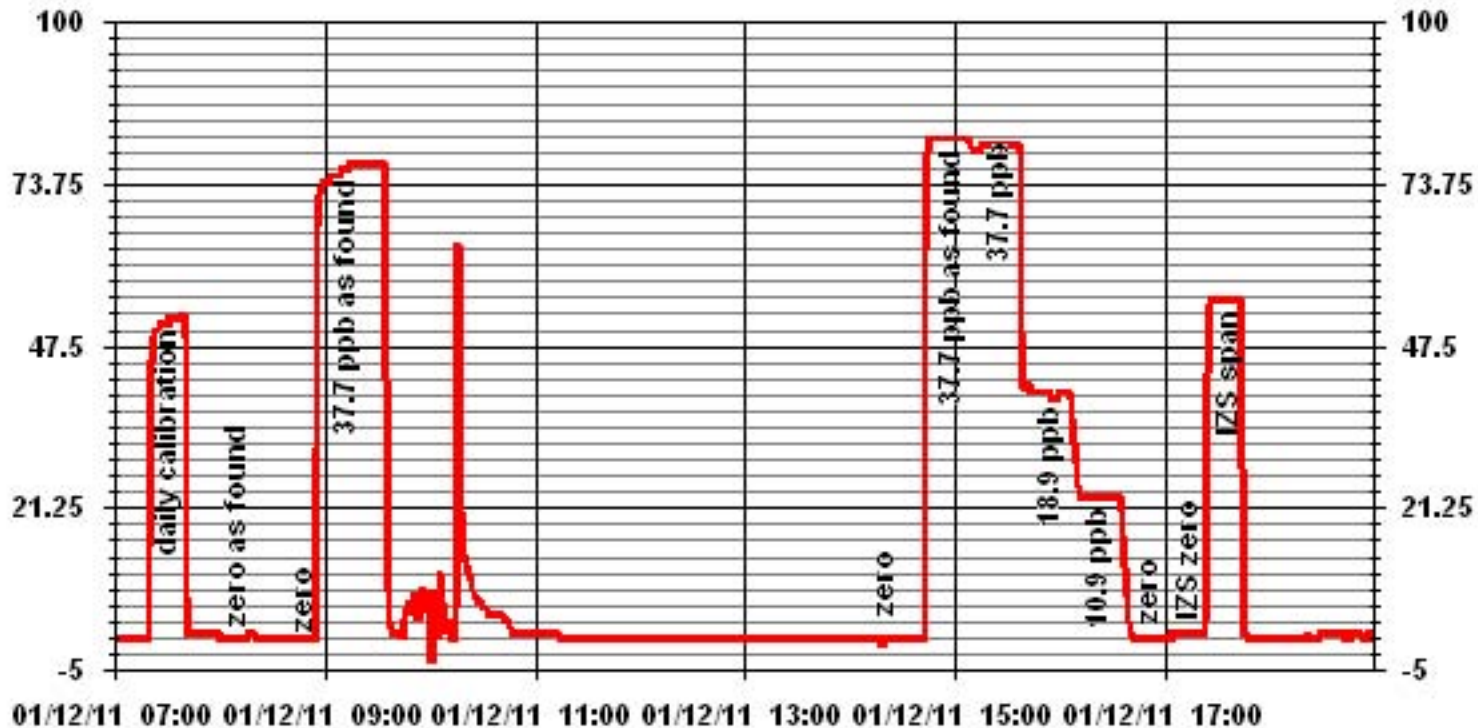
Calibration Date	January 12, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M		
Start Time (MST)	8:03	End Time (MST)	17:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999842
0	1	n/a	Intercept	(± 3% F.S.)	0.990571
23	23	1.0051			
40	40	1.0017			
80	80	0.9993			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	<u>January 26, 2011</u>	Make/Model:	<u>Streamline FTS</u>
Station Name:	<u>Lica Portable (CASA # 33)</u>	Serial Number:	<u>Hi 091001</u>
Location:	<u>Devon Wellsite 13-16-62-5 W4M</u>	Cell s/n:	<u>Lo 091099</u>
Operator:	<u>LICA</u>	Thermometer s/n:	<u>Fisher Brad 15-021B</u>

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	<u>Thermo Scientific Series 1405F</u>	F-Main Set Pt (l/min)	<u>3.00</u>
Unit #	<u>NA</u>	F-Aux Set Pt (l/min)	<u>13.67</u>
Unit s/n	<u>1405A207691003</u>	Filter Load (%)	<u>9.8%</u>
Firmware Ver.	<u>1.51</u>	K _o Factor	<u>15634.0</u>
Parameter	<u>PM 2.5 (with FDMS)</u>	Temp (°C)	<u>0.1</u>
		Press (ATM)	<u>0.931</u>

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	<u>0.003</u>	Warnings	<u>None</u>
Pump Vacuum <0.40atm	<u>0.31</u>	Pump Gauge (inHg)	<u>-19</u>
Temperature/Pressure			
Measured Temp (± 2 °C)	<u>-0.5</u>	D °C	<u>0.6</u>
Measured Press (± 0.01atm)	<u>0.929</u>	DATM	<u>0.002</u>
Flow Audit			
Indicated Main Flow (l/min)	<u>3.00</u>	Main Flow Drift (±10.0%)	<u>1.22%</u>
Measured Main Flow (l/min)	<u>2.99</u>	Flow Adjusted to Measured?	<u>Yes</u>
Indicated Bypass Flow (l/min)	<u>13.67</u>	Bypass Flow Drift (±10.0%)	<u>1.17%</u>
Measured Bypass Flow (l/min)	<u>13.49</u>	Flow Adjusted to Measured?	<u>Yes</u>
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	<u>Base=0.00, Ref=0.00</u>	<u>Flow Control = Active</u>	
Aux (< 0.6 l/min)	<u>Base=0.00, Ref=0.00</u>	<u>Report Conditions = Standard (25.0 C and 1atm)</u>	
K_o Factor			
Measured	<u>NA</u>		
K _o Difference (± 2.5%)	<u>NA</u>		

Start Time: 8:40 **Finish Time:** 10:08

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

Comments: Changed FDMS filter

Auditor/s: Shea Beaton / Ting Xu

Nitrogen Dioxide

NOx - NO- NO₂ Calibration Report

Station Information

Calibration Date	January 12, 2011	Previous Calibration	December 7, 2010
Company	LICA	Plant/Location	Portable/ 13-16-62-5W4M
Start Time (MST)	8:03	End Time (MST)	14:20
Reason:	Monthly Calibration	Other	
Barometric Pressure	0.948 atm	Station Temperature	22 Deg C
Cal Gas Concentration	NOx 50.8 ppm	NO 50.4 ppm	Cal Gas Expiry date 05-Aug-12
DAS Output Voltage	0 - 1	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	API 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 5100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	AO 717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 5100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0-1000			ppb			
Sample Flow/Conv. Temp	484 ccm	315 Deg C		481 ccm	314.2 Deg C		
Ozone Flow / Vacuum	79 ccm	5.5 "Hg-A		79 ccm	5.5 "Hg-A		
HVPS / A ZERO	634 Volts	5.8 MV		634 Volts	5.7 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	33.3 Deg C	45.1 Deg C		33.7 Deg C	45.3 Deg C		
Offset	0.2 NOx	0.1 NO		0.2 NOx	0.1 NO		
Slope	1.179 NOx	1.161 NO		1.198 NOx	1.186 NO		
NO ₂ COEF / Conv Efficiency	NA NO ₂	0.996		NA NO ₂	0.996		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO ₂	NOx	NO	NO ₂	NOx	NO
4992	0.0	----	0	0	0	0	0	0	----	----
4919	74.2	----	755	749	----	744	734	10	1.0146	1.0204
4919	74.2	----	755	749	----	755	748	6	0.9999	1.0013
4960	34.6	----	352	349	----	357	354	3	0.9858	0.9863
4974	19.8	----	201	200	----	205	204	1	0.9825	0.9796
4995	0.0	----	0	0	0	0	1	-1	----	----

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO ₂ Correction Factor	NO ₂ Conv Efficiency
			NOx	NO	NO ₂	NOx	NO	NO ₂		
4919	74.2	----	755	749	----	748	744	4	----	----
4919	74.2	600	755	----	563	750	185	564	0.9982	100.18%
4919	74.2	250	755	----	236	750	512	238	0.9916	100.86%
4919	74.2	140	755	----	133	750	615	135	0.9852	101.55%

Linearity	Sum of Least Squares	NOx= 0.996	NO= 0.997	NO ₂ = 0.997
OK?	Correction Factors:	NOx= 0.9999	NO= 1.0013	NO ₂ = 0.9982
Average Converter Efficiency= 100.86%				

Before Calibration				After Calibration			
Auto Zero	-0.1 NOx	-0.2 NO ₂		0.4 NOx	-1.4 NO ₂		
Auto Span	638 NOx	624 NO ₂		643 NOx	630 NO ₂		
Sample Lines Connected				YES			
Percent Change from Previous Calibration		NOx -1.6%	NO -2.1%	NO ₂ 0.0%			

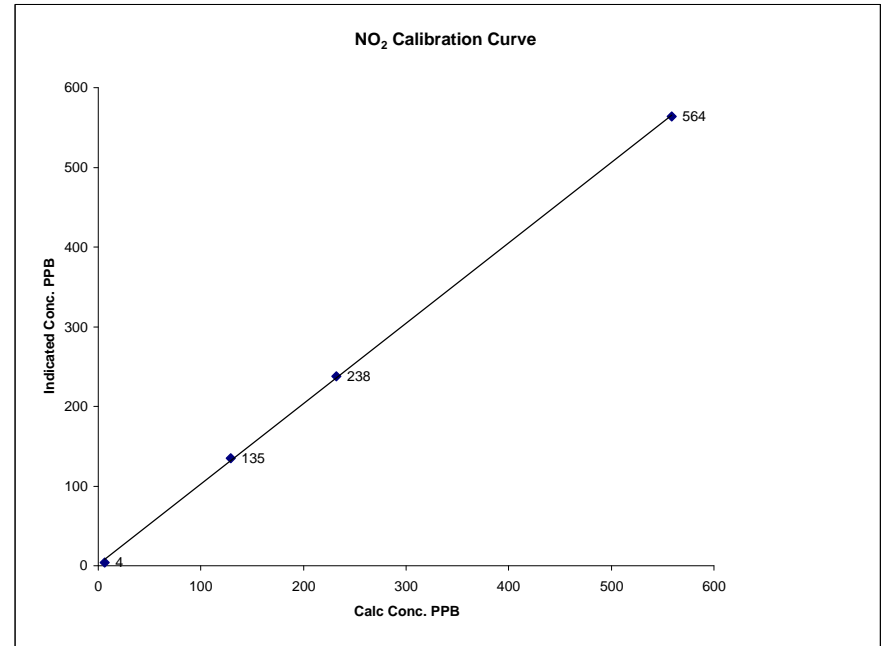
Notes Additional point done for ozone cal (O3 set point= 420), NOx=760, NO=355, NO₂=405.

Calibration Performed by: Ting Xu

NO₂ Calibration Curve

Calibration Date	January 12, 2011	Company	LICA
Plant / Location	Portable/ 13-16-62-5W4M	Start Time (MST)	8:03
End Time (MST)	14:20		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	(0.85 to 1.15) (± 3% F.S.)
6	4	N/A	0.999815	1.008757
129	135	0.9556	Slope	1.72281
232	238	0.9748	Intercept	
559	564	0.9911		

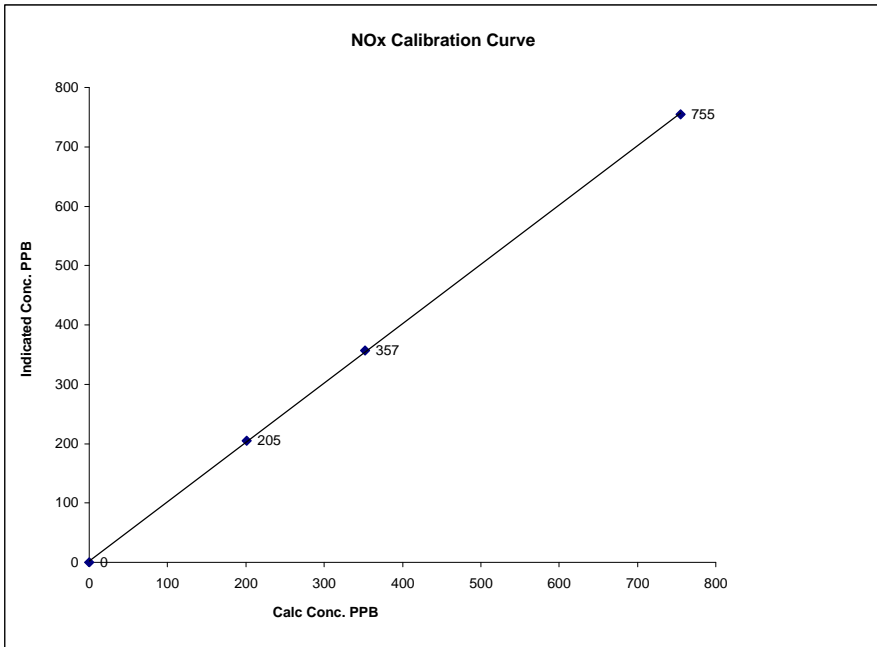


Notes:

NOx Calibration Curve

Calibration Date January 12, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:03 End Time (MST) 14:20

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999937
0	0	N/A	Slope (0.85 to 1.15)	0.999085
201	205	0.9825	Intercept (± 3% F.S.)	2.49110
352	357	0.9858		
755	755	0.9999		

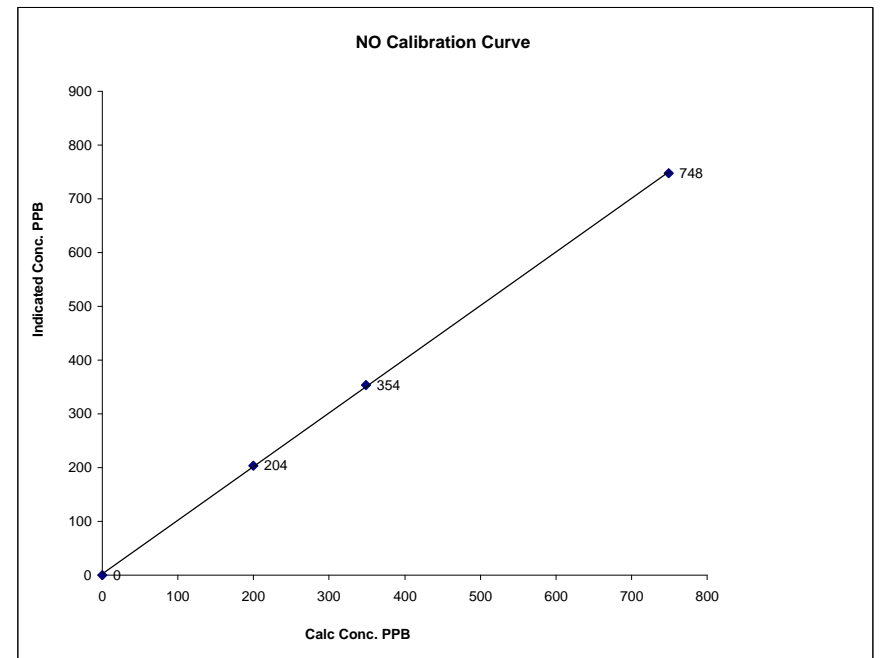


Notes:

NO Calibration Curve

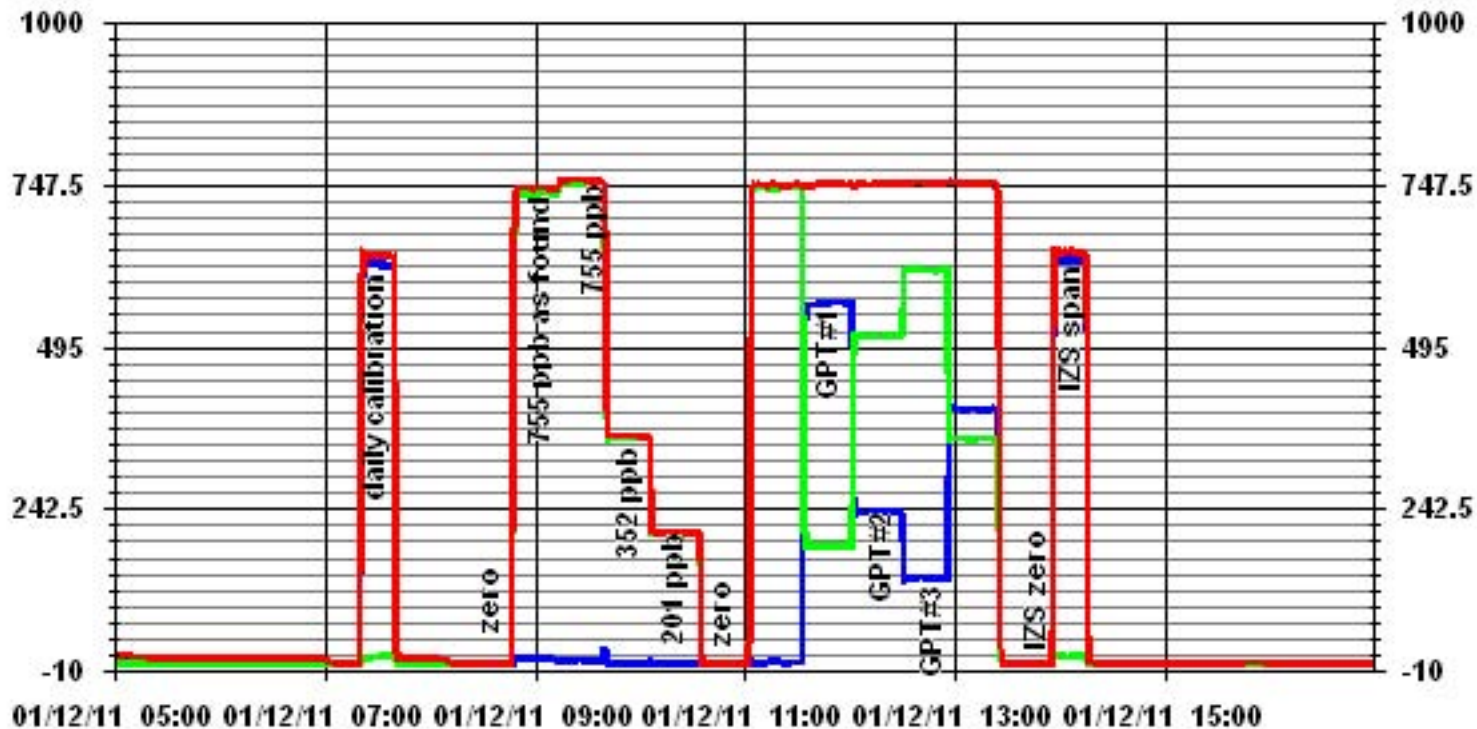
Calibration Date January 12, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:03 End Time (MST) 14:20

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999922
0	0	N/A	Slope (0.85 to 1.15)	0.989594
200	204	0.9796	Intercept (± 3% F.S.)	9.9282
349	354	0.9863		
749	748	1.0013		



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	January 11, 2011	Previous Calibration	December 29, 2010
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	13:33	End Time (MST)	-
Reason:	As Found		
Barometric Pressure	0.921 mm Hg	Station Temperature	22 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
Cell A Flow / Cell B Flow	757 ccm	766 ccm	754 ccm	765 Deg C
Pressure	698 mmHg		679 mmHg	
Bench Lamp Temp	54 Deg C		54.1 Deg C	
O3 Lamp / Box Temp	68.2 Deg C	26.5 Deg C	68.4 Deg C	31.4 Deg C
Offset/Slop	0	0.975	0	0.975

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4993	0	0	0	N
4993	420	396	396	1.0000
Sum of Least Squares				N/A
New Correction Factor				1.0000

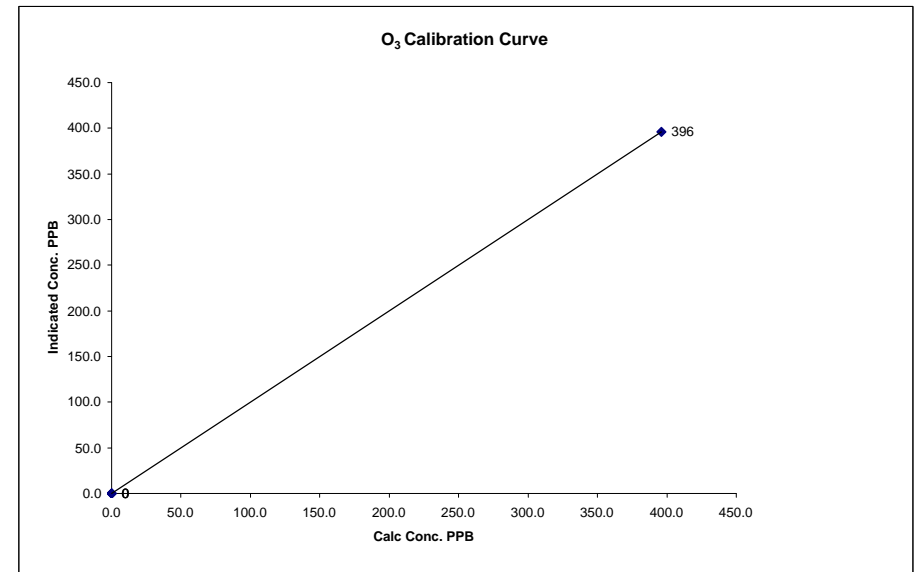
	Before Calibration	After Calibration
Auto Zero	0.1	-
Auto Span	-	-
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.0%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

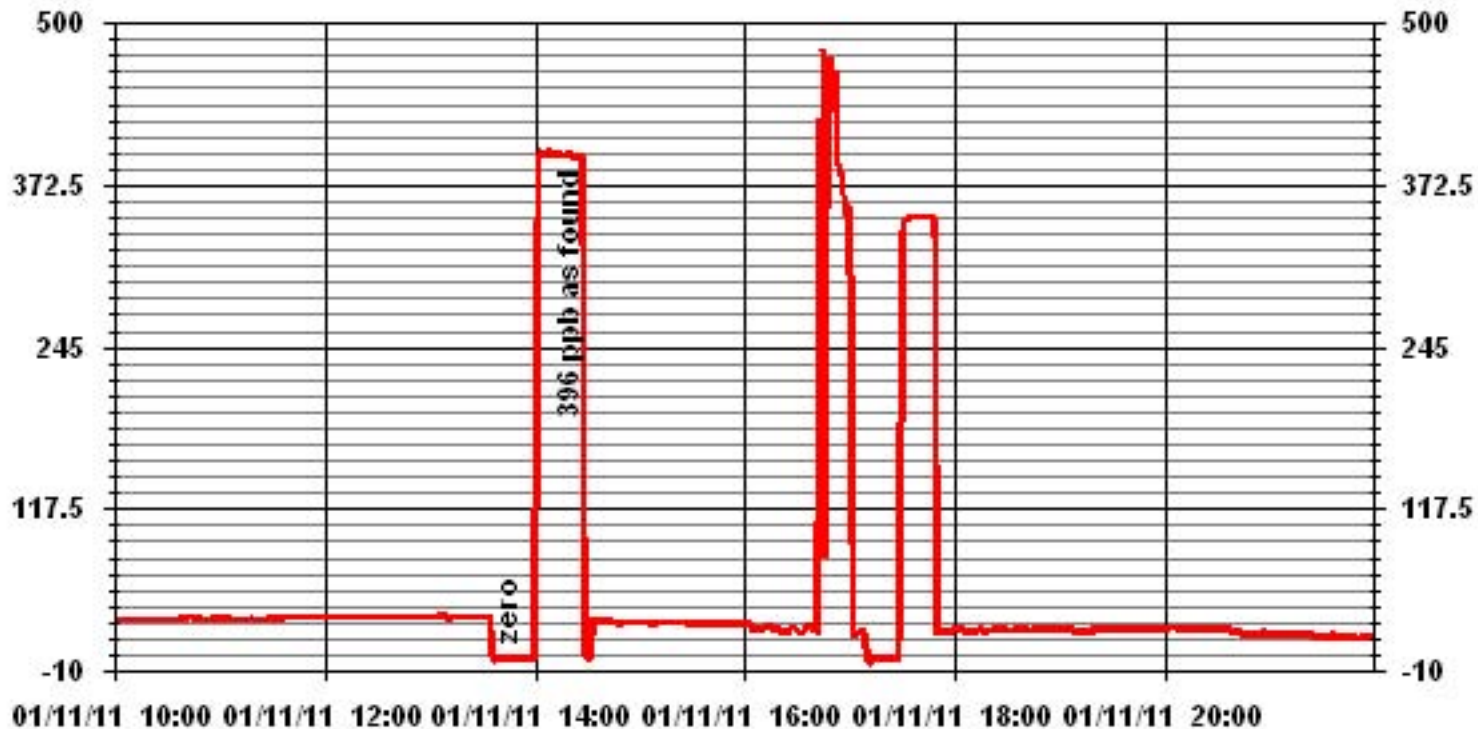
Calibration Date	January 11, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	13:33	End Time (MST)	-

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope (≥ 0.995)	Intercept (± 3% F.S.)	
0	0	n/a			1.000000
0	0	#DIV/0!			1.000000
0	0	#DIV/0!			
396	396	1.0000			0.000000



Notes:

01 Minute Averages



O₃ Calibration Report

Station Information

Calibration Date	January 12, 2011	Previous Calibration	January 11, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	13:40	End Time (MST)	17:18
Reason:	Monthly Calibration		
Barometric Pressure	0.942 mm Hg	Station Temperature	22 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	Enviroincs 6100	S/N :	4760	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	749 ccm	758 ccm	759 ccm	768 Deg C
Pressure	689 mmHg		702 mmHg	
Bench Lamp Temp	54.1 Deg C		54 Deg C	
O3 Lamp / Box Temp	68.2 Deg C	31.9 Deg C	68.2 Deg C	29.7 Deg C
Offset/Slop	0	0.975	0	0.964

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	N/A
4995	420	392	396	0.9899
4995	420	392	393	0.9975
4995	250	232	234	0.9915
4995	140	129	132	0.9773
4995	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.9975

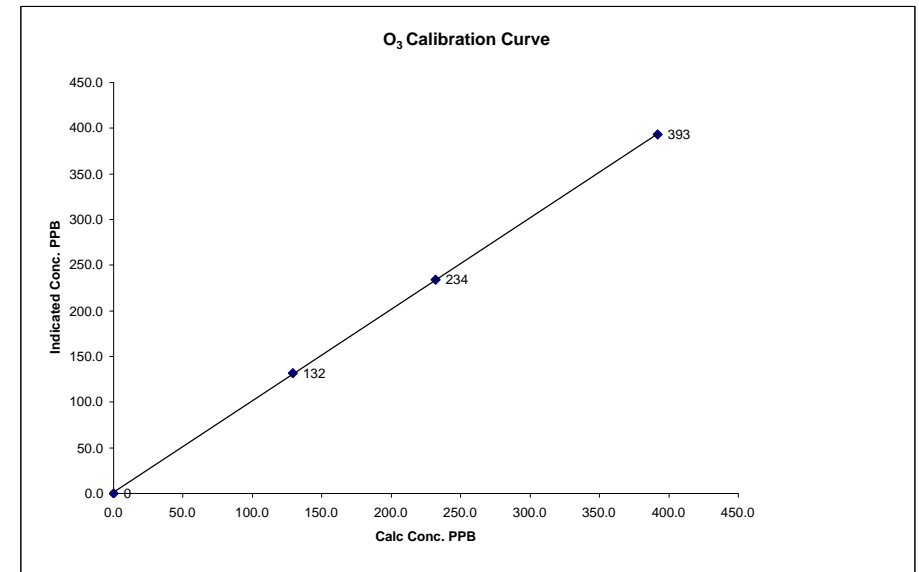
	Before Calibration	After Calibration
Auto Zero	0.0	0.1
Auto Span	359	351
Sample Lines Connected		YES
Percent Change from Previous Calibration		-

Calibration Performed by: Ting Xu

O₃ Calibration Curve

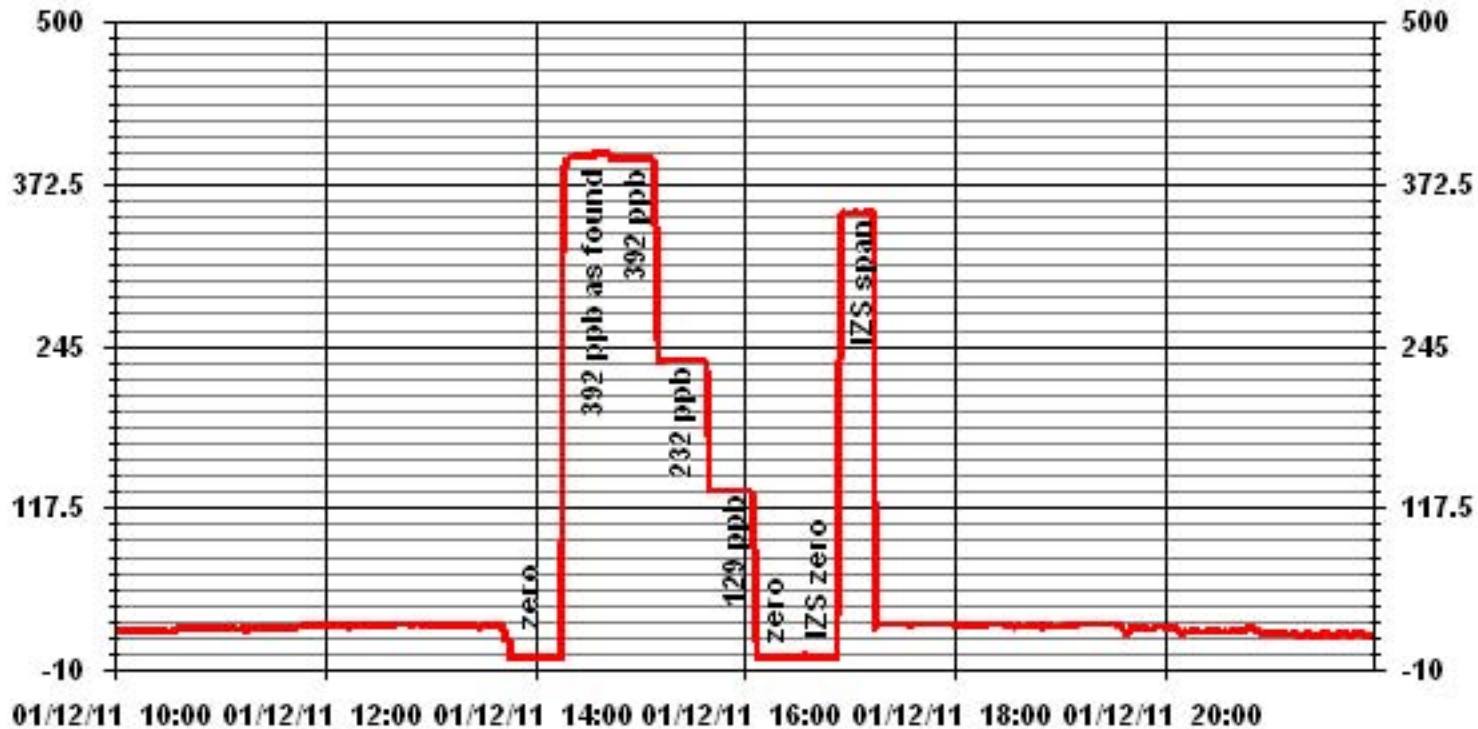
Calibration Date	January 12, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	13:40	End Time (MST)	17:18

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999941
0	0	n/a	Intercept	(0.85 to 1.15)	1.001378
129	132	0.9773			
232	234	0.9915			
392	393	0.9975			1.240626



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	January 12, 2011	Previous Calibration	December 29, 2010
Company:	Lakeland Industry and Community Association		
Plant / Location:	Portable Station Devon Wellsite 13-16-62-5W4M		
Start Time (MST)	10:19	End Time (MST)	14:12
Reason:	Monthly Calibration		
Barometric Pressure:	0.945 atm	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	207Prop/602Meth/1171.25THC ppm	Cal Gas Expiry Date:	9/21/2011
DAS make & Model:	ESC 8832	S/N :	AO717
Output Voltage Range:	0 - 10 VDC		

Analyzer Information

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

Analyzer Settings

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

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0	0.0	0.2	N/A
1999	0	0.0	0.0	N/A
1999	70.0	39.6	40.6	0.9760
1999	70.0	39.6	40.0	0.9907
2000	35.0	20.1	20.0	1.0072
2000	20.0	11.6	11.3	1.0262
2000	0	0.0	-0.1	N/A
Correction Factor:				0.9907

Percent Change

Previous Calibration Correction Factor:	0.9931
Current Correction Factor Before Span Adjust:	0.9907
Percent Change:	0.3%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.2	-0.1
Auto Span	34.1	33.6
Sample Lines Connected		YES

Cylinder Pressures

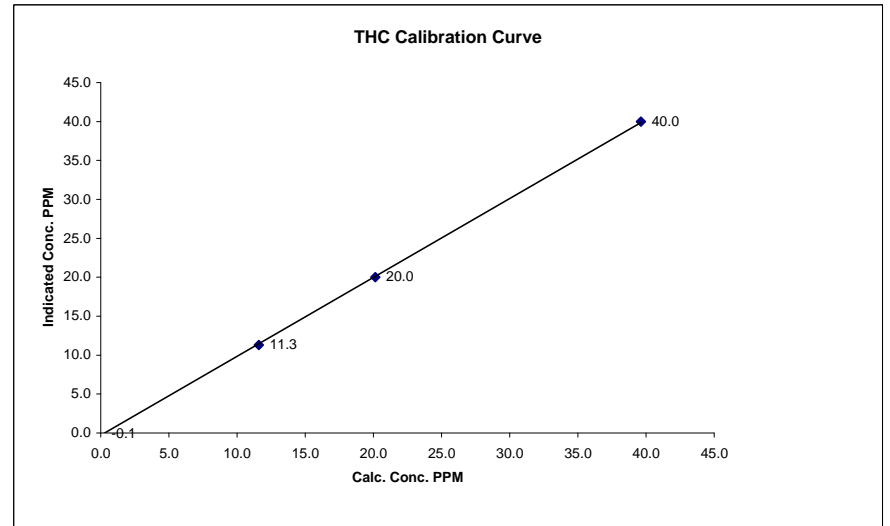
Span	2000 psi
Hydrogen	1500 psi
Zero Air	30 psi Using API 700

Calibration Performed by: Ting Xu

THC Calibration Curve

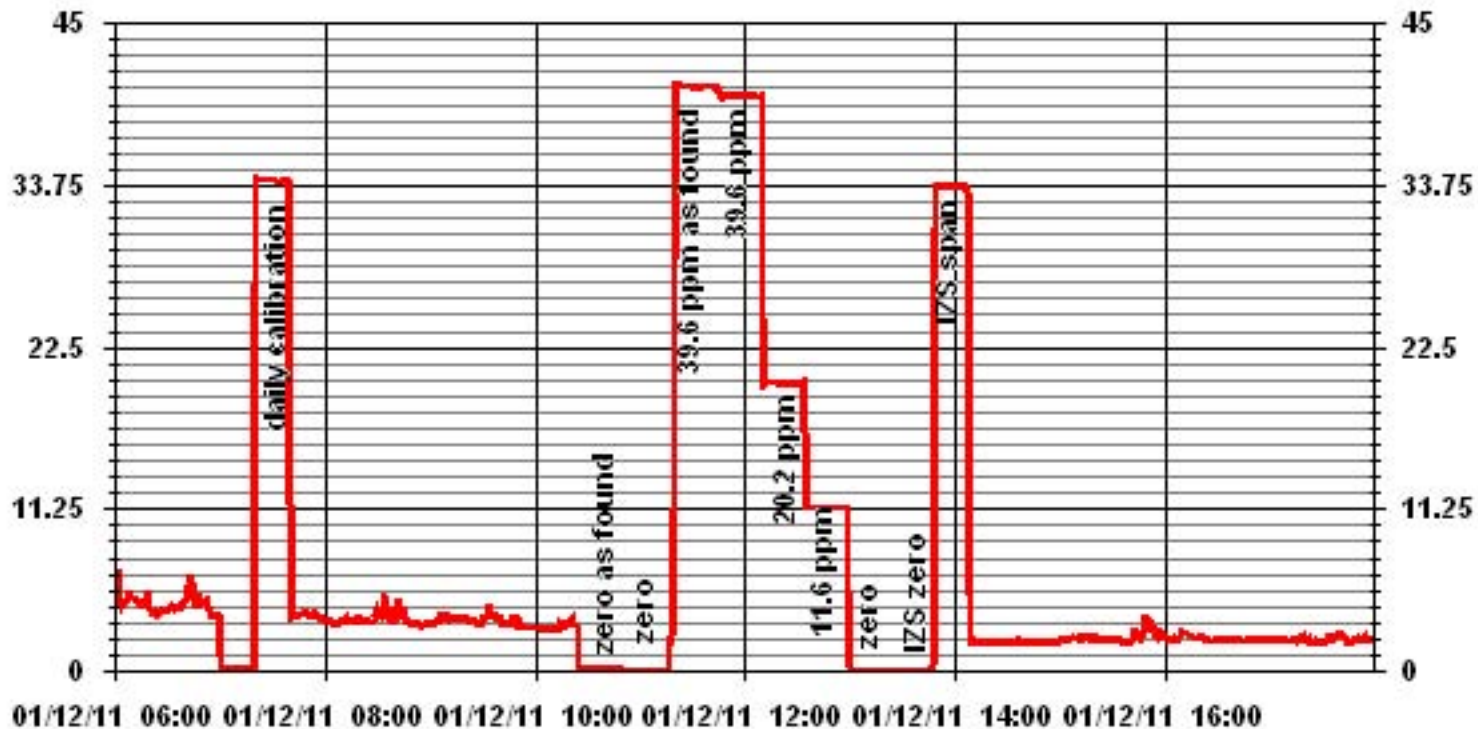
Calibration Date	January 12, 2011
Company	Lakeland Industry and Community Association
Plant / Location	Portable Station Devon Wellsite 13-16-62-5W4M
Start Time (MST)	10:19
End Time (MST)	14:12

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999890
0.0	-0.1		Intercept	(0.85 to 1.15)	1.013661
11.6	11.3	1.0262		(± 3% F.S.)	-0.285624
20.1	20.0	1.0072			
39.6	40.0	0.9907			



Notes:

01 Minute Averages



Volatile Organics Laboratory Analysis

Maxxam Analytics Inc.

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
 Location: 13-16-62-5 W4M Canister ID: 7859
 Station ID: Lica 33 (Portable) Canister Installation Date/Time: Dec 31, 10 @ 16:22 mst
 Field Sample ID: LICA VOC/PORT/ Jan 03, 11 Canister Removal Date/Time: Jan 04, 11 @ 11:39 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
3-Jan-11	1/3/2011 0:00	1/4/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1481	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 # 06470

Technician Signature: Ting Xu

Your C.O.C. #: 06470

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/01/07****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B101203****Received: 2011/01/06, 09:29**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/01/06	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/01/06	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

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

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Total cover pages: 1

Maxxam Job #: B101203
 Report Date: 2011/01/07

RESULTS OF ANALYSES OF AIR

Maxxam ID		IH6735	IH6736	
Sampling Date		2011/01/03	2011/01/03	
COC Number		06470	06470	
	Units	LICA	LICA	QC Batch
		VOC\CLS\JAN	VOC\PORT\JAN	
		03,11 - 7817	03,11 - 7859	

Volatile Organics				
Pressure on Receipt	psig	21	21	2375125

QC Batch = Quality Control Batch

Maxxam Job #: B101203
 Report Date: 2011/01/07

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IH6735			IH6736				
Sampling Date		2011/01/03			2011/01/03				
COC Number		06470			06470				
	Units	LICA VOC\CLS\JAN 03,11 - 7817	ug/m3	DL (ug/m3)	LICA VOC\PORT\JAN 03,11 - 7859	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	0.25	1.16	0.934	<0.20	0.20	<0.934	0.934	2375300
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2375300
Propene	ppbv	2.13	3.67	0.516	1.60	0.30	2.76	0.516	2375300
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2375300
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2375300
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	3.30	0.989	0.68	0.20	3.37	0.989	2375300
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2375300
Chloromethane	ppbv	0.54	1.11	0.620	0.59	0.30	1.22	0.620	2375300
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2375300
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2375300
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2375300
Trichlorofluoromethane (FREON 11)	ppbv	0.32	1.81	1.12	0.31	0.20	1.76	1.12	2375300
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2375300
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2375300
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2375300
2-Propanone	ppbv	0.92	2.20	1.90	0.92	0.80	2.18	1.90	2375300
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2375300
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2375300
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2375300
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2375300
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2375300
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2375300
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2375300
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2375300
Methylene Chloride(Dichloromethane)	ppbv	0.44	1.52	1.04	0.42	0.30	1.47	1.04	2375300
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2375300
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2375300
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2375300
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2375300
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2375300
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2375300

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B101203
 Report Date: 2011/01/07

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IH6735			IH6736				
Sampling Date		2011/01/03			2011/01/03				
COC Number		06470			06470				
	Units	LICA VOC\CLS\JAN 03,11 - 7817	ug/m3	DL (ug/m3)	LICA VOC\PORT\JAN 03,11 - 7859	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	2375300
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2375300
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2375300
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2375300
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2375300
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2375300
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2375300
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2375300
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2375300
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2375300
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2375300
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2375300
Benzene	ppbv	0.32	1.02	0.575	0.21	0.18	0.660	0.575	2375300
Toluene	ppbv	0.34	1.28	0.753	<0.20	0.20	<0.753	0.753	2375300
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2375300
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2375300
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2375300
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2375300
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2375300
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2375300
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2375300
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2375300
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2375300
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2375300
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2375300
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2375300
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2375300
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2375300
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2375300
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.55	0.20	1.88	0.688	2375300
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2375300
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2375300
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2375300
QC Batch = Quality Control Batch									

Maxxam Job #: B101203
 Report Date: 2011/01/07

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IH6735			IH6736				
Sampling Date		2011/01/03			2011/01/03				
COC Number		06470			06470				
	Units	LICA	ug/m3	DL (ug/m3)	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC\CLS\JAN			VOC\PORT\JAN				
		03,11 - 7817			03,11 - 7859				

Surrogate Recovery (%)									
Bromochloromethane	%	89	N/A	N/A	89		N/A	N/A	2375300
D5-Chlorobenzene	%	87	N/A	N/A	88		N/A	N/A	2375300
Difluorobenzene	%	91	N/A	N/A	91		N/A	N/A	2375300

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

Maxxam Job #: B101203
 Report Date: 2011/01/07

Test Summary

Maxxam ID IH6735 **Collected** 2011/01/03
Sample ID LICA VOC\CLS\JAN 03,11 - 7817 **Shipped**
Matrix AIR **Received** 2011/01/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2375125	N/A	2011/01/06	LSY
Volatile Organics in Air (TO-15)	GC/MS	2375300	N/A	2011/01/06	LSY

Maxxam ID IH6736 **Collected** 2011/01/03
Sample ID LICA VOC\PORT\JAN 03,11 - 7859 **Shipped**
Matrix AIR **Received** 2011/01/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2375125	N/A	2011/01/06	LSY
Volatile Organics in Air (TO-15)	GC/MS	2375300	N/A	2011/01/06	LSY

Maxxam Job #: B101203
Report Date: 2011/01/07

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: GB101203

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375300 LSY	Spiked Blank	Bromochloromethane	2011/01/06		101	%	60 - 140
		D5-Chlorobenzene	2011/01/06		100	%	60 - 140
		Difluorobenzene	2011/01/06		103	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/06		87	%	70 - 130
		Carbon Disulfide	2011/01/06		84	%	70 - 130
		Propene	2011/01/06		83	%	70 - 130
		Vinyl Acetate	2011/01/06		93	%	70 - 130
		Vinyl Bromide	2011/01/06		87	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/01/06		89	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/01/06		100	%	70 - 130
		Chloromethane	2011/01/06		87	%	70 - 130
		Vinyl Chloride	2011/01/06		85	%	70 - 130
		Chloroethane	2011/01/06		82	%	70 - 130
		1,3-Butadiene	2011/01/06		74	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/01/06		89	%	70 - 130
		Trichlorotrifluoroethane	2011/01/06		86	%	70 - 130
		Ethanol	2011/01/06		74	%	70 - 130
		2-propanol	2011/01/06		81	%	70 - 130
		2-Propanone	2011/01/06		87	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/01/06		94	%	70 - 130
		Methyl Isobutyl Ketone	2011/01/06		82	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/01/06		79	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/01/06		86	%	70 - 130
		Ethyl Acetate	2011/01/06		88	%	70 - 130
		1,1-Dichloroethylene	2011/01/06		85	%	70 - 130
		cis-1,2-Dichloroethylene	2011/01/06		84	%	70 - 130
		trans-1,2-Dichloroethylene	2011/01/06		87	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/01/06		78	%	70 - 130
		Chloroform	2011/01/06		88	%	70 - 130
		Carbon Tetrachloride	2011/01/06		111	%	70 - 130
		1,1-Dichloroethane	2011/01/06		85	%	70 - 130
		1,2-Dichloroethane	2011/01/06		89	%	70 - 130
		Ethylene Dibromide	2011/01/06		88	%	70 - 130
		1,1,1-Trichloroethane	2011/01/06		95	%	70 - 130
		1,1,2-Trichloroethane	2011/01/06		87	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/01/06		76	%	70 - 130
		cis-1,3-Dichloropropene	2011/01/06		95	%	70 - 130
		trans-1,3-Dichloropropene	2011/01/06		99	%	70 - 130
		1,2-Dichloropropane	2011/01/06		84	%	70 - 130
		Bromomethane	2011/01/06		81	%	70 - 130
		Bromoform	2011/01/06		126	%	70 - 130
		Bromodichloromethane	2011/01/06		104	%	70 - 130
		Dibromochloromethane	2011/01/06		122	%	70 - 130
		Heptane	2011/01/06		86	%	70 - 130
		Trichloroethylene	2011/01/06		85	%	70 - 130
		Tetrachloroethylene	2011/01/06		87	%	70 - 130
		Benzene	2011/01/06		83	%	70 - 130
		Toluene	2011/01/06		85	%	70 - 130
		Ethylbenzene	2011/01/06		84	%	70 - 130
		p+m-Xylene	2011/01/06		83	%	70 - 130
		o-Xylene	2011/01/06		83	%	70 - 130
		Styrene	2011/01/06		85	%	70 - 130
		1,3,5-Trimethylbenzene	2011/01/06		75	%	70 - 130
		1,2,4-Trimethylbenzene	2011/01/06		71	%	70 - 130
		4-ethyltoluene	2011/01/06		79	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB101203

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375300 LSY	Spiked Blank	Chlorobenzene	2011/01/06		85	%	70 - 130
		Benzyl chloride	2011/01/06		96	%	70 - 130
		1,3-Dichlorobenzene	2011/01/06		75	%	70 - 130
		1,4-Dichlorobenzene	2011/01/06		77	%	70 - 130
		1,2-Dichlorobenzene	2011/01/06		68 (1)	%	70 - 130
		1,2,4-Trichlorobenzene	2011/01/06		90	%	70 - 130
		Hexachlorobutadiene	2011/01/06		95	%	70 - 130
		Hexane	2011/01/06		79	%	70 - 130
		Cyclohexane	2011/01/06		85	%	70 - 130
		Tetrahydrofuran	2011/01/06		85	%	70 - 130
		1,4-Dioxane	2011/01/06		73	%	70 - 130
	Method Blank	Bromochloromethane	2011/01/06		90	%	60 - 140
		D5-Chlorobenzene	2011/01/06		84	%	60 - 140
		Difluorobenzene	2011/01/06		91	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/06	<0.20		ppbv	
		Carbon Disulfide	2011/01/06	<0.50		ppbv	
		Propene	2011/01/06	<0.30		ppbv	
		Vinyl Acetate	2011/01/06	<0.20		ppbv	
		Vinyl Bromide	2011/01/06	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/01/06	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/01/06	<0.17		ppbv	
		Chloromethane	2011/01/06	<0.30		ppbv	
		Vinyl Chloride	2011/01/06	<0.18		ppbv	
		Chloroethane	2011/01/06	<0.30		ppbv	
		1,3-Butadiene	2011/01/06	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/01/06	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/01/06	<0.15		ppbv	
		Ethanol	2011/01/06	<2.3		ppbv	
		2-propanol	2011/01/06	<3.0		ppbv	
		2-Propanone	2011/01/06	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/01/06	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/01/06	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/01/06	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/01/06	<0.20		ppbv	
		Ethyl Acetate	2011/01/06	<2.2		ppbv	
		1,1-Dichloroethylene	2011/01/06	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/01/06	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/01/06	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/01/06	0.55, RDL=0.30		ppbv	
		Chloroform	2011/01/06	<0.15		ppbv	
		Carbon Tetrachloride	2011/01/06	<0.30		ppbv	
		1,1-Dichloroethane	2011/01/06	<0.20		ppbv	
		1,2-Dichloroethane	2011/01/06	<0.20		ppbv	
		Ethylene Dibromide	2011/01/06	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/01/06	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/01/06	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/01/06	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/01/06	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/01/06	<0.17		ppbv	
		1,2-Dichloropropane	2011/01/06	<0.40		ppbv	
		Bromomethane	2011/01/06	<0.18		ppbv	
		Bromoform	2011/01/06	<0.20		ppbv	
		Bromodichloromethane	2011/01/06	<0.20		ppbv	
		Dibromochloromethane	2011/01/06	<0.20		ppbv	
		Heptane	2011/01/06	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB101203

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375300 LSY	Method Blank	Trichloroethylene	2011/01/06	<0.30		ppbv	
		Tetrachloroethylene	2011/01/06	<0.20		ppbv	
		Benzene	2011/01/06	<0.18		ppbv	
		Toluene	2011/01/06	<0.20		ppbv	
		Ethylbenzene	2011/01/06	<0.20		ppbv	
		p+m-Xylene	2011/01/06	<0.37		ppbv	
		o-Xylene	2011/01/06	<0.20		ppbv	
		Styrene	2011/01/06	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/01/06	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/01/06	<0.50		ppbv	
		4-ethyltoluene	2011/01/06	<2.2		ppbv	
		Chlorobenzene	2011/01/06	<0.20		ppbv	
		Benzyl chloride	2011/01/06	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/01/06	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/01/06	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/01/06	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/01/06	<2.0		ppbv	
		Hexachlorobutadiene	2011/01/06	<3.0		ppbv	
		Hexane	2011/01/06	<0.30		ppbv	
		Cyclohexane	2011/01/06	<0.20		ppbv	
		Tetrahydrofuran	2011/01/06	<0.40		ppbv	
		1,4-Dioxane	2011/01/06	<2.0		ppbv	
		Xylene (Total)	2011/01/06	<0.60		ppbv	

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

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

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

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

Maxxam Analytics Inc.

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
 Location: 13-16-62-5 W4M Canister ID: S2019
 Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jan 07, 11 @ 12:54 mst
 Field Sample ID: LICA VOC/PORT/ Jan 09, 11 Canister Removal Date/Time: Jan 10, 11 @ 10:15 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
9-Jan-11	1/9/2011 0:00	1/10/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1481	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 # 5219

Technician Signature: Ting Xu



Your C.O.C. #: 5219

Attention: Ting Xu

Lakeland Industry & Community Assoc.
 P.O. Box 8237
 Bonnyville, AB
 CANADA T9N 2J5

Report Date: 2011/01/14

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B104596

Received: 2011/01/13, 09:09

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/01/13	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/01/13	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 #: B104596
 Report Date: 2011/01/14

RESULTS OF ANALYSES OF AIR

Maxxam ID		IJ3788	IJ3789	
Sampling Date		2011/01/09 00:00	2011/01/09 00:00	
COC Number		5219	5219	
	Units	LICA VOC \ CLS\ JAN09,11 #7870	LICA VOC \PORT\JAN09,11 #S2019	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2379812
QC Batch = Quality Control Batch				

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3788				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC \ CLS\ JAN09,11 #7870	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2380312
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2380312
Propene	ppbv	<0.30	0.30	<0.516	0.516	2380312
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2380312
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2380312
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	0.20	3.46	0.989	2380312
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2380312
Chloromethane	ppbv	0.59	0.30	1.21	0.620	2380312
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2380312
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2380312
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2380312
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.84	1.12	2380312
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2380312
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2380312
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2380312
2-Propanone	ppbv	1.52	0.80	3.62	1.90	2380312
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2380312
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2380312
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2380312
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2380312
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2380312
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2380312
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2380312
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2380312
Methylene Chloride(Dichloromethane)	ppbv	0.51	0.30	1.78	1.04	2380312
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2380312
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2380312
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2380312
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2380312
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2380312
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2380312
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3788				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC \ CLS\ JAN09,11 #7870	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2380312
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2380312
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2380312
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2380312
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2380312
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2380312
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2380312
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2380312
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2380312
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2380312
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2380312
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2380312
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2380312
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2380312
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2380312
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2380312
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2380312
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2380312
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2380312
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2380312
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2380312
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2380312
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2380312
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2380312
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2380312
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2380312
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2380312
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2380312
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2380312
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2380312
QC Batch = Quality Control Batch						

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3788				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC \ CLS\ JAN09,11 #7870	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	87		N/A	N/A	2380312
D5-Chlorobenzene	%	82		N/A	N/A	2380312
Difluorobenzene	%	88		N/A	N/A	2380312

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

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3789				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC REPORT JAN09,11 #S2019	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2380312
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2380312
Propene	ppbv	0.89	0.30	1.54	0.516	2380312
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2380312
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2380312
Dichlorodifluoromethane (FREON 12)	ppbv	0.72	0.20	3.57	0.989	2380312
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2380312
Chloromethane	ppbv	0.62	0.30	1.29	0.620	2380312
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2380312
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2380312
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2380312
Trichlorofluoromethane (FREON 11)	ppbv	0.34	0.20	1.89	1.12	2380312
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2380312
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2380312
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2380312
2-Propanone	ppbv	1.12	0.80	2.66	1.90	2380312
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2380312
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2380312
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2380312
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2380312
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2380312
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2380312
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2380312
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2380312
Methylene Chloride(Dichloromethane)	ppbv	0.52	0.30	1.81	1.04	2380312
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2380312
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2380312
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2380312
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2380312
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2380312
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3789				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC REPORT JAN09,11 #S2019	RDL	ug/m3	DL (ug/m3)	QC Batch

1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2380312
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2380312
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2380312
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2380312
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2380312
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2380312
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2380312
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2380312
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2380312
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2380312
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2380312
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2380312
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2380312
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2380312
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2380312
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2380312
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2380312
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2380312
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2380312
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2380312
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2380312
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2380312
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2380312
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2380312
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2380312
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2380312
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2380312
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2380312
Cyclohexane	ppbv	0.20	0.20	0.699	0.688	2380312
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2380312

QC Batch = Quality Control Batch

Maxxam Job #: B104596
 Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IJ3789				
Sampling Date		2011/01/09 00:00				
COC Number		5219				
	Units	LICA VOC PORTJAN09,11 #S2019	RDL	ug/m3	DL (ug/m3)	QC Batch
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2380312
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2380312
Surrogate Recovery (%)						
Bromochloromethane	%	86		N/A	N/A	2380312
D5-Chlorobenzene	%	82		N/A	N/A	2380312
Difluorobenzene	%	88		N/A	N/A	2380312
N/A = Not Applicable QC Batch = Quality Control Batch						

Maxxam Job #: B104596
 Report Date: 2011/01/14

Test Summary

Maxxam ID IJ3788 **Collected** 2011/01/09
Sample ID LICA VOC \ CLS\ JAN09,11 #7870 **Shipped**
Matrix AIR **Received** 2011/01/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2379812	N/A	2011/01/13	LSY
Volatile Organics in Air (TO-15)	GC/MS	2380312	N/A	2011/01/13	LSY

Maxxam ID IJ3789 **Collected** 2011/01/09
Sample ID LICA VOC \PORT\JAN09,11 #S2019 **Shipped**
Matrix AIR **Received** 2011/01/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2379812	N/A	2011/01/13	LSY
Volatile Organics in Air (TO-15)	GC/MS	2380312	N/A	2011/01/13	LSY

Maxxam ID IJ3789 Dup **Collected** 2011/01/09
Sample ID LICA VOC \PORT\JAN09,11 #S2019 **Shipped**
Matrix AIR **Received** 2011/01/13

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organics in Air (TO-15)	GC/MS	2380312	N/A	2011/01/13	LSY

Maxxam Job #: B104596
Report Date: 2011/01/14

VOLATILE ORGANICS BY GC/MS (AIR)

Volatile Organics in Air (TO-15): Reference Standard

3 compounds exceed 70 to 130% recovery criteria. Compounds meet %RSD criteria in the continuing calibration standard. They are not found in the test. The failure of these 3 compounds is not believed to have an effect on the integrity of the results, therefore the data was accepted.

Results relate only to the items tested.

Lakeland Industry & Community Assoc.
 Attention: Ting Xu
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB104596

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2380312 LSY	Spiked Blank	Bromochloromethane	2011/01/13		105	%	60 - 140
		D5-Chlorobenzene	2011/01/13		102	%	60 - 140
		Difluorobenzene	2011/01/13		106	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/13		97	%	70 - 130
		Carbon Disulfide	2011/01/13		95	%	70 - 130
		Propene	2011/01/13		96	%	70 - 130
		Vinyl Acetate	2011/01/13		108	%	70 - 130
		Vinyl Bromide	2011/01/13		100	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/01/13		97	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/01/13		111	%	70 - 130
		Chloromethane	2011/01/13		99	%	70 - 130
		Vinyl Chloride	2011/01/13		97	%	70 - 130
		Chloroethane	2011/01/13		95	%	70 - 130
		1,3-Butadiene	2011/01/13		86	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/01/13		96	%	70 - 130
		Trichlorotrifluoroethane	2011/01/13		94	%	70 - 130
		Ethanol	2011/01/13		92	%	70 - 130
		2-propanol	2011/01/13		92	%	70 - 130
		2-Propanone	2011/01/13		101	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/01/13		108	%	70 - 130
		Methyl Isobutyl Ketone	2011/01/13		93	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/01/13		88	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/01/13		96	%	70 - 130
		Ethyl Acetate	2011/01/13		102	%	70 - 130
		1,1-Dichloroethylene	2011/01/13		95	%	70 - 130
		cis-1,2-Dichloroethylene	2011/01/13		95	%	70 - 130
		trans-1,2-Dichloroethylene	2011/01/13		99	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/01/13		89	%	70 - 130
		Chloroform	2011/01/13		97	%	70 - 130
		Carbon Tetrachloride	2011/01/13		119	%	70 - 130
		1,1-Dichloroethane	2011/01/13		96	%	70 - 130
		1,2-Dichloroethane	2011/01/13		99	%	70 - 130
		Ethylene Dibromide	2011/01/13		94	%	70 - 130
		1,1,1-Trichloroethane	2011/01/13		103	%	70 - 130
		1,1,2-Trichloroethane	2011/01/13		94	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/01/13		81	%	70 - 130
		cis-1,3-Dichloropropene	2011/01/13		105	%	70 - 130
		trans-1,3-Dichloropropene	2011/01/13		108	%	70 - 130
		1,2-Dichloropropane	2011/01/13		94	%	70 - 130
		Bromomethane	2011/01/13		89	%	70 - 130
		Bromoform	2011/01/13		134 (1)	%	70 - 130
		Bromodichloromethane	2011/01/13		115	%	70 - 130
		Dibromochloromethane	2011/01/13		131 (1)	%	70 - 130
		Heptane	2011/01/13		99	%	70 - 130
		Trichloroethylene	2011/01/13		90	%	70 - 130
		Tetrachloroethylene	2011/01/13		91	%	70 - 130
		Benzene	2011/01/13		92	%	70 - 130
		Toluene	2011/01/13		93	%	70 - 130
		Ethylbenzene	2011/01/13		90	%	70 - 130
		p+m-Xylene	2011/01/13		89	%	70 - 130
		o-Xylene	2011/01/13		89	%	70 - 130
		Styrene	2011/01/13		88	%	70 - 130
		1,3,5-Trimethylbenzene	2011/01/13		79	%	70 - 130
		1,2,4-Trimethylbenzene	2011/01/13		74	%	70 - 130
		4-ethyltoluene	2011/01/13		84	%	70 - 130

Lakeland Industry & Community Assoc.
 Attention: Ting Xu
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB104596

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2380312 LSY	Spiked Blank	Chlorobenzene	2011/01/13		89	%	70 - 130
		Benzyl chloride	2011/01/13		95	%	70 - 130
		1,3-Dichlorobenzene	2011/01/13		73	%	70 - 130
		1,4-Dichlorobenzene	2011/01/13		73	%	70 - 130
		1,2-Dichlorobenzene	2011/01/13		66 (1)	%	70 - 130
		1,2,4-Trichlorobenzene	2011/01/13		73	%	70 - 130
		Hexachlorobutadiene	2011/01/13		91	%	70 - 130
		Hexane	2011/01/13		91	%	70 - 130
		Cyclohexane	2011/01/13		96	%	70 - 130
		Tetrahydrofuran	2011/01/13		99	%	70 - 130
		1,4-Dioxane	2011/01/13		83	%	70 - 130
	Method Blank	Bromochloromethane	2011/01/13		91	%	60 - 140
		D5-Chlorobenzene	2011/01/13		88	%	60 - 140
		Difluorobenzene	2011/01/13		93	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/13	<0.20		ppbv	
		Carbon Disulfide	2011/01/13	<0.50		ppbv	
		Propene	2011/01/13	<0.30		ppbv	
		Vinyl Acetate	2011/01/13	<0.20		ppbv	
		Vinyl Bromide	2011/01/13	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/01/13	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/01/13	<0.17		ppbv	
		Chloromethane	2011/01/13	<0.30		ppbv	
		Vinyl Chloride	2011/01/13	<0.18		ppbv	
		Chloroethane	2011/01/13	<0.30		ppbv	
		1,3-Butadiene	2011/01/13	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/01/13	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/01/13	<0.15		ppbv	
		Ethanol	2011/01/13	<2.3		ppbv	
		2-propanol	2011/01/13	<3.0		ppbv	
		2-Propanone	2011/01/13	0.88, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/01/13	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/01/13	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/01/13	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/01/13	<0.20		ppbv	
		Ethyl Acetate	2011/01/13	<2.2		ppbv	
		1,1-Dichloroethylene	2011/01/13	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/01/13	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/01/13	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/01/13	0.40, RDL=0.30		ppbv	
		Chloroform	2011/01/13	<0.15		ppbv	
		Carbon Tetrachloride	2011/01/13	<0.30		ppbv	
		1,1-Dichloroethane	2011/01/13	<0.20		ppbv	
		1,2-Dichloroethane	2011/01/13	<0.20		ppbv	
		Ethylene Dibromide	2011/01/13	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/01/13	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/01/13	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/01/13	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/01/13	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/01/13	<0.17		ppbv	
		1,2-Dichloropropane	2011/01/13	<0.40		ppbv	
		Bromomethane	2011/01/13	<0.18		ppbv	
		Bromoform	2011/01/13	<0.20		ppbv	
		Bromodichloromethane	2011/01/13	<0.20		ppbv	
		Dibromochloromethane	2011/01/13	<0.20		ppbv	
		Heptane	2011/01/13	<0.30		ppbv	

Lakeland Industry & Community Assoc.
 Attention: Ting Xu
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB104596

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2380312 LSY	Method Blank	Trichloroethylene	2011/01/13	<0.30		ppbv	
		Tetrachloroethylene	2011/01/13	<0.20		ppbv	
		Benzene	2011/01/13	<0.18		ppbv	
		Toluene	2011/01/13	<0.20		ppbv	
		Ethylbenzene	2011/01/13	<0.20		ppbv	
		p+m-Xylene	2011/01/13	<0.37		ppbv	
		o-Xylene	2011/01/13	<0.20		ppbv	
		Styrene	2011/01/13	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/01/13	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/01/13	<0.50		ppbv	
		4-ethyltoluene	2011/01/13	<2.2		ppbv	
		Chlorobenzene	2011/01/13	<0.20		ppbv	
		Benzyl chloride	2011/01/13	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/01/13	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/01/13	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/01/13	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/01/13	<2.0		ppbv	
		Hexachlorobutadiene	2011/01/13	<3.0		ppbv	
		Hexane	2011/01/13	<0.30		ppbv	
		Cyclohexane	2011/01/13	<0.20		ppbv	
		Tetrahydrofuran	2011/01/13	<0.40		ppbv	
		1,4-Dioxane	2011/01/13	<2.0		ppbv	
		Xylene (Total)	2011/01/13	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/01/13	NC		%	25
		Carbon Disulfide	2011/01/13	NC		%	25
		Propene	2011/01/13	NC		%	25
		Vinyl Acetate	2011/01/13	NC		%	25
		Vinyl Bromide	2011/01/13	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/01/13	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/01/13	NC		%	25
		Chloromethane	2011/01/13	NC		%	25
		Vinyl Chloride	2011/01/13	NC		%	25
		Chloroethane	2011/01/13	NC		%	25
		1,3-Butadiene	2011/01/13	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/01/13	NC		%	25
		Trichlorotrifluoroethane	2011/01/13	NC		%	25
		Ethanol	2011/01/13	NC		%	25
		2-propanol	2011/01/13	NC		%	25
		2-Propanone	2011/01/13	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/01/13	NC		%	25
		Methyl Isobutyl Ketone	2011/01/13	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/01/13	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/01/13	NC		%	25
		Ethyl Acetate	2011/01/13	NC		%	25
		1,1-Dichloroethylene	2011/01/13	NC		%	25
		cis-1,2-Dichloroethylene	2011/01/13	NC		%	25
		trans-1,2-Dichloroethylene	2011/01/13	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/01/13	NC		%	25
		Chloroform	2011/01/13	NC		%	25
		Carbon Tetrachloride	2011/01/13	NC		%	25
		1,1-Dichloroethane	2011/01/13	NC		%	25
		1,2-Dichloroethane	2011/01/13	NC		%	25
		Ethylene Dibromide	2011/01/13	NC		%	25

Lakeland Industry & Community Assoc.
 Attention: Ting Xu
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: GB104596

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2380312 LSY	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/01/13	NC		%	25
		1,1,2-Trichloroethane	2011/01/13	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/01/13	NC		%	25
		cis-1,3-Dichloropropene	2011/01/13	NC		%	25
		trans-1,3-Dichloropropene	2011/01/13	NC		%	25
		1,2-Dichloropropane	2011/01/13	NC		%	25
		Bromomethane	2011/01/13	NC		%	25
		Bromoform	2011/01/13	NC		%	25
		Bromodichloromethane	2011/01/13	NC		%	25
		Dibromochloromethane	2011/01/13	NC		%	25
		Heptane	2011/01/13	NC		%	25
		Trichloroethylene	2011/01/13	NC		%	25
		Tetrachloroethylene	2011/01/13	NC		%	25
		Benzene	2011/01/13	NC		%	25
		Toluene	2011/01/13	NC		%	25
		Ethylbenzene	2011/01/13	NC		%	25
		p+m-Xylene	2011/01/13	NC		%	25
		o-Xylene	2011/01/13	NC		%	25
		Styrene	2011/01/13	NC		%	25
		1,3,5-Trimethylbenzene	2011/01/13	NC		%	25
		1,2,4-Trimethylbenzene	2011/01/13	NC		%	25
		4-ethyltoluene	2011/01/13	NC		%	25
		Chlorobenzene	2011/01/13	NC		%	25
		Benzyl chloride	2011/01/13	NC		%	25
		1,3-Dichlorobenzene	2011/01/13	NC		%	25
		1,4-Dichlorobenzene	2011/01/13	NC		%	25
		1,2-Dichlorobenzene	2011/01/13	NC		%	25
		1,2,4-Trichlorobenzene	2011/01/13	NC		%	25
		Hexachlorobutadiene	2011/01/13	NC		%	25
		Hexane	2011/01/13	NC		%	25
		Cyclohexane	2011/01/13	NC		%	25
		Tetrahydrofuran	2011/01/13	NC		%	25
		1,4-Dioxane	2011/01/13	NC		%	25
		Xylene (Total)	2011/01/13	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 Analytics Inc.

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: Jan 14, 11 @ 9:35 mst
Field Sample ID: LICA VOC/PORT/ Jan 15, 11 Canister Removal Date/Time: Jan 17, 11 @ 10:23 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
15-Jan-11	1/15/2011 0:00	1/16/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1481	25

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-30	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 # 4804

Technician Signature: Ting Xu_____

Your C.O.C. #: 4804

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

Report Date: 2011/01/24

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B107498****Received: 2011/01/19, 10:25**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/01/19	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/01/19	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

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Maxxam Job #: B107498
 Report Date: 2011/01/24

RESULTS OF ANALYSES OF AIR

Maxxam ID		IK6849	IK6850	
Sampling Date		2011/01/15	2011/01/15	
COC Number		4804	4804	
	Units	LICA VOC/CLS/JAN15, 2011 - 7791	LICA VOC/PORT/JAN15, 2011 - 7805	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2385786

QC Batch = Quality Control Batch

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6849				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA VOC/CLS/JAN15, 2011 - 7791	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2385788
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2385788
Propene	ppbv	0.50	0.30	0.863	0.516	2385788
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2385788
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2385788
Dichlorodifluoromethane (FREON 12)	ppbv	0.71	0.20	3.51	0.989	2385788
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2385788
Chloromethane	ppbv	0.57	0.30	1.18	0.620	2385788
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2385788
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2385788
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2385788
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.88	1.12	2385788
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2385788
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2385788
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2385788
2-Propanone	ppbv	1.56	0.80	3.71	1.90	2385788
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2385788
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2385788
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2385788
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2385788
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2385788
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2385788
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2385788
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2385788
Methylene Chloride(Dichloromethane)	ppbv	0.48	0.30	1.67	1.04	2385788
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2385788
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2385788
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2385788
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2385788
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2385788
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2385788
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6849				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA VOC/CLS/JAN15, 2011 - 7791	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2385788
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2385788
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2385788
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2385788
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2385788
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2385788
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2385788
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2385788
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2385788
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2385788
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2385788
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2385788
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2385788
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2385788
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2385788
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2385788
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2385788
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2385788
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2385788
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2385788
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2385788
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2385788
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2385788
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2385788
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2385788
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2385788
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2385788
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2385788
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2385788
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2385788
QC Batch = Quality Control Batch						

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6849				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA VOC/CLS/JAN15, 2011 - 7791	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	82		N/A	N/A	2385788
D5-Chlorobenzene	%	78		N/A	N/A	2385788
Difluorobenzene	%	82		N/A	N/A	2385788

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

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6850				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN15, 2011 - 7805				

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2385788
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2385788
Propene	ppbv	0.75	0.30	1.29	0.516	2385788
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2385788
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2385788
Dichlorodifluoromethane (FREON 12)	ppbv	0.72	0.20	3.56	0.989	2385788
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2385788
Chloromethane	ppbv	0.60	0.30	1.23	0.620	2385788
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2385788
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2385788
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2385788
Trichlorofluoromethane (FREON 11)	ppbv	0.33	0.20	1.88	1.12	2385788
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2385788
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2385788
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2385788
2-Propanone	ppbv	1.03	0.80	2.45	1.90	2385788
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2385788
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2385788
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2385788
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2385788
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2385788
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2385788
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2385788
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2385788
Methylene Chloride(Dichloromethane)	ppbv	0.46	0.30	1.60	1.04	2385788
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2385788
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2385788
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2385788
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2385788
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2385788
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2385788

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6850				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN15, 2011 - 7805				
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2385788
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2385788
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2385788
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2385788
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2385788
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2385788
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2385788
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2385788
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2385788
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2385788
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2385788
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2385788
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2385788
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2385788
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2385788
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2385788
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2385788
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2385788
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2385788
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2385788
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2385788
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2385788
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2385788
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2385788
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2385788
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2385788
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2385788
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2385788
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2385788
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2385788
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2385788
QC Batch = Quality Control Batch						

Maxxam Job #: B107498
 Report Date: 2011/01/24

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IK6850				
Sampling Date		2011/01/15				
COC Number		4804				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JAN15, 2011 - 7805				

Surrogate Recovery (%)						
Bromochloromethane	%	80		N/A	N/A	2385788
D5-Chlorobenzene	%	77		N/A	N/A	2385788
Difluorobenzene	%	81		N/A	N/A	2385788

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

Maxxam Job #: B107498
 Report Date: 2011/01/24

Test Summary

Maxxam ID IK6849
Sample ID LICA VOC/CLS/JAN15, 2011 - 7791
Matrix AIR
Collected 2011/01/15
Shipped
Received 2011/01/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2385786	N/A	2011/01/19	LSY
Volatile Organics in Air (TO-15)	GC/MS	2385788	N/A	2011/01/19	LSY

Maxxam ID IK6850
Sample ID LICA VOC/PORT/JAN15, 2011 - 7805
Matrix AIR
Collected 2011/01/15
Shipped
Received 2011/01/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2385786	N/A	2011/01/19	LSY
Volatile Organics in Air (TO-15)	GC/MS	2385788	N/A	2011/01/19	LSY

Maxxam Job #: B107498
Report Date: 2011/01/24

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: GB107498

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2385788 LSY	Spiked Blank	Bromochloromethane	2011/01/19		100	%	60 - 140
		D5-Chlorobenzene	2011/01/19		100	%	60 - 140
		Difluorobenzene	2011/01/19		102	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/19		89	%	70 - 130
		Carbon Disulfide	2011/01/19		87	%	70 - 130
		Propene	2011/01/19		89	%	70 - 130
		Vinyl Acetate	2011/01/19		102	%	70 - 130
		Vinyl Bromide	2011/01/19		94	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/01/19		91	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/01/19		103	%	70 - 130
		Chloromethane	2011/01/19		93	%	70 - 130
		Vinyl Chloride	2011/01/19		91	%	70 - 130
		Chloroethane	2011/01/19		88	%	70 - 130
		1,3-Butadiene	2011/01/19		81	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/01/19		89	%	70 - 130
		Trichlorotrifluoroethane	2011/01/19		87	%	70 - 130
		Ethanol	2011/01/19		96	%	70 - 130
		2-propanol	2011/01/19		86	%	70 - 130
		2-Propanone	2011/01/19		99	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/01/19		102	%	70 - 130
		Methyl Isobutyl Ketone	2011/01/19		86	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/01/19		82	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/01/19		88	%	70 - 130
		Ethyl Acetate	2011/01/19		96	%	70 - 130
		1,1-Dichloroethylene	2011/01/19		89	%	70 - 130
		cis-1,2-Dichloroethylene	2011/01/19		89	%	70 - 130
		trans-1,2-Dichloroethylene	2011/01/19		93	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/01/19		83	%	70 - 130
		Chloroform	2011/01/19		90	%	70 - 130
		Carbon Tetrachloride	2011/01/19		109	%	70 - 130
		1,1-Dichloroethane	2011/01/19		89	%	70 - 130
		1,2-Dichloroethane	2011/01/19		94	%	70 - 130
		Ethylene Dibromide	2011/01/19		89	%	70 - 130
		1,1,1-Trichloroethane	2011/01/19		94	%	70 - 130
		1,1,2-Trichloroethane	2011/01/19		86	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/01/19		75	%	70 - 130
		cis-1,3-Dichloropropene	2011/01/19		99	%	70 - 130
		trans-1,3-Dichloropropene	2011/01/19		107	%	70 - 130
		1,2-Dichloropropane	2011/01/19		86	%	70 - 130
		Bromomethane	2011/01/19		84	%	70 - 130
		Bromoform	2011/01/19		125	%	70 - 130
		Bromodichloromethane	2011/01/19		105	%	70 - 130
		Dibromochloromethane	2011/01/19		121	%	70 - 130
		Heptane	2011/01/19		91	%	70 - 130
		Trichloroethylene	2011/01/19		83	%	70 - 130
		Tetrachloroethylene	2011/01/19		82	%	70 - 130
		Benzene	2011/01/19		83	%	70 - 130
		Toluene	2011/01/19		84	%	70 - 130
		Ethylbenzene	2011/01/19		82	%	70 - 130
		p+m-Xylene	2011/01/19		82	%	70 - 130
		o-Xylene	2011/01/19		82	%	70 - 130
		Styrene	2011/01/19		83	%	70 - 130
		1,3,5-Trimethylbenzene	2011/01/19		76	%	70 - 130
		1,2,4-Trimethylbenzene	2011/01/19		70	%	70 - 130
		4-ethyltoluene	2011/01/19		78	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB107498

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2385788 LSY	Spiked Blank	Chlorobenzene	2011/01/19		84	%	70 - 130
		Benzyl chloride	2011/01/19		97	%	70 - 130
		1,3-Dichlorobenzene	2011/01/19		73	%	70 - 130
		1,4-Dichlorobenzene	2011/01/19		76	%	70 - 130
		1,2-Dichlorobenzene	2011/01/19		66 (1)	%	70 - 130
		1,2,4-Trichlorobenzene	2011/01/19		89	%	70 - 130
		Hexachlorobutadiene	2011/01/19		93	%	70 - 130
		Hexane	2011/01/19		84	%	70 - 130
		Cyclohexane	2011/01/19		88	%	70 - 130
		Tetrahydrofuran	2011/01/19		91	%	70 - 130
		1,4-Dioxane	2011/01/19		75	%	70 - 130
	Method Blank	Bromochloromethane	2011/01/19		85	%	60 - 140
		D5-Chlorobenzene	2011/01/19		82	%	60 - 140
		Difluorobenzene	2011/01/19		87	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/19	<0.20		ppbv	
		Carbon Disulfide	2011/01/19	<0.50		ppbv	
		Propene	2011/01/19	<0.30		ppbv	
		Vinyl Acetate	2011/01/19	<0.20		ppbv	
		Vinyl Bromide	2011/01/19	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/01/19	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/01/19	<0.17		ppbv	
		Chloromethane	2011/01/19	<0.30		ppbv	
		Vinyl Chloride	2011/01/19	<0.18		ppbv	
		Chloroethane	2011/01/19	<0.30		ppbv	
		1,3-Butadiene	2011/01/19	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/01/19	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/01/19	<0.15		ppbv	
		Ethanol	2011/01/19	<2.3		ppbv	
		2-propanol	2011/01/19	<3.0		ppbv	
		2-Propanone	2011/01/19	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/01/19	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/01/19	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/01/19	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/01/19	<0.20		ppbv	
		Ethyl Acetate	2011/01/19	<2.2		ppbv	
		1,1-Dichloroethylene	2011/01/19	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/01/19	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/01/19	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/01/19	0.39, RDL=0.30		ppbv	
		Chloroform	2011/01/19	<0.15		ppbv	
		Carbon Tetrachloride	2011/01/19	<0.30		ppbv	
		1,1-Dichloroethane	2011/01/19	<0.20		ppbv	
		1,2-Dichloroethane	2011/01/19	<0.20		ppbv	
		Ethylene Dibromide	2011/01/19	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/01/19	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/01/19	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/01/19	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/01/19	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/01/19	<0.17		ppbv	
		1,2-Dichloropropane	2011/01/19	<0.40		ppbv	
		Bromomethane	2011/01/19	<0.18		ppbv	
		Bromoform	2011/01/19	<0.20		ppbv	
		Bromodichloromethane	2011/01/19	<0.20		ppbv	
		Dibromochloromethane	2011/01/19	<0.20		ppbv	
		Heptane	2011/01/19	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB107498

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2385788 LSY	Method Blank	Trichloroethylene	2011/01/19	<0.30		ppbv	
		Tetrachloroethylene	2011/01/19	<0.20		ppbv	
		Benzene	2011/01/19	<0.18		ppbv	
		Toluene	2011/01/19	<0.20		ppbv	
		Ethylbenzene	2011/01/19	<0.20		ppbv	
		p+m-Xylene	2011/01/19	<0.37		ppbv	
		o-Xylene	2011/01/19	<0.20		ppbv	
		Styrene	2011/01/19	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/01/19	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/01/19	<0.50		ppbv	
		4-ethyltoluene	2011/01/19	<2.2		ppbv	
		Chlorobenzene	2011/01/19	<0.20		ppbv	
		Benzyl chloride	2011/01/19	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/01/19	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/01/19	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/01/19	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/01/19	<2.0		ppbv	
		Hexachlorobutadiene	2011/01/19	<3.0		ppbv	
		Hexane	2011/01/19	<0.30		ppbv	
		Cyclohexane	2011/01/19	<0.20		ppbv	
		Tetrahydrofuran	2011/01/19	<0.40		ppbv	
		1,4-Dioxane	2011/01/19	<2.0		ppbv	
		Xylene (Total)	2011/01/19	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/01/19	NC		%	25
		Carbon Disulfide	2011/01/19	NC		%	25
		Propene	2011/01/19	NC		%	25
		Vinyl Acetate	2011/01/19	NC		%	25
		Vinyl Bromide	2011/01/19	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/01/19	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/01/19	NC		%	25
		Chloromethane	2011/01/19	NC		%	25
		Vinyl Chloride	2011/01/19	NC		%	25
		Chloroethane	2011/01/19	NC		%	25
		1,3-Butadiene	2011/01/19	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/01/19	NC		%	25
		Trichlorotrifluoroethane	2011/01/19	NC		%	25
		Ethanol	2011/01/19	1.2		%	25
		2-propanol	2011/01/19	NC		%	25
		2-Propanone	2011/01/19	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/01/19	NC		%	25
		Methyl Isobutyl Ketone	2011/01/19	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/01/19	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/01/19	NC		%	25
		Ethyl Acetate	2011/01/19	NC		%	25
		1,1-Dichloroethylene	2011/01/19	NC		%	25
		cis-1,2-Dichloroethylene	2011/01/19	NC		%	25
		trans-1,2-Dichloroethylene	2011/01/19	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/01/19	NC		%	25
		Chloroform	2011/01/19	NC		%	25
		Carbon Tetrachloride	2011/01/19	NC		%	25
		1,1-Dichloroethane	2011/01/19	NC		%	25
		1,2-Dichloroethane	2011/01/19	NC		%	25
		Ethylene Dibromide	2011/01/19	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB107498

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2385788 LSY	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/01/19	NC		%	25
		1,1,2-Trichloroethane	2011/01/19	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/01/19	NC		%	25
		cis-1,3-Dichloropropene	2011/01/19	NC		%	25
		trans-1,3-Dichloropropene	2011/01/19	NC		%	25
		1,2-Dichloropropane	2011/01/19	NC		%	25
		Bromomethane	2011/01/19	NC		%	25
		Bromoform	2011/01/19	NC		%	25
		Bromodichloromethane	2011/01/19	NC		%	25
		Dibromochloromethane	2011/01/19	NC		%	25
		Heptane	2011/01/19	NC		%	25
		Trichloroethylene	2011/01/19	NC		%	25
		Tetrachloroethylene	2011/01/19	NC		%	25
		Benzene	2011/01/19	NC		%	25
		Toluene	2011/01/19	NC		%	25
		Ethylbenzene	2011/01/19	NC		%	25
		p+m-Xylene	2011/01/19	NC		%	25
		o-Xylene	2011/01/19	NC		%	25
		Styrene	2011/01/19	NC		%	25
		1,3,5-Trimethylbenzene	2011/01/19	NC		%	25
		1,2,4-Trimethylbenzene	2011/01/19	NC		%	25
		4-ethyltoluene	2011/01/19	NC		%	25
		Chlorobenzene	2011/01/19	NC		%	25
		Benzyl chloride	2011/01/19	NC		%	25
		1,3-Dichlorobenzene	2011/01/19	NC		%	25
		1,4-Dichlorobenzene	2011/01/19	NC		%	25
		1,2-Dichlorobenzene	2011/01/19	NC		%	25
		1,2,4-Trichlorobenzene	2011/01/19	NC		%	25
		Hexachlorobutadiene	2011/01/19	NC		%	25
		Hexane	2011/01/19	NC		%	25
		Cyclohexane	2011/01/19	NC		%	25
		Tetrahydrofuran	2011/01/19	NC		%	25
		1,4-Dioxane	2011/01/19	NC		%	25
		Xylene (Total)	2011/01/19	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.

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

Maxxam Analytics Inc.

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
 Location: 13-16-62-5 W4M Canister ID: 7871
 Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jan 20, 11 @ 14:55 mst
 Field Sample ID: LICA VOC/PORT/ Jan 21, 11 Canister Removal Date/Time: Jan 25, 11 @ 10:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
21-Jan-11	1/21/2011 0:00	1/22/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1481	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 # 5154

Technician Signature: Ting Xu

Your C.O.C. #: 5154

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

Report Date: 2011/02/01

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B111404****Received: 2011/01/27, 09:51**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/01/27	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/01/27	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 #: B111404
 Report Date: 2011/02/01

RESULTS OF ANALYSES OF AIR

Maxxam ID		IM5712	IM5713	
Sampling Date		2011/01/21	2011/01/21	
COC Number		5154	5154	
	Units	LICA VOC\CLS\ JAN 21,2011 - 7796	LICA VOC\PORT\ JAN 21,2011 - 7871	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2392659
QC Batch = Quality Control Batch				

Maxxam Job #: B111404
 Report Date: 2011/02/01

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IM5712			IM5713				
Sampling Date		2011/01/21			2011/01/21				
COC Number		5154			5154				
	Units	LICA VOC\CLS\ JAN 21,2011 - 7796	ug/m3	DL (ug/m3)	LICA VOC\PORT\ JAN 21,2011 - 7871	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	2392662
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2392662
Propene	ppbv	0.82	1.41	0.516	0.80	0.30	1.37	0.516	2392662
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2392662
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2392662
Dichlorodifluoromethane (FREON 12)	ppbv	0.70	3.45	0.989	0.70	0.20	3.48	0.989	2392662
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2392662
Chloromethane	ppbv	0.53	1.09	0.620	0.60	0.30	1.24	0.620	2392662
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2392662
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2392662
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2392662
Trichlorofluoromethane (FREON 11)	ppbv	0.33	1.87	1.12	0.33	0.20	1.88	1.12	2392662
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2392662
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2392662
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2392662
2-Propanone	ppbv	1.56	3.70	1.90	1.24	0.80	2.94	1.90	2392662
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2392662
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2392662
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2392662
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2392662
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2392662
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2392662
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2392662
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2392662
Methylene Chloride(Dichloromethane)	ppbv	0.45	1.57	1.04	0.44	0.30	1.51	1.04	2392662
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2392662
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2392662
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2392662
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2392662
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2392662

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B111404
 Report Date: 2011/02/01

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IM5712			IM5713				
Sampling Date		2011/01/21			2011/01/21				
COC Number		5154			5154				
	Units	LICA VOC\CLS\ JAN 21,2011 - 7796	ug/m3	DL (ug/m3)	LICA VOC\PORT\ JAN 21,2011 - 7871	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	2392662
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2392662
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2392662
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2392662
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2392662
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2392662
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2392662
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2392662
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2392662
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2392662
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2392662
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2392662
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2392662
Benzene	ppbv	0.22	0.700	0.575	<0.18	0.18	<0.575	0.575	2392662
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2392662
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2392662
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2392662
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2392662
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2392662
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2392662
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2392662
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2392662
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2392662
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2392662
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2392662
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2392662
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2392662
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2392662
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2392662
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2392662
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.22	0.20	0.758	0.688	2392662
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2392662

QC Batch = Quality Control Batch

Maxxam Job #: B111404
 Report Date: 2011/02/01

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IM5712			IM5713				
Sampling Date		2011/01/21			2011/01/21				
COC Number		5154			5154				
	Units	LICA VOC\CLS\ JAN 21,2011 - 7796	ug/m3	DL (ug/m3)	LICA VOC\PORT\ JAN 21,2011 - 7871	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	2392662
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2392662
Surrogate Recovery (%)									
Bromochloromethane	%	86	N/A	N/A	85		N/A	N/A	2392662
D5-Chlorobenzene	%	83	N/A	N/A	84		N/A	N/A	2392662
Difluorobenzene	%	88	N/A	N/A	87		N/A	N/A	2392662
N/A = Not Applicable QC Batch = Quality Control Batch									

Maxxam Job #: B111404
 Report Date: 2011/02/01

Test Summary

Maxxam ID IM5712 **Collected** 2011/01/21
Sample ID LICA VOC\CLS\ JAN 21,2011 - 7796 **Shipped**
Matrix AIR **Received** 2011/01/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2392659	N/A	2011/01/27	LSY
Volatile Organics in Air (TO-15)	GC/MS	2392662	N/A	2011/01/27	LSY

Maxxam ID IM5713 **Collected** 2011/01/21
Sample ID LICA VOC\PORT\ JAN 21,2011 - 7871 **Shipped**
Matrix AIR **Received** 2011/01/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2392659	N/A	2011/01/27	LSY
Volatile Organics in Air (TO-15)	GC/MS	2392662	N/A	2011/01/27	LSY

Maxxam Job #: B111404
Report Date: 2011/02/01

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: GB111404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2392662 LSY	Spiked Blank	Bromochloromethane	2011/01/27		99	%	60 - 140
		D5-Chlorobenzene	2011/01/27		98	%	60 - 140
		Difluorobenzene	2011/01/27		101	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/27		97	%	70 - 130
		Carbon Disulfide	2011/01/27		85	%	70 - 130
		Propene	2011/01/27		94	%	70 - 130
		Vinyl Acetate	2011/01/27		104	%	70 - 130
		Vinyl Bromide	2011/01/27		100	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/01/27		89	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/01/27		103	%	70 - 130
		Chloromethane	2011/01/27		90	%	70 - 130
		Vinyl Chloride	2011/01/27		93	%	70 - 130
		Chloroethane	2011/01/27		90	%	70 - 130
		1,3-Butadiene	2011/01/27		77	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/01/27		90	%	70 - 130
		Trichlorotrifluoroethane	2011/01/27		89	%	70 - 130
		Ethanol	2011/01/27		93	%	70 - 130
		2-propanol	2011/01/27		95	%	70 - 130
		2-Propanone	2011/01/27		91	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/01/27		99	%	70 - 130
		Methyl Isobutyl Ketone	2011/01/27		89	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/01/27		80	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/01/27		104	%	70 - 130
		Ethyl Acetate	2011/01/27		93	%	70 - 130
		1,1-Dichloroethylene	2011/01/27		95	%	70 - 130
		cis-1,2-Dichloroethylene	2011/01/27		98	%	70 - 130
		trans-1,2-Dichloroethylene	2011/01/27		96	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/01/27		81	%	70 - 130
		Chloroform	2011/01/27		91	%	70 - 130
		Carbon Tetrachloride	2011/01/27		95	%	70 - 130
		1,1-Dichloroethane	2011/01/27		89	%	70 - 130
		1,2-Dichloroethane	2011/01/27		94	%	70 - 130
		Ethylene Dibromide	2011/01/27		98	%	70 - 130
		1,1,1-Trichloroethane	2011/01/27		94	%	70 - 130
		1,1,2-Trichloroethane	2011/01/27		92	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/01/27		83	%	70 - 130
		cis-1,3-Dichloropropene	2011/01/27		101	%	70 - 130
		trans-1,3-Dichloropropene	2011/01/27		115	%	70 - 130
		1,2-Dichloropropane	2011/01/27		91	%	70 - 130
		Bromomethane	2011/01/27		86	%	70 - 130
		Bromoform	2011/01/27		112	%	70 - 130
		Bromodichloromethane	2011/01/27		95	%	70 - 130
		Dibromochloromethane	2011/01/27		105	%	70 - 130
		Heptane	2011/01/27		95	%	70 - 130
		Trichloroethylene	2011/01/27		96	%	70 - 130
		Tetrachloroethylene	2011/01/27		98	%	70 - 130
		Benzene	2011/01/27		95	%	70 - 130
		Toluene	2011/01/27		100	%	70 - 130
		Ethylbenzene	2011/01/27		103	%	70 - 130
		p+m-Xylene	2011/01/27		101	%	70 - 130
		o-Xylene	2011/01/27		98	%	70 - 130
		Styrene	2011/01/27		109	%	70 - 130
		1,3,5-Trimethylbenzene	2011/01/27		98	%	70 - 130
		1,2,4-Trimethylbenzene	2011/01/27		94	%	70 - 130
		4-ethyltoluene	2011/01/27		101	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB111404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2392662 LSY	Spiked Blank	Chlorobenzene	2011/01/27		94	%	70 - 130
		Benzyl chloride	2011/01/27		93	%	70 - 130
		1,3-Dichlorobenzene	2011/01/27		91	%	70 - 130
		1,4-Dichlorobenzene	2011/01/27		92	%	70 - 130
		1,2-Dichlorobenzene	2011/01/27		82	%	70 - 130
		1,2,4-Trichlorobenzene	2011/01/27		97	%	70 - 130
		Hexachlorobutadiene	2011/01/27		96	%	70 - 130
		Hexane	2011/01/27		99	%	70 - 130
		Cyclohexane	2011/01/27		98	%	70 - 130
		Tetrahydrofuran	2011/01/27		96	%	70 - 130
		1,4-Dioxane	2011/01/27		81	%	70 - 130
	Method Blank	Bromochloromethane	2011/01/27		88	%	60 - 140
		D5-Chlorobenzene	2011/01/27		87	%	60 - 140
		Difluorobenzene	2011/01/27		90	%	60 - 140
		2,2,4-Trimethylpentane	2011/01/27	<0.20		ppbv	
		Carbon Disulfide	2011/01/27	<0.50		ppbv	
		Propene	2011/01/27	<0.30		ppbv	
		Vinyl Acetate	2011/01/27	<0.20		ppbv	
		Vinyl Bromide	2011/01/27	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/01/27	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/01/27	<0.17		ppbv	
		Chloromethane	2011/01/27	<0.30		ppbv	
		Vinyl Chloride	2011/01/27	<0.18		ppbv	
		Chloroethane	2011/01/27	<0.30		ppbv	
		1,3-Butadiene	2011/01/27	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/01/27	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/01/27	<0.15		ppbv	
		Ethanol	2011/01/27	<2.3		ppbv	
		2-propanol	2011/01/27	<3.0		ppbv	
		2-Propanone	2011/01/27	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/01/27	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/01/27	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/01/27	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/01/27	<0.20		ppbv	
		Ethyl Acetate	2011/01/27	<2.2		ppbv	
		1,1-Dichloroethylene	2011/01/27	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/01/27	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/01/27	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/01/27	0.39, RDL=0.30		ppbv	
		Chloroform	2011/01/27	<0.15		ppbv	
		Carbon Tetrachloride	2011/01/27	<0.30		ppbv	
		1,1-Dichloroethane	2011/01/27	<0.20		ppbv	
		1,2-Dichloroethane	2011/01/27	<0.20		ppbv	
		Ethylene Dibromide	2011/01/27	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/01/27	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/01/27	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/01/27	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/01/27	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/01/27	<0.17		ppbv	
		1,2-Dichloropropane	2011/01/27	<0.40		ppbv	
		Bromomethane	2011/01/27	<0.18		ppbv	
		Bromoform	2011/01/27	<0.20		ppbv	
		Bromodichloromethane	2011/01/27	<0.20		ppbv	
		Dibromochloromethane	2011/01/27	<0.20		ppbv	
		Heptane	2011/01/27	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB111404

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2392662 LSY	Method Blank	Trichloroethylene	2011/01/27	<0.30		ppbv	
		Tetrachloroethylene	2011/01/27	<0.20		ppbv	
		Benzene	2011/01/27	<0.18		ppbv	
		Toluene	2011/01/27	<0.20		ppbv	
		Ethylbenzene	2011/01/27	<0.20		ppbv	
		p+m-Xylene	2011/01/27	<0.37		ppbv	
		o-Xylene	2011/01/27	<0.20		ppbv	
		Styrene	2011/01/27	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/01/27	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/01/27	<0.50		ppbv	
		4-ethyltoluene	2011/01/27	<2.2		ppbv	
		Chlorobenzene	2011/01/27	<0.20		ppbv	
		Benzyl chloride	2011/01/27	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/01/27	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/01/27	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/01/27	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/01/27	<2.0		ppbv	
		Hexachlorobutadiene	2011/01/27	<3.0		ppbv	
		Hexane	2011/01/27	<0.30		ppbv	
		Cyclohexane	2011/01/27	<0.20		ppbv	
		Tetrahydrofuran	2011/01/27	<0.40		ppbv	
		1,4-Dioxane	2011/01/27	<2.0		ppbv	
		Xylene (Total)	2011/01/27	<0.60		ppbv	

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

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

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

Maxxam Analytics Inc.

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
 Location: 13-16-62-5 W4M Canister ID: 7788
 Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jan 26, 11 @ 9:46 mst
 Field Sample ID: LICA VOC/PORT/ Jan 27, 11 Canister Removal Date/Time: Jan 31, 11 @ 9:34 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
27-Jan-11	1/27/2011 0:00	1/28/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1494	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 # 06612

Technician Signature: Ting Xu

Your C.O.C. #: 06612

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

Report Date: 2011/02/10

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B114517****Received: 2011/02/03, 09:29**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/02/04	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/02/04	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

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

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Total cover pages: 1

Page 1 of 11

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Maxxam Job #: B114517
 Report Date: 2011/02/10

RESULTS OF ANALYSES OF AIR

Maxxam ID		IN9333	IN9334	
Sampling Date		2011/01/27	2011/01/27	
COC Number		06612	06612	
	Units	LICA VOC\CLS\ JAN 27,11 - 7854	LICA VOC\PORT\JAN 27,11 - 7788	QC Batch

Volatile Organics				
Pressure on Receipt	psig	20	20	2398057
QC Batch = Quality Control Batch				

Maxxam Job #: B114517
 Report Date: 2011/02/10

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IN9333			IN9334				
Sampling Date		2011/01/27			2011/01/27				
COC Number		06612			06612				
	Units	LICA VOC\CLS\JAN 27,11 - 7854	ug/m3	DL (ug/m3)	LICA VOC\PORTJAN 27,11 - 7788	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics									
2,2,4-Trimethylpentane	ppbv	0.31	1.47	0.934	<0.20	0.20	<0.934	0.934	2398059
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2398059
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2398059
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2398059
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2398059
Dichlorodifluoromethane (FREON 12)	ppbv	1.23	6.07	0.989	1.29	0.20	6.38	0.989	2398059
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2398059
Chloromethane	ppbv	1.20	2.48	0.620	1.23	0.30	2.55	0.620	2398059
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2398059
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2398059
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2398059
Trichlorofluoromethane (FREON 11)	ppbv	0.60	3.36	1.12	0.64	0.20	3.59	1.12	2398059
Trichlorotrifluoroethane	ppbv	0.21	1.61	1.15	0.21	0.15	1.64	1.15	2398059
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2398059
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2398059
2-Propanone	ppbv	17.6	41.8	1.90	4.40	0.80	10.4	1.90	2398059
Methyl Ethyl Ketone (2-Butanone)	ppbv	4.7	14.0	8.85	<3.0	3.0	<8.85	8.85	2398059
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2398059
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2398059
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2398059
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2398059
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2398059
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2398059
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2398059
Methylene Chloride(Dichloromethane)	ppbv	0.88	3.07	1.04	0.77	0.30	2.66	1.04	2398059
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2398059
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2398059
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2398059
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2398059
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2398059

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B114517
 Report Date: 2011/02/10

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IN9333			IN9334				
Sampling Date		2011/01/27			2011/01/27				
COC Number		06612			06612				
	Units	LICA VOC\CLS\ JAN 27,11 - 7854	ug/m3	DL (ug/m3)	LICA VOC\PORTJAN 27,11 - 7788	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	2398059
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2398059
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2398059
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2398059
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2398059
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2398059
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2398059
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2398059
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2398059
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2398059
Heptane	ppbv	0.39	1.60	1.23	<0.30	0.30	<1.23	1.23	2398059
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2398059
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2398059
Benzene	ppbv	0.69	2.20	0.575	0.34	0.18	1.07	0.575	2398059
Toluene	ppbv	0.89	3.36	0.753	0.25	0.20	0.933	0.753	2398059
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2398059
p+m-Xylene	ppbv	0.55	2.39	1.61	<0.37	0.37	<1.61	1.61	2398059
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2398059
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2398059
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2398059
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2398059
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2398059
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2398059
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2398059
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2398059
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2398059
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2398059
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2398059
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2398059
Hexane	ppbv	0.73	2.58	1.06	0.45	0.30	1.59	1.06	2398059
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2398059
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2398059

QC Batch = Quality Control Batch

Maxxam Job #: B114517
 Report Date: 2011/02/10

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		IN9333			IN9334				
Sampling Date		2011/01/27			2011/01/27				
COC Number		06612			06612				
	Units	LICA VOC\CLS\ JAN 27,11 - 7854	ug/m3	DL (ug/m3)	LICA VOC\PORTJAN 27,11 - 7788	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	2398059
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2398059
Surrogate Recovery (%)									
Bromochloromethane	%	74	N/A	N/A	72		N/A	N/A	2398059
D5-Chlorobenzene	%	73	N/A	N/A	69		N/A	N/A	2398059
Difluorobenzene	%	72	N/A	N/A	70		N/A	N/A	2398059

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

Maxxam Job #: B114517
 Report Date: 2011/02/10

Test Summary

Maxxam ID IN9333 **Collected** 2011/01/27
Sample ID LICA VOC\CLS\ JAN 27,11 - 7854 **Shipped**
Matrix AIR **Received** 2011/02/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2398057	N/A	2011/02/04	MMU
Volatile Organics in Air (TO-15)	GC/MS	2398059	N/A	2011/02/04	MMU

Maxxam ID IN9334 **Collected** 2011/01/27
Sample ID LICA VOC\PORT\JAN 27,11 - 7788 **Shipped**
Matrix AIR **Received** 2011/02/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2398057	N/A	2011/02/04	MMU
Volatile Organics in Air (TO-15)	GC/MS	2398059	N/A	2011/02/04	MMU

Maxxam Job #: B114517
Report Date: 2011/02/10

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: GB114517

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2398059 MMU	Spiked Blank	Bromochloromethane	2011/02/04		113	%	60 - 140
		D5-Chlorobenzene	2011/02/04		109	%	60 - 140
		Difluorobenzene	2011/02/04		112	%	60 - 140
		2,2,4-Trimethylpentane	2011/02/04		91	%	70 - 130
		Carbon Disulfide	2011/02/04		84	%	70 - 130
		Propene	2011/02/04		88	%	70 - 130
		Vinyl Acetate	2011/02/04		99	%	70 - 130
		Vinyl Bromide	2011/02/04		92	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/02/04		97	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/02/04		110	%	70 - 130
		Chloromethane	2011/02/04		101	%	70 - 130
		Vinyl Chloride	2011/02/04		101	%	70 - 130
		Chloroethane	2011/02/04		100	%	70 - 130
		1,3-Butadiene	2011/02/04		104	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/02/04		97	%	70 - 130
		Trichlorotrifluoroethane	2011/02/04		95	%	70 - 130
		Ethanol	2011/02/04		72	%	70 - 130
		2-propanol	2011/02/04		98	%	70 - 130
		2-Propanone	2011/02/04		102	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/02/04		92	%	70 - 130
		Methyl Isobutyl Ketone	2011/02/04		96	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/02/04		99	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/02/04		91	%	70 - 130
		Ethyl Acetate	2011/02/04		98	%	70 - 130
		1,1-Dichloroethylene	2011/02/04		91	%	70 - 130
		cis-1,2-Dichloroethylene	2011/02/04		97	%	70 - 130
		trans-1,2-Dichloroethylene	2011/02/04		86	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/02/04		86	%	70 - 130
		Chloroform	2011/02/04		92	%	70 - 130
		Carbon Tetrachloride	2011/02/04		83	%	70 - 130
		1,1-Dichloroethane	2011/02/04		95	%	70 - 130
		1,2-Dichloroethane	2011/02/04		100	%	70 - 130
		Ethylene Dibromide	2011/02/04		81	%	70 - 130
		1,1,1-Trichloroethane	2011/02/04		85	%	70 - 130
		1,1,2-Trichloroethane	2011/02/04		82	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/02/04		95	%	70 - 130
		cis-1,3-Dichloropropene	2011/02/04		91	%	70 - 130
		trans-1,3-Dichloropropene	2011/02/04		93	%	70 - 130
		1,2-Dichloropropane	2011/02/04		92	%	70 - 130
		Bromomethane	2011/02/04		94	%	70 - 130
		Bromoform	2011/02/04		95	%	70 - 130
		Bromodichloromethane	2011/02/04		91	%	70 - 130
		Dibromochloromethane	2011/02/04		82	%	70 - 130
		Heptane	2011/02/04		91	%	70 - 130
		Trichloroethylene	2011/02/04		72	%	70 - 130
		Tetrachloroethylene	2011/02/04		77	%	70 - 130
		Benzene	2011/02/04		86	%	70 - 130
		Toluene	2011/02/04		82	%	70 - 130
		Ethylbenzene	2011/02/04		84	%	70 - 130
		p+m-Xylene	2011/02/04		85	%	70 - 130
		o-Xylene	2011/02/04		84	%	70 - 130
		Styrene	2011/02/04		83	%	70 - 130
		1,3,5-Trimethylbenzene	2011/02/04		88	%	70 - 130
		1,2,4-Trimethylbenzene	2011/02/04		90	%	70 - 130
		4-ethyltoluene	2011/02/04		87	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB114517

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2398059 MMU	Spiked Blank	Chlorobenzene	2011/02/04		76	%	70 - 130
		Benzyl chloride	2011/02/04		112	%	70 - 130
		1,3-Dichlorobenzene	2011/02/04		88	%	70 - 130
		1,4-Dichlorobenzene	2011/02/04		89	%	70 - 130
		1,2-Dichlorobenzene	2011/02/04		90	%	70 - 130
		1,2,4-Trichlorobenzene	2011/02/04		104	%	70 - 130
		Hexachlorobutadiene	2011/02/04		98	%	70 - 130
		Hexane	2011/02/04		90	%	70 - 130
		Cyclohexane	2011/02/04		87	%	70 - 130
		Tetrahydrofuran	2011/02/04		91	%	70 - 130
		1,4-Dioxane	2011/02/04		78	%	70 - 130
	Method Blank	Bromochloromethane	2011/02/04		105	%	60 - 140
		D5-Chlorobenzene	2011/02/04		99	%	60 - 140
		Difluorobenzene	2011/02/04		104	%	60 - 140
		2,2,4-Trimethylpentane	2011/02/04	<0.20		ppbv	
		Carbon Disulfide	2011/02/04	<0.50		ppbv	
		Propene	2011/02/04	<0.30		ppbv	
		Vinyl Acetate	2011/02/04	<0.20		ppbv	
		Vinyl Bromide	2011/02/04	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/02/04	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/02/04	<0.17		ppbv	
		Chloromethane	2011/02/04	<0.30		ppbv	
		Vinyl Chloride	2011/02/04	<0.18		ppbv	
		Chloroethane	2011/02/04	<0.30		ppbv	
		1,3-Butadiene	2011/02/04	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/02/04	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/02/04	<0.15		ppbv	
		Ethanol	2011/02/04	<2.3		ppbv	
		2-propanol	2011/02/04	<3.0		ppbv	
		2-Propanone	2011/02/04	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/02/04	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/02/04	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/02/04	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/02/04	<0.20		ppbv	
		Ethyl Acetate	2011/02/04	<2.2		ppbv	
		1,1-Dichloroethylene	2011/02/04	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/02/04	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/02/04	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/02/04	0.84, RDL=0.30		ppbv	
		Chloroform	2011/02/04	<0.15		ppbv	
		Carbon Tetrachloride	2011/02/04	<0.30		ppbv	
		1,1-Dichloroethane	2011/02/04	<0.20		ppbv	
		1,2-Dichloroethane	2011/02/04	<0.20		ppbv	
		Ethylene Dibromide	2011/02/04	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/02/04	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/02/04	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/02/04	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/02/04	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/02/04	<0.17		ppbv	
		1,2-Dichloropropane	2011/02/04	<0.40		ppbv	
		Bromomethane	2011/02/04	<0.18		ppbv	
		Bromoform	2011/02/04	<0.20		ppbv	
		Bromodichloromethane	2011/02/04	<0.20		ppbv	
		Dibromochloromethane	2011/02/04	<0.20		ppbv	
		Heptane	2011/02/04	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB114517

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2398059	MMU	Method Blank					
		Trichloroethylene	2011/02/04	<0.30		ppbv	
		Tetrachloroethylene	2011/02/04	<0.20		ppbv	
		Benzene	2011/02/04	<0.18		ppbv	
		Toluene	2011/02/04	<0.20		ppbv	
		Ethylbenzene	2011/02/04	<0.20		ppbv	
		p+m-Xylene	2011/02/04	<0.37		ppbv	
		o-Xylene	2011/02/04	<0.20		ppbv	
		Styrene	2011/02/04	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/02/04	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/02/04	<0.50		ppbv	
		4-ethyltoluene	2011/02/04	<2.2		ppbv	
		Chlorobenzene	2011/02/04	<0.20		ppbv	
		Benzyl chloride	2011/02/04	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/02/04	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/02/04	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/02/04	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/02/04	<2.0		ppbv	
		Hexachlorobutadiene	2011/02/04	<3.0		ppbv	
		Hexane	2011/02/04	<0.30		ppbv	
		Cyclohexane	2011/02/04	<0.20		ppbv	
		Tetrahydrofuran	2011/02/04	<0.40		ppbv	
		1,4-Dioxane	2011/02/04	<2.0		ppbv	
		Xylene (Total)	2011/02/04	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/02/04	NC		%	25
		Carbon Disulfide	2011/02/04	NC		%	25
		Propene	2011/02/04	NC		%	25
		Vinyl Acetate	2011/02/04	NC		%	25
		Vinyl Bromide	2011/02/04	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/02/04	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/02/04	NC		%	25
		Chloromethane	2011/02/04	NC		%	25
		Vinyl Chloride	2011/02/04	NC		%	25
		Chloroethane	2011/02/04	NC		%	25
		1,3-Butadiene	2011/02/04	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/02/04	NC		%	25
		Trichlorotrifluoroethane	2011/02/04	NC		%	25
		Ethanol	2011/02/04	NC		%	25
		2-propanol	2011/02/04	NC		%	25
		2-Propanone	2011/02/04	NC		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/02/04	NC		%	25
		Methyl Isobutyl Ketone	2011/02/04	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/02/04	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/02/04	NC		%	25
		Ethyl Acetate	2011/02/04	NC		%	25
		1,1-Dichloroethylene	2011/02/04	NC		%	25
		cis-1,2-Dichloroethylene	2011/02/04	NC		%	25
		trans-1,2-Dichloroethylene	2011/02/04	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/02/04	NC		%	25
		Chloroform	2011/02/04	NC		%	25
		Carbon Tetrachloride	2011/02/04	NC		%	25
		1,1-Dichloroethane	2011/02/04	NC		%	25
		1,2-Dichloroethane	2011/02/04	NC		%	25
		Ethylene Dibromide	2011/02/04	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB114517

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2398059 MMU	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/02/04	NC		%	25
		1,1,2-Trichloroethane	2011/02/04	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/02/04	NC		%	25
		cis-1,3-Dichloropropene	2011/02/04	NC		%	25
		trans-1,3-Dichloropropene	2011/02/04	NC		%	25
		1,2-Dichloropropane	2011/02/04	NC		%	25
		Bromomethane	2011/02/04	NC		%	25
		Bromoform	2011/02/04	NC		%	25
		Bromodichloromethane	2011/02/04	NC		%	25
		Dibromochloromethane	2011/02/04	NC		%	25
		Heptane	2011/02/04	NC		%	25
		Trichloroethylene	2011/02/04	NC		%	25
		Tetrachloroethylene	2011/02/04	NC		%	25
		Benzene	2011/02/04	NC		%	25
		Toluene	2011/02/04	NC		%	25
		Ethylbenzene	2011/02/04	NC		%	25
		p+m-Xylene	2011/02/04	NC		%	25
		o-Xylene	2011/02/04	NC		%	25
		Styrene	2011/02/04	NC		%	25
		1,3,5-Trimethylbenzene	2011/02/04	NC		%	25
		1,2,4-Trimethylbenzene	2011/02/04	NC		%	25
		4-ethyltoluene	2011/02/04	NC		%	25
		Chlorobenzene	2011/02/04	NC		%	25
		Benzyl chloride	2011/02/04	NC		%	25
		1,3-Dichlorobenzene	2011/02/04	NC		%	25
		1,4-Dichlorobenzene	2011/02/04	NC		%	25
		1,2-Dichlorobenzene	2011/02/04	NC		%	25
		1,2,4-Trichlorobenzene	2011/02/04	NC		%	25
		Hexachlorobutadiene	2011/02/04	NC		%	25
		Hexane	2011/02/04	NC		%	25
		Cyclohexane	2011/02/04	8.8		%	25
		Tetrahydrofuran	2011/02/04	NC		%	25
		1,4-Dioxane	2011/02/04	NC		%	25
		Xylene (Total)	2011/02/04	NC		%	25

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

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

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

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

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/Jan 03, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Dec 31, 2010 @ 16:29 mst
Removal Date/Time: Jan 04, 2011 @ 11:44 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
03-Jan-11	03/01/2011 0:00	04/01/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
23-Dec-10	04-Jan-11	04-Jan-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)
711	229	-15.9	330.35

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

Comments: COC # 5136

GB0H1766 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jan 03, 11

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 5136

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

Report Date: 2011/01/13

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B101348**

Received: 2011/01/06, 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	2011/01/08	2011/01/11	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763=====
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Total cover pages: 1

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Maxxam Job #: B101348
 Report Date: 2011/01/13

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

Maxxam ID		IH7508	IH7509		
Sampling Date		2011/01/03	2011/01/03		
COC Number		5136	5136		
	Units	LICA PUFF+QFF/CLS/JAN 03,11	LICA PUFF+QFF/PORT/JAN 03,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	1.37	0.82	0.10	2375782
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2375782
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2375782
2-Methylantracene	ug	<0.10	<0.10	0.10	2375782
2-Methylnaphthalene	ug	2.76	1.47	0.10	2375782
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2375782
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2375782
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2375782
Acenaphthene	ug	0.106	0.104	0.050	2375782
Acenaphthylene	ug	0.366	0.202	0.050	2375782
Anthracene	ug	<0.050	<0.050	0.050	2375782
Benzo(a)anthracene	ug	0.102	<0.050	0.050	2375782
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2375782
Benzo(a)pyrene	ug	0.078	<0.050	0.050	2375782
Benzo(b)fluoranthene	ug	0.142	0.080	0.050	2375782
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2375782
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2375782
Benzo(g,h,i)perylene	ug	0.146	0.066	0.050	2375782
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2375782
Biphenyl	ug	0.55	0.83	0.10	2375782
Chrysene	ug	0.174	0.110	0.050	2375782
Coronene	ug	<0.10	<0.10	0.10	2375782
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2375782
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2375782
Fluoranthene	ug	0.326	0.228	0.050	2375782
Fluorene	ug	0.258	0.330	0.050	2375782
Indeno(1,2,3-cd)pyrene	ug	0.074	<0.050	0.050	2375782
m-Terphenyl	ug	<0.10	<0.10	0.10	2375782
Naphthalene	ug	2.88	1.15	0.072	2375782
o-Terphenyl	ug	<0.10	<0.10	0.10	2375782
Perylene	ug	<0.10	<0.10	0.10	2375782

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B101348
 Report Date: 2011/01/13

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

Maxxam ID		IH7508	IH7509		
Sampling Date		2011/01/03	2011/01/03		
COC Number		5136	5136		
	Units	LICA PUFF+QFF/CLS/JAN 03,11	LICA PUFF+QFF/PORT/JAN 03,11	RDL	QC Batch
Phenanthrene	ug	0.738	0.738	0.050	2375782
p-Terphenyl	ug	<0.10	<0.10	0.10	2375782
Pyrene	ug	0.286	0.156	0.050	2375782
Quinoline	ug	<0.40	<0.40	0.40	2375782
Tetralin	ug	<0.10	<0.10	0.10	2375782
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	72		2375782
D10-Fluoranthene	%	84	82		2375782
D10-Fluorene (FS)	%	70	76		2375782
D10-Phenanthrene	%	78	76		2375782
D12-Benzo(a)anthracene	%	92	92		2375782
D12-Benzo(a)pyrene	%	92	92		2375782
D12-Benzo(b)fluoranthene	%	90	84		2375782
D12-Benzo(ghi)perylene	%	96	96		2375782
D12-Benzo(k)fluoranthene	%	88	96		2375782
D12-Chrysene	%	90	92		2375782
D12-Indeno(1,2,3-cd)pyrene	%	92	92		2375782
D12-Perylene	%	92	92		2375782
D14-Dibenzo(a,h)anthracene	%	92	94		2375782
D14-Terphenyl (FS)	%	83	84		2375782
D8-Acenaphthylene	%	70	76		2375782
D8-Naphthalene	%	64	68		2375782
QC Batch = Quality Control Batch					

Maxxam Job #: B101348
 Report Date: 2011/01/13

Test Summary

Maxxam ID IH7508 **Collected** 2011/01/03
Sample ID LICA PUFF+QFF/CLS/JAN 03,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2375782	2011/01/08	2011/01/11	WZ

Maxxam ID IH7509 **Collected** 2011/01/03
Sample ID LICA PUFF+QFF/PORT/JAN 03,11 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2375782	2011/01/08	2011/01/11	WZ

Maxxam Job #: B101348
Report Date: 2011/01/13

GENERAL COMMENTS

PAHMS-F

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

Low recovery of Naphthalene in Spike:dup and spike is OK.

Low recovery of surrogate D10-2-Methylnaphthalene, D8-Acenaphthylene and D8-Naphthalene in blank due to low volume on extraction.

Sample IH7508-01: PAHMS-F

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

Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.174ug, which is the value reported for Chrysene.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Searched for ions specific to this compound in the appropriate retention time range with no possible positive detected.

Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to this compounds in the appropriate retention time range, possible positive detected, but would fall below the mdl using Dibenzo(a,h) anthracene calibration.

Sample IH7509-01: PAHMS-F

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

Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.110ug, which is the value reported for Chrysene.

Benzo(b)Anthracene elutes after Benzo(a)Anthracene and Chrysene. Searched for ions specific to this compound in the appropriate retention time range with no possible positive detected.

Picene elutes after Dibenzo(a,h) anthracene. Searched for ions specific to this compounds in the appropriate retention time range, possible positive detected, but would fall below the mdl using Dibenzo(a,h) anthracene calibration.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB101348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375782 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/01/11		74	%	50 - 150
		D10-Fluoranthene	2011/01/11		88	%	50 - 150
		D10-Phenanthrene	2011/01/11		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/11		90	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/11		92	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/11		86	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/11		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/11		90	%	50 - 150
		D12-Chrysene	2011/01/11		90	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/01/11		92	%	50 - 150
		D12-Perylene	2011/01/11		90	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/11		94	%	50 - 150
		D8-Acenaphthylene	2011/01/11		74	%	50 - 150
		D8-Naphthalene	2011/01/11		70	%	50 - 150
		RPD	Acenaphthene	2011/01/11		72	%
	Spiked Blank	Acenaphthene	2011/01/11	11.1		%	50
	RPD	Acenaphthylene	2011/01/11		75	%	60 - 130
	Spiked Blank	Acenaphthylene	2011/01/11	12.1		%	50
	RPD	Anthracene	2011/01/11		76	%	60 - 130
	Spiked Blank	Anthracene	2011/01/11	3.9		%	50
	RPD	Anthracene	2011/01/11		3.9	%	50
	Spiked Blank	Benzo(a)anthracene	2011/01/11		84	%	60 - 130
	RPD	Benzo(a)anthracene	2011/01/11	1.2		%	50
	Spiked Blank	Benzo(a)pyrene	2011/01/11		76	%	60 - 130
	RPD	Benzo(a)pyrene	2011/01/11	2.7		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/01/11		80	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/01/11	3.1		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/01/11		86	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/01/11	2.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/01/11		88	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/01/11	1.1		%	50
	Spiked Blank	Chrysene	2011/01/11		84	%	60 - 130
	RPD	Chrysene	2011/01/11	3.2		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/01/11		83	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/01/11	0.3		%	50
	Spiked Blank	Fluoranthene	2011/01/11		84	%	60 - 130
	RPD	Fluoranthene	2011/01/11	3.8		%	50
	Spiked Blank	Fluorene	2011/01/11		74	%	60 - 130
	RPD	Fluorene	2011/01/11	5.2		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/01/11		82	%	60 - 130
RPD	Indeno(1,2,3-cd)pyrene	2011/01/11	0		%	50	
Spiked Blank	Naphthalene	2011/01/11		67	%	60 - 130	
RPD	Naphthalene	2011/01/11	20.0		%	50	
Spiked Blank	Phenanthrene	2011/01/11		73	%	60 - 130	
RPD	Phenanthrene	2011/01/11	0.3		%	50	
Spiked Blank	Pyrene	2011/01/11		78	%	60 - 130	
RPD	Pyrene	2011/01/11	2.5		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/01/11		48 (1)	%	50 - 150	
	D10-Fluoranthene	2011/01/11		62	%	50 - 150	
	D10-Phenanthrene	2011/01/11		52	%	50 - 150	
	D12-Benzo(a)anthracene	2011/01/11		62	%	50 - 150	
	D12-Benzo(a)pyrene	2011/01/11		66	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/01/11		62	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/01/11		68	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/01/11		60	%	50 - 150	
	D12-Chrysene	2011/01/11		60	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB101348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2375782 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/01/11		64	%	50 - 150
		D12-Perylene	2011/01/11		66	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/11		64	%	50 - 150
		D8-Acenaphthylene	2011/01/11		48 (1)	%	50 - 150
		D8-Naphthalene	2011/01/11		46 (1)	%	50 - 150
		1-Methylnaphthalene	2011/01/11	<0.10		ug	
		1-Methylphenanthrene	2011/01/11	<0.10		ug	
		2-Chloronaphthalene	2011/01/11	<0.10		ug	
		2-Methylantracene	2011/01/11	<0.10		ug	
		2-Methylnaphthalene	2011/01/11	<0.10		ug	
		3-Methylcholanthrene	2011/01/11	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/01/11	<0.10		ug	
		9,10-Dimethylantracene	2011/01/11	<0.40		ug	
		Acenaphthene	2011/01/11	<0.050		ug	
		Acenaphthylene	2011/01/11	<0.050		ug	
		Anthracene	2011/01/11	<0.050		ug	
		Benzo(a)anthracene	2011/01/11	<0.050		ug	
		Benzo(a)fluorene	2011/01/11	<0.10		ug	
		Benzo(a)pyrene	2011/01/11	<0.050		ug	
		Benzo(b)fluoranthene	2011/01/11	<0.050		ug	
		Benzo(b)fluorene	2011/01/11	<0.10		ug	
		Benzo(e)pyrene	2011/01/11	<0.10		ug	
		Benzo(g,h,i)perylene	2011/01/11	<0.050		ug	
		Benzo(k)fluoranthene	2011/01/11	<0.050		ug	
		Biphenyl	2011/01/11	<0.10		ug	
		Chrysene	2011/01/11	<0.050		ug	
		Coronene	2011/01/11	<0.10		ug	
		Dibenz(a,h)anthracene	2011/01/11	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/01/11	<0.20		ug	
		Fluoranthene	2011/01/11	<0.050		ug	
		Fluorene	2011/01/11	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/01/11	<0.050		ug	
		m-Terphenyl	2011/01/11	<0.10		ug	
		Naphthalene	2011/01/11	<0.072		ug	
		o-Terphenyl	2011/01/11	<0.10		ug	
		Perylene	2011/01/11	<0.10		ug	
		Phenanthrene	2011/01/11	<0.050		ug	
		p-Terphenyl	2011/01/11	<0.10		ug	
		Pyrene	2011/01/11	<0.050		ug	
		Quinoline	2011/01/11	<0.40		ug	
		Tetralin	2011/01/11	<0.10		ug	

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

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/Jan 09, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jan 07, 2011 @ 13:11 mst
Removal Date/Time: Jan 10, 2011 @ 10:25 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
09-Jan-11	09/01/2011 0:00	10/01/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
06-Jan-11	10-Jan-11	18-Jan-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)
722	229	-14.3	330.34

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

Comments: COC # 5040

GB0H2623 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jan 09, 11

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 5040

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

Report Date: 2011/01/20

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B106064****Received: 2011/01/17, 08:54**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/01/18	2011/01/19	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

Page 1 of 7

Page 192 of 222

Maxxam Job #: B106064
 Report Date: 2011/01/20

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

Maxxam ID		IK0976	IK0977		
Sampling Date		2011/01/09	2011/01/09		
COC Number		5040	5040		
	Units	LICA PUFF+QFF/CLS/JAN 09,2011	LICA PUFF+QFF/PORT/JAN 09,2011	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.19	0.19	0.10	2382872
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2382872
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2382872
2-Methylantracene	ug	<0.10	<0.10	0.10	2382872
2-Methylnaphthalene	ug	0.37	0.30	0.10	2382872
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2382872
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2382872
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2382872
Acenaphthene	ug	<0.050	<0.050	0.050	2382872
Acenaphthylene	ug	<0.050	<0.050	0.050	2382872
Anthracene	ug	<0.050	<0.050	0.050	2382872
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2382872
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2382872
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2382872
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2382872
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2382872
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2382872
Benzo(g,h,i)perylene	ug	<0.050	0.054	0.050	2382872
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2382872
Biphenyl	ug	0.15	0.18	0.10	2382872
Chrysene	ug	<0.050	<0.050	0.050	2382872
Coronene	ug	<0.10	<0.10	0.10	2382872
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2382872
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2382872
Fluoranthene	ug	<0.050	<0.050	0.050	2382872
Fluorene	ug	0.058	0.068	0.050	2382872
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2382872
m-Terphenyl	ug	<0.10	<0.10	0.10	2382872
Naphthalene	ug	0.336	0.384	0.072	2382872
o-Terphenyl	ug	<0.10	<0.10	0.10	2382872
Perylene	ug	<0.10	<0.10	0.10	2382872

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B106064
 Report Date: 2011/01/20

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

Maxxam ID		IK0976	IK0977		
Sampling Date		2011/01/09	2011/01/09		
COC Number		5040	5040		
	Units	LICA PUFF+QFF/CLS/JAN 09,2011	LICA PUFF+QFF/PORT/JAN 09,2011	RDL	QC Batch

Phenanthrene	ug	0.136	0.180	0.050	2382872
p-Terphenyl	ug	<0.10	<0.10	0.10	2382872
Pyrene	ug	<0.050	<0.050	0.050	2382872
Quinoline	ug	<0.40	<0.40	0.40	2382872
Tetralin	ug	<0.10	<0.10	0.10	2382872
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	70	66		2382872
D10-Fluoranthene	%	86	88		2382872
D10-Fluorene (FS)	%	64	54		2382872
D10-Phenanthrene	%	72	74		2382872
D12-Benzo(a)anthracene	%	84	86		2382872
D12-Benzo(a)pyrene	%	90	92		2382872
D12-Benzo(b)fluoranthene	%	80	82		2382872
D12-Benzo(ghi)perylene	%	92	96		2382872
D12-Benzo(k)fluoranthene	%	88	94		2382872
D12-Chrysene	%	86	88		2382872
D12-Indeno(1,2,3-cd)pyrene	%	86	88		2382872
D12-Perylene	%	96	100		2382872
D14-Dibenzo(a,h)anthracene	%	86	86		2382872
D14-Terphenyl (FS)	%	79	80		2382872
D8-Acenaphthylene	%	74	74		2382872
D8-Naphthalene	%	68	62		2382872

QC Batch = Quality Control Batch

Maxxam Job #: B106064
 Report Date: 2011/01/20

Test Summary

Maxxam ID IK0976 **Collected** 2011/01/09
Sample ID LICA PUFF+QFF/CLS/JAN 09,2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2382872	2011/01/18	2011/01/19	JIW

Maxxam ID IK0977 **Collected** 2011/01/09
Sample ID LICA PUFF+QFF/PORT/JAN 09,2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/17

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2382872	2011/01/18	2011/01/19	JIW

Maxxam Job #: B106064
Report Date: 2011/01/20

GENERAL COMMENTS

PAHMS-F(WS:2382872)

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

Not calibrated for Benzo(b)Anthracene, Picene, Dibenzo(a,c) anthracene and Triphenylene. An estimated mdl for each of these compounds is 0.10ug.

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

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

Samples received after hold time expired.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB106064

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2382872 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/01/19		68	%	50 - 150
		D10-Fluoranthene	2011/01/19		90	%	50 - 150
		D10-Phenanthrene	2011/01/19		74	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/19		84	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/19		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/19		84	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/19		96	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/19		90	%	50 - 150
		D12-Chrysene	2011/01/19		90	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/01/19		90	%	50 - 150
		D12-Perylene	2011/01/19		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/19		90	%	50 - 150
		D8-Acenaphthylene	2011/01/19		70	%	50 - 150
		D8-Naphthalene	2011/01/19		68	%	50 - 150
		Acenaphthene	2011/01/19		67	%	60 - 130
	RPD	Acenaphthene	2011/01/19	9.7		%	50
	Spiked Blank	Acenaphthylene	2011/01/19		71	%	60 - 130
	RPD	Acenaphthylene	2011/01/19	9.1		%	50
	Spiked Blank	Anthracene	2011/01/19		82	%	60 - 130
	RPD	Anthracene	2011/01/19	0.3		%	50
	Spiked Blank	Benzo(a)anthracene	2011/01/19		75	%	60 - 130
	RPD	Benzo(a)anthracene	2011/01/19	0.3		%	50
	Spiked Blank	Benzo(a)pyrene	2011/01/19		72	%	60 - 130
	RPD	Benzo(a)pyrene	2011/01/19	1.0		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/01/19		71	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/01/19	7.4		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/01/19		87	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/01/19	0.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/01/19		93	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/01/19	7.2		%	50
	Spiked Blank	Chrysene	2011/01/19		85	%	60 - 130
	RPD	Chrysene	2011/01/19	0.6		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/01/19		81	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/01/19	5.1		%	50
	Spiked Blank	Fluoranthene	2011/01/19		85	%	60 - 130
	RPD	Fluoranthene	2011/01/19	2.1		%	50
	Spiked Blank	Fluorene	2011/01/19		69	%	60 - 130
	RPD	Fluorene	2011/01/19	2.5		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/01/19		82	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/01/19	5.6		%	50
	Spiked Blank	Naphthalene	2011/01/19		68	%	60 - 130
	RPD	Naphthalene	2011/01/19	15.0		%	50
	Spiked Blank	Phenanthrene	2011/01/19		66	%	60 - 130
	RPD	Phenanthrene	2011/01/19	3.1		%	50
	Spiked Blank	Pyrene	2011/01/19		79	%	60 - 130
	RPD	Pyrene	2011/01/19	5.8		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/01/19		70	%	50 - 150
		D10-Fluoranthene	2011/01/19		96	%	50 - 150
		D10-Phenanthrene	2011/01/19		84	%	50 - 150
		D12-Benzo(a)anthracene	2011/01/19		84	%	50 - 150
		D12-Benzo(a)pyrene	2011/01/19		92	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/01/19		82	%	50 - 150
		D12-Benzo(ghi)perylene	2011/01/19		94	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/01/19		92	%	50 - 150
		D12-Chrysene	2011/01/19		88	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB106064

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2382872 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/01/19		90	%	50 - 150
		D12-Perylene	2011/01/19		98	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/19		86	%	50 - 150
		D8-Acenaphthylene	2011/01/19		78	%	50 - 150
		D8-Naphthalene	2011/01/19		70	%	50 - 150
		1-Methylnaphthalene	2011/01/19	<0.10		ug	
		1-Methylphenanthrene	2011/01/19	<0.10		ug	
		2-Chloronaphthalene	2011/01/19	<0.10		ug	
		2-Methylanthracene	2011/01/19	<0.10		ug	
		2-Methylnaphthalene	2011/01/19	<0.10		ug	
		3-Methylcholanthrene	2011/01/19	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/01/19	<0.10		ug	
		9,10-Dimethylanthracene	2011/01/19	<0.40		ug	
		Acenaphthene	2011/01/19	<0.050		ug	
		Acenaphthylene	2011/01/19	<0.050		ug	
		Anthracene	2011/01/19	<0.050		ug	
		Benzo(a)anthracene	2011/01/19	<0.050		ug	
		Benzo(a)fluorene	2011/01/19	<0.10		ug	
		Benzo(a)pyrene	2011/01/19	<0.050		ug	
		Benzo(b)fluoranthene	2011/01/19	<0.050		ug	
		Benzo(b)fluorene	2011/01/19	<0.10		ug	
		Benzo(e)pyrene	2011/01/19	<0.10		ug	
		Benzo(g,h,i)perylene	2011/01/19	<0.050		ug	
		Benzo(k)fluoranthene	2011/01/19	<0.050		ug	
		Biphenyl	2011/01/19	<0.10		ug	
		Chrysene	2011/01/19	<0.050		ug	
		Coronene	2011/01/19	<0.10		ug	
		Dibenz(a,h)anthracene	2011/01/19	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/01/19	<0.20		ug	
		Fluoranthene	2011/01/19	<0.050		ug	
		Fluorene	2011/01/19	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/01/19	<0.050		ug	
		m-Terphenyl	2011/01/19	<0.10		ug	
		Naphthalene	2011/01/19	<0.072		ug	
		o-Terphenyl	2011/01/19	<0.10		ug	
		Perylene	2011/01/19	<0.10		ug	
		Phenanthrene	2011/01/19	<0.050		ug	
		p-Terphenyl	2011/01/19	<0.10		ug	
		Pyrene	2011/01/19	<0.050		ug	
		Quinoline	2011/01/19	<0.40		ug	
		Tetralin	2011/01/19	<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/Jan 15, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Jan 14, 2011 @ 9:42 mst
 Removal Date/Time: Jan 17, 2011 @ 10:41 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
15-Jan-11	15/01/2011 0:00	16/01/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
14-Jan-11	17-Jan-11	25-Jan-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)
724	229	-24.9	330.36

dx

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 # 4805

GB0H2646 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jan 15, 11

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 4805

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

Report Date: 2011/01/25

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B107426****Received: 2011/01/19, 09:30**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/01/21	2011/01/24	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Total cover pages: 1

Page 1 of 7

Page 200 of 222

Maxxam Job #: B107426
 Report Date: 2011/01/25

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

Maxxam ID		IK6494	IK6495		
Sampling Date		2011/01/15	2011/01/15		
COC Number		4805	4805		
	Units	LICA PUFF+QFF/CLS/JAN 15,2011	LICA PUFF+QFF/PORT/JAN 15,2011	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.54	0.47	0.10	2386301
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2386301
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2386301
2-Methylantracene	ug	<0.10	<0.10	0.10	2386301
2-Methylnaphthalene	ug	1.00	0.73	0.10	2386301
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2386301
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2386301
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2386301
Acenaphthene	ug	0.078	<0.050	0.050	2386301
Acenaphthylene	ug	0.094	0.086	0.050	2386301
Anthracene	ug	<0.050	<0.050	0.050	2386301
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2386301
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2386301
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2386301
Benzo(b)fluoranthene	ug	0.058	0.054	0.050	2386301
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2386301
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2386301
Benzo(g,h,i)perylene	ug	0.056	0.064	0.050	2386301
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2386301
Biphenyl	ug	0.25	0.27	0.10	2386301
Chrysene	ug	0.062	0.056	0.050	2386301
Coronene	ug	<0.10	<0.10	0.10	2386301
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2386301
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2386301
Fluoranthene	ug	0.168	0.142	0.050	2386301
Fluorene	ug	0.118	0.122	0.050	2386301
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2386301
m-Terphenyl	ug	<0.10	<0.10	0.10	2386301
Naphthalene	ug	1.84	1.70	0.072	2386301
o-Terphenyl	ug	<0.10	<0.10	0.10	2386301
Perylene	ug	<0.10	<0.10	0.10	2386301

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B107426
 Report Date: 2011/01/25

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

Maxxam ID		IK6494	IK6495		
Sampling Date		2011/01/15	2011/01/15		
COC Number		4805	4805		
	Units	LICA PUFF+QFF/CLS/JAN 15,2011	LICA PUFF+QFF/PORT/JAN 15,2011	RDL	QC Batch

Phenanthrene	ug	0.448	0.358	0.050	2386301
p-Terphenyl	ug	<0.10	<0.10	0.10	2386301
Pyrene	ug	0.098	0.088	0.050	2386301
Quinoline	ug	<0.40	<0.40	0.40	2386301
Tetralin	ug	<0.10	<0.10	0.10	2386301
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	64	78		2386301
D10-Fluoranthene	%	84	88		2386301
D10-Fluorene (FS)	%	68	77		2386301
D10-Phenanthrene	%	72	76		2386301
D12-Benzo(a)anthracene	%	76	82		2386301
D12-Benzo(a)pyrene	%	88	92		2386301
D12-Benzo(b)fluoranthene	%	74	84		2386301
D12-Benzo(ghi)perylene	%	92	96		2386301
D12-Benzo(k)fluoranthene	%	92	92		2386301
D12-Chrysene	%	88	88		2386301
D12-Indeno(1,2,3-cd)pyrene	%	86	88		2386301
D12-Perylene	%	92	100		2386301
D14-Dibenzo(a,h)anthracene	%	82	86		2386301
D14-Terphenyl (FS)	%	78	82		2386301
D8-Acenaphthylene	%	70	82		2386301
D8-Naphthalene	%	62	76		2386301

QC Batch = Quality Control Batch

Maxxam Job #: B107426
 Report Date: 2011/01/25

Test Summary

Maxxam ID IK6494 **Collected** 2011/01/15
Sample ID LICA PUFF+QFF/CLS/JAN 15,2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2386301	2011/01/21	2011/01/24	JIW

Maxxam ID IK6495 **Collected** 2011/01/15
Sample ID LICA PUFF+QFF/PORT/JAN 15,2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/19

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2386301	2011/01/21	2011/01/24	JIW

Maxxam Job #: B107426
Report Date: 2011/01/25

GENERAL COMMENTS

PAHMS-F(WS:2386301)

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

Naphthalene positive found in Blank. Samples should be considered to be possibly contaminated to the level found in the Blank.

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

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

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

Sample IK6494-01: PAHMS-F(WS:2386301)

Since Dibenzo(a,c)anthracene co-elutes with Dibenz(a,h)anthracene it would have a value below the estimated mdl.

Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.062ug, which is the value reported for Chrysene.

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

Sample IK6495-01: PAHMS-F(WS:2386301)

Since Dibenzo(a,c)anthracene co-elutes with Dibenz(a,h)anthracene it would have a value below the estimated mdl.

Since Triphenylene co-elutes with Chrysene, the maximum possible value for this compound would be 0.056ug, which is the value reported for Chrysene.

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

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB107426

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits		
2386301 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/01/24		78	%	50 - 150		
		D10-Fluoranthene	2011/01/24		92	%	50 - 150		
		D10-Phenanthrene	2011/01/24		76	%	50 - 150		
		D12-Benzo(a)anthracene	2011/01/24		80	%	50 - 150		
		D12-Benzo(a)pyrene	2011/01/24		94	%	50 - 150		
		D12-Benzo(b)fluoranthene	2011/01/24		82	%	50 - 150		
		D12-Benzo(ghi)perylene	2011/01/24		96	%	50 - 150		
		D12-Benzo(k)fluoranthene	2011/01/24		94	%	50 - 150		
		D12-Chrysene	2011/01/24		88	%	50 - 150		
		D12-Indeno(1,2,3-cd)pyrene	2011/01/24		90	%	50 - 150		
		D12-Perylene	2011/01/24		100	%	50 - 150		
		D14-Dibenzo(a,h)anthracene	2011/01/24		88	%	50 - 150		
		RPD	Acenaphthylene	2011/01/24		3.2		%	50
	Acenaphthylene		2011/01/24			83	%	60 - 130	
	Acenaphthylene		2011/01/24		5.9		%	50	
	Anthracene		2011/01/24			74	%	60 - 130	
	Anthracene		2011/01/24		15.9		%	50	
	Benzo(a)anthracene		2011/01/24			73	%	60 - 130	
	Benzo(a)anthracene		2011/01/24		2.4		%	50	
	Benzo(a)pyrene		2011/01/24			70	%	60 - 130	
	Benzo(a)pyrene		2011/01/24		0.4		%	50	
	Benzo(b)fluoranthene		2011/01/24			74	%	60 - 130	
	Benzo(b)fluoranthene		2011/01/24		5.2		%	50	
	Benzo(g,h,i)perylene		2011/01/24			86	%	60 - 130	
	Benzo(g,h,i)perylene		2011/01/24		1.5		%	50	
	Benzo(k)fluoranthene		2011/01/24			87	%	60 - 130	
	Benzo(k)fluoranthene		2011/01/24		10.1		%	50	
	Spiked Blank		Chrysene	2011/01/24			86	%	60 - 130
			Chrysene	2011/01/24		1.2		%	50
		Dibenz(a,h)anthracene	2011/01/24			76	%	60 - 130	
		Dibenz(a,h)anthracene	2011/01/24		0		%	50	
		Fluoranthene	2011/01/24			85	%	60 - 130	
		Fluoranthene	2011/01/24		3.0		%	50	
		Fluorene	2011/01/24			77	%	60 - 130	
		Fluorene	2011/01/24		3.3		%	50	
		Indeno(1,2,3-cd)pyrene	2011/01/24			80	%	60 - 130	
		Indeno(1,2,3-cd)pyrene	2011/01/24		1.9		%	50	
		Naphthalene	2011/01/24			85	%	60 - 130	
		Naphthalene	2011/01/24		10.6		%	50	
		Phenanthrene	2011/01/24			68	%	60 - 130	
Phenanthrene		2011/01/24		6.8		%	50		
Pyrene		2011/01/24			79	%	60 - 130		
Pyrene		2011/01/24		3.9		%	50		
Method Blank	D10-2-Methylnaphthalene	2011/01/24			74	%	50 - 150		
	D10-Fluoranthene	2011/01/24			96	%	50 - 150		
	D10-Phenanthrene	2011/01/24			76	%	50 - 150		
	D12-Benzo(a)anthracene	2011/01/24			82	%	50 - 150		
	D12-Benzo(a)pyrene	2011/01/24			96	%	50 - 150		
	D12-Benzo(b)fluoranthene	2011/01/24			86	%	50 - 150		
	D12-Benzo(ghi)perylene	2011/01/24			100	%	50 - 150		
	D12-Benzo(k)fluoranthene	2011/01/24			92	%	50 - 150		
D12-Chrysene	2011/01/24			92	%	50 - 150			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB107426

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2386301 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/01/24		94	%	50 - 150
		D12-Perylene	2011/01/24		102	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/01/24		92	%	50 - 150
		D8-Acenaphthylene	2011/01/24		80	%	50 - 150
		D8-Naphthalene	2011/01/24		74	%	50 - 150
		1-Methylnaphthalene	2011/01/24	<0.10		ug	
		1-Methylphenanthrene	2011/01/24	<0.10		ug	
		2-Chloronaphthalene	2011/01/24	<0.10		ug	
		2-Methylanthracene	2011/01/24	<0.10		ug	
		2-Methylnaphthalene	2011/01/24	<0.10		ug	
		3-Methylcholanthrene	2011/01/24	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/01/24	<0.10		ug	
		9,10-Dimethylanthracene	2011/01/24	<0.40		ug	
		Acenaphthene	2011/01/24	<0.050		ug	
		Acenaphthylene	2011/01/24	<0.050		ug	
		Anthracene	2011/01/24	<0.050		ug	
		Benzo(a)anthracene	2011/01/24	<0.050		ug	
		Benzo(a)fluorene	2011/01/24	<0.10		ug	
		Benzo(a)pyrene	2011/01/24	<0.050		ug	
		Benzo(b)fluoranthene	2011/01/24	<0.050		ug	
		Benzo(b)fluorene	2011/01/24	<0.10		ug	
		Benzo(e)pyrene	2011/01/24	<0.10		ug	
		Benzo(g,h,i)perylene	2011/01/24	<0.050		ug	
		Benzo(k)fluoranthene	2011/01/24	<0.050		ug	
		Biphenyl	2011/01/24	<0.10		ug	
		Chrysene	2011/01/24	<0.050		ug	
		Coronene	2011/01/24	<0.10		ug	
		Dibenz(a,h)anthracene	2011/01/24	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/01/24	<0.20		ug	
		Fluoranthene	2011/01/24	<0.050		ug	
		Fluorene	2011/01/24	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/01/24	<0.050		ug	
		m-Terphenyl	2011/01/24	<0.10		ug	
		Naphthalene	2011/01/24	0.094, RDL=0.072		ug	
		o-Terphenyl	2011/01/24	<0.10		ug	
		Perylene	2011/01/24	<0.10		ug	
		Phenanthrene	2011/01/24	<0.050		ug	
		p-Terphenyl	2011/01/24	<0.10		ug	
		Pyrene	2011/01/24	<0.050		ug	
		Quinoline	2011/01/24	<0.40		ug	
		Tetralin	2011/01/24	<0.10		ug	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

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

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

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

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: 13-16-62-5 W4M
 Station ID: Lica 33 (Portable)
 Field Sample ID: LICA PUF/PORT/Jan 21, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Jan 20, 2011 @ 15:06 mst
 Removal Date/Time: Jan 25, 2011 @ 10:51 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
21-Jan-11	21/01/2011 0:00	22/01/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
19-Jan-11	24-Jan-11	31-Jan-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	-17.0	330.38

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 # 5155

GB0H2673 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jan 21, 11

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 5155

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

Report Date: 2011/02/03

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B111432****Received: 2011/01/27, 08:55**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/01/28	2011/02/01	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

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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 #: B111432
 Report Date: 2011/02/03

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

Maxxam ID		IM5796	IM5797		
Sampling Date		2011/01/21	2011/01/21		
COC Number		5155	5155		
	Units	LICA PUFF+QFF/CLS/JAN 21, 2011	LICA PUFF+QFF/PORT/JAN 21, 2011	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	0.67	0.43	0.10	2391958
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2391958
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2391958
2-Methylantracene	ug	<0.10	<0.10	0.10	2391958
2-Methylnaphthalene	ug	1.31	0.70	0.10	2391958
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2391958
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2391958
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2391958
Acenaphthene	ug	0.152	0.058	0.050	2391958
Acenaphthylene	ug	0.184	0.186	0.050	2391958
Anthracene	ug	<0.050	<0.050	0.050	2391958
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2391958
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2391958
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2391958
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2391958
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2391958
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2391958
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2391958
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2391958
Biphenyl	ug	0.49	0.48	0.10	2391958
Chrysene	ug	<0.050	<0.050	0.050	2391958
Coronene	ug	<0.10	<0.10	0.10	2391958
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2391958
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2391958
Fluoranthene	ug	0.102	0.132	0.050	2391958
Fluorene	ug	0.222	0.242	0.050	2391958
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2391958
m-Terphenyl	ug	<0.10	<0.10	0.10	2391958
Naphthalene	ug	1.24	0.818	0.072	2391958
o-Terphenyl	ug	<0.10	<0.10	0.10	2391958
Perylene	ug	<0.10	<0.10	0.10	2391958

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B111432
 Report Date: 2011/02/03

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

Maxxam ID		IM5796	IM5797		
Sampling Date		2011/01/21	2011/01/21		
COC Number		5155	5155		
	Units	LICA PUFF+QFF/CLS/JAN 21, 2011	LICA PUFF+QFF/PORT/JAN 21, 2011	RDL	QC Batch
Phenanthrene	ug	0.452	0.510	0.050	2391958
p-Terphenyl	ug	<0.10	<0.10	0.10	2391958
Pyrene	ug	0.062	0.086	0.050	2391958
Quinoline	ug	<0.40	<0.40	0.40	2391958
Tetralin	ug	<0.10	<0.10	0.10	2391958
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	68	70		2391958
D10-Fluoranthene	%	82	86		2391958
D10-Fluorene (FS)	%	68	67		2391958
D10-Phenanthrene	%	76	78		2391958
D12-Benzo(a)anthracene	%	84	88		2391958
D12-Benzo(a)pyrene	%	92	94		2391958
D12-Benzo(b)fluoranthene	%	84	88		2391958
D12-Benzo(ghi)perylene	%	86	90		2391958
D12-Benzo(k)fluoranthene	%	92	90		2391958
D12-Chrysene	%	90	92		2391958
D12-Indeno(1,2,3-cd)pyrene	%	88	92		2391958
D12-Perylene	%	94	94		2391958
D14-Dibenzo(a,h)anthracene	%	86	92		2391958
D14-Terphenyl (FS)	%	78	83		2391958
D8-Acenaphthylene	%	74	76		2391958
D8-Naphthalene	%	64	68		2391958
QC Batch = Quality Control Batch					

Maxxam Job #: B111432
 Report Date: 2011/02/03

Test Summary

Maxxam ID IM5796 **Collected** 2011/01/21
Sample ID LICA PUFF+QFF/CLS/JAN 21, 2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2391958	2011/01/28	2011/02/01	WZ

Maxxam ID IM5797 **Collected** 2011/01/21
Sample ID LICA PUFF+QFF/PORT/JAN 21, 2011 **Shipped**
Matrix PUF AND FILTER **Received** 2011/01/27

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2391958	2011/01/28	2011/02/01	WZ

Maxxam Job #: B111432
Report Date: 2011/02/03

GENERAL COMMENTS

PAHMS-F

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

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

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

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

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB111432

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2391958 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/02/01		74	%	50 - 150
		D10-Fluoranthene	2011/02/01		84	%	50 - 150
		D10-Phenanthrene	2011/02/01		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/02/01		92	%	50 - 150
		D12-Benzo(a)pyrene	2011/02/01		94	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/02/01		94	%	50 - 150
		D12-Benzo(ghi)perylene	2011/02/01		90	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/02/01		84	%	50 - 150
		D12-Chrysene	2011/02/01		88	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/02/01		90	%	50 - 150
		D12-Perylene	2011/02/01		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/02/01		90	%	50 - 150
		D8-Acenaphthylene	2011/02/01		76	%	50 - 150
		D8-Naphthalene	2011/02/01		72	%	50 - 150
		Acenaphthene	2011/02/01		73	%	60 - 130
	RPD	Acenaphthene	2011/02/01	0		%	50
	Spiked Blank	Acenaphthylene	2011/02/01		77	%	60 - 130
	RPD	Acenaphthylene	2011/02/01	0.6		%	50
	Spiked Blank	Anthracene	2011/02/01		75	%	60 - 130
	RPD	Anthracene	2011/02/01	3.7		%	50
	Spiked Blank	Benzo(a)anthracene	2011/02/01		81	%	60 - 130
	RPD	Benzo(a)anthracene	2011/02/01	0.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/02/01		73	%	60 - 130
	RPD	Benzo(a)pyrene	2011/02/01	1.4		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/02/01		82	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/02/01	3.4		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/02/01		80	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/02/01	0.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/02/01		81	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/02/01	0.9		%	50
	Spiked Blank	Chrysene	2011/02/01		83	%	60 - 130
	RPD	Chrysene	2011/02/01	2.4		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/02/01		81	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/02/01	4.1		%	50
	Spiked Blank	Fluoranthene	2011/02/01		80	%	60 - 130
	RPD	Fluoranthene	2011/02/01	7.1		%	50
	Spiked Blank	Fluorene	2011/02/01		77	%	60 - 130
	RPD	Fluorene	2011/02/01	2.0		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/02/01		81	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/02/01	3.8		%	50
	Spiked Blank	Naphthalene	2011/02/01		80	%	60 - 130
	RPD	Naphthalene	2011/02/01	0.9		%	50
	Spiked Blank	Phenanthrene	2011/02/01		75	%	60 - 130
	RPD	Phenanthrene	2011/02/01	6.6		%	50
	Spiked Blank	Pyrene	2011/02/01		81	%	60 - 130
	RPD	Pyrene	2011/02/01	7.7		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/02/01		76	%	50 - 150
		D10-Fluoranthene	2011/02/01		84	%	50 - 150
		D10-Phenanthrene	2011/02/01		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/02/01		80	%	50 - 150
		D12-Benzo(a)pyrene	2011/02/01		92	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/02/01		86	%	50 - 150
		D12-Benzo(ghi)perylene	2011/02/01		88	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/02/01		90	%	50 - 150
		D12-Chrysene	2011/02/01		94	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB111432

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2391958 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/02/01		88	%	50 - 150
		D12-Perylene	2011/02/01		94	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/02/01		88	%	50 - 150
		D8-Acenaphthylene	2011/02/01		78	%	50 - 150
		D8-Naphthalene	2011/02/01		76	%	50 - 150
		1-Methylnaphthalene	2011/02/01	<0.10		ug	
		1-Methylphenanthrene	2011/02/01	<0.10		ug	
		2-Chloronaphthalene	2011/02/01	<0.10		ug	
		2-Methylantracene	2011/02/01	<0.10		ug	
		2-Methylnaphthalene	2011/02/01	<0.10		ug	
		3-Methylcholanthrene	2011/02/01	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/02/01	<0.10		ug	
		9,10-Dimethylantracene	2011/02/01	<0.40		ug	
		Acenaphthene	2011/02/01	<0.050		ug	
		Acenaphthylene	2011/02/01	<0.050		ug	
		Anthracene	2011/02/01	<0.050		ug	
		Benzo(a)anthracene	2011/02/01	<0.050		ug	
		Benzo(a)fluorene	2011/02/01	<0.10		ug	
		Benzo(a)pyrene	2011/02/01	<0.050		ug	
		Benzo(b)fluoranthene	2011/02/01	<0.050		ug	
		Benzo(b)fluorene	2011/02/01	<0.10		ug	
		Benzo(e)pyrene	2011/02/01	<0.10		ug	
		Benzo(g,h,i)perylene	2011/02/01	<0.050		ug	
		Benzo(k)fluoranthene	2011/02/01	<0.050		ug	
		Biphenyl	2011/02/01	<0.10		ug	
		Chrysene	2011/02/01	<0.050		ug	
		Coronene	2011/02/01	<0.10		ug	
		Dibenz(a,h)anthracene	2011/02/01	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/02/01	<0.20		ug	
		Fluoranthene	2011/02/01	<0.050		ug	
		Fluorene	2011/02/01	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/02/01	<0.050		ug	
		m-Terphenyl	2011/02/01	<0.10		ug	
		Naphthalene	2011/02/01	0.102, RDL=0.072		ug	
		o-Terphenyl	2011/02/01	<0.10		ug	
		Perylene	2011/02/01	<0.10		ug	
		Phenanthrene	2011/02/01	<0.050		ug	
		p-Terphenyl	2011/02/01	<0.10		ug	
		Pyrene	2011/02/01	<0.050		ug	
		Quinoline	2011/02/01	<0.40		ug	
		Tetralin	2011/02/01	<0.10		ug	

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

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/Jan 27, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Jan 26, 2011 @ 9:45 mst
 Removal Date/Time: Jan 31, 2011 @ 9:47 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
27-Jan-11	27/01/2011 0:00	28/01/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
25-Jan-11	31-Jan-11	03-Feb-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)
702	229	1.1	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 # 06613

GB0H2690 Puff #2

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

- Noticed condensation on the PUFF glass holder

Technician Signiture: Ting Xu

Your C.O.C. #: 06613

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

Report Date: 2011/02/14

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B114568****Received: 2011/02/03, 09:08**

Sample Matrix: PUF AND FILTER

Samples Received: 2

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

Maxxam Job #: B114568
 Report Date: 2011/02/14

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

Maxxam ID		IN9680	IN9681		
Sampling Date		2011/01/27	2011/01/27		
COC Number		06613	06613		
	Units	LICA PUFF+QFF/CLS/JAN 27, 11	LICA PUFF+QFF/PORT/JAN 27, 11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2397605
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2397605
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2397605
2-Methylantracene	ug	<0.10	<0.10	0.10	2397605
2-Methylnaphthalene	ug	0.19	<0.10	0.10	2397605
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2397605
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2397605
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2397605
Acenaphthene	ug	<0.050	<0.050	0.050	2397605
Acenaphthylene	ug	0.092	<0.050	0.050	2397605
Anthracene	ug	<0.050	<0.050	0.050	2397605
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2397605
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2397605
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2397605
Benzo(b)fluoranthene	ug	0.060	<0.050	0.050	2397605
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2397605
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2397605
Benzo(g,h,i)perylene	ug	0.066	0.058	0.050	2397605
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2397605
Biphenyl	ug	0.17	0.11	0.10	2397605
Chrysene	ug	<0.050	<0.050	0.050	2397605
Coronene	ug	<0.10	<0.10	0.10	2397605
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2397605
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2397605
Fluoranthene	ug	0.142	0.094	0.050	2397605
Fluorene	ug	0.354	0.194	0.050	2397605
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2397605
m-Terphenyl	ug	<0.10	<0.10	0.10	2397605
Naphthalene	ug	0.166	0.080	0.072	2397605
o-Terphenyl	ug	<0.10	<0.10	0.10	2397605
Perylene	ug	<0.10	<0.10	0.10	2397605

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B114568
 Report Date: 2011/02/14

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

Maxxam ID		IN9680	IN9681		
Sampling Date		2011/01/27	2011/01/27		
COC Number		06613	06613		
	Units	LICA PUFF+QFF/CLS/JAN 27, 11	LICA PUFF+QFF/PORT/JAN 27, 11	RDL	QC Batch

Phenanthrene	ug	0.662	0.364	0.050	2397605
p-Terphenyl	ug	<0.10	<0.10	0.10	2397605
Pyrene	ug	0.108	0.050	0.050	2397605
Quinoline	ug	<0.40	<0.40	0.40	2397605
Tetralin	ug	<0.10	<0.10	0.10	2397605
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	60		2397605
D10-Fluoranthene	%	84	64		2397605
D10-Fluorene (FS)	%	16 (1)	12 (1)		2397605
D10-Phenanthrene	%	80	62		2397605
D12-Benzo(a)anthracene	%	80	60		2397605
D12-Benzo(a)pyrene	%	78	60		2397605
D12-Benzo(b)fluoranthene	%	78	66		2397605
D12-Benzo(ghi)perylene	%	84	72		2397605
D12-Benzo(k)fluoranthene	%	92	70		2397605
D12-Chrysene	%	86	72		2397605
D12-Indeno(1,2,3-cd)pyrene	%	86	70		2397605
D12-Perylene	%	92	70		2397605
D14-Dibenzo(a,h)anthracene	%	84	68		2397605
D14-Terphenyl (FS)	%	82	58		2397605
D8-Acenaphthylene	%	70	62		2397605
D8-Naphthalene	%	60	60		2397605

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 #: B114568
 Report Date: 2011/02/14

Test Summary

Maxxam ID	IN9680	Collected	2011/01/27
Sample ID	LICA PUFF+QFF/CLS/JAN 27, 11	Shipped	
Matrix	PUF AND FILTER	Received	2011/02/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2397605	2011/02/04	2011/02/07	WZ

Maxxam ID	IN9681	Collected	2011/01/27
Sample ID	LICA PUFF+QFF/PORT/JAN 27, 11	Shipped	
Matrix	PUF AND FILTER	Received	2011/02/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2397605	2011/02/04	2011/02/07	WZ

Maxxam Job #: B114568
Report Date: 2011/02/14

GENERAL COMMENTS

PAHMS-F

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

Naphthalene positive found in blank. Samples should be considered to be possibly contaminated to the level found in the blank.

Internal Std area response criteria was high in Spike:dup and Blank. Both vials were rerun with similar results. Original run reported.

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

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

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

Sample IN9680-01: PAHMS-F

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

Sample IN9681-01: 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: GB114568

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2397605 WZ	Spiked Blank	D10-2-Methylnaphthalene	2011/02/07		66	%	50 - 150
		D10-Fluoranthene	2011/02/07		86	%	50 - 150
		D10-Phenanthrene	2011/02/07		72	%	50 - 150
		D12-Benzo(a)anthracene	2011/02/07		80	%	50 - 150
		D12-Benzo(a)pyrene	2011/02/07		82	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/02/07		78	%	50 - 150
		D12-Benzo(ghi)perylene	2011/02/07		84	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/02/07		90	%	50 - 150
		D12-Chrysene	2011/02/07		80	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/02/07		86	%	50 - 150
		D12-Perylene	2011/02/07		78	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/02/07		86	%	50 - 150
		RPD	D8-Acenaphthylene	2011/02/07		70	%
	D8-Naphthalene		2011/02/07		68	%	50 - 150
	Spiked Blank	Acenaphthene	2011/02/07		69	%	60 - 130
		Acenaphthene	2011/02/07	1.8		%	50
	RPD	Acenaphthylene	2011/02/07		70	%	60 - 130
		Acenaphthylene	2011/02/07	4.6		%	50
	Spiked Blank	Anthracene	2011/02/07		75	%	60 - 130
		Anthracene	2011/02/07		4.9	%	50
	Spiked Blank	Benzo(a)anthracene	2011/02/07		71	%	60 - 130
		Benzo(a)anthracene	2011/02/07		8.5	%	50
	Spiked Blank	Benzo(a)pyrene	2011/02/07		71	%	60 - 130
		Benzo(a)pyrene	2011/02/07		3.1	%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/02/07		69	%	60 - 130
		Benzo(b)fluoranthene	2011/02/07		16.3	%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/02/07		79	%	60 - 130
		Benzo(g,h,i)perylene	2011/02/07		5.6	%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/02/07		90	%	60 - 130
		Benzo(k)fluoranthene	2011/02/07		9.7	%	50
	Spiked Blank	Chrysene	2011/02/07		81	%	60 - 130
		Chrysene	2011/02/07		0	%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/02/07		77	%	60 - 130
		Dibenz(a,h)anthracene	2011/02/07		5.7	%	50
	Spiked Blank	Fluoranthene	2011/02/07		81	%	60 - 130
		Fluoranthene	2011/02/07		3.1	%	50
	Spiked Blank	Fluorene	2011/02/07		71	%	60 - 130
		Fluorene	2011/02/07		4.5	%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/02/07		77	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/02/07		5.7	%	50
Spiked Blank	Naphthalene	2011/02/07		78	%	60 - 130	
	Naphthalene	2011/02/07		8.0	%	50	
Spiked Blank	Phenanthrene	2011/02/07		66	%	60 - 130	
	Phenanthrene	2011/02/07		7.3	%	50	
Spiked Blank	Pyrene	2011/02/07		83	%	60 - 130	
	Pyrene	2011/02/07		2.7	%	50	
Method Blank	D10-2-Methylnaphthalene	2011/02/07			70	%	50 - 150
	D10-Fluoranthene	2011/02/07			88	%	50 - 150
	D10-Phenanthrene	2011/02/07			80	%	50 - 150
	D12-Benzo(a)anthracene	2011/02/07			76	%	50 - 150
	D12-Benzo(a)pyrene	2011/02/07			80	%	50 - 150
	D12-Benzo(b)fluoranthene	2011/02/07			84	%	50 - 150
	D12-Benzo(ghi)perylene	2011/02/07			86	%	50 - 150
	D12-Benzo(k)fluoranthene	2011/02/07			84	%	50 - 150
	D12-Chrysene	2011/02/07			86	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB114568

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2397605 WZ	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/02/07		88	%	50 - 150
		D12-Perylene	2011/02/07		92	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/02/07		86	%	50 - 150
		D8-Acenaphthylene	2011/02/07		76	%	50 - 150
		D8-Naphthalene	2011/02/07		72	%	50 - 150
		1-Methylnaphthalene	2011/02/07	<0.10		ug	
		1-Methylphenanthrene	2011/02/07	<0.10		ug	
		2-Chloronaphthalene	2011/02/07	<0.10		ug	
		2-Methylantracene	2011/02/07	<0.10		ug	
		2-Methylnaphthalene	2011/02/07	<0.10		ug	
		3-Methylcholanthrene	2011/02/07	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/02/07	<0.10		ug	
		9,10-Dimethylantracene	2011/02/07	<0.40		ug	
		Acenaphthene	2011/02/07	<0.050		ug	
		Acenaphthylene	2011/02/07	<0.050		ug	
		Anthracene	2011/02/07	<0.050		ug	
		Benzo(a)anthracene	2011/02/07	<0.050		ug	
		Benzo(a)fluorene	2011/02/07	<0.10		ug	
		Benzo(a)pyrene	2011/02/07	<0.050		ug	
		Benzo(b)fluoranthene	2011/02/07	<0.050		ug	
		Benzo(b)fluorene	2011/02/07	<0.10		ug	
		Benzo(e)pyrene	2011/02/07	<0.10		ug	
		Benzo(g,h,i)perylene	2011/02/07	<0.050		ug	
		Benzo(k)fluoranthene	2011/02/07	<0.050		ug	
		Biphenyl	2011/02/07	<0.10		ug	
		Chrysene	2011/02/07	<0.050		ug	
		Coronene	2011/02/07	<0.10		ug	
		Dibenz(a,h)anthracene	2011/02/07	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/02/07	<0.20		ug	
		Fluoranthene	2011/02/07	<0.050		ug	
		Fluorene	2011/02/07	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/02/07	<0.050		ug	
		m-Terphenyl	2011/02/07	<0.10		ug	
		Naphthalene	2011/02/07	0.098, RDL=0.072		ug	
		o-Terphenyl	2011/02/07	<0.10		ug	
		Perylene	2011/02/07	<0.10		ug	
		Phenanthrene	2011/02/07	<0.050		ug	
		p-Terphenyl	2011/02/07	<0.10		ug	
		Pyrene	2011/02/07	<0.050		ug	
		Quinoline	2011/02/07	<0.40		ug	
		Tetralin	2011/02/07	<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
January 2011

Prepared By:



February 23, 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: January 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 – January 2011

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)			
						OBJECTIVES					EXCEEDENCES					1-HOUR
PARAMETER	1-HR		24-HR		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY				
	SO2 (PPB)	172	57	0									0	0.29	4	10, 21
H2S (PPB)	10	3	0	0	0.13	1	VAR	VAR	VAR	VAR	0.9	22	99.5			
THC (PPM)	-	-	-	-	2.21	4.1	12	VAR	VAR	VAR	3.0	12	99.5			
OZONE (PPB)	82	-	0	-	28.36	45	23	VAR	VAR	VAR	42.8	23	99.6			
NOx (PPB)	-	-	-	-	3.03	22	1	10, 11	10.9, 11.2	328(NNW), 307(NW)	10.4	1	99.5			
NO (PPB)	-	-	-	-	0.29	13	17	20	12.4	1(N)	1.6	1	99.5			
NO2 (PPB)	212	106	0	0	2.57	20	31	23	6.8	354(N)	9.3	1	99.5			
PM2.5 (ug/m3)	-	30	-	0	3.86	34.8	1	11	11.2	307(NW)	15.3	1	99.6			
TEMPERATURE (DEGREE C)	-	-	-	-	-13.48	6.1	27	13, 14	11.1, 15.5	280(W), 314(NW)	2.5	27	99.6			
BP (MILLIBAR)	-	-	-	-	927	948	31	VAR	VAR	VAR	946.5	31	99.6			
RH (%)	-	-	-	-	70.35	87	5	9, 10	11.5, 14.5	244(WSW), 253(WSW)	82.1	4	99.6			
PRECIPITATION (MM)	-	-	-	-	0.02	0.9	17	22	12.1	353(N)	4.2	16	99.6			
VECTOR WS (KPH)	-	-	-	-	10.61	26.5	23	0	-	284(WNW)	14.4	28	99.6			
VECTOR WD (DEGREES)	-	-	-	-	345(NNW)	-	-	-	-	-	-	-	99.6			

VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)

- Analyzer make / model - API 100E, S/N: 468

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. 3 hours of data were missing this month. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

- Analyzer make / model - API 101E, S/N: 510

No operational issue was observed during this month. Some span results went outside of +10% of the limited range because the expected value was setup too low after the monthly calibration last month. 3 hours of data were missing this month. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

- Analyzer make / model –TECO 51C, S/N: 77021-384

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. 3 hours of data were missing this month. 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. 3 hours of data were missing this month. 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. 3 hours of data were missing this month. 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 January 12th. 3 hours of data were missing this month. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. No data was invalidated as all data were above –3 ug/m3.

Temperature (Degree C)

- Analyzer make / model – Met One 060

No operational issue was observed during the month. 3 hours of data were missing this 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. 3 hours of data were missing this month.

Relative Humidity (%)

- Analyzer make / model - Met One 083

No operational issue was observed during this month. 3 hours of data were missing this month.

Precipitation (MM)

- Analyzer make / model - Met One 387

No operational issue was observed during this month. 3 hours of data were missing 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.

2 hours of data for wind speed maximum were invalidated as the data went full scale. It is likely due to instantaneous spike for unknown reason.

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. The time on the datalogger was adjusted to match the time on the central polling computer on January 23rd.

General Monthly Summary

AQM STATION – LICA – St. Lina

Trailer

No issue was observed this month. The manifold was cleaned on January 20th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. Two hours of AQI values recorded in January 2011 were in the Fair range, and they were due to PM2.5. Others were within the Good range. The highest hourly concentration of PM2.5 was 34.8ug/m3 and an AQI value of 28, hour 11 on January 1st. The highest hourly concentration of Ozone was 45 ppb and an AQI value of 23, on January 23rd, in various hours.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JANUARY 2011

AIR QUALITY INDEX (AQI)

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

STATUS FLAG CODES NA - NOT APPLICABLE

V - VARIOUS

AQI CLASS	OZONE (O ₃)					PARTICULATE MATTER 2.5 (PM _{2.5})					NITROGEN DIOXIDE (NO ₂)					SULPHUR DIOXIDE (SO ₂)					FREQUENCY	
	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%	MAX AQI	HR	DAY	HRS	%
VERY POOR (101-255)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
POOR (51-100)	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
FAIR (26-50)	0	0.0%	-	-	-	2	0.3%	28	11	1	0	0.0%	-	-	-	0	0.0%	-	-	-	2	0.3%
GOOD (1-25)	669	89.9%	23	VAR	23	25	3.4%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	694	93.3%
OVERALL	669	89.9%	-	-	-	27	3.6%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	696	93.5%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	48	6.5%

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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				
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	MAX.	AVG.	RDGS.				
DAY																														
1	1	1	1	0	IZS	0	0	0	0	0	0	1	1	1	2	1	0	0	0	0	0	0	0	0	0	2	0.4	24		
2	0	0	0	IZS	0	0	1	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24		
3	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24		
4	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24		
5	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24		
6	1	1	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	2	0.3	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	1	1	0.0	24	
10	1	1	1	1	1	0	0	0	3	4	3	2	1	0	0	0	0	0	1	IZS	1	0	0	0	0	4	0.9	24		
11	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		
12	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	1	0.1	24		
13	0	0	0	0	0	0	1	2	1	1	1	3	3	1	0	IZS	0	0	0	0	0	0	2	1	1	3	0.7	24		
14	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	1	0.1	24		
15	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		
16	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	2	1	2	0.1	24
17	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		
18	0	0	0	1	1	2	3	2	2	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.5	24		
19	0	0	0	0	0	0	0	0	0	IZS	C	C	C	C	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	1	1	1	1	1	1	1	1	1	0	0	1	0.4	24		
21	0	0	0	0	0	0	N	0	IZS	1	3	4	3	1	1	1	1	1	2	2	3	3	2	2	1	4	1.4	23		
22	1	1	0	0	0	0	N	IZS	0	0	0	0	1	1	1	0	0	0	0	2	2	2	2	1	1	2	0.7	23		
23	1	1	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	23		
24	0	0	0	0	0	IZS	0	1	1	1	1	0	0	1	1	1	1	1	1	0	0	0	0	0	0	1	0.4	24		
25	0	0	0	0	IZS	0	0	0	0	0	0	1	2	2	2	3	3	2	1	0	0	0	0	0	0	3	0.7	24		
26	0	0	IZS	2	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0.5	24		
27	0	IZS	0	0	0	0	0	1	1	1	1	1	2	1	1	1	3	2	2	2	1	0	0	0	0	3	0.8	24		
28	IZS	0	1	1	2	2	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	2	0.6	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	1	1	2	2	2	2	3	2	3	4	4	3	3	2	3	3	2	2	2	2	3	3	2	2	1					
HOURLY AVG	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.4	0.3	0.5	0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2					

STATUS FLAG CODES

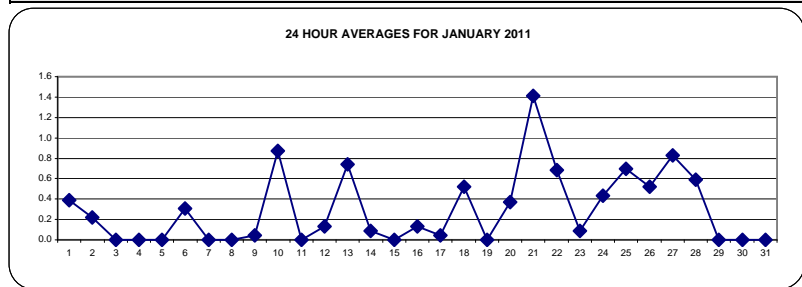
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

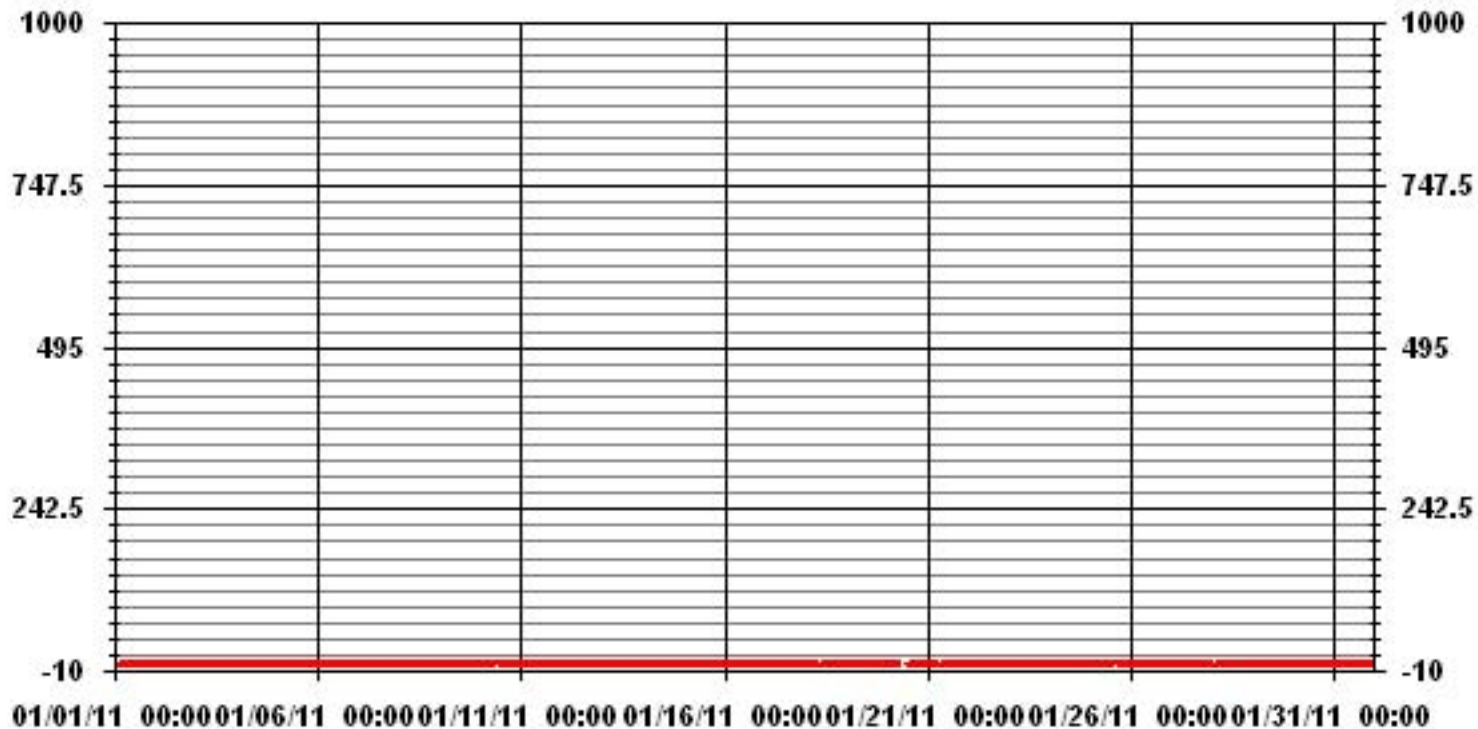
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	57	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	144					
MAXIMUM 1-HR AVERAGE:	4	PPB	@ HOUR(S)	9, 10	ON DAY(S)	10, 21
MAXIMUM 24-HR AVERAGE:	1.4	PPB			ON DAY(S)	21
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741 HRS		
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.6 %		
STANDARD DEVIATION:	0.66		MONTHLY AVERAGE:	0.29 PPB		



01 Hour Averages



— LICA31 SO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	MAX.	AVG.	RDGS.		
1		2	1	2	1	IZS	1	1	1	1	1	1	2	2	3	3	2	1	1	1	1	1	1	0	3	1.3	24		
2		1	0	1	IZS	0	1	2	1	1	2	1	1	1	2	2	2	1	1	1	1	0	0	0	2	0.9	24		
3		0	0	IZS	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	1	0.3	24		
4		0	IZS	0	0	1	0	1	0	0	1	1	1	1	1	1	0	1	1	1	1	1	0	1	1	0.7	24		
5		IZS	0	1	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	IZS	1	0.8	24		
6		2	2	2	2	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	2	0.7	24	
7		0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	0	0	0	0	0.0	24
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	IZS	1	1	1	2	2	0.3	24	
10		2	2	2	2	2	1	0	2	4	5	5	3	2	1	1	1	2	2	IZS	2	1	1	1	0	5	1.9	24	
11		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	0.3	24	
12		1	1	1	2	1	1	1	1	1	1	1	1	0	0	0	IZS	0	0	0	0	0	0	0	0	2	0.6	24	
13		0	0	0	0	0	1	3	3	2	2	2	4	4	3	1	IZS	1	1	1	1	2	3	2	2	4	1.7	24	
14		2	2	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	2	0.3	24	
15		0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
16		0	0	0	0	0	0	0	0	0	0	1	1	IZS	1	1	1	1	1	1	1	1	2	3	2	3	0.7	24	
17		2	1	1	1	1	1	1	1	0	0	1	IZS	1	1	1	0	0	1	1	1	3	1	1	0	3	0.9	24	
18		0	0	1	2	2	4	3	4	3	3	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	4	1.0	24	
19		0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20		0	0	0	0	0	0	1	1	IZS	C	C	C	C	1	2	2	2	2	2	2	2	1	1	1	2	1.0	24	
21		1	1	1	1	1	N	1	IZS	3	5	5	4	3	2	2	2	2	3	3	4	4	3	2	2	5	2.5	23	
22		2	1	1	1	1	N	IZS	1	1	1	1	1	2	2	2	1	1	1	1	3	3	3	2	2	3	1.6	23	
23		2	2	1	1	1	N	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	0	0	0	2	0.9	24	
24		0	0	0	0	IZS	2	2	2	2	1	1	2	1	2	2	2	2	1	1	1	1	1	1	1	2	1.2	24	
25		1	1	1	IZS	0	0	1	1	1	1	2	3	3	3	4	4	3	2	1	1	1	1	1	1	4	1.6	24	
26		1	1	IZS	4	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	4	1.6	23	
27		1	IZS	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	2	1	1	1	3	1.8	24	
28		IZS	1	2	2	3	4	1	0	0	0	0	1	1	2	2	2	2	2	2	2	3	1	0	IZS	4	1.4	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	IZS	0	0.0	24	
30		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
31		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
HOURLY MAX		2	2	2	4	3	4	3	4	4	5	5	4	4	3	4	4	4	3	3	4	4	4	3	3	2			
HOURLY AVG		0.7	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9	1.0	0.9	1.1	1.0	1.0	1.0	0.9	0.8	0.9	0.8	0.8	1.0	0.9	0.8	0.6				

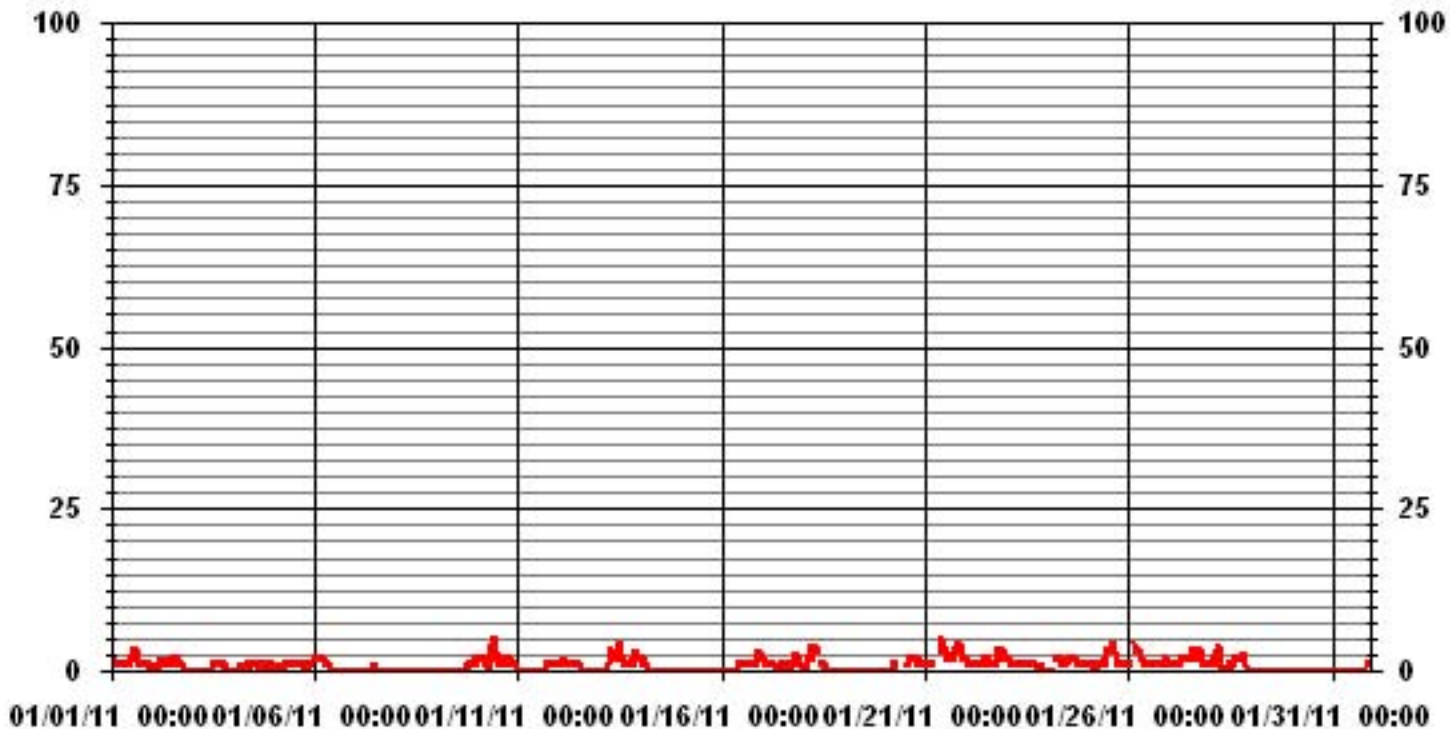
STATUS FLAG CODES

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:	374					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	VAR	ON DAY(S)	10, 21
IZS CALIBRATION TIME:	32			OPERATIONAL TIME:	741	HRS
MONTHLY CALIBRATION TIME:	4					
STANDARD DEVIATION:	1.01					

01 Hour Averages



— LICA31 SO2MAX PPB

LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

January 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	9.64	4.39	5.53	6.95	5.81	5.24	5.81	7.94	5.53	3.68	4.11	5.10	4.53	7.80	7.80	10.07	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	9.64	4.39	5.53	6.95	5.81	5.24	5.81	7.94	5.53	3.68	4.11	5.10	4.53	7.80	7.80	10.07	

Calm : .00 %

Total # Operational Hours : 705

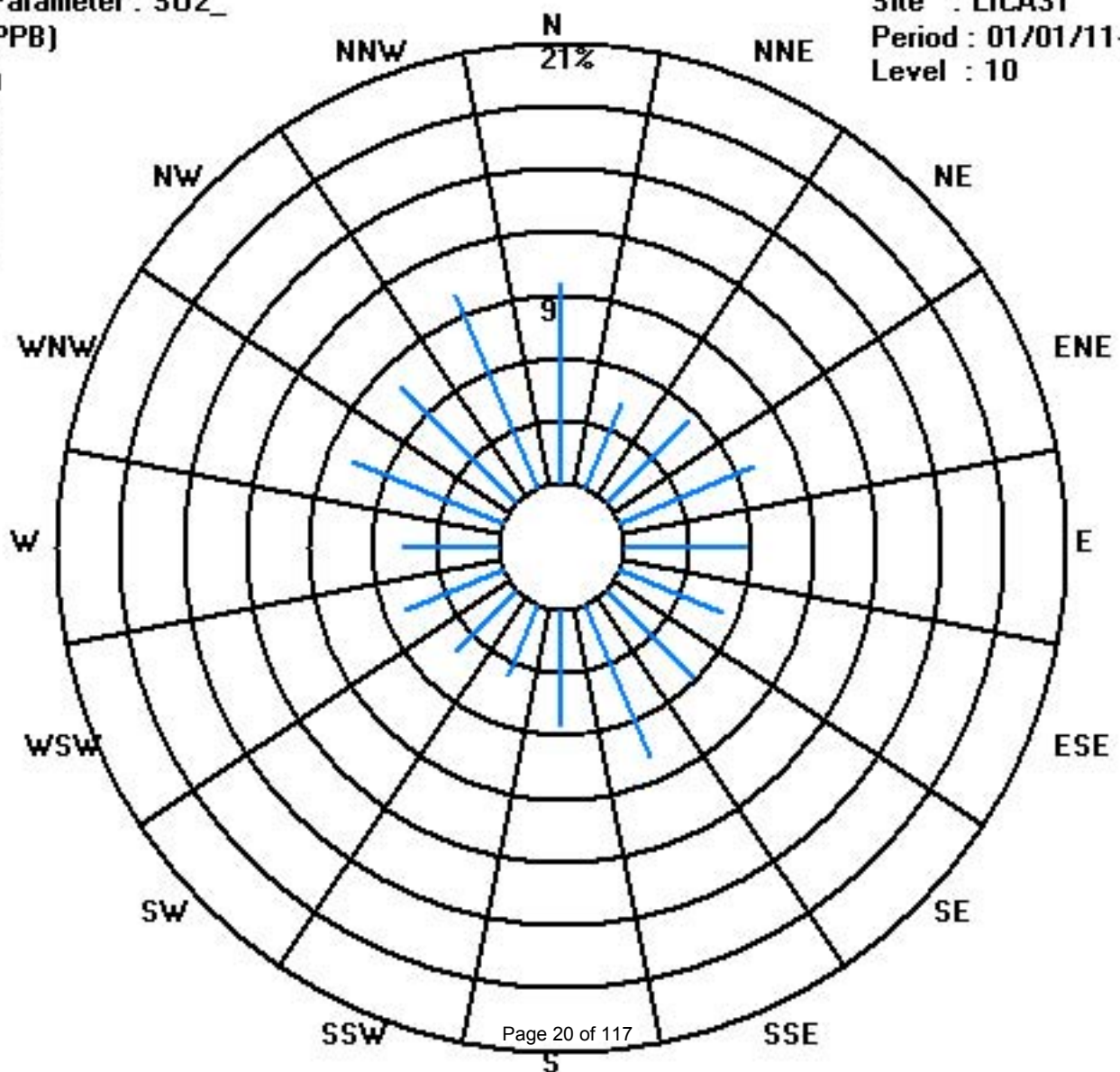
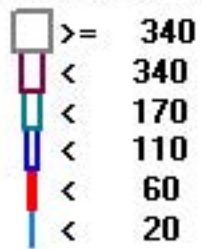
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	68	31	39	49	41	37	41	56	39	26	29	36	32	55	55	71	705
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	68	31	39	49	41	37	41	56	39	26	29	36	32	55	55	71	

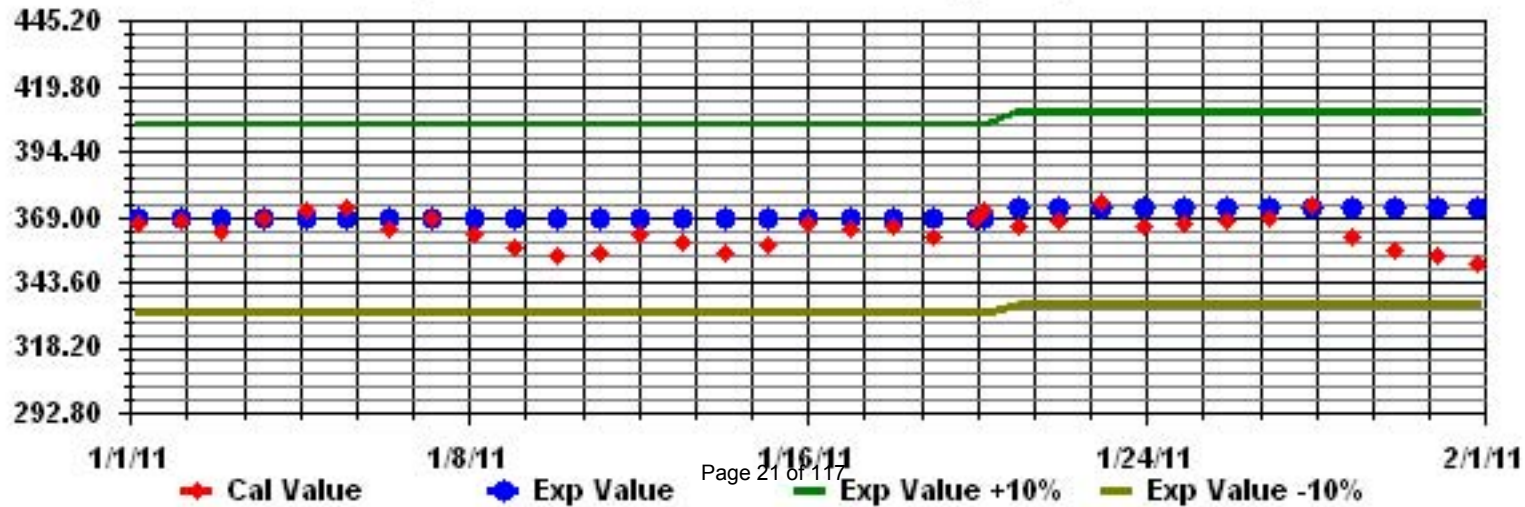
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
2	2	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
3	3	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
4	4	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
5	5	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24	
6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24		
7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24		
8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0.0	24		
9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0.0	24	
10	10	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	
11	11	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	
12	12	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	
13	13	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	
14	14	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	
15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
16	16	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
17	17	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
18	18	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	
19	19	0	0	0	0	0	0	0	0	0	IZS	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	20	0	0	0	0	0	0	0	0	IZS	0	1	1	M	1	1	1	1	1	1	1	1	1	0	0	1	0.5	23	
21	21	0	0	0	0	0	N	0	IZS	0	0	0	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0.5	23
22	22	1	1	1	1	0	N	IZS	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9	23
23	23	1	1	1	1	1	N	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.6	23
24	24	0	0	0	0	IZS	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	1	0.5	24
25	25	0	0	0	IZS	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	0.3	24
26	26	0	0	IZS	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	1	0.8	24	
27	27	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28	28	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
29	29	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
30	30	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
31	31	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
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		0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			

STATUS FLAG CODES

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

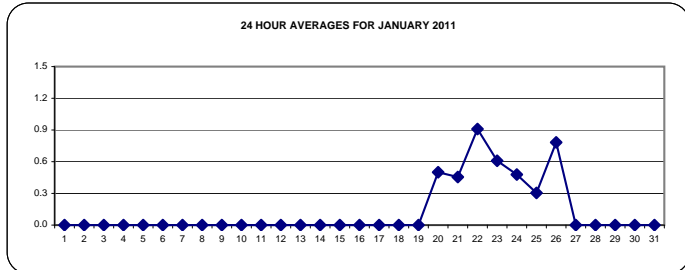
OBJECTIVE LIMIT:

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

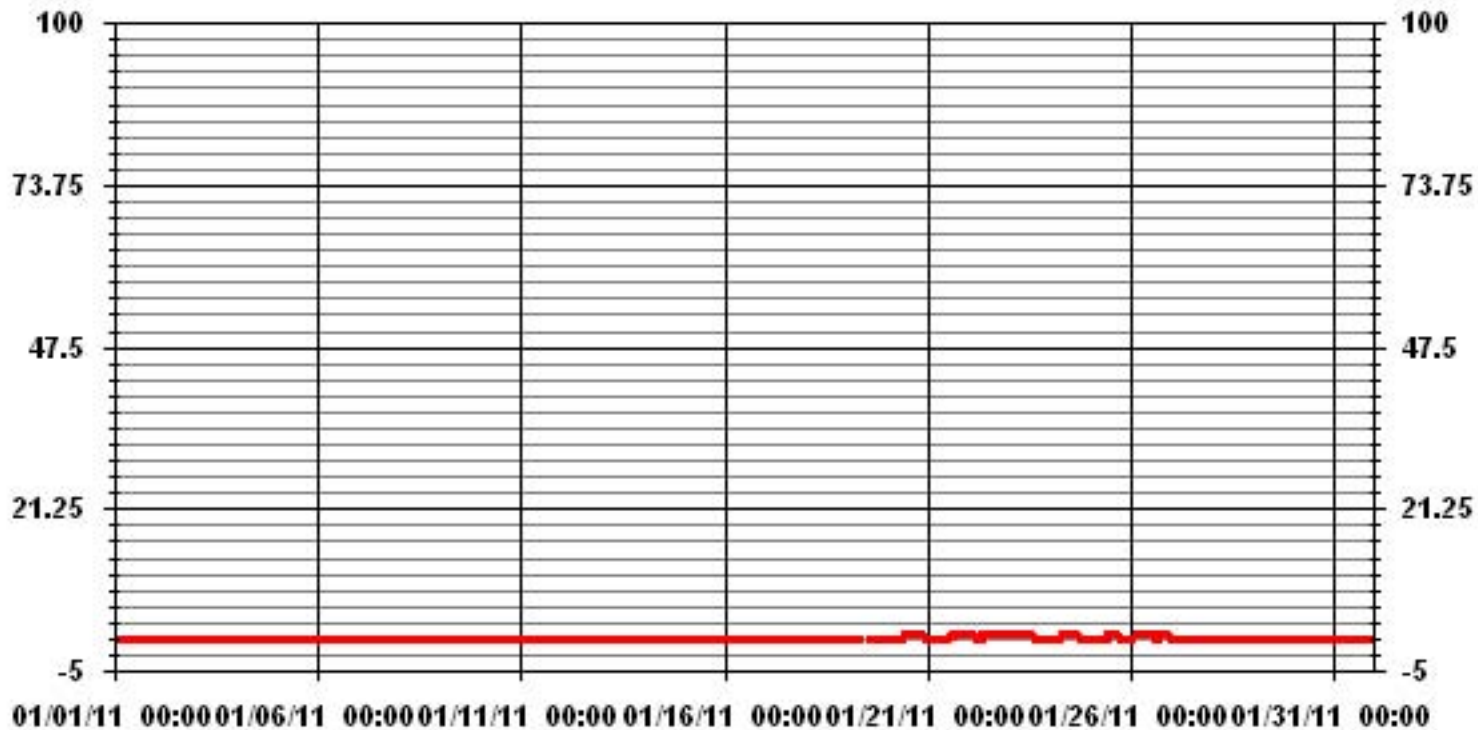
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	91				
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)
MAXIMUM 24-HR AVERAGE:	0.9	PPB			22
				VAR-VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.5	%
STANDARD DEVIATION:	0.34		MONTHLY AVERAGE:	0.13	PPB

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA31 H2S_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	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	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
2		0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
3		0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
4		0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
5		IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	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	IZS	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	IZS	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	IZS	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	IZS	0	0	0	0	0	0	0.0	24
12		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0.0	24
13		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24
14		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0.0	24
15		0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
16		0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17		0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
18		0	0	0	0	0	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	1	IZS	1	1	1	M	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	23
21		1	0	0	0	0	N	0	IZS	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	23
22		1	1	1	1	1	N	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	23
23		1	1	1	1	1	N	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	0.7	24
24		0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0.7	24
25		1	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0.9	24
26		1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	P	1	1	1	1	1	1	1	1	1	1	1	1.0	23
27		1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
28		IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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		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		0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2			

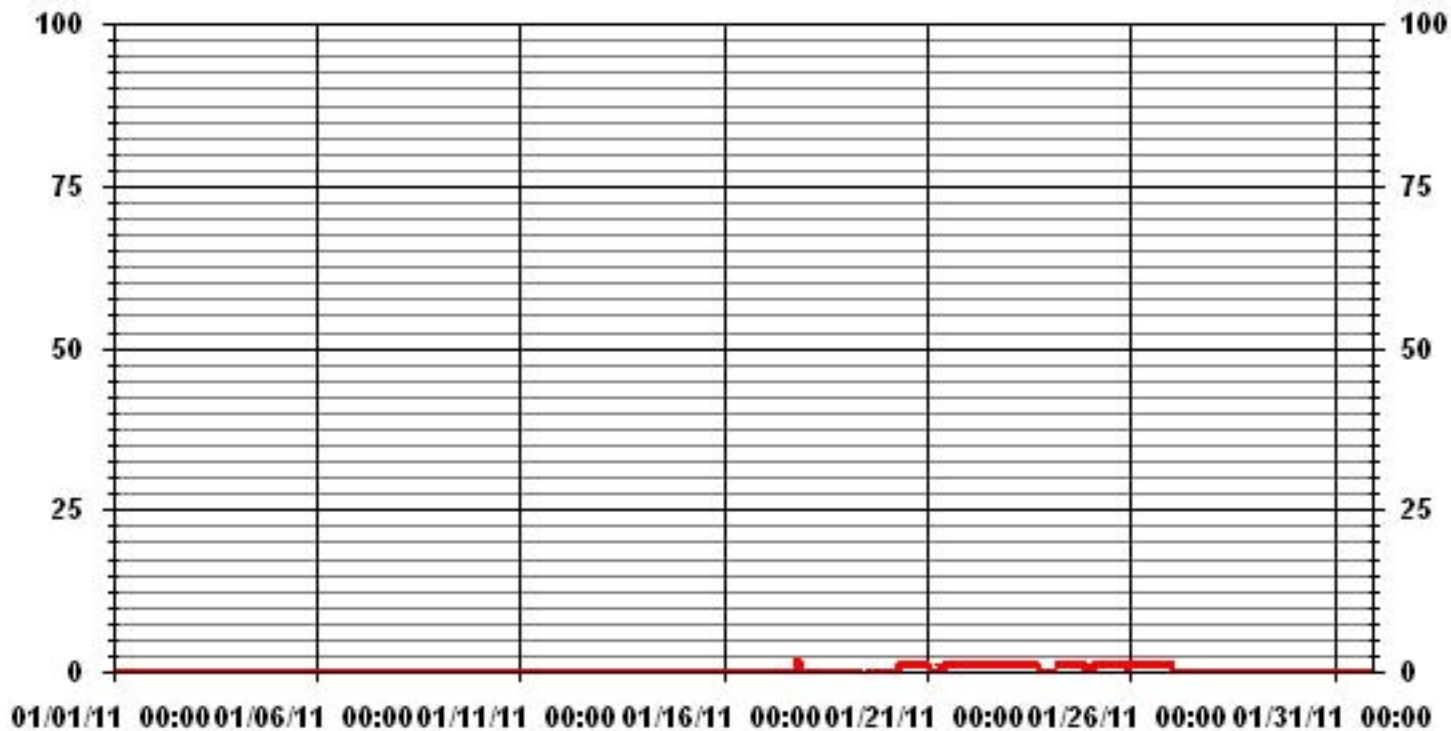
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	130					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	20	ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.39					

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

January 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	9.65	4.40	5.53	6.96	5.82	5.53	5.96	7.95	5.53	3.69	3.55	5.11	4.54	7.81	7.81	10.08	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	9.65	4.40	5.53	6.96	5.82	5.53	5.96	7.95	5.53	3.69	3.55	5.11	4.54	7.81	7.81	10.08	

Calm : .00 %

Total # Operational Hours : 704

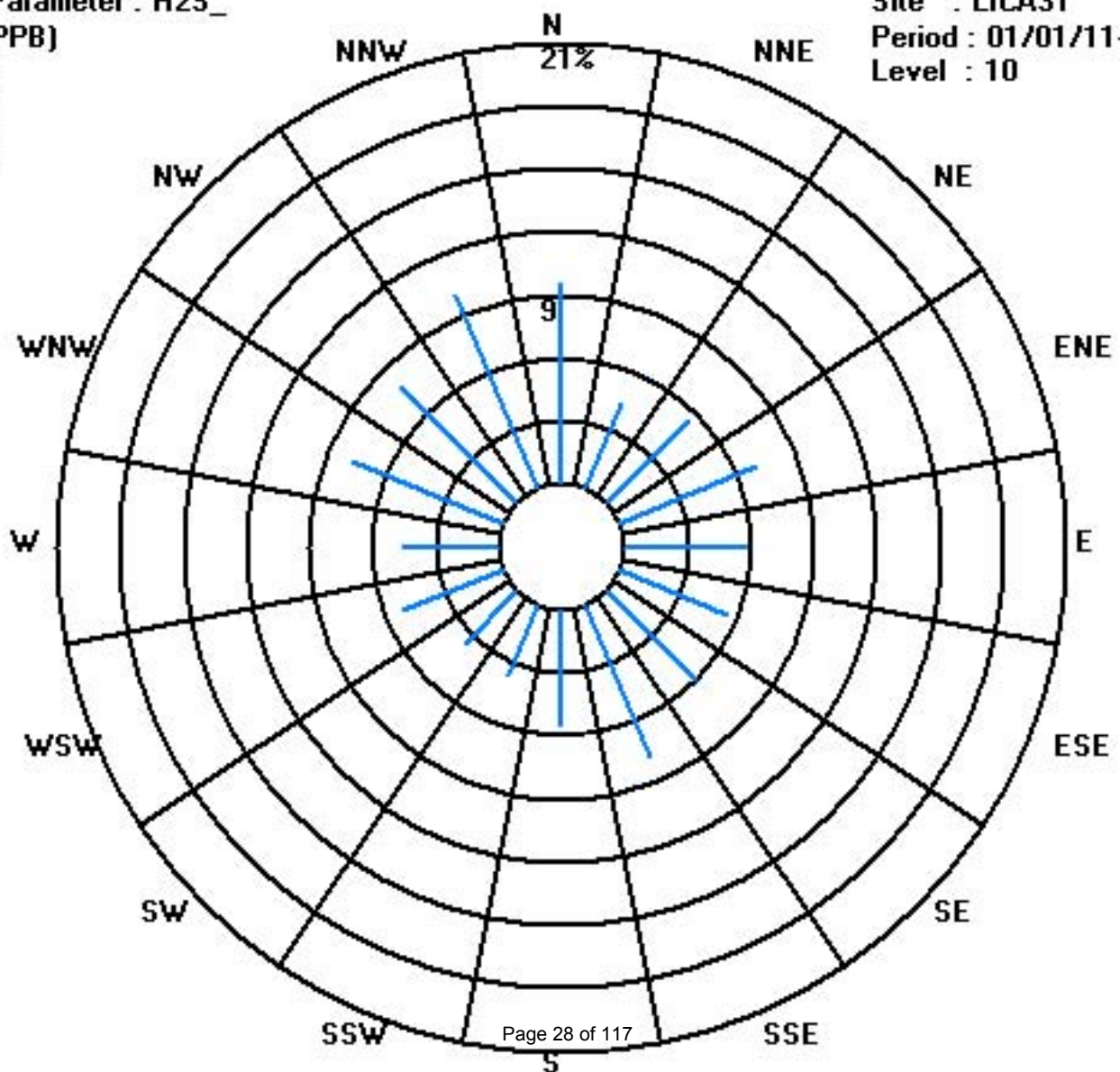
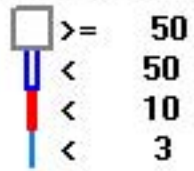
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	68	31	39	49	41	39	42	56	39	26	25	36	32	55	55	71	704
< 10																	
< 50																	
>= 50																	
Totals	68	31	39	49	41	39	42	56	39	26	25	36	32	55	55	71	

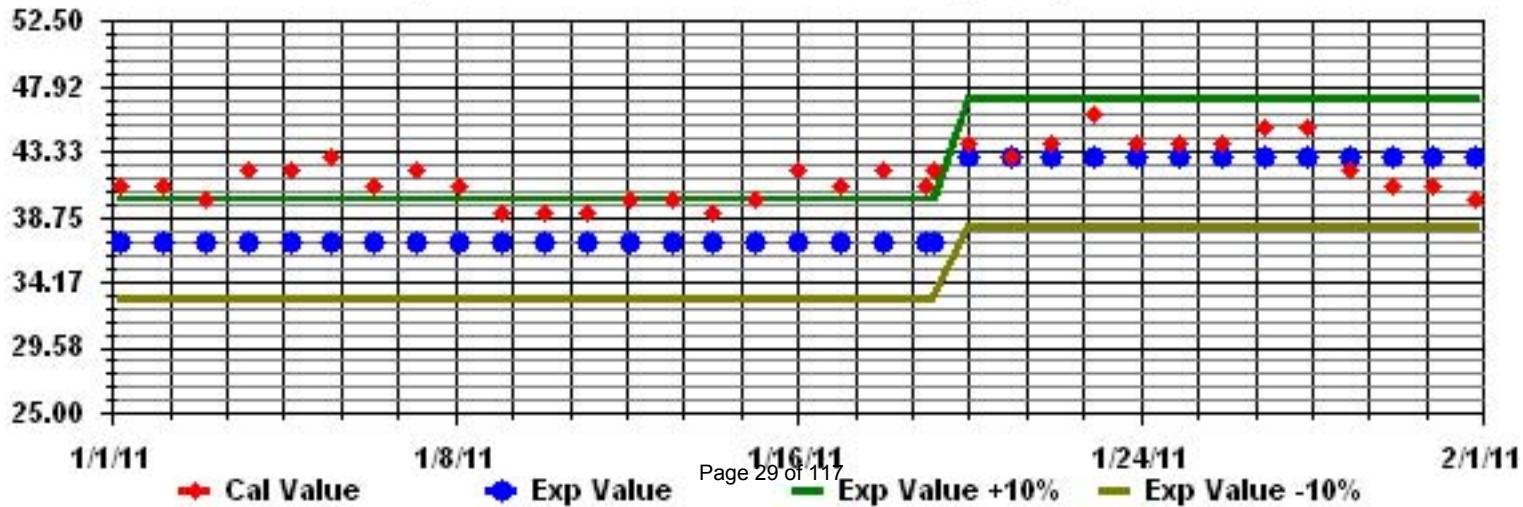
Calm : .00 %

Total # Operational Hours : 704

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAll



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

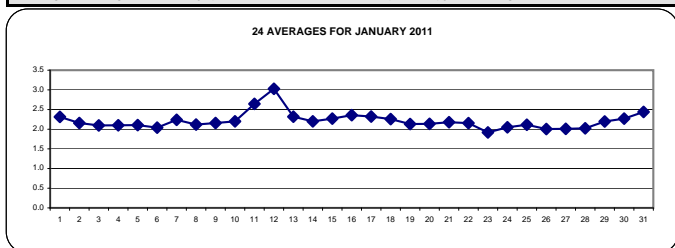
JANUARY 2011

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	2.4	2.4	2.4	2.4	IZS	2.4	2.5	2.5	2.5	2.5	2.6	2.5	2.5	2.4	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.6	2.3	24	
2	2.1	2.1	2.3	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.3	2.2	24
3	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2	2	2	2.2	2.1	24	
4	2.1	IZS	2.1	2.1	2.2	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	2.2	2.2	2.1	24	
5	IZS	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2	2	2.1	2.1	2.1	2.2	2.1	2.1	IZS	2.2	2.1	24		
6	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	2.1	2.1	IZS	2.1	2.1	24	
7	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.3	2.4	2.6	2.8	2.7	2.4	2.2	2.1	2.1	IZS	2.1	2.1	2.1	2.8	2.2	24	
8	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	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.1	2.1	2.2	2.1	24	
9	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.2	2.2	24	
10	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	IZS	2.2	2.2	2.2	2.2	2.2	2.2	24	
11	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.5	2.7	2.7	2.5	2.5	2.6	3.2	3.2	IZS	3.1	3	3.2	3.2	3	3	3.2	2.6	2.4	24	
12	2.9	2.9	2.8	2.9	2.9	3	3.1	3.5	3.8	4.1	4.1	4.1	3.9	3.4	2.8	2.5	IZS	2.4	2.3	2.3	2.4	2.5	2.5	2.5	4.1	3.0	24		
13	2.6	2.7	2.7	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.3	24
14	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
15	2.2	2.3	2.3	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.3	2.2	2.2	IZS	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.3	2.5	2.5	2.3	2.4	24	
16	2.8	2.7	2.6	2.6	2.6	2.6	2.5	2.6	2.6	2.5	2.3	2.4	IZS	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.8	2.4	24	
17	2.1	2.1	2.2	2.3	2.4	2.3	2.3	2.3	2.4	2.2	2.2	IZS	2.2	2.3	2.4	2.3	2.2	2.3	2.4	2.4	2.4	2.5	2.6	2.6	2.6	2.3	2.4	24	
18	2.6	2.6	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.3	IZS	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	2.6	2.3	24	
19	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.1	2.1	C	C	C	C	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
20	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.4	IZS	2.1	2.2	M	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2	2.1	2.4	2.1	23	
21	2	2	2	2	2	N	2.1	IZS	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.4	2.4	2.3	2.3	2.3	2.2	2.2	2.2	2.3	2.4	2.2	2.3	23	
22	2.3	2.2	2.3	2.3	2.4	N	IZS	2.3	2.2	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2	2	1.9	2.4	2.2	2.3	23		
23	1.9	1.9	1.9	1.9	1.9	N	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2.0	1.9	23	
24	2	2.1	2	2	IZS	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	2	2.1	2.0	24	
25	2	2	2	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.1	2.1	2	2	2	2	2	2.3	2.1	24	
26	2	2	IZS	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	1.9	1.9	1.9	2	2	2	2	2	2	2	2	2.1	2.0	24	
27	1.9	IZS	1.9	2	2	2	2	2	2	2.1	2.1	2	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2	2	1.9	1.9	1.9	2.1	2.0	24	
28	IZS	1.9	1.9	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	2.0	24	
29	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2.2	2.3	2.5	2.6	2.2	2.2	2.2	IZS	2.2	2.6	2.2	2.4	24	
30	2.3	2.3	2.4	2.4	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.2	2.4	2.3	2.3	2.3	2.3	2.2	IZS	2.2	2.2	2.4	2.3	24	
31	2.3	2.3	2.2	2.2	2.2	2.3	2.4	2.5	2.5	2.6	2.6	2.5	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.5	IZS	2.5	2.6	2.7	2.7	2.4	2.4	24	
HOURLY MAX	2.9	2.9	2.8	2.9	2.9	3.0	3.1	3.5	3.8	4.1	4.1	4.1	3.9	3.4	2.8	3.2	3.2	2.5	3.1	3.0	3.2	3.2	3.0	3.0					
HOURLY AVG	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2				

STATUS FLAG CODES

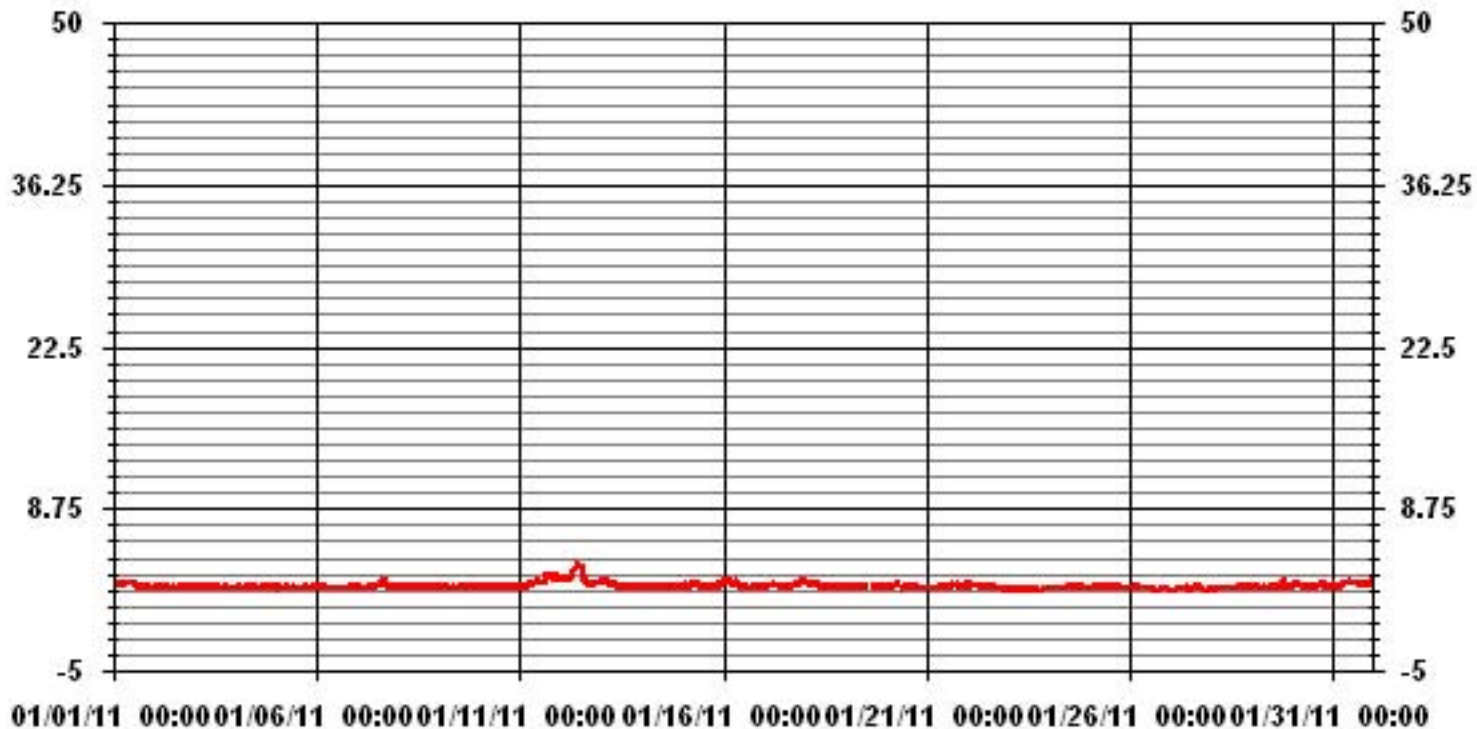
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704
MAXIMUM 1-HR AVERAGE:	4.1 PPM @ HOUR(S) VAR ON DAY(S) 12
MAXIMUM 24-HR AVERAGE:	3.0 PPM ON DAY(S) 12
	VAR- VARIOUS
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	0.26
OPERATIONAL TIME:	740 HRS
AMD OPERATION UPTIME:	99.5 %
MONTHLY AVERAGE:	2.21 PPM

01 Hour Averages



— LICA31 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	2.4	2.4	2.4	2.4	IZS	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.5	2.4	2.5	2.3	2.2	2.2	2.2	2.1	2.2	2.3	2.1	2.1	2.6	2.4	24	
2	2.1	2.1	2.4	IZS	2.3	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.1	2.3	2.3	2.4	2.2	24	
3	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
4	2.1	IZS	2.1	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.1	2.2	2.1	2.2	2.3	2.1	2.1	3.7	3.7	2.2	24	
5	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.1	2.1	2	2	2	2	2.1	2.3	2.2	2.2	2.3	2.3	2.1	IZS	2.3	2.2	24	
6	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	2.1	2.1	2.1	2.2	2.3	IZS	2.2	2.3	2.1	24	
7	2.8	2.2	2.2	2.2	2.2	2.2	2.2	2.2	4.7	2.1	2.1	2.2	2.3	2.8	3	3.4	3.2	2.7	2.5	2.4	2.3	IZS	2.4	2.4	4.7	2.6	24	
8	2.3	2.3	2.3	2.3	2.2	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	3.2	2.1	2.1	2.1	IZS	2.1	2.1	2.1	3.2	2.2	2.4	24	
9	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	IZS	2.2	2.2	2.2	2.2	2.2	2.2	24	
10	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	2.3	IZS	2.2	2.2	2.2	2.2	2.2	2.3	2.2	24	
11	2.2	2.2	2.3	2.3	2.3	2.4	2.5	2.3	2.8	3.2	2.8	2.8	2.6	2.7	3.3	4.3	4.3	IZS	3.3	3.1	3.4	3.3	3.1	3.1	4.3	2.9	24	
12	3	3	2.9	3	2.9	3.4	3.5	3.8	4	4.4	4.6	4.3	4.2	3.7	3.1	2.6	IZS	2.4	2.4	2.4	2.8	2.7	2.6	2.7	4.6	3.2	24	
13	2.7	2.8	2.9	2.8	2.7	2.5	2.4	2.4	2.6	2.4	2.3	2.2	2.2	2.3	2.3	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.9	2.4	24
14	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	IZS	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	24
15	2.3	2.6	2.4	2.5	2.3	2.6	2.3	2.4	2.4	2.4	2.6	2.7	2.8	IZS	2.5	2.7	2.7	2.4	2.6	2.3	2.3	2.3	2.7	2.8	2.8	2.5	24	
16	3.3	3.3	3.1	3.1	3.2	2.8	2.6	2.7	2.6	2.6	2.4	2.5	IZS	2.3	2.3	2.2	2.4	2.2	2.1	2.1	2.1	2.1	2.1	3.3	2.5	2.4	24	
17	2.1	2.2	2.2	2.3	2.4	2.4	3.1	3.1	3.5	2.4	2.2	IZS	2.8	2.9	2.9	2.9	2.3	2.3	2.4	2.4	2.4	2.6	2.6	2.7	3.5	2.6	24	
18	2.7	2.6	2.6	2.5	2.5	2.5	2.4	2.4	2.4	2.4	IZS	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	2.7	2.3	24	
19	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.3	2.3	IZS	2.2	2.2	2.2	C	C	C	C	2.2	2.2	2.1	2.3	2.1	2.2	2.2	2.3	2.2	24	
20	2.2	2.2	2.1	2.2	2.2	2.3	2.5	2.5	IZS	2.2	2.2	2.2	N	2.2	2.1	2.1	2.1	2.1	2.7	2.2	2.1	2.1	2.1	2.1	2.7	2.2	23	
21	2.1	2.1	2.1	2.1	2.1	N	2.4	IZS	2.9	2.9	2.6	3	3.1	2.6	2.3	2.5	3	2.7	2.7	2.6	2.7	2.6	2.6	2.8	3.1	2.6	23	
22	2.9	2.9	3.3	2.4	2.4	N	IZS	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2	3.3	2.3	2.3	23	
23	2	1.9	1.9	1.9	1.9	N	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2.1	2.1	2.2	2.2	2.0	24	
24	2.2	2.2	2	2	IZS	2.1	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.1	24	
25	2.1	2.1	2	IZS	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.3	2.2	2.3	2.2	2.1	2.1	2.1	2.1	2	2	2.3	2.1	24	
26	2.1	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2	2	P	2	1.9	2	2.1	2	2.1	2	2	2	2.1	2.1	23	
27	2	IZS	2	2.1	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	1.9	1.9	1.9	2.2	2.0	24
28	IZS	1.9	2	2	2	2	2	2	2	2	2	2.1	2.1	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.0	24
29	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.5	2.6	2.2	2.2	2.3	2.4	2.4	2.8	3.9	5	2.8	2.2	2.2	IZS	2.3	5	2.5	24	
30	2.3	2.3	3	2.9	2.5	2.5	2.7	2.3	2.2	2.2	3	2.6	2.8	2.8	2.8	3.1	3.1	3.8	4.1	2.8	4.6	IZS	2.8	2.2	4.6	2.8	24	
31	2.8	2.5	2.5	2.2	2.4	2.5	2.5	2.5	2.6	2.7	2.6	2.6	2.5	2.6	2.6	2.5	2.5	2.4	2.4	2.5	IZS	2.6	2.7	2.7	2.8	2.5	24	
HOURLY MAX	3	3	3	3	3	3	4	4	5	4	5	4	4	4	3	4	4	4	5	3	5	3	3	4				
HOURLY AVG	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.5	2.4	2.4	2.4	2.4	2.3	2.4	2.4	2.4	2.3	2.4	2.3	2.4	2.3	2.2	2.3	2.3			

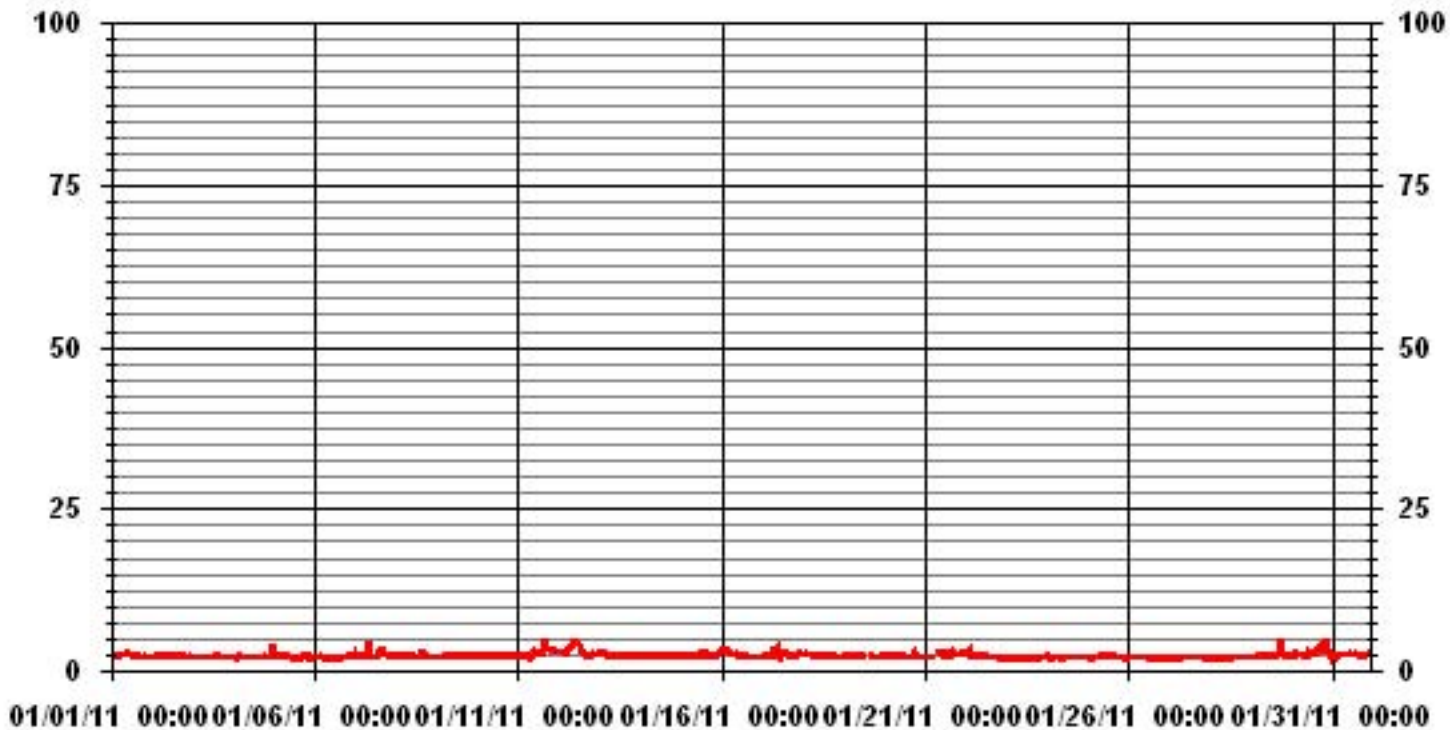
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM INSTANTANEOUS VALUE:	5.0	PPM	@ HOUR(S)	18	ON DAY(S)	29
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	0.41					

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

January 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	9.09	4.11	5.53	5.82	5.53	5.53	5.82	7.95	5.53	3.40	3.83	5.11	4.54	7.81	7.81	10.08	97.58
< 10.0	.56	.28	.00	1.13	.28	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.41
< 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	9.65	4.40	5.53	6.96	5.82	5.53	5.96	7.95	5.53	3.40	3.83	5.11	4.54	7.81	7.81	10.08	

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	64	29	39	41	39	39	41	56	39	24	27	36	32	55	55	71	687
< 10.0	4	2		8	2		1										17
< 50.0																	
>= 50.0																	
Totals	68	31	39	49	41	39	42	56	39	24	27	36	32	55	55	71	

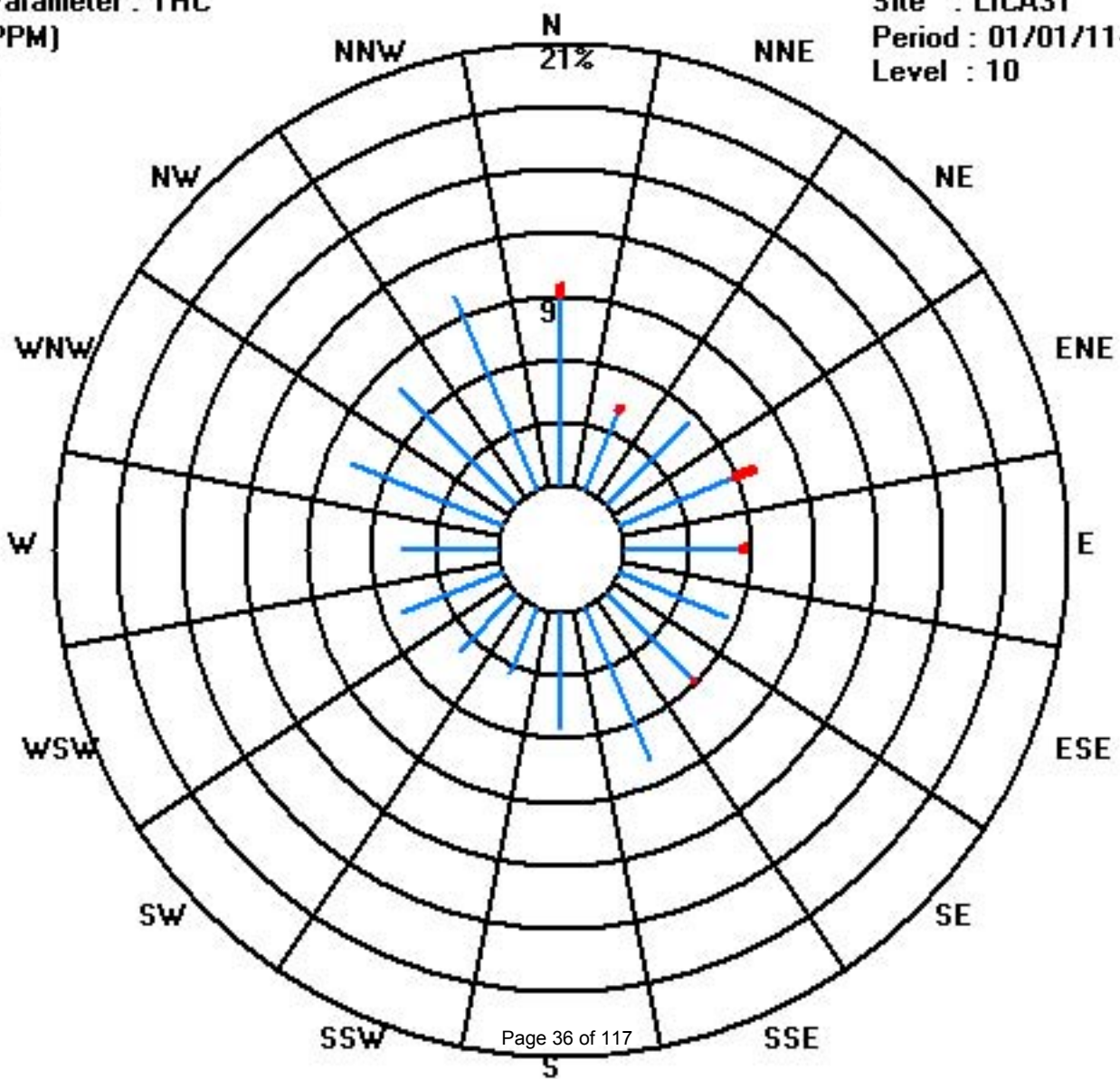
Calm : .00 %

Total # Operational Hours : 704

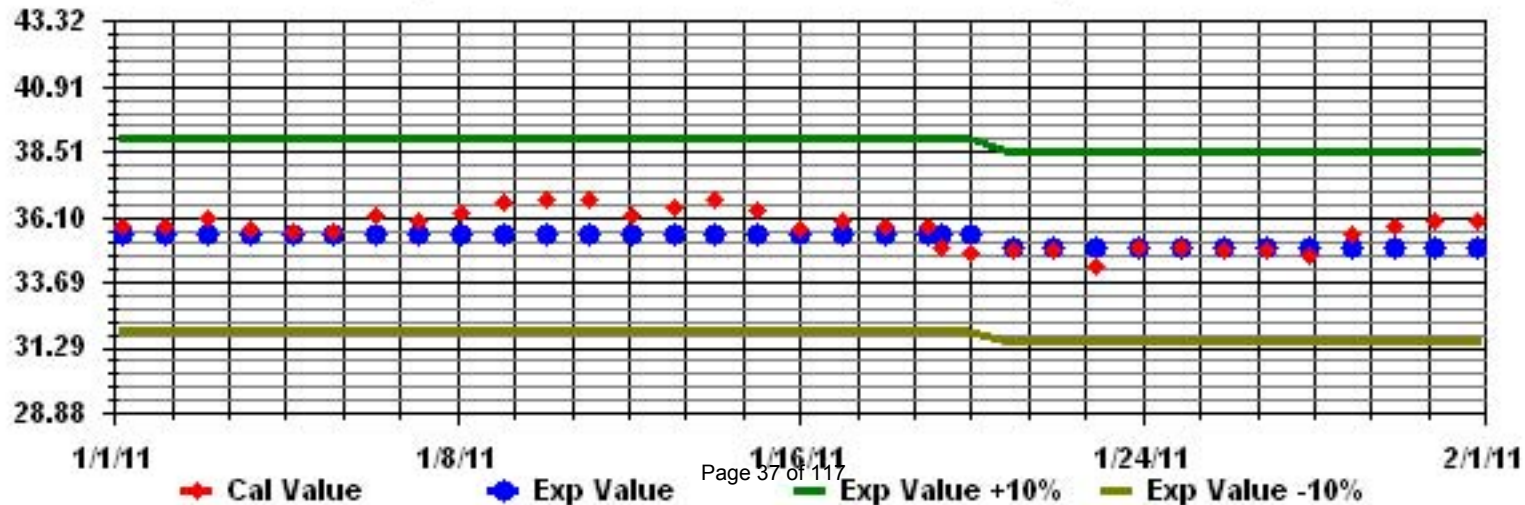
Class Limits (PPM)

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

Level : 10



Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAll



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	21	20	19	18	IZS	17	14	11	10	12	13	14	16	17	20	23	25	28	30	31	32	32	32	32	32	21.2	24
2	2	32	29	25	IZS	24	25	23	22	23	24	28	30	29	28	28	27	26	26	27	31	32	33	33	33	33	27.7	24
3	3	33	33	IZS	33	32	32	32	31	30	30	30	29	28	27	26	27	28	29	30	32	33	33	33	33	33	30.6	24
4	4	32	IZS	31	31	30	29	31	32	33	32	32	32	32	32	32	30	29	30	30	30	30	29	30	30	30	30.9	24
5	5	IZS	30	28	28	28	28	27	25	23	25	27	29	31	34	35	35	34	30	29	31	31	30	29	IZS	35	29.4	24
6	6	23	28	27	28	28	27	34	38	41	41	41	41	40	40	40	40	39	39	38	38	37	37	IZS	36	41	35.7	24
7	7	36	34	33	32	33	33	33	31	32	34	35	35	34	34	30	28	30	33	35	33	29	IZS	27	27	36	32.2	24
8	8	28	27	27	26	24	23	23	23	22	23	27	31	32	32	32	32	31	31	31	IZS	33	34	35	35	35	28.7	24
9	9	35	34	32	30	30	29	27	27	29	29	30	29	29	30	31	31	29	29	29	IZS	27	26	26	25	35	29.3	24
10	10	25	25	24	24	24	25	28	27	25	25	25	26	28	29	28	29	27	26	IZS	25	25	27	27	27	29	26.1	24
11	11	28	26	30	33	30	27	27	25	24	23	22	21	22	22	22	19	18	IZS	19	19	17	17	18	18	33	22.9	24
12	12	17	17	18	18	18	17	15	13	13	12	14	16	17	19	23	26	IZS	25	24	25	24	23	23	21	26	19.0	24
13	13	20	18	16	16	15	13	11	11	12	15	20	22	24	25	25	IZS	25	24	24	24	23	21	22	22	25	19.5	24
14	14	22	22	22	23	25	26	26	25	25	26	26	26	27	28	IZS	29	28	27	27	27	27	27	28	27	29	25.9	24
15	15	26	24	21	22	22	22	22	21	20	21	23	24	23	IZS	26	26	26	26	25	25	24	25	24	23	27	23.8	24
16	16	22	22	22	22	22	22	21	20	21	23	24	23	IZS	23	24	24	22	22	23	23	25	25	27	26	27	23.0	24
17	17	25	25	25	25	24	23	22	23	24	25	26	IZS	26	25	24	24	24	23	23	23	21	20	19	18	26	23.3	24
18	18	19	19	18	15	12	7	8	11	14	17	IZS	29	31	32	32	33	33	33	33	32	33	33	34	35	35	24.5	24
19	19	33	32	31	30	30	28	29	31	30	IZS	32	32	33	33	33	33	32	31	32	32	31	31	31	30	33	31.3	24
20	20	30	30	30	30	30	29	30	29	IZS	C	C	C	C	32	33	32	32	32	30	30	31	31	32	32	33	30.8	24
21	21	33	34	33	33	32	N	30	IZS	29	28	27	28	27	26	27	28	27	25	24	25	24	25	26	27	34	28.1	23
22	22	28	28	28	28	29	N	IZS	29	29	29	29	29	29	31	35	35	35	36	36	35	35	36	37	42	42	32.2	23
23	23	41	44	45	45	45	N	43	43	43	43	43	44	44	44	43	43	43	43	42	42	41	41	40	40	45	42.8	23
24	24	40	38	38	40	IZS	36	35	35	37	39	38	38	37	37	37	35	34	34	34	36	36	36	36	36	40	36.6	24
25	25	34	35	36	IZS	31	31	31	30	29	26	22	21	22	26	25	22	18	21	27	29	32	34	35	35	36	28.3	24
26	26	34	34	IZS	24	25	25	26	33	32	34	33	33	34	36	36	33	32	32	32	31	29	25	27	29	36	30.8	24
27	27	30	IZS	29	27	25	25	25	24	23	21	23	25	26	29	29	25	24	25	24	24	29	40	42	42	42	27.7	24
28	28	IZS	41	31	29	30	28	31	30	30	30	31	33	35	34	33	32	32	30	30	30	29	32	31	IZS	41	31.5	24
29	29	31	31	31	32	32	32	32	33	32	32	33	33	33	32	32	31	31	30	30	30	32	32	IZS	30	33	31.6	24
30	30	29	28	28	28	27	31	31	31	31	31	31	31	31	31	31	30	30	30	30	31	31	IZS	31	31	31	30.2	24
31	31	30	30	31	31	30	29	28	28	27	26	26	26	26	27	28	27	24	20	19	16	IZS	13	11	8	31	24.4	24
HOURLY MAX		41	44	45	45	45	36	43	43	43	43	43	44	44	44	43	43	43	43	42	42	41	41	42	42			
HOURLY AVG		28.9	28.9	27.9	27.6	27.1	25.7	26.5	26.4	26.4	26.8	28.0	28.7	29.3	29.8	30.0	29.7	29.0	29.0	28.9	29.0	29.3	29.2	29.1	29.3			

STATUS FLAG CODES

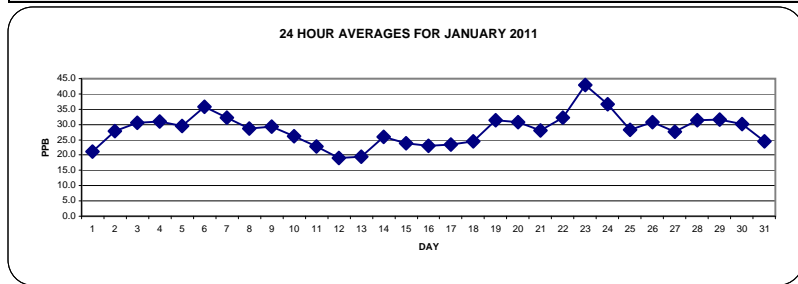
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

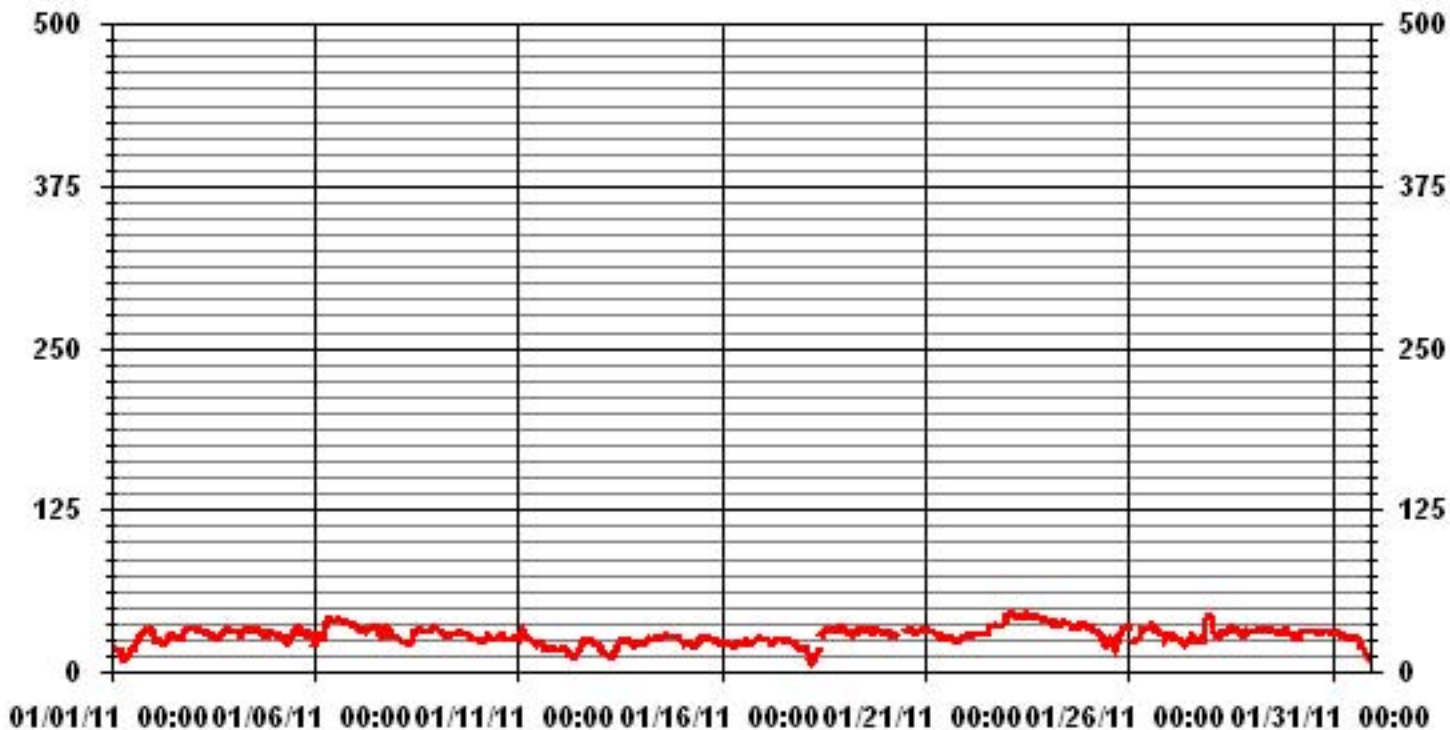
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	705				
MAXIMUM 1-HR AVERAGE:	45	PPB	@ HOUR(S)	VAR	ON DAY(S) 23
MAXIMUM 24-HR AVERAGE:	42.8	PPB			ON DAY(S) 23
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	741	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	99.6	%
STANDARD DEVIATION	6.39		MONTHLY AVERAGE	28.36	PPB



01 Hour Averages



— LICA31 03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	21	20	20	19	IZS	18	16	13	11	13	13	16	17	19	21	25	27	30	31	32	33	33	33	33	33	33	22.3	24
2	32	31	29	IZS	25	27	25	23	24	26	30	30	30	28	29	28	27	27	29	32	33	33	33	34	34	34	28.9	24
3	34	33	IZS	33	33	32	32	32	31	30	31	30	29	28	27	28	28	30	32	33	33	34	34	34	34	34	31.3	24
4	33	IZS	31	31	30	30	32	33	33	33	33	32	33	33	32	32	32	30	30	31	31	32	31	31	33	31.7	24	
5	IZS	31	28	28	28	29	28	26	24	27	29	30	33	35	35	35	35	32	30	31	31	30	30	IZS	35	30.2	24	
6	26	29	28	29	29	29	37	40	41	42	42	41	41	40	40	40	40	40	39	38	38	38	IZS	37	42	36.7	24	
7	37	36	35	33	33	34	34	32	34	35	35	35	35	35	32	29	33	34	36	35	30	IZS	28	28	37	33.4	24	
8	28	28	28	27	25	24	24	24	23	26	29	32	33	34	33	33	33	32	32	32	IZS	34	35	36	36	29.8	24	
9	36	35	33	31	30	30	29	28	30	30	30	30	30	31	31	31	30	30	30	IZS	27	26	26	25	36	30.0	24	
10	26	26	25	25	24	27	28	28	26	25	26	27	29	30	28	29	29	27	IZS	25	27	28	28	28	30	27.0	24	
11	28	28	32	33	33	29	28	27	25	23	23	22	23	23	24	21	19	IZS	22	20	19	18	18	19	33	24.2	24	
12	18	18	18	18	18	19	18	15	13	13	16	17	19	21	25	26	IZS	25	25	25	24	24	23	22	26	20.0	24	
13	21	20	17	16	16	14	12	12	14	18	22	23	25	25	26	IZS	26	25	25	25	24	22	22	22	26	20.5	24	
14	22	22	22	25	26	26	27	26	26	26	27	27	28	29	IZS	29	29	28	28	27	27	28	28	28	29	26.6	24	
15	27	26	23	23	22	22	22	22	21	22	25	27	27	IZS	27	27	27	26	25	25	25	25	25	24	27	24.6	24	
16	23	23	23	22	22	23	23	22	22	25	25	25	IZS	24	25	25	24	23	24	24	25	26	27	27	27	24.0	24	
17	25	26	26	25	25	23	23	24	25	26	26	IZS	26	26	25	25	25	24	23	24	23	22	20	19	26	24.2	24	
18	19	19	19	17	14	9	9	14	15	22	IZS	30	32	33	33	34	35	34	33	33	33	34	35	35	35	25.7	24	
19	35	33	32	31	31	30	32	33	32	IZS	33	33	33	34	34	34	33	32	32	32	32	32	32	31	31	35	32.4	24
20	30	30	31	31	31	30	30	29	IZS	C	C	C	33	33	33	33	32	32	32	32	31	33	33	33	33	31.6	24	
21	34	34	34	33	33	N	31	IZS	29	29	28	29	29	27	28	29	28	26	25	25	25	26	27	27	34	28.9	23	
22	28	28	28	29	29	N	IZS	29	29	29	29	29	29	34	36	36	35	37	37	36	36	37	39	44	44	32.9	23	
23	43	46	46	46	45	N	44	44	43	43	44	44	44	44	44	44	44	43	43	43	42	41	41	41	41	46	43.4	23
24	40	39	39	40	IZS	38	36	36	39	39	39	38	38	38	37	36	35	35	35	37	37	36	36	36	40	37.3	24	
25	35	36	37	IZS	36	34	31	31	30	28	23	21	24	27	27	25	20	26	28	31	34	35	35	36	37	30.0	24	
26	35	34	IZS	25	26	25	30	35	33	35	34	34	36	36	P	37	36	35	35	35	34	29	29	30	37	32.6	23	
27	31	IZS	31	29	26	27	26	26	24	22	25	27	27	32	31	27	25	25	25	26	34	43	43	42	43	29.3	24	
28	IZS	42	40	31	32	30	32	32	31	31	33	35	36	35	34	32	32	31	31	30	31	32	32	IZS	42	33.0	24	
29	32	32	32	32	33	33	33	33	33	33	33	34	34	33	32	32	32	31	31	31	32	32	IZS	30	34	32.3	24	
30	29	29	29	29	29	32	32	31	31	31	32	32	32	32	32	31	31	30	31	32	32	IZS	32	31	32	31.0	24	
31	31	31	31	32	31	30	30	28	28	28	27	27	27	29	29	29	26	23	20	18	IZS	14	13	9	32	25.7	24	
HOURLY MAX	43	46	46	46	45	38	44	44	43	43	44	44	44	44	44	43	43	43	43	42	41	43	43	44				
HOURLY AVG	29.6	29.8	29.2	28.4	28.1	26.9	27.8	27.6	27.3	27.9	29.0	29.6	30.3	30.9	30.7	30.7	30.3	30.1	30.0	30.0	30.4	30.2	29.9	30.1				

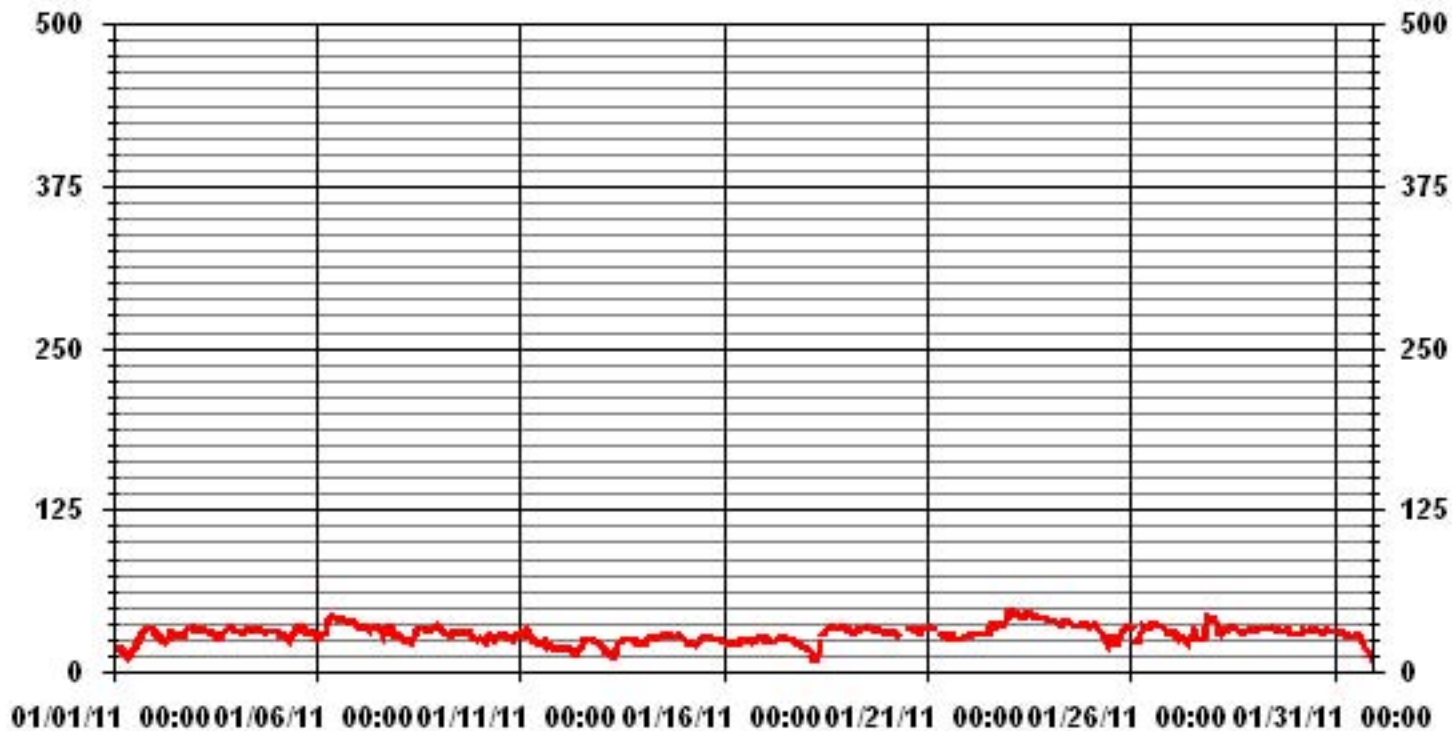
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	704				
MAXIMUM INSTANTANEOUS VALUE:	46	PPB	@ HOUR(S)	VAR	ON DAY(S) 23
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS
MONTHLY CALIBRATION TIME:	4	HRS			
STANDARD DEVIATION	6.30				

01 Hour Averages



— LICA31 O3MAX PPB

LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

January 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	9.64	4.39	5.53	6.95	5.81	5.24	5.81	7.94	5.53	3.68	4.11	5.10	4.53	7.80	7.80	10.07	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	9.64	4.39	5.53	6.95	5.81	5.24	5.81	7.94	5.53	3.68	4.11	5.10	4.53	7.80	7.80	10.07	

Calm : .00 %

Total # Operational Hours : 705

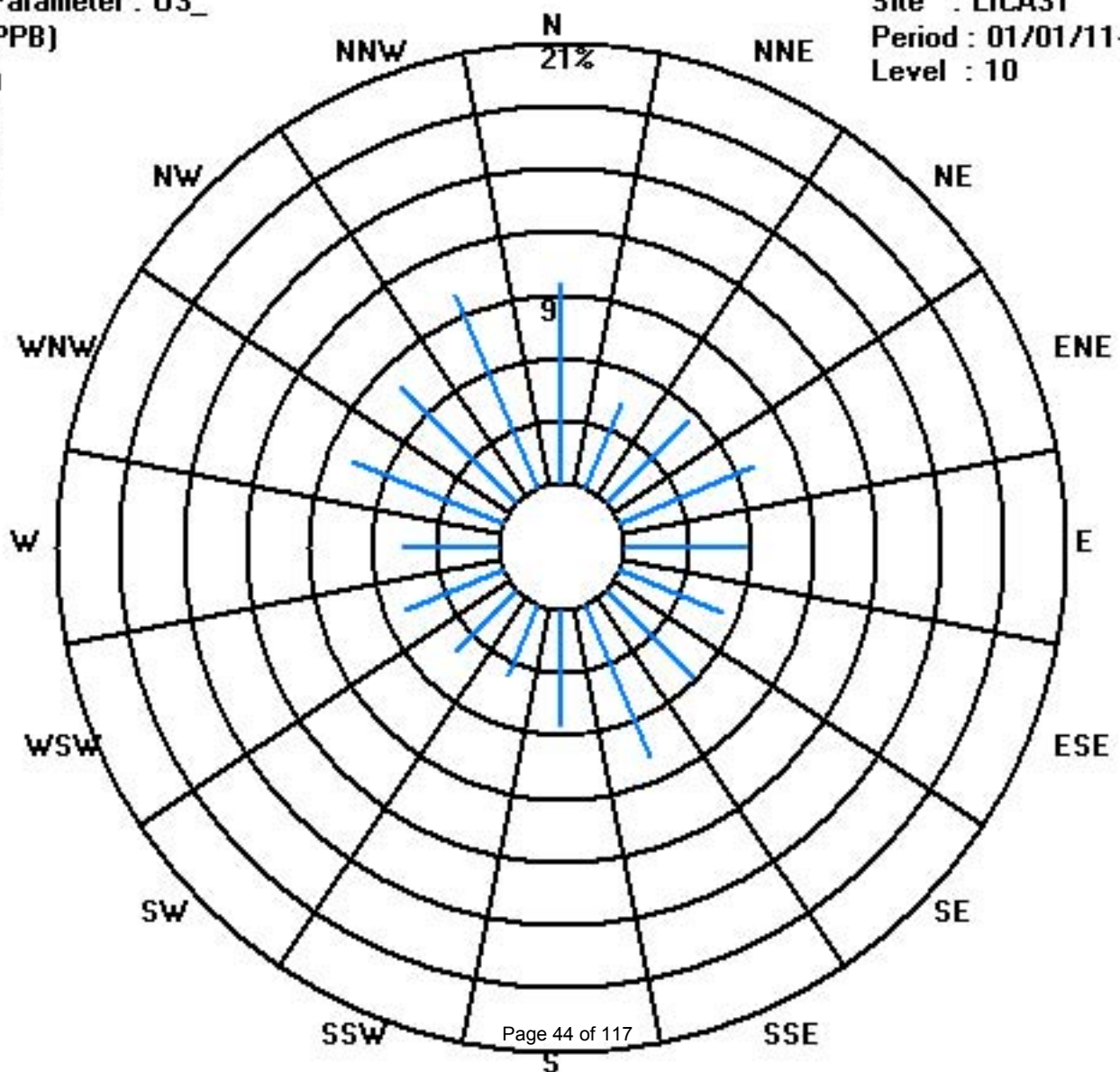
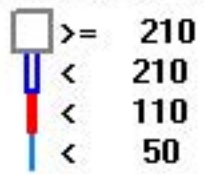
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	68	31	39	49	41	37	41	56	39	26	29	36	32	55	55	71	705
< 110																	
< 210																	
>= 210																	
Totals	68	31	39	49	41	37	41	56	39	26	29	36	32	55	55	71	

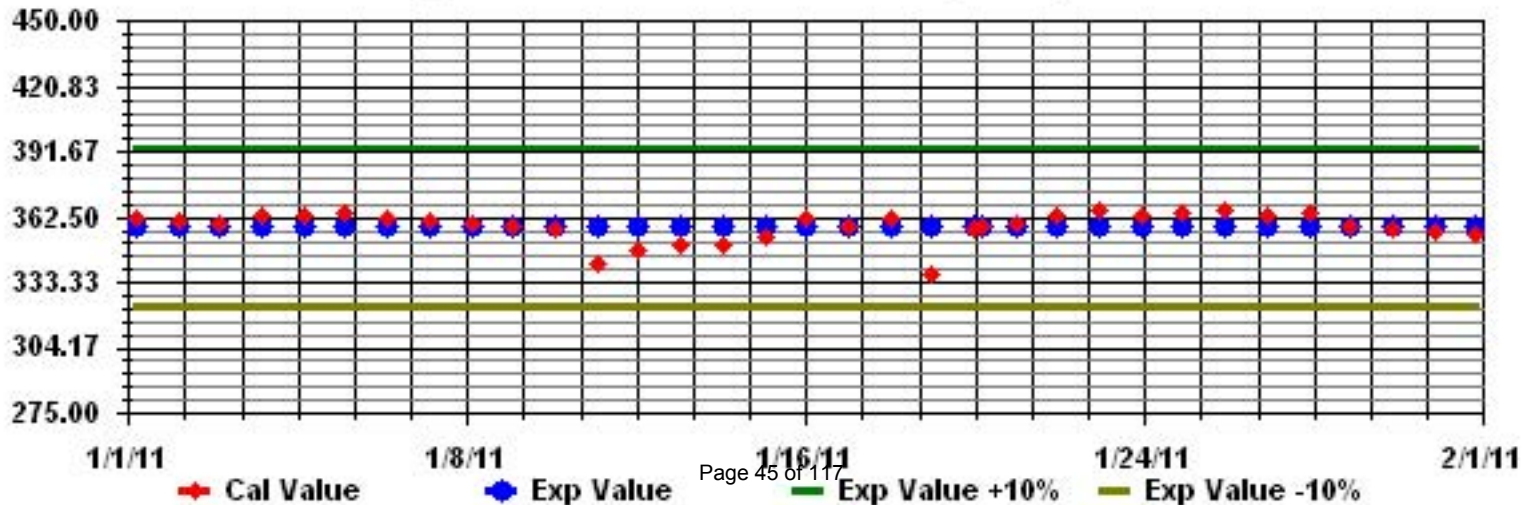
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: 03_ Sequence: 03 Phase: SPAN



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	8	8	8	9	IZS	9	12	16	16	15	16	15	14	14	14	11	9	6	4	3	2	2	1	2	16	9.3	24	
2	1	1	2	IZS	2	1	2	2	1	1	1	1	1	2	3	3	3	3	2	1	1	1	0	0	3	1.5	24	
3	0	0	IZS	0	0	0	0	0	1	2	1	2	3	4	5	6	5	4	3	2	1	1	1	0	6	1.8	24	
4	1	IZS	2	1	2	2	1	1	1	2	2	2	1	1	2	2	2	3	2	2	2	2	1	1	3	1.7	24	
5	IZS	1	2	2	2	2	2	3	4	3	2	1	0	0	0	0	0	2	3	3	3	3	3	IZS	4	1.9	24	
6	8	6	6	5	5	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	8	1.8	24
7	0	1	2	2	1	1	1	2	2	1	1	1	1	2	4	5	4	1	0	0	1	IZS	0	0	5	1.4	24	
8	0	1	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	2	0.2	24	
9	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	IZS	2	3	2	3	3	0.6	24	
10	3	3	3	3	3	2	2	2	3	3	3	2	1	1	2	1	2	3	IZS	3	3	2	2	2	3	2.3	24	
11	2	3	2	1	2	2	3	3	3	3	4	5	4	4	4	8	9	IZS	7	6	8	8	7	7	9	4.6	24	
12	7	7	7	7	7	7	8	9	10	11	9	8	8	7	4	2	IZS	3	3	3	3	3	3	4	11	6.1	24	
13	3	4	5	4	4	7	8	9	8	6	3	2	2	1	1	IZS	1	2	2	1	2	3	4	3	9	3.7	24	
14	4	4	3	3	2	2	1	2	2	1	1	1	1	0	IZS	0	0	1	1	1	1	1	0	0	4	1.4	24	
15	1	3	5	4	4	4	4	4	5	4	2	0	0	IZS	0	0	0	1	1	1	2	1	1	2	5	2.1	24	
16	3	3	3	3	3	3	3	4	3	2	1	2	IZS	3	2	1	3	3	2	1	0	0	0	0	4	2.1	24	
17	0	0	0	1	2	2	3	2	2	1	0	IZS	0	1	1	1	1	1	2	2	7	4	4	4	7	1.8	24	
18	4	3	4	7	10	14	13	12	11	9	IZS	3	1	1	1	1	1	1	1	1	1	1	0	0	14	4.3	24	
19	1	1	1	2	2	2	3	1	2	IZS	C	C	C	C	C	C	0	0	0	0	0	0	0	1	3	0.9	24	
20	1	1	1	1	1	2	2	2	IZS	0	1	1	M	1	1	2	3	3	5	4	3	2	1	1	5	1.8	23	
21	0	0	0	0	0	N	1	IZS	0	1	2	2	2	3	2	3	4	4	4	3	3	2	2	1	4	1.8	23	
22	1	1	1	1	1	N	IZS	1	1	1	2	2	3	3	2	3	3	3	4	6	5	4	3	2	6	2.4	23	
23	2	1	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1	23	
24	0	0	1	0	IZS	2	3	3	2	2	3	3	4	4	5	6	7	7	5	4	2	2	1	1	7	2.9	24	
25	2	1	1	IZS	2	3	2	2	3	5	10	11	11	8	9	14	18	14	8	6	4	3	2	2	18	6.1	24	
26	2	3	IZS	10	8	7	7	4	5	4	3	3	3	1	1	0	1	1	1	2	2	3	3	1	10	3.3	24	
27	1	IZS	1	1	2	1	1	2	4	5	5	5	4	4	6	10	12	9	9	8	4	0	0	0	12	4.1	24	
28	IZS	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	1	1	IZS	2	0.6	24
29	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	2	2	1	1	IZS	1	2	0.7	24	
30	2	2	2	2	3	0	0	0	1	0	0	0	0	0	1	1	1	1	1	0	0	IZS	1	0	3	0.8	24	
31	1	1	0	0	1	2	2	2	2	4	3	3	3	2	2	3	5	8	9	11	IZS	14	17	20	20	5.0	24	
HOURLY MAX	8	8	8	10	10	14	13	16	16	15	16	15	14	14	14	14	18	14	9	11	8	14	17	20				
HOURLY AVG	2.0	2.0	2.2	2.4	2.4	3.0	2.9	3.0	3.1	2.9	2.6	2.6	2.4	2.3	2.5	2.9	3.3	2.9	2.8	2.6	2.2	2.3	2.1	2.0				

STATUS FLAG CODES

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

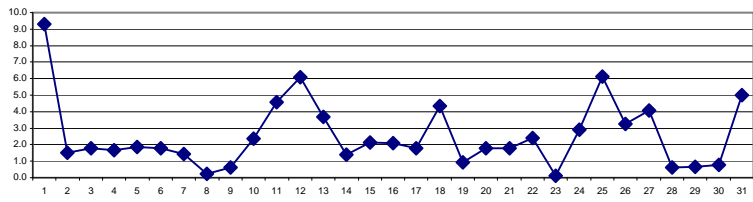
OBJECTIVE LIMIT:

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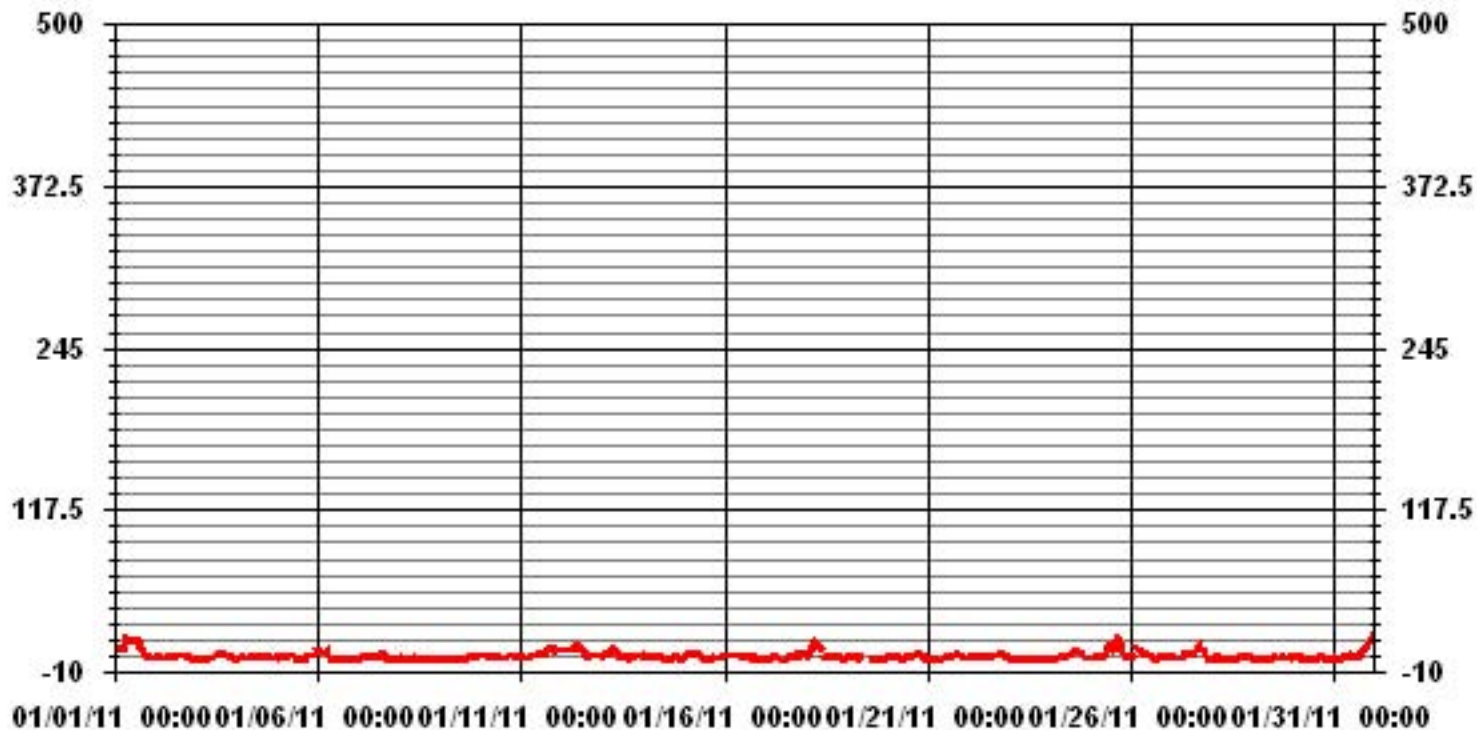
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	535		
MAXIMUM 1-HR AVERAGE:	20 PPB @ HOUR(S) 23 ON DAY(S) 31		
MAXIMUM 24-HR AVERAGE:	9.3 PPB ON DAY(S) 1		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	740 HRS
MONTHLY CALIBRATION TIME:	6 HRS	AMD OPERATION UPTIME:	99.5 %
STANDARD DEVIATION:	3.12	MONTHLY AVERAGE:	2.57 PPB

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA31 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JANUARY 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	9	9	10	IZS	11	14	17	17	16	18	16	15	15	15	14	10	8	5	4	3	3	2	3	18	10.6	24	
2	2	2	4	IZS	2	2	2	3	2	2	2	9	2	3	3	4	5	5	3	2	3	3	1	1	9	2.9	24	
3	1	1	IZS	0	1	0	1	1	2	5	3	3	4	6	7	7	6	5	4	3	2	1	1	1	7	2.8	24	
4	2	IZS	2	2	3	3	2	2	2	6	2	2	3	2	3	2	3	4	3	3	2	3	2	2	6	2.6	24	
5	IZS	3	3	3	3	2	3	4	5	4	3	2	1	10	1	1	2	3	4	4	3	4	3	IZS	10	3.2	24	
6	10	7	7	6	7	8	6	2	1	0	0	0	0	0	0	0	0	0	0	0	1	0	IZS	1	10	2.4	24	
7	1	3	3	4	2	1	2	3	3	2	1	2	2	3	5	7	6	2	1	1	2	IZS	1	2	7	2.6	24	
8	1	1	2	1	1	0	0	0	2	2	2	1	1	1	1	0	0	0	0	0	IZS	0	0	0	2	0.7	24	
9	0	0	0	0	0	1	1	1	1	0	1	1	1	0	1	1	2	2	2	IZS	3	3	3	4	4	1.2	24	
10	3	4	4	4	4	3	2	3	4	4	4	3	2	3	3	2	3	5	IZS	4	4	3	3	3	5	3.3	24	
11	3	4	4	2	4	3	3	4	4	4	6	6	5	4	6	9	10	IZS	8	7	9	9	8	8	10	5.7	24	
12	8	8	8	8	7	8	9	11	11	12	11	9	9	8	5	3	IZS	4	4	4	5	3	4	4	12	7.1	24	
13	4	5	6	5	6	8	10	10	10	8	5	3	3	3	2	IZS	2	3	2	2	4	4	4	4	10	4.9	24	
14	4	4	4	3	3	2	2	3	3	2	2	2	2	1	IZS	1	1	2	2	1	2	1	1	1	4	2.1	24	
15	2	4	5	5	4	4	4	5	6	6	3	1	1	IZS	1	1	1	2	2	2	3	2	2	3	6	3.0	24	
16	4	3	4	3	3	5	5	5	5	3	3	3	IZS	4	3	2	3	3	2	2	1	1	0	0	5	2.9	24	
17	1	0	1	2	3	3	3	3	2	2	1	IZS	1	1	2	2	1	2	3	3	61	5	5	5	61	4.9	24	
18	5	4	5	9	13	16	14	13	12	10	IZS	14	2	1	1	1	2	2	2	2	1	1	1	1	16	5.7	24	
19	3	2	2	3	2	4	4	2	2	IZS	C	C	C	C	C	C	C	1	1	0	1	1	1	3	4	2.0	24	
20	2	2	1	1	2	3	3	3	IZS	1	1	2	M	1	2	4	4	4	6	6	4	3	2	2	6	2.7	23	
21	1	1	1	1	1	N	2	IZS	1	2	3	3	4	5	3	4	5	5	5	4	4	3	2	2	5	2.8	23	
22	2	2	2	2	2	N	IZS	2	2	2	8	3	4	11	5	11	4	4	6	7	6	5	4	3	11	4.4	23	
23	3	3	1	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
24	0	1	1	1	IZS	3	4	3	3	3	3	4	5	5	6	7	9	8	6	5	3	3	2	2	9	3.8	24	
25	2	2	2	IZS	4	4	3	3	13	8	11	12	13	9	12	16	19	18	10	8	5	4	3	3	19	8.0	24	
26	4	4	IZS	12	9	8	9	5	6	5	4	12	5	2	P	2	7	2	2	3	3	4	4	2	12	5.2	23	
27	1	IZS	2	2	3	2	2	4	4	5	6	12	10	5	9	11	30	11	10	11	7	2	0	0	30	6.5	24	
28	IZS	0	2	1	2	2	0	0	0	0	0	0	0	0	1	1	1	2	2	3	3	2	1	IZS	3	1.0	24	
29	1	0	1	0	0	1	1	0	1	1	0	0	2	1	2	2	3	3	3	2	2	1	IZS	2	3	1.3	24	
30	2	3	3	4	4	2	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	IZS	1	1	4	1.7	24	
31	2	2	1	1	2	3	3	3	5	32	11	3	4	3	12	5	7	27	10	13	IZS	15	20	21	32	8.9	24	
HOURLY MAX	10	9	9	12	13	16	14	17	17	32	18	16	15	15	15	16	30	27	10	13	61	15	20	21				
HOURLY AVG	2.9	2.9	3.1	3.3	3.3	4.0	3.8	3.9	4.3	4.9	4.0	4.4	4.4	3.6	3.7	4.0	4.2	5.1	4.6	3.7	3.6	5.1	3.1	2.8	2.9			

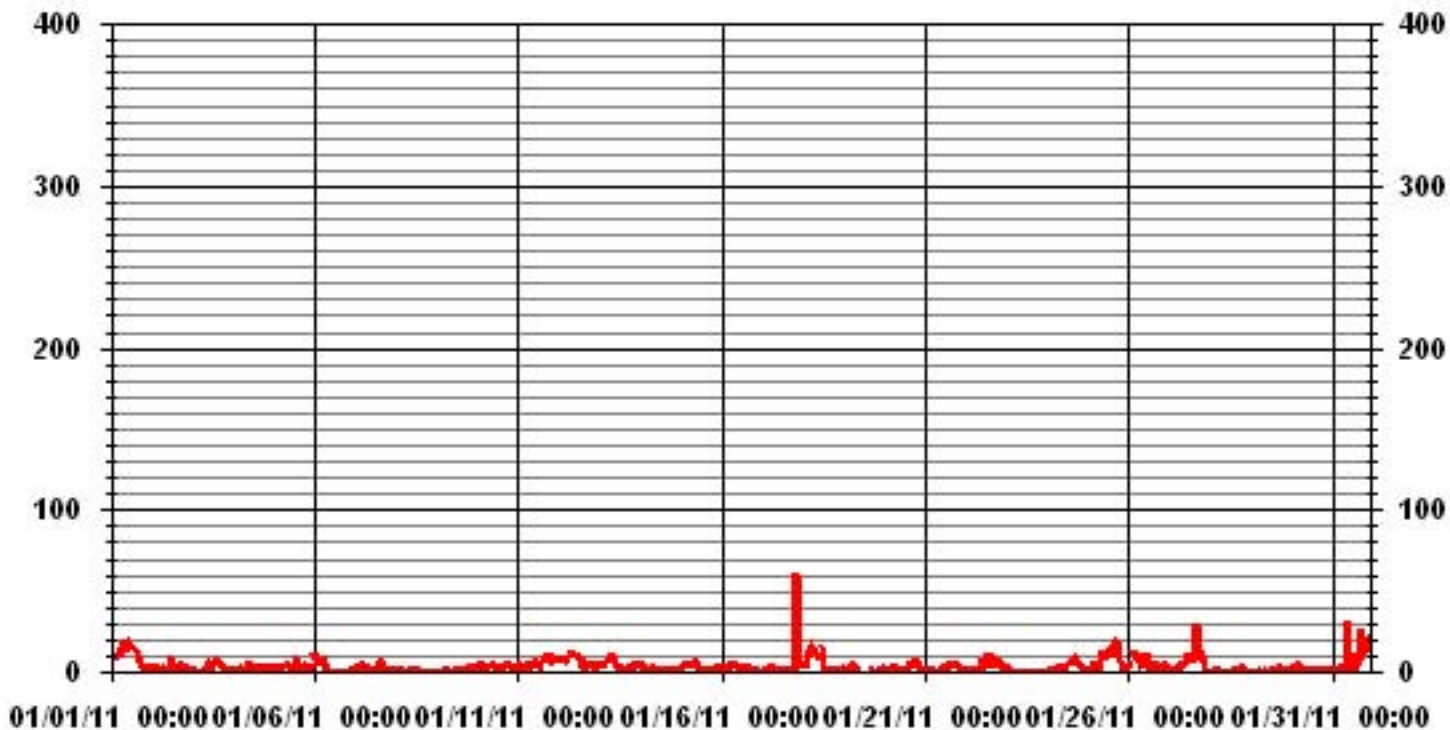
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	626					
MAXIMUM INSTANTANEOUS VALUE:	61	PPB	@ HOUR(S)	20	ON DAY(S)	17
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	4.46					

01 Hour Averages



— LICA31 H02MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

January 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	9.68	4.41	5.55	6.98	5.84	5.55	5.98	7.97	5.55	3.41	3.56	5.12	4.55	7.83	7.83	10.11	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	9.68	4.41	5.55	6.98	5.84	5.55	5.98	7.97	5.55	3.41	3.56	5.12	4.55	7.83	7.83	10.11	

Calm : .00 %

Total # Operational Hours : 702

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	68	31	39	49	41	39	42	56	39	24	25	36	32	55	55	71	702
< 110																	
< 210																	
>= 210																	
Totals	68	31	39	49	41	39	42	56	39	24	25	36	32	55	55	71	

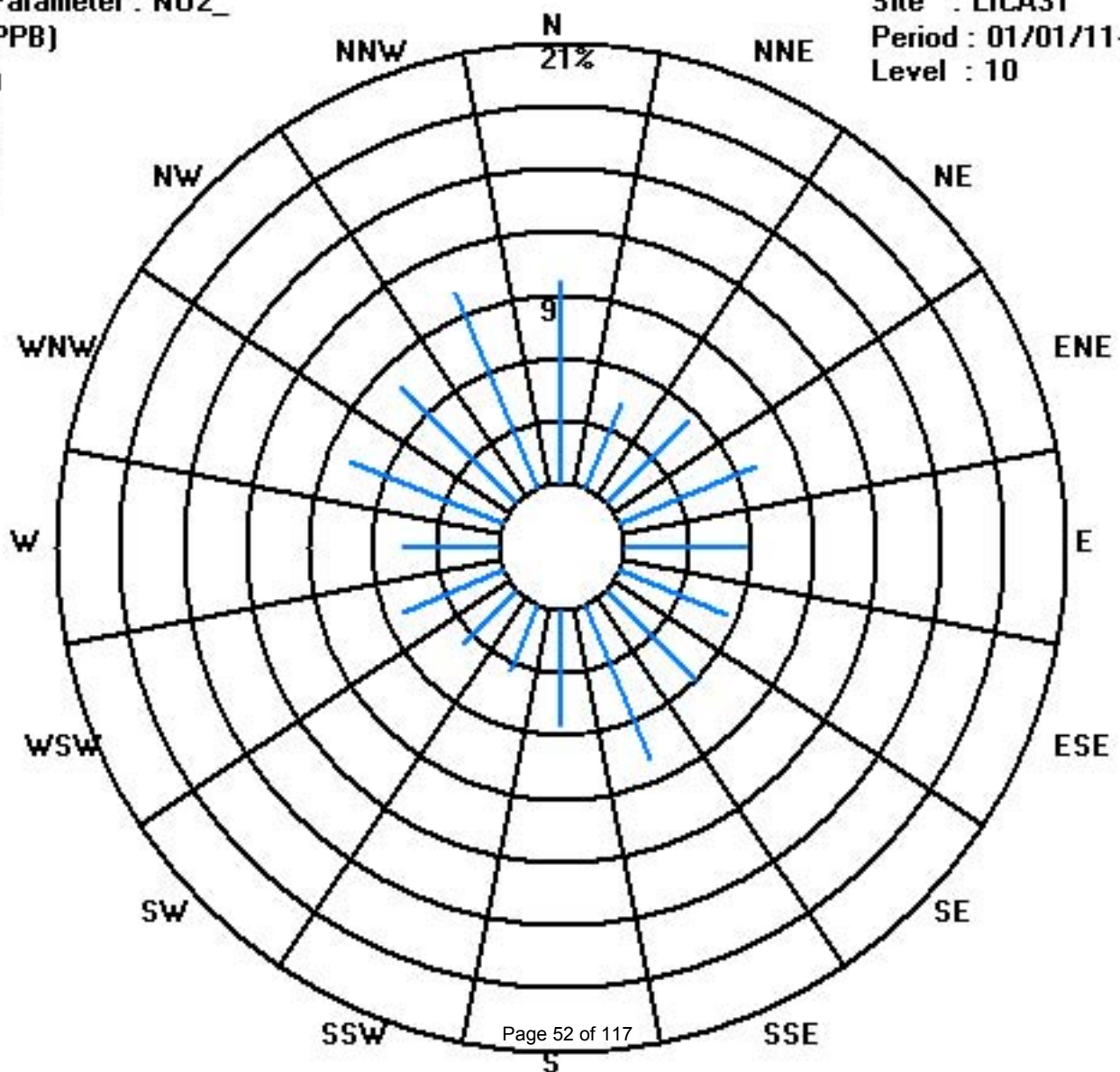
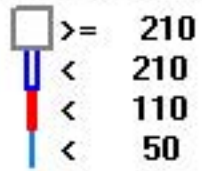
Calm : .00 %

Total # Operational Hours : 702

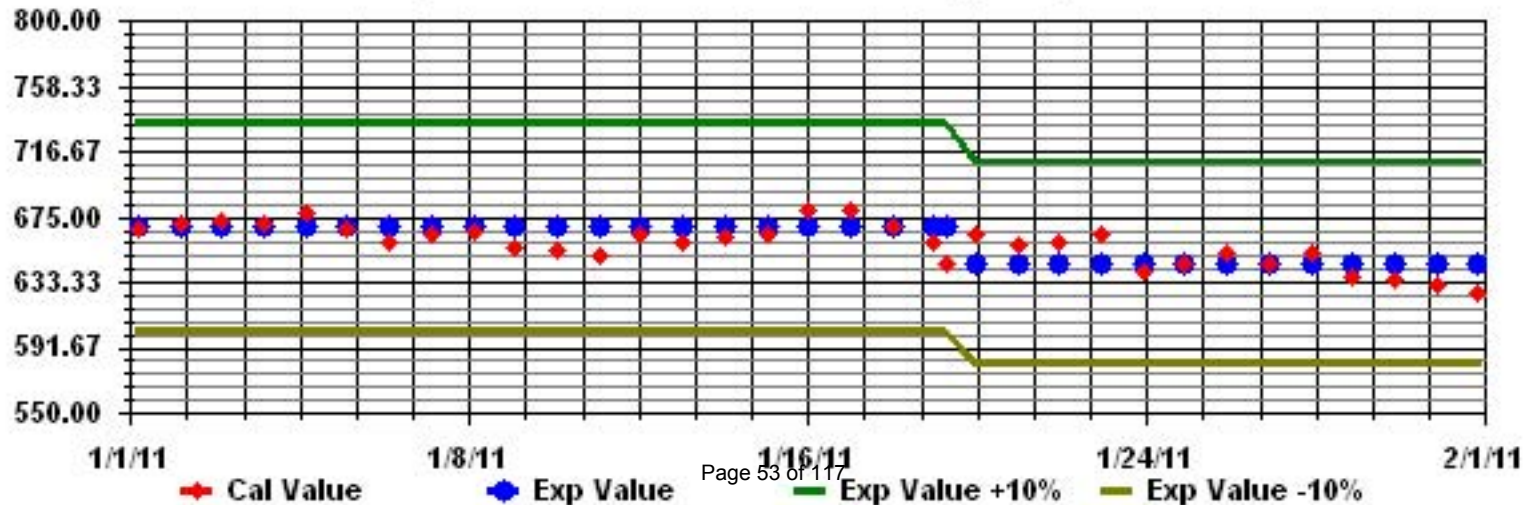
Class Limits (PPB)

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

Level : 10



Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	IZS	1	0	1	1	3	7	7	7	5	3	1	0	0	0	0	0	0	0	0	0	7	1.6	24	
2	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
3	0	0	IZS	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
4	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
5	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0.0	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0.0	24
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	IZS	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	IZS	0	0	0	0	0	0	0.0	24
10	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	IZS	0	0	0	0	0	1	0.2	24	
11	0	0	0	0	0	0	0	0	0	2	3	2	2	2	2	1	IZS	0	0	0	0	0	0	0	0	3	0.6	24	
12	0	0	0	0	0	0	0	0	1	3	5	5	6	5	1	0	IZS	0	0	0	0	0	0	0	0	6	1.1	24	
13	0	0	0	0	0	0	0	1	1	2	2	2	2	1	0	IZS	0	0	0	0	0	0	0	0	0	2	0.5	24	
14	0	0	0	0	0	0	0	0	0	0	0	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
15	0	0	0	0	0	0	0	0	0	1	1	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
16	0	0	0	0	0	0	0	0	0	0	1	1	IZS	2	1	0	0	0	0	0	0	0	0	0	0	2	0.2	24	
17	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	0	0	0	0	0	0	0	0	0	13	0.7	24		
18	0	0	0	0	0	1	1	0	1	3	IZS	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0.4	24	
19	0	0	0	0	0	0	0	0	0	0	IZS	C	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0.0	24	
20	0	0	0	0	0	0	0	0	0	IZS	0	0	0	M	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23	
21	0	0	0	0	0	N	0	IZS	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.2	23	
22	0	0	0	0	0	N	IZS	0	0	0	1	1	2	2	1	0	0	0	0	0	0	0	0	0	0	2	0.3	23	
23	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	23	
24	0	0	0	0	IZS	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24	
25	0	0	0	IZS	0	0	0	0	0	1	3	4	4	3	5	5	2	0	0	0	0	0	0	0	0	5	1.2	24	
26	0	0	IZS	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
27	0	IZS	0	0	0	0	0	0	0	0	1	2	1	0	1	2	1	0	0	0	0	0	0	0	0	2	0.3	24	
28	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0	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	2	2	2	2	2	2	1	1	1	0	0	0	IZS	1	1	1	2	0.8	24	
HOURLY MAX	0	0	0	0	0	1	1	1	1	3	7	7	7	5	5	5	2	1	0	0	13	1	1	1	1				
HOURLY AVG	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.5	0.9	1.2	1.2	1.0	0.8	0.4	0.2	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0				

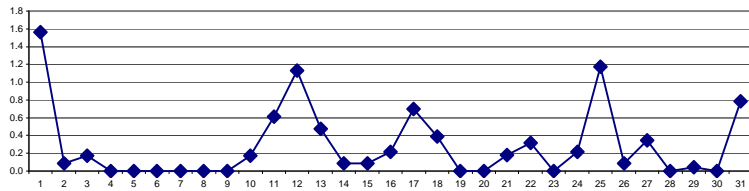
STATUS FLAG CODES

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

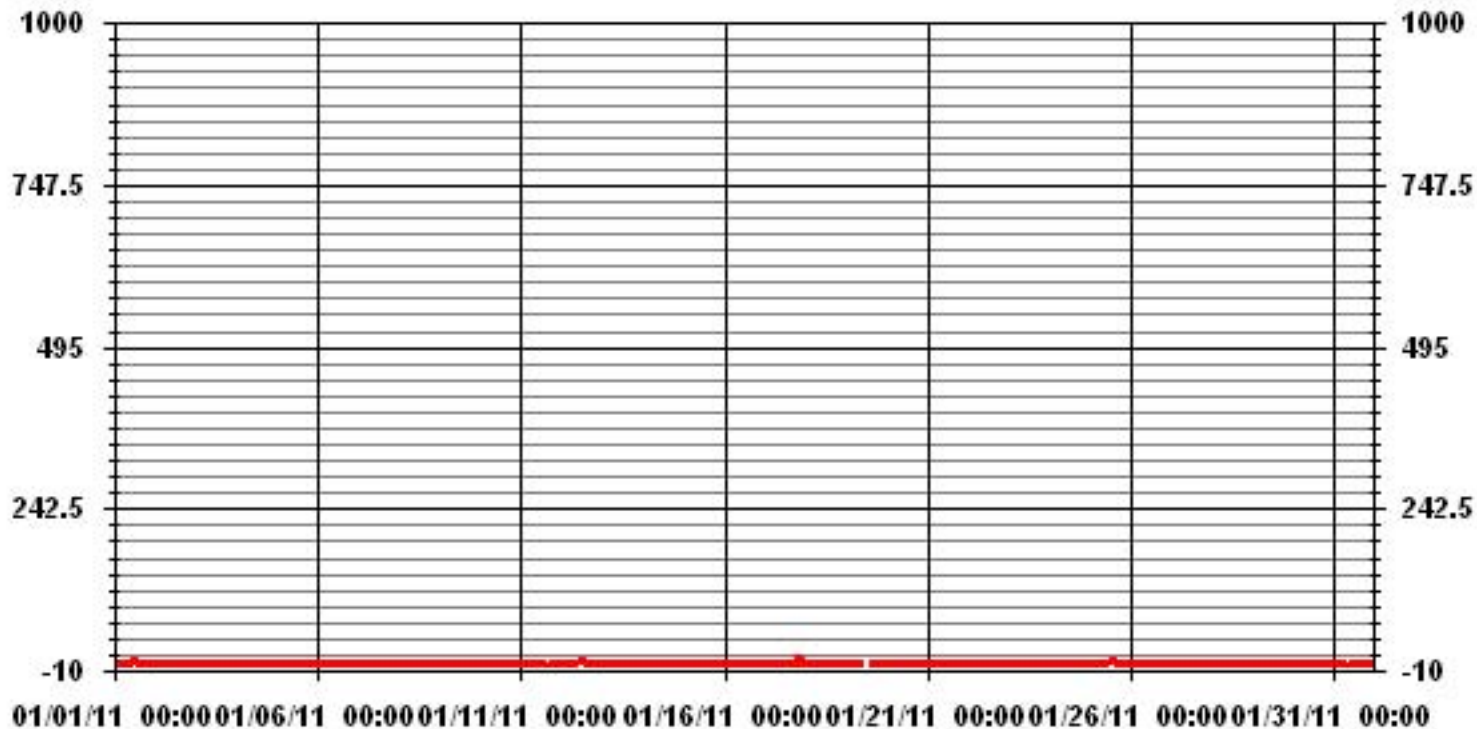
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	101
MAXIMUM 1-HR AVERAGE:	13 PPB @ HOUR(S) 20 ON DAY(S) 17
MAXIMUM 24-HR AVERAGE:	1.6 PPB ON DAY(S) 1
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
OPERATIONAL TIME:	740 HRS
AMD OPERATION UPTIME:	99.5 %
STANDARD DEVIATION:	0.99
MONTHLY AVERAGE:	0.29 PPB

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA31 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2011

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR				
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.			
DAY																														
1	1	0	2	1	IZS	1	1	2	2	5	9	8	8	6	5	2	0	1	1	0	2	1	0	0	9	2.5	24			
2	0	0	0	IZS	1	0	0	0	0	0	0	10	1	2	2	1	1	0	0	0	2	2	0	1	10	1.0	24			
3	0	0	IZS	1	0	0	0	0	0	2	2	2	2	3	3	1	1	1	0	0	0	0	0	0	3	0.8	24			
4	0	IZS	1	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	1	0	0	0	0	0	1	0.3	24			
5	IZS	1	0	0	0	0	0	0	0	1	1	0	0	8	1	1	0	1	0	0	0	1	1	IZS	8	0.7	24			
6	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	1	1	0.2	24		
7	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	IZS	1	0	1	0.3	24	
8	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	1	0.1	24
9	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	0	IZS	1	0	0	0	1	0.2	24	24		
10	0	0	0	0	1	0	0	1	1	1	2	1	1	1	2	1	0	1	IZS	1	1	0	0	0	2	0.7	24			
11	0	0	0	0	0	0	0	0	0	1	3	4	3	4	3	2	IZS	1	1	1	1	1	1	1	4	1.3	24			
12	1	1	1	1	1	1	1	1	2	5	6	7	7	7	3	1	IZS	1	1	1	2	1	0	0	7	2.3	24			
13	1	0	1	1	1	1	1	2	2	3	3	2	2	2	2	IZS	1	0	0	0	1	0	0	0	3	1.1	24			
14	0	0	0	1	0	1	0	1	0	1	1	2	1	1	IZS	1	0	0	0	0	0	0	0	0	2	0.4	24			
15	0	0	1	0	0	1	0	1	1	2	2	1	1	IZS	2	1	0	0	0	0	0	0	0	0	2	0.6	24			
16	0	1	0	0	0	0	0	0	1	1	1	2	IZS	4	2	1	1	0	1	1	0	0	0	0	4	0.7	24			
17	0	0	0	0	0	0	0	0	0	1	1	IZS	2	1	1	1	0	0	0	0	314	0	0	1	314	14.0	24			
18	1	1	0	1	1	2	2	1	2	4	IZS	9	3	1	1	1	1	1	0	1	0	0	0	0	9	1.4	24			
19	0	0	1	0	0	0	0	0	1	IZS	C	C	C	C	C	C	C	0	0	0	0	0	0	1	1	0.2	24			
20	0	0	0	0	0	1	0	0	IZS	1	0	0	M	0	1	2	2	1	1	0	0	0	0	0	2	0.4	23			
21	0	0	0	0	0	N	0	IZS	1	1	2	1	2	2	1	1	1	0	0	0	0	0	0	0	2	0.5	23			
22	0	0	0	0	0	N	IZS	1	1	1	12	2	10	12	14	10	1	1	0	0	0	0	0	0	14	3.0	23			
23	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.0	24			
24	0	0	0	0	IZS	1	0	0	0	1	1	1	2	2	2	2	1	1	0	0	0	0	0	0	2	0.6	24			
25	0	0	0	IZS	1	0	0	0	42	37	4	4	5	5	6	6	4	1	0	0	0	0	0	0	42	5.0	24			
26	0	0	IZS	1	0	0	0	11	0	1	1	8	2	1	IZS	2	3	0	0	0	0	0	0	0	11	1.4	23			
27	0	IZS	0	0	0	0	0	0	0	1	2	15	6	1	3	3	16	1	0	1	0	0	0	0	16	2.1	24			
28	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24			
29	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0.3	24		
30	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0.3	24			
31	0	0	0	0	0	0	1	0	1	47	29	3	4	3	24	2	2	24	1	2	IZS	2	1	2	47	6.4	24			
HOURLY MAX	1	1	2	1	1	2	2	11	42	47	29	15	10	12	24	10	16	24	1	2	314	2	1	2						
HOURLY AVG	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.7	1.9	3.9	2.9	3.0	2.4	2.4	3.0	1.6	1.3	1.2	0.2	0.3	11.2	0.3	0.2	0.3						

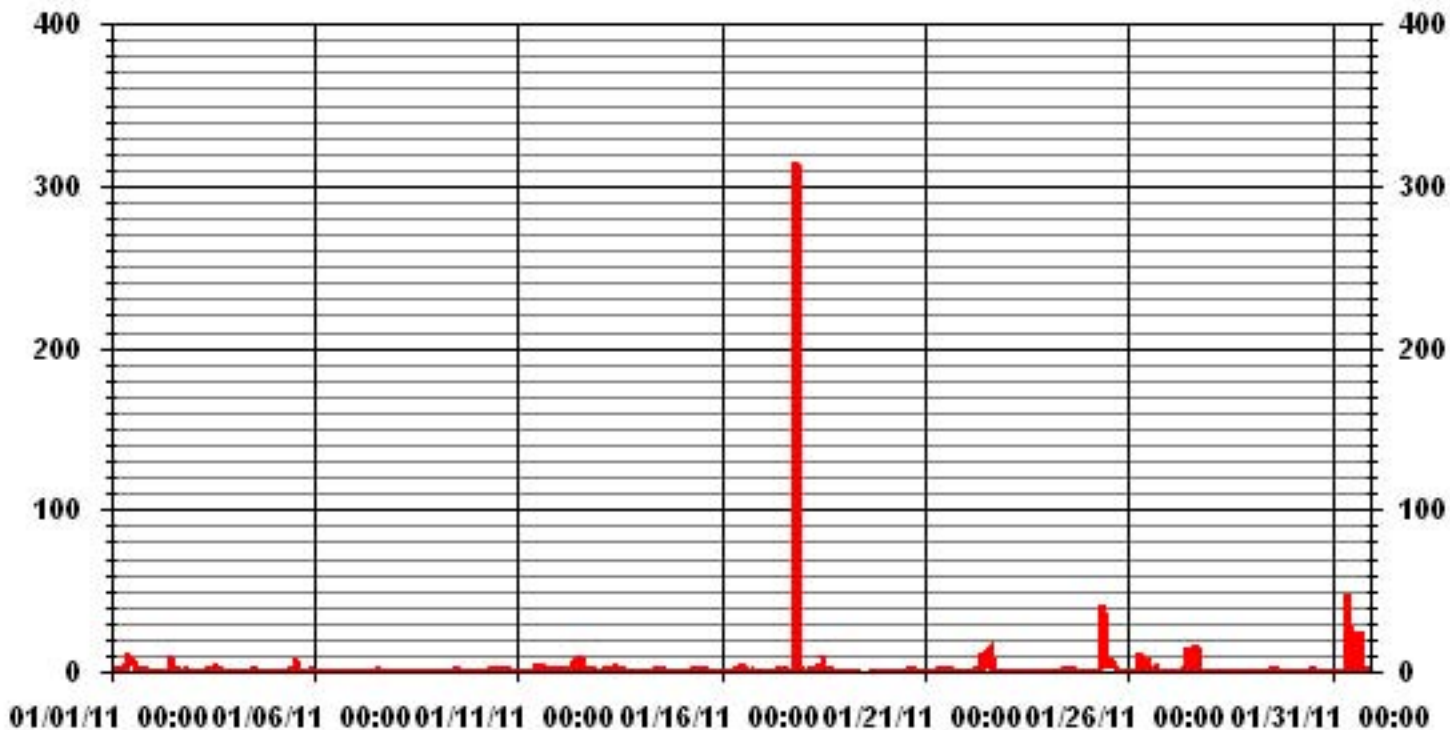
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	292					
MAXIMUM INSTANTANEOUS VALUE:	314	PPB	@ HOUR(S)	20	ON DAY(S)	17
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION	12.37					

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

January 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	9.68	4.41	5.55	6.98	5.84	5.55	5.98	7.97	5.55	3.41	3.56	5.12	4.55	7.83	7.83	10.11	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	9.68	4.41	5.55	6.98	5.84	5.55	5.98	7.97	5.55	3.41	3.56	5.12	4.55	7.83	7.83	10.11	

Calm : .00 %

Total # Operational Hours : 702

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	68	31	39	49	41	39	42	56	39	24	25	36	32	55	55	71	702
< 110																	
< 210																	
>= 210																	
Totals	68	31	39	49	41	39	42	56	39	24	25	36	32	55	55	71	

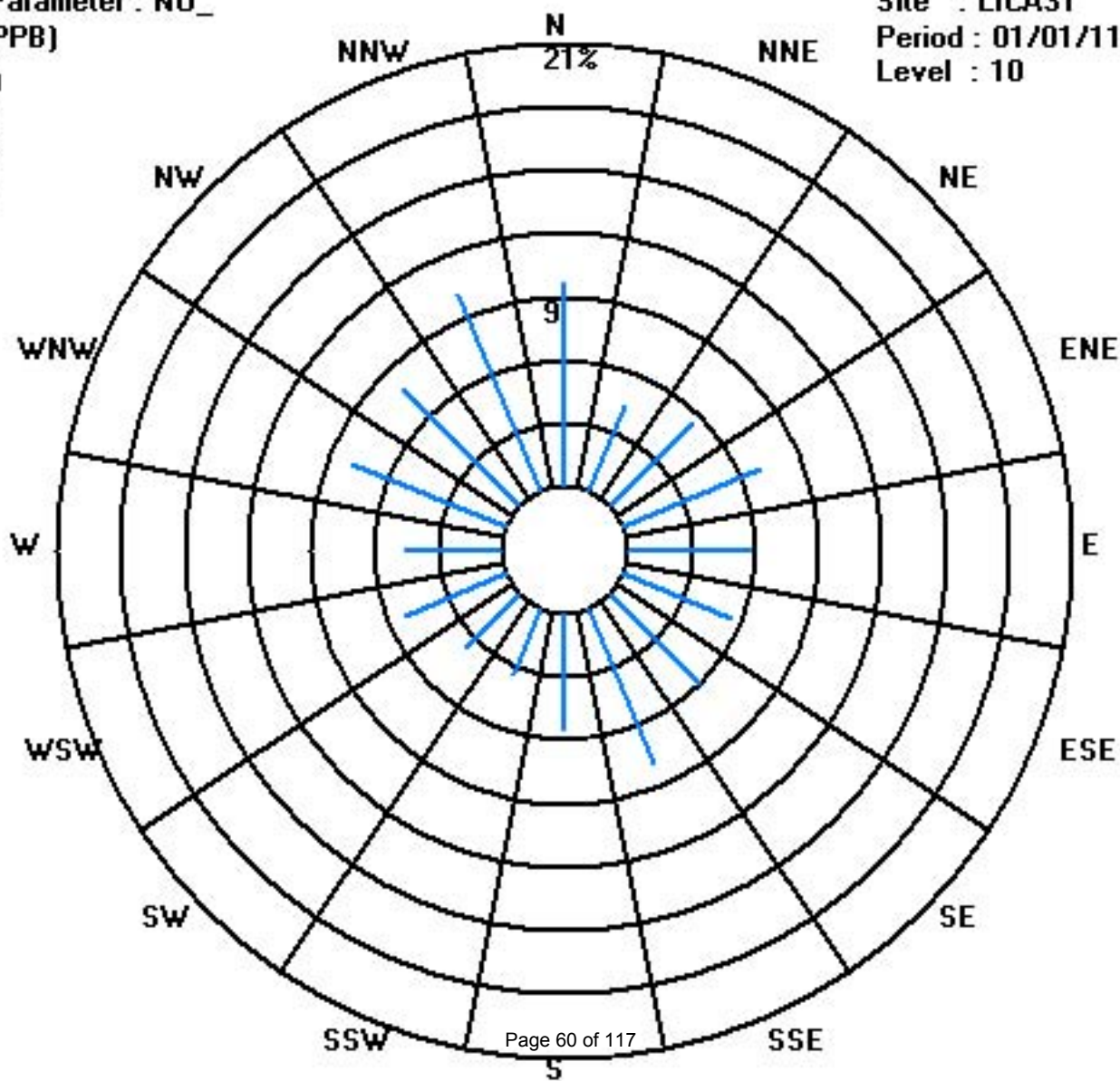
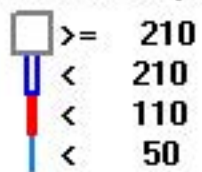
Calm : .00 %

Total # Operational Hours : 702

Class Limits (PPB)

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

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	9	9	9	IZS	9	12	16	16	18	22	22	20	18	16	12	8	5	4	2	2	1	1	0	22	10.4	24	
2	0	0	1	IZS	2	2	2	2	2	2	1	1	2	3	4	4	4	3	2	1	1	1	0	0	4	1.7	24	
3	0	0	IZS	0	0	0	0	0	1	2	2	2	4	7	7	6	6	4	3	2	1	1	1	0	7	2.1	24	
4	1	IZS	2	2	2	2	2	1	1	2	2	2	2	2	2	2	2	3	3	3	2	2	1	1	3	1.9	24	
5	IZS	2	2	2	2	2	2	3	4	3	2	2	1	1	1	0	1	2	3	3	2	3	3	IZS	4	2.1	24	
6	9	6	6	5	5	7	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	9	1.8	24
7	0	2	2	2	1	1	1	2	2	1	1	2	2	2	4	6	5	1	0	1	2	IZS	0	0	6	1.7	24	
8	0	0	1	0	0	0	0	0	0	2	1	1	0	0	0	0	0	0	0	0	0	IZS	0	0	0	2	0.2	24
9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	IZS	3	3	2	3	3	0.7	24	
10	3	3	4	3	3	2	2	2	3	3	4	3	2	2	3	2	3	4	IZS	4	3	2	2	2	4	2.8	24	
11	2	3	2	1	2	2	3	3	3	4	7	8	6	7	7	11	10	IZS	7	6	8	9	8	7	11	5.5	24	
12	8	8	7	7	7	7	8	10	11	15	15	13	14	12	5	3	IZS	3	3	3	4	3	3	4	15	7.5	24	
13	4	4	5	5	5	7	9	10	9	8	5	4	3	3	2	IZS	2	2	2	2	2	4	4	4	10	4.6	24	
14	4	4	4	3	2	2	2	2	2	2	2	2	2	1	IZS	1	0	1	1	1	1	1	1	0	0	4	1.7	24
15	1	3	5	4	4	4	4	4	5	5	4	1	0	IZS	1	1	1	1	1	1	1	2	2	2	2	5	2.5	24
16	3	3	3	3	3	3	4	4	4	4	3	2	4	IZS	5	4	2	3	3	2	1	0	0	0	0	5	2.6	24
17	0	0	0	1	2	2	3	3	2	1	1	IZS	1	2	3	2	1	1	2	2	20	4	4	5	20	2.7	24	
18	4	4	4	8	11	15	14	12	12	12	IZS	5	2	1	1	1	1	1	1	1	1	1	0	0	15	4.9	24	
19	1	1	2	2	2	3	3	1	2	IZS	C	C	C	C	C	C	C	0	0	0	0	0	1	0	1	3	1.1	24
20	1	1	1	1	1	2	2	2	IZS	1	1	1	M	1	2	3	3	4	5	5	3	2	1	1	5	2.0	23	
21	0	0	0	0	0	N	1	IZS	1	2	3	3	3	5	3	4	4	4	4	4	3	2	2	1	5	2.2	23	
22	1	1	1	1	1	N	IZS	1	1	2	3	4	5	6	3	4	4	3	4	6	5	4	3	2	6	3.0	23	
23	3	1	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0.2	23	
24	0	0	1	0	IZS	2	3	3	2	2	3	4	5	6	7	8	8	7	5	4	2	2	1	1	8	3.3	24	
25	2	1	1	IZS	3	3	2	2	4	6	13	15	15	11	15	19	20	14	8	6	4	3	2	2	20	7.4	24	
26	3	3	IZS	11	9	7	7	4	5	4	4	5	4	2	1	0	1	1	1	2	2	3	3	1	11	3.6	24	
27	1	IZS	1	1	2	1	1	3	4	5	6	7	6	5	8	13	13	10	9	9	4	0	0	0	13	4.7	24	
28	IZS	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	2	2	1	1	IZS	2	0.6	24	
29	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	2	2	2	2	1	1	IZS	2	2	0.8	24		
30	2	2	2	2	3	0	0	1	1	0	0	0	1	1	1	1	1	2	1	0	0	IZS	1	1	3	1.0	24	
31	1	1	0	0	1	2	2	2	2	6	5	5	5	4	4	4	7	9	9	12	IZS	15	18	21	21	5.9	24	
HOURLY MAX	9	9	9	11	11	15	14	16	16	18	22	22	20	18	16	19	20	14	9	12	20	15	18	21				
HOURLY AVG	2.1	2.1	2.3	2.6	2.6	3.1	3.1	3.2	3.3	3.7	3.8	4.0	3.8	3.7	3.7	3.9	3.7	3.1	2.8	2.8	2.8	2.4	2.2	2.1				

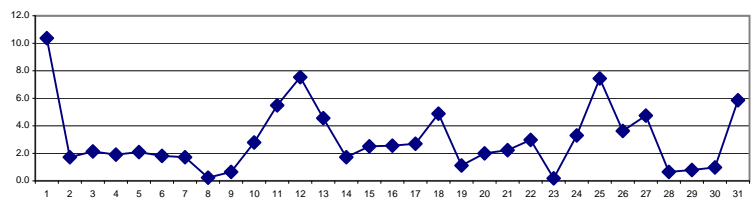
STATUS FLAG CODES

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

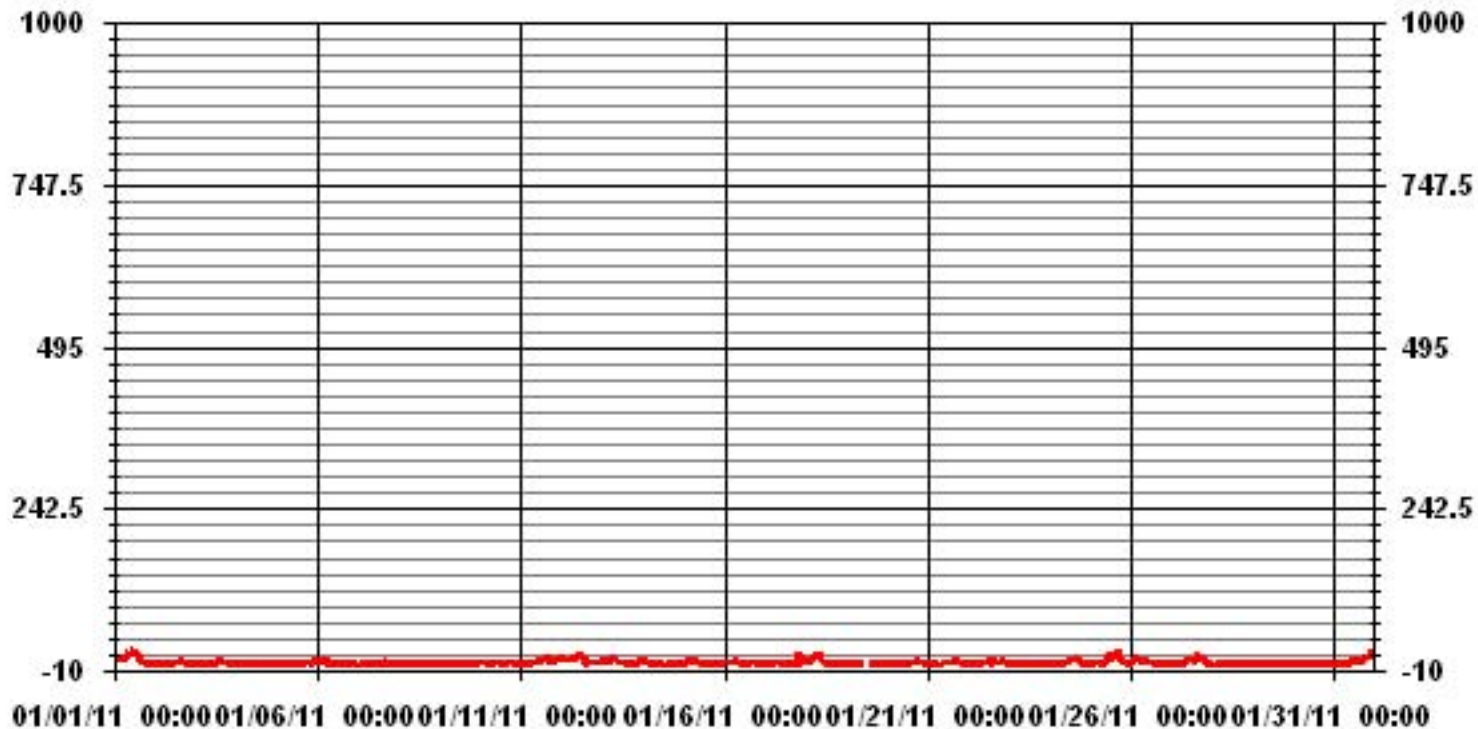
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	552					
MAXIMUM 1-HR AVERAGE:	22	PPB	@ HOUR(S)	10, 11	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	10.4	PPB			ON DAY(S)	1
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.5	%	
STANDARD DEVIATION:	3.71		MONTHLY AVERAGE:	3.03	PPB	

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA31 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	9	11	10	IZS	11	14	18	17	20	24	24	22	20	17	15	9	7	5	3	3	3	2	2	24	12.0	24	
2	1	1	3	IZS	3	2	2	3	2	2	2	19	4	5	5	5	6	5	3	2	5	5	1	1	19	3.8	24	
3	0	1	IZS	1	1	1	1	1	3	7	5	5	6	9	9	7	7	5	4	3	2	1	1	1	9	3.5	24	
4	2	IZS	3	2	3	2	3	2	3	2	6	3	4	4	3	3	4	3	4	4	2	3	2	2	6	3.0	24	
5	IZS	3	3	3	3	2	3	5	6	4	3	3	2	12	2	2	2	4	4	5	3	4	4	IZS	12	3.7	24	
6	11	7	7	6	7	8	7	2	1	0	0	0	0	0	0	1	0	0	1	0	1	1	1	IZS	1	11	2.7	24
7	1	3	4	4	2	1	2	3	3	2	1	2	2	4	5	7	7	2	1	1	2	IZS	2	2	7	2.7	24	
8	1	1	1	1	0	0	0	0	2	3	2	1	1	1	0	0	0	0	0	0	IZS	1	0	0	3	0.7	24	
9	0	0	0	0	0	0	1	1	1	0	1	1	1	1	1	2	2	2	2	IZS	4	3	3	4	4	1.3	24	
10	4	4	4	4	4	4	3	4	4	4	5	4	3	4	5	3	4	5	IZS	5	5	3	3	4	5	4.0	24	
11	3	4	4	2	4	4	3	3	4	5	9	10	8	7	10	12	12	IZS	10	8	9	9	9	8	12	6.8	24	
12	9	9	8	8	8	8	9	11	12	17	17	16	15	15	8	4	IZS	4	5	5	7	4	4	4	17	9.0	24	
13	4	6	6	6	6	8	10	11	10	12	7	5	5	4	4	IZS	3	3	2	2	4	4	4	4	12	5.7	24	
14	4	4	4	4	3	2	2	3	3	2	3	4	3	1	IZS	1	1	2	1	2	2	1	1	1	4	2.3	24	
15	2	5	6	5	5	5	5	5	6	6	5	3	1	IZS	2	1	1	2	2	2	3	2	2	3	6	3.4	24	
16	4	4	4	3	4	5	5	6	5	4	4	5	IZS	7	5	3	4	4	3	3	1	1	0	0	7	3.7	24	
17	0	1	1	2	3	3	3	3	3	3	2	IZS	2	3	3	3	1	2	3	3	343	5	5	6	343	17.5	24	
18	5	4	5	10	14	17	15	14	13	13	IZS	22	5	2	2	1	2	3	2	3	1	1	1	1	22	6.8	24	
19	3	2	3	3	3	4	4	2	3	IZS	C	C	C	C	C	C	C	1	1	1	1	1	1	3	4	2.3	24	
20	2	2	2	1	2	3	3	3	3	IZS	2	2	2	M	2	3	6	6	5	6	7	4	3	2	3	7	3.2	23
21	1	1	1	1	1	N	3	IZS	2	3	5	4	6	7	4	5	5	5	5	4	4	3	2	2	7	3.4	23	
22	2	2	2	2	2	N	IZS	3	2	3	20	5	14	22	17	20	5	5	6	7	6	5	4	3	22	7.1	23	
23	3	3	1	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	3	0.3	24	
24	0	1	1	0	IZS	3	3	4	3	3	4	5	7	7	8	9	10	8	6	5	3	3	2	2	10	4.2	24	
25	2	2	1	IZS	4	5	3	4	56	46	15	16	17	14	18	20	21	18	10	8	5	4	3	3	56	12.8	24	
26	4	4	IZS	13	10	8	9	16	6	7	5	15	7	3	IZS	2	9	2	2	2	3	4	4	2	16	6.2	23	
27	2	IZS	2	3	3	2	3	4	5	6	8	26	16	7	11	14	46	12	10	11	7	2	0	0	46	8.7	24	
28	IZS	0	2	2	2	2	0	0	0	1	0	0	0	0	1	2	2	2	2	2	3	2	1	IZS	3	1.2	24	
29	1	0	0	0	0	0	1	0	1	1	0	1	2	2	3	3	3	3	3	2	2	1	IZS	3	3	1.4	24	
30	3	3	3	3	4	2	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	IZS	2	1	4	1.8	24	
31	2	2	1	1	2	3	3	3	5	78	33	6	8	6	27	6	8	48	10	14	IZS	17	21	22	78	14.2	24	
HOURLY MAX	11	9	11	13	14	17	15	18	56	78	33	26	22	22	27	20	46	48	10	14	343	17	21	22				
HOURLY AVG	2.9	3.0	3.2	3.4	3.6	4.1	4.0	4.5	6.0	8.7	6.4	7.2	5.8	5.9	6.3	5.4	6.3	5.5	3.8	3.9	15.0	3.3	3.0	3.0				

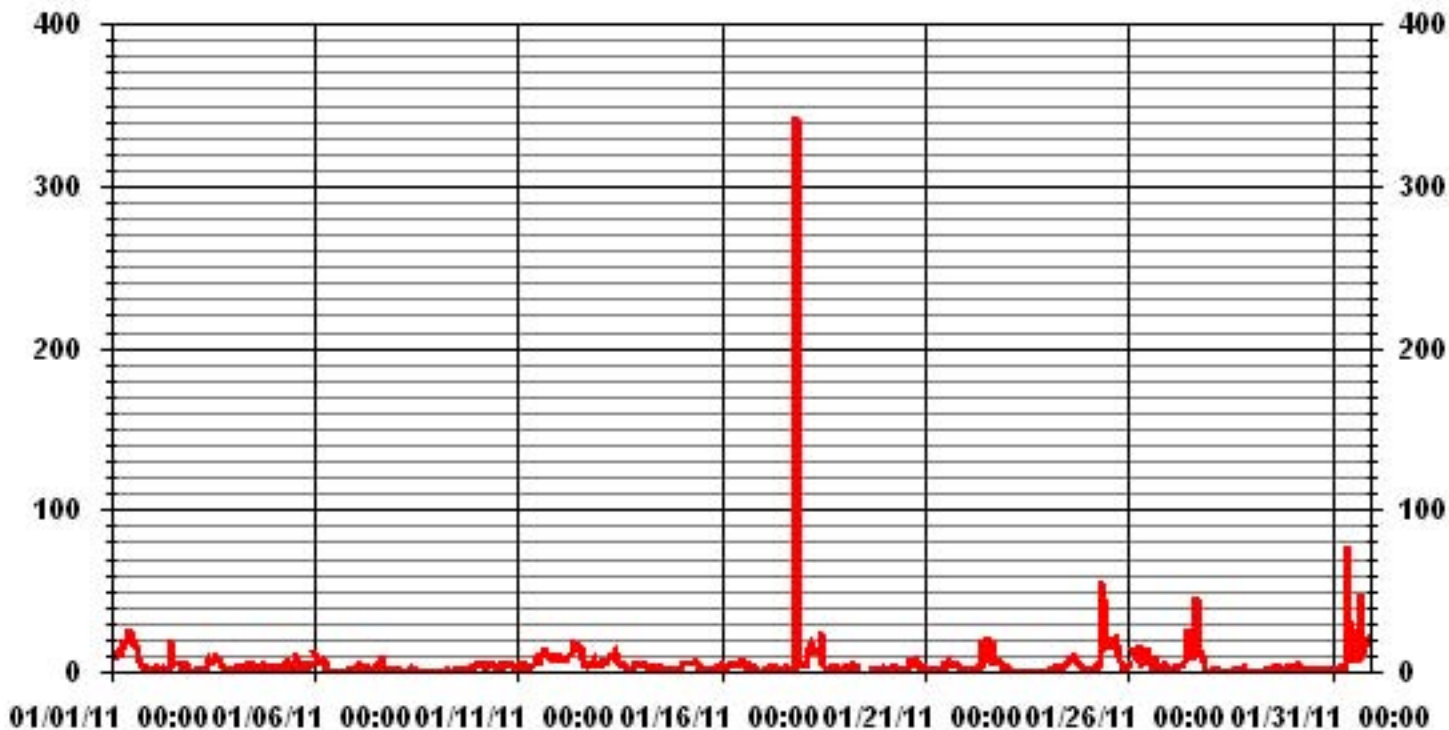
STATUS FLAG CODES

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:	630
MAXIMUM INSTANTANEOUS VALUE:	343 PPB @ HOUR(S) 20 ON DAY(S) 17
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	740 HRS
STANDARD DEVIATION:	14.27

01 Hour Averages



— LICA31 NOXMAX PPB

LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)

January 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	9.68	4.41	5.55	6.98	5.84	5.55	5.98	7.97	5.55	3.41	3.56	5.12	4.55	7.83	7.83	10.11	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	9.68	4.41	5.55	6.98	5.84	5.55	5.98	7.97	5.55	3.41	3.56	5.12	4.55	7.83	7.83	10.11	

Calm : .00 %

Total # Operational Hours : 702

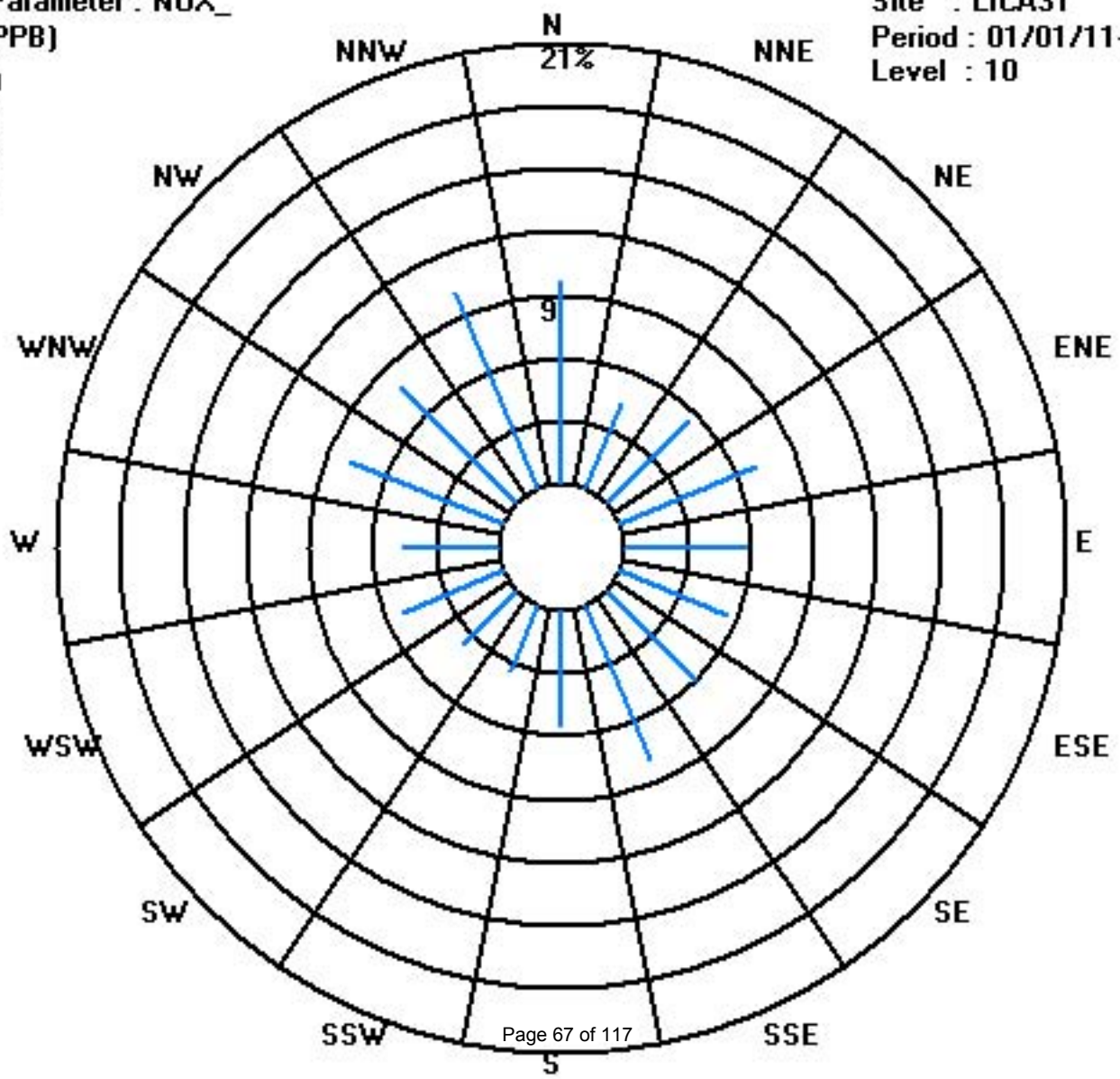
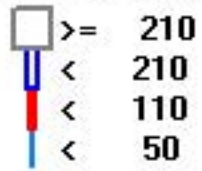
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	68	31	39	49	41	39	42	56	39	24	25	36	32	55	55	71	702
< 110																	
< 210																	
>= 210																	
Totals	68	31	39	49	41	39	42	56	39	24	25	36	32	55	55	71	

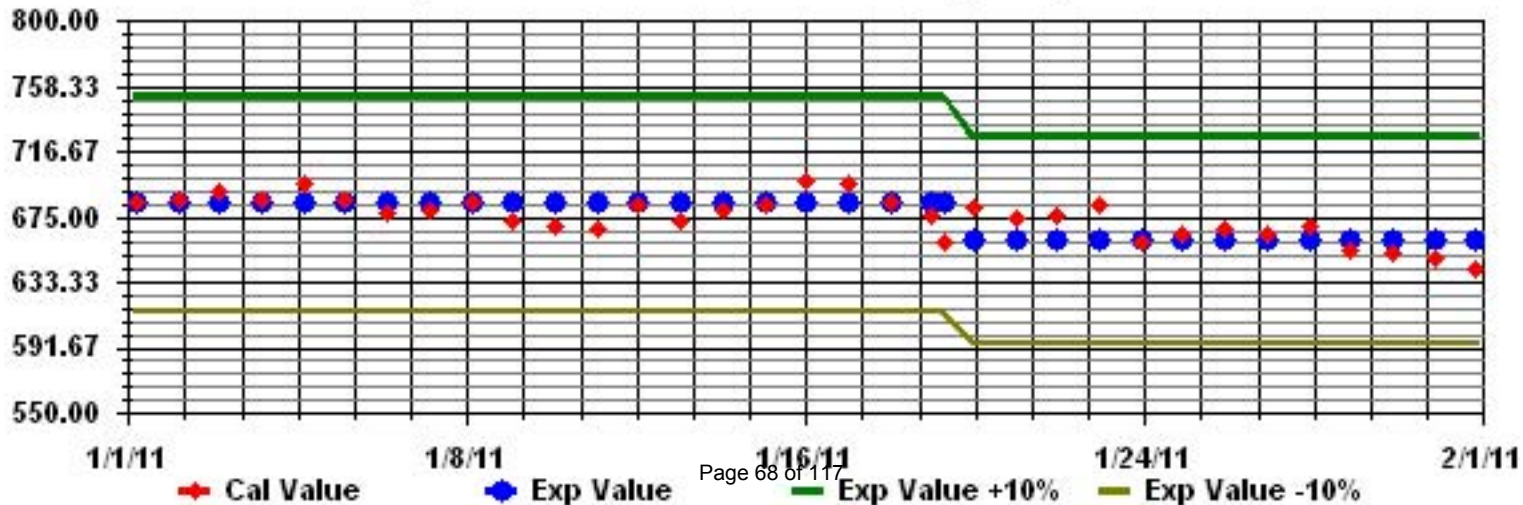
Calm : .00 %

Total # Operational Hours : 702

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	24:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	17.9	17.4	14.2	14.3	13.6	12.9	15.9	21.2	22.8	25.2	31.2	34.8	29.9	21.9	18	11.1	7.2	6.3	7.7	8.2	5.1	3.7	3.2	2.7	34.8	15.3	24	
2	2	0.8	2.2	4.6	5.4	4.1	3.5	2.5	2.6	4.1	3.9	3.3	0.5	2.5	2.4	3.8	2.4	2.7	0.7	1.2	1.2	2	0.1	0.8	5.4	2.5	24	
3	1.1	3.8	1.9	3.4	2	2.5	0.4	2.4	3.2	5.8	3.2	4.3	6.6	7.7	5.5	7.2	4.2	4.3	1.5	2.8	2.5	2.9	0.8	2.5	7.7	3.4	24	
4	2.3	3.3	0.9	3.8	4	6.3	4.7	4.6	3.6	3.5	0.2	3.3	2.3	4.3	2.2	1.4	2.2	3.5	2.8	3.4	2.2	3.2	1.3	4.3	6.3	3.1	24	
5	2.4	3.9	4.8	7.2	7.9	7.6	6.3	9.4	10.9	9.3	6.4	3	1.8	2.3	0.4	1	0.5	1.1	1.4	2	2.9	3.4	5.6	6.2	10.9	4.5	24	
6	11.5	11.8	10.1	8.3	7.9	2.5	3.7	0.7	3.1	0.6	1.7	3.5	0	0.7	0.1	0	1.7	0.8	0	0.3	0.4	0.1	0	11.8	2.9	24		
7	1.4	3.8	3.7	5.4	3.1	2.9	3.6	4.3	7.1	3.7	2.6	2.8	2.2	4.1	5.8	4.5	6.2	4	4	2.2	4.4	6.8	4.8	3.1	7.1	4.0	24	
8	2.8	1.8	2.7	3.4	1.8	1.1	0.8	3.4	2.6	1	1.6	0	1.5	1.9	1.9	1.1	1.7	2	1.6	2.8	2.8	1.5	1.3	0.9	3.4	1.8	24	
9	1.3	1.8	1.6	1.8	3	2.2	2.1	2.4	0.9	0.4	1.2	1.8	0.6	0.8	0	0.8	2.4	3.3	3.9	2.5	1.8	1.9	1.7	3.8	3.9	1.8	24	
10	2.6	2.9	3.4	2.8	3.7	3.6	4.1	2.9	1.4	2.9	3.9	2.4	3	3.1	3.2	3	2.1	2.5	3.2	3.5	2.2	3.5	0.9	3.6	4.1	2.9	24	
11	0.9	0.4	0	0	0.3	0.1	0	0	2.1	2.1	1.3	4.8	5.2	2.8	3.9	4.2	6.9	6.5	5.4	3.8	6	7.2	9.2	8.6	9.2	3.4	24	
12	7.7	7.1	6.6	6.8	5.7	6.1	6.9	7	9.7	9.7	9.4	6.4	5.5	C	C	C	7	2.1	2.6	7.3	3.2	5.6	5.5	3.6	9.7	6.3	24	
13	4.9	3.3	4.9	5.3	7	6	4	1.9	3.4	4.6	6.3	2.4	1.7	3.3	1.8	2.7	3.5	1.9	0.7	1.7	0	2.9	5.4	6.6	7.0	3.6	24	
14	4	5.2	6	3.5	1.3	0	1.6	4.8	6	3.5	5.7	6.8	5.2	2.9	1.3	3.1	2.4	0.9	2.7	5.2	4.6	3.8	3.3	2.1	6.8	3.6	24	
15	1.5	3.8	3.6	3.3	3	1.8	3.4	2	2.5	5.1	1.4	2.2	2.9	1.9	2.7	1.5	4.2	1.4	2.2	2.6	3.5	1.8	3.2	3.1	5.1	2.7	24	
16	3.2	0	0	1.2	2.6	0.5	1.9	2.5	2.7	2.4	2.1	3.4	2.6	3.8	3.2	1.3	0.8	4.2	2.2	0.9	2.4	0	0.5	0.1	4.2	1.9	24	
17	1	1.5	1.8	2.1	0.5	2.7	1.8	1.9	1.1	2.3	3	0	0	1.1	2.4	2.3	1.8	4.3	2.2	1	0	2.9	4.1	4.1	4.3	1.9	24	
18	3.1	3.7	3.7	6.4	10.9	13	6.9	6.2	5.9	8.7	7.3	4.9	2.1	4.7	3.6	1.5	3.1	0.6	1.7	2	2	3.5	3.4	2.7	13.0	4.7	24	
19	2.4	2.1	1.9	2.6	2.1	4.3	4.6	5.6	3.9	0.4	0	1.7	2.1	3.5	4.4	2.7	0	1.1	1.4	0.2	0	1.3	1.4	2.5	5.6	2.2	24	
20	1.3	2.3	0.9	2.6	1.5	4.3	3.2	4.1	0.5	2.5	2.3	1.8	4.1	2.5	0	2.2	3.3	5.3	6.3	6.4	7	7.4	4.1	2.9	7.4	3.3	24	
21	2.8	1.1	0.4	1.8	7.8	N	5.3	5.6	6.3	4.7	4.3	4.3	4.5	3.9	4.9	3.8	3.4	1.9	1.7	2.4	3.6	3.8	3.6	3.2	7.8	3.7	23	
22	2.3	4.8	4.2	2.6	3.3	N	7.1	4.3	3.3	5.1	7.5	8.9	10	7.1	3.4	3.9	3.8	5.9	3.5	3.5	3.3	0.6	0	0.5	10.0	4.3	23	
23	1	1.2	0.2	1.2	1.3	N	1.5	2	2.1	1.5	0	0.2	0.8	1	3.2	1	1.1	1.4	1.7	1.5	1.8	3.5	1.8	0	3.5	1.3	23	
24	0	1.6	4.8	2.6	1	5	6.6	2.8	4.6	1.3	1.7	3.6	4.5	6	6	3.3	3.8	3.8	1.8	2.5	5.5	3.4	4.1	3.8	6.6	3.5	24	
25	2.7	1.5	1.8	1.2	0.8	3.3	3.8	4.9	6.3	7.5	13.7	19.5	17.4	15.3	12.9	9.8	10.7	6	4.2	4.5	2.8	3.2	3.2	4.2	19.5	6.7	24	
26	4.2	3.7	5.7	6.5	6.5	6	6.7	5.3	1.8	4.1	2.8	3.2	1.9	1.1	0	1.8	0.9	1.1	1.8	3.5	0.5	9	4.5	9.0	3.4	24		
27	6.6	7.3	5.3	4.8	4	4.9	4.1	6.5	11.6	10.6	10.7	6.2	5	6.7	4.7	4.6	5.5	5	5.8	7.6	6.1	2.3	3	1.6	11.6	5.9	24	
28	1.8	0.1	0	2.1	2	3.2	0	0.6	1.2	2.8	3.7	1.9	1.3	2.7	2.5	3.4	5	5.5	3.9	3.8	2.9	2.9	1.7	2.6	5.5	2.4	24	
29	3.5	2.1	4	1.8	0.2	2.6	2.2	1.3	3.6	3.1	2.5	3.1	1.3	3.6	3.3	1.5	3.9	4.2	4	2.8	3.2	1	3.5	2.3	4.2	2.7	24	
30	3.6	5.1	4.3	2.6	3.3	2.1	2.1	1.9	2.2	5.5	2.3	3	2.2	3.4	3.5	5.4	4.5	5.9	4.1	3.7	3.5	4.3	4.2	3.1	5.9	3.6	24	
31	4.4	3.3	2.2	2.1	4.7	5.1	4.4	2.4	2.8	3.6	4.5	7.1	4.6	3.3	4.4	6	8	9.5	9.7	9.9	11.3	11.6	16	16.1	6.5	24		
HOURLY MAX	18	17	14	14	14	13	16	21	23	25	31	35	30	22	18	11	11	10	10	10	11	12	16	16				
HOURLY AVG	3.5	3.6	3.5	3.8	3.9	4.2	4.0	4.1	4.6	4.8	4.8	5.0	4.3	4.3	3.7	3.3	3.7	3.5	3.1	3.3	3.3	3.3	3.5	3.4				

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

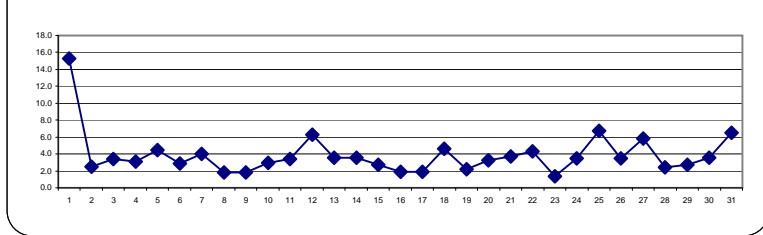
ALBERTA ENVIRONMENT:

1-HR	-	ug/m3	24-HR	30	ug/m3
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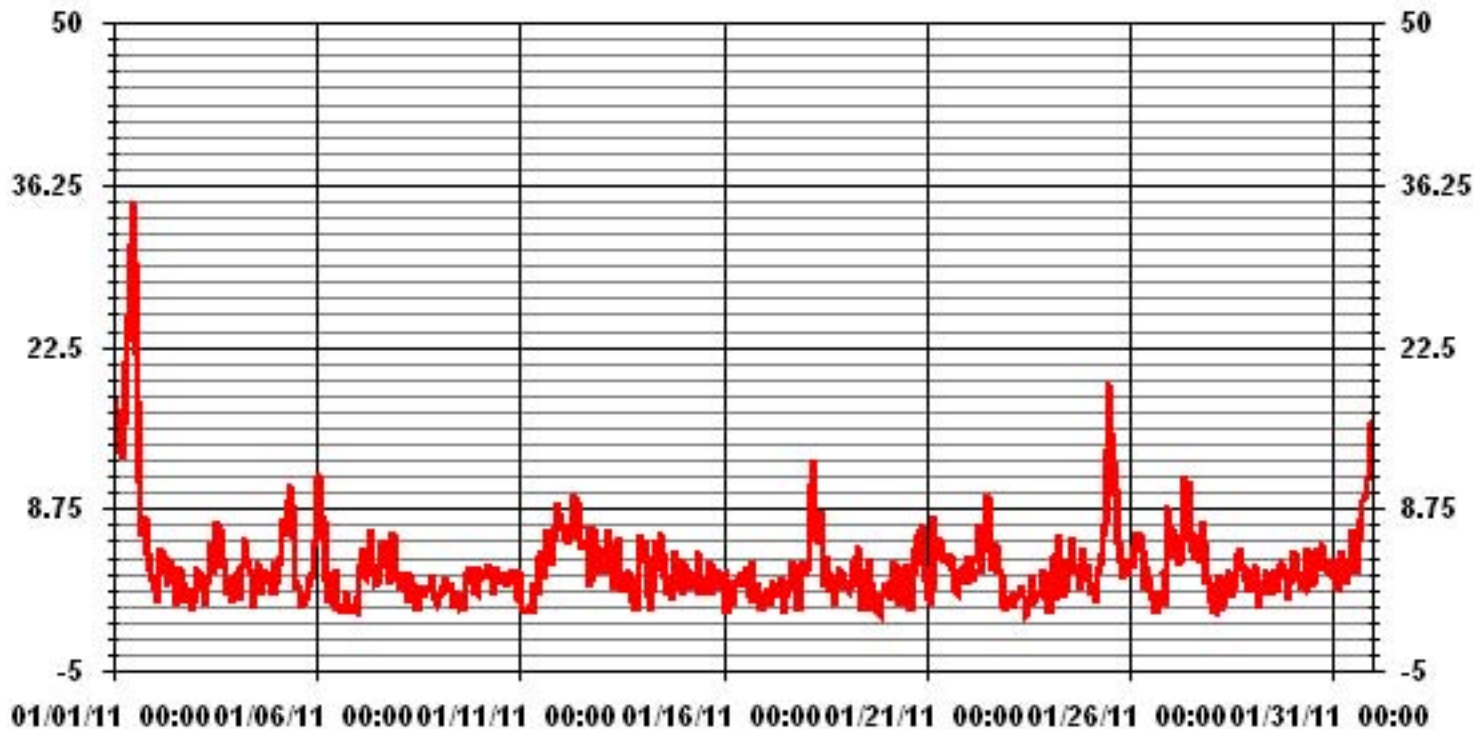
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-		
NUMBER OF 24-HR EXCEEDENCES:	0 PROPOSED CANADA WIDE GUIDELINE		
NUMBER OF NON-ZERO READINGS:	707		
MAXIMUM 1-HR AVERAGE:	34.8 UG/M ³ @ HOUR(S) 11 ON DAY(S) 1		
MAXIMUM 24-HR AVERAGE:	15.3 UG/M ³ ON DAY(S) 1		
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	741 HRS
MONTHLY CALIBRATION TIME:	3 HRS	AMD OPERATION UPTIME:	99.6 %
STANDARD DEVIATION:	3.69	MONTHLY AVERAGE:	3.86 UG/M ³

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
 PM2 / WDR Joint Frequency Distribution (Percent)

January 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	9.48	4.47	5.69	6.36	5.96	5.42	5.96	8.13	5.42	3.65	4.20	5.14	4.60	7.58	7.85	9.75	99.72
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.13	.27
< 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	9.48	4.47	5.69	6.36	5.96	5.42	5.96	8.13	5.42	3.65	4.20	5.14	4.60	7.58	7.99	9.89	

Calm : .00 %

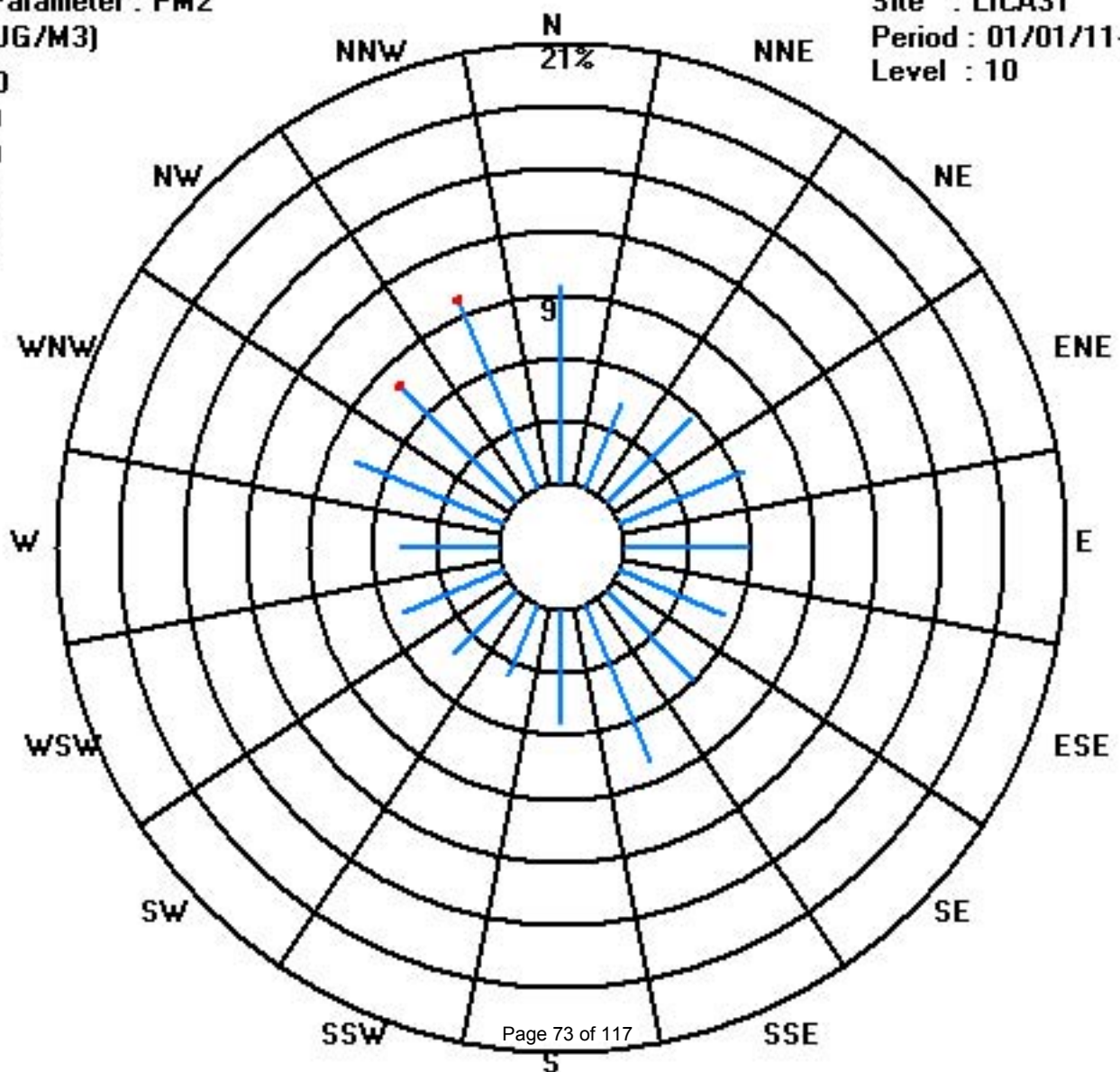
Total # Operational Hours : 738

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 30.0	70	33	42	47	44	40	44	60	40	27	31	38	34	56	58	72	736
< 60.0															1	1	2
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	70	33	42	47	44	40	44	60	40	27	31	38	34	56	59	73	

Calm : .00 %

Total # Operational Hours : 738



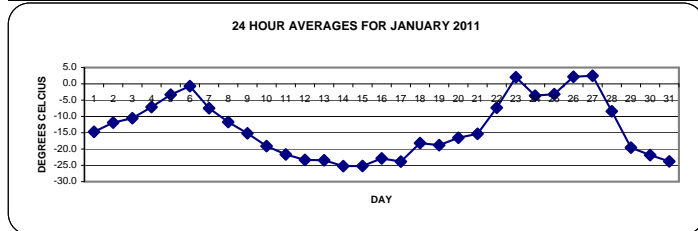
Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA
JANUARY 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	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		-23.8	-23.7	-22.9	-22.8	-23.3	-23.4	-23.6	-22.9	-21.1	-19.3	-17.3	-15.3	-13.5	-11.9	-9.9	-8.9	-8.5	-7.6	-6.8	-6.3	-5.7	-5.2	-4.8	-4.8	-4.8	-4.8	24	
2		-5.2	-6.1	-7.4	-8.8	-9.2	-9.6	-10.7	-11.1	-11.3	-11.6	-11.7	-11.4	-10.2	-10.4	-11.7	-12.9	-14.9	-15.9	-16.2	-16.1	-15.9	-15.9	-15.7	-15.4	-5.2	-11.9	24	
3		-15.2	-15.1	-15.4	-15.5	-15.3	-15.4	-15	-14.2	-13.4	-12.3	-10.5	-8.8	-7.2	-6.4	-6.9	-6.6	-7.2	-7.4	-7.6	-7.3	-7.6	-7.4	-7.3	-7.7	-6.4	-10.5	24	
4		-9.1	-8.5	-8.8	-8.9	-9.5	-9.9	-9.2	-8.8	-8.8	-7.9	-6.9	-6	-5	-4.3	-4	-4.1	-4.6	-5.4	-6	-5.9	-5.5	-7	-8.4	-8.2	-4.0	-7.1	24	
5		-7.8	-7.6	-7.4	-7	-6.4	-5.9	-5.7	-5.2	-4.2	-2.4	-1.2	0.2	1.9	3.4	1.9	0.3	-0.8	-2.3	-2.9	-3.2	-3.6	-4.6	-5	-4.3	3.4	-3.3	24	
6		-3.4	-1.8	-2.1	-2.3	-1.4	0	1.1	1	0.2	0.5	1.7	2.1	2.2	2	1.1	0.5	-0.3	-0.9	-1.7	-2.4	-2.6	-3.1	-3.2	-4.1	2.2	-0.7	24	
7		-4.9	-7	-7.4	-9.1	-10.1	-9.6	-9.8	-10.2	-9.4	-6.8	-5.4	-4.9	-5.1	-5.6	-7.2	-7.6	-6.9	-5.9	-6	-6.9	-7.7	-8.2	-8.6	-9	-4.9	-7.5	24	
8		-9.3	-9.5	-9.9	-10.2	-10.5	-10.8	-11.1	-11.2	-11.5	-11.7	-11.5	-11.2	-11.1	-11.5	-11.9	-12.2	-12.6	-12.9	-13	-13.2	-13.5	-13.7	-13.6	-13.6	-9.3	-11.7	24	
9		-13.6	-13.8	-14	-14.4	-15.2	-15.3	-15.1	-15.2	-15.4	-15.1	-14.6	-14.3	-14.3	-14.5	-14.7	-15	-15.3	-15.7	-16	-16.3	-16.5	-16.5	-16.5	-16.6	-16.8	-13.6	-15.2	24
10		-16.9	-17	-17.2	-17.2	-17.4	-17.8	-18.2	-18.5	-18.8	-18.9	-18.3	-17.7	-16.7	-16.5	-17.2	-19	-20.6	-21.3	-21.8	-21.9	-21.8	-22.1	-22.5	-22.7	-16.5	-19.1	24	
11		-23.3	-23.5	-24.7	-25	-24.5	-23.3	-24.3	-24.3	-23.6	-22	-20.6	-19.6	-18.5	-17.1	-15.8	-18.6	-20.8	-21	-20.7	-21.2	-21.4	-21.6	-21.7	-22.4	-15.8	-21.6	24	
12		-23	-23.4	-23.8	-24.3	-24.4	-25	-26.4	-27.1	-25.6	-25.1	-24.4	-23.7	-23.5	-22.5	-22.1	-21.6	-21.4	-21.5	-21.4	-21.7	-22.1	-22.1	-22.3	-22.3	-21.4	-23.3	24	
13		-22.7	-23.1	-23.3	-23.2	-23.2	-23.4	-24.4	-25	-25.4	-24.6	-23.2	-22.4	-22	-21.8	-22.1	-22.5	-23.7	-23.9	-23.8	-23.7	-23.6	-23.7	-23.8	-23.9	-21.8	-23.4	24	
14		-23.9	-24	-24.2	-24.5	-25	-25.4	-25.5	-25.5	-26.2	-26.1	-25.4	-25.2	-25.5	-25.1	-25.2	-25.3	-25.6	-25.5	-25.4	-25.4	-25.3	-25.2	-25.4	-25.6	-23.9	-25.2	24	
15		-25.8	-25.9	-26.2	-26.3	-26.3	-26.3	-26.2	-26.4	-26	-25.3	-24	-21.9	-23.1	-23.2	-24.5	-25.1	-25.4	-25.6	-25.4	-25.3	-25.2	-24.7	-24.2	-21.9	-25.2	24		
16		-23.8	-23.9	-24.1	-24.1	-23.7	-23.6	-24	-24.5	-24.1	-23.5	-22.6	-22.1	-21.8	-21.8	-21.5	-22	-22	-22.1	-22.1	-22	-22	-22.2	-22.5	-22.8	-21.5	-22.9	24	
17		-23.1	-23.1	-23.5	-24.3	-24.9	-25.5	-25.5	-25.8	-26.1	-25.7	-24.8	-23.8	-23.1	-23	-23.2	-23.2	-23.2	-23	-23	-22.9	-22.6	-22.6	-22.8	-23.5	-22.6	-23.8	24	
18		-23.8	-24.4	-25.2	-25.5	-25.3	-24.3	-22.7	-21.1	-20.3	-19	-14.4	-11.9	-11.2	-11.4	-12.8	-13.3	-14.6	-15.5	-15.9	-16.5	-17.1	-17	-16.7	-16.4	-11.2	-18.2	24	
19		-18	-18.9	-18	-18.1	-16.6	-16.4	-16.6	-16.1	-17.2	-16.7	-16	-16	-15.9	-16	-16.4	-18	-20	-21	-21.5	-21.7	-22.5	-23.9	-24.6	-25.3	-15.9	-18.8	24	
20		-26.3	-26.3	-24.7	-24.1	-22.9	-22.2	-21.3	-20.9	-19.9	-17.9	-17.3	-16.7	-15.8	-14.5	-13.4	-12.4	-11.7	-11.5	-9.9	-7.5	-7.3	-9.5	-10.8	-12.2	-7.3	-16.5	24	
21		-12.4	-12.8	-13.5	-13.8	-14.3	N	-16.9	-17	-16.7	-16.2	-15.7	-15	-15.6	-15.5	-14.5	-14	-14.5	-15.4	-15.7	-16.1	-16.2	-16.8	-17.2	-17	-12.4	-15.3	23	
22		-16.8	-16.4	-16	-15.2	-14.2	N	-13.3	-12.9	-12.7	-12.1	-10.8	-8.2	-5.2	-2	-0.3	-1.4	-2.9	-2.9	-2.5	-2	-2.7	-1.5	-0.9	4.2	4.2	-7.3	23	
23		5	4.7	4.6	3.9	3.1	N	2.2	2.1	1.5	2.4	3.5	3.8	3.6	3.3	3.1	2.7	2.2	1.9	1	0.4	-0.4	-1.8	-2.8	-3.1	5.0	2.0	23	
24		-4.7	-5.8	-6.8	-7.1	-8.1	-7.8	-6.7	-6.2	-5.1	-3.6	-2.2	-1.6	-1	-0.7	-0.1	-0.2	-1.1	-1.9	-2.2	-2.3	-2.9	-2.9	-3	-3.1	-0.1	-3.6	24	
25		-4.3	-4.2	-2.5	-3.3	-7.3	-6.5	-8	-8.6	-8.5	-7.9	-7.4	-5.7	-3.5	-1.9	0	0.8	0.4	0.5	1.3	0.6	0.2	0	0.1	0	1.3	-3.2	24	
26		-0.3	0.3	-0.2	0.7	0.2	-0.6	-0.2	2.1	2.1	2.5	2.4	3.5	4	4.2	5.2	4.6	3.7	3.1	2.9	3	2.5	2	1.9	2.7	5.2	2.2	24	
27		2.5	2	1	0.1	-0.4	0	0.5	0.8	1	0.7	1.6	2.9	3.5	6.1	6.1	4.9	3.8	2.9	3	3.1	3.3	4.5	3.3	2.3	6.1	2.5	24	
28		2	1.9	0.4	-1.3	-3.3	-6	-7.7	-7.7	-8.4	-8.7	-9.1	-9.2	-8.9	-9.3	-9.7	-10.4	-11.2	-11.8	-12.3	-12.8	-13.6	-14.5	-15	-15.4	2.0	-8.4	24	
29		-15.8	-16.1	-16.4	-16.7	-17.1	-17.6	-18.2	-19.7	-21.3	-21.4	-19.8	-17.9	-18.1	-18.2	-18.4	-18.6	-20.3	-21.5	-22.6	-23	-22.9	-22.7	-22.5	-15.8	-19.6	24		
30		-22.2	-21.9	-21.6	-21.3	-21.3	-21.5	-21.9	-22.5	-22.8	-21.7	-20.9	-20.5	-19.8	-19.7	-19.7	-18.9	-20.8	-23.1	-23.5	-23.6	-23.3	-24.2	-24	-23.9	-18.9	-21.9	24	
31		-23.7	-24.1	-24.5	-24.4	-24.5	-25.1	-25.1	-25.2	-25	-23.3	-20.9	-19.2	-17.7	-17.7	-18.3	-20.5	-22.2	-24.5	-25.8	-26.8	-27.8	-28.1	-28.2	-17.7	-23.8	24		
HOURLY MAX		5.0	4.7	4.6	3.9	3.1	0.0	2.2	2.1	2.1	2.5	3.5	3.8	4.0	6.1	6.1	4.9	3.8	3.1	3.0	3.1	3.3	4.5	3.3	4.2				
HOURLY AVG		-14.0	-14.2	-14.4	-14.6	-14.9	-15.7	-15.1	-15.1	-15.0	-14.2	-13.2	-12.3	-11.5	-11.1	-11.1	-11.5	-12.3	-12.9	-13.0	-13.1	-13.3	-13.6	-13.8					

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

MINIMUM 1-HR AVERAGE:	-28.2 °C	@ HOUR(S)	23	ON DAY(S)	31
MAXIMUM 1-HR AVERAGE:	6.1 °C	@ HOUR(S)	13, 14	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	2.5 °C			ON DAY(S)	27
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	741 HRS		
STANDARD DEVIATION:	9.34	AMD OPERATION UPTIME:	99.6 %		
		MONTHLY AVERAGE:	-13.48 °C		

01 Hour Averages



— LICA31 TPX DGC

Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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	920	920	920	920	919	919	918	917	917	917	917	916	915	915	915	915	915	915	915	915	916	916	917	918	920	917.0	24		
2	918	919	920	921	921	922	923	924	924	925	925	925	925	926	926	926	927	927	927	927	927	927	927	927	927	927	927	924.4	24
3	927	926	926	926	926	925	925	924	924	924	923	923	922	922	921	921	920	920	920	920	920	920	920	920	920	920	927	922.7	24
4	919	919	919	919	918	918	917	917	917	917	917	917	917	916	916	917	917	916	916	916	916	917	916	916	916	919	917.1	24	
5	916	916	916	916	916	916	916	916	916	916	917	917	917	918	918	918	918	918	918	918	918	918	917	917	917	917	918	916.9	24
6	916	916	916	916	917	917	917	917	918	918	919	919	920	921	923	924	925	926	927	927	928	928	929	929	929	929	929	921.4	24
7	929	930	930	929	929	928	928	928	927	927	927	927	926	926	925	925	924	924	923	923	923	922	922	922	922	930	926.0	24	
8	922	922	922	922	923	923	923	924	925	925	926	927	927	927	928	928	929	930	930	930	931	931	931	932	932	932	932	926.6	24
9	932	933	934	934	934	934	935	935	936	936	937	937	937	937	938	939	939	940	940	940	940	941	941	941	941	941	941	937.1	24
10	941	942	942	943	943	943	943	943	943	944	944	943	943	943	943	943	943	943	942	942	942	942	942	942	942	942	942	942.7	24
11	942	942	942	942	942	941	941	941	941	941	941	941	941	941	941	940	940	940	939	939	939	939	939	939	939	942	940.6	24	
12	938	938	938	937	936	936	934	933	933	932	931	930	929	928	927	927	927	927	927	927	927	927	928	928	938	931.0	24		
13	929	929	930	930	931	931	931	931	932	933	933	932	932	932	932	932	932	932	932	932	932	932	932	932	933	933	931.5	24	
14	933	933	933	935	936	936	937	938	939	940	940	941	940	940	940	940	940	940	940	940	940	940	940	940	941	938.4	24		
15	939	939	939	938	938	938	937	937	937	936	936	935	934	934	933	933	932	931	930	929	928	927	925	924	939	933.7	24		
16	923	922	921	920	920	918	918	918	918	918	918	917	918	917	917	918	918	919	919	919	920	920	920	921	923	919.0	24		
17	921	921	922	922	922	922	922	922	922	922	922	922	922	922	922	922	923	922	922	923	923	923	923	923	923	923	922.2	24	
18	923	922	922	921	920	920	919	918	918	919	919	920	920	920	920	920	920	921	920	920	920	920	920	920	920	923	920.1	24	
19	920	920	919	919	920	920	921	923	925	927	928	929	929	930	931	932	933	934	934	934	934	934	934	933	932	934	927.5	24	
20	931	930	928	926	925	923	920	918	916	914	913	912	911	910	909	910	910	910	911	912	913	914	915	916	931	916.5	24		
21	917	918	919	919	920	N	920	920	920	920	920	919	919	917	917	916	915	914	914	913	913	913	914	915	920	917.0	23		
22	915	916	917	917	918	N	918	918	918	918	918	918	918	919	919	919	918	917	916	915	914	913	912	911	919	916.6	23		
23	911	912	911	911	911	N	911	912	912	913	915	915	916	917	918	919	921	923	923	924	925	926	926	926	926	917.3	23		
24	926	926	925	924	924	922	921	920	920	919	919	919	919	919	919	920	921	921	922	922	922	922	923	923	926	921.6	24		
25	924	924	924	925	924	924	924	924	924	924	924	925	924	924	925	925	925	925	925	925	925	925	925	925	925	925	924.5	24	
26	924	924	923	923	922	922	921	922	922	922	922	922	922	922	922	922	922	922	922	922	923	922	922	923	924	922.3	24		
27	923	923	923	923	922	922	922	921	921	920	919	918	918	917	917	917	916	915	915	915	915	916	916	916	923	918.8	24		
28	917	918	920	921	923	924	925	926	927	927	928	928	929	929	929	930	930	930	930	930	931	932	932	933	933	927.0	24		
29	933	934	934	935	935	936	936	936	937	937	938	939	939	939	939	940	940	940	940	940	941	941	941	941	941	941	937.9	24	
30	941	941	941	942	942	942	942	942	942	943	943	943	943	943	943	943	944	943	943	944	944	944	944	944	945	945	942.8	24	
31	945	945	945	945	946	946	946	946	947	947	948	948	948	948	948	947	948	947	947	947	947	946	945	945	948	946.5	24		
HOURLY MAX	945	945	945	945	946	946	946	946	946	947	947	948	948	948	948	948	947	948	947	947	947	946	945	945	948	946.5			
HOURLY AVG	926	926	926	926	927	927	926	926	926	926	927	927	927	926	926	927	927	927	927	927	927	927	927	927	927	927	927		

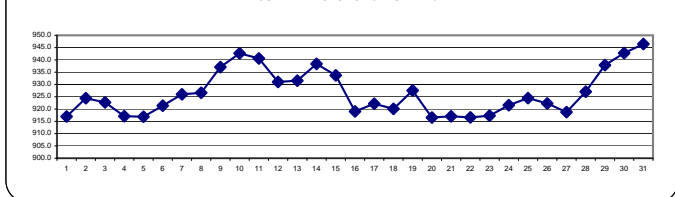
STATUS FLAG CODES

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

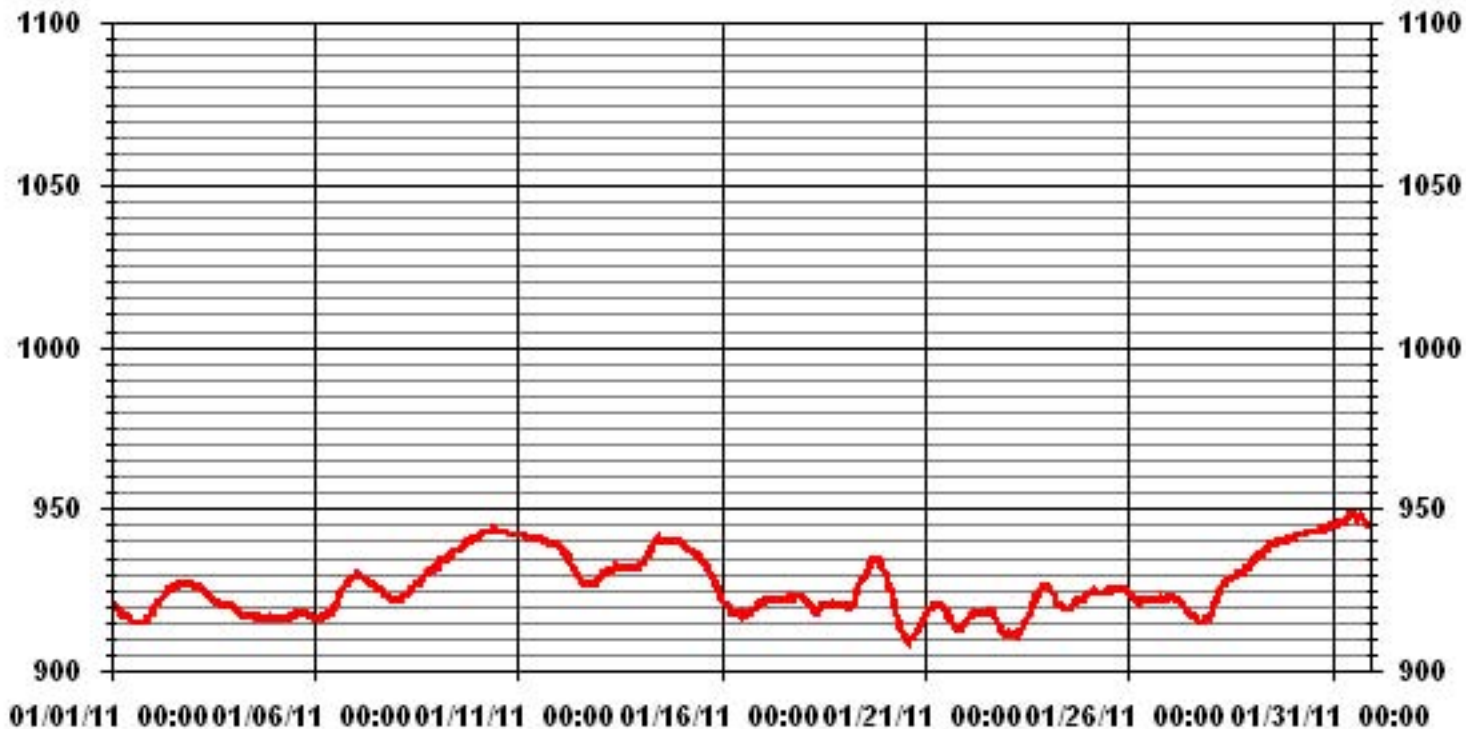
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	948	MB	@ HOUR(S)	VAR	ON DAY(S)	31
MAXIMUM 24-HR AVERAGE:	946.5	MB			ON DAY(S)	31
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	741	HRS	
STANDARD DEVIATION:	9.49		AMD OPERATION UPTIME:	99.6	%	
			MONTHLY AVERAGE:	927	MB	

24 HOUR AVERAGES FOR JANUARY 2011



01 Hour Averages



— LICA31 BP MB

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2011

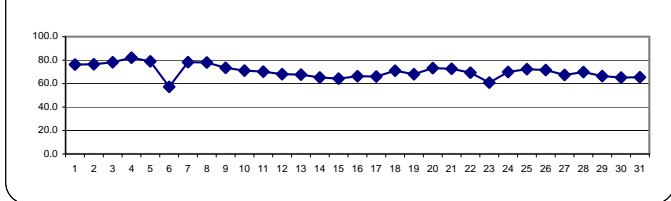
RELATIVE HUMIDITY hourly averages (%)

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	70	69	69	68	68	68	70	70	71	73	75	76	78	80	81	82	83	84	84	85	85	85	85	85	85	85	76.2	24
2	2	84	83	82	81	81	79	79	79	78	77	74	72	67	67	69	70	76	78	78	77	76	76	76	76	76	84	76.5	24
3	3	76	76	76	76	76	76	76	77	78	78	79	80	81	79	80	79	77	77	78	79	80	80	81	82	82	82	78.2	24
4	4	83	82	82	82	82	82	82	82	82	81	81	81	81	80	79	79	81	83	85	85	84	84	84	84	83	85	82.1	24
5	5	83	83	83	83	84	84	84	85	86	87	87	83	70	61	64	68	72	77	78	78	78	80	80	77	87	79.0	24	
6	6	73	66	64	65	65	65	56	53	50	46	43	44	46	49	52	53	56	57	60	61	61	62	62	65	73	57.3	24	
7	7	67	74	75	79	81	80	79	80	79	77	75	75	76	77	78	80	81	82	82	82	82	82	81	81	82	78.3	24	
8	8	81	81	80	80	80	79	79	79	79	78	78	77	76	76	76	77	77	77	77	77	77	77	77	77	77	81	78.0	24
9	9	77	77	76	76	76	76	75	75	75	74	73	72	71	70	71	72	72	72	72	72	73	73	72	73	77	73.5	24	
10	10	73	73	75	75	74	74	73	73	73	72	72	69	64	62	62	66	70	71	72	72	72	73	73	73	75	71.1	24	
11	11	72	72	71	69	70	70	68	68	68	69	70	71	71	71	69	69	71	71	72	71	71	70	70	70	72	70.2	24	
12	12	69	69	69	68	68	67	66	66	66	66	66	66	66	67	68	69	70	70	70	70	70	69	69	69	70	68.0	24	
13	13	69	69	68	68	68	68	68	67	67	67	67	67	67	67	68	68	67	67	68	68	68	68	67	67	69	67.6	24	
14	14	67	67	67	67	66	66	66	66	65	65	64	63	63	63	64	64	65	65	65	65	66	66	65	65	67	65.2	24	
15	15	65	65	65	65	65	65	65	65	65	64	63	60	58	61	61	63	64	65	66	66	66	66	66	67	67	67	64.3	24
16	16	67	67	67	67	67	67	67	67	67	66	64	63	63	63	63	65	67	67	68	68	68	68	68	67	68	66.3	24	
17	17	67	67	67	67	68	68	68	67	66	66	64	62	61	62	63	65	66	66	67	67	67	67	68	69	69	66.0	24	
18	18	69	69	68	68	68	68	69	70	71	72	73	71	69	68	68	69	70	72	74	75	76	76	76	75	76	71.0	24	
19	19	75	75	75	74	74	74	75	74	74	72	66	60	55	53	53	56	62	65	67	68	70	72	72	71	75	68.0	24	
20	20	70	69	69	69	68	69	70	70	71	72	72	72	73	74	75	76	77	78	78	78	78	78	79	78	79	73.2	24	
21	21	76	74	73	72	72	N	75	74	72	70	69	67	69	71	72	74	75	74	74	74	74	74	73	74	76	72.6	23	
22	22	74	74	74	75	75	N	76	77	77	79	77	73	67	61	60	62	67	69	69	68	69	69	63	61	47	79	69.3	23
23	23	46	53	54	59	62	N	66	64	63	59	55	54	55	54	56	58	60	63	67	70	73	76	77	77	77	60.8	23	
24	24	82	83	82	80	80	78	74	72	69	65	61	60	60	59	60	63	65	67	69	71	72	73	73	73	83	69.9	24	
25	25	76	75	69	71	80	80	82	84	83	81	81	80	77	72	66	63	65	65	63	64	64	64	65	65	84	72.3	24	
26	26	65	63	65	61	61	65	64	65	67	73	77	70	74	77	74	75	78	79	79	77	78	79	79	73	79	71.6	24	
27	27	73	74	77	79	81	79	79	78	78	78	75	70	66	56	55	59	62	65	65	64	65	46	44	49	81	67.4	24	
28	28	53	59	74	77	73	70	74	76	76	72	69	69	68	67	69	69	70	69	70	69	70	70	71	72	77	69.8	24	
29	29	74	77	76	75	74	74	73	71	70	69	67	62	59	57	57	54	58	61	65	66	64	63	64	64	77	66.4	24	
30	30	65	66	67	67	68	69	69	69	69	65	62	61	58	57	58	55	60	67	68	68	68	69	69	69	69	65.1	24	
31	31	70	70	71	72	72	71	70	69	67	65	63	60	57	56	55	58	60	67	69	67	66	66	65	64	72	65.4	24	
HOURLY MAX		84	83	83	83	84	84	84	85	86	87	87	83	81	80	81	82	83	85	85	85	85	85	85	85	85			
HOURLY AVG		71.3	71.6	71.9	72.1	72.5	72.5	72.2	72.0	71.6	70.8	69.7	68.0	66.5	65.6	65.7	66.7	68.9	70.4	71.4	71.5	71.8	71.3	71.4	70.9				

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

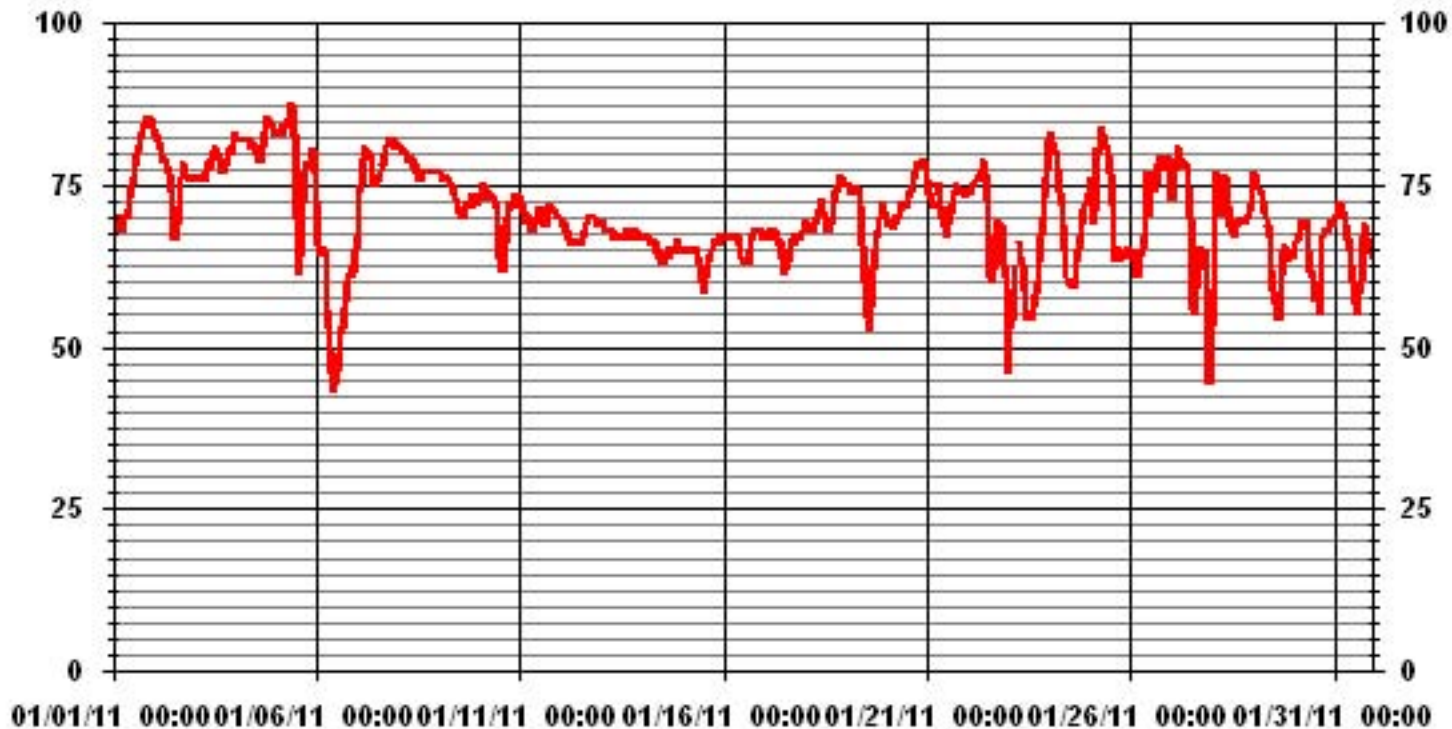
24 HOUR AVERAGES FOR JANUARY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	87	%	@ HOUR(S)	9, 10	ON DAY(S)	5
MAXIMUM 24-HR AVERAGE:	82.1	%			ON DAY(S)	4
VAR-VARIOUS						
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	741	HRS	
STANDARD DEVIATION:	7.57		AMD OPERATION UPTIME:	99.6	%	
			MONTHLY AVERAGE:	70.35	%	

01 Hour Averages



— LICA31 RH %FS

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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 MAX.	DAILY TOTAL	RDGS.	
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				
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.2	0	0	0	0	0	0	0	0.2	0	0.2	0.6	24	
2	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	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	0.0	24	
5	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	24
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.4	0.3	0.2	0.4	1.2	24	
8	0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	0.3	0.1	0.3	0.2	0	0.1	0	0.1	0.3	0.2	0.2	0.2	0.2	0.1	0	0.2	0.3	3.1	24		
9	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.3	24	
10	0	0	0	0	0	0	0	0	0	0	0.8	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.8	1.0	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	0.0	24	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0.2	0	0	0.1	0	0	0	0	0	0.2	0.4	24	
13	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0.2	0.1	0.1	0.2	0.7	24	
14	0.1	0.1	0.1	0.3	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0.1	0.1	0	0.1	0.1	0.2	0.3	1.5	24	
15	0	0.1	0.2	0	0	0	0.1	0.2	0	0.2	0.1	0.1	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.2	1.1	24	
16	0.1	0.2	0.2	0.7	0.1	0	0.1	0	0	0.2	0.1	0.1	0.2	0.1	0.2	0.2	0.2	0.3	0.2	0	0.7	0.2	0.1	0	0.7	4.2	24		
17	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0	0	0	0	0	0.9	0	0.9	1.3	24
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
19	0	0	0	0	0	0	0	0	0	0.1	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	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24
21	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0.1	0	0.1	0	0.1	0	0.1	0.1	0.7	0.4	0.7	1.6	23	
22	0.1	0	0	0	0	N	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	23	
23	0	0	0	0	0	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	23	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	

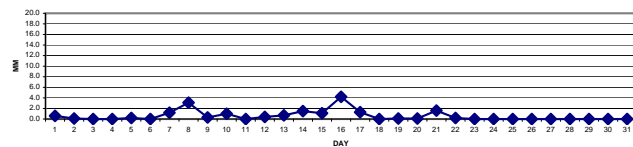
STATUS FLAG CODES

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

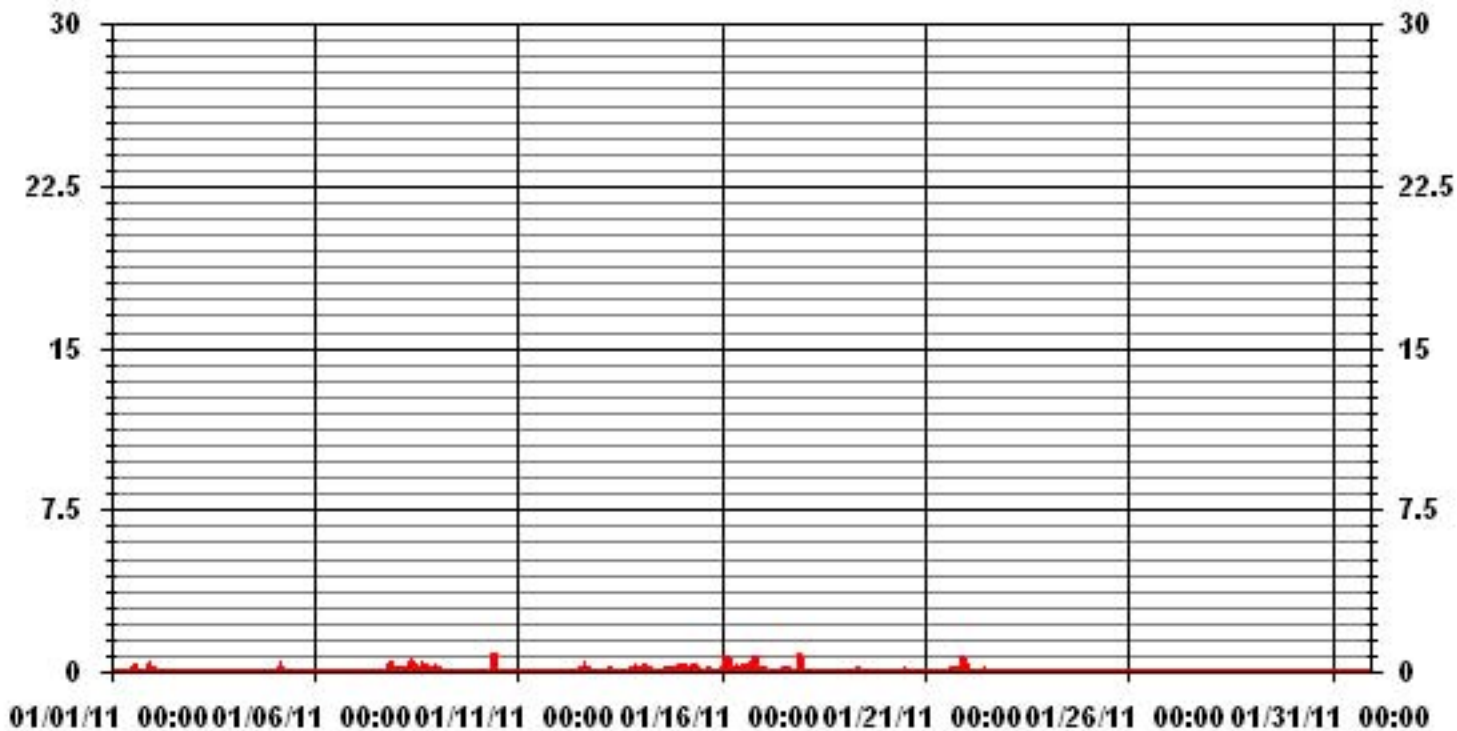
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	0.9	MM	HOUR(S)	22	ON DAY(S)	17
MAXIMUM DAILY TOTAL	4.2	MM			ON DAY(S)	16
MONTHLY TOTAL	17.7	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	741	HRS	
STANDARD DEVIATION:	0.08		AMD OPERATION UPTIME:	99.6	%	
			MONTHLY AVERAGE:	0.02	MM	

DAILY TOTALS FOR JANUARY 2011



01 Hour Averages



— LICA31 PRECIP MM

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 2011

WIND SPEED hourly averages (km/hr)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		8.5	9.7	10.2	11.5	11.1	11.2	10.4	9.2	11.3	10.8	10.9	11.2	12.7	11.6	16.5	18.3	17	12.2	10.1	9.2	9.6	8.8	9.6	10.9	18.3	9.6	24	
2		9	8.8	10.8	11.6	12.1	6.7	6	7.1	8.6	11.5	10.9	9.4	8.7	10.5	8.5	10	9.7	11.2	12.4	11.6	12.2	14.4	10.9	4.4	14.4	8.9	24	
3		7.4	10.1	11.2	13.3	12	12.4	12.5	11.7	12.7	11.6	11.7	11	11.1	12.1	13	15.9	15.5	12.5	10.8	9.8	9.5	11.1	10.8	9.3	15.9	10	24	
4		12.2	12.4	11.3	10.2	9.7	10.7	14.3	13.4	14.1	11.4	8.9	6.8	7	8.5	8.2	4.5	5.5	6	6.9	6.4	3.7	12.3	13	5.2	14.3	7.4	24	
5		4.6	5.8	6.9	6.5	6.2	7.2	7.9	8	8.7	11.5	14.5	14.1	15.9	12	7.7	8.5	6.7	6.5	9.1	14.2	7.3	4.6	11.8	10.6	15.9	5.4	24	
6		8.7	10.2	8.3	10.3	12	14.5	14.8	4	1.5	3.8	8.3	14.9	16.3	19.5	16.3	13.9	10.5	9.7	7	8.5	8	8.6	8.2	19.5	7.4	24		
7		8.2	11	12.6	15.5	12.9	12.5	9.2	8.1	10	11.3	8.5	8.2	13.8	12.4	11.6	13.3	14.5	2.2	2.4	4.5	6	6.1	5.8	7.1	15.5	7.4	24	
8		7	8.2	6.8	7.1	10.1	8.2	8.3	10.2	14.5	14.2	16.5	18	17.4	19.2	19.9	18.7	19.2	20.6	21.5	18.4	16.8	14.8	13.2	14	21.5	13.7	24	
9		13.7	14.7	14	16.8	13.9	11.4	13.8	11.9	13	14.4	14.4	12.1	14.7	15.7	15.9	17.1	16.5	16.5	16.7	15.6	16.2	16	15.5	16.8	17.1	13.6	24	
10		15.4	17.5	14.4	13.6	16.4	16.5	16.8	16.1	15.1	13.1	14.7	14.3	13.3	12	14.2	12.3	13.2	16	8.5	10.7	9.3	12.5	13	13.1	17.5	10.2	24	
11		13.3	13.7	8.3	4.9	5.3	4.4	6.3	6	6.1	6.2	13.1	15	15.5	6.1	6.1	8.8	10	8.6	10.8	8.5	12.3	11.5	12.5	11.9	15.5	4.8	24	
12		12.2	11.8	10.9	10.5	12.9	14	7.5	9.9	8.1	6.5	6.7	7.4	10.9	10.9	7.8	7.9	12.8	13.4	12.9	12.2	12.2	12.4	7.3	8.2	14	3.6	24	
13		8.9	10.5	9.3	7.5	9.5	9.5	9.7	8.5	6.1	8.1	10.8	9.2	10.5	11	11.8	10.8	8.5	10.5	10.5	11.2	10.2	11.6	12.2	10.7	12.2	6.8	24	
14		10.1	9.4	10.5	11	11.1	9.5	9.5	9.8	10.1	10.3	11.2	9.5	8	9.4	10.7	11.4	9.9	10.1	10.3	12.4	12.8	12.6	12.3	11.4	12.8	10.3	24	
15		12	8.7	7.4	5.7	4.8	5	8.4	12.5	12.5	11.8	4.7	3.4	3.6	6.1	13	1.7	2.1	7.8	10	4	4.8	6.5	7.5	4.7	13	4.7	24	
16		6.4	7.9	8.4	8.2	7.8	8.4	9.4	10.4	12.2	11.5	10.7	10.8	11.6	11.7	10.2	10.5	11.5	12.6	11.2	11.1	11.7	12.1	11.1	11.2	12.6	8	24	
17		12.3	13.8	12.8	13.1	6.2	4.6	6.6	6.1	8.2	9.9	9.5	6.8	7.6	8.1	8.6	8.2	11.6	11.1	11.9	13	12.4	11.9	12.1	10.4	13.8	4.9	24	
18		9.8	10.3	10.1	9.7	6.4	9	9.6	10.9	10	13	13.6	9.8	9.4	8.9	10.6	12.2	9.7	9.7	10.1	9.3	8.3	8.6	9.8	6.9	13.6	8.2	24	
19		8.4	10.6	12.2	12.6	13.7	13.1	7.2	6.2	10.5	10.9	9.5	11	10	11	10.1	8.3	6.6	8.4	6.7	7.2	6	11.2	10.3	9.8	13.7	4.4	24	
20		8.1	4.3	4.7	5.8	5.2	5.6	7.2	8.9	7.1	6.2	4.9	4.3	1.9	3.7	6.9	11.2	13.3	12.1	6.9	13.1	8.6	7.8	8.6	12.2	13.3	1.1	24	
21		9.6	9.3	9.1	8.4	9	N	11.1	12.2	10.9	6.6	9	8.6	11	1.5	10	7.1	1.7	16.1	10.9	16.4	18.3	7.4	5.9	13	18.3	5	23	
22		12.7	11.8	10.4	9.4	5.6	N	7.3	5.4	8.7	9.3	8.7	11.8	11.7	14.5	16.1	12.6	10.3	11.7	10.4	9.1	9.7	8.1	10.1	23.2	23.2	6.7	23	
23		26.5	21.8	25.2	23.3	21.5	N	5.7	5	6.4	9.6	8.8	12.3	14.2	18.9	21.4	20	19	16.5	14.6	14.5	11.4	9.8	12.1	10.6	26.5	9.9	23	
24		10.6	11.2	13.6	16.8	16	16	18.3	18.3	18.4	19.2	18.6	16.8	14.1	10.2	9.5	9.8	8	6.1	6.4	8	4.8	3.1	3.1	4.7	19.2	11.2	24	
25		6.5	3.6	5.3	5.8	14.2	6.9	14.4	11.2	14.6	14.1	14.6	11.7	14.3	14.2	12.7	13.7	7.3	3.9	2.8	4.1	6.8	6.1	6.6	6	14.6	8.8	24	
26		12.3	10.4	14.1	11.3	15.1	14.1	11.8	7.8	8.1	10.7	8.6	7.5	8.9	7.6	6.3	11.4	11.5	11.7	12.3	11.8	12.1	10.9	9.5	9.8	15.1	4.4	24	
27		8.3	8.9	8.9	13.8	10.1	12.2	10.6	11.6	12.5	10	5.2	8.1	10.9	11.1	15.5	13	10.4	10.7	9.6	10	14.5	11.9	9.2	6.1	15.5	8.9	24	
28		7.8	13	23	20.2	20.4	22.5	19.1	18.4	18.3	18.2	15.2	14.2	14.9	14.3	12.3	11.3	14.1	11.9	15.3	15.8	15.9	10.1	13	14.8	23	14.4	24	
29		14.8	15.6	15.7	14	12.7	11.7	10.9	9.7	10.1	10.6	12.2	12.8	13.6	10.4	11.3	5.9	6	2.2	0.8	6	6.1	4.4	6.5	4.8	15.7	5.2	24	
30		13.1	13.2	8.4	7.1	7.5	7.4	6.9	6.5	6.7	6.8	7	5.7	4.3	3.1	2.4	4.2	4.4	5.1	4.1	3.2	5.1	0.6	3.3	16	16	4	24	
31		13.7	13.6	12.8	15.5	14.6	11.2	15.1	14.8	13.6	13.9	13.1	14	12.5	12.2	11.9	9.3	11.6	9.7	10.2	8.6	7.5	7.3	6.1	6.8	15.5	11.1	24	
HOURLY MAX		26.5	21.8	25.2	23.3	21.5	22.5	19.1	18.4	18.4	19.2	18.6	18.0	17.4	19.5	21.4	20.0	19.2	20.6	21.5	18.4	18.3	16.0	15.5	23.2				
HOURLY AVG		10.7	11.0	11.2	11.3	11.2	10.6	10.5	10.0	10.6	10.9	10.8	10.7	11.3	10.9	11.5	11.0	10.6	10.4	9.8	10.3	10.0	9.5	9.7	10.1				

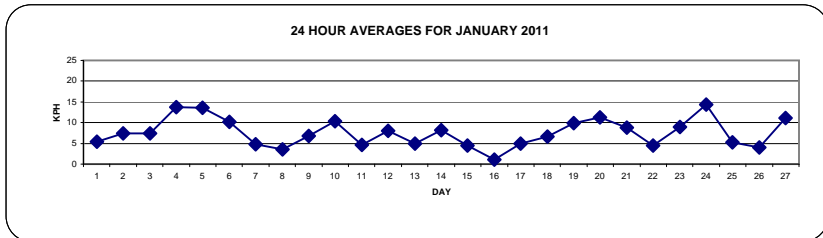
STATUS FLAG CODES

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

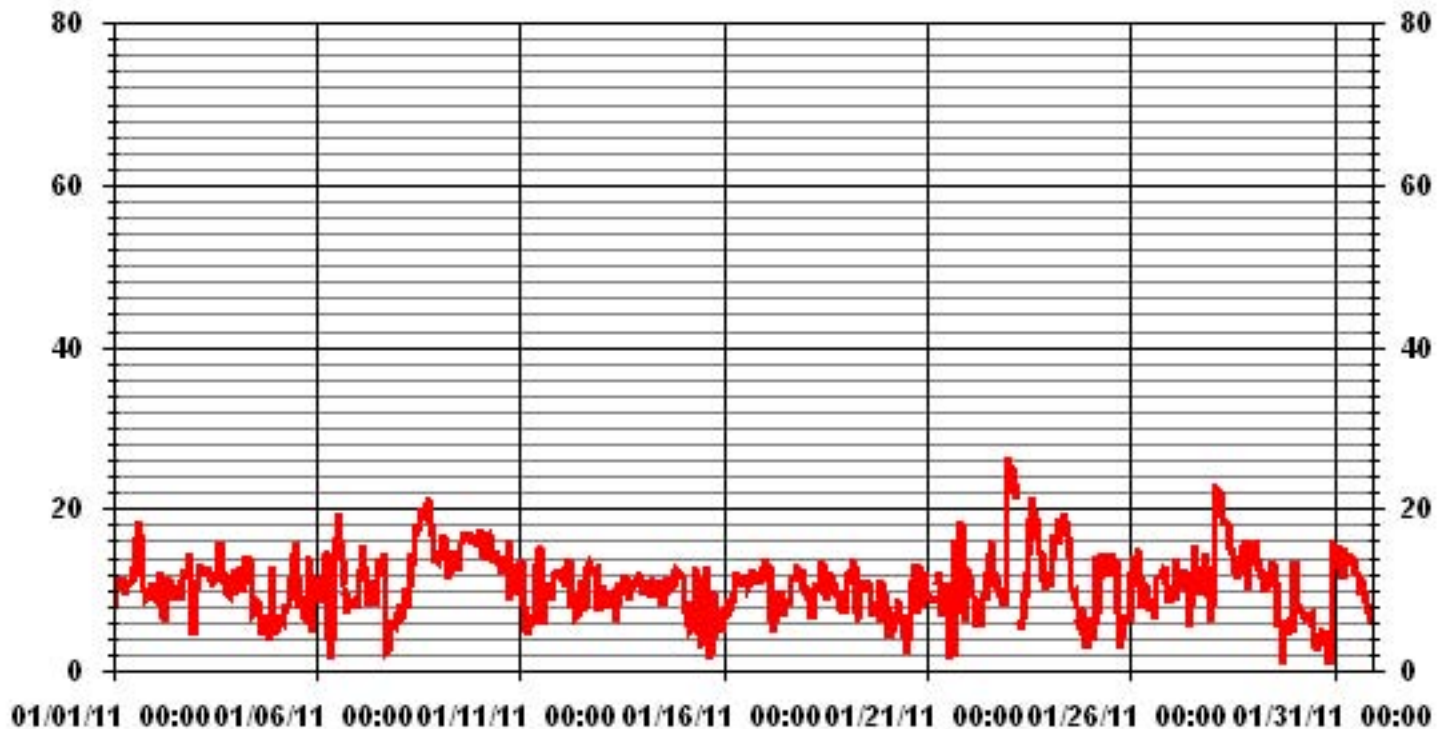
LAST CALIBRATION: June 17, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	26.5 KPH	@ HOUR(S)	0	ON DAY(S)	23
MAXIMUM 24-HR AVERAGE:	14.4 KPH			ON DAY(S)	28
CALMS (≤ 0 KPH)	0.27 %	OPERATIONAL TIME:	741 HRS		
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	99.6 %		
STANDARD DEVIATION	3.92	MONTHLY AVERAGE	10.61 KPH		



01 Hour Averages



— LICA31 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JANUARY 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		21.5	16.7	15.3	14.2	14.4	16.2	14	16.9	16.9	14.9	16.4	16.8	18	17.7	28.2	30	21.7	19.9	16.6	17	18.8	17.7	24.3	21.4	30	
2		21.2	19.5	20.1	22.7	24	22.1	20.8	19.9	21.2	21	20.1	21	21.5	21	23.6	19.5	18.4	18.6	20.1	22.5	22.7	28	29.4	17.7	29.4	
3		13.6	19.2	18.6	20.6	21.9	23.4	23.6	24.1	22.1	21.6	23.4	22.1	19.9	18.8	17.1	21.4	19.1	21.9	20.1	19.9	17.9	19.9	21	16.4	24.1	
4		16.2	17.5	14.4	14.4	13.5	16.4	20.3	19.5	19.9	18.4	12.2	11.6	13.5	12.3	15.5	16.2	20.3	8.5	11.8	12.5	21.4	22.3	17.5	10.9	22.3	
5		10	12.5	12.1	11.8	11.1	12.5	14.6	14.7	15.7	19	22.3	22.3	28	21.8	14.4	12.9	11.6	9	19.5	18.1	17.7	17.9	15.5	16.8	28	
6		16.2	25.4	17.5	18.8	26	27.5	47.7	38.9	37	31.5	42.7	48.1	56.9	50.9	45.5	42.9	30.2	32.8	24.5	16.7	18.2	16.2	16.6	14.5	56.9	
7		14.7	18.8	24.3	22.7	23.8	20.6	16.6	14.6	16.6	18.2	20.5	23.8	23.2	23.4	22.7	22.7	36.1	32.2	24.3	29.8	23.4	22.7	19.9	21.4	36.1	
8		22.3	24.5	22.5	22.7	26.2	26	25.8	23.2	26.9	27.8	35.4	36.5	33.7	36.3	38.1	35	36.1	36.5	39.6	34.8	36.4	33.3	32.8	35.5	39.6	
9		32.6	33.7	34.4	37.4	33.5	30	29.8	30.2	31.5	38.1	35.2	33.5	30	30.9	31.1	34.4	32.4	31.3	37	35.9	33.5	31.5	26.7	38.5	38.5	
10		30.2	33.1	30.4	29.6	29.3	30.2	30.9	28.9	27.6	29.1	25.6	28.5	26.2	26	24.1	25.8	28	23.6	27.1	24.5	39	27.4	14.5	15.1	39	
11		16	15.5	18.8	26.3	16.7	10.9	8.6	12.9	14.4	22.7	24.9	28.9	30.9	30.2	21.6	17.5	18.6	16.4	19	21.4	24.3	23.6	23.8	21.4	30.9	
12		26	21	19	19.7	26.5	25.6	11.4	20.6	17.1	17.9	16.6	17.3	25.6	23.2	18.2	17.1	18.2	23.6	19.5	30.4	25.6	21.5	17.3	13.8	30.4	
13		20.8	22.8	19.5	19	23.2	19.9	18.8	20.2	16.9	18.2	23.7	27.4	24.3	23.2	24.1	27.8	23.6	25.6	24.1	26.9	22.5	24.1	28	25.2	28	
14		24.9	23	21.6	24.3	28.9	25.6	25.6	24.5	28.9	23.6	25	25.6	23.2	24.1	26.9	27.4	25.8	24.9	25.8	36.6	28.5	42.5	32.2	26.3	42.5	
15		21.9	19.3	20.6	13.6	17.7	28.9	18	19.7	17.1	18.6	24.3	35.9	39.2	49.7	35.5	150.8	137	141.2	26.7	50.1	136.6	15.3	38.8	39.5	150.8	
16		60.9	19.3	20.4	20.6	17.8	17.3	17.3	17.8	18.2	20.1	23.6	23.8	26	24.5	24.9	25.6	29.4	30	26.9	25.4	26.1	34.8	23.4	22.3	60.9	
17		25.2	46.6	63.3	17.1	17.5	27.8	29.6	28	18.6	25.2	20.8	29.1	23.8	18.2	20.1	21.2	19	19.7	23	26	25.6	26.3	26	21.4	63.3	
18		23	22.5	19	15.1	17.3	19.7	19.5	17.7	17.3	20.1	26	26.7	23.2	23	19.5	24.5	23.2	20.6	20.1	19.2	18.4	17.9	19	17.5	26.7	
19		21.6	17.7	16.8	19.5	25.2	23.6	23.4	23	31.7	26.5	23.4	22.7	22.7	19.9	24.3	21	22.1	17.5	23	21.9	32.5	24.3	22.5	20.8	32.5	
20		20.4	16.9	16.4	16.8	37.2	24.1	23.2	30.9	21.2	49.9	43.1	42.2	47.5	38.3	19	19.2	18.6	15.5	27.1	21.9	21.9	27.5	31.5	31.3	49.9	
21		32.2	19.9	20.8	19.9	22.3	N	28.5	28.9	22.5	18.2	22.1	24.7	26.2	13.1	21.9	21	27.1	31.1	30.6	30.4	35.7	37.4	26.5	28	37.4	
22		25.2	23.2	23.8	20.6	24.1	N	21	17.7	19.7	19.9	18.6	21.2	19.2	20.3	23.6	18.6	15.3	18.4	19.4	19.9	18.8	21.6	27.3	44	44	
23		64.3	57.7	64.5	48.6	53.8	N	33.9	28.4	25.1	36.3	33.5	45.5	48.6	60.2	63.2	63.6	48.8	48.1	43.1	33.5	30	14.9	18.1	19.3	64.5	
24		14.6	18.6	25.1	26.1	29.1	31.3	34.6	36.1	34.8	36.5	34.8	29.5	28.2	18.1	15.5	13.8	12.5	11.1	10.9	11.8	8.9	8.7	12.1	9.8	36.5	
25		10	12	16.8	12.9	20.6	12.9	21.4	16.8	18.4	20.1	22.7	23.9	25.4	22.1	19	19.4	16.6	13.1	14.9	12.5	12.2	11.1	14	13.8	25.4	
26		17.9	19.4	21.4	17.2	19.9	19.4	19.2	12.2	15.7	18.2	14.8	12	15.7	12.9	P	20.1	17	16.6	20.5	18.2	19.2	16.6	15.3	19.4	21.4	
27		16.4	12.7	17	18.4	14.2	15.7	17.1	20.5	20.1	21	16.6	25.6	18.1	25.6	22.3	19	15.3	14.2	25.1	21.6	46.6	59.5	38.3	39.4	59.5	
28		37.4	48.1	56.9	47	56	56.2	47.5	45.7	46.6	47.3	37	37.2	34.8	37	34.1	28.7	30.2	29.5	33.5	32.4	30.2	28	28.7	29.1	56.9	
29		26.5	25.6	26.5	23.4	19.9	19.2	20.6	18.8	18.8	17.1	21.4	23.4	24.8	22.5	20.6	17.3	38.3	147.5	155.6	35.9	10.3	22.7	11.4	20.4	155.6	
30		22.1	16.8	19.9	17.7	14	16.4	15.3	12.5	10.3	10.9	15.8	12.3	26	37.6	65	34.6	42	12.5	28	N	N	143.6	5.5	25.6	143.6	
31		29.8	28.7	27.8	48.2	28.9	24.5	19.5	20.1	23.6	23	22.8	21.6	21.6	21.7	22.1	19.3	23.2	18.8	17.8	20.8	15.3	20.2	38.3	19	48.2	
PEAK		64.3	57.7	64.5	48.6	56.0	56.2	47.7	45.7	46.6	49.9	43.1	48.1	56.9	60.2	65.0	150.8	137.0	147.5	155.6	50.1	136.6	143.6	38.8	44.0		

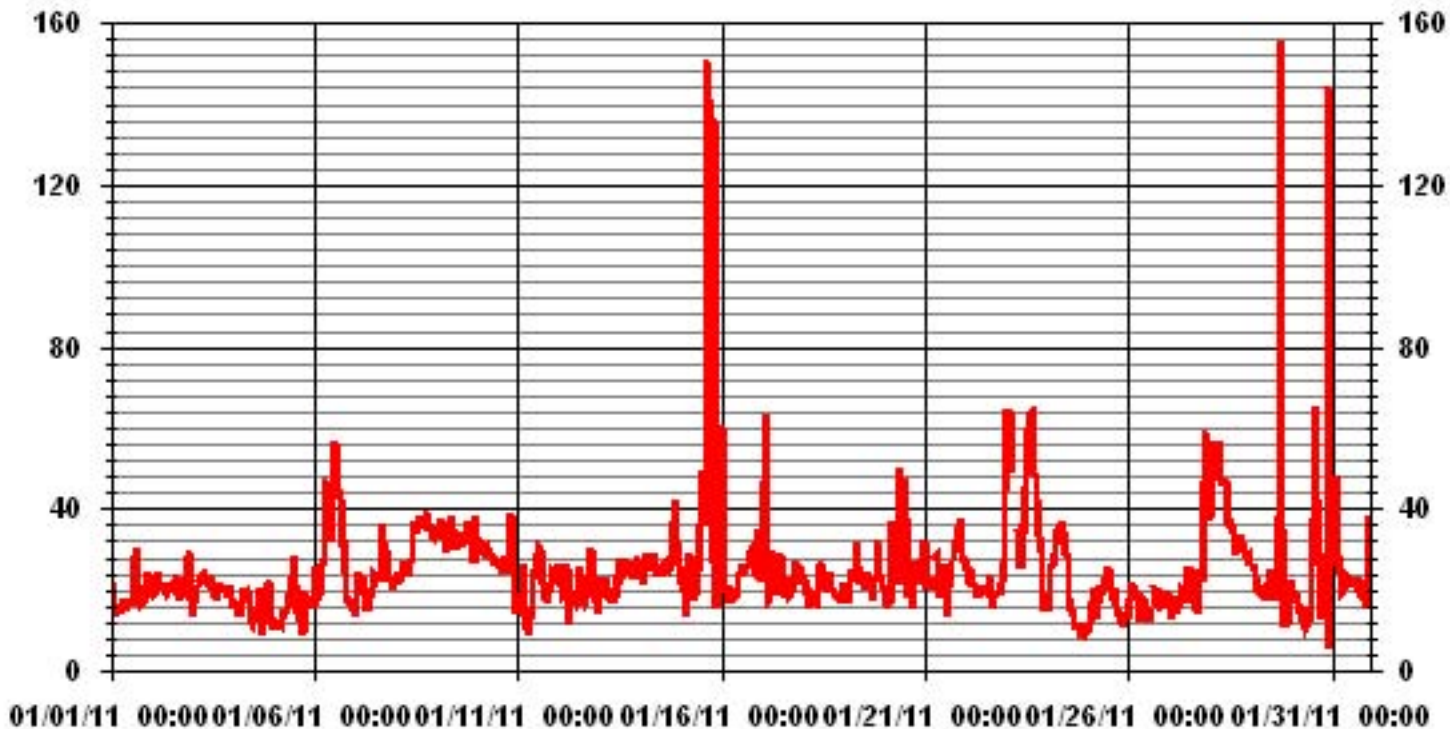
STATUS FLAG CODES

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

MAXIMUM INSTANTANEOUS READING	155.6	KPH	@ HOUR(S)	18
			ON DAY(S)	29

01 Hour Averages



— LICA31 WSMAX KPH

LICA31
WSP / WDR Joint Frequency Distribution (Percent)

January 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	.26	.40	.53	1.61	1.61	1.75	1.21	.40	.00	.00	.26	.00	.67	.40	.26	.26	9.71	
< 12.0	3.77	2.02	1.88	4.58	3.37	2.69	2.96	4.04	3.91	3.10	3.50	3.91	2.42	5.12	4.45	4.04	55.87	
< 20.0	5.26	1.61	3.23	.40	.94	1.07	1.75	3.64	1.48	.53	.26	1.07	1.07	1.61	3.23	4.99	32.25	
< 29.0	.13	.40	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.40	.40	.00	.53	1.88	
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	9.44	4.45	5.66	6.61	5.93	5.53	5.93	8.09	5.39	3.64	4.04	4.99	4.58	7.55	7.96	9.85		

Calm : .26 %

Total # Operational Hours : 741

Distribution By Samples

		Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 6.0	2	3	4	12	12	13	9	3			2		5	3	2	2	72	
< 12.0	28	15	14	34	25	20	22	30	29	23	26	29	18	38	33	30	414	
< 20.0	39	12	24	3	7	8	13	27	11	4	2	8	8	12	24	37	239	
< 29.0	1	3											3	3		4	14	
< 39.0																		
>= 39.0																		
Totals	70	33	42	49	44	41	44	60	40	27	30	37	34	56	59	73		

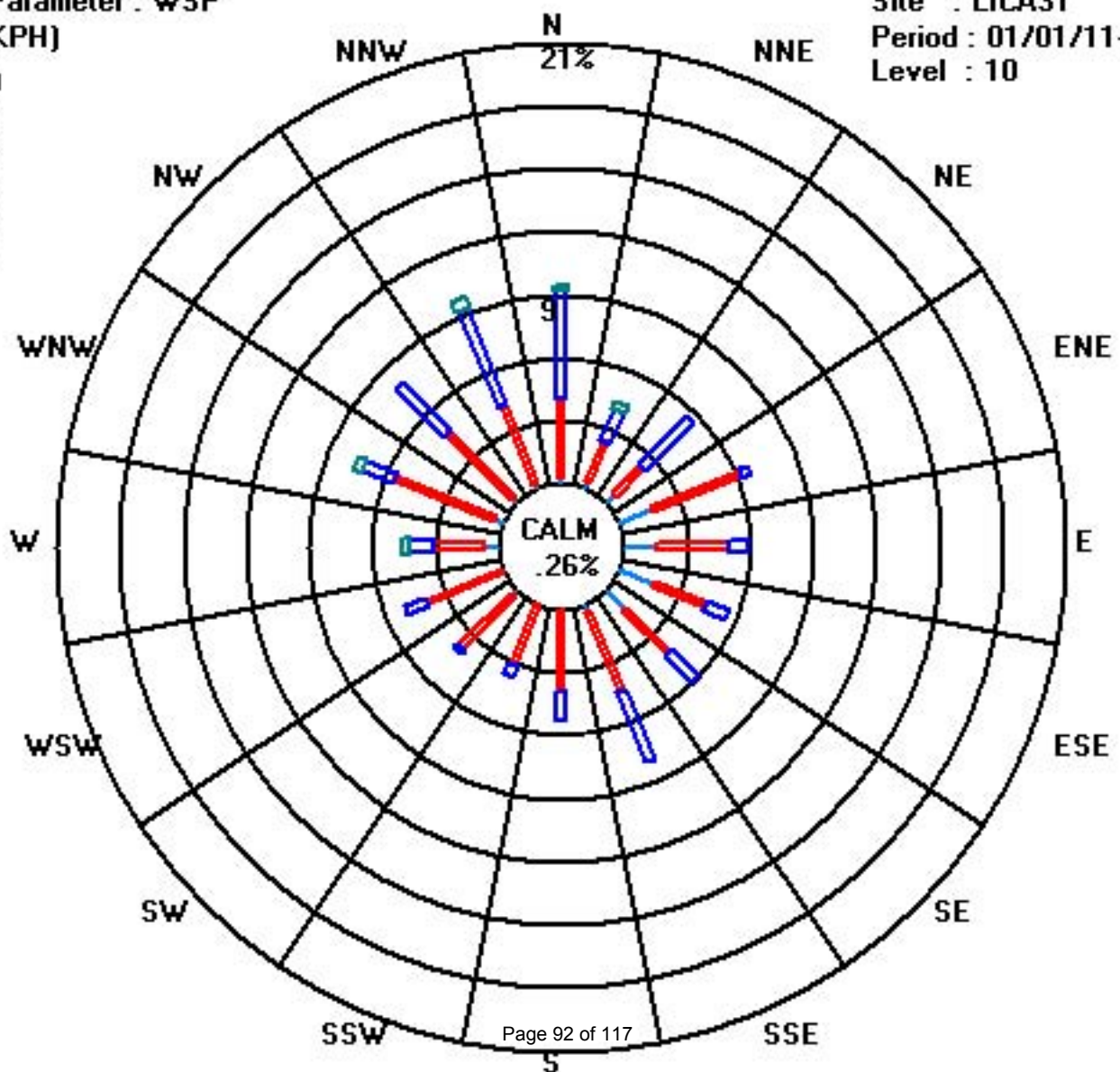
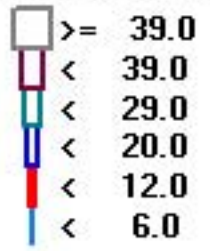
Calm : .26 %

Total # Operational Hours : 741

Class Limits (KPH)

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

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JANUARY 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		346	330	325	315	320	314	314	319	314	328	328	307	295	298	302	302	310	284	269	284	297	304	187	185	346	NNW	24				
2		175	158	157	165	178	203	241	213	206	219	212	213	215	226	234	216	225	213	219	227	202	188	189	283	283	W	24				
3		242	233	303	313	334	343	345	341	351	348	340	337	321	306	308	310	321	294	274	284	282	286	285	270	351	N	24				
4		253	259	251	246	239	236	257	261	257	247	241	248	249	246	264	264	225	226	261	286	277	150	146	85	286	WNW	24				
5		110	143	161	169	172	171	191	209	218	244	253	259	261	270	265	265	254	213	338	331	288	278	319	325	338	NNW	24				
6		331	328	338	320	290	271	276	276	292	325	326	326	341	344	354	352	6	11	48	68	50	49	56	75	354	N	24				
7		86	108	105	114	108	358	6	17	35	50	55	60	53	51	90	93	89	75	40	17	13	22	10	4	358	N	24				
8		13	20	11	11	21	11	0	340	331	331	335	341	330	333	334	332	330	330	330	324	330	333	342	354	354	N	24				
9		354	336	344	338	338	7	32	10	11	350	346	6	38	32	32	32	33	39	34	28	28	44	48	41	354	N	24				
10		43	39	24	34	42	39	43	46	49	35	53	43	47	49	61	42	48	59	43	169	173	166	159	161	173	S	24				
11		164	161	151	138	134	100	94	90	89	45	7	358	358	27	62	98	93	115	136	32	7	15	9	8	358	N	24				
12		6	14	16	18	10	9	67	65	64	74	67	61	63	64	59	119	153	165	161	179	196	209	289	305	305	WNW	24				
13		301	293	296	241	287	299	219	237	276	253	210	195	195	199	206	192	187	179	175	173	162	161	169	164	301	WNW	24				
14		164	161	156	166	175	180	171	179	188	193	195	192	179	179	174	177	178	168	166	178	173	176	171	161	195	SSW	24				
15		155	144	133	62	74	143	148	155	151	146	95	95	38	3	172	124	102	13	10	109	105	122	105	106	172	S	24				
16		97	89	73	78	64	61	55	139	152	151	149	155	163	162	164	163	176	183	182	183	175	166	160	161	183	S	24				
17		166	170	166	160	135	66	72	80	92	103	102	100	96	92	94	79	36	29	17	1	1	1	353	354	354	N	24				
18		351	347	329	301	308	290	289	299	316	315	265	280	288	302	214	222	292	292	300	232	280	279	268	267	351	N	24				
19		343	333	332	349	354	346	222	241	304	238	231	224	226	229	207	205	234	301	225	192	166	5	7	3	354	N	24				
20		345	340	74	66	68	64	70	80	132	110	118	214	296	298	333	327	322	208	211	225	241	248	245	345	NNW	24					
21		252	219	215	219	206	N	185	167	153	94	107	88	85	146	224	198	145	82	75	82	83	71	91	83	252	WSW	23				
22		85	86	86	130	21	N	350	309	273	272	283	287	299	312	306	303	306	305	313	320	356	326	314	290	356	N	23				
23		284	266	279	282	273	N	357	23	10	352	355	338	342	345	344	347	350	356	27	39	46	75	72	76	357	N	23				
24		109	116	132	125	137	152	150	156	152	156	148	143	150	153	134	124	126	128	126	121	131	104	98	98	156	SSE	24				
25		124	103	48	81	124	122	122	129	121	124	127	136	127	128	142	138	143	159	163	147	120	123	104	108	163	SSE	24				
26		123	126	131	142	116	118	113	114	98	67	131	121	99	119	132	253	251	248	245	250	238	251	255	280	280	W	24				
27		274	257	280	326	333	329	344	350	357	354	347	321	326	280	314	315	335	337	284	257	251	283	324	314	357	N	24				
28		331	342	1	17	13	19	23	12	338	359	350	16	3	346	340	4	323	342	322	323	324	319	318	313	359	N	24				
29		307	302	308	304	298	300	304	309	303	292	292	298	297	165	155	70	62	103	240	81	57	52	47	92	309	NW	24				
30		160	155	133	61	57	64	60	60	51	59	69	59	66	78	98	82	100	109	109	116	272	232	126	5	272	W	24				
31		357	3	5	3	5	354	353	354	353	352	346	350	338	338	337	333	346	337	322	331	319	294	299	302	357	N	24				
HOURLY AVG		357	347	344	349	354	358	357	354	357	359	355	358	358	346	354	352	350	356	338	331	356	333	353	354							

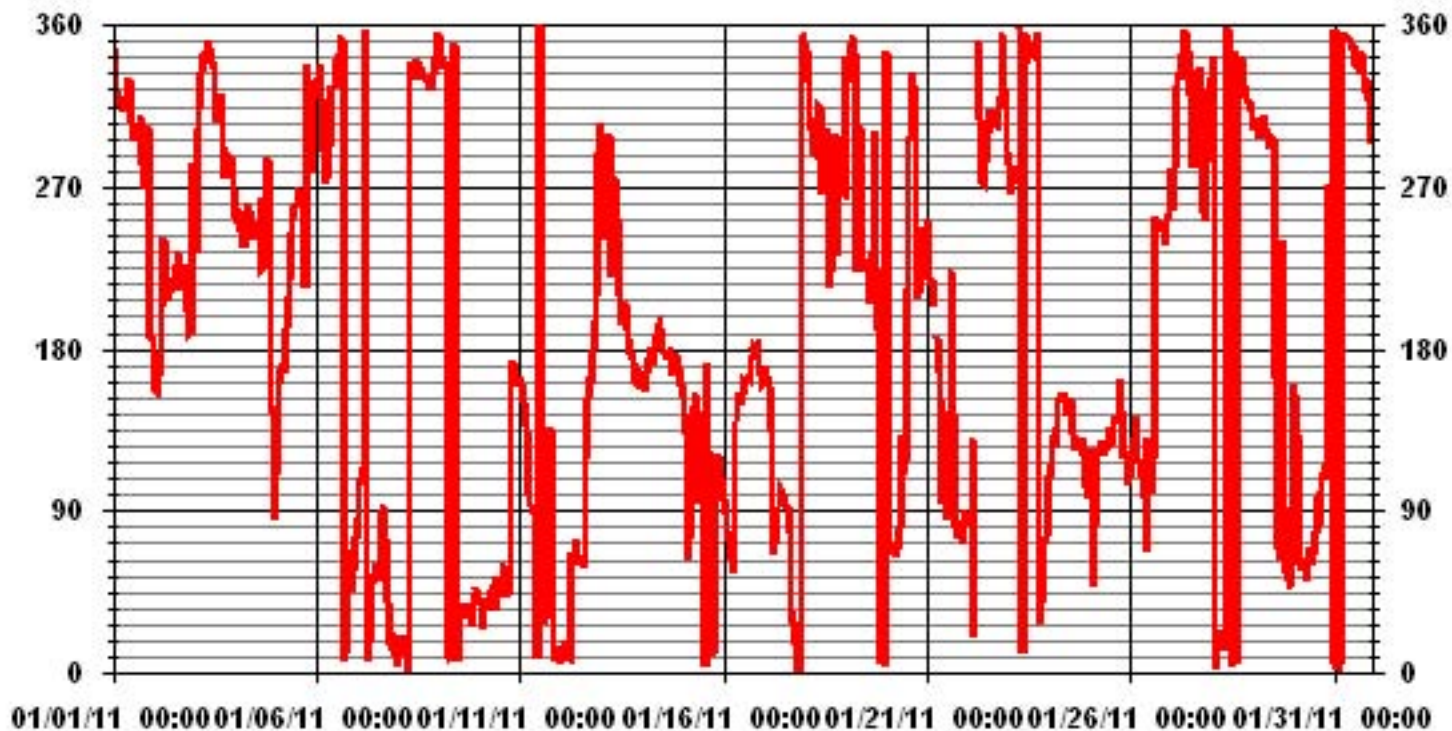
STATUS FLAG CODES

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:	741 HRS
STANDARD DEVIATION	110.96	AMD OPERATION UPTIME	99.6 %
		MONTHLY AVERAGE	345 DEG

01 Hour Averages



— LICA31 WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JANUARY 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	11	8	5	5	7	7	13	7	8	8	10	7	9	5	7	5	15	9	13	12	12	23	24
2	33	26	12	8	17	45	48	37	35	15	15	26	27	20	28	17	18	14	13	16	12	11	37	28
3	11	11	24	11	12	15	13	12	11	14	14	18	13	9	6	6	6	15	10	13	12	12	11	9
4	3	4	4	4	3	5	5	5	5	6	5	9	18	7	7	15	23	7	6	9	23	9	13	11
5	18	15	13	11	10	10	12	9	7	7	6	8	8	12	10	7	8	7	32	3	21	24	6	8
6	13	18	16	15	15	13	35	71	90	74	54	35	29	27	25	27	30	32	28	17	22	20	18	12
7	7	5	10	3	29	17	24	9	7	13	23	25	14	29	10	8	9	85	69	51	43	41	42	36
8	36	32	41	36	32	34	31	23	14	14	13	14	16	13	14	13	14	14	16	26	37	46	52	53
9	52	48	51	42	51	56	47	57	54	48	49	55	42	40	38	35	36	32	34	44	41	26	16	24
10	32	29	49	48	32	33	28	24	31	50	29	42	48	48	23	53	45	26	48	18	46	19	2	2
11	3	2	23	38	14	9	7	9	9	20	8	8	17	31	33	9	8	9	10	15	11	9	8	9
12	13	6	7	7	7	19	8	9	11	16	12	17	11	11	13	27	9	6	5	34	18	8	18	10
13	11	13	14	29	21	26	20	31	24	26	18	29	24	16	16	21	33	25	24	19	19	13	13	14
14	18	24	17	16	21	27	29	26	23	19	17	27	36	26	19	18	22	20	21	23	24	27	17	13
15	11	35	24	15	29	46	26	9	8	20	24	41	50	60	35	53	50	44	36	28	24	13	17	27
16	23	17	14	18	13	12	10	28	9	11	16	15	15	14	21	19	31	21	20	19	21	14	11	11
17	12	22	16	4	15	10	15	21	24	13	13	21	20	18	17	20	13	14	11	24	18	15	14	15
18	18	14	11	11	30	18	14	9	9	11	12	17	18	27	16	17	20	13	14	20	11	11	7	17
19	14	8	5	7	37	31	30	22	25	23	27	20	21	17	21	32	23	12	20	24	43	24	12	13
20	24	53	42	37	41	36	33	26	31	50	53	59	88	60	28	9	5	4	26	14	27	36	33	20
21	30	26	25	28	24	N	25	25	27	14	14	14	29	62	20	30	72	9	46	9	9	62	59	9
22	21	9	10	13	49	N	37	43	22	20	18	10	7	6	6	6	8	9	11	20	18	26	27	15
23	15	32	24	22	14	N	61	55	46	40	42	37	35	26	22	22	22	26	18	15	17	11	7	9
24	3	4	43	25	36	40	32	32	31	28	16	12	12	12	8	5	6	12	11	7	14	29	33	14
25	7	23	28	22	5	6	3	4	4	4	8	33	32	15	7	7	21	40	55	34	14	18	18	20
26	7	11	9	9	7	6	9	9	11	11	11	11	10	11	11	7	5	5	7	6	5	5	7	12
27	9	6	21	5	7	4	10	8	10	19	37	22	13	49	9	7	8	7	28	21	8	43	49	65
28	56	38	18	18	36	25	32	36	36	39	43	42	44	48	54	56	45	48	27	13	14	17	16	13
29	18	16	17	16	13	12	15	17	15	11	10	23	19	39	26	24	16	45	63	42	8	11	7	24
30	5	5	17	11	10	11	11	9	6	7	13	11	24	37	42	29	26	6	47	49	63	74	6	34
31	43	42	45	36	27	38	2	3	2	5	5	6	8	9	9	14	8	9	8	19	26	27	32	29

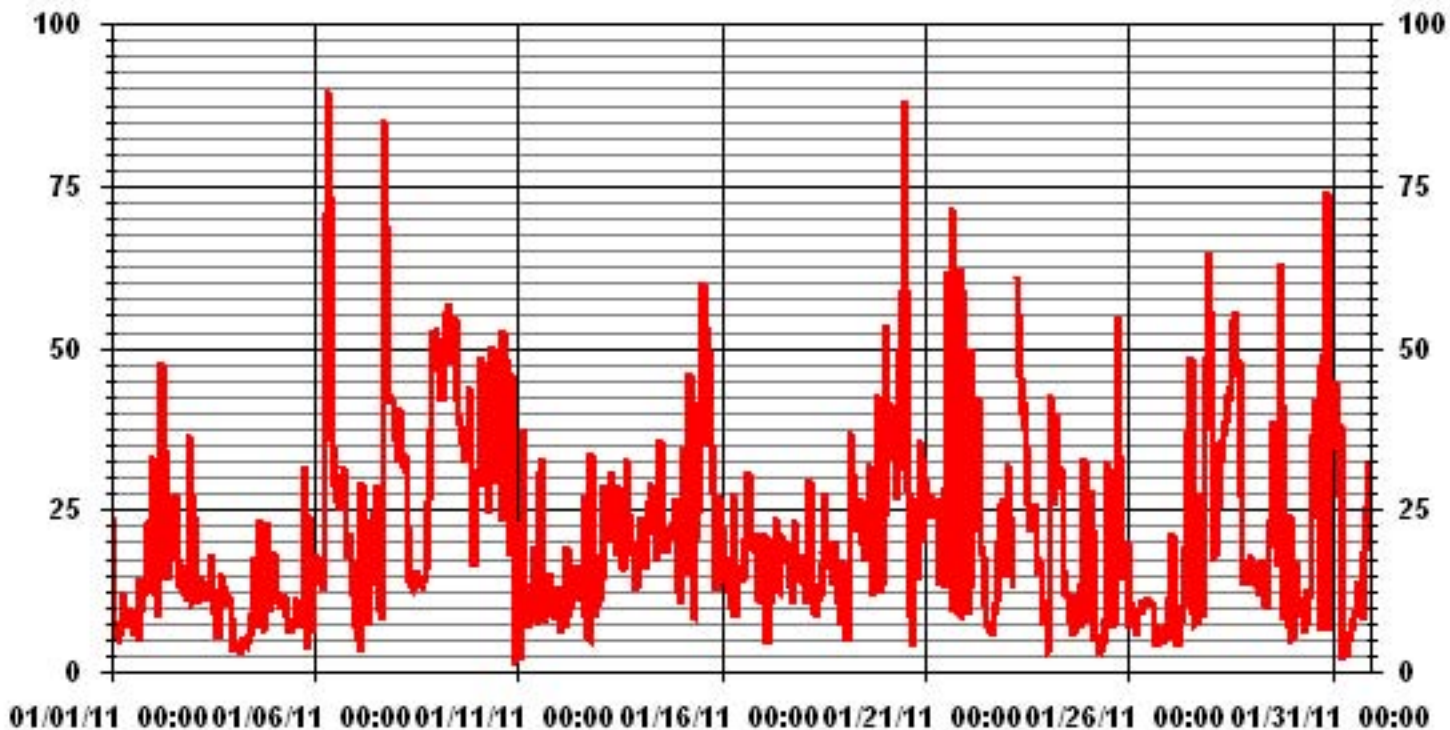
STATUS FLAG CODES

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: 741 HRS

01 Hour Averages



— LICA31 STDWDIR DEG

Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report

Station Information

Calibration Date	January 20, 2011	Previous Calibration	December 15, 2010
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	9:09	End Time (MST)	12:56
Reason:	Monthly Calibration		
Barometric Pressure	915 mmHg	Station Temperature	23 Deg C
Cal Gas	51.4 ppm	Cal Gas Expiry date	August 13, 2011
DAS Output Voltage	0 - 1 Volts		

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	468	Method:	Fluorescent
Converter Make / Model:	-	S/N :	-		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000 ppb		
Sample Flow / Box Temp	526 ccm 33.8 Deg C	523 ccm 34.4 Deg C	
HVPS / Lamp Setting	529 2475	529 2472	
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	64.7 1.139	64.1 1.138	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4998	0	0	-1	N/A
4998	0	0	0	N/A
4925	73	751	753	0.9970
4960	38.9	400	400	0.9999
4982	16.5	170	170	0.9981
4998	0	0	0	N/A
Sum of Least Squares				0.9977
New Correction Factor				0.9970

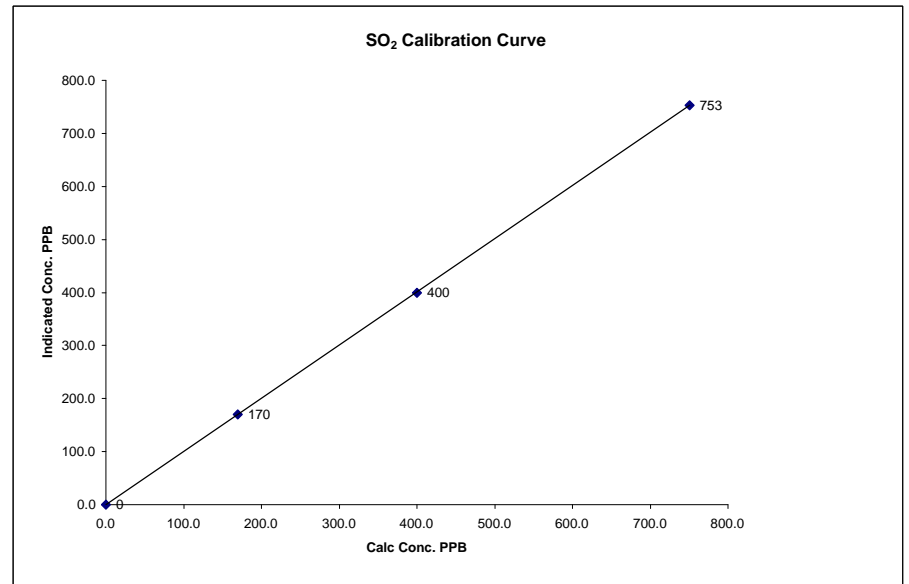
	Before Calibration	After Calibration
Auto Zero	0.4	0.9
Auto Span	369	373
Sample Lines Connected		YES
Percent Change from Previous Calibration		0.2%

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

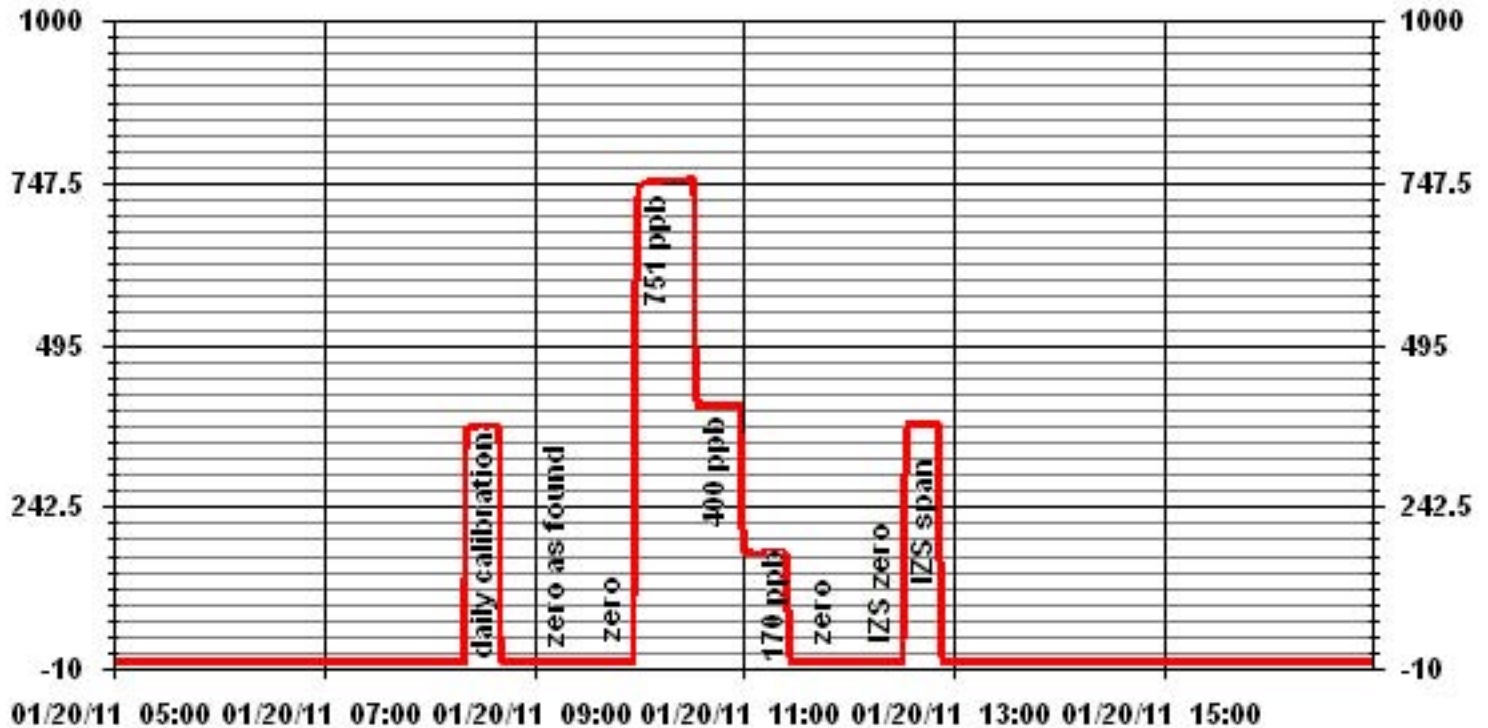
Calibration Date	January 20, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	9:09
End Time (MST)	12:56

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999997
0	0	n/a	Intercept	(± 3% F.S.)	-0.285483
170	170	0.9981			
400	400	0.9999			
751	753	0.9970			



Notes:

01 Minute Averages



Hydrogen Sulphide

H₂S Calibration Report

Station Information

Calibration Date	January 19, 2011	Previous Calibration	December 15, 2010
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	9:50	End Time (MST)	13:48
Reason:	Monthly Calibration		
Barometric Pressure	927 mmHg	Station Temperature	24 Deg C
Cal Gas	10.6 ppm	Cal Gas Expiry date	05/12/2011
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	550 ccm	35.9 Deg C	554	35.1	Deg C
HVPS / Lamp Setting	518	2594	518	2595	
PMT / RxCell Temp	8.4 Deg C	50 Deg C	8.4	50	Deg C
Converter / IZS Temp	315 Deg C	45 Deg C	315	45	Deg C
Offset / Slope	58.1	0.981	56.8	1.006	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4997	0	0	-1	NA
4997	0	0	0	NA
4960	37.7	80	78	1.0251
4960	37.7	80	80	0.9995
4982	18.9	40	40	1.0015
4986	10.9	23	23	1.0053
4997	0	0	0	N/A
Sum of Least Squares				1.0002
New Correction Factor				0.9995

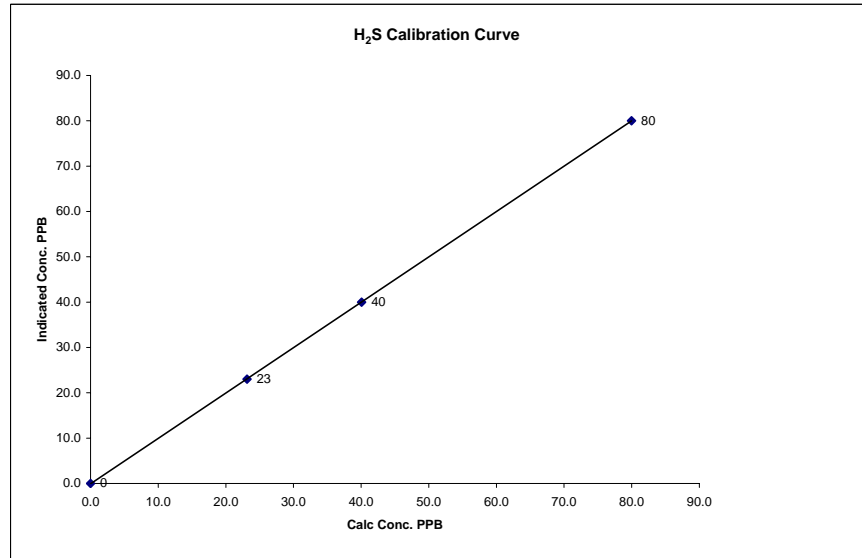
		Before Calibration	After Calibration
Auto Zero		-0.3	0.3
Auto Span		42	43
Sample Lines Connected			YES
Percent Change from Previous Calibration			-2.5%

Calibration Performed by: Ting Xu

H₂S Calibration Curve

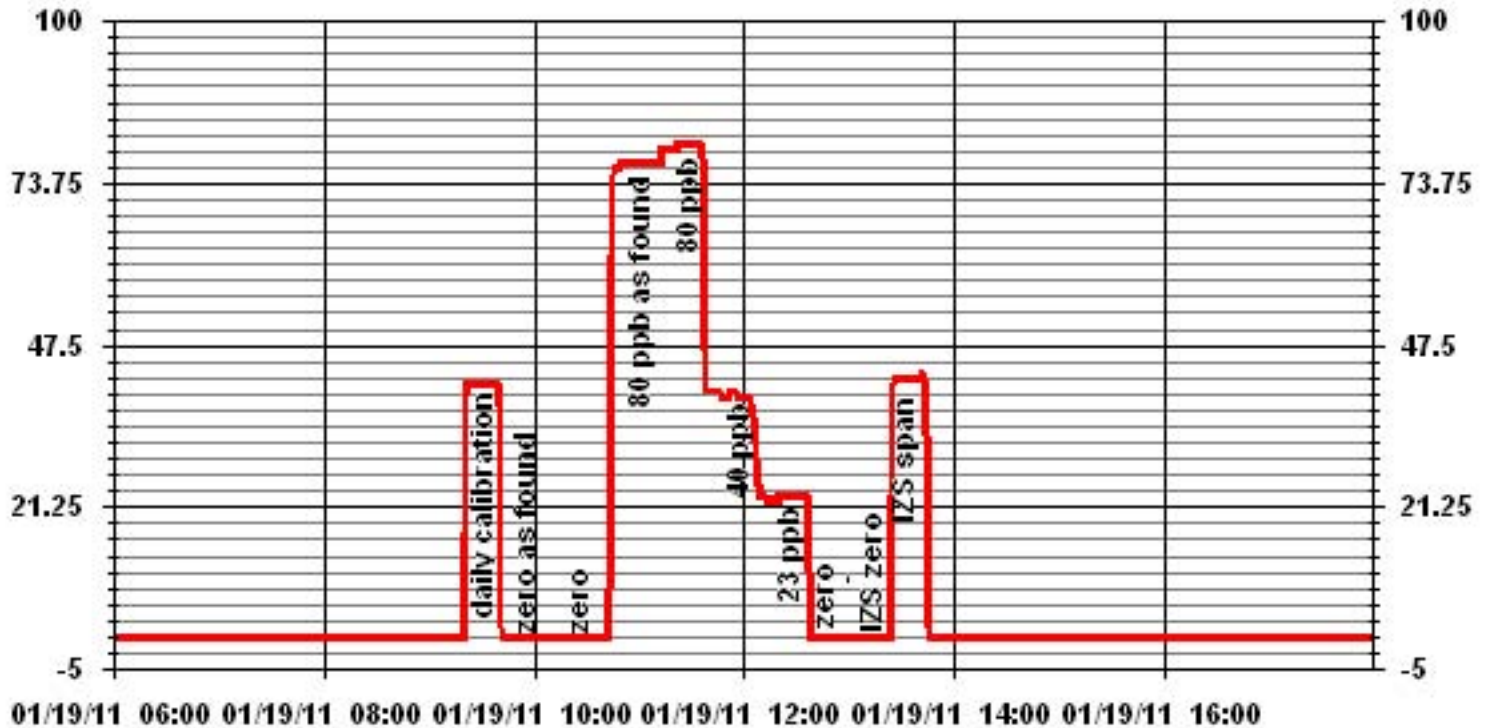
Calibration Date	January 19, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	9:50	End Time (MST)	13:48

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.999996 1.000886 -0.067682
0	0	n/a	Intercept		
23	23	1.0053			
40	40	1.0015			
80	80	0.9995			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	January 19, 2011	Previous Calibration	December 15, 2010
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
:	(MST) 13:15	End Time	(MST) 16:35
Reason:	Monthly Calibration		
Barometric Pressure:	931 mmHg	Station Temperature:	23 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
1999	0.0	0.0	0.0	N/A
1999	70.0	39.6	41.0	0.9665
1999	70.0	39.6	39.9	0.9931
1999	35.0	20.2	20.1	1.0027
1999	20.0	11.6	11.4	1.0177
1999	0	0.0	0.0	N/A
Correction Factor:				0.9931

Previous Calibration Correction Factor:	0.9907
Current Correction Factor Before Span Adjust:	0.9665
Percent Change:	2.50%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.1	0.0
Auto Span	35.8	35.0
Sample Lines Connected		YES

Cylinder Pressures

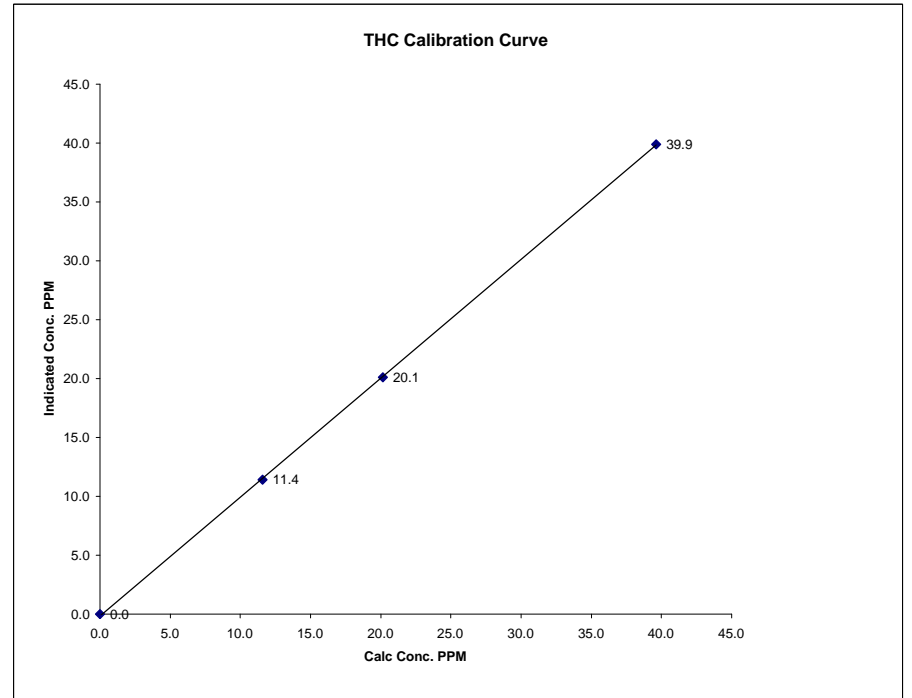
Span	1500 psi	
Hydrogen	900 psi	
Zero Air	34 psi	Unlimited API 701

Calibration Performed by: Ting Xu

THC Calibration Curve

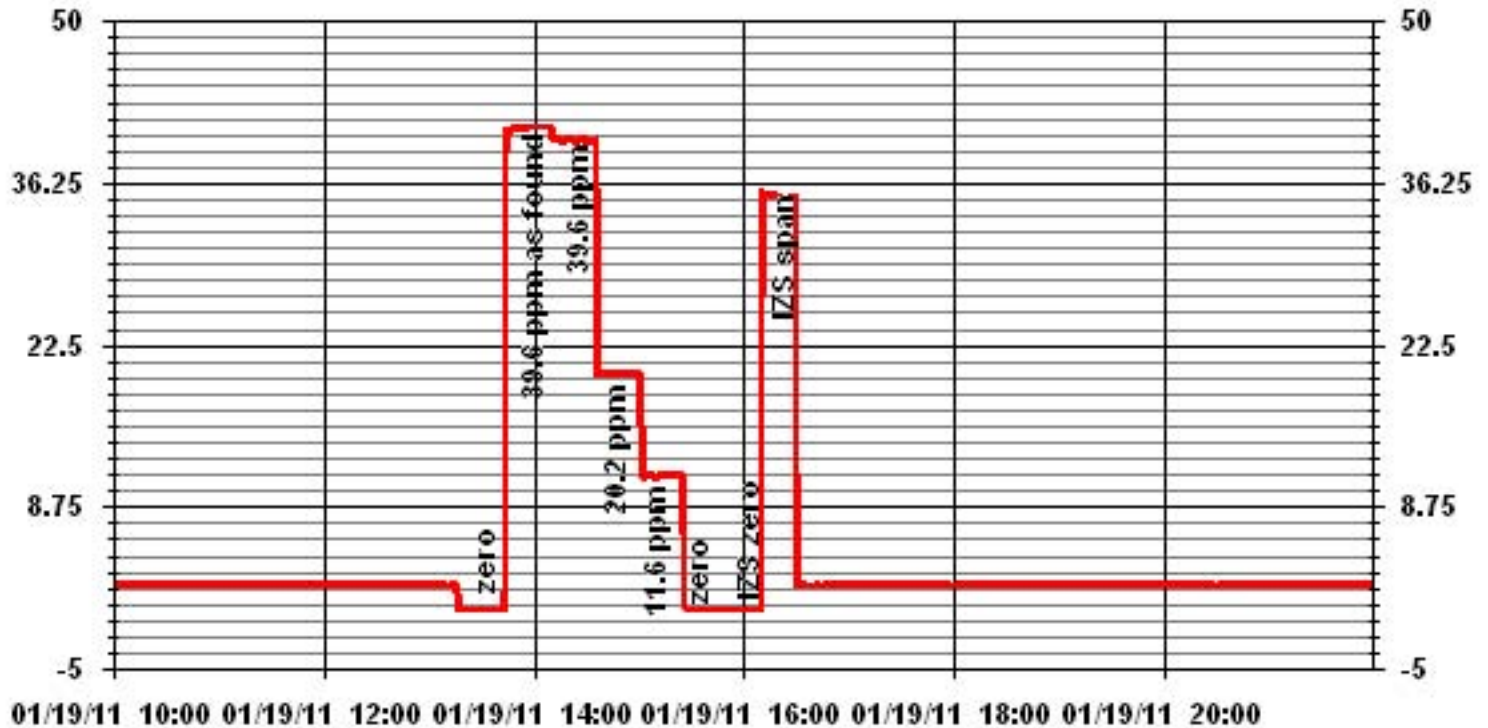
Calibration Date	January 19, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	13:15	End Time (MST)	16:35

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999931
0.0	0.0		Intercept	(± 3% F.S.)	-0.146964
11.6	11.4	1.0177			
20.2	20.1	1.0027			
39.6	39.9	0.9931			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO₂ Calibration Report

Station Information

Calibration Date	January 19, 2011	Previous Calibration	December 15, 2010
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	9:50	End Time (MST)	16:11
Reason:	Monthly Calibration		Other
Barometric Pressure	927 mmHg	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 50.8 ppm	NO 50.4 ppm	Cal Gas Expiry date 05-Aug-12
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	473 ccm	313.5 Deg C		472 ccm	315.0 Deg C		
Ozone Flow / Vacuum	73 ccm	4.6 "Hg-A		73 ccm	4.6 "Hg-A		
HVPS / A ZERO	662 Volts	19.8 MV		662 Volts	20 MV		
Rx/ Temp / PMT Temp	50.0 Deg C	6.9 Deg C		50.0 Deg C	6.9 Deg C		
Box Temp / IZS Temp	31.8 Deg C	45.1 Deg C		33.5 Deg C	45.1 Deg C		
Offset	2.5 NOx	0.5 NO		2.5 NOx	0.5 NO		
Slope	1.108 NOx	1.007 NO		1.003 NOx	0.992 NO		
NO ₂ COEF / Conv Efficiency	NA NO ₂	0.993		NA NO ₂	0.993		

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO ₂	NOx	NO	NO ₂	NOx	NO
4994	0.0	----	0	0	0	0	0	-1	----	----
4919	74.2	----	755	749	----	766	760	6	0.9855	0.9855
4919	74.2	----	755	749	----	754	748	6	1.0012	1.0013
4961	34.6	----	352	349	----	355	352	3	0.9911	0.9917
4978	16.8	----	171	170	----	176	175	1	0.9708	0.9687
4996	0.0	----	0	0	0	-1	0	-1	----	----

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO ₂ Correction Factor	NO ₂ Conv Efficiency
			NOx	NO	NO ₂	NOx	NO	NO ₂		
4919	74.2	----	755	749	----	755	748	7	----	----
4919	74.2	550	755	----	522	756	233	523	0.9962	100.19%
4919	74.2	300	755	----	289	757	466	291	0.9897	100.71%
4919	74.2	100	755	----	119	755	636	118	1.0000	99.11%

Linearity	Sum of Least Squares	NOx= 0.998	NO= 0.998	NO ₂ = 0.997
OK? Yes	Correction Factors:	NOx= 1.0012	NO= 1.0013	NO ₂ = 0.9962
Average Converter Efficiency= 100.00%				

Before Calibration				After Calibration			
Auto Zero	-0.2 NOx	-0.4 NO ₂		-0.3 NOx	-1.4 NO ₂		
Auto Span	677 NOx	660 NO ₂		660 NOx	646 NO ₂		
Sample Lines Connected				YES			
Percent Change from Previous Calibration		NOx 1.3%	NO 1.2%	NO ₂ 0.6%			

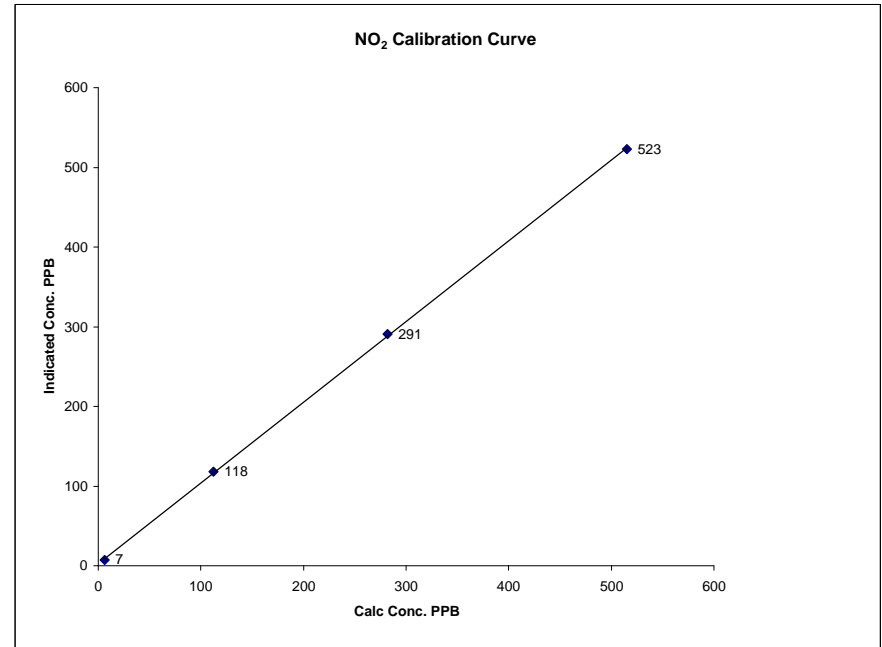
Notes Additional GPT point done for ozone calibration. O3 set point 450, NO=322, NO₂=433

Calibration Performed by: Ting Xu

NO₂ Calibration Curve

Calibration Date	January 19, 2011	LICA	
Company		St. Lina	
Plant / Location			
Start Time (MST)	9:50	End Time (MST)	16:11

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	
6	7	N/A	Slope (0.85 to 1.15)	0.999901
112	118	0.9492	Intercept (± 3% F.S.)	1.012471
282	291	0.9691		3.14725
515	523	0.9847		

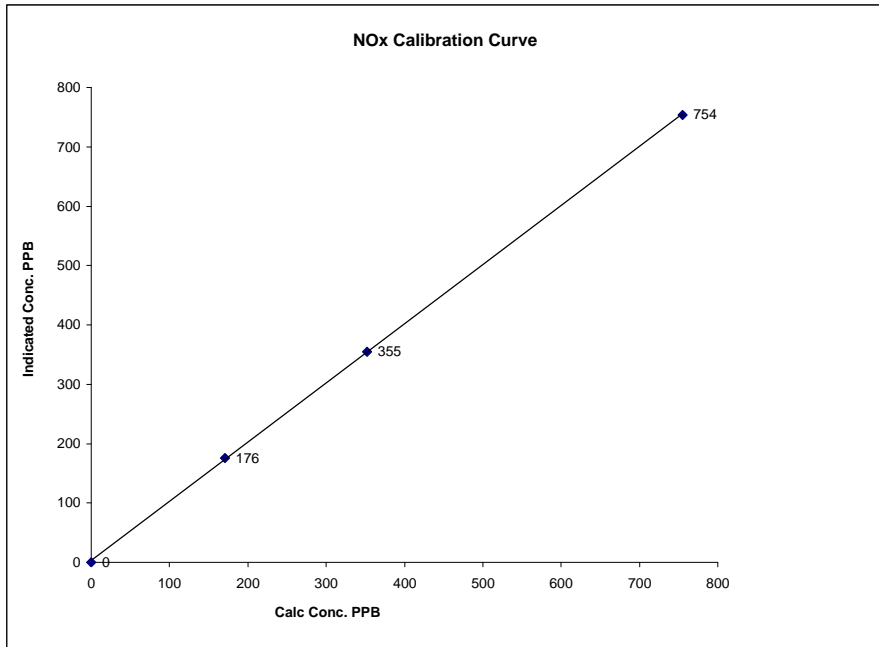


Notes:

NOx Calibration Curve

Calibration Date January 19, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:50 End Time (MST) 16:11

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999936
0	0	N/A	Slope (0.85 to 1.15)	0.996659
171	176	0.9708	Intercept (± 3% F.S.)	2.91457
352	355	0.9911		
755	754	1.0012		

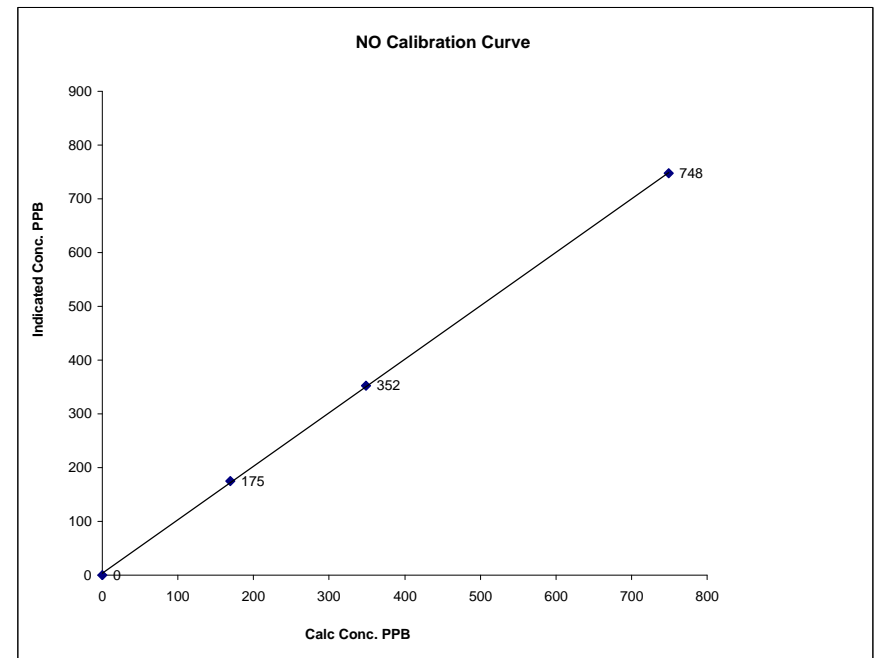


Notes:

NO Calibration Curve

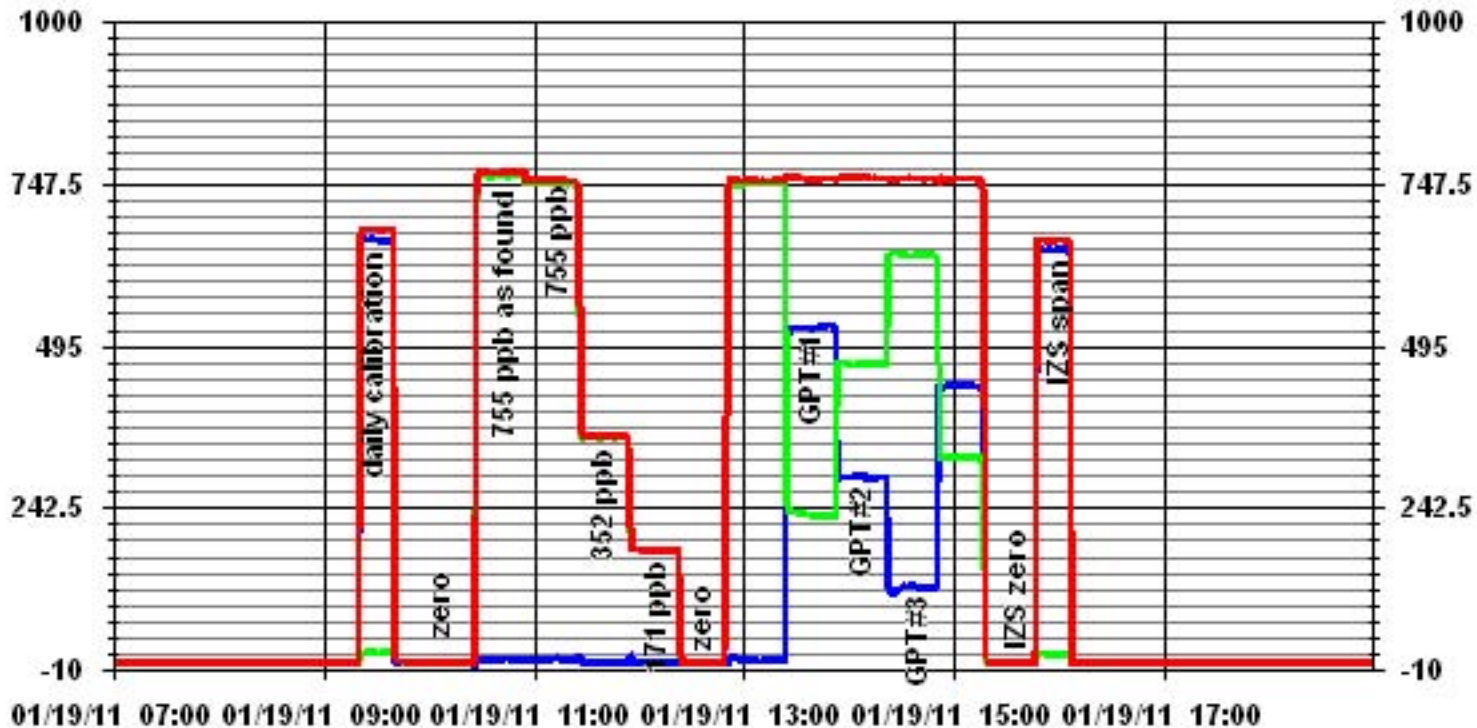
Calibration Date January 19, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:50 End Time (MST) 16:11

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999930
0	0	N/A	Slope (0.85 to 1.15)	0.989130
170	175	0.9687	Intercept (± 3% F.S.)	6.3113
349	352	0.9917		
749	748	1.0013		



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	January 20, 2011	Previous Calibration	December 15, 2010
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	9:12	End Time (MST)	12:56
Reason:	Monthly Calibration		
Barometric Pressure	915 mm Hg	Station Temperature	23 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	
	712 ccm	730 ccm	715 ccm	733 ccm
Concentration Range	0 - 500 ppb			
Cell A Flow / Cell B Flow				
Pressure	685.6 mmHg		691.3 mmHg	
Bench Temp	55.7 Deg C		55.6 Deg C	
O3 Lamp / Box Temp	80 Deg C	32.8 Deg C	80 Deg C	32.7 Deg C
Offset / Slope	0.2	0.996	-0.8	0.996

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4994	0	0	-1	N/A
4994	0	0	0	N/A
4994	450	426	424	1.0047
4994	300	282	284	0.9930
4994	120	112	115	0.9739
4994	0	0	1	N/A
Sum of Least Squares				N/A
New Correction Factor				1.0047

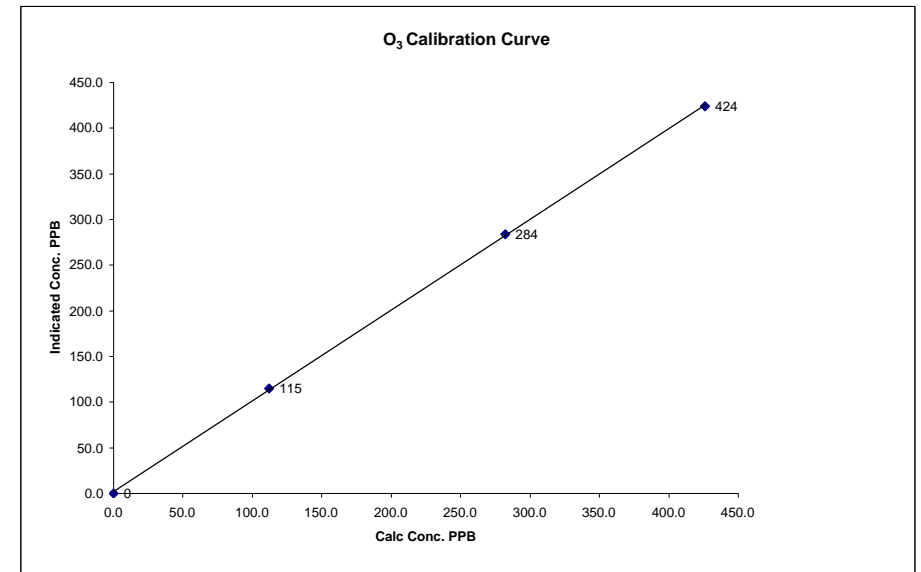
	Before Calibration	After Calibration
Auto Zero	0.5	1.6
Auto Span	357	358
Sample Lines Connected		YES
Percent Change from Previous Calibration		-0.5%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

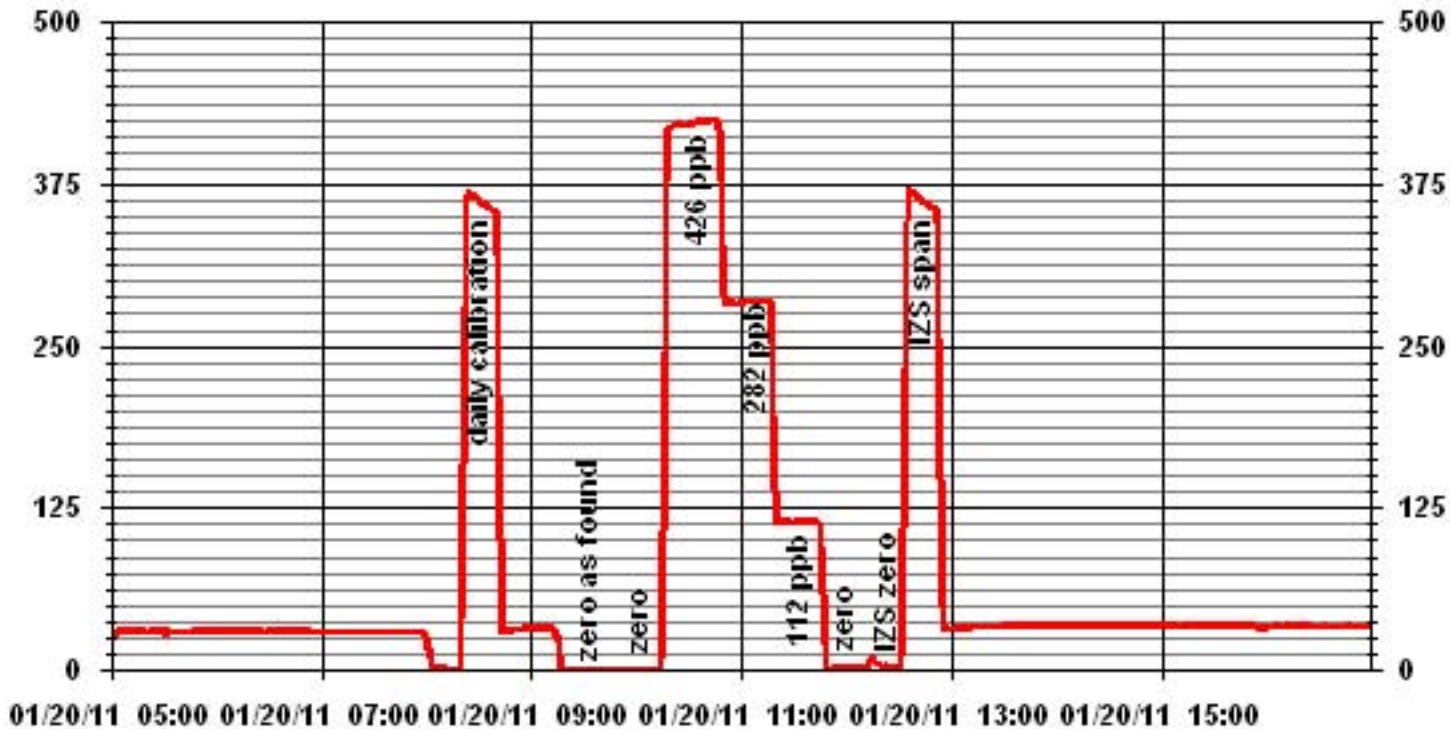
Calibration Date	January 20, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	9:12	End Time (MST)	12:56

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999888
0	0	n/a	Intercept	(± 3% F.S.)	1.852339
112	115	0.9739			
282	284	0.9930			
426	424	1.0047			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM® 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	January 12, 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 (%)	30.4%
Firmware Ver.	1.52	K _o Factor	13125.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	-22.2
		Press (ATM)	0.917

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	0.004	Warnings	None
Pump Vacuum <0.4atm	0.30	Pump Gauge (inHg)	-20
Temperature/Pressure			
Measured Temp (± 2 °C)	-22.0	Δ °C	-0.2
Measured Press (± 0.01atm)	0.916	Δ ATM	0.001
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	83.00%
Measured Main Flow (l/min)	3.09	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	1.31%
Measured Bypass Flow (l/min)	13.58	Flow Adjusted to Measured?	Yes
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	NA	Flow Control = Active	
Aux (< 0.6 l/min)	NA	Report Conditions = Standard (25.0 C and 1atm)	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 13:10 **Finish Time:** 15:23

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 18.6%

Comments: _____

Auditor/s: Shea Beaton