

Lakeland Industry & Community Association

Cold Lake Monitoring Site

Ambient Air Monitoring

Data Report

For

July 2011

Prepared By:



August 26, 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: July 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 – July 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO ₂ (PPB)	172	48	0	0	0.09	2	5	9	8.5	233(SW)	0.7	2, 5	100.0
TRS (PPB)	-	-	-	-	0.04	3	3, 7	3, 2	1.2, 1	69(ENE), 272(W)	0.3	VAR	99.5
NO ₂ (PPB)	159	-	0	-	1.53	5	1, 6	VAR	VAR	VAR	2.3	6	85.2
NO (PPB)	-	-	-	-	0.16	4	11	6	0.5	272(W)	0.7	17	85.2
NO _x (PPB)	-	-	-	-	1.70	7	17	7	1.4	84(E)	2.6	6	85.2
O ₃ (PPB)	82	-	0	-	19.66	50	8	12	9.3	219(SW)	26.8	8	100.0
THC (PPM)	-	-	-	-	2.14	3.4	6	2, 5	3.2, 2.2	246(WSW), 256(WSW)	2.4	VAR	99.6
PM 2.5 (UG/M ³)	-	30	-	0	4.34	20.7	18	21	5.2	151(SSE)	6.2	18	99.5
TEMPERATURE (DEG C)	-	-	-	-	16.81	28.2	18	15	6.5	187(S)	20.8	18	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	74.22	99	24	VAR	VAR	VAR	92.0	26	100.0
VECTOR WS (KPH)	-	-	-	-	6.17	17.8	3	13	-	130(SE)	9.8	4	100.0
VECTOR WD (DEGREES)	-	-	-	-	225(SW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS NA: NOT AVAILABLE

Monthly Non-Continuous Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – July 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
SO ₂	#27	1.0	0.26
H ₂ S	#27	1.12	0.29
NO ₂	#28	1.6	0.5
O ₃	#32	28.8	

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

Xontech Model 910A – July 2, 2011

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

Xontech Model 910A – July 8, 2011

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

Xontech Model 910A – July 14, 2011

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

Xontech Model 910A – July 20, 2011

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

Xontech Model 910A – July 26, 2011

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION – COLD LAKE

PUF cartridge – July 2, 2011

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

No sample was collected on July 2nd as the PUF sampler was not received on time.

PUF cartridge – July 8, 2011

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

PUF cartridge – July 14, 2011

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

PUF cartridge – July 20, 2011

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

PUF cartridge – July 26, 2011

Maximum reading (ng/m3)	Semi-Volatile Organic
<6.059	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. One hour of the maximum concentration was invalidated due to a power failure on July 26th. Data was corrected using daily zero information.

Total Reduced Sulphur (PPB)

- Analyzer make / model –TEI 450i, S/N: 812728560
- Converter - CD NOVA CDN 101, S/N: 250

No operational issues observed during the month. The monthly calibration was performed on July 8th. The span value went below –10% of limited range on July 19th because the permeation tube needed to be replaced. The perm tube was replaced on July 19th. The analyzer would take couples days to stabilize. The as found points check was performed on July 26th to check the analyzer stability; the result was good. The inlet filter was changed before the monthly calibration was started. One hour of the maximum concentration was invalidated due to a power failure on July 26th. Data was corrected using daily zero information.

Ozone (PPB)

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

No operational issue observed during the month. The inlet filter was changed before the monthly calibration was started. One hour of the maximum concentration was invalidated due to a power failure on July 26th. Data was corrected using daily zero information.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Total Hydrocarbon (PPM)

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

The inlet filter was changed before the monthly calibration was started on July 8th. The H2 gas cylinder was replaced on July 21st following by the daily zero/span check. The analyzer flamed out on July 26th due to a power failure, and it was re-lit two hours later. Two hours of data were invalidated due to this issue. One hour of the maximum concentration was invalidated due to a power failure on July 26th. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

The monthly calibration was performed on July 8th. The inlet filter was changed before the monthly calibration was started. The analyzer spanned low on July 26th. The as found points check was performed on July 27th; the result went outside of 15% range. It was found that the issue was due to low sample flow rate. The sample pump was replaced on July 27th. The analyzer was allowed time to stabilize, and then a post-repair calibration was performed. Data was invalidated back to the last valid daily calibration check, which was July 22nd. A total of 110 hours of data was invalidated. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m³)

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

No operational issue was observed this month. A routine Teom audit was performed on July 11th. Both the Teom filter and the FDMS filter was changed on July 11th. Data was corrected using Alberta air quality guideline. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. Four hours of data were invalidated as the data were below –3 ug/m³.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

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

- System make / model –RM Young, S/N: 46553

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

No operational issue was observed during the month. One hour of the maximum wind speed was invalidated due to a power failure on July 26th.

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issue was observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3

No operational issues observed during the month.

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues observed during the month.

Datalogger

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

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

Trailer

No issue was observed during this month. The manifold was cleaned on July 11th.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. All AQI values were within the Good range this month. The highest AQI value of O₃ was 20, on July 8th, in various hours. The highest hourly concentration of PM_{2.5} was 20.7 ug/m³ and an AQI value of 17 on July 18th, hour of 21.

Passive Network

The duplicate sample for H₂S at site #17 was found on the ground when picking up the sample on July 29th.

Volatile Organics (VOCs)

The volatile organics were sampled from July 2nd to July 26th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs in this report were reported as ug/m³ in 3 significant figures.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs scheduled to be sampled from July 2nd to July 26th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m³. No sample was collected on July 2nd, as the PUF sampler was not received on time.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 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	0:00	DAILY MAX	
DAY	HOURLY	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00			
1	10	9	8	5	6	7	8	10	10	12	13	13	13	12	12	13	13	13	13	NA	12	11	9	7	6	13		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	O3_
2	6	6	6	5	5	7	5	8	12	15	16	17	18	18	20	20	20	20	20	20	19	11	7	6	7	20		
	O3_	PM2	PM2	PM2	PM2	O3_	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	PM2	O3_
3	5	4	2	5	6	6	13	14	16	18	20	22	22	23	23	23	23	23	23	23	18	17	15	13	13	11	23	
	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
4	9	9	9	10	9	9	9	10	11	12	13	13	13	13	14	14	14	14	14	14	15	15	14	12	6	7	6	15
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
5	4	5	6	3	2	3	6	10	14	18	18	19	19	20	20	20	20	20	20	20	18	18	17	9	7	5	6	20
	O3_	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_
6	7	5	8	7	5	8	8	8	12	13	13	13	15	15	16	16	16	17	17	17	17	13	10	6	8	9	17	
	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	O3_
7	7	10	6	8	11	11	13	13	12	12	13	14	14	16	18	17	16	15	15	14	14	14	14	14	14	14	18	
	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
8	14	13	12	11	10	10	10	13	-	-	-	-	-	-	20	20	20	17	15	14	12	8	5	6	6	20		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	NA	NA	NA	NA	NA	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
9	6	6	7	6	5	5	8	7	8	10	-	9	11	11	10	9	9	10	12	12	11	11	11	13	11	13		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
10	10	8	6	8	12	12	13	13	12	-	13	13	13	13	13	13	13	13	13	14	14	9	5	2	5	14		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	O3_	
11	5	4	8	2	3	5	2	8	-	15	15	-	-	-	-	-	15	15	15	14	11	7	5	5	3	15		
	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	NA	O3_	O3_	NA	NA	NA	NA	NA	NA	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	O3_	
12	5	4	4	4	3	6	8	-	11	12	13	13	14	15	15	15	15	13	13	13	12	10	7	7	8	15		
	PM2	PM2	PM2	O3_	PM2	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	
13	9	10	10	10	8	9	-	7	8	9	10	11	13	12	14	15	16	16	16	15	13	8	5	5	5	16		
	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	O3_
14	5	3	8	8	3	-	8	8	10	10	9	8	8	9	15	14	17	16	15	14	10	7	8	8	10	17		
	PM2	PM2	O3_	PM2	O3_	NA	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	
15	8	7	10	4	-	7	4	5	6	16	18	21	20	17	15	14	12	11	10	9	8	8	6	5	21			
	O3_	O3_	PM2	O3_	NA	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	
16	5	7	5	-	2	5	7	8	9	10	10	11	12	11	11	11	10	11	10	11	10	6	3	2	6	12		
	O3_	O3_	O3_	NA	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	
17	3	5	-	6	5	1	2	5	9	11	12	14	13	14	15	14	16	17	17	15	12	11	14	11	17			
	PM2	PM2	NA	PM2	PM2	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_	
18	9	-	5	5	3	9	8	8	13	10	15	17	19	18	20	22	20	17	13	10	12	17	16	14	22			
	O3_	NA	PM2	O3_	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	O3_	O3_	O3_	
19	-	6	9	7	5	6	9	10	12	14	14	13	14	14	14	14	14	13	10	10	7	9	11	-	14			
	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	
20	10	8	9	8	-	10	9	9	-	10	12	12	12	12	12	12	12	13	13	14	13	11	12	-	10	14		
	O3_	O3_	PM2	O3_	NA	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	
21	8	8	7	7	7	6	7	8	10	11	11	12	13	14	14	14	15	14	17	11	-	9	7	17				
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	NA	O3_	O3_	PM2		
22	8	8	8	8	7	6	7	7	8	7	6	7	9	9	8	8	7	7	7	7	-	-	-	-	-	9		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	NA	NA	NA	O3_	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	O3_	O3_	O3_	O3_	O3_	O3_	
28	6	7	7	9	9	7	7	7	9	10	12	13	13	13	-	13	15	14	14	11	5	4	5	5	15			
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_	O3_	O3_	
29	3	4	5	4	5	4	8	8	11	13	15	14	16	-	16	17	17	13	13	-	11	11	10	10	17			
	PM2	O3_	O3_	O3_	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	
30	11	10	8	8	7	6	7	8	10	12	12	13	-	16	18	16	17	17	17	15	10	10	8	11	18			
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	O3_	O3_		
31	11	11	12	11	11	10	10	11	11	11	11	11	-	13	13	16	16	17	19	18	13	11	12	11	12	19		
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	NA	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	
PEAK	14	13	12	11	12	12	13	14	16	18	20	22	22	23	23	23												

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

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

STATUS FLAG CODES

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

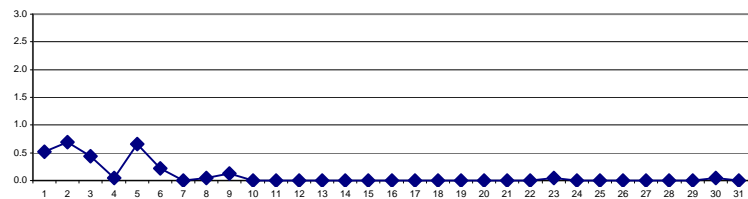
OBJECTIVE LIMIT:

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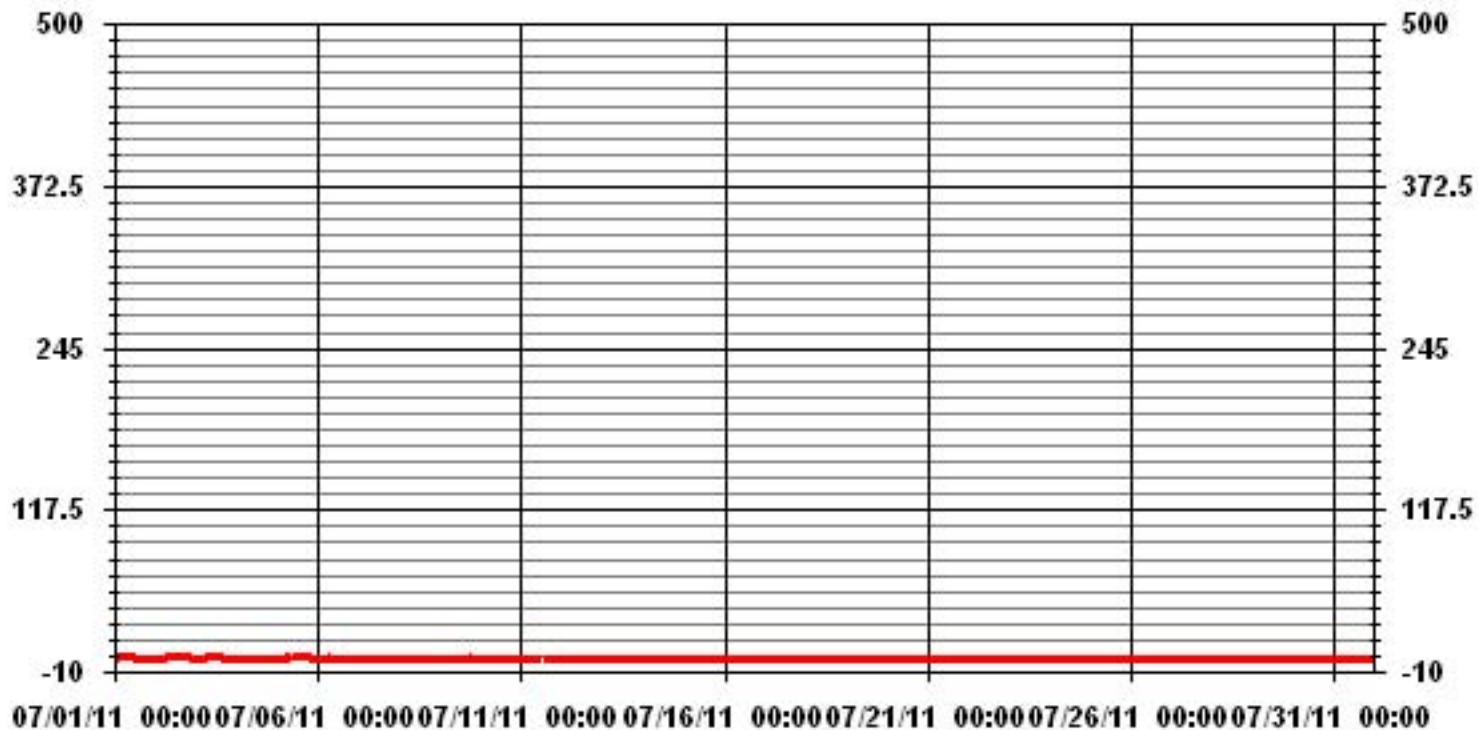
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0		
NUMBER OF 24-HR EXCEEDENCES:	0		
NUMBER OF NON-ZERO READINGS:	64		
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) 9 ON DAY(S) 5		
MAXIMUM 24-HR AVERAGE:	0.7 PPB ON DAY(S) 2, 5		
IZS CALIBRATION TIME:	32 HRS	OPERATIONAL TIME:	744 HRS
MONTHLY CALIBRATION TIME:	4 HRS	AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.29	MONTHLY AVERAGE:	0.09 PPB

24 HOUR AVERAGES FOR JULY 2011

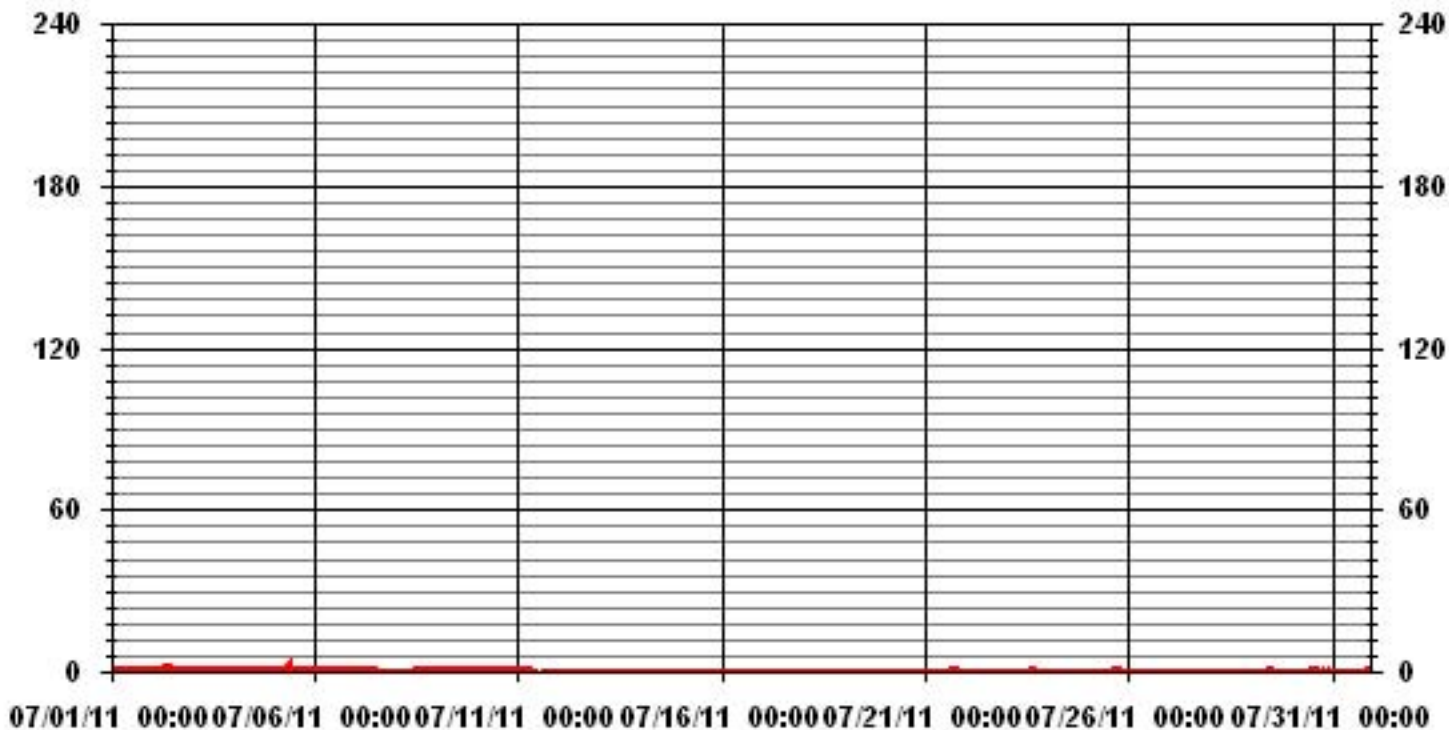


01 Hour Averages



— LICA SO2_ PPB

01 Hour Averages



LICA
 SO2_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	1.55	1.69	2.96	2.40	6.49	9.88	10.45	4.66	2.11	5.08	12.57	18.36	14.54	4.09	1.55	1.55	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.55	1.69	2.96	2.40	6.49	9.88	10.45	4.66	2.11	5.08	12.57	18.36	14.54	4.09	1.55	1.55	

Calm : .00 %

Total # Operational Hours : 708

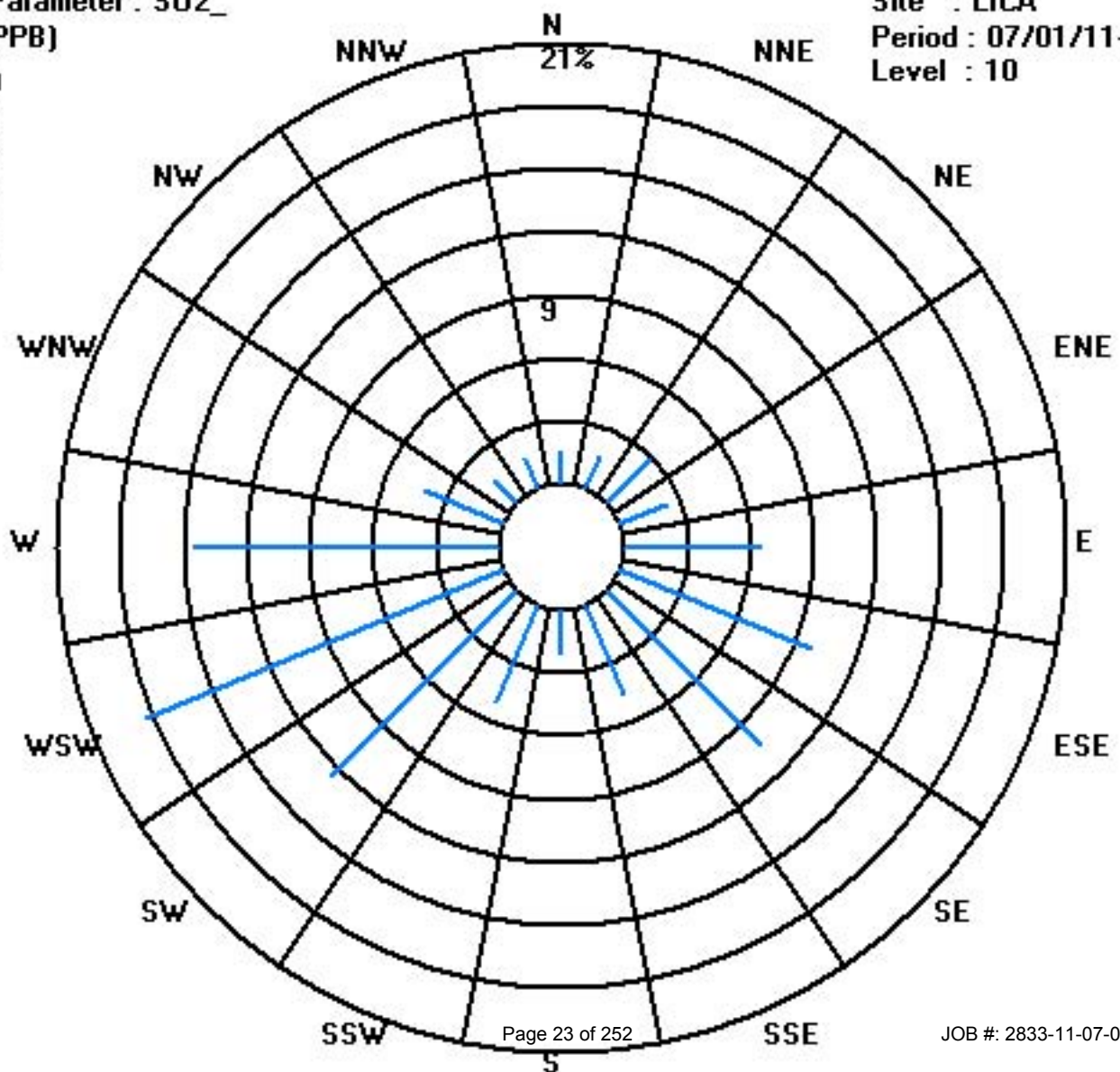
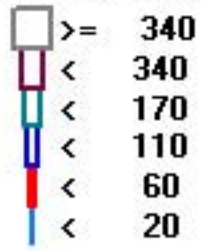
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	11	12	21	17	46	70	74	33	15	36	89	130	103	29	11	11	708
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	11	12	21	17	46	70	74	33	15	36	89	130	103	29	11	11	

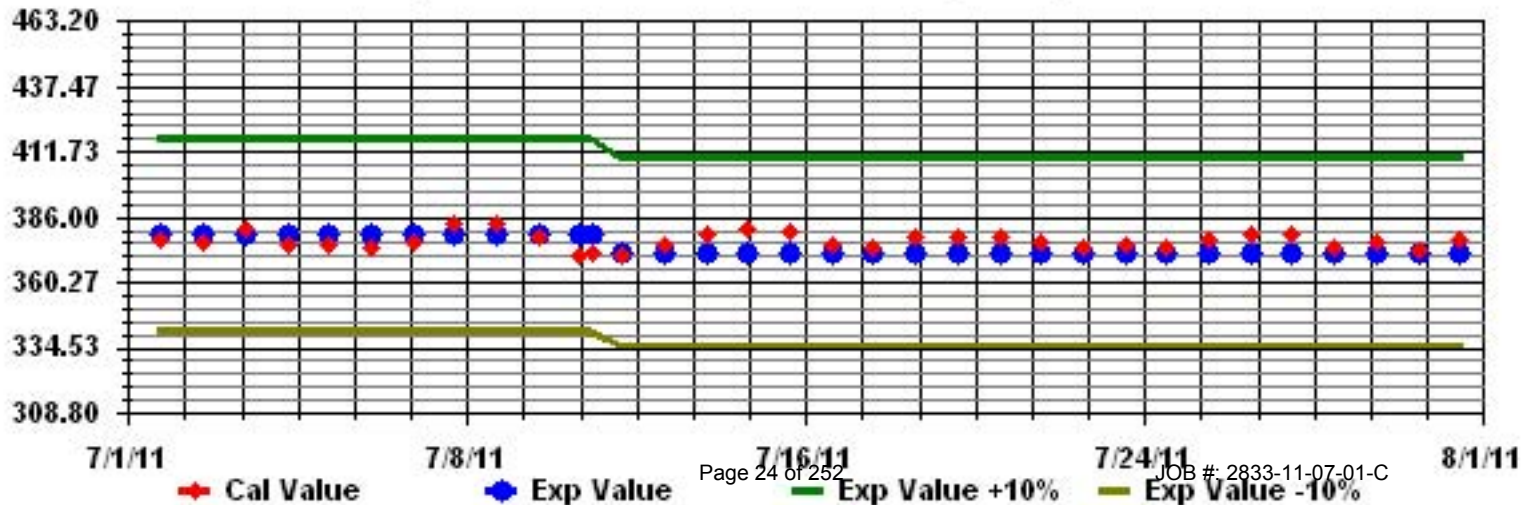
Calm : .00 %

Total # Operational Hours : 708

Class Limits (PPB)



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



Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 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	24:00	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	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
2	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	1	0.1	24
3	3	0	0	1	3	2	2	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	3	0.3	24	
4	4	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	
5	5	0	0	0	0	0	1	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.1	24	
6	6	0	0	0	0	0	1	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	1	0.1	24	
7	7	1	1	3	1	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	3	0.3	24	
8	8	0	0	0	0	0	0	0	0	C	C	C	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24	
9	9	0	0	0	0	1	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24	
10	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	24	
11	11	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	12	0	0	1	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	
13	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	24	
14	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	24	
15	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	16	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	
17	17	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	
18	18	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	
19	19	IZS	1	1	1	0	0	C	0	C	C	C	M	M	M	M	0	0	0	0	C	C	0	0	IZS	1	0.3	20	
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	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	24	
22	22	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	
23	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	24	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	
25	25	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	
26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	IZS	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	IZS	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	24	
29	29	0	0	0	0	1	1	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	0	0	0	1	0.1	24	
30	30	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	
31	31	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	
HOURLY MAX		1	1	3	3	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1				
HOURLY AVG		0.0	0.1	0.2	0.2	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

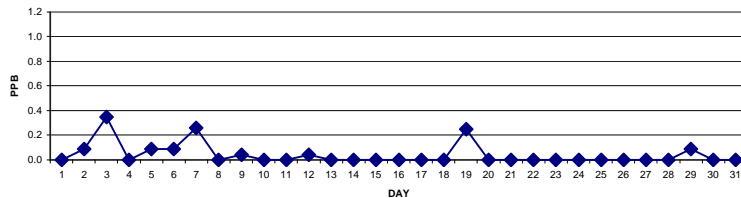
OBJECTIVE LIMIT:

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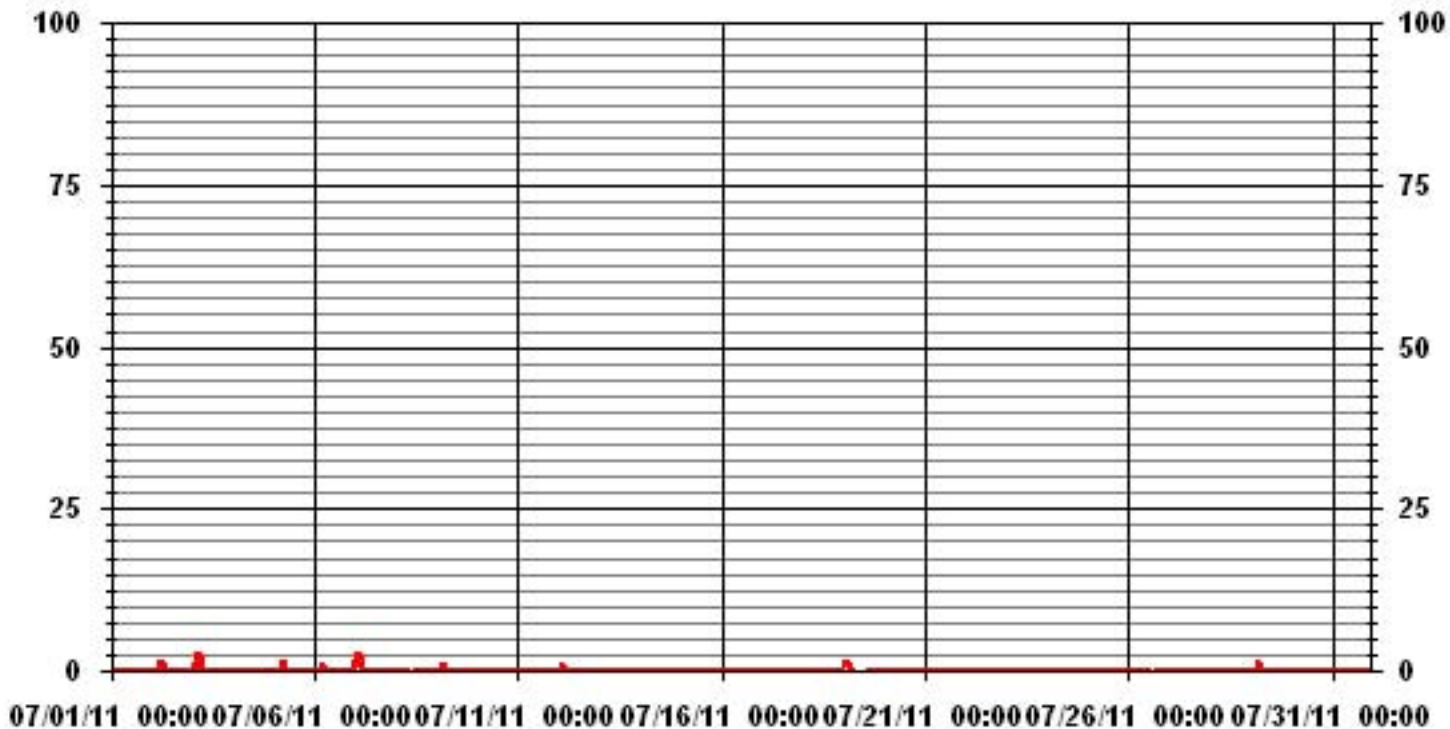
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	21					
MAXIMUM 1-HR AVERAGE:	3	PPB	@ HOUR(S)	3, 2	ON DAY(S)	3, 7
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	VAR
				VAR-VARIOUS		
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	13	HRS	AMD OPERATION UPTIME:	99.5	%	
STANDARD DEVIATION:	0.25		MONTHLY AVERAGE:	0.04	PPB	

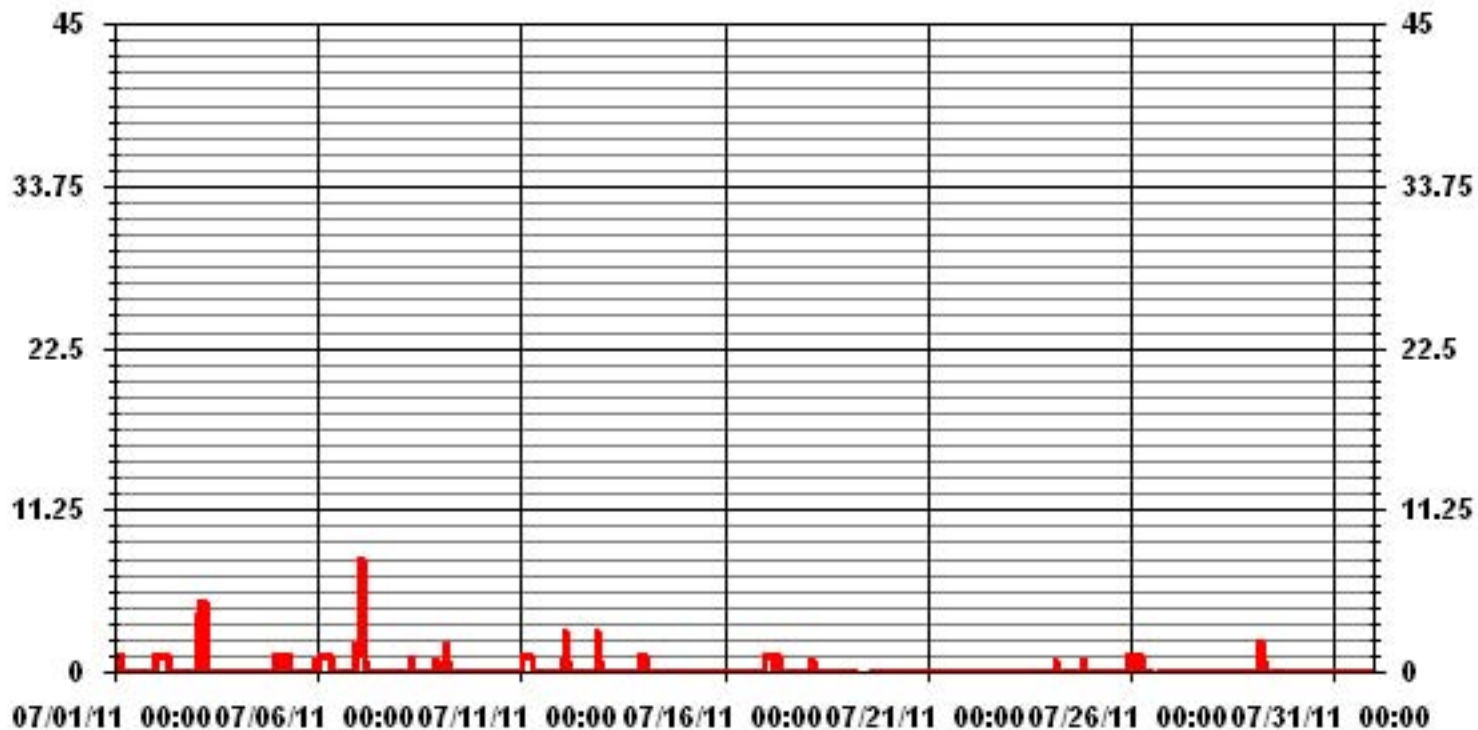
24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



01 Hour Averages



LICA
 TRS_ / WD Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	1.58	1.72	3.01	2.29	6.60	10.20	10.91	4.59	2.15	5.02	12.50	17.95	14.08	4.02	1.58	1.43	99.71
< 10	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.28
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.58	1.72	3.01	2.44	6.60	10.20	10.91	4.59	2.15	5.02	12.50	17.95	14.22	4.02	1.58	1.43	

Calm : .00 %

Total # Operational Hours : 696

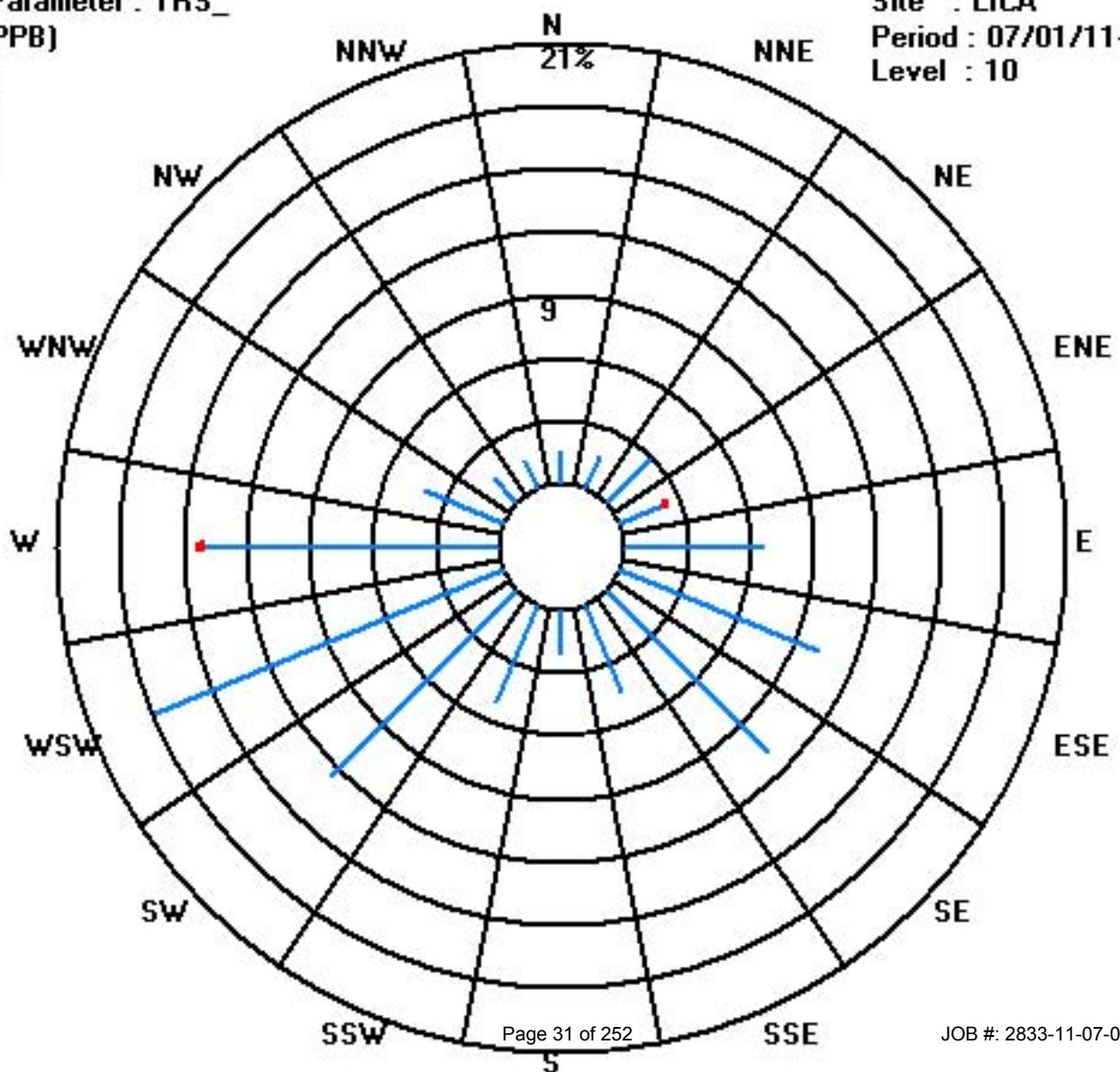
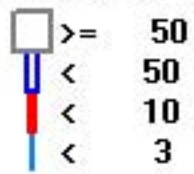
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	11	12	21	16	46	71	76	32	15	35	87	125	98	28	11	10	694
< 10				1									1				2
< 50																	
>= 50																	
Totals	11	12	21	17	46	71	76	32	15	35	87	125	99	28	11	10	

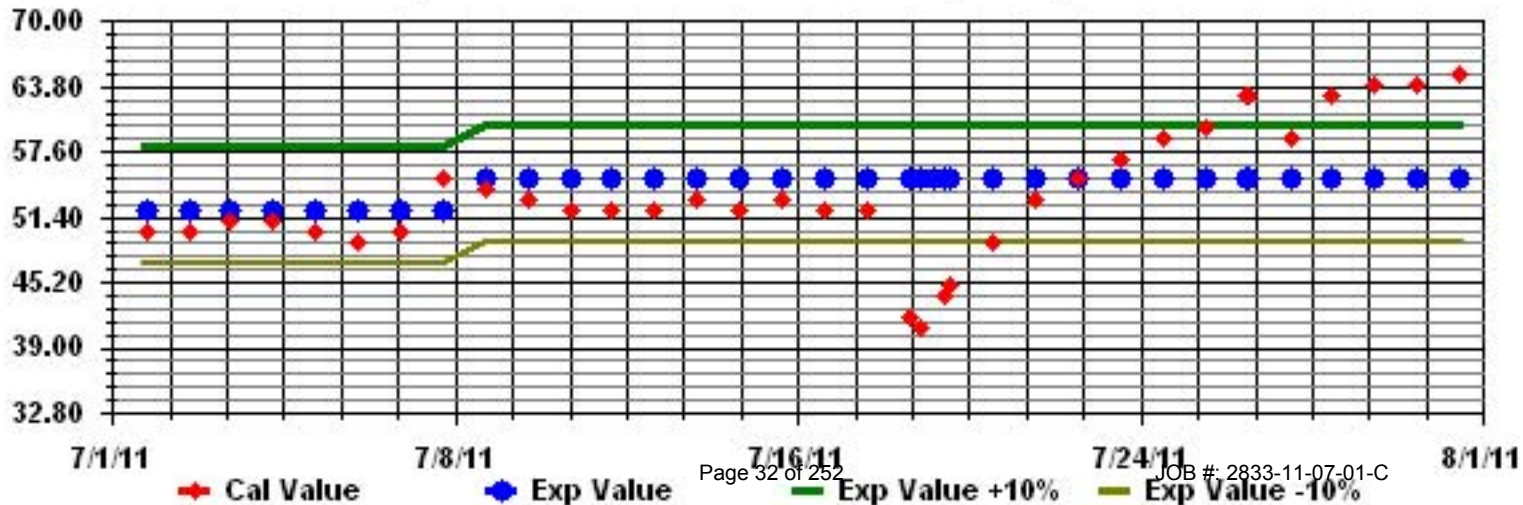
Calm : .00 %

Total # Operational Hours : 696

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

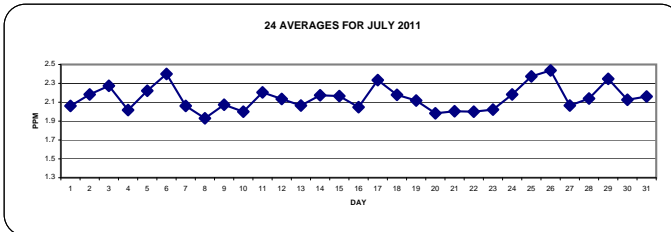
JULY 2011

TOTAL HYDROCARBONS (THC) hourly averages in ppm

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

STATUS FLAG CODES

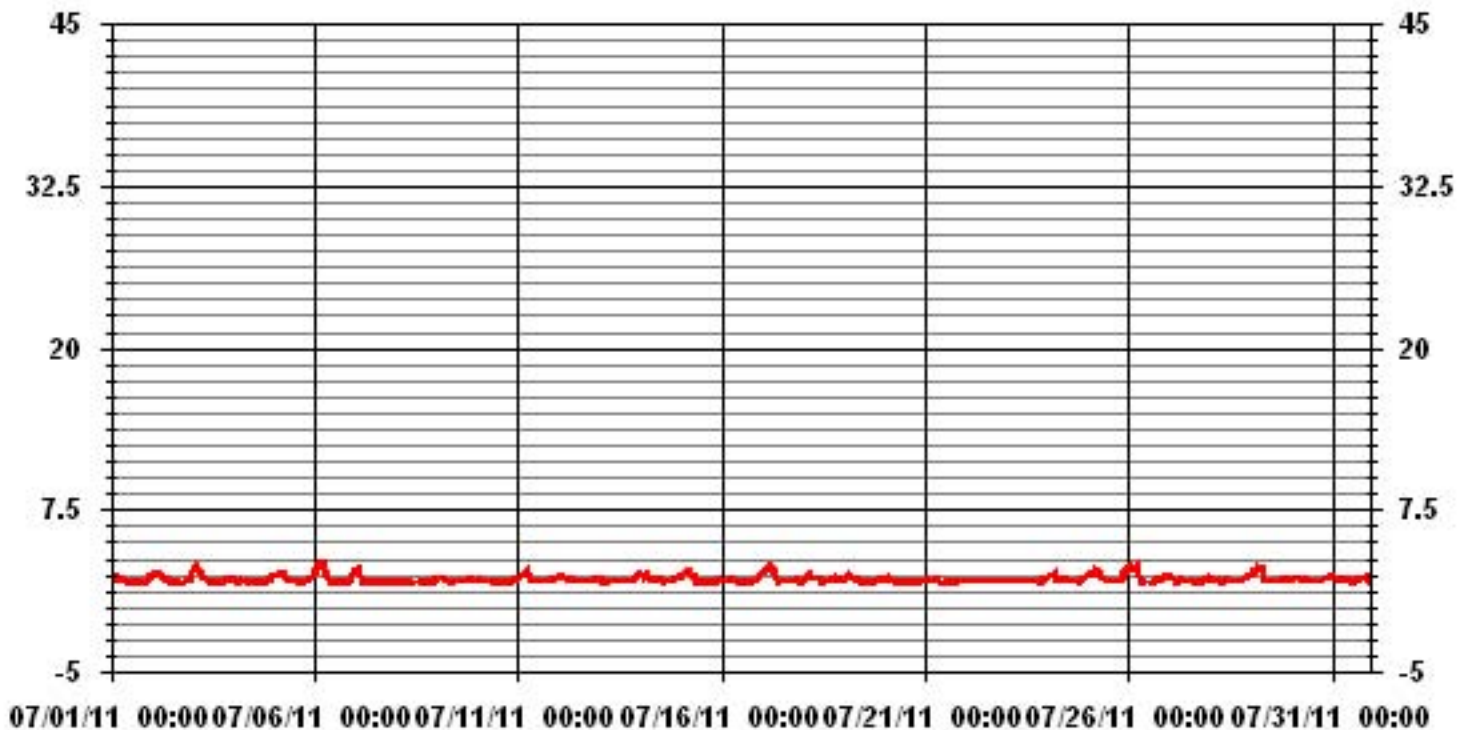
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703					
MAXIMUM 1-HR AVERAGE:	3.4	PPM	@ HOUR(S)	2, 5	ON DAY(S)	6
MAXIMUM 24-HR AVERAGE:	2.4	PPM			ON DAY(S)	VAR
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.6	%	
STANDARD DEVIATION:	0.28		MONTHLY AVERAGE:	2.14	PPM	

01 Hour Averages



— LICA THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOURLY MAX	HOURLY AVG.	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		2.2	2.2	2.4	2.4	2.4	2.3	2.4	2.4	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	IZS	1.9	2	2.1	2.4	2.5	2.5	2.1	24	
2		2.6	2.6	2.7	2.7	2.6	2.6	2.6	2.6	2.3	2.1	2.1	2.1	2	2	2	2	2	IZS	2	2	2.1	2.2	2.2	2.5	2.7	2.3	24	
3		3.1	3.3	3.4	3.1	3	2.9	2.5	2.3	2.3	2.2	2.1	2	2	1.9	2	1.9	IZS	2.1	1.9	2	2.2	2.2	2.2	2.2	3.4	2.4	24	
4		2.3	2.2	2.2	2.1	2.1	2.1	2.1	2	2	2	2.1	2	2	2	IZS	IZS	1.9	2	2	2	2	2.1	2.4	2.5	2.5	2.1	24	
5		2.6	2.5	2.6	2.5	2.7	2.8	2.7	2.8	2.2	2.1	2.2	2	2	2	IZS	2	2	2	2	2	2.1	2.1	2.3	2.4	2.8	2.8	2.3	24
6		2.7	3.5	3.7	3.7	3.6	3.6	3.1	3	2.3	2.3	2.1	2	2	IZS	1.9	2	1.9	2	2	2	2	2.1	2.2	3	3	3.7	2.6	24
7		3	3	3.2	3	2	2	1.9	2	2	2	2	2	IZS	1.9	2	1.9	2	2.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.2	2.2	24
8		1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	1.9	C	C	C	C	1.9	1.9	1.9	1.9	1.9	2	2	2.1	2.5	2.5	2.0	24	
9		2.2	2.4	2.2	2.2	2.3	2.4	2.1	2.1	2	2	IZS	2	2	2.1	2.3	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.4	2.2	24	
10		2.3	2.2	2.2	2.2	2	2.1	2	2	2.1	IZS	1.9	1.9	2	2	2	2	2	2	2	2	2	2.1	2.1	2.4	2.2	2.4	2.1	24
11		2.4	2.4	2.5	2.7	2.9	3.3	3	2.6	IZS	2	2	2	2.1	2	M	M	2.1	2	2.1	2.1	2.2	2.3	2.3	2.4	3.3	2.4	22	
12		2.4	2.5	2.7	2.5	2.4	2.2	2.4	IZS	2.2	2.1	2.1	2	2	2	2	2	2.2	2.3	2.3	2.1	2.1	2.2	2.4	2.3	2.7	2.2	24	
13		2.3	2.2	2.1	2.2	2.2	2.1	IZS	2.1	2.1	2.5	2.1	2.1	2.1	2	2.1	2.1	2.5	2	2.2	2.2	3.2	2.5	2.7	2.5	3.2	2.3	24	
14		2.9	2.7	2.3	2.8	3.4	IZS	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.1	2.1	2	2	2.1	2.4	2.4	2.3	2.4	3.4	2.3	24
15		2.7	2.9	2.9	3.4	IZS	3.3	2.7	2.6	2.5	2.4	2	1.9	2	1.9	2	1.9	1.9	2	2	1.9	2	2	2.2	2.5	3.4	2.3	24	
16		2.2	2.1	2.1	IZS	2.3	2.4	2.2	2.1	2.2	2	1.9	2	2	2	2.1	2	2	2	2	2	2.3	2.2	2.3	2.9	3.4	3.4	2.2	24
17		2.9	3.1	IZS	3.3	3.8	3.3	3.2	2.9	2.7	2.1	2.1	2.2	2.1	2.1	2	2.7	2.2	2.1	2.1	2.2	2.2	2.2	2.1	2.1	3.8	2.5	24	
18		2.2	IZS	2.6	2.9	3	2.3	2.2	2.3	2.3	2.4	2.3	2.1	2.1	2.1	2.1	2.1	2.2	2.1	2.2	2.7	2.4	2.3	2.2	2.1	3	2.3	24	
19		IZS	2.3	2.5	2.7	2.6	2.6	2.4	2.2	2.2	2.1	2.1	2	2	1.9	2	1.9	1.9	2	2.1	2.3	2.3	2.3	2.1	IZS	2.7	2.2	24	
20		2.1	2.3	2.3	2.3	2.2	2.1	2	2	1.9	2	2	2	2	1.9	1.9	1.9	1.9	2	1.9	2	2	2.1	2	IZS	2.2	2.3	2.0	24
21		2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.2	M	C	1.9	1.9	1.9	1.9	1.9	2.1	2	2	2.1	2.1	2.2	IZS	2.1	2	2.3	2.1	23	
22		2	2	2	2	2	2	2.1	2.1	2	2	2.1	2.1	2.2	2.1	2.2	2	2.1	2.1	2.1	2.1	2.1	IZS	2	2	2.1	2.2	2.1	24
23		2.1	2.1	2	2	2.2	2	2.1	2.2	2.1	2.1	2	2	2	2.2	2.1	2	2.1	2.1	2.1	2.1	IZS	2	2.1	2.2	2.5	2.5	2.1	24
24		2.6	2.6	2.6	2.7	2.8	2.5	2.2	2.2	2.3	2.2	2.3	2.1	2.2	2.1	2.1	2.2	2.1	2	IZS	2.1	2.2	2.3	2.3	2.7	2.8	2.3	24	
25		2.5	2.6	2.8	2.9	3.3	3.2	3	3	2.4	2.3	2.3	2.2	2	2.1	2	2	2	IZS	2	2.1	2.4	3.7	2.8	3.5	3.7	2.6	24	
26		3.8	3.6	3.2	3.1	3.1	3.6	3.2	2	1.9	2.1	P	N	C	C	2	2.1	IZS	2.2	2.1	2.1	2.3	2.6	2.8	2.5	3.8	2.6	22	
27		2.3	2.3	2.4	2.3	2.2	2.1	2.2	2.2	2.1	2	2.1	2	2	2.1	2.1	2	IZS	2	2	3.1	2	2.1	2.2	2.2	2.5	3.1	2.2	24
28		2.5	2.4	2.4	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2	2	2.1	2.1	2.2	2.3	2.4	2.7	2.8	2.8	2.2	24	
29		2.7	2.8	2.9	3.2	3.6	3.2	3.2	3.3	2.4	2.1	2	2	2	IZS	2	2.6	2	2	2.1	2.2	2.3	2.2	2.2	2.1	3.6	2.5	24	
30		2.1	2.2	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.1	IZS	2.1	2.1	2.1	2.1	2.2	2.1	2.3	2.5	2.4	2.5	2.4	2.5	2.2	24	
31		2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.1	IZS	3.3	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.4	2.5	2.4	2.1	2	3.3	2.3	24
HOURLY MAX		4	4	4	4	4	4	3	3	3	3	2	2	3	2	2	3	3	2	3	3	3	4	3	4				
HOURLY AVG		2.5	2.5	2.5	2.6	2.6	2.5	2.4	2.3	2.2	2.1	2.1	2.0	2.1	2.0	2.0	2.1	2.0	2.1	2.1	2.1	2.2	2.3	2.3	2.4				

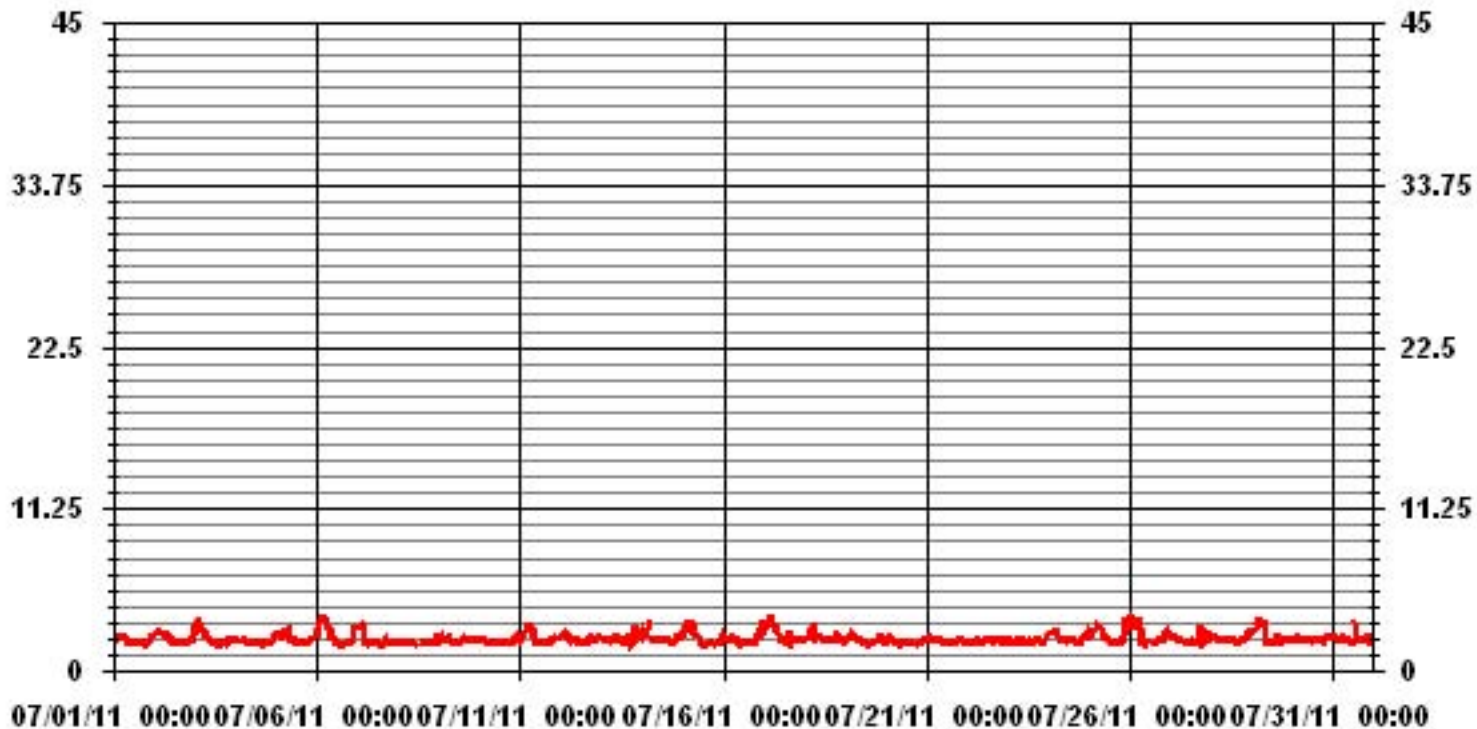
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM INSTANTANEOUS VALUE:	3.8	PPM	@ HOUR(S)	4	ON DAY(S)	17
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	739	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.36					

01 Hour Averages



— LICA THCMAX PPM

LICA
 THC / WD Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : THC
 Units : PPM

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	1.28	1.70	2.98	2.13	6.54	9.81	10.66	4.55	2.13	5.12	12.09	17.35	14.08	3.98	1.28	1.28	97.01
< 10.0	.28	.00	.00	.28	.00	.42	.00	.14	.00	.00	.14	1.13	.42	.00	.00	.14	2.98
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.56	1.70	2.98	2.41	6.54	10.24	10.66	4.69	2.13	5.12	12.23	18.49	14.50	3.98	1.28	1.42	

Calm : .00 %

Total # Operational Hours : 703

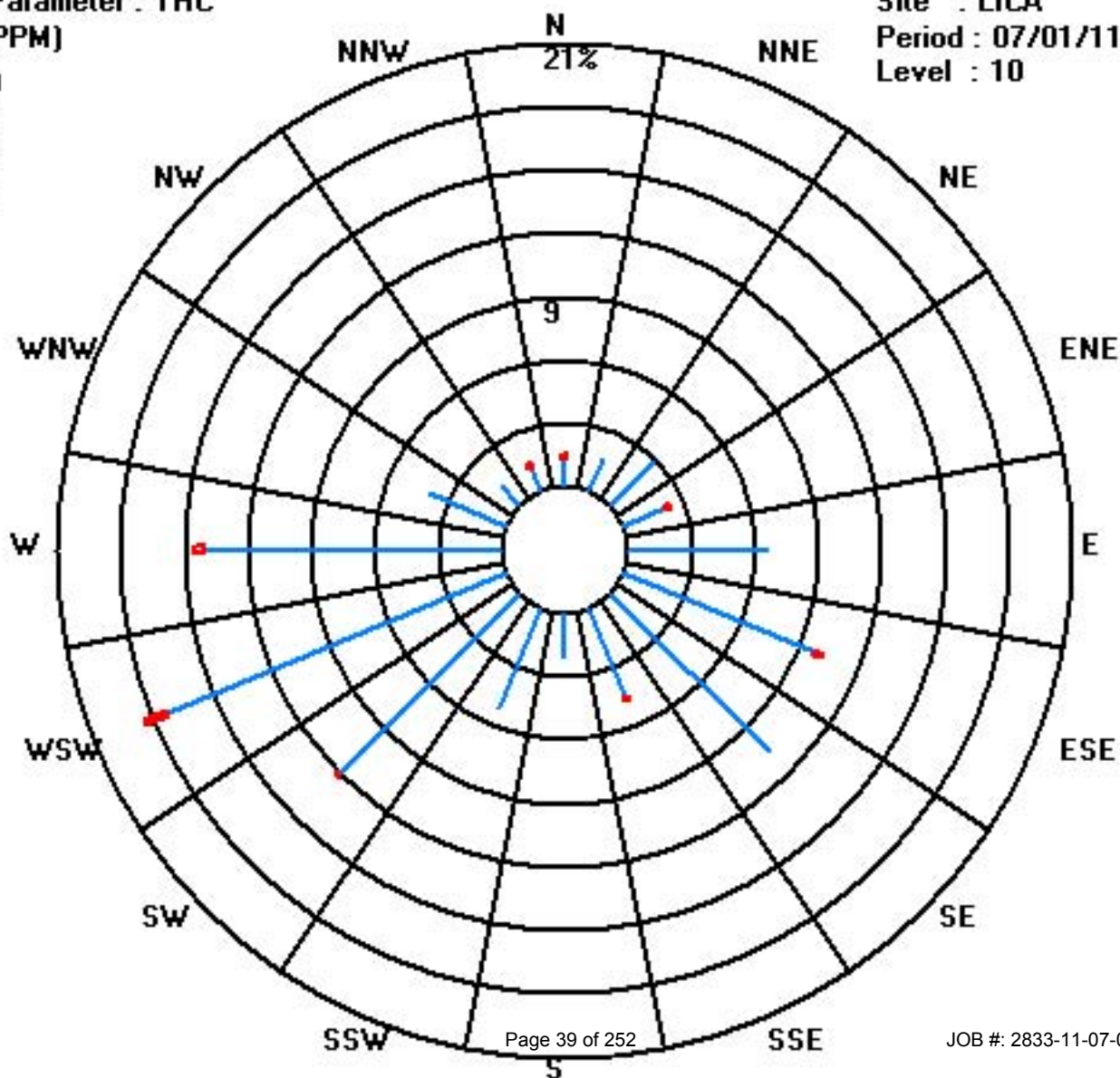
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	9	12	21	15	46	69	75	32	15	36	85	122	99	28	9	9	682
< 10.0	2			2		3		1			1	8	3			1	21
< 50.0																	
>= 50.0																	
Totals	11	12	21	17	46	72	75	33	15	36	86	130	102	28	9	10	

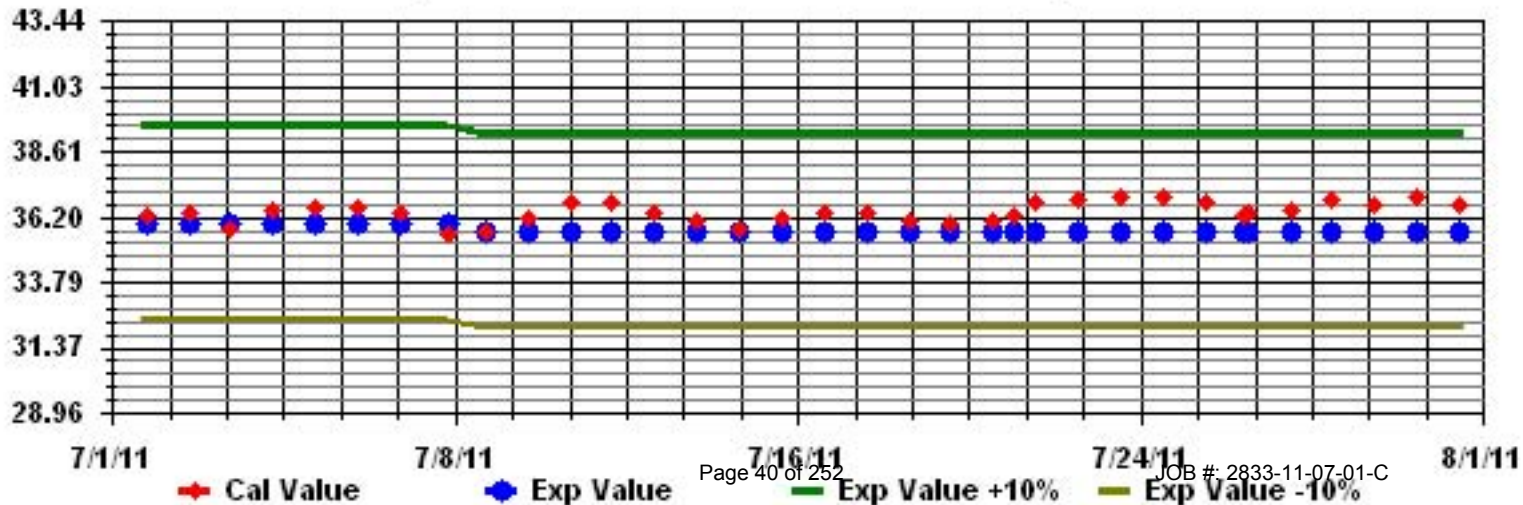
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPM)



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 2011

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

MST

DAY	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
1	4	4	3.4	3.4	3.4	2.5	5.9	1.4	1	0	4.4	1.9	1	2.5	2.9	2.9	4	4	1	2.9	1.4	5.9	5.5	7.5	7.5	3.2	24	
2	4.4	7.5	6.9	6.4	6	7.9	3.4	9	9	0.4	3.4	3.4	2.9	1.4	3.4	5.5	6	4	5	2.9	6.4	6.9	6.4	8.5	9.0	5.3	24	
3	6.4	4.4	2.9	6	6.9	6.9	5.5	5.5	6	5	1	6.4	3.4	8.5	6	6	8.4	13.5	6	4	6.9	5.5	3.4	3.4	13.5	5.7	24	
4	4.4	1.9	5	2.5	2.9	1.4	4	4	2.5	4	7.9	4	7.9	0	1	5	0	2.9	4.4	2.5	3.4	4.4	1.9	5	7.9	3.5	24	
5	4	6	7.5	4	2.5	1.9	3.4	7.5	3.4	5	3.4	6	4	2.9	6.4	5.5	4.4	8.4	6.9	5.5	9.4	7.9	5.5	6.9	9.4	5.3	24	
6	8.4	6	9	8.4	6.4	9.9	9.5	2	6	0	4.4	2	2.5	6.4	5	4	3.4	1.9	4.4	9.4	12	4.4	9.4	10.5	12.0	6.1	24	
7	8	12	7.5	5	2.9	2.9	5	5.5	2.9	2.9	2.9	4.4	4.4	6.4	6.9	4.4	6.9	6.4	4	9.4	9.5	4.4	4.4	4.4	12.0	5.6	24	
8	8.5	6	6.4	6.9	9.5	5.5	9.9	15	13.5	12.5	1.4	6.9	0	4	1.9	0.4	2.5	4.4	0	2	1.4	1.9	1.9	3.4	15.0	5.2	24	
9	0	2.5	2.5	0	4	0	1	1	4	0	6.4	1.4	13.5	0	1.9	4	1	5.5	3.4	5.5	2.9	4	5	5.5	13.5	3.1	24	
10	2.9	1.9	5	2.5	4	7.5	6	6.9	1.4	4.4	6	4	2.5	2	2.5	2.5	2.5	0	1	2.9	6	5.5	2.9	6	7.5	3.7	24	
11	6	4.4	9.4	2.9	3.4	6	1	4	5	2.5	0	C	2	1.9	2.9	6.9	1.9	2.9	1.4	3.4	4.4	6	6	4	9.4	3.8	24	
12	6	4.4	5	1.9	3.4	1.9	5.9	1.4	6.9	4.4	2.9	4	3.4	5	2.9	5	6.4	5	9	6	5	5	8.4	9.0	4.8	24		
13	6.4	5.5	6	6.9	5.5	9.9	5	4.4	5.5	5.5	7.5	9	7.9	6.9	4	1.4	9	5.5	4.4	3.4	6.4	6.4	6.4	5.5	9.9	6.0	24	
14	5.5	3.4	4	9	2.5	7.5	5	9	9	8.4	9.9	7.9	9	4	6.9	5.5	6	5	1.9	1.4	7.9	1.4	6	7.5	9.9	6.0	24	
15	4.4	2.5	11.5	4	6.4	7.9	5	2.5	6.4	7.5	1.9	4	6	3.4	4	1.9	0	1.4	0.4	2.5	1.4	7.5	1.9	1.4	11.5	4.0	24	
16	2.9	1	5	1.4	1.4	5.5	0	1.9	2.5	1	1.9	2.9	5.5	5.5	5.5	4	2.9	0	2.5	4.4	4.4	0	2.9	6.9	6.9	3.0	24	
17	3.4	6	4	7.4	6.5	0.4	2.4	5	3.4	3.4	2.5	2.9	3.9	5	7.5	6	6.5	4	4	8.4	12.6	6.8	9.9	8.1	12.6	5.4	24	
18	8	6.1	5.4	2	4	7.3	3.1	0	5.8	0	2.6	6.4	2.6	2.9	8.3	2.5	10.5	5.3	10.2	12.3	13.8	20.7	3.5	6.6	20.7	6.2	24	
19	1.7	5.4	1.2	4.4	3.2	2.4	6.4	8.3	8.4	12.5	11.9	7.5	6.9	4.3	0	3.8	2.9	0	0	6.7	2.7	0	0	2.7	12.5	4.3	24	
20	2.7	5.8	10.4	2.7	N	0.3	6.6	5.9	N	0	6	3	1	0	9.3	2.4	4.4	2.1	7.4	3.9	1.4	4.2	2.7	3.7	10.4	3.9	22	
21	5.5	4	4.4	3.7	2.5	1.9	0.4	1	2.9	0	1	2.8	3.1	4.8	1.2	4.7	3.3	9.4	5.5	20.6	13.5	14	9.9	2.9	20.6	5.1	24	
22	7.8	2.6	5.3	4	0.3	3.1	2.2	2.1	3.1	0.9	2.6	3.3	3.4	6.1	5.8	2.9	2.7	4.5	3.3	0.3	0	3.4	2.1	3	7.8	3.1	24	
23	1.4	0.6	3.8	0	1.9	0.4	0	0	4.9	0	4.2	4.5	4	4.4	5	5.5	2.9	1.4	4.4	0.4	3.4	4.4	1.4	4.6	5.5	2.6	24	
24	1.4	3.4	4.4	2.9	4.3	0	1	0	2.5	5.3	N	3.4	2.4	0.4	0.4	3.4	2.9	5.5	6.4	3.4	5	2.9	3.4	6.9	6.9	3.1	23	
25	5	4	3.4	3.4	0	3.4	0	3.4	1.4	5	4.4	0.4	1.4	4	6	2.9	2.9	5	1.4	2.5	4	6.9	8.5	6	8.5	3.6	24	
26	4	4.4	2.5	4	5.5	0.4	5	4.5	5	7.5	0	4.4	9.9	10.5	5	2.9	5.5	4.4	0	1.9	5	5	4	4.4	10.5	4.4	24	
27	0	2.5	0.4	0	1.9	5	3.4	3.4	5	5	6.4	2.9	2.9	2.9	9	2	0	1.4	4.4	4.4	1.4	1.5	1.9	2.9	9.0	2.9	24	
28	1.4	1	5.5	2.9	0.4	0	0	4.4	1.9	1	2.9	2.5	1.9	2.5	4.4	2.9	4.5	7.5	2.9	4	6.4	5	5.5	2.9	7.5	3.1	24	
29	3.4	4.4	5	2.9	5.9	5	9	9	1.9	6.4	5.5	2.5	9.9	0	0	2.9	9.9	1	2	N	3.4	0	2.5	3.4	9.9	4.2	23	
30	1.4	0	0.4	2.5	3.4	0	4	1	2.9	6	1.4	1	6	5.5	4	2.9	5	6	3.4	7.5	6	8.4	9	0.4	9.0	3.7	24	
31	6.4	1.9	6.9	1.9	4	1.9	0	2.9	2.5	3.4	3.4	4.4	2.5	2.9	2.9	6	5.5	6.9	5.5	6.4	6	7.5	3.4	12.5	12.5	4.5	24	
HOURLY MAX	9	12	12	9	10	10	10	15	14	13	12	8	14	11	9	7	11	14	10	21	14	21	10	13				
HOURLY AVG	4.4	4.0	5.2	3.7	3.8	3.8	3.8	4.3	4.5	3.9	3.9	4.0	4.5	3.8	4.4	3.9	4.1	4.5	3.7	5.2	5.5	5.4	4.6	5.3				

STATUS FLAG CODES

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

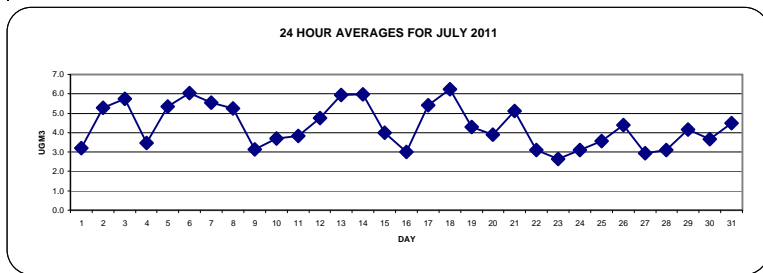
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT:

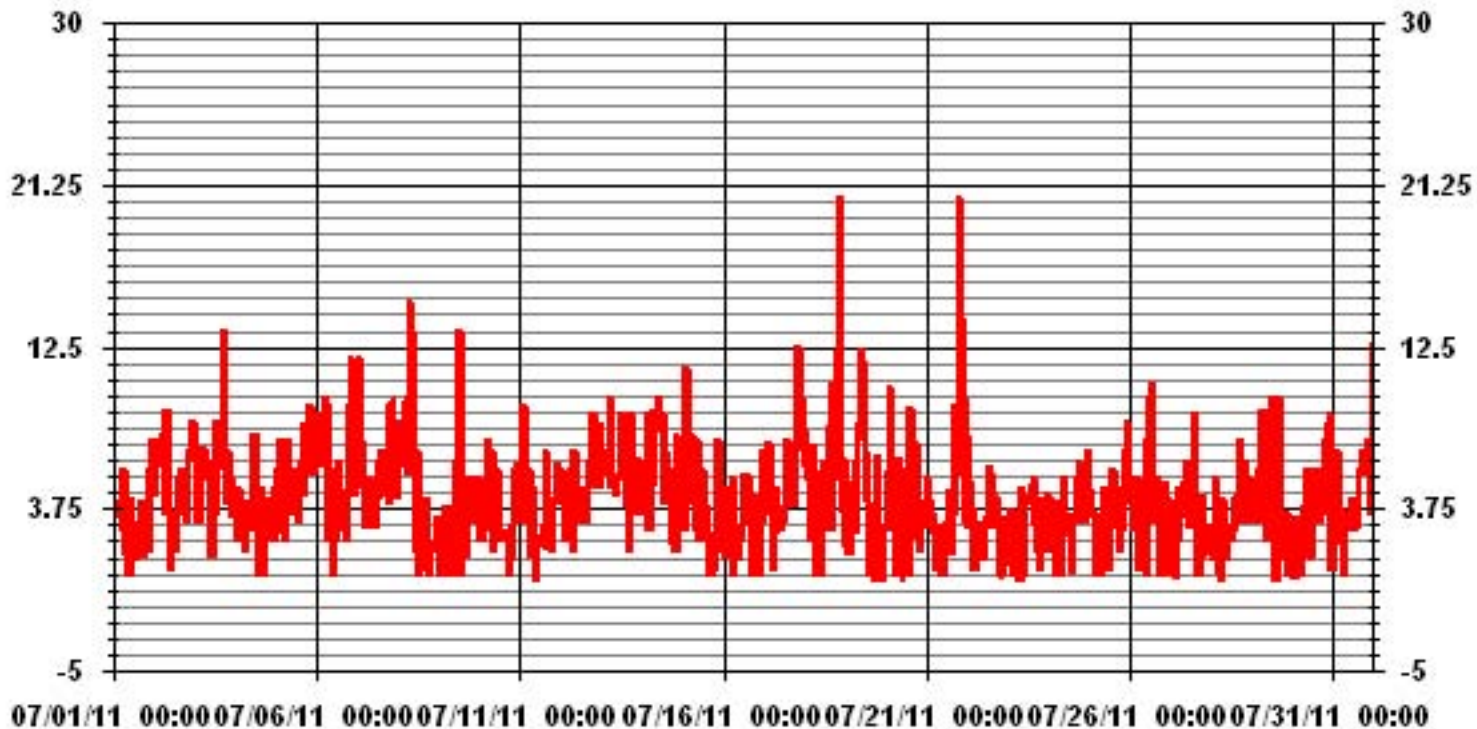
1-HR	-	ug/m ³	24-HR	30	ug/m ³
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-		
NUMBER OF 24-HR EXCEEDENCES:	0 PROPOSED CANADA WIDE GUIDELINE		
NUMBER OF NON-ZERO READINGS:	690		
MAXIMUM 1-HR AVERAGE:	20.7 UG/M ³ @ HOUR(S) 21 ON DAY(S) 18		
MAXIMUM 24-HR AVERAGE:	6.2 UG/M ³ ON DAY(S) 18		
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	740 HRS
MONTHLY CALIBRATION TIME:	1 HRS	AMD OPERATION UPTIME:	99.5 %
STANDARD DEVIATION:	2.90	MONTHLY AVERAGE:	4.34 UG/M ³



01 Hour Averages



— LICA PM2 UG/M3

LICA
 PM2 / WD Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	1.62	1.75	2.97	2.43	6.49	10.28	10.55	4.46	2.02	5.00	12.85	17.99	14.88	3.65	1.48	1.48	100.00
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.62	1.75	2.97	2.43	6.49	10.28	10.55	4.46	2.02	5.00	12.85	17.99	14.88	3.65	1.48	1.48	

Calm : .00 %

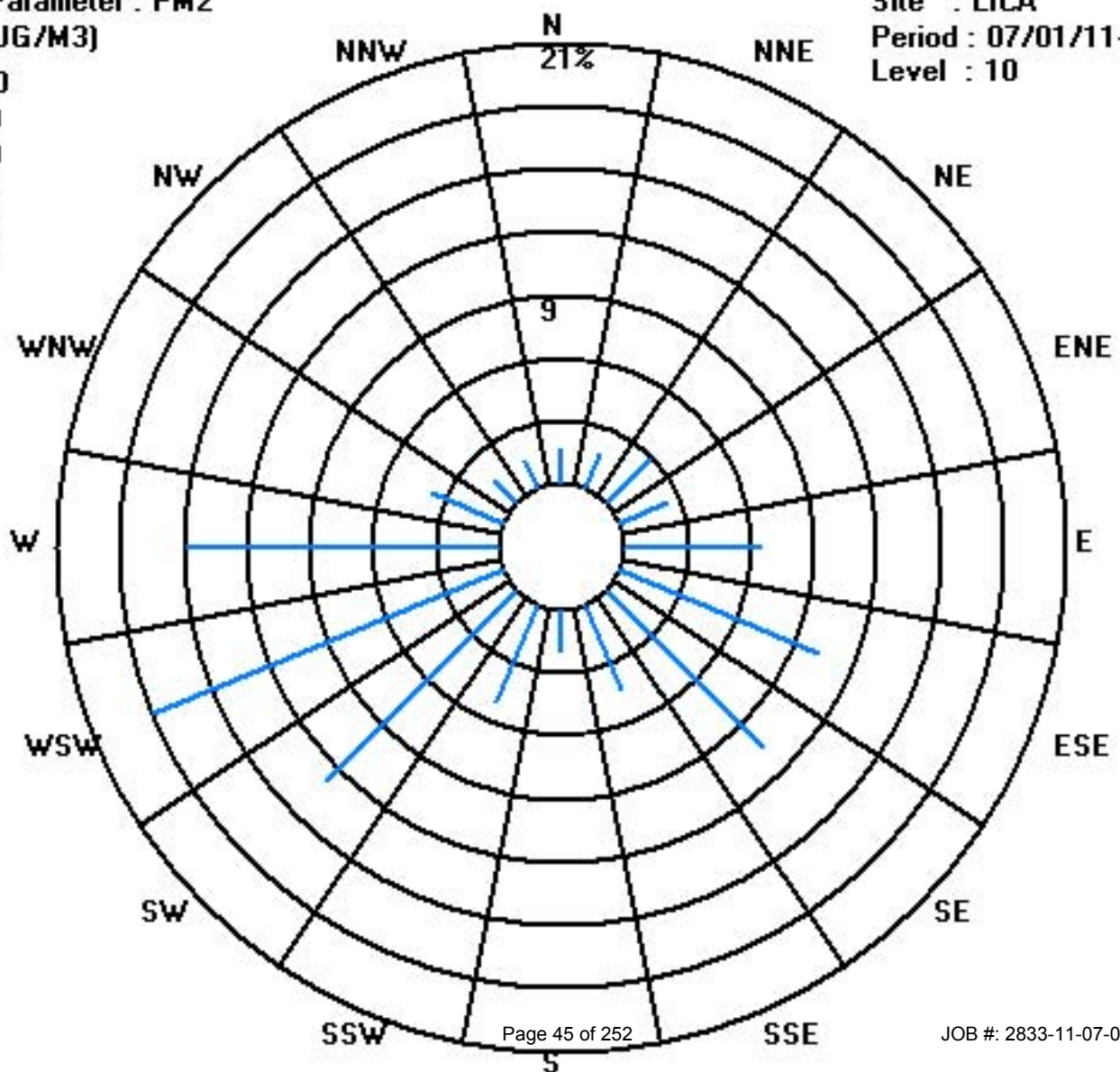
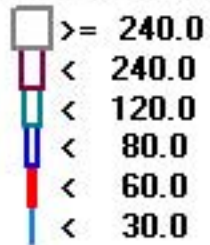
Total # Operational Hours : 739

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	12	13	22	18	48	76	78	33	15	37	95	133	110	27	11	11	739
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	12	13	22	18	48	76	78	33	15	37	95	133	110	27	11	11	

Calm : .00 %

Total # Operational Hours : 739



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 2011

NITROGEN DIOXIDE hourly averages in ppb

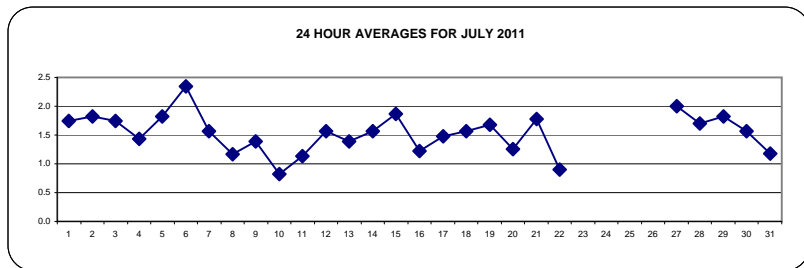
MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
DAY																												
1	2	3	5	5	4	4	3	2	1	1	1	0	0	0	0	0	0	0	IZS	1	1	2	2	3	5	1.7	24	
2	3	3	2	2	1	2	2	2	2	2	1	1	1	1	1	1	1	1	IZS	1	1	2	3	3	4	1.8	24	
3	3	2	2	2	2	3	1	1	1	1	1	1	1	1	1	1	IZS	1	2	2	2	3	3	3	3	1.7	24	
4	2	3	2	2	2	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	3	2	2	3	1.4	24
5	2	2	2	1	2	2	3	3	2	3	1	1	1	1	1	IZS	1	1	1	1	2	3	2	3	2	3	1.8	24
6	2	3	5	5	4	3	5	3	2	1	1	1	1	1	IZS	1	1	1	1	1	2	2	2	3	4	5	2.3	24
7	3	3	3	3	1	1	1	1	2	3	1	1	IZS	1	1	1	1	1	1	2	2	1	1	1	3	1.6	24	
8	1	1	1	1	1	1	1	2	C	C	C	C	C	C	1	1	1	1	1	1	2	1	2	1	2	1.2	24	
9	1	2	1	1	2	2	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	2	2	2	2	2	1.4	24	
10	2	2	3	1	1	0	0	0	0	IZS	1	0	0	0	0	0	0	0	1	1	1	1	2	1	2	3	0.8	24
11	1	2	1	1	1	1	2	3	IZS	1	0	1	1	0	0	0	0	0	1	1	1	2	2	2	3	3	1.1	24
12	2	2	2	3	2	3	2	IZS	1	1	0	0	1	0	1	1	1	2	1	2	2	2	3	2	3	1.6	24	
13	1	1	1	1	1	1	1	IZS	2	1	1	2	1	1	1	1	1	1	1	1	1	2	2	3	4	1.4	24	
14	4	2	1	1	2	IZS	2	1	1	1	2	1	1	1	1	1	1	1	1	2	2	3	2	2	4	1.6	24	
15	2	2	2	2	IZS	4	4	3	3	2	4	2	1	1	1	1	1	1	1	1	1	1	2	1	4	1.9	24	
16	2	2	1	IZS	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.2	24	
17	2	2	IZS	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1	2	3	3	1	1	3	1.5	24	
18	1	IZS	2	2	2	1	2	3	2	3	2	1	1	1	1	1	1	1	1	3	2	1	1	1	3	1.6	24	
19	IZS	2	2	3	3	3	3	2	2	2	1	1	1	1	1	1	1	1	2	1	2	1	1	IZS	3	1.7	24	
20	1	2	2	2	2	2	3	3	1	1	1	0	1	0	1	0	0	0	1	1	2	1	IZS	2	3	1.3	24	
21	3	3	4	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	3	3	IZS	2	1	4	1.8	24	
22	1	0	0	0	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	IZS	N	N	N	2	0.9	21	
23	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	
25	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	
26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0	0	
27	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	C	C	C	2	2	2	2	2	2	2.0	13
28	3	2	2	2	2	3	2	2	1	1	1	1	1	1	1	IZS	1	1	1	1	2	3	2	2	2	3	1.7	24
29	1	2	2	2	2	3	4	4	2	1	1	1	2	IZS	1	1	1	1	1	2	2	2	2	1	4	1.8	24	
30	1	2	2	3	2	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	2	3	3	2	3	1.6	24	
31	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	2	2	1	2	1.2	24	
HOURLY MAX	4	3	5	5	4	4	5	4	3	3	4	2	2	1	1	1	1	2	2	3	3	3	3	4				
HOURLY AVG	1.9	2.0	2.0	2.0	1.8	1.9	2.0	2.0	1.4	1.4	1.2	0.9	1.0	0.8	0.9	0.8	0.8	0.9	1.2	1.6	2.0	2.0	2.1	2.0				

STATUS FLAG CODES

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

OBJECTIVE LIMIT:

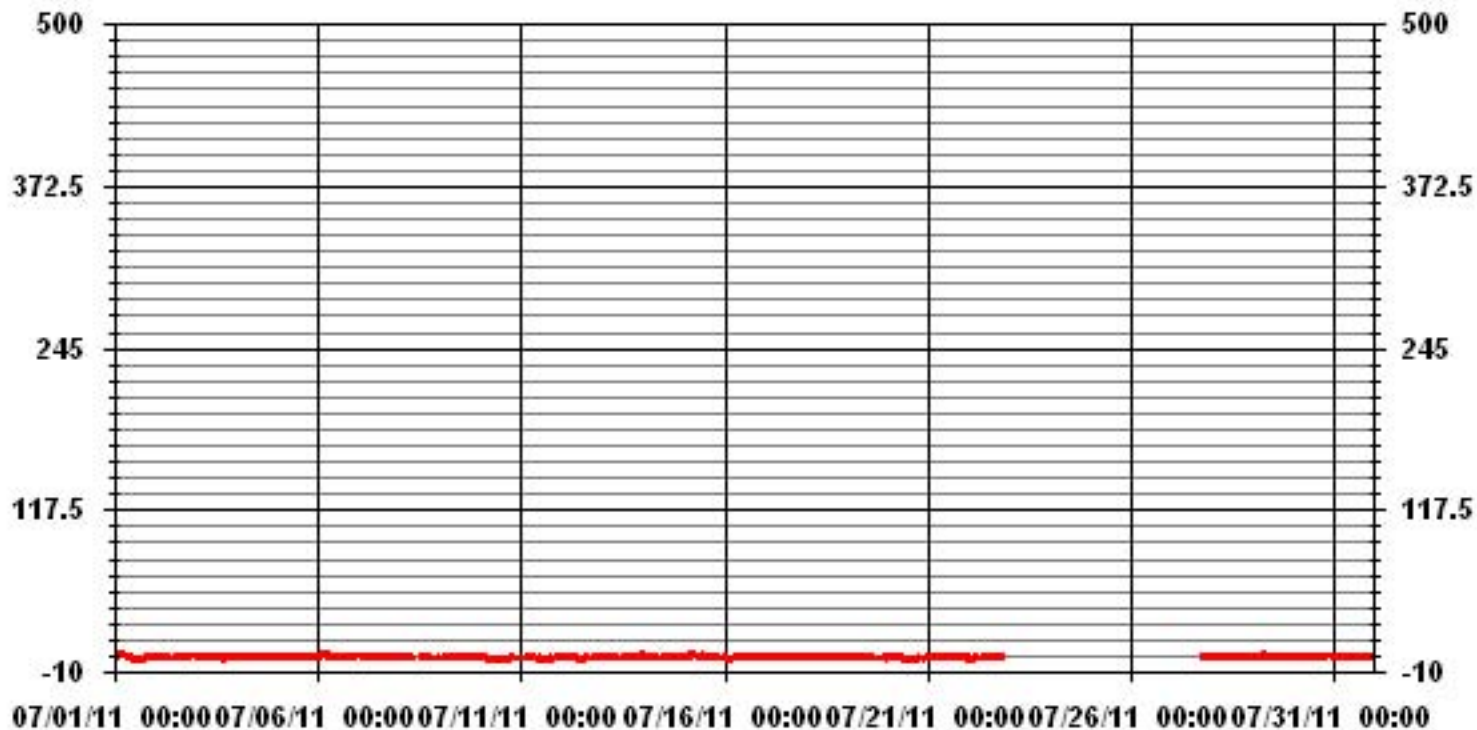
ALBERTA ENVIRONMENT: 1-HR 159 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	560
MAXIMUM 1-HR AVERAGE:	5 PPB @ HOUR(S) VAR ON DAY(S) 1, 6
MAXIMUM 24-HR AVERAGE:	2.3 PPB ON DAY(S) 6
IZS CALIBRATION TIME:	26 HRS
MONTHLY CALIBRATION TIME:	14 HRS
STANDARD DEVIATION:	0.90
OPERATIONAL TIME:	634 HRS
AMD OPERATION UPTIME:	85.2 %
MONTHLY AVERAGE:	1.53 PPB

01 Hour Averages



— LICA H02_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 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	3	3	6	6	5	5	4	3	2	1	2	1	1	1	1	1	1	1	IZS	1	1	3	4	3	6	2.6	24	
2	5	3	2	2	2	3	3	4	3	2	2	2	3	1	1	1	4	IZS	1	5	3	4	6	6	6	3.0	24	
3	4	3	3	3	3	5	2	1	1	5	10	5	3	1	1	1	IZS	5	11	6	3	4	4	4	11	3.8	24	
4	4	4	2	2	3	2	2	2	1	1	1	1	1	1	1	IZS	1	1	1	2	2	7	2	2	7	2.0	24	
5	3	3	2	2	3	6	4	4	6	5	2	2	2	3	IZS	2	3	2	1	3	4	3	4	4	6	3.2	24	
6	3	4	8	7	5	5	5	5	3	2	1	1	1	IZS	1	1	9	1	1	3	4	3	4	5	9	3.6	24	
7	4	4	4	3	2	2	4	7	5	27	2	2	IZS	9	5	2	3	2	3	3	3	2	1	1	27	4.3	24	
8	1	1	1	1	2	2	3	10	C	C	C	C	C	C	2	2	1	2	1	1	7	4	2	2	10	2.5	24	
9	2	2	2	2	3	3	2	2	2	2	2	IZS	3	1	2	1	1	1	2	4	3	4	3	3	2	4	2.3	24
10	3	3	3	3	1	1	1	1	1	IZS	1	1	1	1	2	4	2	1	5	3	2	4	2	2	5	2.1	24	
11	3	3	2	1	1	2	3	5	IZS	1	1	2	13	1	M	M	2	2	3	1	4	3	4	4	13	2.9	22	
12	3	3	3	4	4	6	4	IZS	4	2	2	1	4	1	7	3	3	3	3	8	5	4	4	4	8	3.7	24	
13	2	2	1	1	4	2	IZS	3	4	2	22	3	2	2	4	2	3	1	2	4	7	4	4	5	22	3.7	24	
14	5	3	2	2	6	IZS	4	4	2	5	5	2	3	3	1	3	3	2	4	3	5	6	2	2	6	3.3	24	
15	4	2	3	3	IZS	5	7	8	6	5	8	4	7	3	2	3	7	1	1	1	2	2	2	2	8	3.8	24	
16	3	3	2	IZS	2	3	2	1	3	1	1	1	2	1	2	1	4	1	1	2	2	2	2	2	4	1.9	24	
17	3	3	IZS	2	2	2	3	4	3	1	6	4	2	3	2	2	8	1	2	3	6	5	3	2	8	3.1	24	
18	1	IZS	2	2	4	2	9	9	3	5	4	2	2	7	9	2	8	2	5	7	3	4	4	2	9	4.3	24	
19	IZS	2	3	4	4	4	4	4	3	3	2	1	2	1	3	1	1	2	3	2	5	2	1	IZS	5	2.6	24	
20	2	2	2	2	3	2	3	3	3	2	3	1	1	1	1	1	1	1	1	3	3	1	IZS	5	5	2.0	24	
21	5	5	8	6	3	3	3	6	1	1	2	5	1	1	2	2	2	3	3	4	5	IZS	10	3	10	3.7	24	
22	1	1	1	1	1	2	2	4	2	2	2	2	2	2	3	2	3	1	2	10	IZS	N	N	N	10	2.3	21	
23	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
25	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
27	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	C	C	C	3	4	2	2	5	5	3.2	13
28	4	3	4	3	3	4	3	3	1	5	1	1	2	1	IZS	5	1	2	7	4	4	3	2	3	7	3.0	24	
29	3	3	3	3	4	6	10	13	4	2	2	4	2	IZS	2	1	3	2	3	2	3	3	3	2	13	3.6	24	
30	2	3	4	4	4	2	2	3	1	1	1	2	IZS	1	1	1	2	2	2	6	7	4	15	15	15	3.7	24	
31	1	2	1	2	3	3	2	1	2	1	3	IZS	5	4	1	1	2	2	2	3	3	3	3	2	5	2.3	24	
HOURLY MAX	5	5	8	7	6	6	10	13	6	27	22	5	13	9	9	5	9	5	11	10	7	7	15	15				
HOURLY AVG	3.0	2.8	3.0	2.8	3.1	3.3	3.6	4.4	2.8	3.5	3.6	2.2	2.7	2.2	2.4	1.9	3.1	1.8	2.9	3.6	3.9	3.4	3.7	3.6				

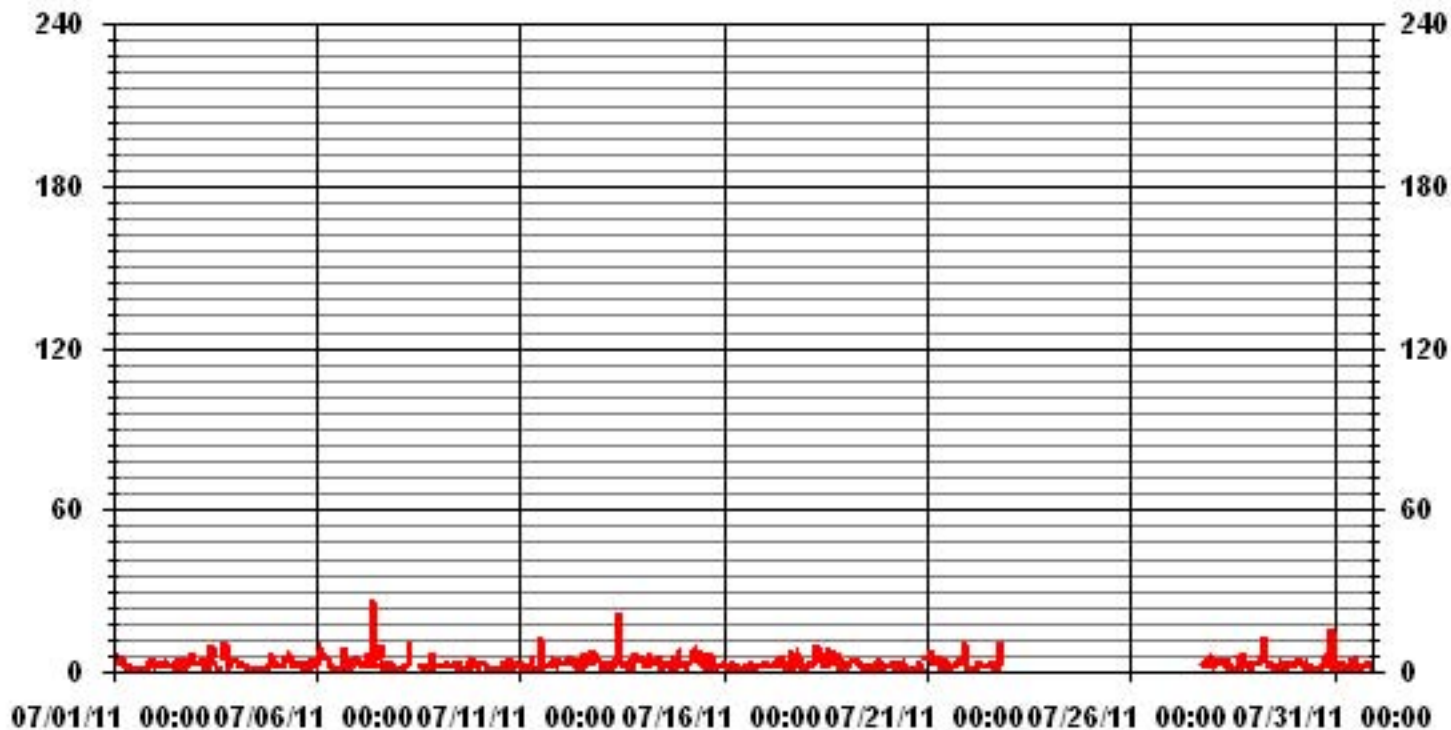
STATUS FLAG CODES

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:	592					
MAXIMUM INSTANTANEOUS VALUE:	27	PPB	@ HOUR(S)	9	ON DAY(S)	7
IZS CALIBRATION TIME:	26	HRS	OPERATIONAL TIME:	632	HRS	
MONTHLY CALIBRATION TIME:	14	HRS				
STANDARD DEVIATION	2.38					

01 Hour Averages



LICA
 NO2_ / WD Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 01
 Site Name : LICA
 Parameter : NO2_
 Units : PPB

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.84	1.84	3.36	2.68	7.39	10.08	11.76	4.03	1.84	4.53	11.09	18.15	14.11	4.03	1.51	1.68	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.84	1.84	3.36	2.68	7.39	10.08	11.76	4.03	1.84	4.53	11.09	18.15	14.11	4.03	1.51	1.68	

Calm : .00 %

Total # Operational Hours : 595

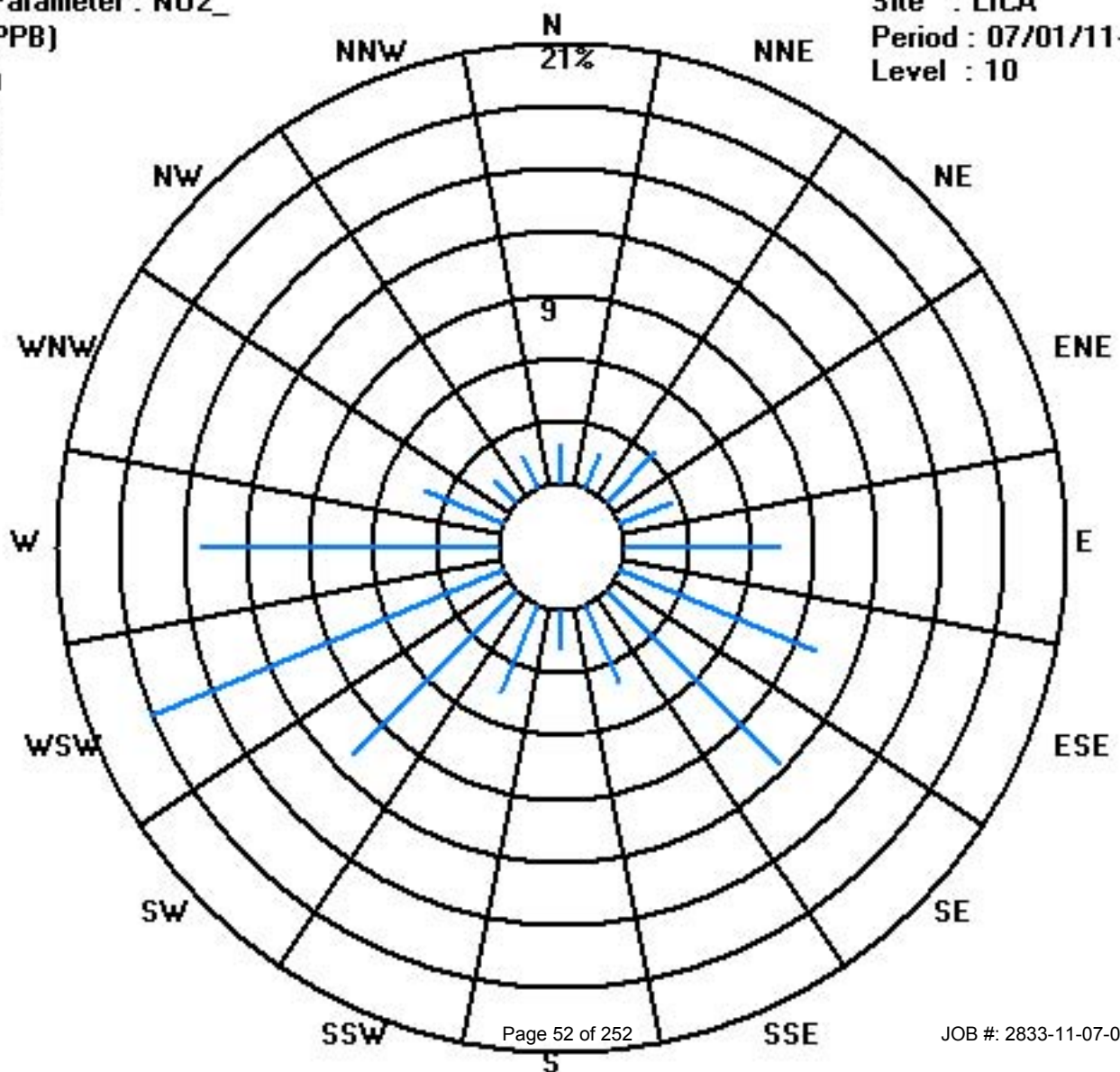
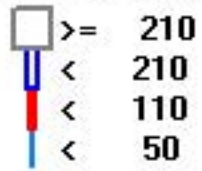
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	11	20	16	44	60	70	24	11	27	66	108	84	24	9	10	595
< 110																	
< 210																	
>= 210																	
Totals	11	11	20	16	44	60	70	24	11	27	66	108	84	24	9	10	

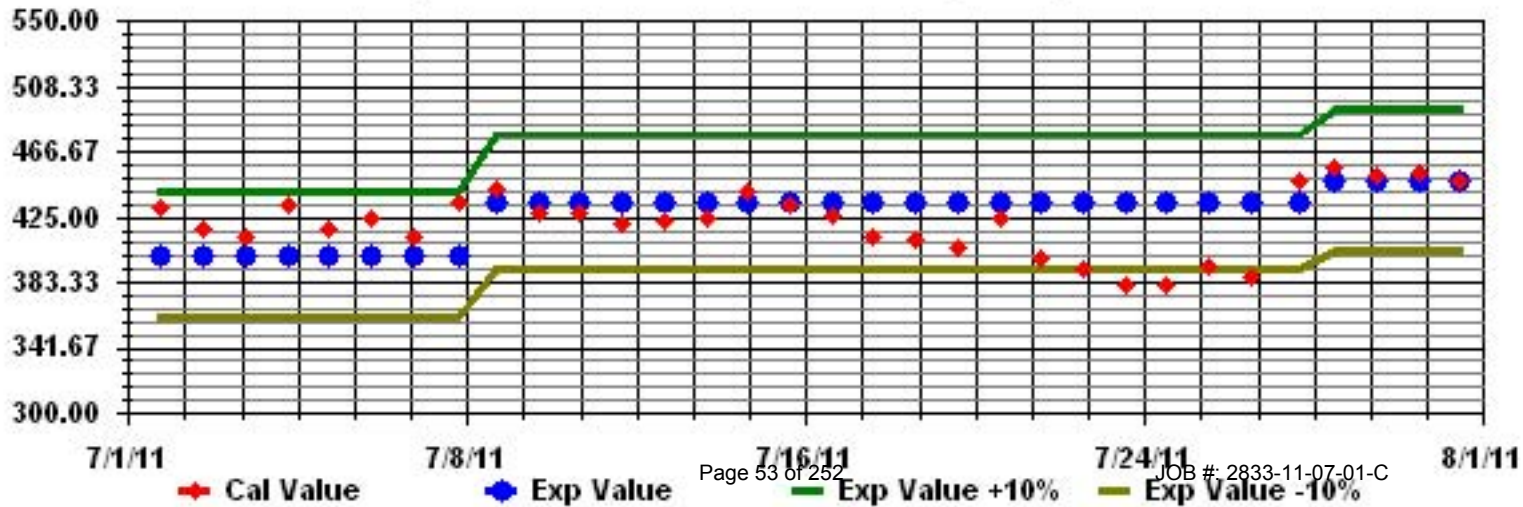
Calm : .00 %

Total # Operational Hours : 595

Class Limits (PPB)

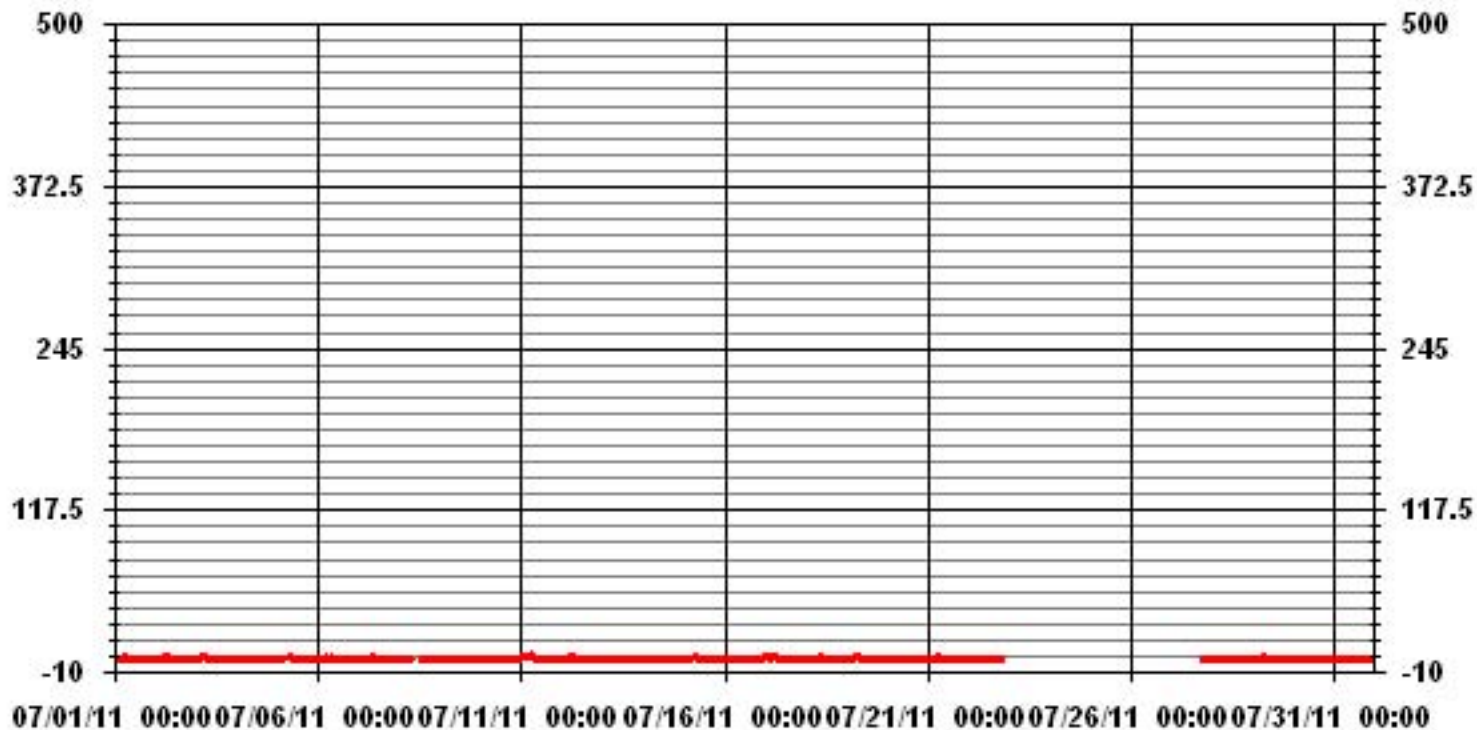


Calibration Graph for Site: LICA Parameter: H02_ Sequence: H02 Phase: SPAN



Nitric Oxide

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 2011

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	0	0	0	0	0	1	1	1	2	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	0	2	0.2	24
2	0	0	0	0	0	3	1	4	1	0	0	2	3	0	0	1	1	IZS	0	1	0	0	0	0	4	0.7	24	
3	1	0	0	4	3	7	0	0	0	0	1	2	3	1	5	3	IZS	2	3	3	0	0	0	0	7	1.7	24	
4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	IZS	0	0	0	0	1	6	0	0	6	0.3	24	
5	0	1	0	1	3	6	2	6	3	1	1	0	0	0	IZS	0	3	0	0	0	0	0	0	0	6	1.2	24	
6	0	1	1	1	1	3	3	2	1	0	0	0	0	IZS	0	0	1	0	0	0	1	0	0	1	3	0.7	24	
7	1	0	0	0	1	1	2	4	9	22	0	2	IZS	5	3	0	30	3	1	3	0	1	1	0	30	3.9	24	
8	0	0	0	0	0	0	5	6	C	C	C	C	C	C	C	0	4	0	0	0	3	1	0	0	6	1.1	24	
9	0	0	0	0	1	1	1	1	1	1	IZS	1	0	1	0	0	2	0	0	0	0	0	0	0	2	0.4	24	
10	0	0	0	0	0	0	0	0	0	IZS	0	0	2	0	0	2	0	0	4	1	0	0	0	1	4	0.4	24	
11	3	2	3	3	4	3	5	5	IZS	0	0	1	12	2	M	M	2	3	1	0	0	1	0	0	12	2.4	22	
12	1	0	0	0	1	4	4	IZS	7	0	3	9	1	0	2	5	5	1	1	3	1	0	4	1	9	2.3	24	
13	0	0	0	0	5	1	IZS	1	2	0	9	0	2	0	1	3	2	5	1	5	3	1	1	1	9	1.9	24	
14	1	1	0	1	5	IZS	8	3	1	1	1	1	14	2	0	1	3	0	3	5	15	1	0	0	15	2.9	24	
15	0	0	0	3	IZS	2	5	25	3	2	1	1	5	6	1	2	3	0	0	0	0	0	0	0	25	2.6	24	
16	0	0	1	IZS	1	2	1	1	2	0	0	0	0	0	1	0	7	0	0	0	0	1	3	2	7	1.0	24	
17	5	2	IZS	2	26	4	4	4	3	0	4	1	1	2	0	1	5	0	1	0	2	4	1	1	26	3.2	24	
18	0	IZS	0	1	4	0	6	6	0	3	1	1	1	6	1	1	6	1	0	1	0	1	2	0	6	1.8	24	
19	IZS	0	0	0	0	5	1	3	1	1	0	0	0	3	2	0	0	0	2	0	0	0	0	0	5	0.8	24	
20	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	IZS	0	1	0.1	24
21	0	0	0	0	0	1	1	3	0	0	1	1	1	0	1	2	0	1	0	1	3	IZS	27	2	27	2.0	24	
22	1	0	0	0	0	1	1	3	1	1	2	2	1	1	1	2	5	3	2	1	IZS	N	N	N	5	1.4	21	
23	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
25	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			0	
27	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	C	C	C	C	0	0	0	0	0	0.0	13	
28	0	0	0	0	0	1	1	1	1	3	1	0	0	0	IZS	5	0	0	3	1	0	1	1	0	5	0.8	24	
29	1	1	0	1	1	4	19	9	1	0	1	5	1	IZS	1	0	0	0	1	1	1	0	0	0	19	2.1	24	
30	0	0	0	0	0	1	1	2	0	0	0	1	IZS	0	0	0	2	0	0	2	2	0	10	10	10	1.3	24	
31	0	7	0	0	0	1	1	0	1	0	1	IZS	0	1	0	0	2	0	0	0	0	0	0	0	7	0.6	24	
HOURLY MAX	5	7	3	4	26	7	19	25	9	22	9	9	14	6	5	5	30	5	4	5	15	6	27	10				
HOURLY AVG	0.6	0.6	0.2	0.7	2.2	2.1	3.0	3.6	1.7	1.5	1.1	1.3	2.0	1.3	0.8	1.3	3.2	0.8	0.9	1.0	1.2	0.7	2.0	0.8				

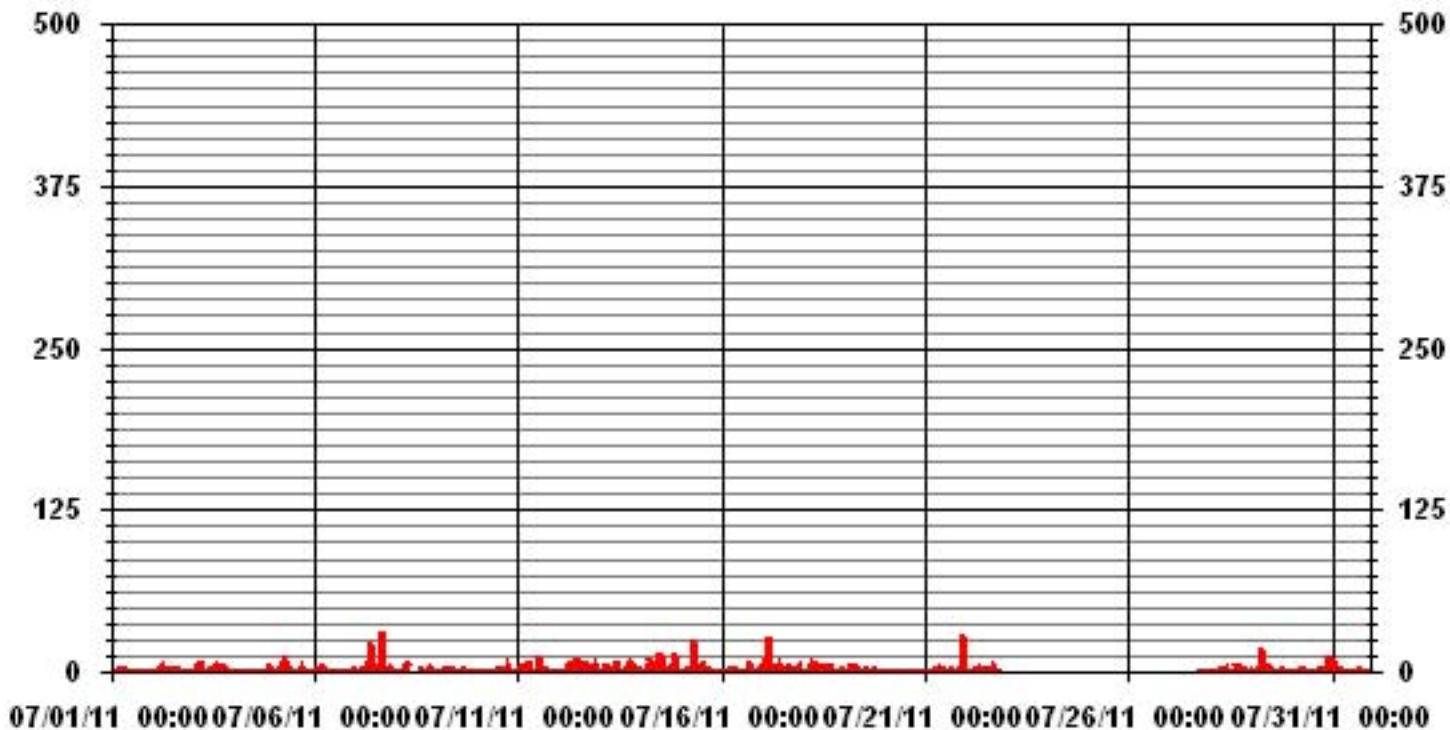
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	291
MAXIMUM INSTANTANEOUS VALUE:	30 PPB @ HOUR(S) 10 ON DAY(S) 9
IZS CALIBRATION TIME:	26 HRS
MONTHLY CALIBRATION TIME:	14 HRS
STANDARD DEVIATION	3.09
OPERATIONAL TIME:	632 HRS

01 Hour Averages



LICA
 NO_ / WD Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WD
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.84	1.84	3.36	2.68	7.39	10.08	11.76	4.03	1.84	4.53	11.09	18.15	14.11	4.03	1.51	1.68	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.84	1.84	3.36	2.68	7.39	10.08	11.76	4.03	1.84	4.53	11.09	18.15	14.11	4.03	1.51	1.68	

Calm : .00 %

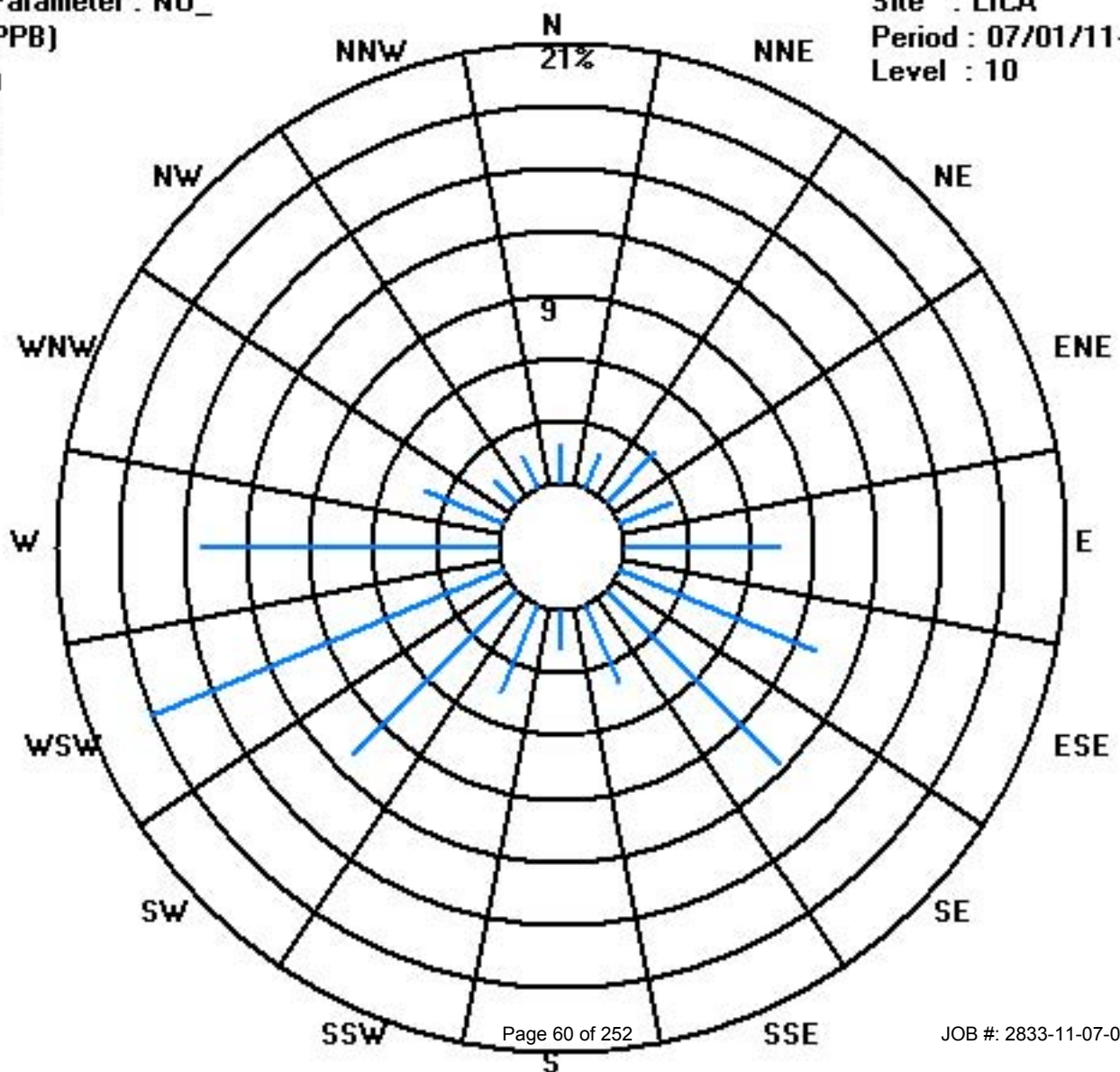
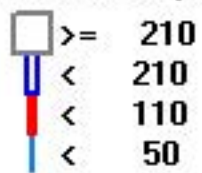
Total # Operational Hours : 595

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	11	20	16	44	60	70	24	11	27	66	108	84	24	9	10	595
< 110																	
< 210																	
>= 210																	
Totals	11	11	20	16	44	60	70	24	11	27	66	108	84	24	9	10	

Calm : .00 %

Total # Operational Hours : 595



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 2011

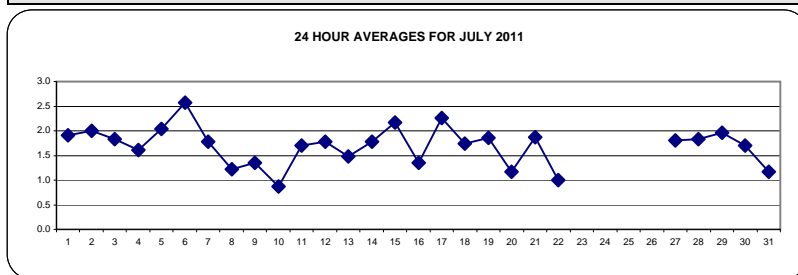
OXIDES OF NITROGEN hourly averages in ppb

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	2	3	5	5	5	5	4	2	2	1	1	0	0	0	0	0	0	0	IZS	1	1	2	2	3	5	1.9	24	
2	3	3	2	2	1	3	3	3	3	2	1	1	1	1	1	1	1	IZS	1	1	2	3	3	4	4	2.0	24	
3	3	2	2	3	2	4	1	1	1	1	1	1	1	1	1	1	IZS	1	2	2	2	3	3	3	4	1.8	24	
4	2	3	2	2	3	2	2	2	1	1	1	1	1	1	1	IZS	1	1	1	1	1	3	2	2	3	1.6	24	
5	2	2	2	1	2	4	4	4	3	3	2	1	1	1	IZS	1	1	1	1	1	3	2	3	2	4	2.0	24	
6	2	3	5	5	4	5	6	4	3	1	1	1	1	IZS	1	1	1	1	1	2	2	2	3	4	6	2.6	24	
7	3	3	3	2	1	2	2	2	3	4	1	1	IZS	2	1	1	1	1	1	2	2	1	1	1	4	1.8	24	
8	1	1	1	1	1	1	2	3	C	C	C	C	C	C	C	1	1	1	1	1	2	1	1	1	3	1.2	24	
9	1	1	1	1	2	2	2	1	1	1	IZS	1	1	1	1	1	1	1	2	2	2	2	2	1	2	1.3	24	
10	2	2	3	1	1	0	0	0	0	IZS	1	0	1	0	0	0	0	0	1	1	1	1	2	1	2	3	0.9	24
11	2	3	2	2	2	3	6	5	IZS	1	0	1	1	0	0	0	0	0	1	1	2	2	2	3	6	1.7	24	
12	2	2	2	3	2	4	2	IZS	2	1	1	1	1	0	1	1	1	2	1	3	2	2	3	2	4	1.8	24	
13	1	1	1	1	1	1	IZS	2	2	1	3	1	1	1	1	1	1	1	1	1	2	2	3	4	4	1.5	24	
14	4	3	1	1	3	IZS	2	2	1	2	2	1	1	2	1	1	1	1	1	2	2	3	2	2	4	1.8	24	
15	2	2	2	2	IZS	5	6	5	3	2	5	2	2	1	1	1	1	1	1	1	1	1	2	1	6	2.2	24	
16	2	2	1	IZS	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	1.3	24	
17	4	3	IZS	3	4	4	4	7	3	1	1	1	1	1	1	1	1	1	1	2	3	3	1	1	7	2.3	24	
18	1	IZS	2	2	3	1	3	3	2	4	2	2	1	1	1	1	1	1	1	3	2	1	1	1	4	1.7	24	
19	IZS	2	2	3	3	4	4	3	3	2	1	1	1	1	1	1	1	1	2	1	2	1	1	1	IZS	4	1.9	24
20	1	2	1	2	2	1	3	3	2	2	1	0	1	0	0	0	0	0	0	1	2	1	IZS	2	3	1.2	24	
21	3	3	4	3	2	2	3	2	1	1	1	1	1	1	1	1	1	1	1	3	3	IZS	3	1	4	1.9	24	
22	1	0	0	0	1	1	2	2	1	1	1	1	1	1	1	2	1	1	1	1	IZS	N	N	N	2	1.0	21	
23	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
24	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
25	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
26	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
27	N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	C	C	1	2	2	2	2	2	1.8	13	
28	3	2	2	2	2	3	3	3	1	2	1	1	1	1	IZS	1	1	1	1	2	3	2	2	2	3	1.8	24	
29	1	2	2	2	2	4	5	5	3	1	1	1	2	IZS	1	1	1	1	2	2	2	2	1	1	5	2.0	24	
30	1	2	2	3	2	2	2	2	1	1	1	1	IZS	1	1	1	1	1	1	2	3	2	4	2	4	1.7	24	
31	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	2	2	2	2	2	1	2	1.2	24	
HOURLY MAX	4	3	5	5	5	5	6	7	3	4	5	2	2	2	1	1	2	2	2	3	3	3	4	4				
HOURLY AVG	2.0	2.1	2.0	2.1	2.2	2.6	3.0	2.7	1.9	1.6	1.3	1.0	1.0	0.9	0.8	0.8	0.9	0.9	1.1	1.6	2.0	1.9	2.1	2.0				

STATUS FLAG CODES

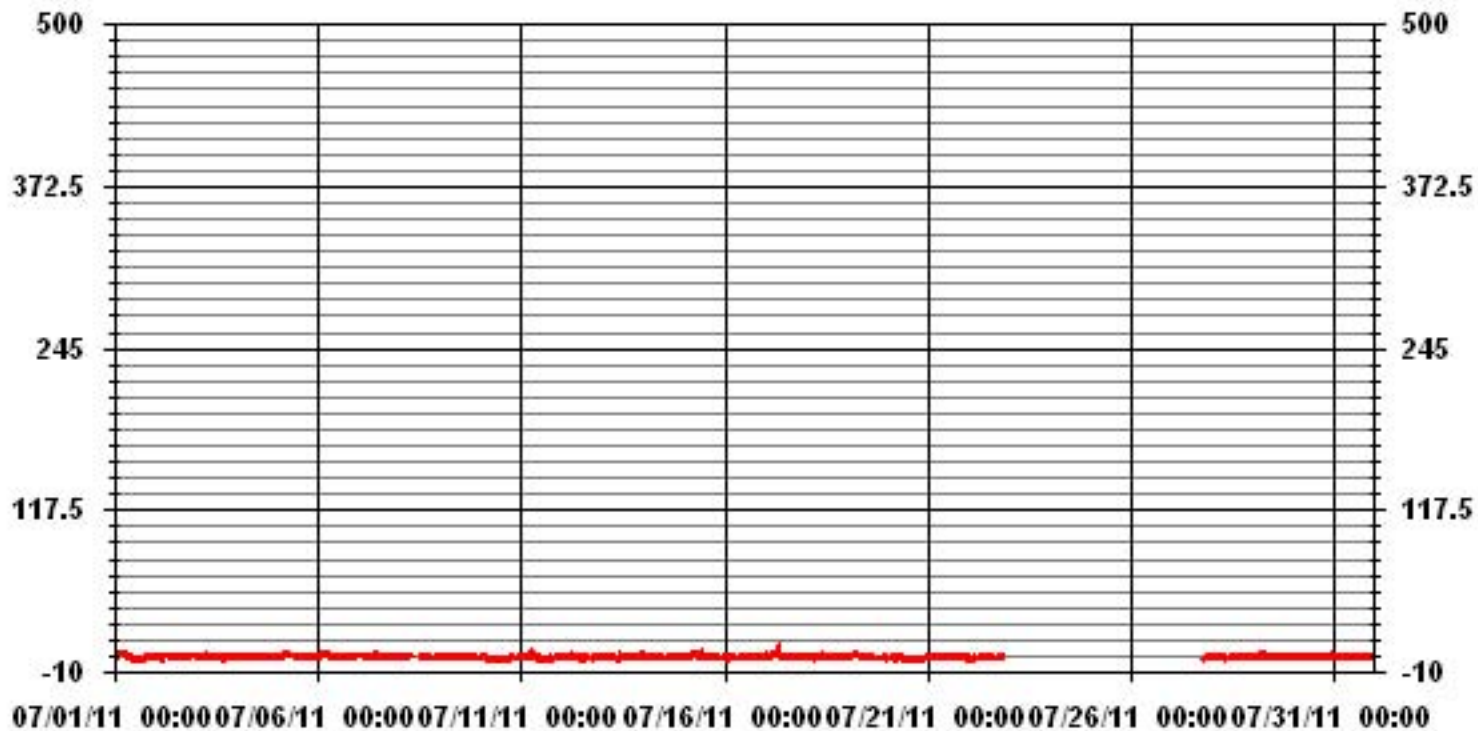
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	561
MAXIMUM 1-HR AVERAGE:	7 PPB @ HOUR(S) 7 ON DAY(S) 17
MAXIMUM 24-HR AVERAGE:	2.6 PPB ON DAY(S) 6
IZS CALIBRATION TIME:	26 HRS
MONTHLY CALIBRATION TIME:	14 HRS
STANDARD DEVIATION:	1.10
OPERATIONAL TIME:	634 HRS
AMD OPERATION UPTIME:	85.2 %
MONTHLY AVERAGE:	1.70 PPB

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 2011

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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		3	3	7	6	6	6	5	5	4	2	2	1	1	1	1	1	1	1	IZS	1	1	3	4	3	7	3.0	24	
2		5	3	2	2	2	5	4	7	5	2	2	5	5	1	1	2	5	IZS	2	6	3	4	6	6	7	3.7	24	
3		4	3	3	6	6	11	2	2	2	5	12	5	4	1	4	2	IZS	7	15	7	3	5	4	4	15	5.1	24	
4		4	4	2	2	4	2	2	2	2	1	1	1	1	1	2	IZS	1	1	1	2	2	11	3	2	11	2.3	24	
5		3	3	3	2	5	12	6	9	8	6	3	2	2	3	IZS	2	5	2	2	3	4	3	4	4	12	4.2	24	
6		3	4	8	7	6	8	8	7	4	2	1	1	1	IZS	1	1	10	1	2	4	5	3	4	5	10	4.2	24	
7		4	4	4	3	3	3	5	8	13	37	2	3	IZS	13	8	2	7	4	4	6	3	2	2	1	37	6.1	24	
8		1	1	1	1	2	2	7	14	C	C	C	C	C	C	3	4	1	2	1	1	10	5	2	2	14	3.3	24	
9		2	2	2	2	4	3	3	2	2	2	IZS	4	2	3	2	1	2	2	4	3	4	3	3	2	4	2.6	24	
10		3	3	3	3	1	1	1	1	1	IZS	1	1	3	1	2	6	2	2	8	4	2	5	2	3	8	2.6	24	
11		5	5	4	3	5	5	7	9	IZS	1	1	2	16	2	M	M	4	4	4	1	4	4	4	5	16	4.5	22	
12		4	3	4	4	5	10	8	IZS	6	2	4	4	5	1	9	4	5	3	3	11	6	4	4	4	11	4.9	24	
13		3	2	1	1	9	3	IZS	4	6	2	32	3	3	2	5	4	4	2	4	8	9	4	4	6	32	5.3	24	
14		6	4	2	2	11	IZS	9	6	4	5	6	2	5	4	2	4	6	2	6	5	14	7	3	2	14	5.1	24	
15		4	2	3	5	IZS	7	12	29	9	7	9	4	12	9	2	5	11	1	1	1	2	2	2	2	29	6.1	24	
16		3	3	3	IZS	2	4	2	2	4	1	1	1	2	1	2	1	8	2	1	2	2	2	5	4	8	2.5	24	
17		7	4	IZS	4	23	6	6	8	6	1	10	4	2	5	2	4	12	1	3	3	7	9	4	3	23	5.8	24	
18		1	IZS	2	3	6	2	15	15	3	8	5	3	3	13	10	3	13	3	6	8	3	5	6	2	15	6.0	24	
19		IZS	2	3	4	4	9	6	7	5	4	2	1	2	4	6	1	1	2	5	2	5	2	1	IZS	9	3.5	24	
20		2	2	2	2	3	2	3	3	3	2	4	1	1	1	2	1	1	1	1	1	3	3	1	IZS	5	2.1	24	
21		5	5	8	6	3	4	4	9	2	1	3	6	2	1	3	3	3	5	3	5	8	IZS	32	4	32	5.4	24	
22		1	1	1	1	2	3	3	7	3	2	3	3	3	2	3	3	7	2	3	11	IZS	N	N	N	11	3.2	21	
23		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
24		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
25		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
26		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		0	
27		N	N	N	N	N	N	N	N	N	N	N	C	C	C	C	C	C	C	C	C	3	4	2	2	5	5	3.2	13
28		4	3	4	3	3	4	3	4	2	8	2	1	2	1	IZS	6	1	2	10	5	4	4	3	3	10	3.6	24	
29		3	3	3	3	4	9	27	19	5	3	3	8	3	IZS	2	1	3	2	4	2	4	2	3	2	27	5.1	24	
30		2	3	4	4	4	2	2	4	1	1	2	2	IZS	2	2	2	4	3	2	8	7	4	25	25	25	5.0	24	
31		1	4	1	2	3	4	2	2	2	1	4	IZS	5	5	2	1	3	2	2	3	3	3	3	2	5	2.6	24	
HOURLY MAX		7	5	8	7	23	12	27	29	13	37	32	8	16	13	10	6	13	7	15	11	14	11	32	25				
HOURLY AVG		3.3	3.0	3.2	3.2	5.0	5.1	6.1	7.4	4.3	4.4	4.8	2.8	3.7	3.3	3.3	2.7	4.8	2.4	3.9	4.4	4.7	4.0	5.4	4.2				

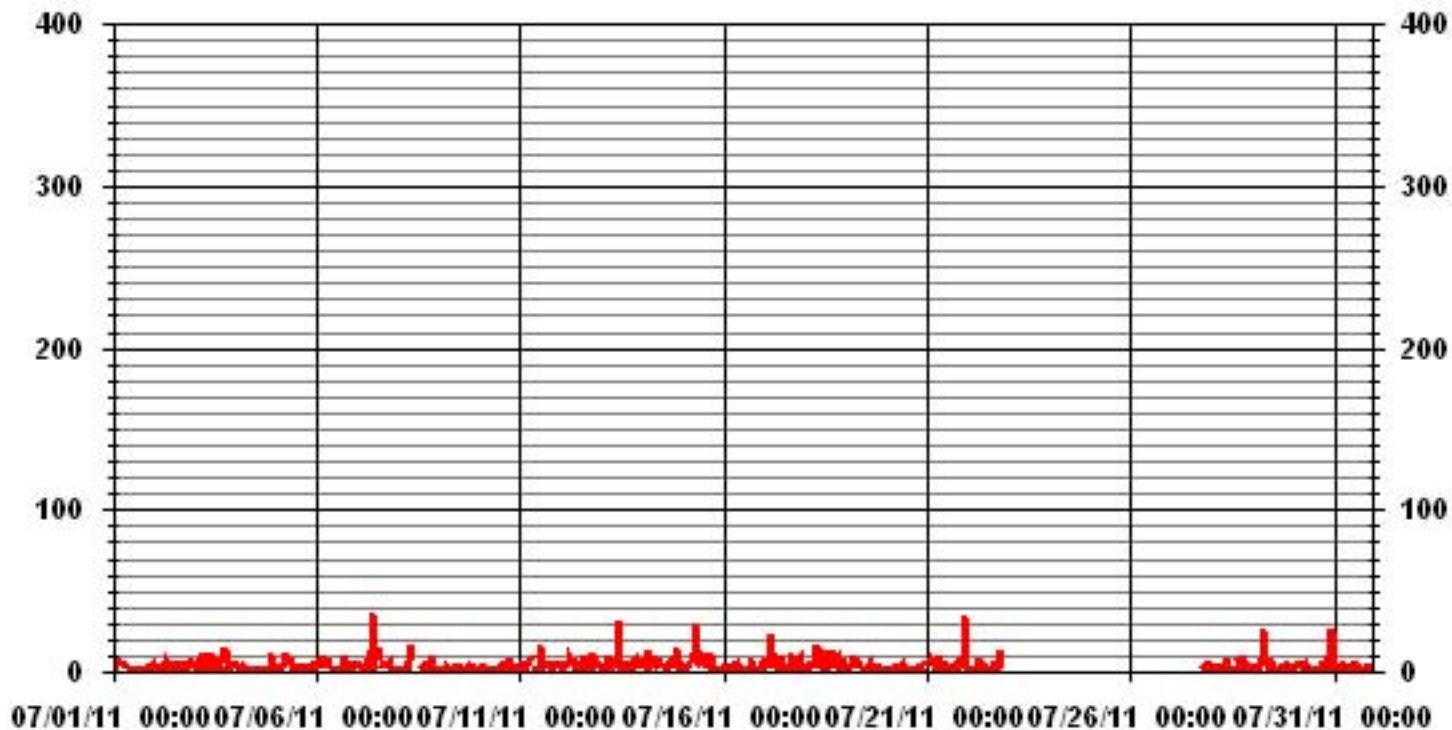
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	592					
MAXIMUM INSTANTANEOUS VALUE:	37	PPB	@ HOUR(S)	9	ON DAY(S)	7
IZS CALIBRATION TIME:	26	HRS	OPERATIONAL TIME:	632 HRS		
MONTHLY CALIBRATION TIME:	14	HRS				
STANDARD DEVIATION	4.01					

01 Hour Averages



LICA
NOX_ / WD Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.85	1.85	3.36	2.69	7.40	10.10	11.78	4.04	1.85	4.54	11.11	18.18	13.97	4.04	1.51	1.68	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.85	1.85	3.36	2.69	7.40	10.10	11.78	4.04	1.85	4.54	11.11	18.18	13.97	4.04	1.51	1.68	

Calm : .00 %

Total # Operational Hours : 594

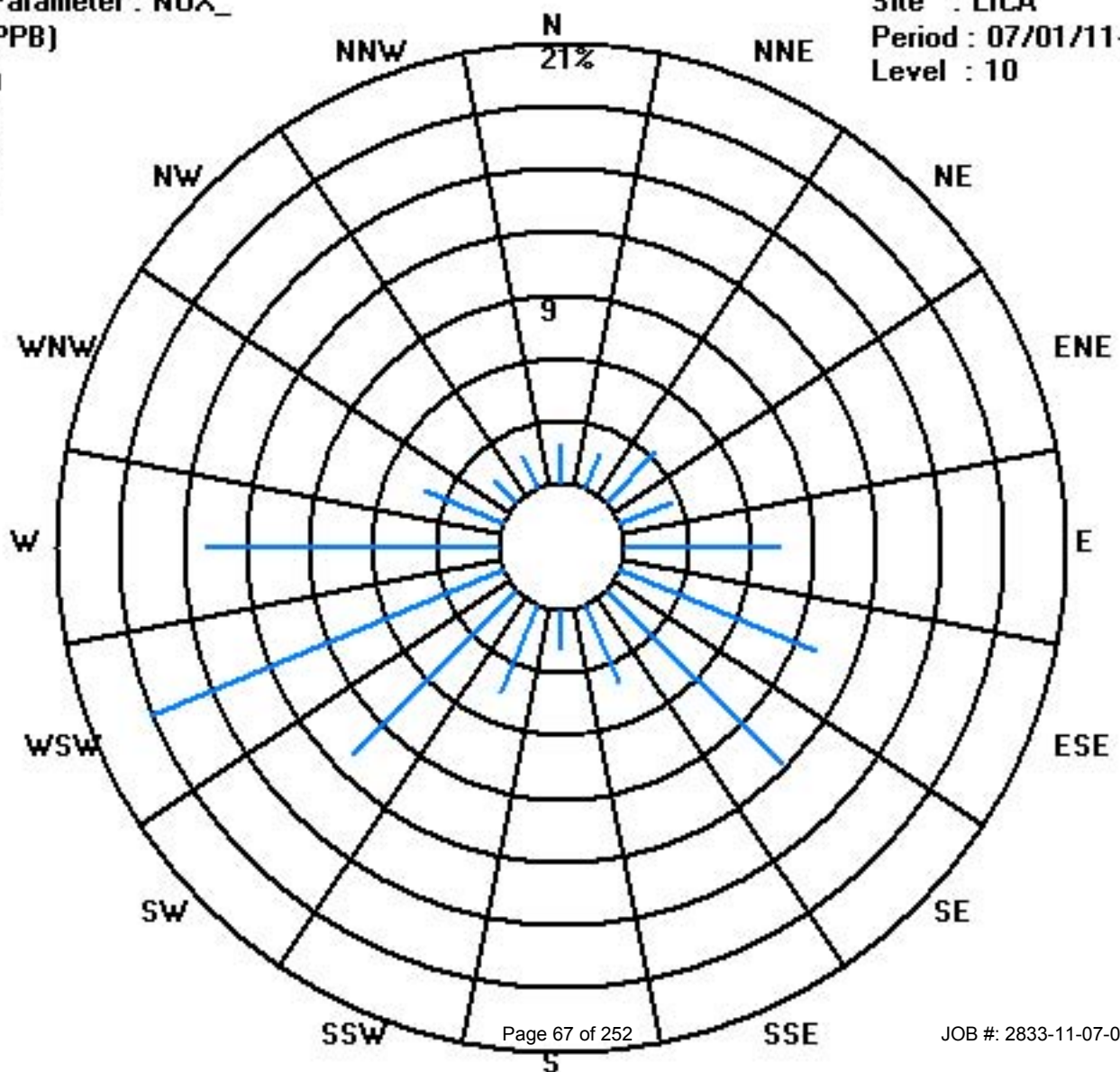
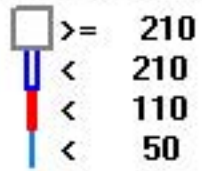
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	11	20	16	44	60	70	24	11	27	66	108	83	24	9	10	594
< 110																	
< 210																	
>= 210																	
Totals	11	11	20	16	44	60	70	24	11	27	66	108	83	24	9	10	

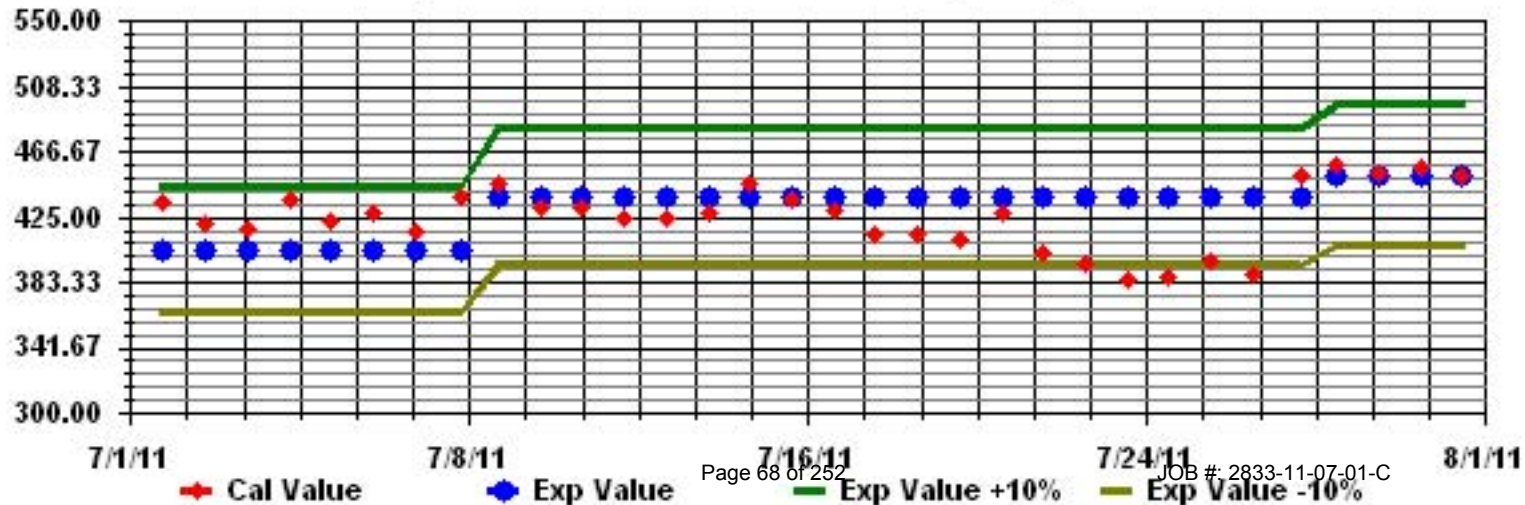
Calm : .00 %

Total # Operational Hours : 594

Class Limits (PPB)



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 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	20	17	15	10	12	13	16	19	20	23	25	25	25	24	23	24	25	25	IZS	24	22	18	13	12	25	19.6	24
2	11	11	8	4	3	5	10	14	23	29	31	34	35	36	39	40	40	IZS	40	37	21	14	12	8	40	22.0	24
3	6	5	3	2	3	8	25	27	31	35	39	43	43	45	46	45	IZS	40	36	33	29	26	25	22	46	26.8	24
4	18	17	18	19	17	17	18	20	21	23	25	25	25	26	27	IZS	28	29	29	27	24	12	13	11	29	21.3	24
5	7	6	4	4	3	6	12	20	28	35	36	38	38	40	IZS	36	36	36	38	33	18	11	8	7	40	21.7	24
6	5	5	5	5	5	7	11	16	23	25	25	26	29	IZS	32	32	32	33	33	26	14	11	9	4	33	18.0	24
7	3	3	2	15	22	22	25	26	24	24	26	27	IZS	32	35	33	32	30	30	27	27	27	27	28	35	23.8	24
8	28	26	24	22	20	19	19	19	20	25	28	IZS	50	47	40	40	40	34	29	28	23	16	9	11	50	26.8	24
9	11	11	13	12	10	10	16	14	16	19	IZS	18	19	22	20	18	18	20	23	23	21	21	25	22	25	17.5	24
10	19	16	11	15	23	24	25	25	24	IZS	25	26	26	25	25	26	25	26	28	27	17	7	4	3	28	20.5	24
11	2	1	1	1	1	1	4	16	IZS	29	30	C	C	C	C	30	29	30	27	21	13	8	5	5	30	13.4	24
12	5	3	3	7	5	11	15	IZS	22	24	26	26	28	28	29	29	29	26	25	24	20	13	14	16	29	18.5	24
13	18	20	20	19	15	18	IZS	14	16	18	20	22	25	24	28	29	31	31	29	26	15	7	3	1	31	19.5	24
14	2	5	16	6	5	IZS	15	15	20	20	17	16	16	18	29	28	34	31	30	27	20	14	15	20	34	18.2	24
15	16	13	13	7	IZS	8	6	9	11	32	35	41	40	34	29	27	23	22	19	17	16	15	12	9	41	19.7	24
16	9	13	9	IZS	3	8	13	16	18	20	20	21	23	22	21	22	22	20	21	19	11	5	2	1	23	14.7	24
17	1	1	IZS	1	1	2	4	9	18	22	24	27	25	27	29	28	31	34	34	30	24	22	27	21	34	19.2	24
18	18	IZS	8	9	6	18	16	15	26	20	30	34	38	36	40	44	40	34	26	7	21	25	32	27	44	24.8	24
19	IZS	11	17	14	10	11	17	20	23	28	27	26	27	27	27	28	28	26	20	19	13	18	22	IZS	28	20.9	24
20	20	16	12	16	20	20	18	17	18	19	23	23	24	23	24	24	25	26	27	25	21	23	IZS	20	27	21.0	24
21	16	15	13	13	13	12	13	16	19	21	22	22	23	26	27	27	28	29	28	25	14	IZS	17	14	29	19.7	24
22	15	15	16	15	13	12	13	13	15	14	13	12	14	18	18	16	15	13	14	13	IZS	15	17	16	18	14.6	24
23	17	17	19	19	19	19	17	15	15	22	26	27	27	28	31	33	34	32	24	IZS	24	18	14	15	34	22.3	24
24	11	8	7	6	6	6	7	9	12	15	18	22	24	25	24	24	23	22	IZS	15	9	10	9	9	25	14.0	24
25	5	2	2	2	2	5	7	9	14	20	26	28	30	31	30	33	32	IZS	32	20	11	6	4	3	33	15.4	24
26	3	3	4	5	3	3	11	23	24	16	11	19	17	19	18	15	IZS	14	16	16	11	7	9	9	24	12.0	24
27	8	8	8	10	11	13	13	13	15	18	20	22	23	23	23	IZS	26	26	23	21	19	19	17	14	26	17.1	24
28	12	13	14	18	17	14	13	14	18	20	23	25	25	26	IZS	26	29	28	28	22	9	7	10	9	29	18.3	24
29	5	8	10	7	4	4	11	11	22	25	30	28	32	IZS	32	33	34	26	25	23	21	21	20	19	34	19.6	24
30	21	19	15	15	14	12	14	16	19	23	23	25	IZS	32	35	32	33	34	33	30	20	19	15	21	35	22.6	24
31	21	21	24	22	21	20	19	21	22	22	22	IZS	25	26	31	32	34	37	36	26	22	23	22	24	37	24.9	24
HOURLY MAX	28	26	24	22	23	24	25	27	31	35	39	43	50	47	46	45	40	40	40	37	29	27	32	28			
HOURLY AVG	11.8	11.0	11.1	10.7	10.2	11.6	14.1	16.4	19.9	22.9	24.9	26.0	27.7	28.3	29.0	29.4	29.4	28.1	27.7	23.7	18.3	15.3	14.4	13.4			

STATUS FLAG CODES

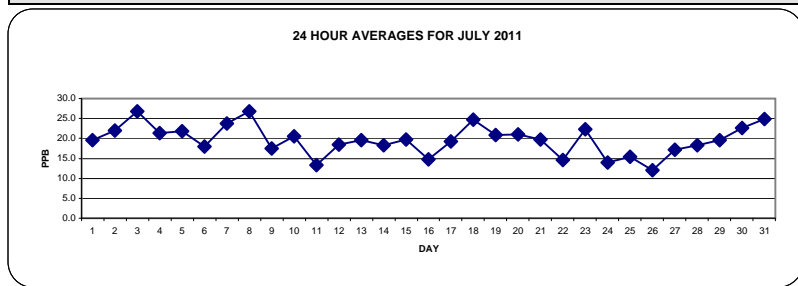
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

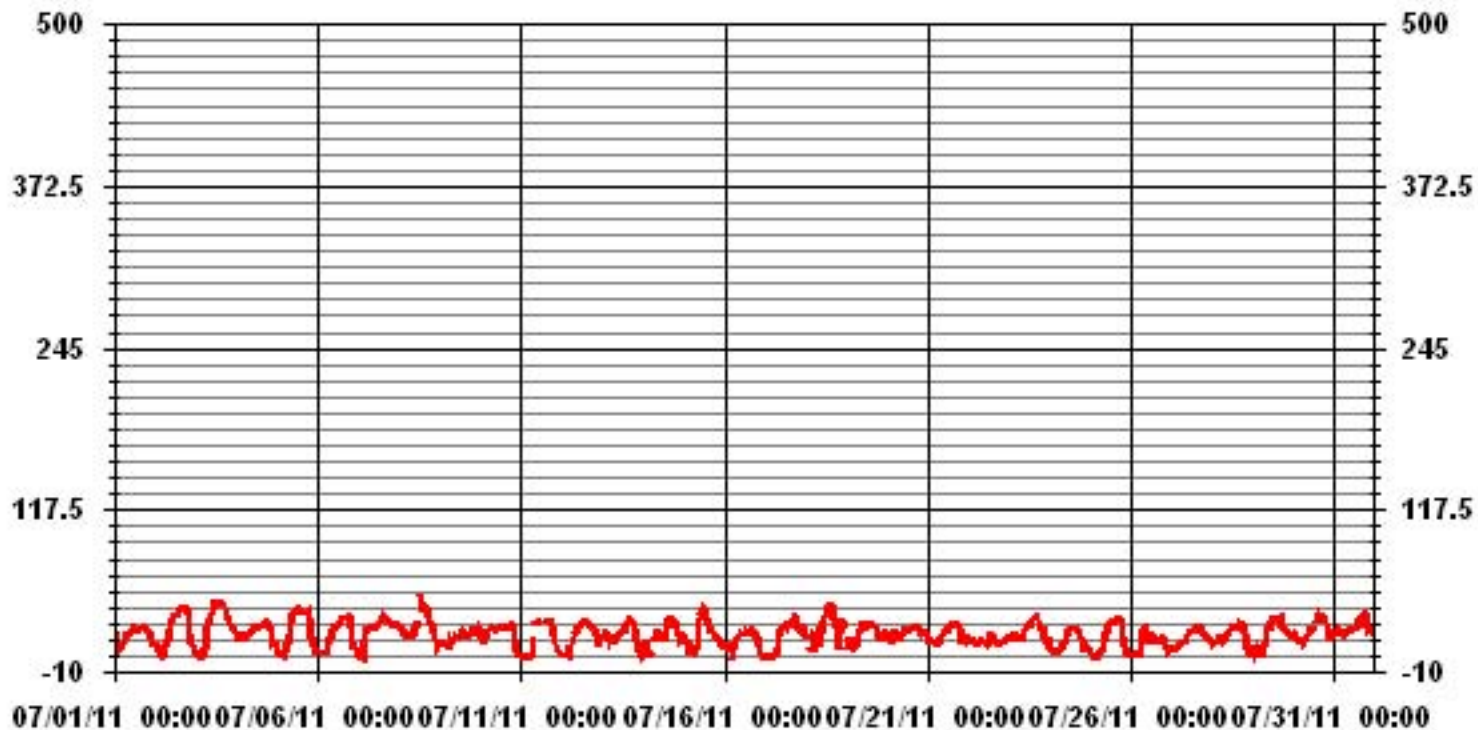
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	708				
MAXIMUM 1-HR AVERAGE:	50	PPB	@ HOUR(S)	12	ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	26.8	PPB			ON DAY(S) 8
					VAR-VARIOUS
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION	9.61		MONTHLY AVERAGE	19.66	PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 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	22	18	18	13	13	16	16	21	22	25	27	26	26	25	24	25	26	26	IZS	25	24	21	15	15	27	21.3	24	
2	13	13	11	6	4	10	13	18	28	30	33	36	37	39	41	42	42	IZS	42	41	33	19	17	12	42	25.2	24	
3	9	7	8	5	7	23	28	30	35	39	43	44	45	47	48	47	IZS	45	42	36	33	28	27	23	48	30.4	24	
4	19	18	19	20	18	18	19	21	23	25	26	26	26	27	28	IZS	29	30	30	29	27	22	17	17	30	23.2	24	
5	10	8	6	6	4	12	15	25	31	38	38	39	41	42	IZS	39	37	38	39	37	26	13	11	10	42	24.6	24	
6	8	7	7	9	8	11	12	21	25	26	26	28	31	IZS	33	33	34	35	35	32	19	16	13	8	35	20.7	24	
7	5	4	3	23	25	24	27	27	26	25	28	28	IZS	36	39	35	33	33	31	29	28	28	27	28	39	25.7	24	
8	28	27	25	23	21	20	19	21	22	29	36	IZS	53	53	43	41	42	40	31	31	27	19	14	16	53	29.6	24	
9	14	13	15	14	14	15	18	18	21	21	IZS	19	21	23	23	20	20	22	29	27	23	23	27	25	29	20.2	24	
10	21	17	13	23	24	25	27	27	26	IZS	28	27	27	28	29	27	27	28	29	28	25	11	7	4	29	23.0	24	
11	3	2	3	3	3	3	7	27	IZS	31	31	C	C	C	C	C	31	32	30	24	17	10	9	7	32	15.2	24	
12	8	6	6	10	7	14	17	IZS	24	26	27	27	30	30	31	30	28	27	27	27	22	19	17	18	31	20.8	24	
13	21	22	22	22	17	21	IZS	16	18	20	24	24	27	27	31	32	33	33	30	29	22	13	5	4	33	22.3	24	
14	4	17	19	12	8	IZS	18	16	22	21	19	18	17	31	31	30	36	35	35	33	25	20	20	22	36	22.1	24	
15	18	17	15	12	IZS	10	9	16	15	42	39	46	48	37	33	28	26	24	20	19	17	16	14	11	48	23.1	24	
16	11	16	16	IZS	5	11	16	18	21	21	21	24	25	24	23	23	24	22	23	21	19	8	5	3	25	17.4	24	
17	3	3	IZS	3	2	3	6	12	21	24	26	31	27	30	30	30	36	36	35	34	27	27	29	28	36	21.9	24	
18	21	IZS	13	15	15	20	19	18	34	23	35	38	41	38	44	46	43	38	34	16	35	33	36	34	46	30.0	24	
19	IZS	20	21	17	13	14	20	23	26	30	28	28	28	28	29	30	29	30	29	24	21	18	20	24	IZS	30	23.6	24
20	24	17	18	19	22	21	19	18	20	24	25	25	25	24	26	26	27	28	28	28	23	25	IZS	23	28	23.3	24	
21	17	17	16	14	14	13	15	18	21	23	23	24	26	28	29	29	30	31	30	30	22	IZS	19	15	31	21.9	24	
22	16	16	18	17	14	13	15	14	16	15	14	14	16	19	20	17	16	14	15	14	IZS	17	17	17	20	15.8	24	
23	18	18	20	20	20	18	17	20	26	28	29	29	30	33	34	35	35	35	27	IZS	30	21	16	16	35	24.3	24	
24	13	11	7	7	7	7	8	10	15	16	22	23	25	27	26	26	25	23	IZS	17	14	12	11	12	27	15.8	24	
25	10	5	3	4	6	8	10	12	17	23	28	30	31	32	33	35	35	IZS	34	30	18	9	7	7	35	18.6	23	
26	5	5	7	7	5	6	23	25	25	22	P	22	22	20	21	17	IZS	16	17	17	15	10	12	11	25	15.0	23	
27	9	9	10	11	13	14	15	15	16	20	21	23	24	24	24	IZS	30	27	25	22	20	20	19	16	30	18.6	24	
28	13	14	17	19	18	16	14	16	20	22	25	26	26	27	IZS	28	31	30	30	29	14	10	15	13	31	20.6	24	
29	8	13	13	12	6	6	16	21	24	28	32	31	36	IZS	34	35	37	31	27	25	22	23	23	21	37	22.8	24	
30	23	24	16	16	15	13	15	17	22	24	24	27	IZS	36	36	35	36	36	36	31	26	22	20	23	36	24.9	24	
31	22	23	25	24	22	21	20	22	23	23	IZS	26	29	33	34	37	38	37	36	26	25	24	26	38	26.9	24		
HOURLY MAX	28	27	25	24	25	28	30	35	42	43	46	53	53	48	47	43	45	42	41	35	33	36	34					
HOURLY AVG	13.9	13.6	13.7	13.5	12.3	14.3	16.5	19.3	22.6	25.4	27.6	28.0	29.9	30.8	31.2	31.2	31.6	30.4	30.1	27.3	23.2	18.7	17.2	16.2				

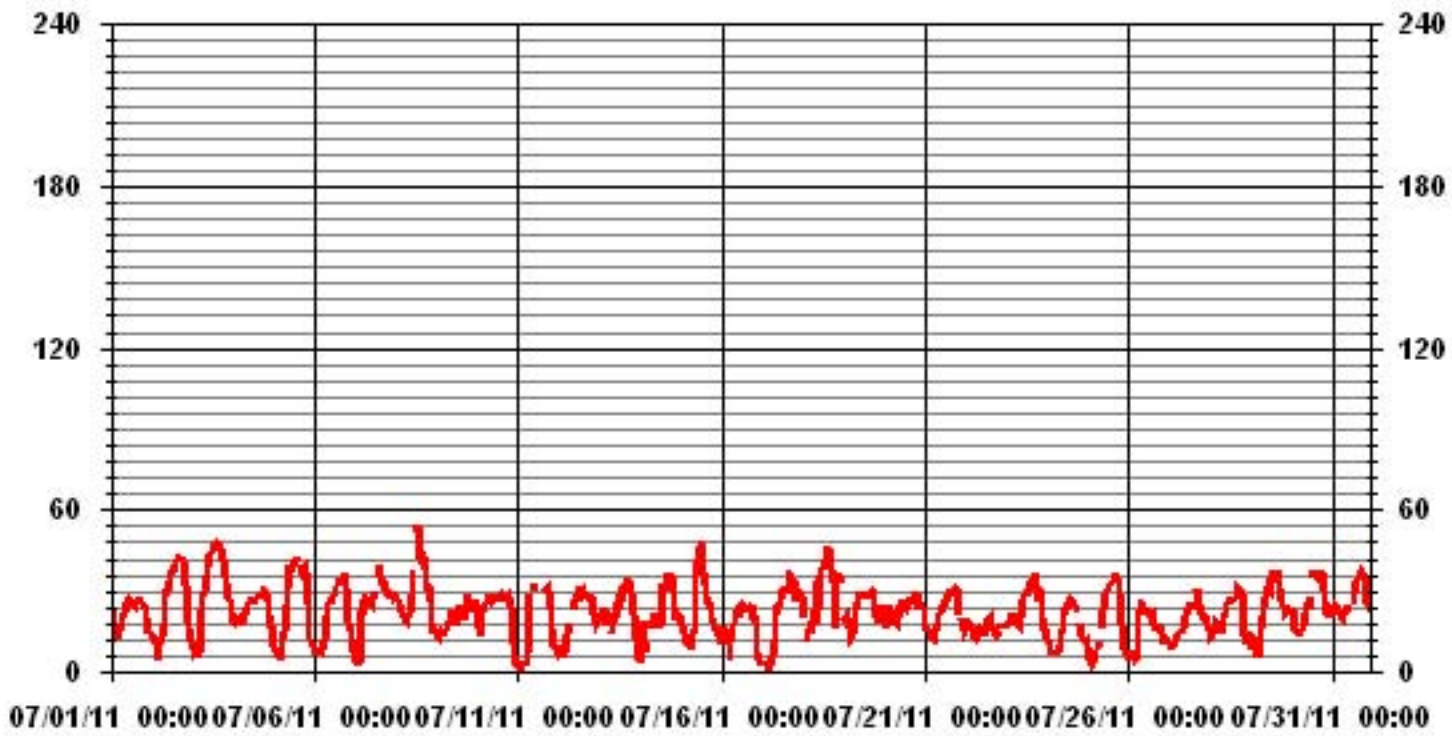
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM INSTANTANEOUS VALUE:	53	PPB	@ HOUR(S)	12, 13	ON DAY(S)	8
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION	9.62					

01 Hour Averages



— LICA O3MAX PPB

LICA
O3_ / WD Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : O3_
Units : PPB

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	1.55	1.69	2.96	2.40	6.49	9.88	10.45	4.66	2.11	5.08	12.42	18.36	14.54	4.09	1.55	1.55	99.85
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.14
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.55	1.69	2.96	2.40	6.49	9.88	10.45	4.66	2.11	5.08	12.57	18.36	14.54	4.09	1.55	1.55	

Calm : .00 %

Total # Operational Hours : 708

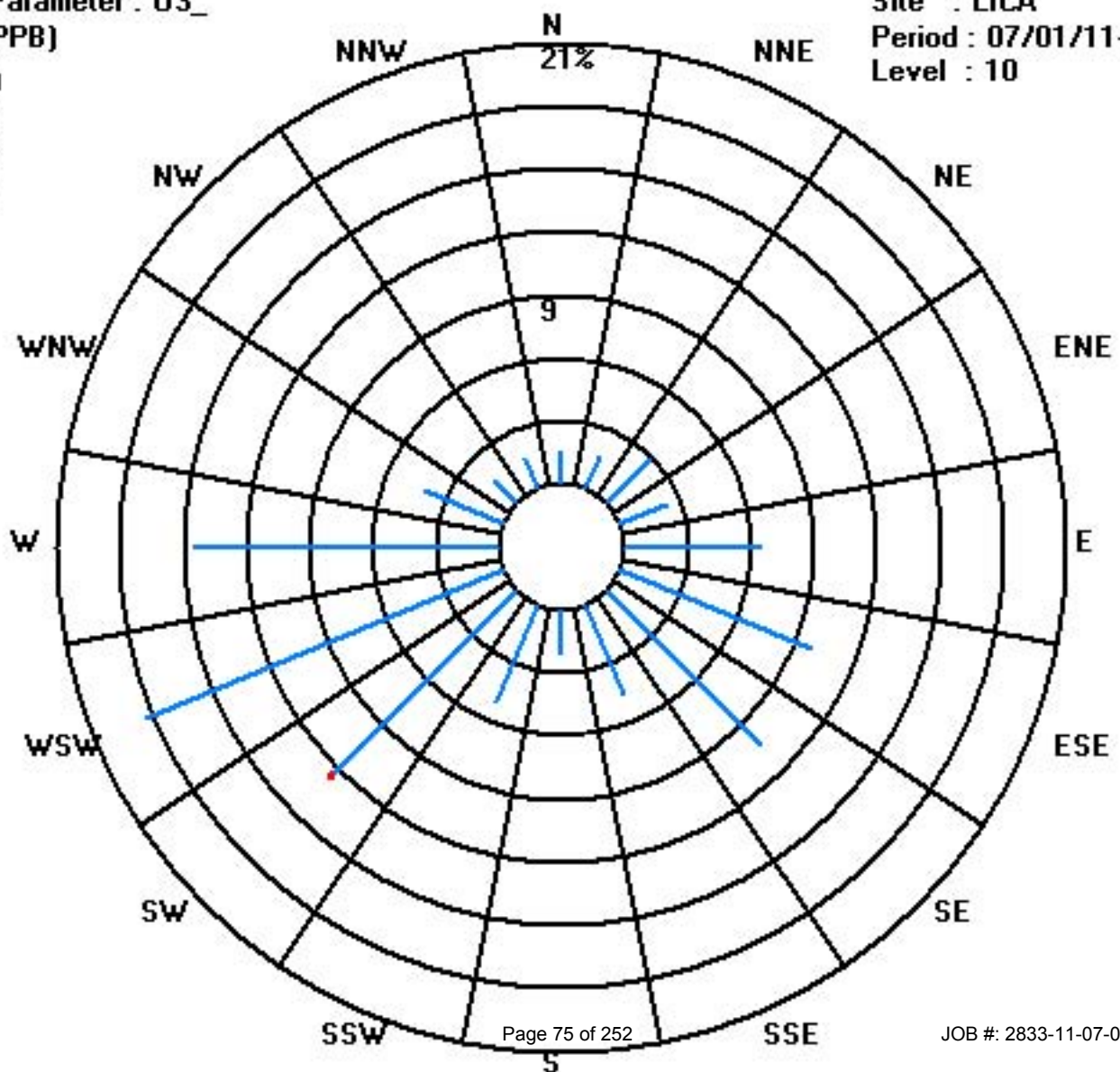
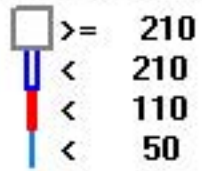
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 50	11	12	21	17	46	70	74	33	15	36	88	130	103	29	11	11	707
< 110											1						1
< 210																	
>= 210																	
Totals	11	12	21	17	46	70	74	33	15	36	89	130	103	29	11	11	

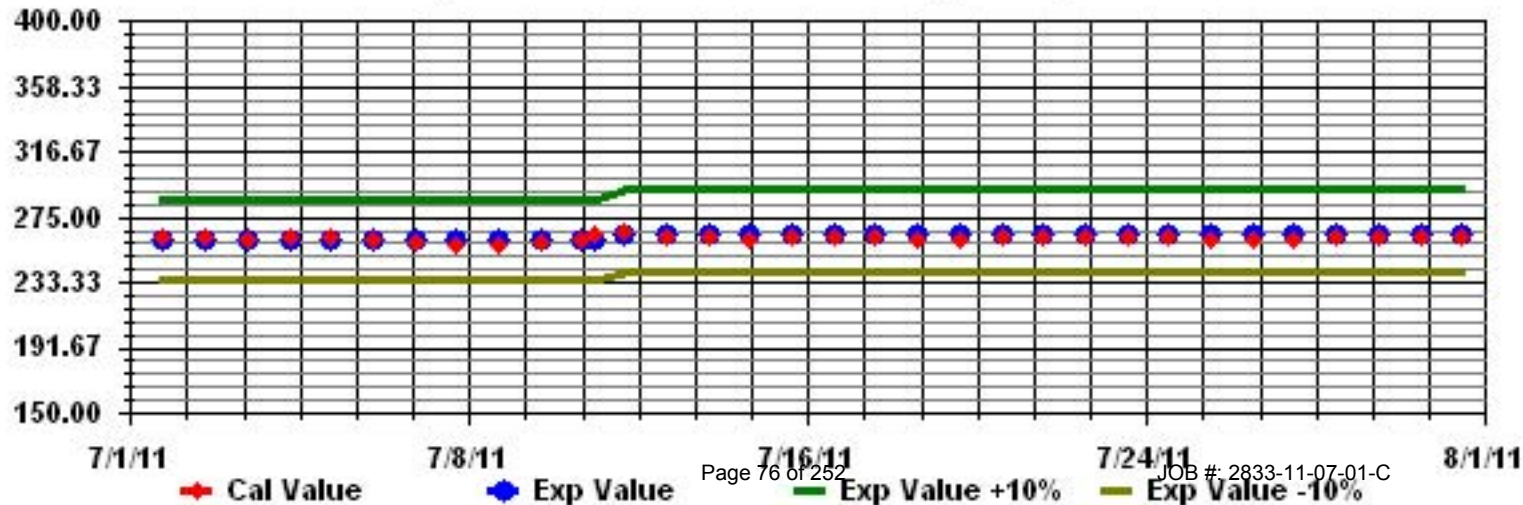
Calm : .00 %

Total # Operational Hours : 708

Class Limits (PPB)



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



Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

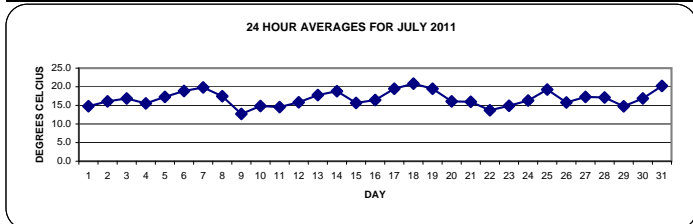
JULY 2011

AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.		
DAY																															
1		11.6	10.8	10.9	10	9.7	10.9	12.4	13.9	14.5	15.9	16.9	17.6	18.2	18.5	18.8	18.5	19	19	18.7	18	16	13.6	11.2	10.1	19.0	14.8	24			
2		9.3	8.6	7.2	5.9	5.6	9.8	12.7	14.8	17	18.7	19.6	21.1	21.8	22.6	22.3	22.4	22.9	23	22.5	21.6	18.1	14.5	12.7	11.3	23.0	16.1	24			
3		10.5	9.7	9.2	9.1	9	13	15.7	18	19.5	21.5	22.9	23.9	24.5	25.4	25.9	25.5	24.1	15	14	14	14	13.8	13.3	12.9	25.9	16.9	24			
4		12.3	11.7	11.2	11	10.6	11.1	12.2	13.6	14.9	16.1	17.4	18.5	19.3	19.7	20.2	20.5	20.8	20.7	20.3	19.2	16.8	13	11.1	10.5	20.8	15.5	24			
5		9	8.3	7.6	7	6.8	10.6	12.9	16.6	18.4	19.9	20.7	21.7	22.8	23.7	23.3	24.4	24.1	24.1	24.2	23.5	19.4	15.6	15.1	14.9	24.4	17.3	24			
6		13.1	12.3	11.9	11.5	11.6	14.3	16.3	17.7	19.7	20.9	21.9	22.9	23.6	24.2	24.6	25	25.2	25.4	25	22	18.2	16.2	15.1	14.1	25.4	18.9	24			
7		12.9	13	13.9	15.4	15.3	15	16.4	16.6	17.8	18.8	20.5	22.1	23.3	24.3	24.9	24.9	24.8	25	24.5	23.6	22.1	21.1	20.1	19.3	25.0	19.8	24			
8		18.5	17.7	17	16.5	16.2	17	16.9	17.7	19	20.9	18.1	20.8	21.6	22.5	21.1	21.9	22.3	18.1	13.7	15	13.5	11.8	11	10.1	22.5	17.5	24			
9		9.4	9	9	9.1	9.5	10.1	11.5	11.6	12.5	13.2	12.9	12.2	13.8	15	15.3	15.9	16.5	16.1	15	13.7	13.4	13.4	13.3	13.4	16.5	12.7	24			
10		13.6	13.7	13.8	14.2	14.2	14.5	15	15.3	15.2	15	16.5	17.4	17.7	17.3	16.4	16	16.4	15.9	16	16.1	14.4	11.8	10.3	9.3	17.7	14.8	24			
11		8.5	7.7	6.8	6	6	8	12.7	15.6	16.6	17.3	18.1	19.1	19.6	19.8	20.2	20.3	19.7	20	19	18.5	15.8	12.5	11	10.2	20.3	14.5	24			
12		9.6	9	9.2	9.9	9.8	12.2	13.6	15.2	16.6	18.1	18.5	18.7	19.1	19.7	20	19.2	18.9	18.9	18.6	18.1	17.5	16.4	16.6	16.5	20.0	15.8	24			
13		16	15.8	15.7	14.9	14.7	15.5	16	16.2	16.7	17.3	17.8	18.2	19.1	19.5	20.3	21.4	21.4	21.7	21.2	20.7	19.1	16.6	15.6	15	21.7	17.8	24			
14		15	15.8	16.6	15.4	15.1	16.5	17.1	18.4	19.7	20	20.4	20.7	20.7	20.9	21.6	21.3	21.6	21.2	20.5	20.3	20	18.4	17.2	17.2	21.6	18.8	24			
15		16.2	15.4	14.5	13.1	11.9	12.8	14.1	14.1	14.1	11.9	12.3	16.4	19.1	20.5	19.6	19.2	19.5	18.5	18.4	18.1	16	14.7	13.2	12	20.5	15.7	24			
16		12	12.3	11.3	10.4	9.8	12.2	15.7	17.5	17.8	17.4	17.6	18.8	19.2	20.2	19.9	21.2	20.9	19.8	20.3	21.3	18	15	13.5	12.5	21.3	16.4	24			
17		12	11.1	10.4	9.7	9.3	10.7	14.8	17.9	19.9	21.2	22	23	24.1	24.8	25.2	25.8	25.8	25.9	25.3	24.3	22.3	21.1	21.3	19.4	25.9	19.5	24			
18		18	16.8	15.6	15.2	14.6	17.7	17.8	17.8	17	17.3	20.2	22.6	24.3	26.2	27.6	28.2	27.8	27	26	23.7	22.3	20.4	18.7	17.2	28.2	20.8	24			
19		15.7	15.1	15.1	14.6	14.4	15.5	16.9	18.5	20	21	22.4	23	23.8	24.3	24.7	24.6	24.5	23	21.6	20	18.8	18.6	16.1	15.2	24.7	19.5	24			
20		15.1	14.8	14.8	14.7	14.6	14.3	13.8	13.7	13.8	14.1	14.5	15.3	17.4	18.9	19.2	19.5	19.9	19.7	19.1	18.4	16.5	15.7	14.5	13.6	19.9	16.1	24			
21		12.6	11.7	10.9	10.2	10	10.2	11.3	13.3	15.5	17	17.9	18.8	20	20.7	21.3	20.2	20.4	20.1	19.9	19.1	16.9	15.1	15.3	14.6	21.3	16.0	24			
22		14.5	14.3	14	13.5	13.4	13.5	14.1	14.6	14.9	15.2	14.7	14.2	13.9	14.5	14.5	14.3	14	13.1	12.5	12.2	12.2	12.2	12.1	11.9	15.2	13.7	24			
23		11.7	11.7	11.8	11.8	11.9	12	12.2	12.8	13.6	14.5	15.7	16.7	17.9	19	19.5	20	19.8	19.5	17.7	14.8	13.3	13.1	13	13.3	20.0	14.9	24			
24		13.1	12.3	11.5	10.8	10.6	11.3	11.4	11.5	13.3	14.9	16.6	18.6	19.9	20.6	21.3	21.8	21.6	22.1	21.8	20.7	17.7	17.1	15.9	14.8	22.1	16.3	24			
25		13.6	12.2	11.4	11.1	10.8	13.4	14.7	15.1	18.6	20.9	22.6	23.9	24.9	25.5	25.9	26.2	26.3	26.2	26.3	23.3	19.5	17.6	16.5	15.6	26.3	19.3	24			
26		14.8	14.5	14.7	13.8	13	13.6	17.2	19.5	19.8	18.7	16.8	15.7	16.3	17	16.1	15.7	15.6	15.4	15.4	15.2	15.1	14.9	14.8	15.3	19.8	15.8	24			
27		15.2	14.7	14.1	13.7	13.5	13.7	14.3	15.3	16.2	17.3	18.6	20.2	21.1	21.5	21.4	21.6	20.5	19.8	19.3	18.3	17.1	16.4	15.5	15.2	21.6	17.3	24			
28		15.1	14.9	14.5	14.5	14.3	14.1	14.4	14.9	17.7	18.9	19.8	20.4	20.7	20.8	20.3	19.7	20.6	20.1	20.4	19.1	15.3	13.5	13.6	13.3	20.8	17.1	24			
29		12	12.5	12.4	12.1	11.5	12.5	13.3	13.4	14.6	15.5	17.3	17.2	18.3	19.4	20.3	20.7	16	13.9	14.9	14.9	13.2	13.2	12.8	12.1	20.7	14.8	24			
30		11.4	10.9	10.1	9.7	9.2	9.6	11.4	13.5	15.7	17.6	19.2	20.2	21.3	22.1	22.8	23.1	23.1	23.6	22.6	21	18.3	16.7	15.7	15.8	23.6	16.9	24			
31		15.4	15.1	15.6	14.8	13.9	14.3	15.5	16.9	18.1	19.8	21.1	22.5	23.8	25.3	26.4	26.7	26.3	26.1	26	24.5	21.1	20.8	19.7	15.5	26.7	20.2	24			
HOURLY MAX		18.5	17.7	17.0	16.5	16.2	17.7	17.8	19.5	20.0	21.5	22.9	23.9	24.9	26.2	27.6	28.2	27.8	27.0	26.3	24.5	22.3	21.1	21.3	19.4						
HOURLY AVG		13.2	12.7	12.3	11.9	11.6	12.9	14.3	15.5	16.7	17.6	18.4	19.4	20.4	21.1	21.3	21.5	21.3	20.6	20.0	19.1	17.2	15.6	14.7	13.9						

STATUS FLAG CODES

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

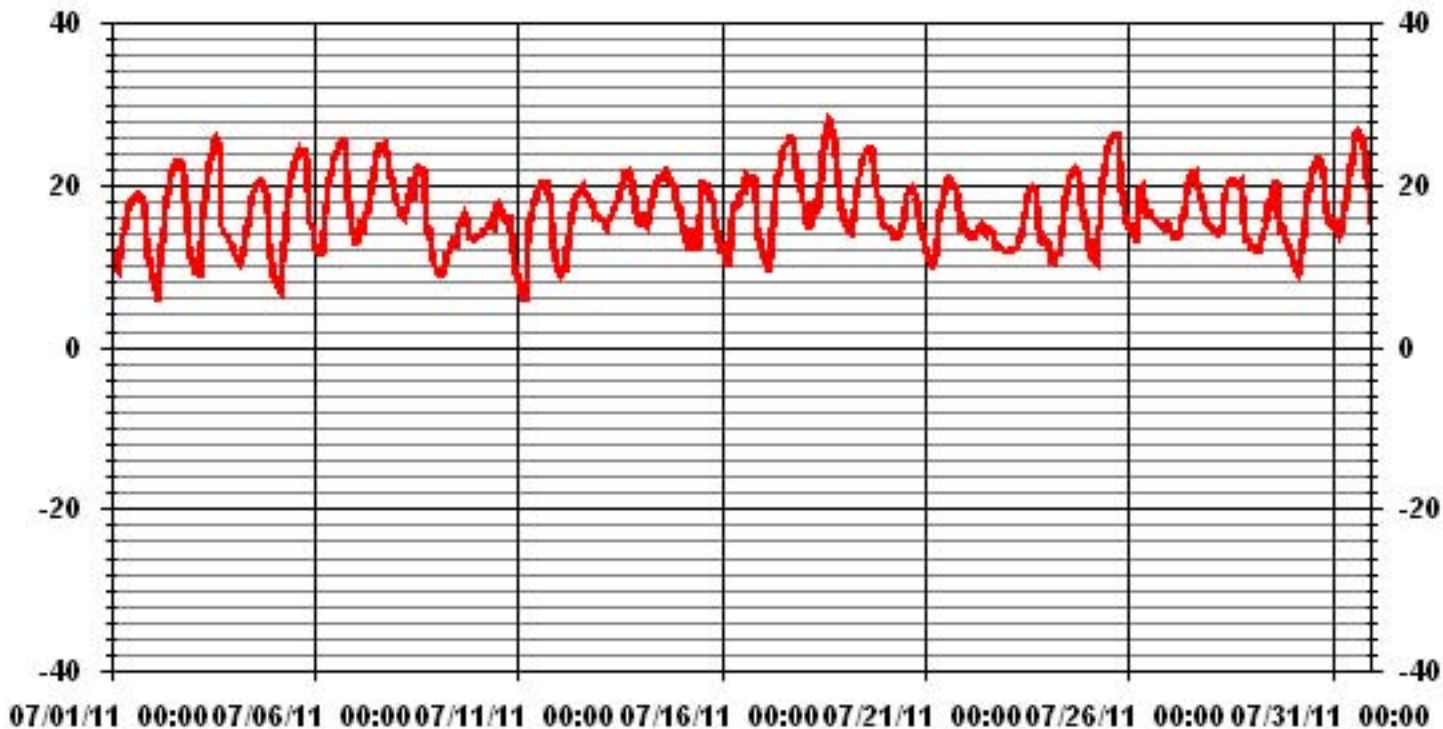


MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	5.6 °C	@ HOUR(S)	4	ON DAY(S)	2
MAXIMUM 1-HR AVERAGE:	28.2 °C	@ HOUR(S)	15	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	20.8 °C			ON DAY(S)	18
VAR-VARIOUS					
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
STANDARD DEVIATION:	4.42	AMD OPERATION UPTIME:	100.0 %		
		MONTHLY AVERAGE:	16.81 °C		

* Outside detection limits of sensor.

01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 2011

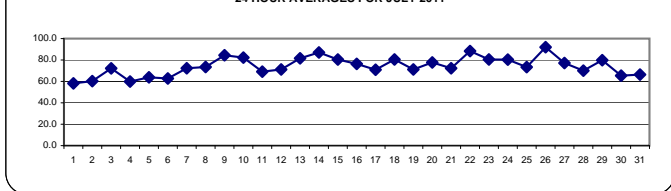
RELATIVE HUMIDITY hourly averages (%)

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	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1	73	80	83	90	91	87	76	65	63	58	48	43	38	38	39	39	34	33	35	37	44	56	70	76	91	58.2	24	
2	79	82	88	92	91	79	72	65	52	44	42	37	36	33	35	37	37	38	39	46	67	80	86	89	92	60.3	24	
3	91	93	93	92	93	78	67	60	57	51	46	42	40	37	36	39	45	94	96	97	98	97	96	95	98	72.2	24	
4	94	92	91	88	87	83	76	68	61	54	47	42	37	34	32	32	33	34	36	38	47	70	79	82	94	59.9	24	
5	89	90	92	92	93	83	76	65	58	52	51	48	45	40	38	36	38	39	38	43	68	84	85	88	93	63.8	24	
6	92	92	93	93	91	82	76	69	56	50	46	41	38	35	34	35	36	34	36	51	74	80	83	89	93	62.8	24	
7	92	92	91	91	93	91	83	83	77	73	68	64	60	57	54	55	56	57	59	62	65	67	71	74	93	72.3	24	
8	77	80	83	85	86	83	86	85	81	73	73	54	47	45	51	46	41	65	88	82	83	86	92	91	92	73.5	24	
9	91	91	89	90	90	89	83	85	82	76	80	90	83	71	72	72	70	72	82	91	94	94	94	96	96	84.5	24	
10	97	97	97	94	89	86	82	81	82	86	78	70	68	70	73	72	71	73	70	71	84	93	95	95	97	82.3	24	
11	95	95	95	95	95	91	81	76	62	56	50	46	45	44	42	44	46	44	51	62	76	86	90	92	95	69.1	24	
12	92	93	91	91	91	85	80	72	66	60	54	55	53	53	54	56	61	61	64	67	72	81	78	78	93	71.2	24	
13	80	79	83	92	95	91	86	87	85	83	82	80	77	76	72	69	67	67	70	73	83	93	94	94	95	81.6	24	
14	95	94	90	94	95	91	91	87	84	84	85	85	85	86	79	80	75	78	81	82	86	92	96	94	96	87.0	24	
15	96	97	98	98	98	98	98	97	96	91	91	74	65	57	55	59	54	57	61	65	73	77	85	91	98	80.5	24	
16	90	86	90	93	94	86	74	69	67	67	68	66	66	62	66	62	68	67	65	82	92	95	95	95	95	76.4	24	
17	95	96	96	95	96	98	88	78	71	65	61	57	55	53	51	52	51	49	50	57	66	70	68	84	98	70.9	24	
18	86	91	95	94	95	87	88	88	93	91	78	72	JULY	61	55	50	56	62	70	85	88	91	86	89	95	80.5	24	
19	97	98	96	97	97	92	84	76	70	65	55	46	46	44	41	42	44	50	60	68	78	77	90	95	98	71.2	24	
20	96	97	98	98	98	97	97	97	95	90	87	83	72	62	60	56	54	53	52	57	66	64	65	71	98	77.7	24	
21	77	81	84	87	88	88	84	77	70	66	64	61	58	54	51	56	55	59	62	66	80	88	88	91	91	72.3	24	
22	89	89	89	91	93	93	90	87	83	82	83	84	83	78	79	80	83	93	94	96	95	95	95	96	96	88.3	24	
23	95	95	95	94	95	95	96	95	92	82	70	62	59	56	53	51	52	54	71	87	94	96	97	96	97	80.5	24	
24	97	96	96	97	98	99	99	99	92	83	75	67	62	59	58	57	59	58	64	70	84	84	87	89	99	80.4	24	
25	92	96	96	96	96	92	90	92	79	71	61	55	50	48	45	44	43	43	46	66	83	90	92	95	96	73.4	24	
26	96	96	96	95	96	93	80	69	69	77	92	95	94	91	94	96	98	98	97	97	97	97	98	98	95	98	92.0	24
27	95	95	94	94	93	90	89	87	84	79	73	67	64	61	60	59	58	61	65	72	75	74	80	83	95	77.2	24	
28	85	87	89	87	86	86	83	78	66	62	58	51	48	48	48	50	48	52	52	64	85	90	88	90	90	70.0	24	
29	94	92	91	93	94	90	92	93	87	79	67	70	65	59	56	53	67	84	81	81	87	85	78	78	94	79.8	24	
30	81	84	88	89	90	88	81	75	68	61	57	51	44	41	40	41	40	41	46	58	72	76	80	77	90	65.4	24	
31	78	77	70	72	76	74	70	65	63	62	62	61	58	57	55	54	56	56	57	67	80	73	64	86	86	66.4	24	
HOURLY MAX	97	98	98	98	98	99	99	99	96	91	92	95	94	91	94	96	98	98	97	97	98	98	98	96				
HOURLY AVG	89.5	90.4	91.0	91.9	92.4	88.5	83.8	79.7	74.5	70.1	66.2	61.9	58.0	55.2	54.1	54.0	54.5	58.9	62.6	68.5	78.3	83.2	85.3	88.2				

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

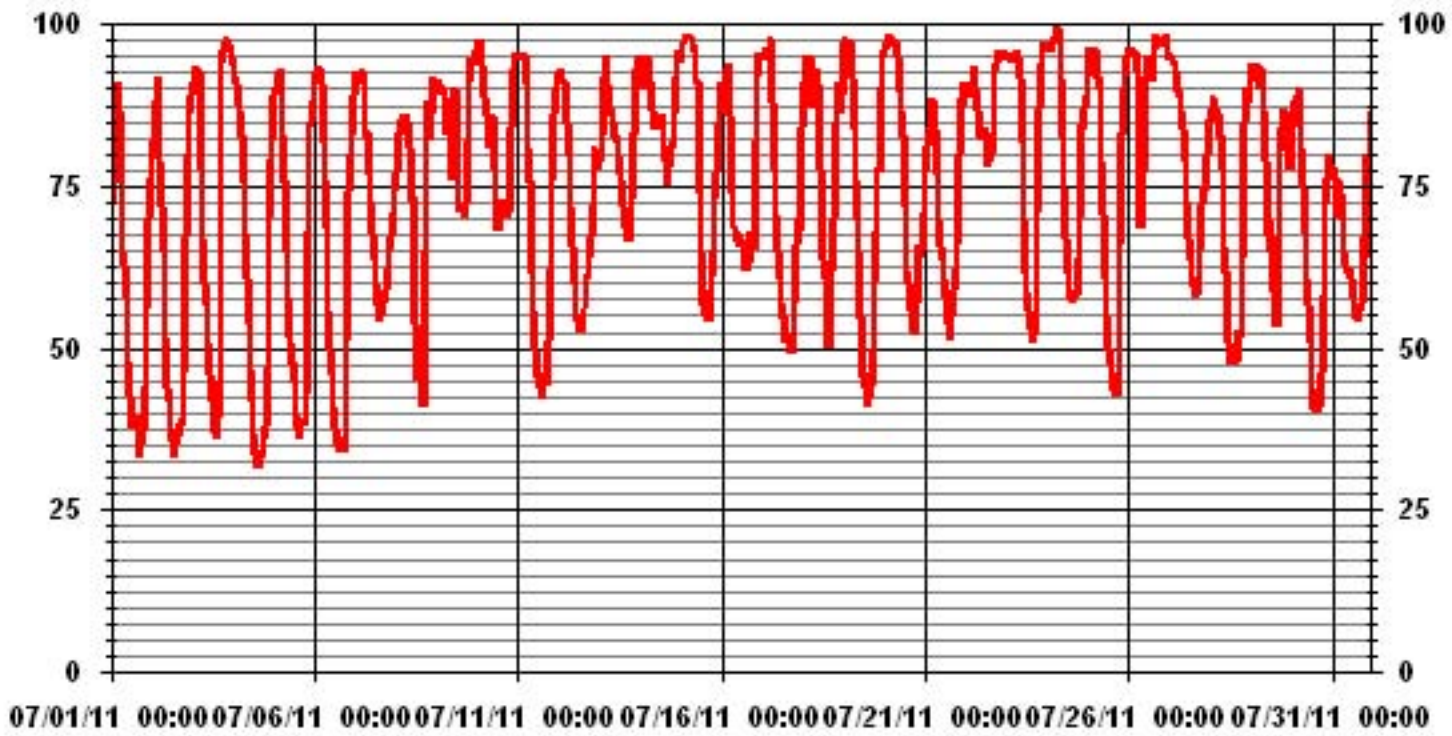
24 HOUR AVERAGES FOR JULY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	99	%	@ HOUR(S)	VAR	ON DAY(S)	24
MAXIMUM 24-HR AVERAGE:	92.0	%			ON DAY(S)	26
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	18.46		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	74.22	%	

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 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		3.2	3.5	3.7	3.1	3.8	5.2	8	8.8	8.8	11.2	12.9	13.6	14.1	15.3	13.8	14.3	15.3	14.7	12.5	10.4	6.6	3.5	2.8	3.7	15.3	8.7	24
2		4.4	4.3	1.7	0.5	0.7	0.2	2.4	4.4	7.2	7.4	7.1	8.7	11.3	9.9	7.9	7.8	7.3	6.1	4.9	4.5	1.7	1	0.9	1	11.3	4.5	24
3		0.5	0.4	1	1.2	0.7	2.4	7.9	7.5	8.4	11.5	12.7	14.9	16.5	17.8	17.2	15.4	9.1	5.6	2.1	5.1	4.1	6.8	6.6	6.7	17.8	5.2	24
4		5.4	7.3	8.3	9.6	8.8	8.5	10.3	10.8	12.9	14.3	14.2	14.6	15.2	16.5	16	14.5	12.6	11.7	10.3	8	4.6	1.9	1.4	0.9	16.5	9.8	24
5		1.2	1	0.6	1	0.2	1.4	3.5	4.9	6.7	8.5	10.5	10.6	10.3	11.5	9.5	9.9	9.5	7.9	7.7	3.7	1.3	0.7	0	1.2	11.5	5.1	24
6		1.1	1.8	3.2	2.1	2.1	2.2	3.8	5.1	6.9	8.8	8.8	9.2	9.8	9.3	8.6	8	7.4	6.1	5.4	2.8	1.4	0.9	0.3	0.3	9.8	4.8	24
7		0.6	0.4	1	7	1.5	6.6	7.4	7.2	4.3	5	7.2	8.4	8.4	7.3	9.8	9.5	9.5	9.1	10.4	9.6	10.2	11.2	9.6	12.8	12.8	7.3	24
8		12.1	11	10.1	10.5	12.3	12.9	9.9	11.4	15.1	11.4	9.5	10.8	9.3	8.3	7.8	7.4	4.5	7.2	8.3	4.6	5.1	4.1	1.5	1.7	15.1	8.6	24
9		1.9	3.4	3.6	2.9	1.4	2.1	2.6	3.7	4.4	5.7	5.4	4.9	4.8	7.4	4.3	4.5	4.7	6.1	8.6	6.9	7.7	6.6	6.4	3.3	8.6	4.7	24
10		3.6	3.9	3.9	8.2	8.1	8.8	9.9	11.6	13.4	9.2	10.3	12.8	10.4	13.1	13.1	11.9	10.5	9.6	9.3	5.4	1.1	0.7	0.6	0.8	13.4	7.9	24
11		0.2	0.3	0.4	1	0.1	1.7	0.5	2.6	5	9	10.4	10.8	11.4	10.8	10.2	9.7	8	9.8	5.1	1.7	0.8	1.3	0.9	1	11.4	4.7	24
12		1	1.1	1.5	2.4	2.5	4.2	5.9	6.9	9	11.2	15.5	10.4	13.1	11.9	10.3	8.2	7.1	5.8	5.7	4.9	2.4	0.4	2.3	2.9	15.5	6.1	24
13		2.1	2.4	3.2	1.9	2.1	4.6	4.9	3.8	4.1	4.1	3.6	3.3	1.7	3	3.9	4.8	4	4.7	4.5	4.4	1.4	0.5	0.8	1.5	4.9	3.1	24
14		0.7	1.6	2.2	0.2	1.4	3.4	6.8	5.5	6.3	5.5	5.6	8.4	8.8	4.9	5.2	5.9	5.3	3.1	2.9	3.1	1.2	1.6	3.3	4.8	8.8	4.1	24
15		4.5	3.3	3.3	1.8	1.2	2.6	3.2	3.7	1.8	13.7	4.9	3.4	9.7	12.7	11.3	11.9	13.8	11.8	10	7.4	6.4	6.7	3.5	2.1	13.8	6.4	24
16		4	4.8	2.5	1.9	0.8	2.4	3	4	5	9.5	8.2	8.1	9.6	11	7	6.5	7.3	4.1	2	2.3	1.7	0.6	0.6	0.6	11.0	4.5	24
17		0.9	0.8	0.3	0.4	0.4	0.4	0.7	1.4	3.6	5.6	6.1	7.7	7.3	6.4	6.8	7.1	8.4	8.8	7.1	4.2	3.2	3.2	6	2.6	8.8	4.1	24
18		4.5	1.2	2.4	0.8	2.5	8.7	4.7	4.6	9.6	7	10.9	10.4	9.9	7.4	8.1	6.5	6.2	5.3	2.1	2.7	4.7	5.2	6.3	1.2	10.9	5.5	24
19		1.4	2.9	3.5	4.3	3.1	3.7	6.2	5.7	6.4	8.1	9	10.1	8.2	8.5	7.6	6.9	5.2	3.5	2.8	4	2.6	4.8	6.3	5.3	10.1	5.4	24
20		2.3	0.8	1.8	5.1	5.4	9.1	8.8	7.8	9.4	7.9	7.5	9.6	10.8	11.4	10.9	12.6	11.2	11.7	11.1	5.2	6.7	6.8	6.8	7.5	12.6	7.8	24
21		7.2	8.1	7.1	7	7.4	8.6	7.6	8.2	9.2	8.9	7.6	5.8	6.1	3.9	1.7	6	7.9	8.4	7.1	5	0.9	2.5	6.4	9.4	9.4	6.6	24
22		9	9.6	8.6	7.2	6.7	6	5.6	7	9.6	10.6	10	12.1	12.8	11.8	9.9	10.1	9.4	8.5	11.1	10.3	9	8.8	9.6	9.7	12.8	9.3	24
23		9.3	8.1	9.7	8.6	8.4	8.3	9.4	7.1	4.7	8.6	9.1	8.4	7.5	8.3	8.2	8.1	8.3	5.9	3.4	4.1	4.1	3.2	2.6	2.3	9.7	6.9	24
24		1.9	3	3.7	3.9	4.8	6.1	7.2	8	8	9.4	8.7	8.8	8.6	10.1	8.2	7.4	5.4	8.4	4.7	4.3	2.6	3.1	2.8	0.9	10.1	5.8	24
25		1.1	1.3	1.7	1.4	1.6	1.1	3.7	2.4	3.7	5.4	6.7	7	7.4	7.9	8.5	6.3	5.4	5.3	2.9	1.2	1.3	0.8	1	0.3	8.5	3.6	24
26		0.5	2.1	1.7	0.9	0.9	0.9	2.7	5.6	6.5	1.7	4.9	2.6	10.1	10.2	5.1	3.7	4.1	4.8	4.8	3.9	1.5	1.7	2.2	5.9	10.2	3.7	24
27		5.8	2.8	6.3	5	4.3	6.6	7	7.1	7.2	9.4	9.2	11.9	12	12.9	14.2	13.1	14.6	8.8	5.8	3.7	6.3	7	4.2	3.8	14.6	7.9	24
28		5	3.6	5.2	7.3	6.9	6.9	8.6	8.4	9.2	9.5	9.4	12.4	13	13.5	13.6	13.6	13	8.3	7.7	3.1	1.7	1.1	0.9	0.9	13.6	7.6	24
29		1.9	1.2	0.7	0.6	0.6	0.7	3.5	3.4	7.4	7.9	5.8	5.1	5.7	6.5	6.8	7.5	10.5	1.3	4.9	5.5	4.6	6.4	9.5	9.7	10.5	4.9	24
30		8.6	8.4	8.6	7.9	5.8	5.2	8.1	8.7	8.2	8.6	7.4	9.6	11	9.2	8.6	7	6.4	3.4	5	4.4	2.7	2.6	2.6	4.6	11.0	6.8	24
31		5.8	7.9	10.2	8.1	6.4	5.3	6.1	7.9	8.5	6.9	7.8	8.6	5.4	3.2	5.2	4.4	5.7	5.8	4	1.7	4.3	8.8	15.3	7.8	15.3	6.7	24
HOURLY MAX		12.1	11.0	10.2	10.5	12.3	12.9	10.3	11.6	15.1	14.3	15.5	14.9	16.5	17.8	17.2	15.4	15.3	14.7	12.5	10.4	10.2	11.2	15.3	12.8			
HOURLY AVG		3.6	3.6	3.9	4.0	3.6	4.7	5.8	6.3	7.4	8.4	8.6	9.1	9.7	9.7	9.0	8.7	8.3	7.1	6.3	4.8	3.7	3.7	4.0	3.8			

STATUS FLAG CODES

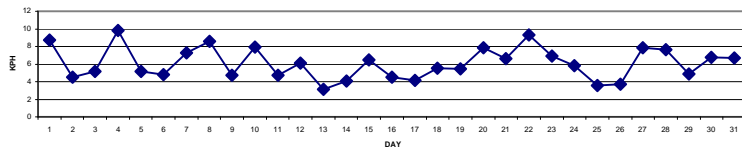
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: November 23, 2010

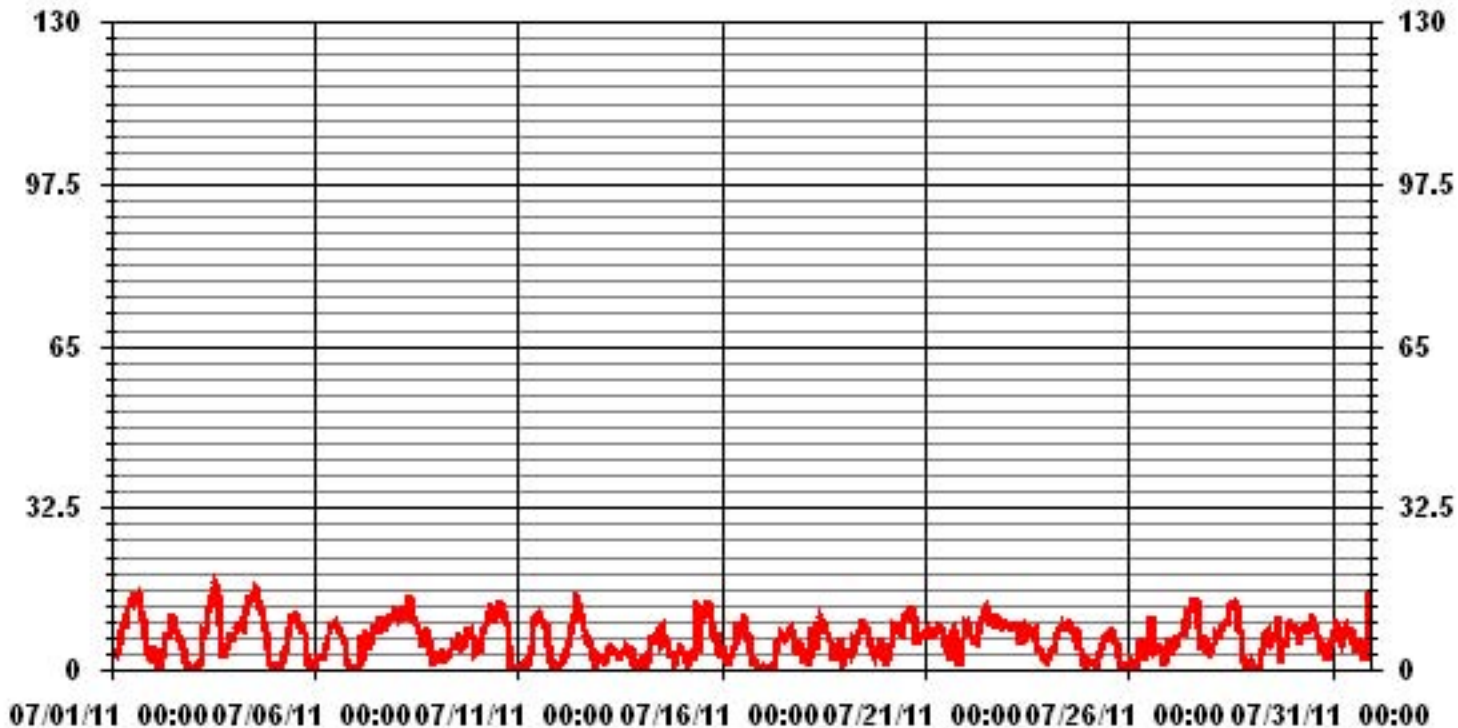
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	17.8	KPH	@ HOUR(S)	13	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	9.8	KPH			ON DAY(S)	4
CALMS (≤ 0 KPH)	1.48	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	3.78		MONTHLY AVERAGE:	6.17	KPH	

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



— LICA WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 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		
HOUR END		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	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		5.3	5.2	6.3	4.1	5.5	11.5	11.5	13.9	15	16.9	20.2	21.9	21.5	31.5	21.1	21.9	22.8	23.8	20.2	15	13.1	5.4	4.4	4.7	31.5	
2		6.4	6.2	4.4	1.7	1.5	2.1	6.4	10.1	12.5	12.4	12.4	17.4	19.5	16.8	13.6	13	14.6	11.6	7.9	8	3.2	2	3.1	2.7	19.5	
3		1.8	1.8	3.2	2.3	3.6	9.1	12	12	16.4	17.7	20.9	21.5	23.6	25.1	24	25.4	15.8	30.4	9.6	10.3	7.3	10.5	11	10.3	30.4	
4		9.3	11	11.2	13.1	11.6	11.7	17.3	16.7	18.3	23.8	21.3	24.7	22.9	24.5	23.3	24.2	19.5	18.4	16.6	13.9	8.1	4.1	3.1	4.2	24.7	
5		4.1	3.4	2.3	2.5	2.1	6.4	7.2	11.3	12.3	15.6	16.2	15.3	19.3	18.5	17.5	16	14.4	14.1	13	7.8	3	2.8	1.6	5.2	19.3	
6		2.9	3.5	4.9	4.6	4.1	4.7	6.5	9.6	12.4	16.4	15.9	14.4	16.4	14.8	16.1	15.2	17.6	11	11	6.4	3.2	2.7	2.8	2.5	17.6	
7		4.8	3.8	7.9	13.1	8.1	12.2	13.4	11.9	8.2	9.2	13.9	14.3	15.4	14.2	16.5	14.8	13.6	14.4	15.2	15.1	16.4	17.3	15.1	22.2	22.2	
8		17.5	17.9	15.3	16.5	21.2	21.2	18.3	19.3	22.9	21.9	18.7	20.1	16.7	15.9	15.5	15.1	10.3	23.4	19	8.3	7.8	10	4.1	3.5	23.4	
9		4.2	6.5	6.1	5.3	3.8	3.9	5.7	6.9	8	9.1	9.6	8.8	12.5	13.9	10.3	7.9	8.9	12.3	15.6	11.3	10.6	11.1	10.4	6.3	15.6	
10		6.3	7.2	5.6	13.6	12.8	14.4	16.5	18.3	19.7	16.9	18.7	22	17	21.2	21.4	18.2	15.2	14.4	14.9	9.4	3	2.2	3.8	2.8	22	
11		1.5	2	1.9	3.3	1.2	3.6	1.6	5.7	12	16.3	19.2	22.4	19.8	17.9	19.7	17.6	14.9	14.2	9.3	3.9	2.1	2.4	2.5	2	22.4	
12		2.5	2.2	2.4	3.4	4.2	8.8	11.1	13.5	14.9	17.7	25.4	17.2	18.9	17	18.9	10.9	12.5	9.3	10	8.7	4.2	3.6	5.5	4.6	25.4	
13		4.8	6.4	7	6.2	4.1	8.5	9.4	6	6.9	6.9	7.9	8.1	5	6.9	11	9.9	9.8	9.8	8.3	8.6	4.2	3.7	2	2.8	11	
14		3.1	6.6	5.7	3.1	3.6	7.5	10.1	10.2	11.4	10.6	10	14.3	14.6	13.1	11.3	11.1	10.6	9.4	7.3	6.9	4	3.9	5.7	8	14.6	
15		6.9	5	11.4	3.9	4	5	8.9	8.8	11.5	28.8	12.3	8.3	15.7	23.2	21.8	21.4	21.2	20	18.7	12.7	10.6	11.5	6.7	4.4	28.8	
16		6.7	8	6.1	5	2.5	5.8	9.3	11.1	17.1	15.7	16.9	14.8	16.7	18.9	14.2	12.3	13.4	9	4.2	4.2	3.2	3.3	2.4	3.8	18.9	
17		2.9	5.1	2.9	3.6	3	1.8	2.3	4.7	8.3	12	11.8	13.5	15.2	12.6	14.5	15.6	13.1	17.6	12.5	6.8	6.1	5.1	10.5	5.6	17.6	
18		7.1	3.1	4.2	3.5	6.8	12.7	8.1	11.3	20.5	16.2	19.8	16.4	16.4	14.3	15.4	11.8	11.3	10.4	6.2	6.1	13.9	10.8	13.7	8.9	20.5	
19		5.6	7.1	6.5	6.6	4.7	7.9	9.5	10.9	11.7	13.9	14.8	16.6	17	15.6	13.6	13.3	8.7	8.7	4.8	6.8	6.9	10.4	9.5	9.4	17	
20		4.1	4	4.6	10.3	8.9	15.2	12.6	13.1	15.3	13.3	15.4	14.9	17	17.9	18	19.4	16.1	17.8	21.6	12.1	12.5	10.9	9.7	10.4	21.6	
21		11.3	11.2	9.7	10.5	9.3	10.8	11	14.6	14.3	16.9	14.9	12.2	13.8	10.2	11.7	10.9	12.3	11.7	11	10.9	3.3	11.7	11.2	17.1	17.1	
22		15.8	21.8	17.1	12.9	11.7	9.1	10.9	12.1	15	15.8	15.9	20.1	19.8	19.7	17.8	16.7	14.5	12.5	17.3	16.6	14.4	13.5	14.1	16.2	21.8	
23		15.2	13.2	14.1	13.1	13.5	14.1	13.6	14.2	11.4	14	15.3	16.2	15.8	16.6	14.5	13.9	14.2	10.9	8.6	20.4	8.3	6.5	5.1	4.5	20.4	
24		5.5	4.6	7.3	6.5	7.1	13	11.5	11.8	14.6	13.9	14.7	16.9	15.2	20.5	16.7	12.4	11.1	13.8	9.7	7.4	4.8	4.7	5.4	8.2	20.5	
25		5.5	2.4	2.6	2.8	3.7	3.4	11.6	10	7.1	9.6	12.7	12.9	14.9	13	14.7	12.2	10.6	8.4	7	2.8	3.2	7.5	3.2	4	14.9	
26		3.7	10.3	5.1	4.2	3	4.2	8.2	9.7	11.5	6.4	P	9.5	14.8	14.8	10.9	7.5	7.5	7.7	8.8	6.9	5.5	4.3	7.6	11.6	14.8	
27		9.6	5.2	8.9	8.7	8.3	9.6	12.4	12.6	11.2	15	16.6	17.9	17.5	19.9	23.4	19.2	22.2	16.5	9.5	6.4	9.6	10.4	7.1	6.1	23.4	
28		8.1	5.5	11.1	10.9	10.4	11.1	11.8	12.6	14.3	15.5	15.7	18.8	22	19.2	20	22	23.4	13.4	13.8	7	2.8	1.9	6.6	4.5	23.4	
29		3.5	2.6	3.7	2.6	4.1	4	13.5	9.1	11.6	11.8	13.3	13.2	13.4	12.9	12.4	14.3	28.6	4.6	8.1	9	8.3	9.5	13.3	13	28.6	
30		12.7	11.3	12.6	11.4	8.6	10.3	12.3	13.2	13.1	12.8	13.5	14.6	17.4	15.8	13.3	14.2	11.4	8.3	7.8	5.9	4.7	3.8	3.9	6.7	17.4	
31		9.1	10.5	14.3	14	9.6	7.7	10.2	14.9	15.2	13.2	12.2	15.6	12.1	11.9	12.7	9.2	11.1	9.5	7.4	4.8	7.6	16.6	24.4	30.2	30.2	
PEAK		17.5	21.8	17.1	16.5	21.2	21.2	18.3	19.3	22.9	28.8	25.4	24.7	23.6	31.5	24.0	25.4	28.6	30.4	21.6	20.4	16.4	17.3	24.4	30.2		

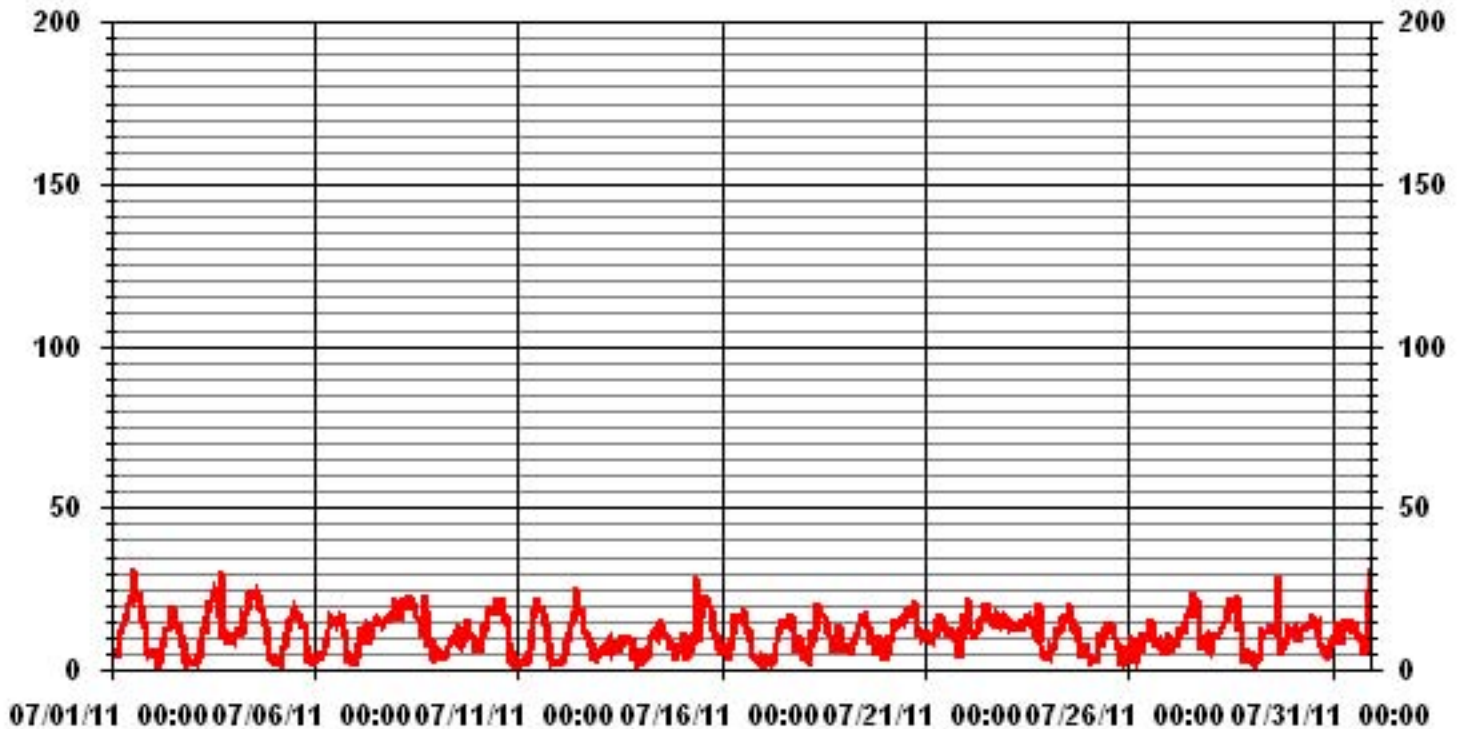
STATUS FLAG CODES

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	31.5	KPH	@ HOUR(S)	13
			ON DAY(S)	1

01 Hour Averages



LICA
WSP / WD Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	1.20	.40	2.15	1.88	2.95	4.30	3.76	3.76	1.74	4.70	7.25	6.72	4.03	1.61	.80	.67	47.98
< 12.0	.26	.94	.80	.26	2.68	5.64	5.51	.40	.13	.13	5.51	10.48	7.12	2.15	.53	.80	43.41
< 20.0	.13	.40	.00	.00	.67	.26	1.07	.00	.00	.00	.13	.53	3.62	.13	.13	.00	7.12
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.61	1.74	2.95	2.15	6.31	10.21	10.34	4.16	1.88	4.83	12.90	17.74	14.78	3.89	1.47	1.47	

Calm : 1.47 %

Total # Operational Hours : 744

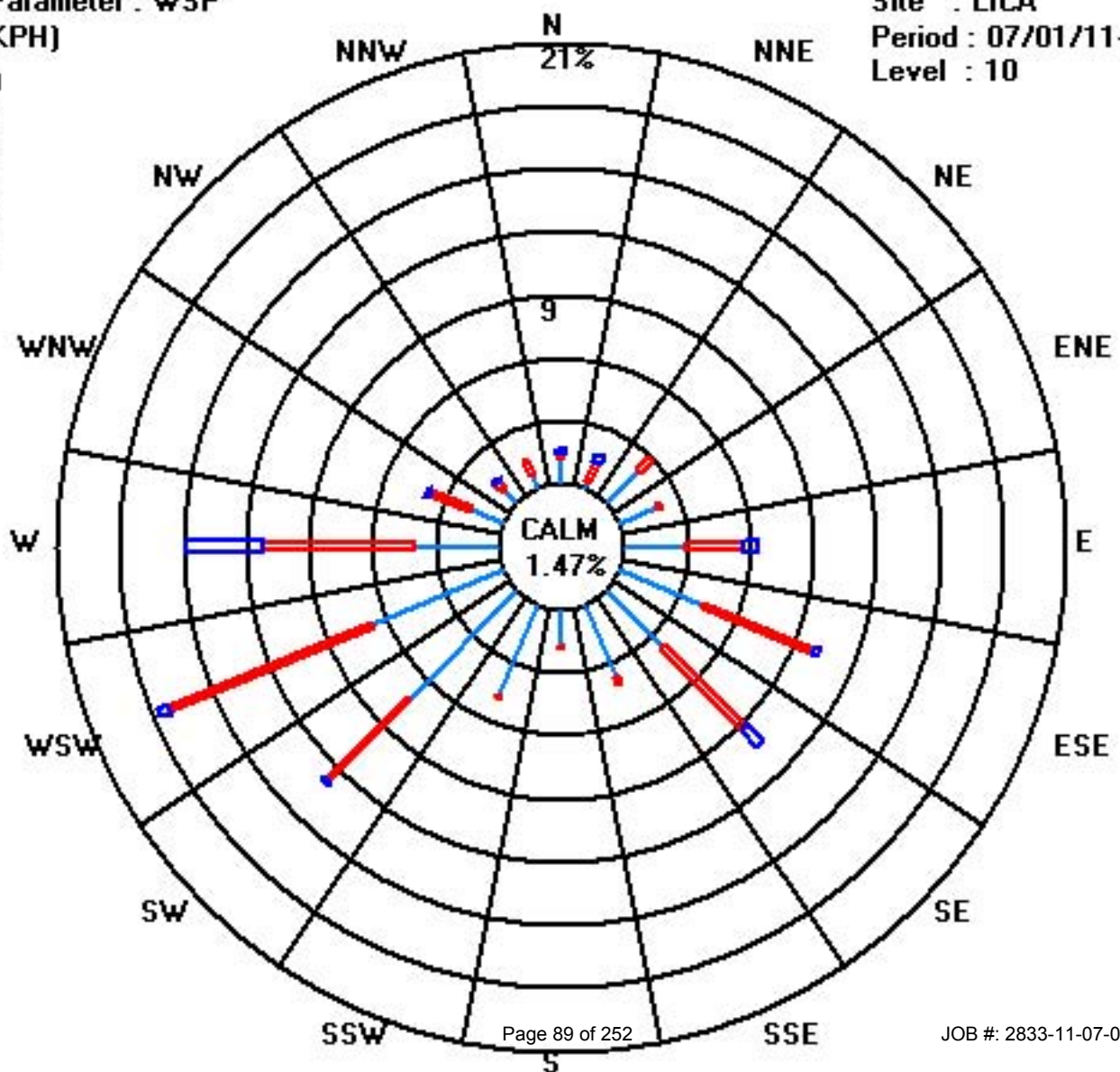
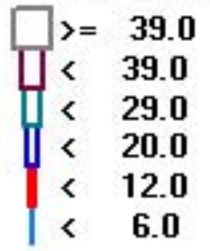
Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	9	3	16	14	22	32	28	28	13	35	54	50	30	12	6	5	357
< 12.0	2	7	6	2	20	42	41	3	1	1	41	78	53	16	4	6	323
< 20.0	1	3			5	2	8				1	4	27	1	1		53
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	12	13	22	16	47	76	77	31	14	36	96	132	110	29	11	11	

Calm : 1.47 %

Total # Operational Hours : 744

Class Limits (KPH)



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

JULY 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	254	238	232	229	236	242	257	272	244	241	259	259	266	267	274	264	262	265	265	258	247	230	223	228	257	WSW	24	
2	228	230	226	139	150	207	243	212	220	225	224	222	223	224	223	213	226	220	225	220	160	129	130	127	219	SW	24	
3	115	110	68	69	359	101	127	127	129	132	125	128	128	130	130	129	121	249	334	232	230	261	257	255	140	SE	24	
4	250	252	252	259	256	251	254	259	262	255	268	270	266	264	264	277	272	270	263	261	244	171	233	266	262	W	24	
5	225	196	109	154	248	291	239	227	226	233	248	237	229	235	239	244	253	257	270	254	195	188	75	269	241	WSW	24	
6	213	249	246	245	250	256	237	250	282	301	289	268	275	276	269	272	278	274	267	240	198	127	154	84	270	W	24	
7	191	112	272	234	70	128	130	129	101	92	90	99	110	111	124	126	119	122	98	87	85	88	93	94	108	ESE	24	
8	101	98	106	103	100	119	120	100	120	152	221	229	219	214	220	217	195	257	297	286	262	238	153	166	154	SSE	24	
9	154	137	125	111	60	44	57	321	315	6	13	353	353	16	349	294	267	264	258	259	250	252	250	236	298	WNW	24	
10	250	272	279	335	348	330	341	344	350	359	26	15	22	19	20	16	25	41	55	43	274	172	238	218	5	N	24	
11	105	167	136	228	68	256	272	49	105	113	118	108	108	129	127	132	136	131	136	202	153	113	117	96	123	ESE	24	
12	99	70	75	101	117	99	100	116	122	122	131	135	131	134	133	132	123	126	123	128	212	50	53	123	123	ESE	24	
13	48	55	101	67	355	46	41	28	45	54	87	123	44	351	145	169	161	134	149	144	223	246	92	104	90	E	24	
14	63	86	79	183	48	82	128	106	127	111	92	129	136	147	154	211	213	221	180	149	198	142	221	229	143	SE	24	
15	235	215	235	230	253	301	294	205	214	241	117	156	229	242	233	239	235	230	239	241	230	242	232	238	234	SW	24	
16	246	260	201	192	139	167	207	206	221	236	238	246	240	257	281	250	228	263	334	290	212	200	177	190	240	WSW	24	
17	76	204	132	228	123	251	329	84	109	113	118	129	130	129	135	133	129	134	127	114	99	101	125	103	124	ESE	24	
18	128	78	115	75	115	127	117	124	259	44	76	121	133	137	143	187	158	145	165	245	243	151	148	212	137	SE	24	
19	217	216	217	241	230	237	251	260	252	242	257	261	256	273	266	267	259	253	240	220	208	207	214	227	247	WSW	24	
20	342	304	193	287	291	313	310	297	295	317	291	294	281	291	277	275	276	271	295	287	258	277	262	258	286	WNW	24	
21	260	255	253	251	252	252	257	277	291	279	276	274	258	272	318	61	45	55	49	53	94	92	106	105	280	W	24	
22	105	122	108	104	96	80	89	90	98	85	88	83	83	105	94	97	106	113	96	113	113	112	102	106	99	E	24	
23	119	95	120	116	98	102	124	131	197	235	228	238	240	238	228	228	229	217	170	219	141	130	130	152	173	S	24	
24	187	234	234	233	240	244	251	261	258	248	265	258	268	265	261	250	243	225	216	213	176	195	200	284	246	WSW	24	
25	147	159	160	147	149	239	234	166	202	225	227	223	226	226	229	227	238	222	197	172	148	122	119	259	215	SSW	24	
26	275	271	120	197	243	255	74	46	13	121	144	326	320	333	291	270	278	271	278	271	227	208	209	251	296	WNW	24	
27	247	228	250	249	243	252	250	261	262	266	273	261	265	266	266	275	289	292	289	273	252	256	269	258	265	W	24	
28	260	253	246	251	251	250	257	259	260	259	259	258	263	266	268	267	266	265	265	231	161	150	197	196	259	WSW	24	
29	147	167	124	54	350	68	257	5	10	22	32	338	318	271	283	281	288	236	225	226	233	241	253	253	285	WNW	24	
30	258	260	249	254	248	247	255	254	255	259	244	244	253	240	241	225	221	193	134	129	112	99	102	120	239	WSW	24	
31	124	126	125	120	116	105	110	111	121	121	109	126	145	190	250	234	250	271	272	276	272	303	325	300	140	SE	24	
HOURLY AVG	342	304	279	335	359	330	341	344	350	359	291	353	353	351	349	294	289	292	334	290	274	303	325	300				

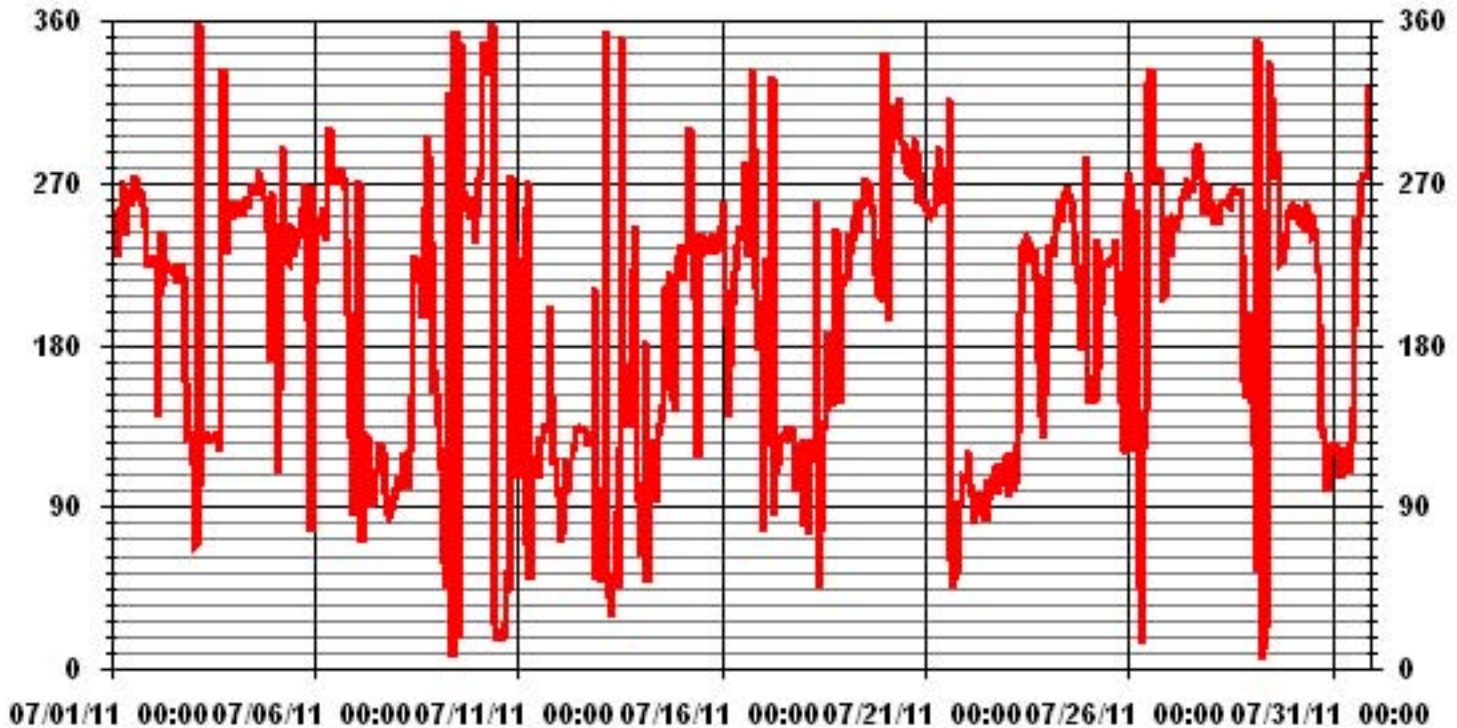
STATUS FLAG CODES

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

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

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION	78.82	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	225 DEG

01 Hour Averages



— LICA WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

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

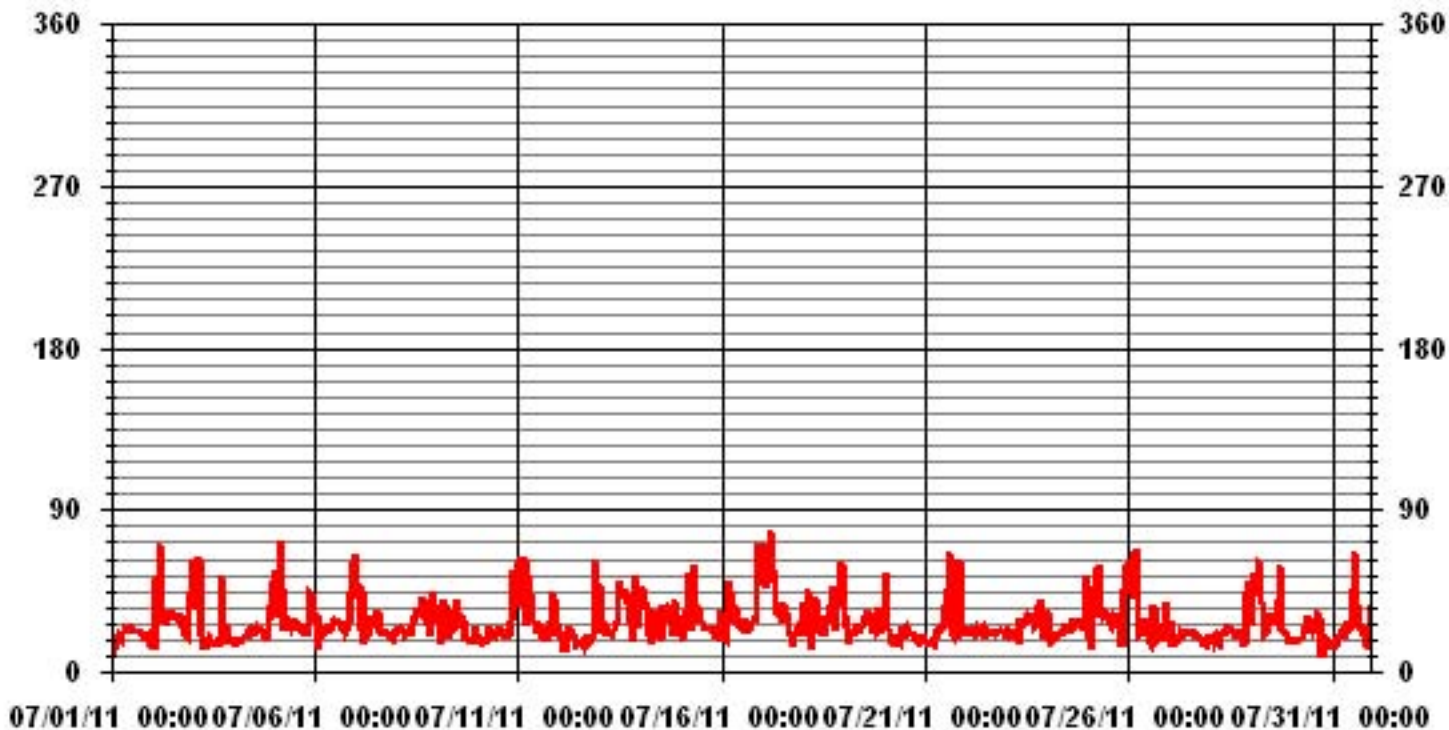
STATUS FLAG CODES

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

LAST CALIBRATION: November 8, 2010

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



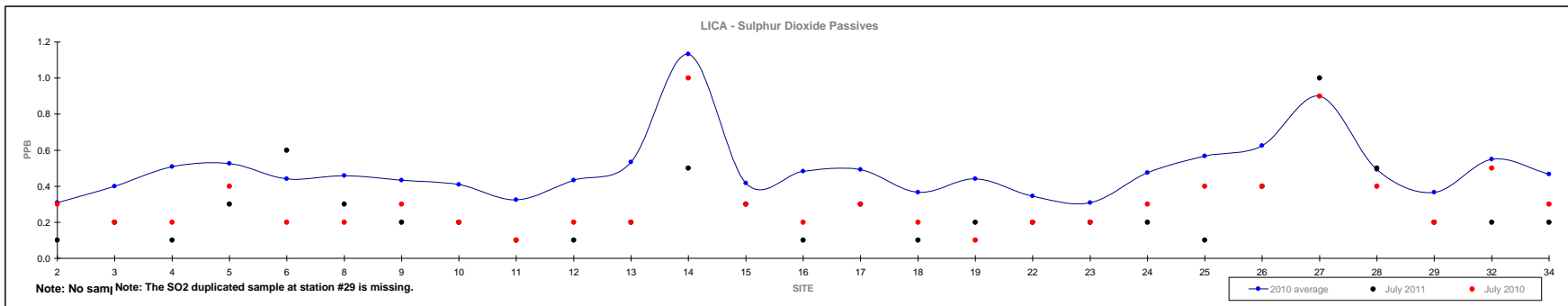
— LICA STDWDIR DEG

Non-Continuous Monitoring

Passive Summary Results for July 2011

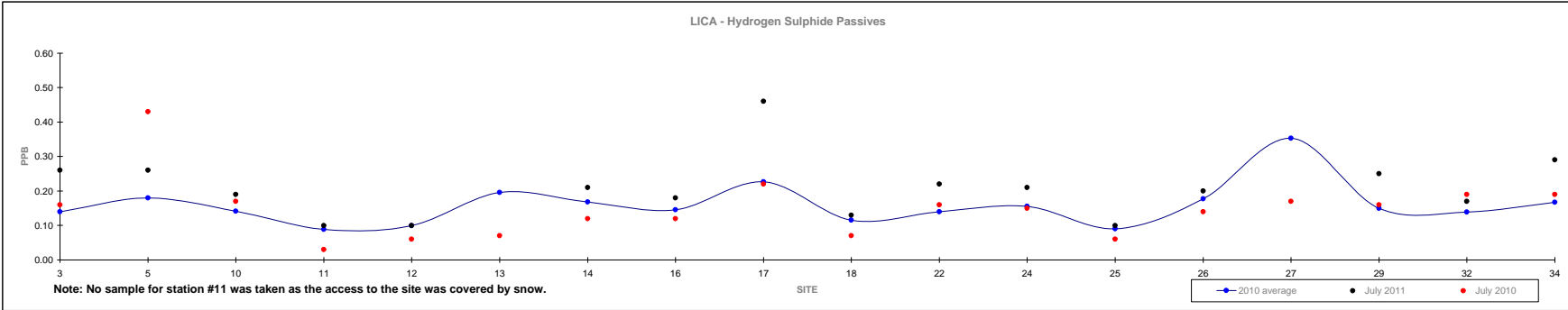
Lakeland Industry & Community Association

	Sulphur Dioxide ppb																																		Reading	Site
	2010																																		July 2011	
Mean	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	0.3	-							
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	<0.1	#11, #12							
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	1.0	#27							



Passive Summary Results for July 2011 Lakeland Industry & Community Association

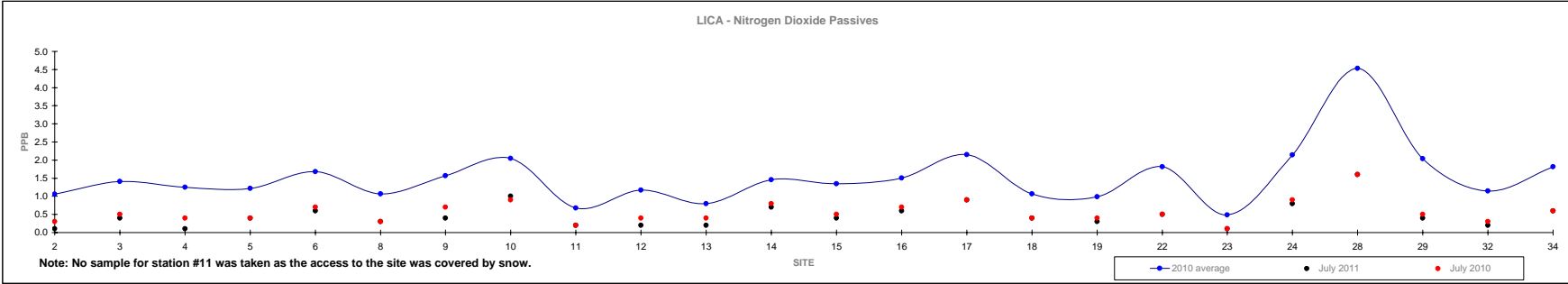
	2010															July 2011				
	3	5	10	11	12	13	14	16	17	18	22	24	25	26	27	29	32	34	Reading	Site
Mean	0.13	0.26	0.15	0.08	0.10	0.09	0.14	0.13	0.17	0.11	0.11	0.14	0.08	0.12	0.21	0.13	0.14	0.15	0.29	-
Minimum	0.05	0.10	0.08	0.03	0.05	0.03	0.08	0.04	0.09	0.04	0.02	0.07	0.05	0.07	0.07	0.06	0.08	0.10	0.10	VARIOUS
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	1.12	#27



Passive Summary Results for July 2011

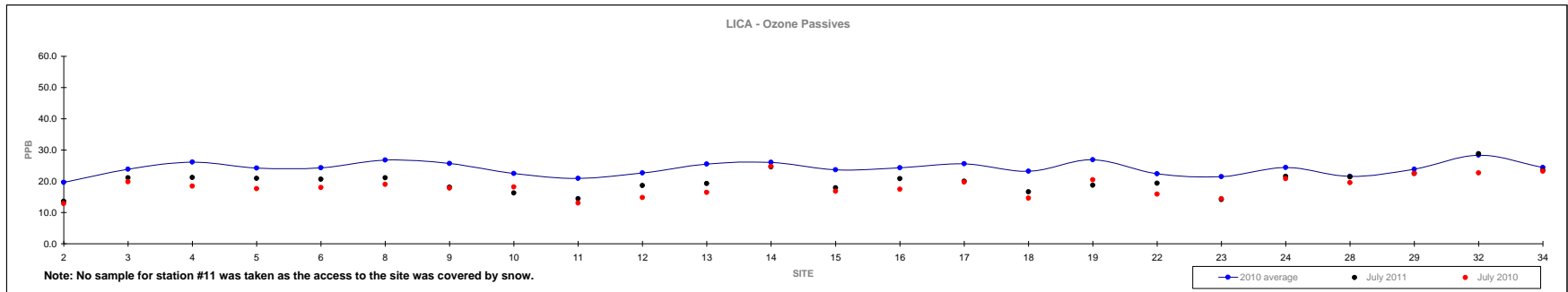
Lakeland Industry & Community Association

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



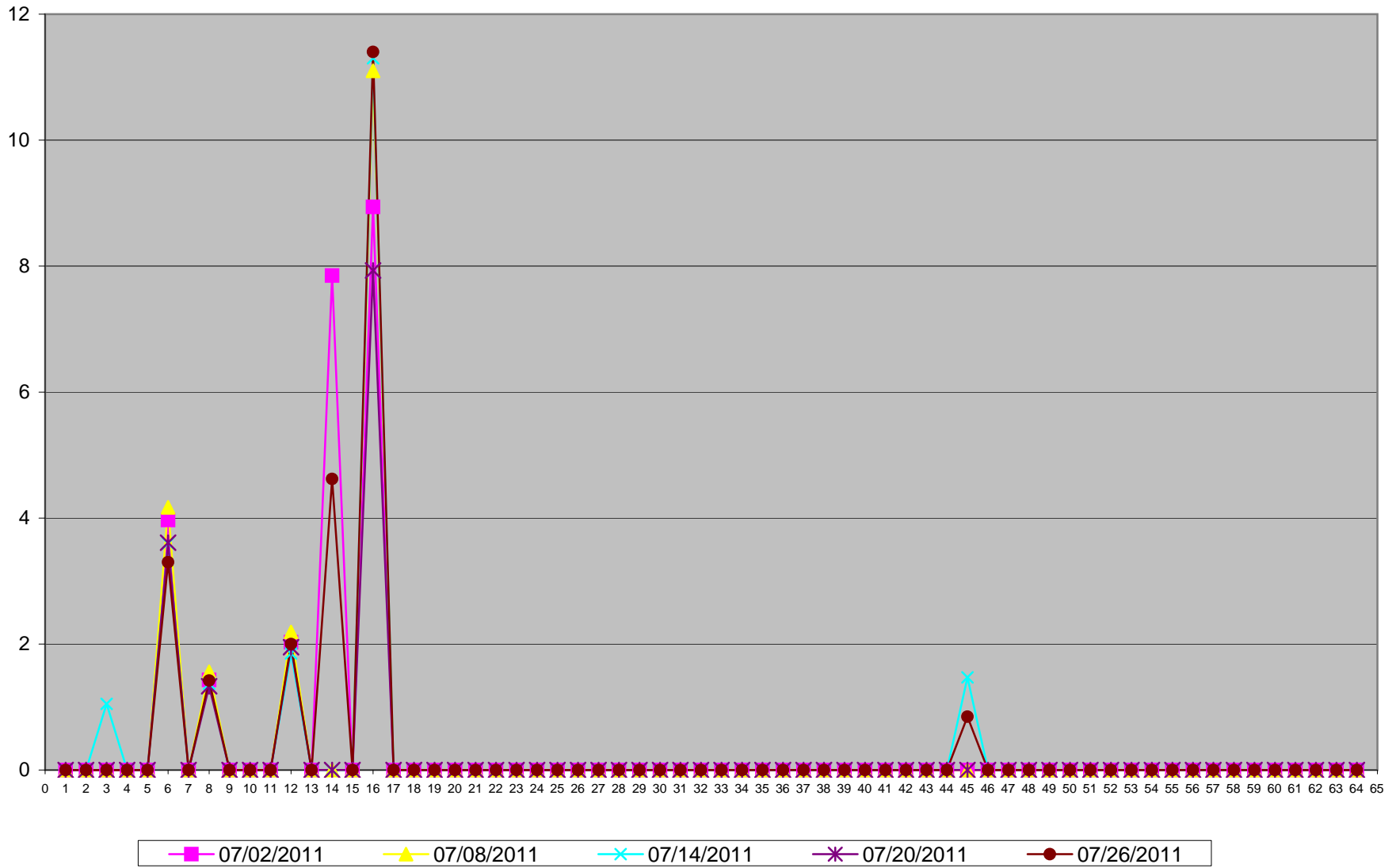
Passive Summary Results for July 2011 Lakeland Industry & Community Association

	Ozone ppb																												Reading	July 2011	Site
	2	3	4	5	6	8	9	10	11	12	2010 13	14	15	16	17	18	19	22	23	24	28	29	32	34	19.8	-					
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							
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	13.6	#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	28.8	#32					



Volatile Organics

Volatile Organics in ug/m3 Site: LICA - Cold Lake South



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

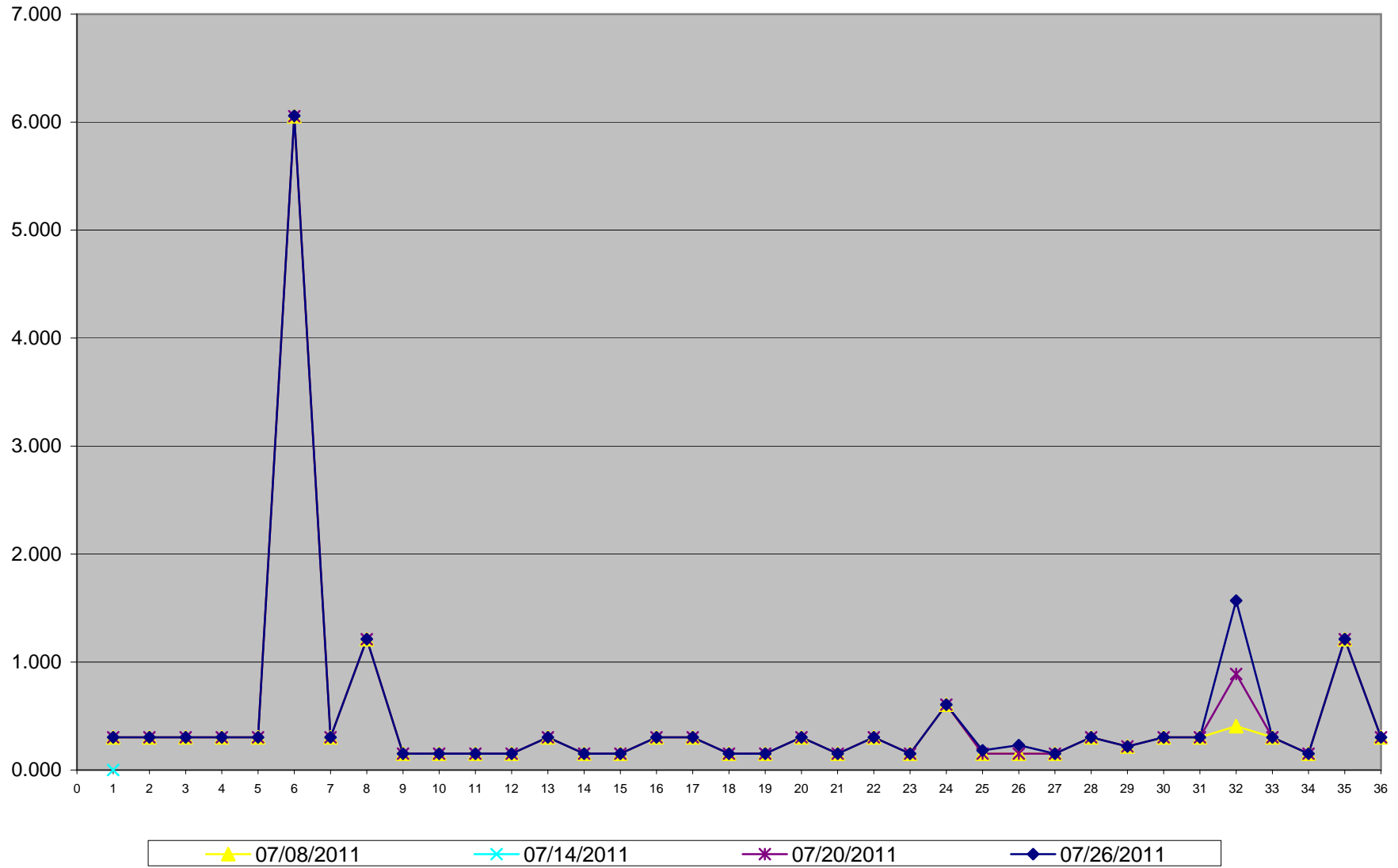
Polycyclic Aromatic Hydrocarbons

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

PAHs	07/02/2011	07/08/2011	07/14/2011	07/20/2011	07/26/2011
Sample Volume (unit: m3)	NA	330.33	330.33	330.33	330.08
1 1-Methylnaphthalene	NA	0.303	0.303	0.303	0.303
2 1-Methylphenanthrene	NA	0.303	0.303	0.303	0.303
3 2-Chloronaphthalene	NA	0.303	0.303	0.303	0.303
4 2-Methylantracene	NA	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	NA	0.303	0.303	0.303	0.303
6 3-Methylcholanthrene	NA	6.055	6.055	6.055	6.059
7 7,12-Dimethylbenzo(a)anthracene	NA	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	NA	1.211	1.211	1.211	1.212
9 Acenaphthene	NA	0.151	0.151	0.151	0.151
10 Acenaphthylene	NA	0.151	0.151	0.151	0.151
11 Anthracene	NA	0.151	0.151	0.151	0.151
12 Benzo(a)anthracene	NA	0.151	0.151	0.151	0.151
13 Benzo(a)fluorene	NA	0.303	0.303	0.303	0.303
14 Benzo(a)pyrene	NA	0.151	0.151	0.151	0.151
15 Benzo(b)fluoranthene	NA	0.151	0.151	0.151	0.151
16 Benzo(b)fluorene	NA	0.303	0.303	0.303	0.303
17 Benzo(e)pyrene	NA	0.303	0.303	0.303	0.303
18 Benzo(g,h,i)perylene	NA	0.151	0.151	0.151	0.151
19 Benzo(k)fluoranthene	NA	0.151	0.151	0.151	0.151
20 Biphenyl	NA	0.303	0.303	0.303	0.303
21 Chrysene	NA	0.151	0.151	0.151	0.151
22 Coronene	NA	0.303	0.303	0.303	0.303
23 Dibenz(a,h)anthracene	NA	0.151	0.151	0.151	0.151
24 Dibenzo(a,e)pyrene	NA	0.605	0.605	0.605	0.606
25 Fluoranthene	NA	0.151	0.188	0.151	0.182
26 Fluorene	NA	0.151	0.151	0.151	0.230
27 Indeno(1,2,3-cd)pyrene	NA	0.151	0.151	0.151	0.151
28 m-Terphenyl	NA	0.303	0.303	0.303	0.303
29 Naphthalene	NA	0.218	0.218	0.218	0.218
30 o-Terphenyl	NA	0.303	0.303	0.303	0.303
31 Perylene	NA	0.303	0.303	0.303	0.303
32 Phenanthrene	NA	0.406	0.618	0.890	1.569
33 p-Terphenyl	NA	0.303	0.303	0.303	0.303
34 Pyrene	NA	0.151	0.151	0.151	0.151
35 Quinoline	NA	1.211	1.211	1.211	1.212
36 Tetralin	NA	0.303	0.303	0.303	0.303

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

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



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

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	July 11, 2011	Previous Calibration	June 17, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	11:16	End Time (MST)	15:14
Reason:	Monthly Calibration		
Barometric Pressure	0.945 atm	Station Temperature	23 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822
DAS Output Voltage	0 - 10 Volts	Cal Gas Expiry date	February 4, 2013
		Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	Thermo 43i	S/N :	806528242	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	ppb	
Sample Flow / Box Temp	452 ccm, 29.3 Deg C	451 ccm, 30.4 Deg C	
HVPS / Lamp Setting	-632, 740	-632, 743	
PMT / RxCell Temp	OK Deg C, 44.9 Deg C	OK Deg C, 44.9 Deg C	
Converter / IZS Temp	NA Deg C, 45 Deg C	NA Deg C, 45.0 Deg C	
Offset / Slope	5.3, 1.015	5.9, 1.015	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	N/A
4995	0	0	0	1.0000
4959	40.8	400	400	1.0000
	No Adj Required			
4979	20.4	200	202	0.9898
4981	15.3	150	152	0.9872
4995	0	0	0	N/A
Sum of Least Squares				0.9966
New Correction Factor				1.0000

Before Calibration

After Calibration

Auto Zero	0.6	-0.1
Auto Span	371.0	372.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9947
Current Correction Factor Before Span Adjust:	1.0000
Percent Change:	-0.5%

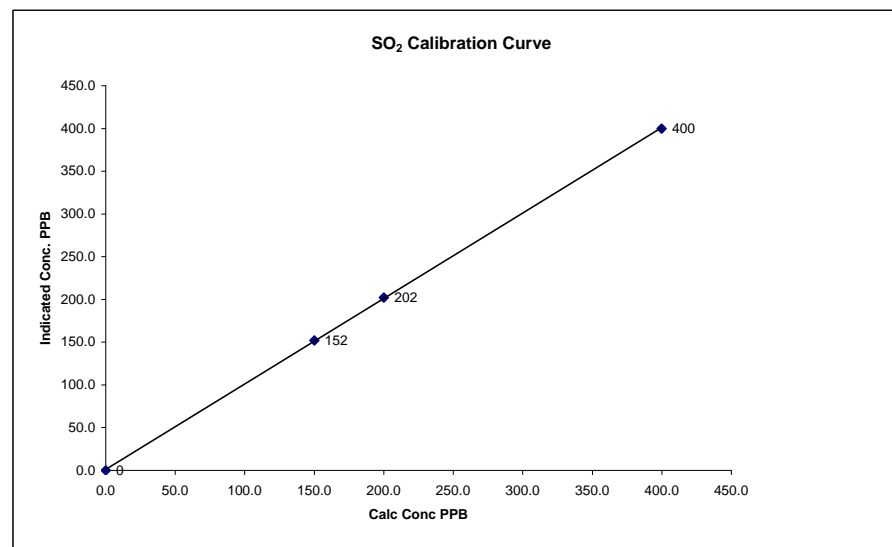
Notes: N/A : Not applicable

Calibration Performed by: Ting Xu

SO2 Calibration Curve

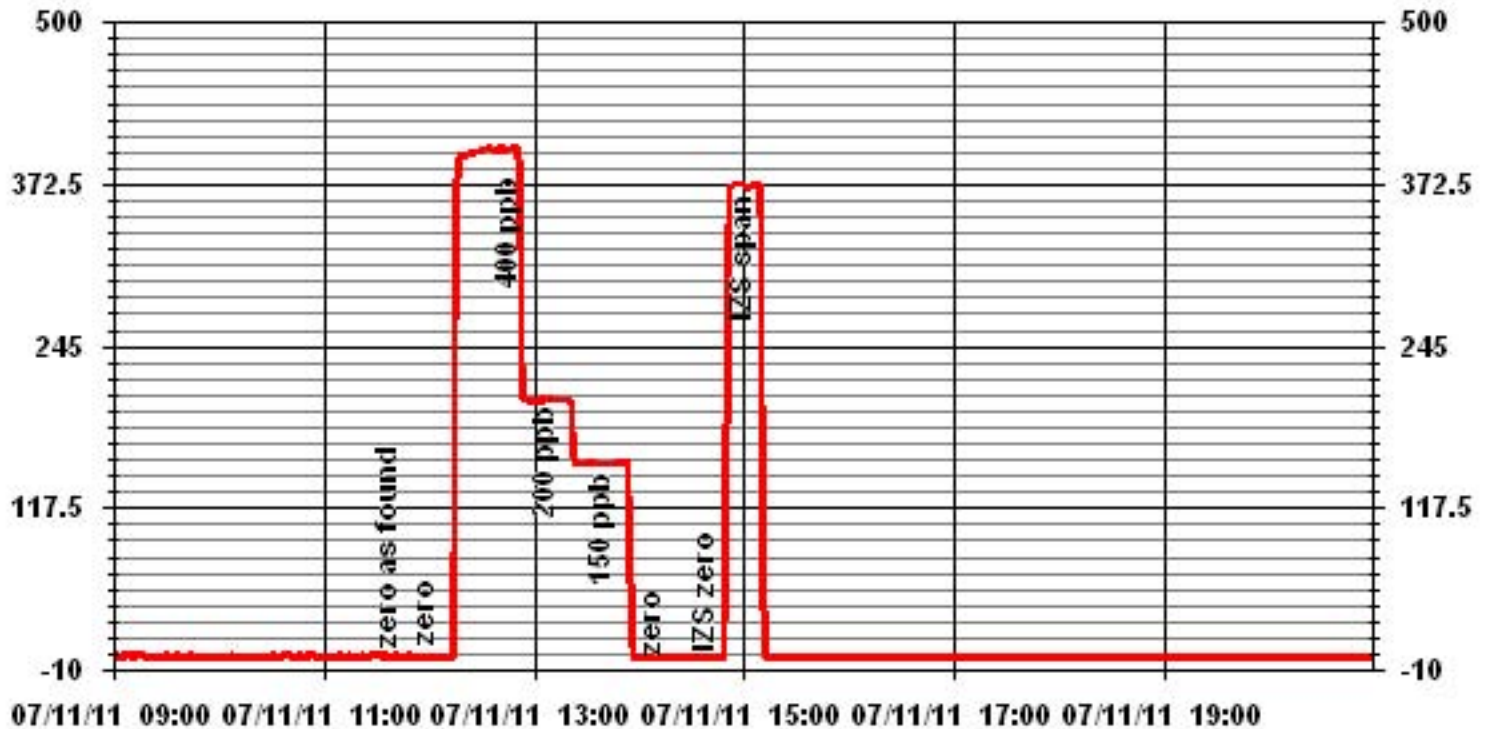
Calibration Date	July 11, 2011
Company	Lakeland Community and Industry Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	11:16
End Time (MST)	15:14

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept (± 3% F.S.)
0	0	n/a	0.999954
150	152	0.9872	0.999796
200	202	0.9898	1.075435
400	400	0.9996	



Notes:

01 Minute Averages



Total Reduced Sulphur

TRS Calibration Report
Station Information

Calibration Date	July 8, 2011	Previous Calibration	June 16, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:01	End Time (MST)	11:51
Reason:	Monthly Calibration		
Barometric Pressure	0.922 atm	Station Temperature	24 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	LL84150
DAS Output Voltage	0 - 10 Volts	Cal Gas Expiry date	February 2, 2012
		Chart Rec. Output	0 - 10 Volts

Equipment Information

Analyzer Make / Model:	Thermo 450i	S/N :	812728560	Method:	Fluorescent
Converter Make / Model:	CDN 101	S/N :	250		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100		
Sample Flow / Box Temp	347 ccm, 31.4 Deg C	347 ccm, 31 Deg C	
HVPS / Lamp Setting	-623.1, 750	-623.1, 750	
PMT / RxCell Temp	OK Deg C, 44.9 Deg C	OK Deg C, 45 Deg C	
Converter / IZS Temp	810 Deg C, 45 Deg C	810 Deg C, 45.0 Deg C	
Offset / Slope	12.3, 1.178	12.9, 1.232	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	N/A
	No Adj required			
4959	39.2	80	76	1.0526
4959	39.2	80	81	0.9876
4980	19.6	40	41	0.9753
4986	11.2	23	23	1.0000
4996	0.0	0	0	N/A
Sum of Least Squares				0.9857
New Correction Factor				0.9876

Before Calibration

Auto Zero	-0.3	After Calibration	-0.3
Auto Span	50.1		54.8
Sample Lines Connected			YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0526
Percent Change:	-5.0%

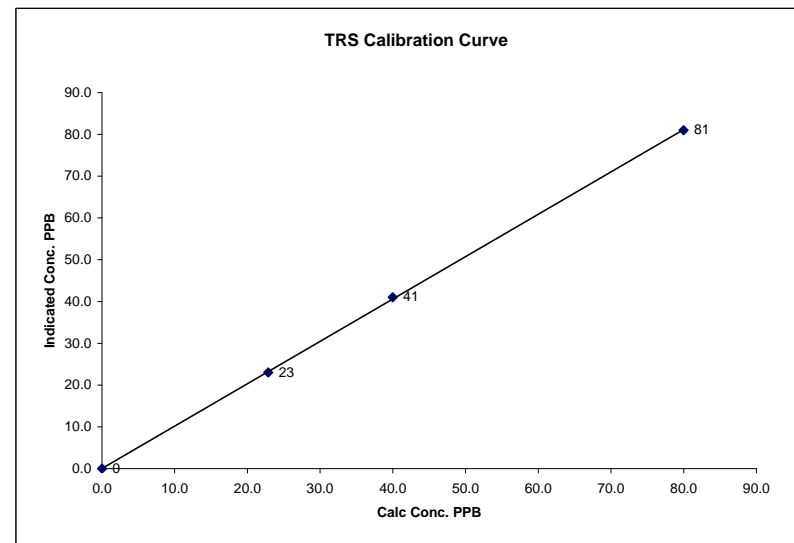
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

TRS Calibration Curve

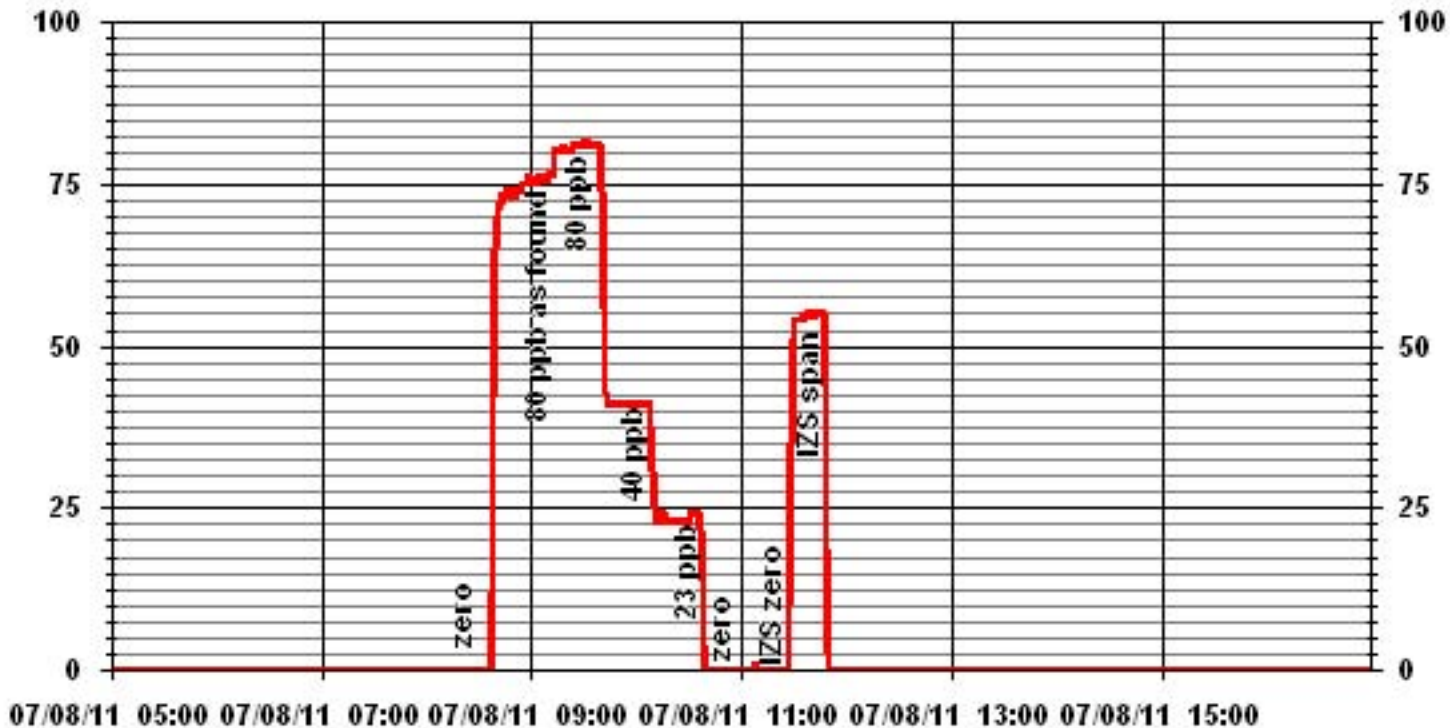
Calibration Date	July 8, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	8:01
End Time (MST)	11:51

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.999930
0	0	n/a	Intercept		1.013734
23	23	0.0000			0.048341
40	41	0.5576			
80	81	0.4937			

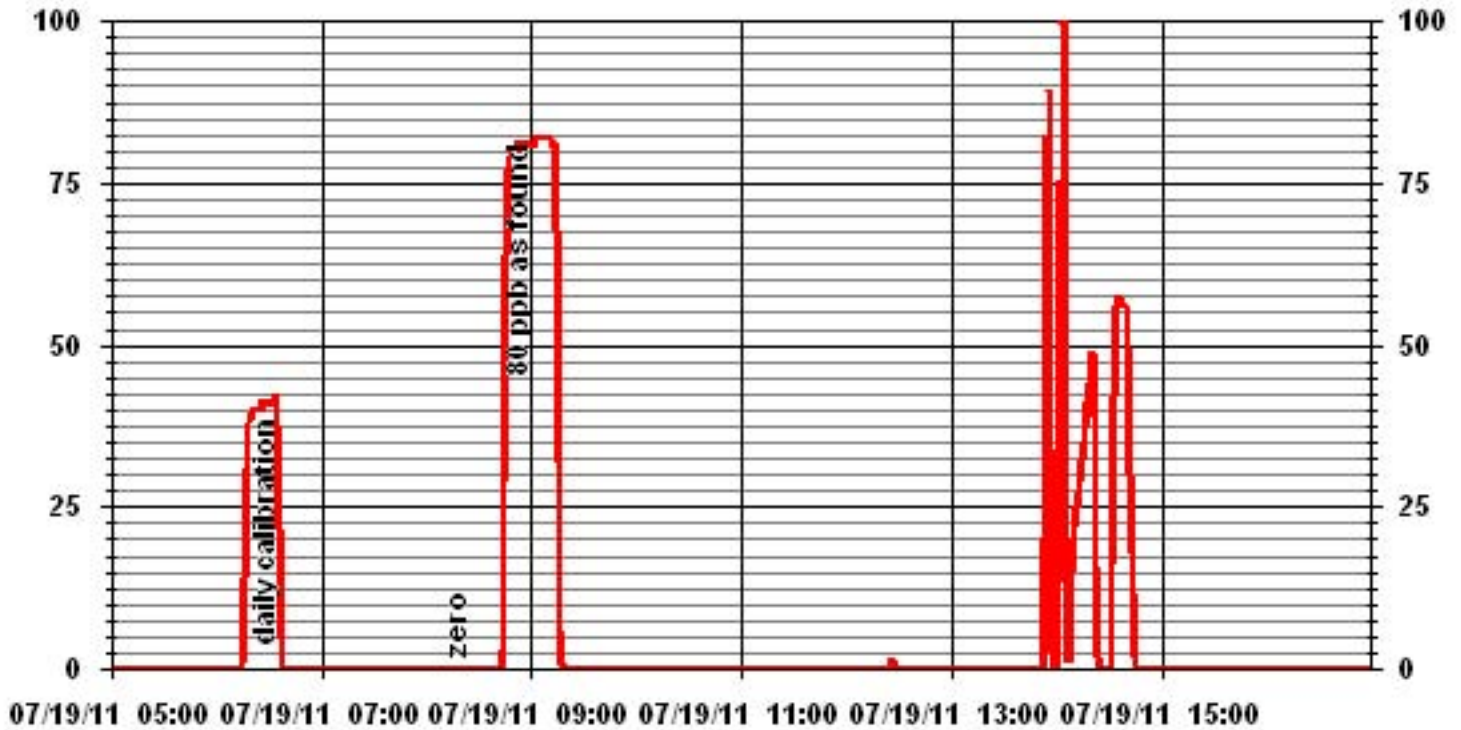


Notes:

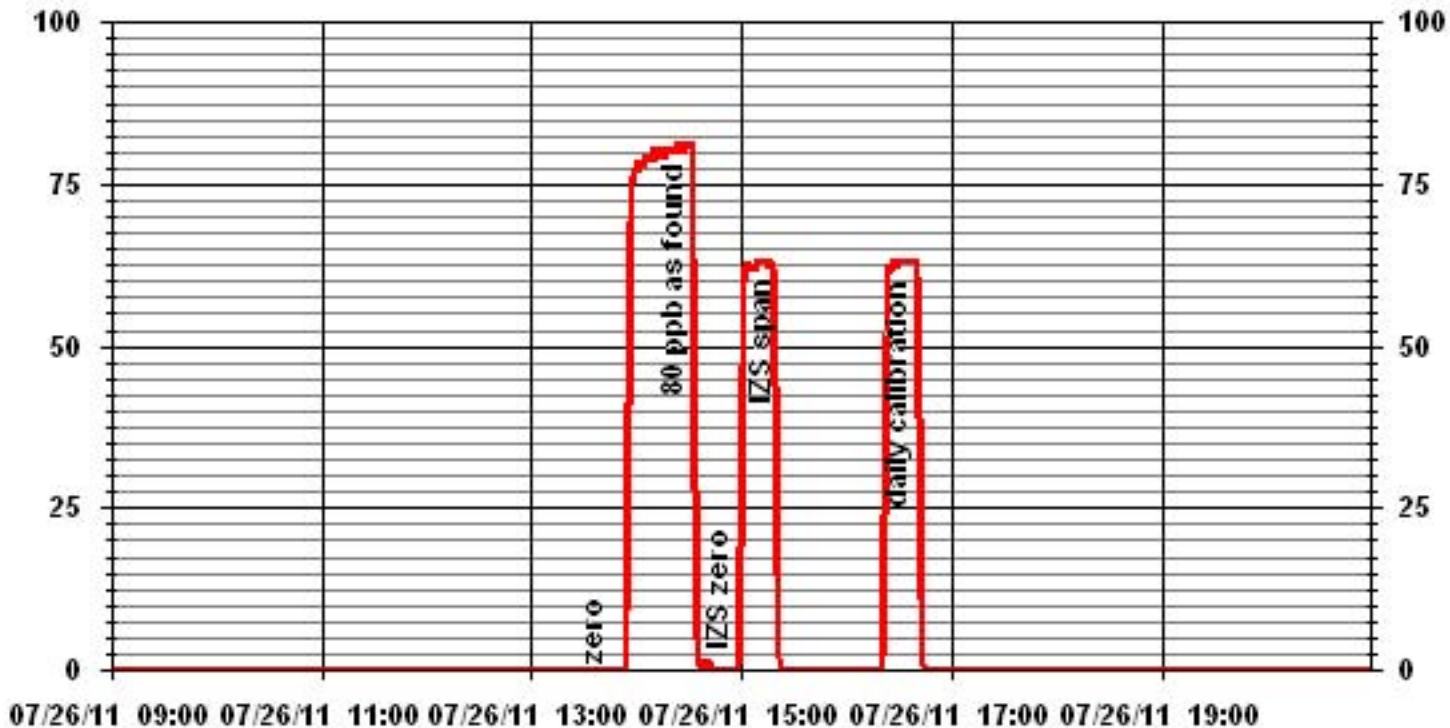
01 Minute Averages



01 Minute Averages



01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	July 8, 2011	Previous Calibration	June 16, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	LICA1/Cold Lake		
Start Time (MST)	11:14	End Time (MST)	14:30
Reason:	Monthly Calibration		
Barometric Pressure:	0.923 atm	Station Temperature:	22 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 602 PPM	C3H8 207 PPM	
	TOTAL CH4 1171.3 PPM	Gas Cyl. # LL84150	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	3485
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information			
Make / Model	TEI 51C-LT	S/N :	427408718
Method	Flame Ionization		

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

Calibration Data				
Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0.0	0.0	-0.1	NA
1998	0.0	0.0	0.0	NA
1999	70.0	39.6	39.9	0.9931
	No Adj Required			
1999	34.9	20.1	19.8	1.0150
1998	20.0	11.6	11.3	1.0273
1998	0.0	0.0	0.0	NA
New Correction Factor:				0.9931

Percent Change	
Previous Calibration Correction Factor:	0.9931
Current Correction Factor Before Span Adjust:	0.9931
Percent Change:	0.0%

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	36.4	35.7
Sample Lines Connected	YES	

Cylinder Pressures			
Span	1200 psi	Hydrogen	350 psi
		Zero Air	32 psi

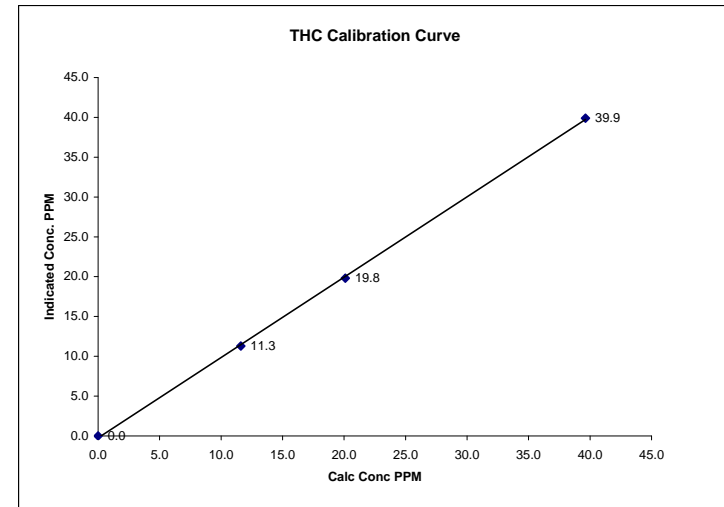
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

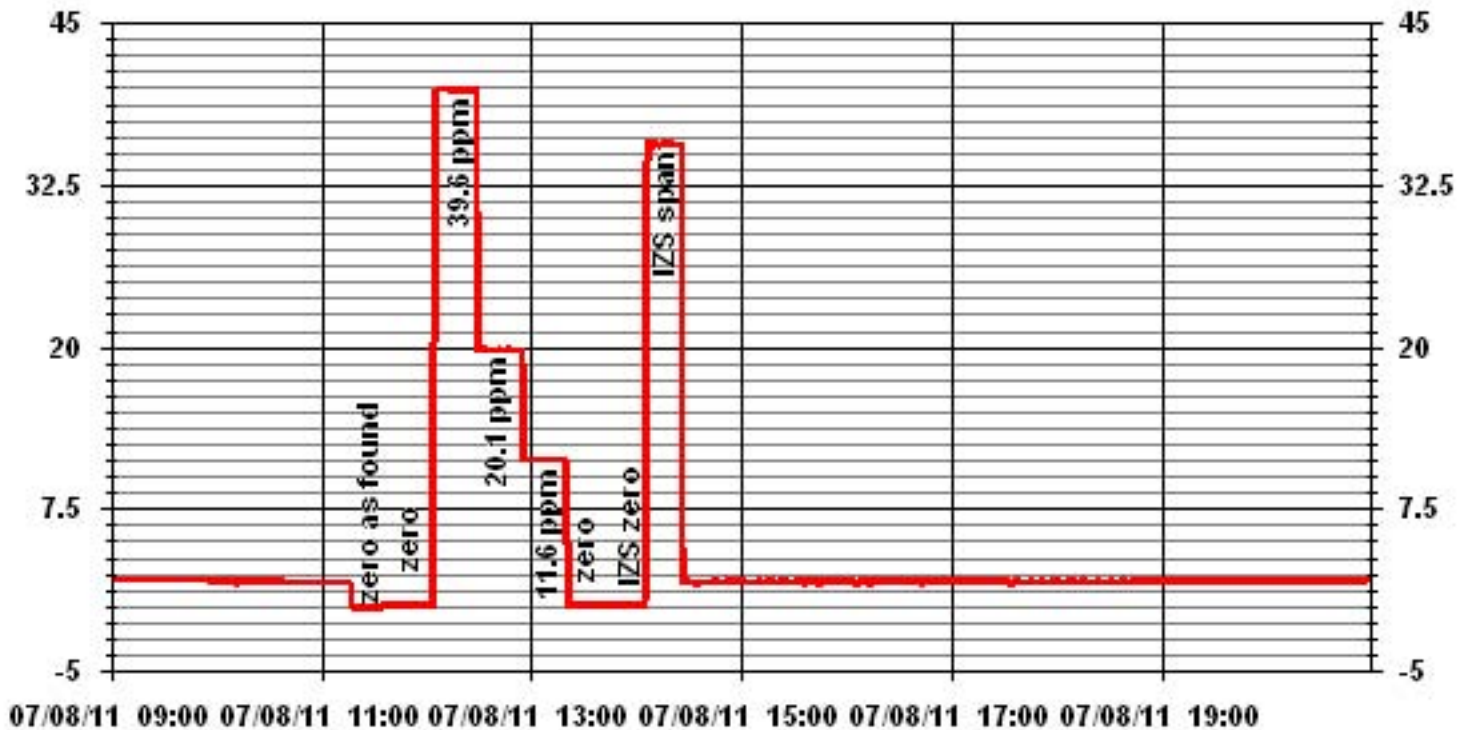
Calibration Date	July 8, 2011		
Company	Lakeland Industry and Community Association		
Plant / Location	LICA1/Cold Lake		
Start Time (MST)	11:14	End Time (MST)	14:30

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	(≥ 0.995)	1.008605
0.0	0.0	NA	Intercept	(±3% F.S.)	-0.23653
11.6	11.3	1.0273			
20.1	19.8	1.0150			
39.6	39.9	0.9931			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	July 11, 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 (%)	26.8%
Firmware Ver.	1.52	K _o Factor	14578.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	20.0
		Press (ATM)	0.945

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	0.006	Warnings	None
0.36	0.36		
Temperature/Pressure			
Measured Temp (± 2 °C)	19.1	D °C	1.0
Measured Press (± 0.01atm)	0.950	DATM	-0.005
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	0.09%
Measured Main Flow (l/min)	2.95	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.52%
Measured Bypass Flow (l/min)	13.50	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 = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 12:32 **Finish Time:** 13:58

Sample Inlet Cleaned: Yes **New Filters Installed:** YES
New Filter Loading %: 22.1%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	July 8, 2011	Previous Calibration	June 16, 2011
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	8:01	End Time (MST)	13:42
Reason:	Monthly Calibration		
Barometric Pressure	0.922 atm	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822	MFCF	0
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	701	ccm	317	0 - 500	701	ppb	317
Sample Flow/Conv. Temp			Deg C				Deg C
Ozone Flow / Vacuum	OK	ccm	181.0	"Hg-A	OK	ccm	181.7
HVPS / A ZERO	-821	Volts	NA	MV	-821	Volts	NA
Rx/ Temp / PMT Temp	49.7	Deg C	-2.4	Deg C	49.7	Deg C	-2.4
Box Temp / IZS Temp	27.4	Deg C	OK	Deg C	26.8	Deg C	OK
Offset	3.9	NOx	3.5	NO	4	NOx	3.6
Slope	1.027	NOx	0.910	NO	1.026	NOx	0.935
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	NA	0	0	NA	0	0	0	NA	NA
No Zero Adj Requi										
4954	39.6	NA	410	400	NA	400	390	10	1.0250	1.0248
4954	39.6	NA	410	400	NA	410	400	10	1.0000	1.0000
4973	19.8	NA	205	200	NA	207	202	5	0.9905	0.9895
4984	9.9	NA	102	100	NA	105	103	3	0.9761	0.9700
4996	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4954	39.6	NA	410	400	NA	411	401	10	NA	NA
No Adj Required										
4954	39.6	350	410	NA	330	411	81	330	1.0000	100.00%
4954	39.6	150	410	NA	149	411	262	149	1.0000	100.00%
4954	39.6	75	410	NA	80	411	331	80	1.0000	100.00%

Linearity	Sum of Least Squares	NOx= 0.997	NO= 0.996	NO2= 1.000
OK?	Yes	NOx= 1.0000	NO= 1.0000	NO2= 1.0000
Correction Factors:				
Average Converter Efficiency= 100.00%				

Before Calibration				After Calibration			
Auto Zero	0.1	NOx	0.2	NO2	0.1	NOx	0.2
Auto Span	416	NOx	413	NO2	438	NOx	434
Sample Lines Connected							
YES							

Percent Change from Previous Calibration	NOx	-2.7%	NO	-2.4%	NO2	-0.3%
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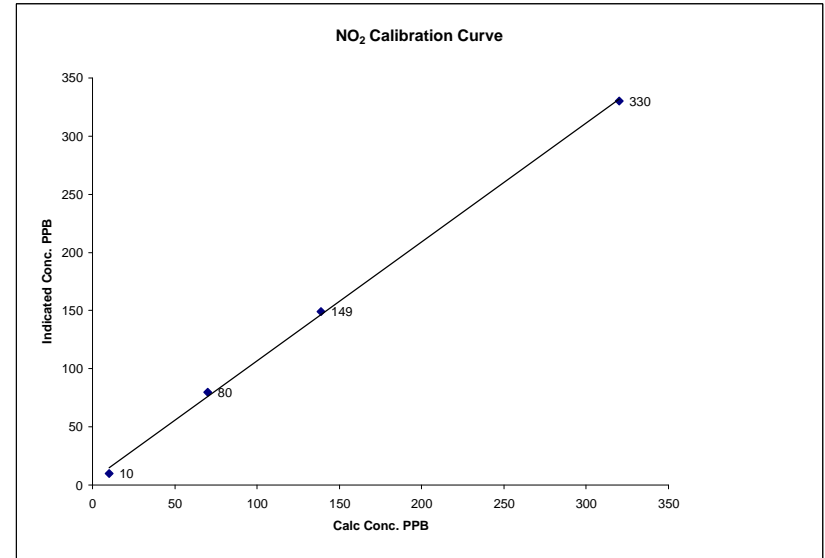
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	July 8, 2011
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	8:01
End Time (MST)	13:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999184
10	10	N/A	Intercept	(± 3% F.S.)	4.39225
70	80	0.8750			
139	149	0.9329			
320	330	0.9697			

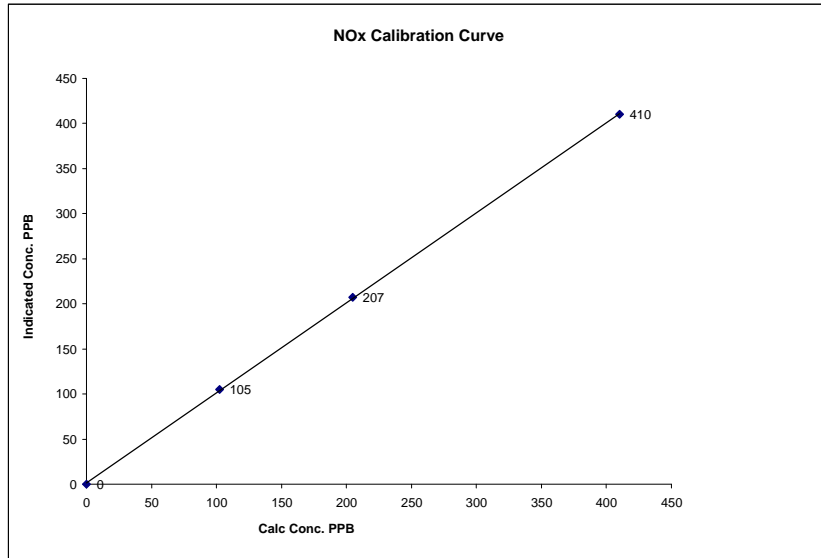


Notes:

NOx Calibration Curve

Calibration Date July 8, 2011
 Company LICA
 Plant / Location Cold Lake South
 Start Time (MST) 8:01 End Time (MST) 13:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999946
0	0	N/A	Intercept	(± 3% F.S.)	1.39586
102	105	0.9761			
205	207	0.9905			
410	410	1.0000			

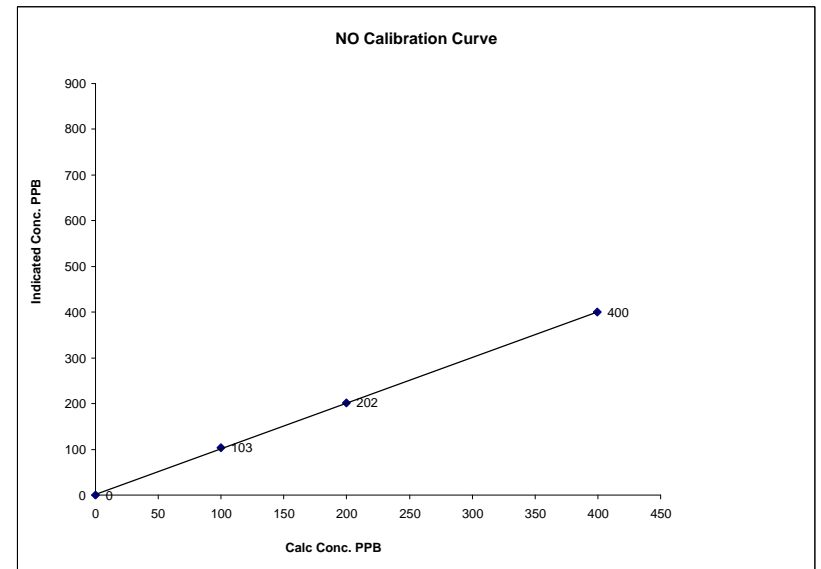


Notes:

NO Calibration Curve

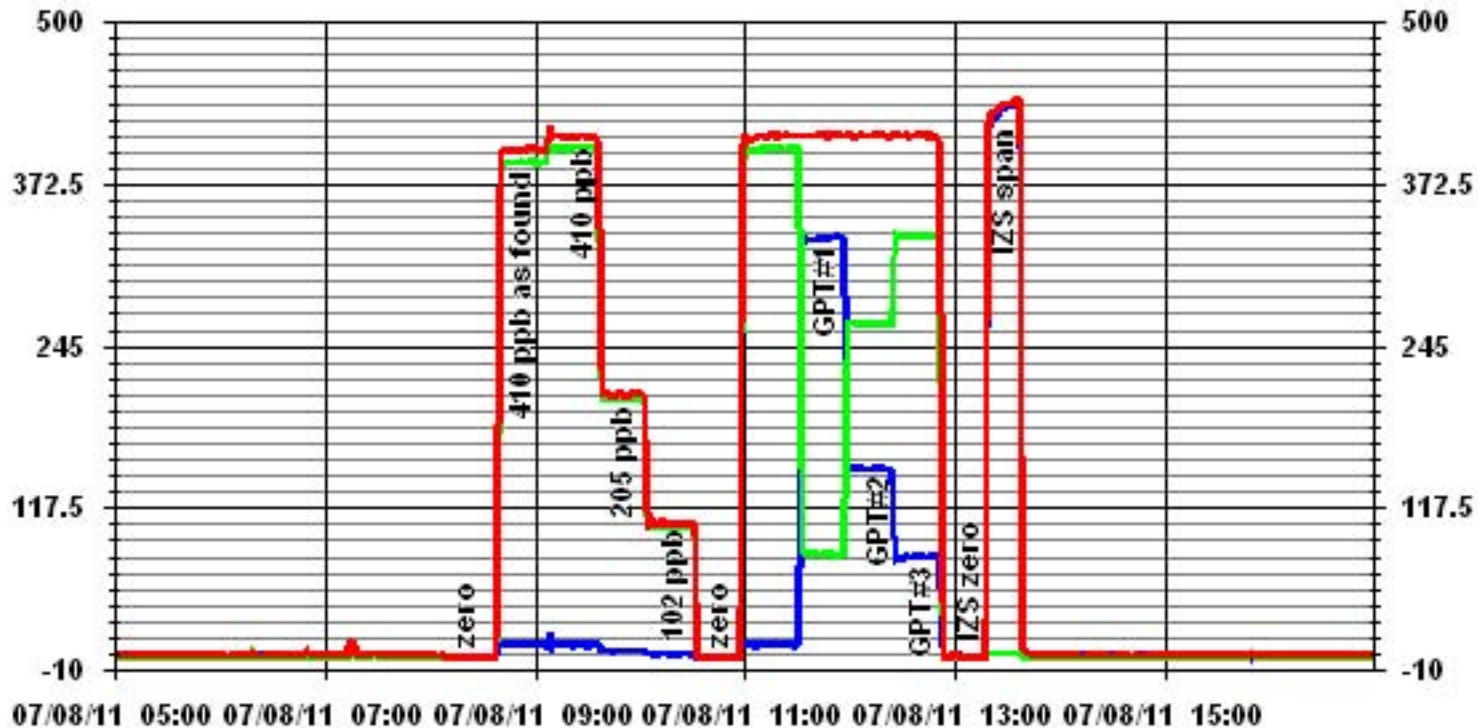
Calibration Date July 8, 2011
 Company LICA
 Plant / Location Cold Lake South
 Start Time (MST) 8:01 End Time (MST) 13:42

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999927
0	0	N/A	Intercept	(± 3% F.S.)	3.9365
100	103	0.9700			
200	202	0.9895			
400	400	0.9992			



Notes:

01 Minute Averages



— LICA

NOX_

PPB

— LICA

NO_

PPB

— LICA

NO2_

PPB

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	July 27, 2011	Previous Calibration	July 8, 2011
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	11:59	End Time (MST)	13:40
Reason:	As Found		
Barometric Pressure	0.922 atm	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822		MFCF 0
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	EnviroNics 6100	S/N:	4760		
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	EnviroNics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 500			ppb			
Sample Flow/Conv. Temp	649 ccm	317 Deg C		749 ccm	317 Deg C		
Ozone Flow / Vacuum	OK ccm	207.8 "Hg-A		OK ccm	168.6 "Hg-A		
HVPS / A ZERO	-821 Volts	NA MV		-821 Volts	NA MV		
Rx/ Temp / PMT Temp	49.7 Deg C	-2.4 Deg C		49.8 Deg C	-2.5 Deg C		
Box Temp / IZS Temp	27.5 Deg C	OK Deg C		26.8 Deg C	OK Deg C		
Offset	4 NOx	3.6 NO		4 NOx	3.6 NO		
Slope	1.026 NOx	0.935 NO		1.026 NOx	0.935 NO		
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	NA	0	0	NA	0	0	0	NA	NA
No Zero Adj Requ										
4954	39.6	NA	410	400	NA	354	346	8	1.1582	1.1551

Gas Phase Titration Calibration Data

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

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 1.1582	NO= 1.1551	NO2=
				Average Converter Efficiency=		

Before Calibration				After Calibration				
Auto Zero	0.1	NOx	0.2	NO2	NA	NOx	NA	NO2
Auto Span	389	NOx	386	NO2	NA	NOx	NA	NO2
				Sample Lines Connected YES				

Percent Change from Previous Calibration	NOx	-13.9%	NO	-13.4%	NO2	#VALUE!
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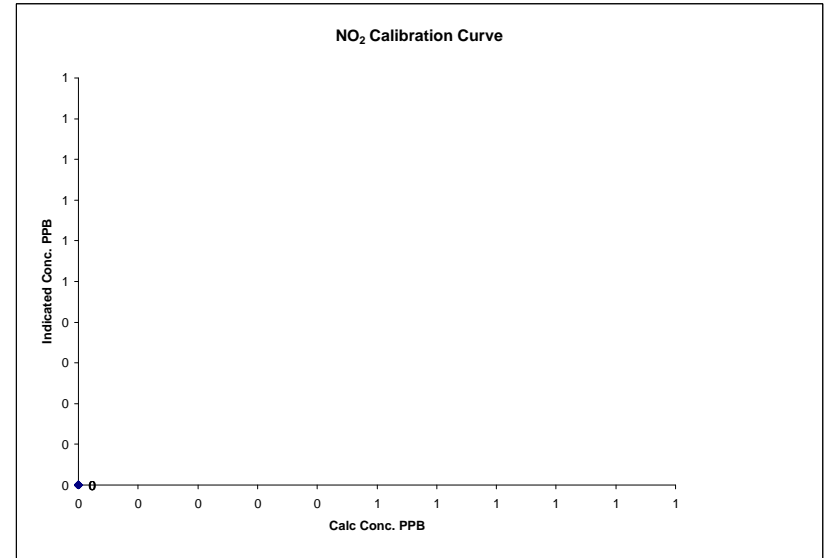
Notes: **NA : Not Applicable**
The sample pump was replaced following the as found points.

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	July 27, 2011
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	11:59
End Time (MST)	13:40

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



Notes:

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	July 27, 2011	Previous Calibration	July 8, 2011
Company	LICA	Plant/Location	Cold Lake South
Start Time (MST)	13:40	End Time (MST)	18:57
Reason:	Post Repair Calibration		
Barometric Pressure	0.931 atm	Station Temperature	23 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822		MFCF 0
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	Thermo 42C	S/N :	427408716	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N :	4760		
DAS Make / Model:	ESC 8832	S/N :	3485		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	Envionics 6100	S/N :	4760		

Analyzer Settings

Before Calibration				After Calibration			
Concentration Range	0 - 500			ppb			
Sample Flow/Conv. Temp	749 ccm	317 Deg C		744 ccm	317 Deg C		
Ozone Flow / Vacuum	OK ccm	168.6 Hg-A		OK ccm	168.8 Hg-A		
HVPS / A ZERO	-821 Volts	NA MV		-821 Volts	NA MV		
Rx/ Temp / PMT Temp	49.5 Deg C	-2.5 Deg C		49.9 Deg C	-2.4 Deg C		
Box Temp / IZS Temp	27.2 Deg C	OK Deg C		27.4 Deg C	OK Deg C		
Offset	4 NOx	3.6 NO		3.5 NOx	3.2 NO		
Slope	1.026 NOx	0.935 NO		1.028 NOx	0.820 NO		
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	NA	0	0	NA	0	0	0	NA	NA
No Zero Adj Requ										
4954	39.6	NA	410	400	NA	466	456	11	0.8798	0.8765
4954	39.6	NA	410	400	NA	411	400	11	0.9975	1.0000
4973	19.8	NA	205	200	NA	207	202	5	0.9905	0.9895
4984	9.9	NA	102	100	NA	105	102	3	0.9761	0.9795
4996	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4954	39.6	NA	410	400	NA	411	400	11	NA	NA
No Adj Required										
4954	39.6	350	410	NA	332	411	79	332	1.0000	100.00%
4954	39.6	150	410	NA	149	412	262	150	0.9933	100.72%
5954	39.6	75	342	NA	79	412	332	80	0.9875	101.47%

Linearity	Sum of Least Squares	NOx= 0.995	NO= 0.996	NO2= 0.998
OK?	Yes	NOx= 0.9975	NO= 1.0000	NO2= 1.0000
Average Converter Efficiency= 100.73%				

Before Calibration				After Calibration			
Auto Zero	0.1 NOx	0.2 NO2		0.1 NOx	0.3 NO2		
Auto Span	389 NOx	386 NO2		452 NOx	448 NO2		
Sample Lines Connected YES							

Percent Change from Previous Calibration	NOx	NA	NO	NA	NO2	NA
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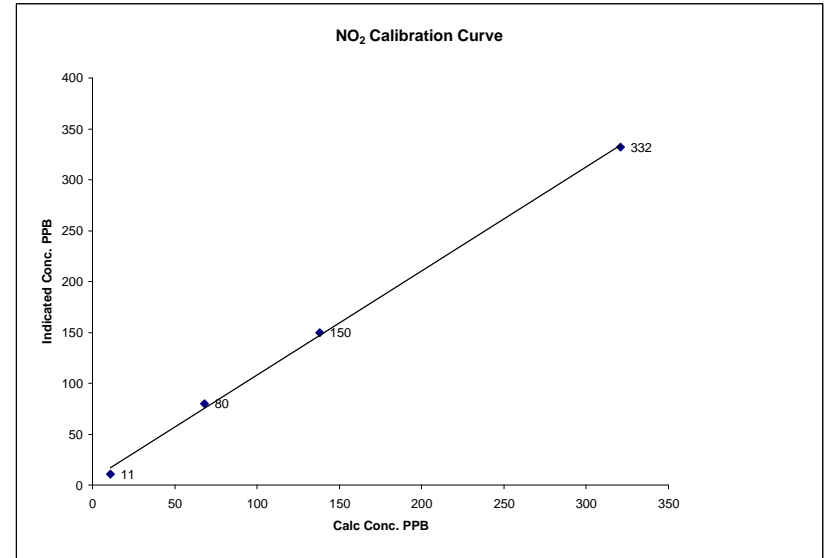
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	July 27, 2011
Company	LICA
Plant / Location	Cold Lake South
Start Time (MST)	13:40
End Time (MST)	18:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998742
11	11	N/A	Intercept	(± 3% F.S.)	5.55103
68	80	0.8500			
138	150	0.9200			
321	332	0.9669			

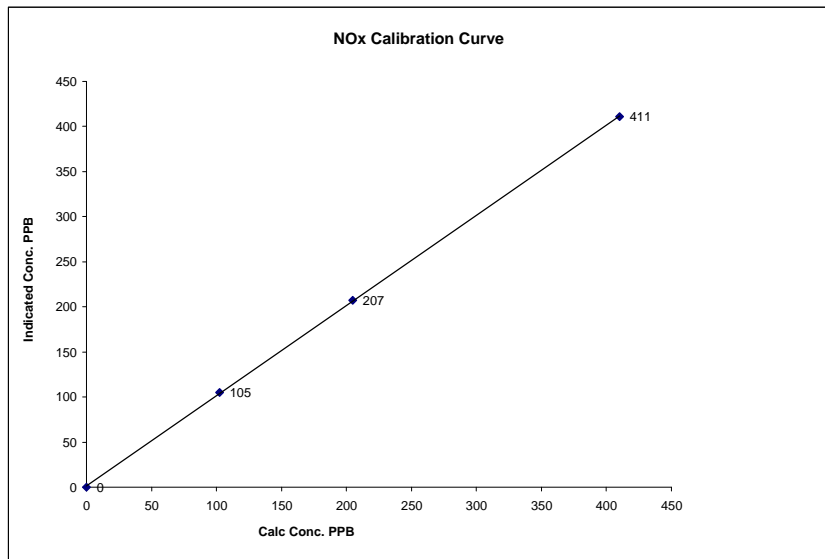


Notes:

NOx Calibration Curve

Calibration Date July 27, 2011
 Company LICA
 Plant / Location Cold Lake South
 Start Time (MST) 13:40 End Time (MST) 18:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999961
0	0	N/A	Intercept	(± 3% F.S.)	1.19587
102	105	0.9761			
205	207	0.9905			
410	411	0.9975			

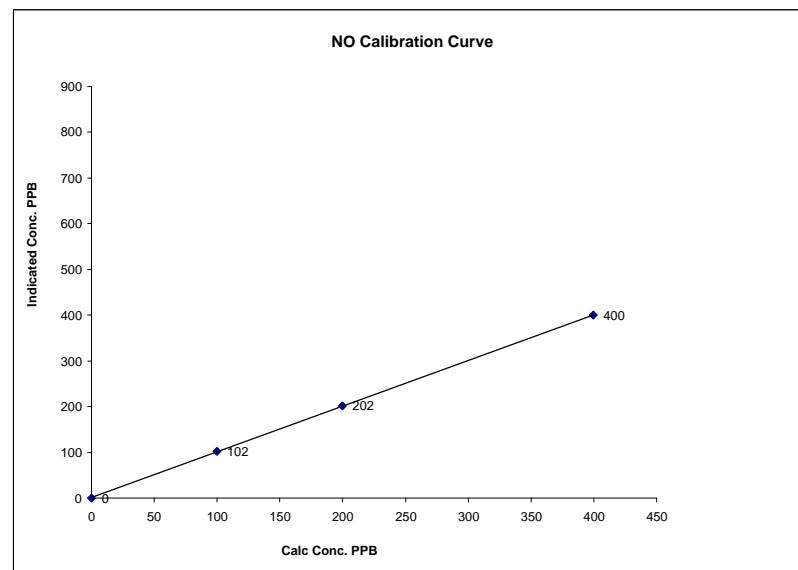


Notes:

NO Calibration Curve

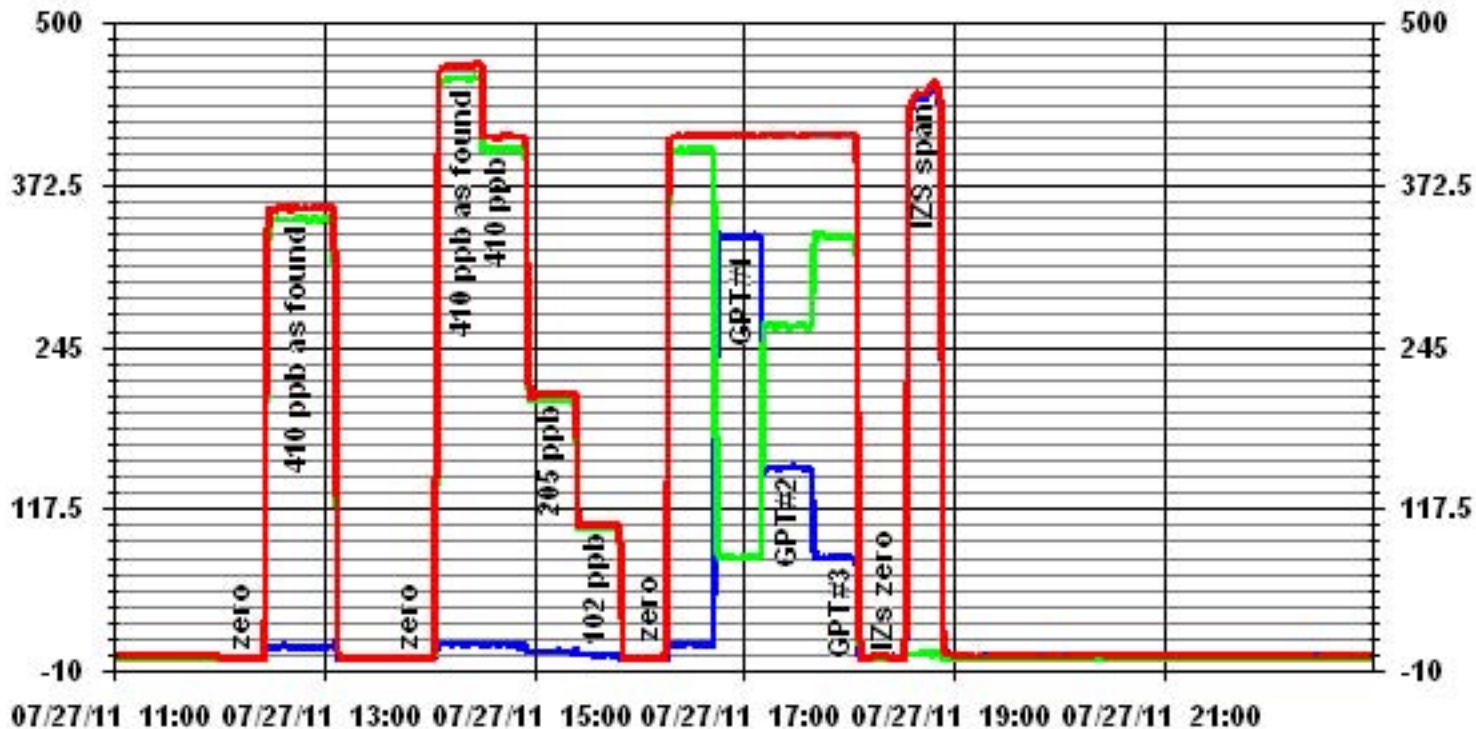
Calibration Date July 27, 2011
 Company LICA
 Plant / Location Cold Lake South
 Start Time (MST) 13:40 End Time (MST) 18:57

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999956
0	0	N/A	Intercept	(± 3% F.S.)	3.9365
100	102	0.9795			
200	202	0.9895			
400	400	0.9992			



Notes:

01 Minute Averages



— LICA

NOX_

PPB

— LICA

NO_

PPB

— LICA

NO2_

PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	July 11, 2011	Previous Calibration	June 17, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	11:16	End Time (MST)	-
Reason:	Monthly Calibration		
Barometric Pressure	0.945 atm	Station Temperature	24 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	700419951	Method:	Photometric
Calibrator Make / Model:	EnviroNics 6100		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	714 ccm	757 ccm	714 ccm / 756 ccm
Pressure	711 mmHg		710 mmHg
Bench Lamp	53.5 Deg C		67.6 Deg C
O3 Lamp / Box Temp	67.6 Deg C	28.1 Deg C	53.5 Deg C / 28.6 Deg C
Offset / Slope	0.1	0.981	0.1 / 0.993

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	0	NA
	No Adj Required			
4996	350	320	315	1.0159
4996	350	320	322	0.9938
4996	150	139	138	1.0072
4996	75	69	68	1.0147
4996	0	0	0	NA
Sum of Least Squares				0.9966
New Correction Factor				0.9938

Before Calibration		After Calibration	
Auto Zero	-0.3	Auto Zero	-0.3
Auto Span	261.0	Auto Span	265.0
Sample Lines Connected		YES	
Previous Calibration Correction Factor:		100.3%	
Current Correctio Factor Before Span Adjust:		99.4%	
Percent Change:		0.9%	

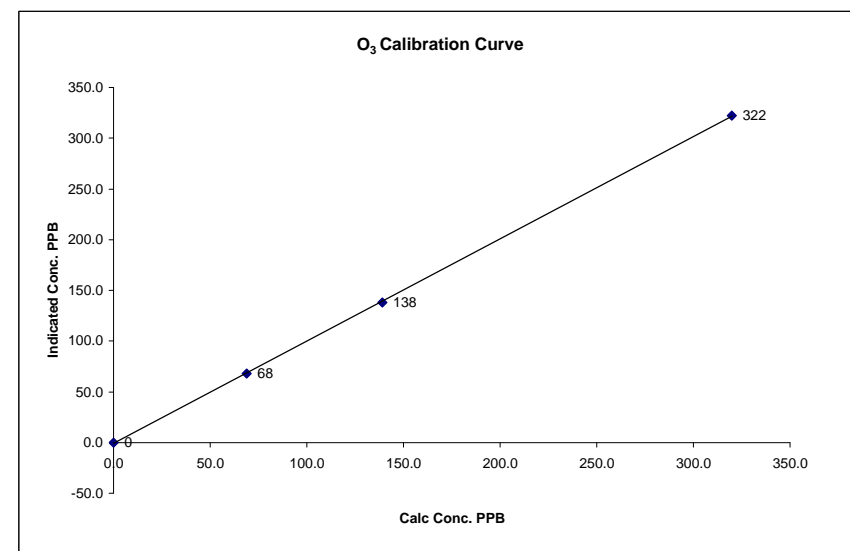
Note: NA : Not Applicable

Calibration Performed by: Ting Xu

O₃ Calibration Curve

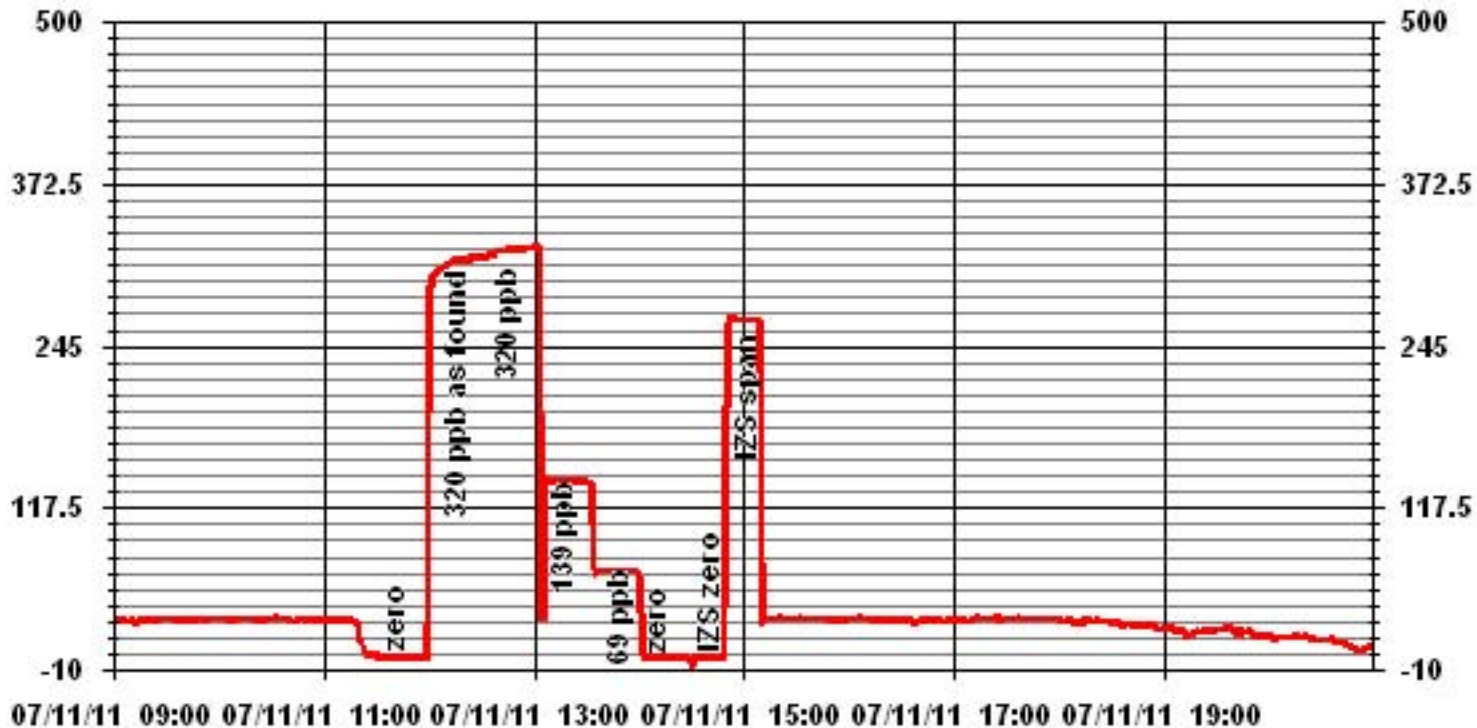
Calibration Date	July 11, 2011
Company	Lakeland Industry & Community Association
Plant / Location	LICA 1 - Cold Lake South
Start Time (MST)	11:16
End Time (MST)	-

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)
0	0	n/a		0.999953
69	68	1.0147		1.007608
139	138	1.0072		-1.004191
320	322	0.9938		



Notes:

01 Minute Averages



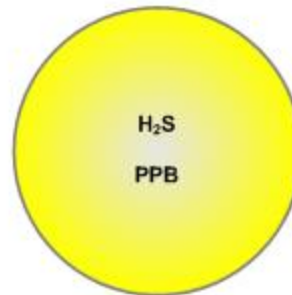
Passive Bubble Maps

Lakeland Industry & Community Association H₂S Passive Bubble Map

JULY 2011

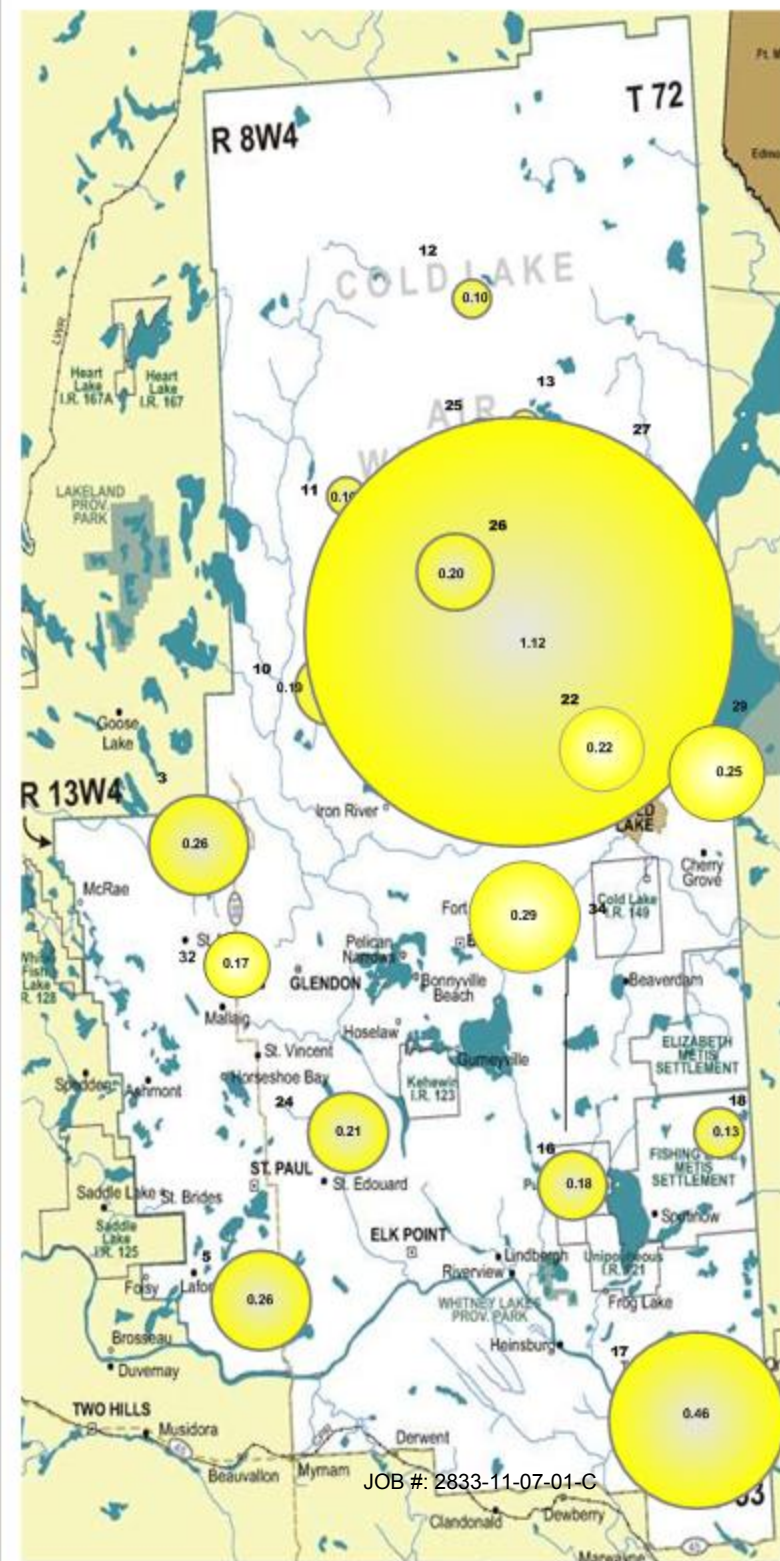
PASSIVE STATIONS

		DUPLICATE
3 – Therien	0.26 PPB	NA
5 – Lake Eliza	0.26 PPB	0.26 PPB
10 – La Corey	0.18 PPB	0.20 PPB
11 – Wolf Lake	0.10 PPB	NA
12 – Foster Creek	0.10 PPB	0.09 PPB
13 – Primrose	0.08 PPB	NA
14 – Maskwa	0.17 PPB	0.24 PPB
16 – Frog Lake	0.18 PPB	NA
17 – Clear Range	0.43 PPB	0.48 PPB
18 – Fishing Lake	0.13 PPB	NA
22 – Cold Lake South	0.22 PPB	NA
24 – Fort George	0.22 PPB	0.19 PPB
25 – Burnt Lake	0.10 PPB	NA
26 – Mahihkan	0.20 PPB	0.19 PPB
27 – Mahkeses	1.12 PPB	NA
29 – Cold Lake South 2	0.25 PPB	0.25 PPB
32 – St. Lina	0.17 PPB	NA
34 – Portable	0.29 PPB	NA



Summary

Minimum : 0.10 PPB – Various Stations
 Maximum: 1.12 PPB – Mahkeses
 Average: 0.50 PPB *Includes Duplicates

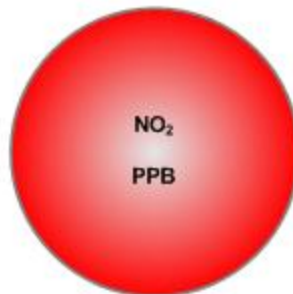


Lakeland Industry & Community Association NO₂ Passive Bubble Map

JULY 2011

PASSIVE STATIONS

		DUPLICATE
2 – Sand River	<0.1 PPB	NA
3 – Therien	0.4 PPB	0.4 PPB
4 – Flat Lake	<0.1 PPB	NA
5 – Lake Eliza	0.4 PPB	0.3 PPB
6 – Telegraph Creek	0.6 PPB	NA
8 – Muriel-Kehewin	0.3 PPB	0.3 PPB
9 – Dupre	0.4 PPB	NA
10 – La Corey	1.1 PPB	0.9 PPB
11 – Wolf Lake	0.2 PPB	NA
12 – Foster Creek	0.2 PPB	0.2 PPB
13 – Primrose	0.2 PPB	NA
14 – Maskwa	0.7 PPB	0.6 PPB
15 – Ardmore	0.4 PPB	NA
16 – Frog Lake	0.7 PPB	0.5 PPB
17 – Clear Range	0.9 PPB	NA
18 – Fishing Lake	0.4 PPB	0.3 PPB
19 – Beaverdam	0.3 PPB	NA
22 – Cold Lake South	0.5 PPB	NA
23 – Medley-Martineau	0.1 PPB	<0.1 PPB
24 – Fort George	0.8 PPB	NA
28 – Town of Bonnyville	1.7 PPB	1.4 PPB
29 – Cold Lake South 2	0.4 PPB	NA
32 – St. Lina	0.2 PPB	NA
34 – Portable	0.6 PPB	NA



Summary

Minimum : <0.1 PPB – Sand River and Flat Lake
Maximum: 1.6 PPB – Town of Bonnyville
Average: 0.5 PPB *Includes Duplicates

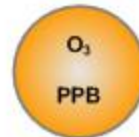


Lakeland Industry & Community Association O₃ Passive Bubble Map

JULY 2011

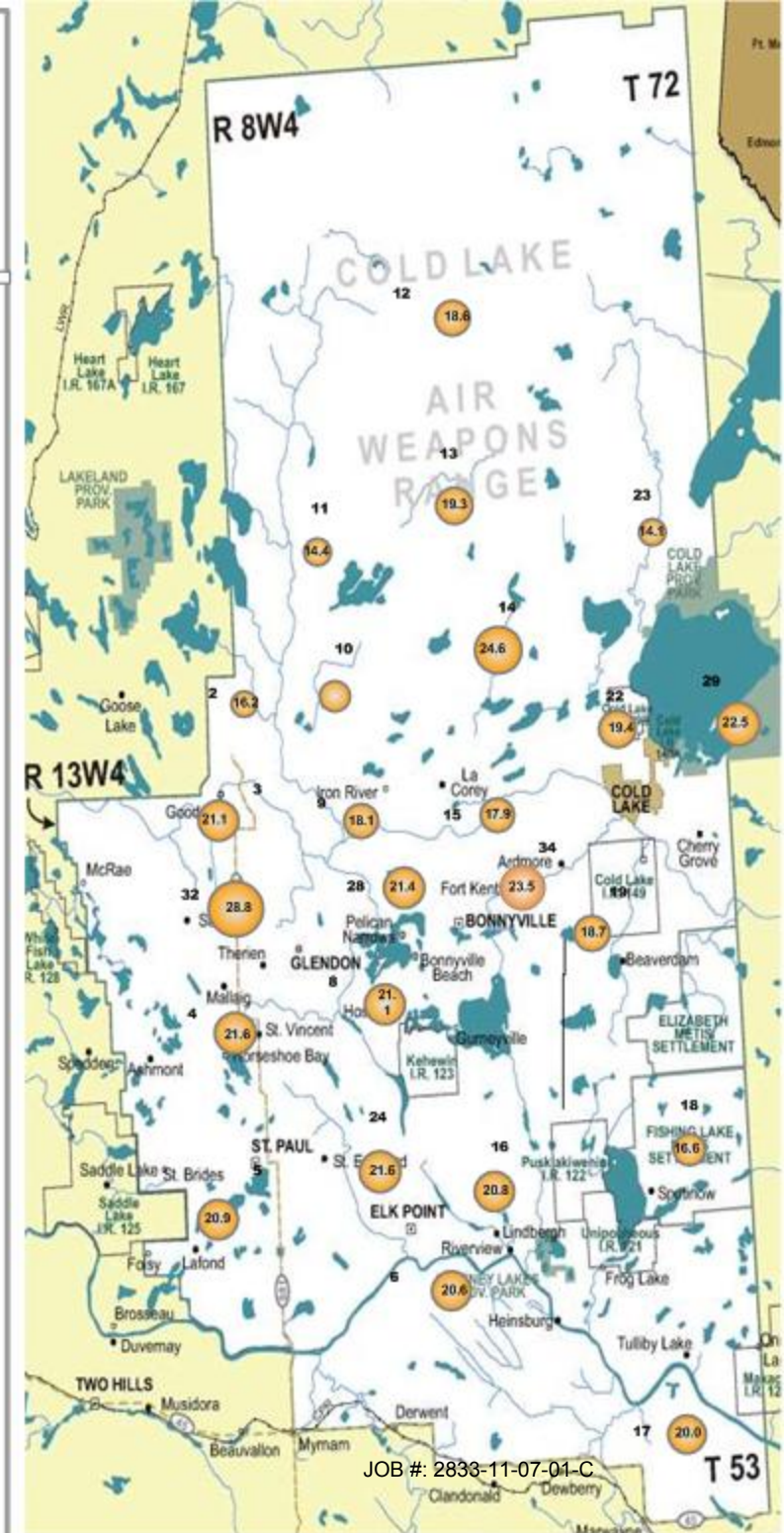
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	13.6 PPB	NA
3 – Therien	20.9 PPB	21.2 PPB
4 – Flat Lake	21.2 PPB	NA
5 – Lake Eliza	21.3 PPB	20.4 PPB
6 – Telegraph Creek	20.6 PPB	NA
8 – Muriel-Kehewin	20.4 PPB	21.8 PPB
9 – Dupre	18.1 PPB	NA
10 – La Corey	16.7 PPB	15.6 PPB
11 – Wolf Lake	14.4 PPB	NA
12 – Foster Creek	18.5 PPB	18.6 PPB
13 – Primrose	19.3 PPB	NA
14 – Maskwa	25.6 PPB	23.6 PPB
15 – Ardmore	17.9 PPB	NA
16 – Frog Lake	20.9 PPB	20.7 PPB
17 – Clear Range	20.0 PPB	NA
18 – Fishing Lake	16.6 PPB	16.5 PPB
19 – Beaverdam	18.7 PPB	NA
22 – Cold Lake South	19.4 PPB	NA
23 – Medley-Martineau	13.6 PPB	14.6 PPB
24 – Fort George	21.6 PPB	NA
28 – Town of Bonnyville	21.6 PPB	21.2 PPB
29 – Cold Lake South 2	22.5 PPB	NA
32 – St. Lina	28.8 PPB	NA
34 – Portable	23.5 PPB	NA



Summary

Minimum : 13.6 PPB – Sand River
 Maximum : 28.8 PPB – St. Lina
 Average : 19.8 PPB *Includes Duplicates



Lakeland Industry & Community Association SO₂ Passive Bubble Map

JULY 2011

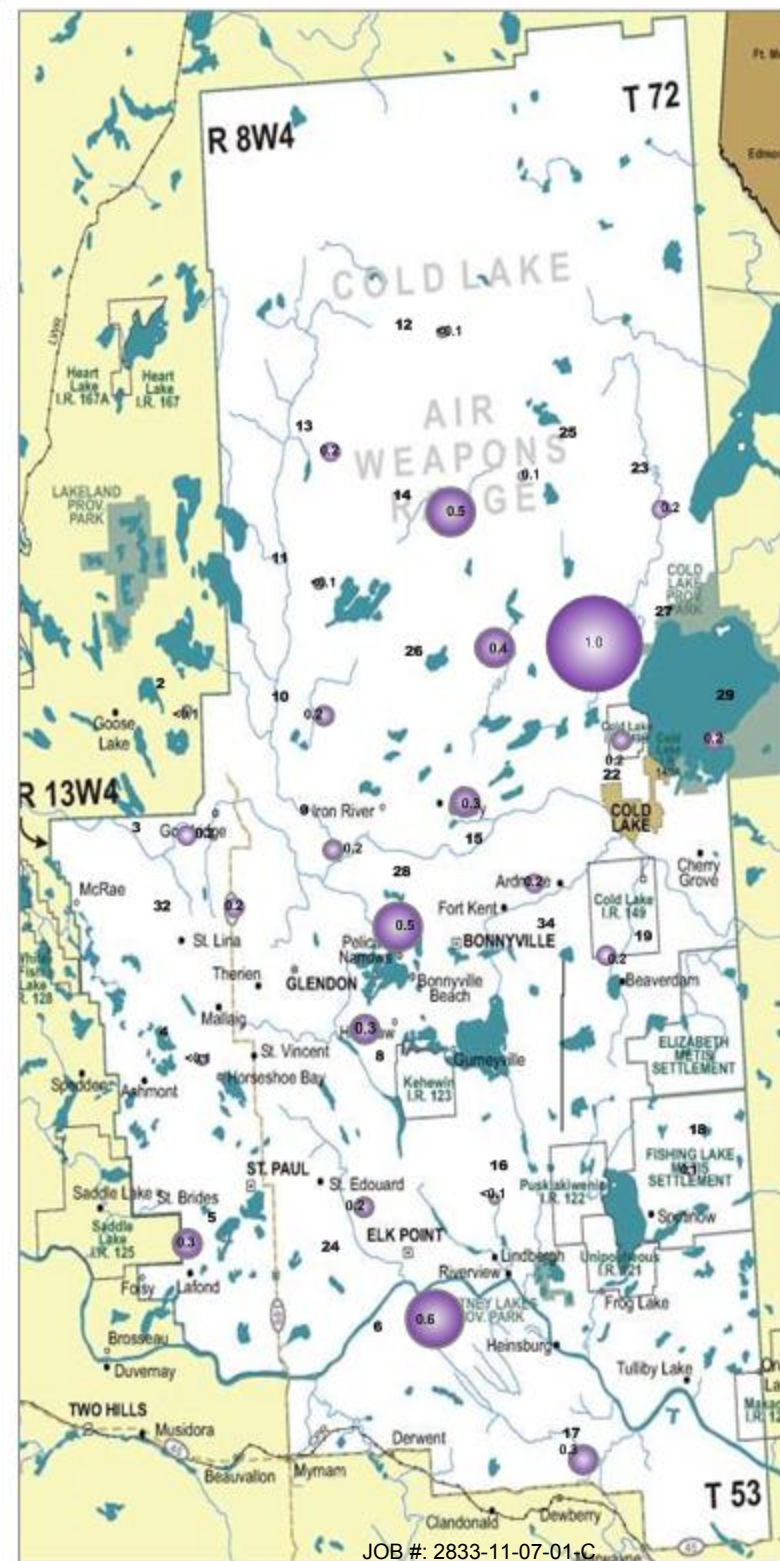
PASSIVE STATIONS

		DUPLICATE
2 – Sand River	<0.1 PPB	NA
3 – Therien	0.2 PPB	0.1 PPB
4 – Flat Lake	<0.1 PPB	NA
5 – Lake Eliza	0.3 PPB	0.2 PPB
6 – Telegraph Creek	0.6 PPB	NA
8 – Muriel-Kehewin	0.3 PPB	0.3 PPB
9 – Dupre	0.2 PPB	NA
10 – La Corey	0.2 PPB	0.1 PPB
11 – Wolf Lake	<0.1 PPB	NA
12 – Foster Creek	<0.1 PPB	<0.1 PPB
13 – Primrose	0.2 PPB	NA
14 – Maskwa	0.5 PPB	0.5 PPB
15 – Ardmore	0.3 PPB	NA
16 – Frog Lake	<0.1 PPB	0.1 PPB
17 – Clear Range	0.3 PPB	NA
18 – Fishing Lake	0.1 PPB	0.1 PPB
19 – Beaverdam	0.2 PPB	NA
22 – Cold Lake South	0.2 PPB	NA
23 – Medley-Martineau	0.1 PPB	0.2 PPB
24 – Fort George	0.2 PPB	NA
25 – Burnt Lake	0.1 PPB	0.1 PPB
26 – Mahikan	0.4 PPB	NA
27 – Mahkeses	1.0 PPB	0.9 PPB
28 – Town of Bonnyville	0.5 PPB	NA
29 – Cold Lake South 2	0.2 PPB	0.2 PPB
32 – St. Lina	0.2 PPB	NA
34 – Portable	0.2 PPB	NA



Summary

Minimum : <0.1PPB –Various Stations
Maximum: 1.0 PPB –Mahkeses
Average: 0.26 PPB *Includes Duplicates



Passive Field Data

Field Notes

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
2	SO ₂ /NO ₂ /O ₃	06/28/2011	15:04	07/28/2011	15:18	
2A (Dup)	NA	NA	NA	NA	NA	
3	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	15:52	07/28/2011	16:04	
3A (Dup)	SO ₂ /NO ₂ /O ₃	06/28/2011	15:52	07/28/2011	16:04	
4	SO ₂ /NO ₂ /O ₃	06/29/2011	13:43	07/29/2011	14:20	
4A (Dup)	NA	NA	NA	NA	NA	
5	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	13:01	07/29/2011	13:33	
5A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	13:01	07/29/2011	13:33	
6	SO ₂ /NO ₂ /O ₃	06/29/2011	11:37	07/29/2011	12:18	
6A (Dup)	NA	NA	NA	NA	NA	
8	SO ₂ /NO ₂ /O ₃	06/29/2011	14:54	07/29/2011	15:19	
8A (Dup)	SO ₂ /NO ₂ /O ₃	06/29/2011	14:54	07/29/2011	15:19	
9	SO ₂ /NO ₂ /O ₃	06/28/2011	17:57	07/28/2011	17:45	
9A (Dup)	NA	NA	NA	NA	NA	
10	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	09:45	07/28/2011	10:14	
10A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	09:45	07/29/2011	10:14	
11	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	10:30	07/28/2011	10:52	
11A (Dup)	NA	NA	NA	NA	NA	
12	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	12:52	07/28/2011	13:12	
12A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	12:52	07/28/2011	13:12	
13	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	08:37	07/28/2011	08:51	
13A (Dup)	NA	NA	NA	NA	NA	
14	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	07:29	07/28/2011	07:31	
14A (Dup)	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	07:29	07/28/2011	07:31	
15	SO ₂ /NO ₂ /O ₃	06/29/2011	16:02	07/28/2011	18:24	
15A (Dup)	NA	NA	NA	NA	NA	
16	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	09:48	07/29/2011	10:20	
16A (Dup)	SO ₂ /NO ₂ /O ₃	06/29/2011	09:48	07/29/2011	10:20	

ID	SAMPLER	START		END		NOTES
		DATE	TIME	DATE	TIME	
17	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	10:42	07/29/2011	11:29	
17A (Dup)	H ₂ S	06/29/2011	10:42	07/29/2011	11:29	
18	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	09:00	07/29/2011	09:34	H2S sample was found on the ground.
18A (Dup)	SO ₂ /NO ₂ /O ₃	06/29/2011	09:00	07/29/2011	09:34	
19	SO ₂ /NO ₂ /O ₃	06/29/2011	07:55	07/29/2011	08:26	
19A (Dup)	NA	NA	NA	NA	NA	
22	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	17:44	07/29/2011	07:36	
22A (Dup)	NA	NA	NA	NA	NA	
23	SO ₂ /NO ₂ /O ₃	06/29/2011	16:56	07/29/2011	17:41	
23A (Dup)	SO ₂ /NO ₂ /O ₃	06/29/2011	16:56	07/29/2011	17:41	
24	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	12:10	07/29/2011	12:52	
24A (Dup)	H ₂ S	06/29/2011	12:10	07/29/2011	12:52	
25	H ₂ S/SO ₂	06/28/2011	11:32	07/28/2011	11:54	
25A (Dup)	SO ₂	06/28/2011	11:32	07/28/2011	11:54	
26	H ₂ S/SO ₂	06/28/2011	07:58	07/28/2011	08:15	
26A (Dup)	H ₂ S	06/28/2011	07:58	07/28/2011	08:15	
27	H ₂ S/SO ₂	06/28/2011	07:07	07/28/2011	07:10	
27A (Dup)	SO ₂	06/28/2011	07:07	07/28/2011	07:10	
28	SO ₂ /NO ₂ /O ₃	06/28/2011	17:33	07/29/2011	15:50	
28A (Dup)	NO ₂ /O ₃	06/28/2011	17:33	07/29/2011	15:50	
29	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	17:57	07/29/2011	07:24	
29A (Dup)	H ₂ S/SO ₂	06/29/2011	17:57	07/29/2011	07:24	
32	H ₂ S/SO ₂ /NO ₂ /O ₃	06/28/2011	16:34	07/28/2011	16:40	
32A (Dup)	NA	NA	NA	NA	NA	
34	H ₂ S/SO ₂ /NO ₂ /O ₃	06/29/2011	15:30	07/29/2011	16:29	
34A (Dup)	NA	NA	NA	NA	NA	

Passive Network Laboratory Analysis



Your Project #: 2011/06/28 - 2011/07/29
Site Location: LICA

Attention: MICHAEL BISAGA

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

Report Date: 2011/08/23

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B170266

Received: 2011/08/03, 12:10

Sample Matrix: Air
Samples Received: 43

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	26	2011/08/12	2011/08/12	EINDSOP-00150	Tang.Passive H2S in
NO2 Passive Analysis (1)	12	2011/08/05	2011/08/12	EINDSOP-00148	Tang Passive NO2 in
NO2 Passive Analysis (1)	22	2011/08/06	2011/08/12	EINDSOP-00148	Tang Passive NO2 in
O3 Passive Analysis (1)	34	2011/08/10	2011/08/12	EINDSOP-00197	EPA 300 R2.1
SO2 Passive Analysis (1)	39	2011/08/06	2011/08/12	EINDSOP-00149	Tang Passive SO2 in

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

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

Encryption Key

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

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

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

Total cover pages: 1



Maxxam Job #: B170266
 Report Date: 2011/08/23

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/06/28 - 2011/07/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		BD7834	BD7835	BD7836	BD7837	BD7838		
Sampling Date		2011/06/28 15:04	2011/06/28 15:52	2011/06/28 15:52	2011/06/29 13:43	2011/06/29 13:01		
	Units	2	3	3A(DUP)	4	5	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.26			0.26	0.02	5085564
Calculated NO2	ppb	0.3	0.4	0.4	0.5	0.4	0.1	5065088
Calculated O3	ppb	13.6	20.9	21.2	21.6	21.3	0.1	5079419
Calculated SO2	ppb	<0.1	0.2	0.1	0.2	0.3	0.1	5069153
RDL = Reportable Detection Limit								

Maxxam ID		BD7839	BD7840	BD7841	BD7842	BD7843		
Sampling Date		2011/06/29 13:01	2011/06/29 11:37	2011/06/29 14:54	2011/06/29 14:54	2011/06/28 17:57		
	Units	5A (DUP)	6	8	8A (DUP)	9	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.26					0.02	5085564
Calculated NO2	ppb	0.3	0.6	0.3	0.3	0.4	0.1	5065088
Calculated O3	ppb	20.4	20.6	20.4	21.8	18.1	0.1	5079419
Calculated SO2	ppb	0.2	0.6	0.3	0.3	0.2	0.1	5069153
RDL = Reportable Detection Limit								

Maxxam ID		BD7844	BD7845		BD7846	BD7847		
Sampling Date		2011/06/28 09:45	2011/06/28 09:45		2011/06/28 10:30	2011/06/28 12:52		
	Units	10	10A(DUP)	QC Batch	11	12	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.18	0.20	5085564	0.10	0.10	0.02	5085564
Calculated NO2	ppb	1.1	0.9	5065088	0.2	0.2	0.1	5069150
Calculated O3	ppb	16.7	15.6	5079419	14.4	18.5	0.1	5079419
Calculated SO2	ppb	0.2	0.1	5069153	<0.1	<0.1	0.1	5069153
RDL = Reportable Detection Limit								



Maxxam Job #: B170266
 Report Date: 2011/08/23

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/06/28 - 2011/07/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		BD7848	BD7849		BD7850	BD7851		
Sampling Date		2011/06/28 12:52	2011/06/28 08:37		2011/06/28 07:29	2011/06/28 07:29		
	Units	12A (DUP)	13	QC Batch	14	14A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.09	0.08	5085564	0.17	0.24	0.02	5085564
Calculated NO2	ppb	0.2	0.2	5069150	0.7	0.6	0.1	5069150
Calculated O3	ppb	18.6	19.3	5079419	25.6	23.6	0.1	5079431
Calculated SO2	ppb	<0.1	0.2	5069153	0.5	0.5	0.1	5069153
RDL = Reportable Detection Limit								

Maxxam ID		BD7852		BD7853	BD7854	BD7855		
Sampling Date		2011/06/29 06:02		2011/06/29 09:48	2011/06/29 09:48	2011/06/29 10:42		
	Units	15	QC Batch	16	16A (DUP)	17	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		5085564	0.18		0.43	0.02	5085564
Calculated NO2	ppb	0.4	5069150	0.7	0.5	0.9	0.1	5069150
Calculated O3	ppb	17.9	5079431	20.9	20.7	20.0	0.1	5079431
Calculated SO2	ppb	0.3	5069153	<0.1	0.1	0.3	0.1	5069156
RDL = Reportable Detection Limit								

Maxxam ID		BD7856	BD7857	BD7858	BD7859	BD7860		
Sampling Date		2011/06/29 10:42	2011/06/29 09:00	2011/06/29 09:00	2011/06/29 07:55	2011/06/29 17:44		
	Units	17A (DUP)	18	18A (DUP)	19	22	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb	0.48	0.13			0.22	0.02	5085564
Calculated NO2	ppb		0.4	0.3	0.3	0.5	0.1	5069150
Calculated O3	ppb		16.6	16.5	18.7	19.4	0.1	5079431
Calculated SO2	ppb		0.1	0.1	0.2	0.2	0.1	5069156
RDL = Reportable Detection Limit								



Maxxam Job #: B170266
 Report Date: 2011/08/23

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Client Project #: 2011/06/28 - 2011/07/29
 Site Location: LICA
 Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		BD7861	BD7862	BD7863	BD7864	BD7865		
Sampling Date		2011/06/29 16:56	2011/06/29 16:56	2011/06/29 12:10	2011/06/29 12:10	2011/06/28 11:32		
	Units	23	23A (DUP)	24	24A (DUP)	25	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			0.22	0.19	0.10	0.02	5085564
Calculated NO2	ppb	0.1	<0.1	0.8			0.1	5069150
Calculated O3	ppb	13.6	14.6	21.6			0.1	5079431
Calculated SO2	ppb	0.1	0.2	0.2		0.1	0.1	5069156
RDL = Reportable Detection Limit								

Maxxam ID		BD7866	BD7867	BD7868	BD7869	BD7870		
Sampling Date		2011/06/28 11:32	2011/06/28 07:58	2011/06/28 07:58	2011/06/28 07:07	2011/06/28 07:07		
	Units	25A (DUP)	26	26A (DUP)	27	27A (DUP)	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb		0.20	0.19	1.12		0.02	5085564
Calculated SO2	ppb	0.1	0.4		1.0	0.9	0.1	5069156
RDL = Reportable Detection Limit								

Maxxam ID		BD7871	BD7872	BD7873	BD7874	BD7875		
Sampling Date		2011/06/28 17:33	2011/06/28 17:33	2011/06/29 17:57	2011/06/29 17:57	2011/06/28 16:34		
	Units	28	28A (DUP)	29	29A (DUP)	32	RDL	QC Batch

Passive Monitoring								
Calculated H2S	ppb			0.25	0.25	0.17	0.02	5085564
Calculated NO2	ppb	1.7	1.4	0.4		0.2	0.1	5069150
Calculated O3	ppb	21.6	21.2	22.5		28.8	0.1	5079431
Calculated SO2	ppb	0.5		0.2	0.2	0.2	0.1	5069156
RDL = Reportable Detection Limit								



Maxxam Job #: B170266
Report Date: 2011/08/23

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/06/28 - 2011/07/29
Site Location: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		BD7876		
Sampling Date		2011/06/29 15:30		
	Units	34	RDL	QC Batch

Passive Monitoring				
Calculated H2S	ppb	0.29	0.02	5085564
Calculated NO2	ppb	0.6	0.1	5069150
Calculated O3	ppb	23.5	0.1	5079431
Calculated SO2	ppb	0.2	0.1	5069156
RDL = Reportable Detection Limit				



Maxxam Job #: B170266
Report Date: 2011/08/23

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2011/06/28 - 2011/07/29
Site Location: LICA
Sampler Initials: SB

General Comments

Results relate only to the items tested.



LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
 Attention: MICHAEL BISAGA
 Client Project #: 2011/06/28 - 2011/07/29
 P.O. #:
 Site Location: LICA

Quality Assurance Report
 Maxxam Job Number: PB170266

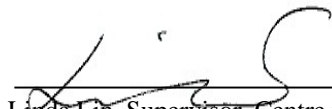
QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5065088 DF4	Calibration Check	Calculated NO2	2011/08/05		101	%	76 - 118
	Spiked Blank	Calculated NO2	2011/08/05		100	%	N/A
	Method Blank	Calculated NO2	2011/08/05	<0.1		ppb	
5069150 DF4	Calibration Check	Calculated NO2	2011/08/06		101	%	76 - 118
	Spiked Blank	Calculated NO2	2011/08/06		100	%	N/A
	Method Blank	Calculated NO2	2011/08/06	<0.1		ppb	
5069153 DF4	Calibration Check	Calculated SO2	2011/08/06		103	%	95 - 105
	Spiked Blank	Calculated SO2	2011/08/06		100	%	N/A
	Method Blank	Calculated SO2	2011/08/06	<0.1		ppb	
5069156 DF4	Calibration Check	Calculated SO2	2011/08/06		102	%	95 - 105
	Spiked Blank	Calculated SO2	2011/08/06		101	%	N/A
	Method Blank	Calculated SO2	2011/08/06	<0.1		ppb	
5079419 OZ	Calibration Check	Calculated O3	2011/08/10		100	%	91 - 107
	Spiked Blank	Calculated O3	2011/08/10		102	%	N/A
	Method Blank	Calculated O3	2011/08/10	<0.1		ppb	
5079431 OZ	Calibration Check	Calculated O3	2011/08/10		98	%	91 - 107
	Spiked Blank	Calculated O3	2011/08/10		99	%	N/A
	Method Blank	Calculated O3	2011/08/10	<0.1		ppb	
5085564 TM5	Calibration Check	Calculated H2S	2011/08/12		99	%	80 - 120
	Spiked Blank	Calculated H2S	2011/08/12		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 #: B170266

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". The signature is 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: 7838
Station ID: Lica 1 Canister Installation Date/Time: Jun 30, 2011 @ 9:19 mst
Field Sample ID: LICA VOC/CLS /Jul 02,11 Canister Removal Date/Time: Jul 04, 2011 @ 10:07 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
02-Jul-11	07/02/2011 0:00	07/03/2011 0:00	24.00

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

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	21

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

Comments: System leak check prior to sampling. COC # 05120

Technician Signiture: Ting Xu

Your C.O.C. #: 05120

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/07/14****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B198961****Received: 2011/07/06, 09:31**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/12	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/12	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

=====

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

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Total cover pages: 1

Page 1 of 10

Maxxam Job #: B198961
 Report Date: 2011/07/14

RESULTS OF ANALYSES OF AIR

Maxxam ID		KB4004	KB4005	
Sampling Date		2011/07/02	2011/07/02	
COC Number		05120	05120	
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	LICA VOC\ PORT\ JULY 02,11 - 7824	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2549321

QC Batch = Quality Control Batch

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	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	2549807
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2549807
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2549807
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2549807
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2549807
Dichlorodifluoromethane (FREON 12)	ppbv	0.80	3.97	0.989	0.86	0.20	4.25	0.989	2549807
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2549807
Chloromethane	ppbv	0.69	1.43	0.620	0.75	0.30	1.56	0.620	2549807
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2549807
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2549807
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2549807
Trichlorofluoromethane (FREON 11)	ppbv	0.36	2.03	1.12	0.39	0.20	2.17	1.12	2549807
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2549807
Ethanol	ppbv	4.2	7.85	4.33	<2.3	2.3	<4.33	4.33	2549807
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2549807
2-Propanone	ppbv	3.76	8.94	1.90	3.91	0.80	9.28	1.90	2549807
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2549807
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2549807
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2549807
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2549807
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2549807
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2549807
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2549807
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2549807
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2549807
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2549807
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2549807
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2549807
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2549807
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2549807
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2549807

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	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	2549807
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2549807
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2549807
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2549807
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2549807
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2549807
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2549807
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2549807
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2549807
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2549807
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2549807
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2549807
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2549807
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2549807
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2549807
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2549807
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2549807
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2549807
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2549807
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2549807
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2549807
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2549807
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2549807
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2549807
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2549807
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2549807
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2549807
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2549807
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2549807
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2549807
QC Batch = Quality Control Batch									

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	93	N/A	N/A	88		N/A	N/A	2549807
D5-Chlorobenzene	%	98	N/A	N/A	93		N/A	N/A	2549807
Difluorobenzene	%	96	N/A	N/A	90		N/A	N/A	2549807

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

Maxxam Job #: B198961
 Report Date: 2011/07/14

Test Summary

Maxxam ID KB4004 **Collected** 2011/07/02
Sample ID LICA VOC\ CLS\ JULY 02,11 - 7838 **Shipped**
Matrix AIR **Received** 2011/07/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2549321	N/A	2011/07/12	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2549807	N/A	2011/07/12	YAO LIANG SUN

Maxxam ID KB4005 **Collected** 2011/07/02
Sample ID LICA VOC\ PORT\ JULY 02,11 - 7824 **Shipped**
Matrix AIR **Received** 2011/07/06

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2549321	N/A	2011/07/12	YAO LIANG SUN
Volatile Organics in Air (TO-15)	GC/MS	2549807	N/A	2011/07/12	YAO LIANG SUN

Maxxam Job #: B198961
Report Date: 2011/07/14

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: GB198961

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2549807 LSY	Spiked Blank	Bromochloromethane	2011/07/12		97	%	60 - 140
		D5-Chlorobenzene	2011/07/12		100	%	60 - 140
		Difluorobenzene	2011/07/12		100	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/12		105	%	70 - 130
		Carbon Disulfide	2011/07/12		99	%	70 - 130
		Propene	2011/07/12		99	%	70 - 130
		Vinyl Acetate	2011/07/12		102	%	70 - 130
		Vinyl Bromide	2011/07/12		106	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/12		105	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/12		120	%	70 - 130
		Chloromethane	2011/07/12		104	%	70 - 130
		Vinyl Chloride	2011/07/12		107	%	70 - 130
		Chloroethane	2011/07/12		104	%	70 - 130
		1,3-Butadiene	2011/07/12		87	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/12		102	%	70 - 130
		Trichlorotrifluoroethane	2011/07/12		104	%	70 - 130
		Ethanol	2011/07/12		92	%	70 - 130
		2-propanol	2011/07/12		95	%	70 - 130
		2-Propanone	2011/07/12		94	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/12		94	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/12		97	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/12		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/12		103	%	70 - 130
		Ethyl Acetate	2011/07/12		102	%	70 - 130
		1,1-Dichloroethylene	2011/07/12		103	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/12		102	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/12		106	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/12		96	%	70 - 130
		Chloroform	2011/07/12		104	%	70 - 130
		Carbon Tetrachloride	2011/07/12		105	%	70 - 130
		1,1-Dichloroethane	2011/07/12		106	%	70 - 130
		1,2-Dichloroethane	2011/07/12		103	%	70 - 130
		Ethylene Dibromide	2011/07/12		99	%	70 - 130
		1,1,1-Trichloroethane	2011/07/12		101	%	70 - 130
		1,1,2-Trichloroethane	2011/07/12		102	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/12		94	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/12		104	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/12		100	%	70 - 130
		1,2-Dichloropropane	2011/07/12		103	%	70 - 130
		Bromomethane	2011/07/12		106	%	70 - 130
		Bromoform	2011/07/12		114	%	70 - 130
		Bromodichloromethane	2011/07/12		105	%	70 - 130
		Dibromochloromethane	2011/07/12		112	%	70 - 130
		Heptane	2011/07/12		103	%	70 - 130
		Trichloroethylene	2011/07/12		102	%	70 - 130
		Tetrachloroethylene	2011/07/12		103	%	70 - 130
		Benzene	2011/07/12		102	%	70 - 130
		Toluene	2011/07/12		100	%	70 - 130
		Ethylbenzene	2011/07/12		102	%	70 - 130
		p+m-Xylene	2011/07/12		100	%	70 - 130
		o-Xylene	2011/07/12		101	%	70 - 130
		Styrene	2011/07/12		98	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/12		90	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/12		86	%	70 - 130
		4-ethyltoluene	2011/07/12		96	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB198961

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits	
2549807 LSY	Spiked Blank	Chlorobenzene	2011/07/12		104	%	70 - 130	
		Benzyl chloride	2011/07/12		87	%	70 - 130	
1,3-Dichlorobenzene		2011/07/12		90	%	70 - 130		
1,4-Dichlorobenzene		2011/07/12		90	%	70 - 130		
1,2-Dichlorobenzene		2011/07/12		86	%	70 - 130		
1,2,4-Trichlorobenzene		2011/07/12		118	%	70 - 130		
Hexachlorobutadiene		2011/07/12		114	%	70 - 130		
Hexane		2011/07/12		105	%	70 - 130		
Cyclohexane		2011/07/12		104	%	70 - 130		
Tetrahydrofuran		2011/07/12		103	%	70 - 130		
Method Blank		1,4-Dioxane	2011/07/12		100	%	70 - 130	
		Bromochloromethane	2011/07/12		93	%	60 - 140	
		D5-Chlorobenzene	2011/07/12		96	%	60 - 140	
		Difluorobenzene	2011/07/12		96	%	60 - 140	
		2,2,4-Trimethylpentane	2011/07/12	<0.20			ppbv	
		Carbon Disulfide	2011/07/12	<0.50			ppbv	
		Propene	2011/07/12	<0.30			ppbv	
		Vinyl Acetate	2011/07/12	<0.20			ppbv	
		Vinyl Bromide	2011/07/12	<0.20			ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/12	<0.20			ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/12	<0.17			ppbv	
		Chloromethane	2011/07/12	<0.30			ppbv	
		Vinyl Chloride	2011/07/12	<0.18			ppbv	
		Chloroethane	2011/07/12	<0.30			ppbv	
		1,3-Butadiene	2011/07/12	<0.50			ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/12	<0.20			ppbv	
		Trichlorotrifluoroethane	2011/07/12	<0.15			ppbv	
		Ethanol	2011/07/12	<2.3			ppbv	
		2-propanol	2011/07/12	<3.0			ppbv	
		2-Propanone	2011/07/12	<0.80			ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/12	<3.0			ppbv	
		Methyl Isobutyl Ketone	2011/07/12	<3.2			ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/12	<2.0			ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/12	<0.20			ppbv	
		Ethyl Acetate	2011/07/12	<2.2			ppbv	
		1,1-Dichloroethylene	2011/07/12	<0.25			ppbv	
		cis-1,2-Dichloroethylene	2011/07/12	<0.19			ppbv	
		trans-1,2-Dichloroethylene	2011/07/12	<0.20			ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/12	<0.80			ppbv	
		Chloroform	2011/07/12	<0.15			ppbv	
		Carbon Tetrachloride	2011/07/12	<0.30			ppbv	
		1,1-Dichloroethane	2011/07/12	<0.20			ppbv	
		1,2-Dichloroethane	2011/07/12	<0.20			ppbv	
		Ethylene Dibromide	2011/07/12	<0.17			ppbv	
		1,1,1-Trichloroethane	2011/07/12	<0.30			ppbv	
		1,1,2-Trichloroethane	2011/07/12	<0.15			ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/12	<0.20			ppbv	
		cis-1,3-Dichloropropene	2011/07/12	<0.18			ppbv	
trans-1,3-Dichloropropene	2011/07/12	<0.17			ppbv			
1,2-Dichloropropane	2011/07/12	<0.40			ppbv			
Bromomethane	2011/07/12	<0.18			ppbv			
Bromoform	2011/07/12	<0.20			ppbv			
Bromodichloromethane	2011/07/12	<0.20			ppbv			
Dibromochloromethane	2011/07/12	<0.20			ppbv			
Heptane	2011/07/12	<0.30			ppbv			

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB198961

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2549807 LSY	Method Blank	Trichloroethylene	2011/07/12	<0.30		ppbv	
		Tetrachloroethylene	2011/07/12	<0.20		ppbv	
		Benzene	2011/07/12	<0.18		ppbv	
		Toluene	2011/07/12	<0.20		ppbv	
		Ethylbenzene	2011/07/12	<0.20		ppbv	
		p+m-Xylene	2011/07/12	<0.37		ppbv	
		o-Xylene	2011/07/12	<0.20		ppbv	
		Styrene	2011/07/12	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/12	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/12	<0.50		ppbv	
		4-ethyltoluene	2011/07/12	<2.2		ppbv	
		Chlorobenzene	2011/07/12	<0.20		ppbv	
		Benzyl chloride	2011/07/12	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/12	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/12	<3.0		ppbv	
		Hexane	2011/07/12	<0.30		ppbv	
		Cyclohexane	2011/07/12	<0.20		ppbv	
		Tetrahydrofuran	2011/07/12	<0.40		ppbv	
		1,4-Dioxane	2011/07/12	<2.0		ppbv	
		Xylene (Total)	2011/07/12	<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

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7834
Station ID: Lica 1 Canister Installation Date/Time: Jul 07, 2011 @ 7:22 mst
Field Sample ID: LICA VOC/CLS /Jul 08,11 Canister Removal Date/Time: Jul 11, 2011 @ 7:43 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
08-Jul-11	07/08/2011 0:00	07/09/2011 0:00	24.00

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

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	21

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

Comments: System leak check prior to sampling. COC # 05191

Technician Signiture: Ting Xu



Your C.O.C. #: 05191

Attention: Michael Bisaga

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

Report Date: 2011/07/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1A3524

Received: 2011/07/13, 10:30

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/18	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/18	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

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

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Total cover pages: 1

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

RESULTS OF ANALYSES OF AIR

Maxxam ID		KD6600	KD6601	
Sampling Date		2011/07/08	2011/07/08	
COC Number		05191	05191	
	Units	LICA VOC/CLS/JULY 8,11 - 7834	LICA VOC/PORT/JULY 8,11 - 7828	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2555243

QC Batch = Quality Control Batch

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6600				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/CLS/JULY 8,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2555273
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2555273
Propene	ppbv	<0.30	0.30	<0.516	0.516	2555273
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2555273
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2555273
Dichlorodifluoromethane (FREON 12)	ppbv	0.84	0.20	4.17	0.989	2555273
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2555273
Chloromethane	ppbv	0.76	0.30	1.56	0.620	2555273
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2555273
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2555273
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2555273
Trichlorofluoromethane (FREON 11)	ppbv	0.39	0.20	2.19	1.12	2555273
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2555273
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2555273
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2555273
2-Propanone	ppbv	4.66	0.80	11.1	1.90	2555273
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2555273
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2555273
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2555273
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2555273
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2555273
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2555273
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2555273
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2555273
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2555273
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2555273
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2555273
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2555273
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2555273
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2555273
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2555273

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6600				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/CLS/JULY 8,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2555273
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2555273
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2555273
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2555273
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2555273
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2555273
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2555273
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2555273
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2555273
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2555273
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2555273
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2555273
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2555273
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2555273
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2555273
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2555273
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2555273
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2555273
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2555273
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2555273
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2555273
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2555273
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2555273
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2555273
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2555273
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2555273
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2555273
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2555273
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2555273
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2555273
QC Batch = Quality Control Batch						

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6600				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/CLS/JULY 8,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	92		N/A	N/A	2555273
D5-Chlorobenzene	%	102		N/A	N/A	2555273
Difluorobenzene	%	95		N/A	N/A	2555273

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

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6601				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/PORT/JULY 8,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2555273
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2555273
Propene	ppbv	<0.30	0.30	<0.516	0.516	2555273
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2555273
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2555273
Dichlorodifluoromethane (FREON 12)	ppbv	0.83	0.20	4.12	0.989	2555273
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2555273
Chloromethane	ppbv	0.76	0.30	1.58	0.620	2555273
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2555273
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2555273
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2555273
Trichlorofluoromethane (FREON 11)	ppbv	0.39	0.20	2.17	1.12	2555273
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2555273
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2555273
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2555273
2-Propanone	ppbv	4.40	0.80	10.4	1.90	2555273
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2555273
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2555273
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2555273
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2555273
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2555273
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2555273
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2555273
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2555273
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2555273
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2555273
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2555273
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2555273
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2555273
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2555273
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2555273
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6601				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/PORT/JULY 8,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2555273
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2555273
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2555273
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2555273
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2555273
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2555273
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2555273
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2555273
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2555273
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2555273
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2555273
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2555273
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2555273
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2555273
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2555273
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2555273
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2555273
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2555273
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2555273
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2555273
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2555273
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2555273
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2555273
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2555273
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2555273
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2555273
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2555273
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2555273
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2555273
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2555273
QC Batch = Quality Control Batch						

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6601				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JULY				
		8,11 - 7828				

Surrogate Recovery (%)						
Bromochloromethane	%	92		N/A	N/A	2555273
D5-Chlorobenzene	%	103		N/A	N/A	2555273
Difluorobenzene	%	94		N/A	N/A	2555273

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

Maxxam Job #: B1A3524
Report Date: 2011/07/22

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: GB1A3524

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2555273 LSY	Spiked Blank	Bromochloromethane	2011/07/18		99	%	60 - 140
		D5-Chlorobenzene	2011/07/18		102	%	60 - 140
		Difluorobenzene	2011/07/18		101	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/18		107	%	70 - 130
		Carbon Disulfide	2011/07/18		101	%	70 - 130
		Propene	2011/07/18		98	%	70 - 130
		Vinyl Acetate	2011/07/18		103	%	70 - 130
		Vinyl Bromide	2011/07/18		108	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/18		103	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/18		121	%	70 - 130
		Chloromethane	2011/07/18		103	%	70 - 130
		Vinyl Chloride	2011/07/18		108	%	70 - 130
		Chloroethane	2011/07/18		105	%	70 - 130
		1,3-Butadiene	2011/07/18		86	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/18		103	%	70 - 130
		Trichlorotrifluoroethane	2011/07/18		105	%	70 - 130
		Ethanol	2011/07/18		89	%	70 - 130
		2-propanol	2011/07/18		98	%	70 - 130
		2-Propanone	2011/07/18		97	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/18		95	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/18		96	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/18		96	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/18		105	%	70 - 130
		Ethyl Acetate	2011/07/18		102	%	70 - 130
		1,1-Dichloroethylene	2011/07/18		104	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/18		104	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/18		108	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/18		97	%	70 - 130
		Chloroform	2011/07/18		105	%	70 - 130
		Carbon Tetrachloride	2011/07/18		106	%	70 - 130
		1,1-Dichloroethane	2011/07/18		107	%	70 - 130
		1,2-Dichloroethane	2011/07/18		102	%	70 - 130
		Ethylene Dibromide	2011/07/18		102	%	70 - 130
		1,1,1-Trichloroethane	2011/07/18		102	%	70 - 130
		1,1,2-Trichloroethane	2011/07/18		104	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/18		95	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/18		106	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/18		104	%	70 - 130
		1,2-Dichloropropane	2011/07/18		105	%	70 - 130
		Bromomethane	2011/07/18		108	%	70 - 130
		Bromoform	2011/07/18		119	%	70 - 130
		Bromodichloromethane	2011/07/18		106	%	70 - 130
		Dibromochloromethane	2011/07/18		113	%	70 - 130
		Heptane	2011/07/18		105	%	70 - 130
		Trichloroethylene	2011/07/18		105	%	70 - 130
		Tetrachloroethylene	2011/07/18		105	%	70 - 130
		Benzene	2011/07/18		105	%	70 - 130
		Toluene	2011/07/18		103	%	70 - 130
		Ethylbenzene	2011/07/18		105	%	70 - 130
		p+m-Xylene	2011/07/18		103	%	70 - 130
		o-Xylene	2011/07/18		103	%	70 - 130
		Styrene	2011/07/18		104	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/18		90	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/18		85	%	70 - 130
		4-ethyltoluene	2011/07/18		97	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A3524

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2555273 LSY	Spiked Blank	Chlorobenzene	2011/07/18		108	%	70 - 130
		Benzyl chloride	2011/07/18		91	%	70 - 130
		1,3-Dichlorobenzene	2011/07/18		93	%	70 - 130
		1,4-Dichlorobenzene	2011/07/18		95	%	70 - 130
		1,2-Dichlorobenzene	2011/07/18		86	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/18		113	%	70 - 130
		Hexachlorobutadiene	2011/07/18		104	%	70 - 130
		Hexane	2011/07/18		107	%	70 - 130
		Cyclohexane	2011/07/18		107	%	70 - 130
		Tetrahydrofuran	2011/07/18		104	%	70 - 130
		1,4-Dioxane	2011/07/18		98	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/18		93	%	60 - 140
		D5-Chlorobenzene	2011/07/18		98	%	60 - 140
		Difluorobenzene	2011/07/18		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/18	<0.20		ppbv	
		Carbon Disulfide	2011/07/18	<0.50		ppbv	
		Propene	2011/07/18	<0.30		ppbv	
		Vinyl Acetate	2011/07/18	<0.20		ppbv	
		Vinyl Bromide	2011/07/18	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/18	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/18	<0.17		ppbv	
		Chloromethane	2011/07/18	<0.30		ppbv	
		Vinyl Chloride	2011/07/18	<0.18		ppbv	
		Chloroethane	2011/07/18	<0.30		ppbv	
		1,3-Butadiene	2011/07/18	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/18	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/18	<0.15		ppbv	
		Ethanol	2011/07/18	<2.3		ppbv	
		2-propanol	2011/07/18	<3.0		ppbv	
		2-Propanone	2011/07/18	0.84, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/18	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/18	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/18	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/18	<0.20		ppbv	
		Ethyl Acetate	2011/07/18	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/18	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/18	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/18	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/18	<0.80		ppbv	
		Chloroform	2011/07/18	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/18	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/18	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/18	<0.20		ppbv	
		Ethylene Dibromide	2011/07/18	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/18	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/18	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/18	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/18	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/18	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/18	<0.40		ppbv	
		Bromomethane	2011/07/18	<0.18		ppbv	
		Bromoform	2011/07/18	<0.20		ppbv	
		Bromodichloromethane	2011/07/18	<0.20		ppbv	
		Dibromochloromethane	2011/07/18	<0.20		ppbv	
		Heptane	2011/07/18	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A3524

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2555273 LSY	Method Blank	Trichloroethylene	2011/07/18	<0.30		ppbv	
		Tetrachloroethylene	2011/07/18	<0.20		ppbv	
		Benzene	2011/07/18	<0.18		ppbv	
		Toluene	2011/07/18	<0.20		ppbv	
		Ethylbenzene	2011/07/18	<0.20		ppbv	
		p+m-Xylene	2011/07/18	<0.37		ppbv	
		o-Xylene	2011/07/18	<0.20		ppbv	
		Styrene	2011/07/18	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/18	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/18	<0.50		ppbv	
		4-ethyltoluene	2011/07/18	<2.2		ppbv	
		Chlorobenzene	2011/07/18	<0.20		ppbv	
		Benzyl chloride	2011/07/18	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/18	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/18	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/18	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/18	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/18	<3.0		ppbv	
		Hexane	2011/07/18	<0.30		ppbv	
		Cyclohexane	2011/07/18	<0.20		ppbv	
		Tetrahydrofuran	2011/07/18	<0.40		ppbv	
		1,4-Dioxane	2011/07/18	<2.0		ppbv	
		Xylene (Total)	2011/07/18	<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

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: 7827
Station ID: Lica 1 Canister Installation Date/Time: Jul 13, 2011 @ 7:18 mst
Field Sample ID: LICA VOC/CLS /Jul 14,11 Canister Removal Date/Time: Jul 15, 2011 @ 7:43 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jul-11	07/14/2011 0:00	07/15/2011 0:00	24.00

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

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	21

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

Comments: System leak check prior to sampling. COC # 05227

Technician Signiture: Ting Xu_____



Your C.O.C. #: 05227

Attention: Michael Bisaga

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

Report Date: 2011/07/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1A7509

Received: 2011/07/20, 10:00

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/25	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/25	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 #: B1A7509
 Report Date: 2011/07/27

RESULTS OF ANALYSES OF AIR

Maxxam ID		KF7124	KF7125	
Sampling Date		2011/07/14	2011/07/14	
COC Number		05227	05227	
	Units	LICA VOC/CLS/ JULY 14,11 - 7827	LICA VOC/PORT/ JULY 14,11 - 7927	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2562141
QC Batch = Quality Control Batch				

Maxxam Job #: B1A7509
 Report Date: 2011/07/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KF7124			KF7125				
Sampling Date		2011/07/14			2011/07/14				
COC Number		05227			05227				
	Units	LICA VOC/CLS/ JULY 14,11 - 7827	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JULY 14,11 - 7927	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	2562142
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2562142
Propene	ppbv	0.61	1.05	0.516	1.02	0.30	1.76	0.516	2562142
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2562142
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2562142
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	3.60	0.989	0.70	0.20	3.47	0.989	2562142
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2562142
Chloromethane	ppbv	0.67	1.37	0.620	0.64	0.30	1.32	0.620	2562142
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2562142
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2562142
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2562142
Trichlorofluoromethane (FREON 11)	ppbv	0.33	1.85	1.12	0.34	0.20	1.89	1.12	2562142
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2562142
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2562142
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2562142
2-Propanone	ppbv	4.74	11.3	1.90	4.49	0.80	10.7	1.90	2562142
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2562142
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2562142
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2562142
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2562142
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2562142
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2562142
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2562142
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2562142
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2562142
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2562142
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2562142
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2562142
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2562142
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2562142

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1A7509
 Report Date: 2011/07/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KF7124			KF7125				
Sampling Date		2011/07/14			2011/07/14				
COC Number		05227			05227				
	Units	LICA VOC/CLS/ JULY 14,11 - 7827	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JULY 14,11 - 7927	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	2562142
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2562142
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2562142
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2562142
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2562142
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2562142
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2562142
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2562142
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2562142
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2562142
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2562142
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2562142
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2562142
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2562142
Toluene	ppbv	0.39	1.47	0.753	<0.20	0.20	<0.753	0.753	2562142
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2562142
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2562142
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2562142
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2562142
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2562142
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2562142
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2562142
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2562142
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2562142
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2562142
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2562142
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2562142
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2562142
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2562142
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2562142
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.37	0.20	1.26	0.688	2562142
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2562142

QC Batch = Quality Control Batch

Maxxam Job #: B1A7509
 Report Date: 2011/07/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KF7124			KF7125				
Sampling Date		2011/07/14			2011/07/14				
COC Number		05227			05227				
	Units	LICA VOC/CLS/ JULY 14,11 - 7827	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JULY 14,11 - 7927	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	2562142
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2562142
Surrogate Recovery (%)									
Bromochloromethane	%	73	N/A	N/A	74		N/A	N/A	2562142
D5-Chlorobenzene	%	75	N/A	N/A	76		N/A	N/A	2562142
Difluorobenzene	%	73	N/A	N/A	75		N/A	N/A	2562142

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

Maxxam Job #: B1A7509
Report Date: 2011/07/27

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1A7509

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2562142 VEA	Spiked Blank	Bromochloromethane	2011/07/25		96	%	60 - 140
		D5-Chlorobenzene	2011/07/25		96	%	60 - 140
		Difluorobenzene	2011/07/25		98	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/25		100	%	70 - 130
		Carbon Disulfide	2011/07/25		95	%	70 - 130
		Propene	2011/07/25		95	%	70 - 130
		Vinyl Acetate	2011/07/25		99	%	70 - 130
		Vinyl Bromide	2011/07/25		102	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/25		98	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/25		114	%	70 - 130
		Chloromethane	2011/07/25		99	%	70 - 130
		Vinyl Chloride	2011/07/25		103	%	70 - 130
		Chloroethane	2011/07/25		100	%	70 - 130
		1,3-Butadiene	2011/07/25		83	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/25		97	%	70 - 130
		Trichlorotrifluoroethane	2011/07/25		99	%	70 - 130
		Ethanol	2011/07/25		90	%	70 - 130
		2-propanol	2011/07/25		89	%	70 - 130
		2-Propanone	2011/07/25		95	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/25		91	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/25		91	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/25		91	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/25		98	%	70 - 130
		Ethyl Acetate	2011/07/25		97	%	70 - 130
		1,1-Dichloroethylene	2011/07/25		98	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/25		97	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/25		100	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/25		91	%	70 - 130
		Chloroform	2011/07/25		99	%	70 - 130
		Carbon Tetrachloride	2011/07/25		100	%	70 - 130
		1,1-Dichloroethane	2011/07/25		100	%	70 - 130
		1,2-Dichloroethane	2011/07/25		96	%	70 - 130
		Ethylene Dibromide	2011/07/25		96	%	70 - 130
		1,1,1-Trichloroethane	2011/07/25		97	%	70 - 130
		1,1,2-Trichloroethane	2011/07/25		98	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/25		87	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/25		99	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/25		97	%	70 - 130
		1,2-Dichloropropane	2011/07/25		98	%	70 - 130
		Bromomethane	2011/07/25		102	%	70 - 130
		Bromoform	2011/07/25		109	%	70 - 130
		Bromodichloromethane	2011/07/25		99	%	70 - 130
		Dibromochloromethane	2011/07/25		106	%	70 - 130
		Heptane	2011/07/25		98	%	70 - 130
		Trichloroethylene	2011/07/25		99	%	70 - 130
		Tetrachloroethylene	2011/07/25		101	%	70 - 130
		Benzene	2011/07/25		98	%	70 - 130
		Toluene	2011/07/25		97	%	70 - 130
		Ethylbenzene	2011/07/25		96	%	70 - 130
		p+m-Xylene	2011/07/25		94	%	70 - 130
		o-Xylene	2011/07/25		95	%	70 - 130
		Styrene	2011/07/25		90	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/25		82	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/25		78	%	70 - 130
		4-ethyltoluene	2011/07/25		88	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A7509

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2562142 VEA	Spiked Blank	Chlorobenzene	2011/07/25		99	%	70 - 130
		Benzyl chloride	2011/07/25		81	%	70 - 130
		1,3-Dichlorobenzene	2011/07/25		85	%	70 - 130
		1,4-Dichlorobenzene	2011/07/25		86	%	70 - 130
		1,2-Dichlorobenzene	2011/07/25		79	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/25		106	%	70 - 130
		Hexachlorobutadiene	2011/07/25		100	%	70 - 130
		Hexane	2011/07/25		100	%	70 - 130
		Cyclohexane	2011/07/25		100	%	70 - 130
		Tetrahydrofuran	2011/07/25		98	%	70 - 130
		1,4-Dioxane	2011/07/25		90	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/25		83	%	60 - 140
		D5-Chlorobenzene	2011/07/25		87	%	60 - 140
		Difluorobenzene	2011/07/25		85	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/25	<0.20		ppbv	
		Carbon Disulfide	2011/07/25	<0.50		ppbv	
		Propene	2011/07/25	<0.30		ppbv	
		Vinyl Acetate	2011/07/25	<0.20		ppbv	
		Vinyl Bromide	2011/07/25	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/25	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/25	<0.17		ppbv	
		Chloromethane	2011/07/25	<0.30		ppbv	
		Vinyl Chloride	2011/07/25	<0.18		ppbv	
		Chloroethane	2011/07/25	<0.30		ppbv	
		1,3-Butadiene	2011/07/25	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/25	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/25	<0.15		ppbv	
		Ethanol	2011/07/25	<2.3		ppbv	
		2-propanol	2011/07/25	<3.0		ppbv	
		2-Propanone	2011/07/25	1.12, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/25	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/25	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/25	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/25	<0.20		ppbv	
		Ethyl Acetate	2011/07/25	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/25	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/25	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/25	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/25	<0.80		ppbv	
		Chloroform	2011/07/25	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/25	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/25	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/25	<0.20		ppbv	
		Ethylene Dibromide	2011/07/25	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/25	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/25	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/25	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/25	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/25	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/25	<0.40		ppbv	
		Bromomethane	2011/07/25	<0.18		ppbv	
		Bromoform	2011/07/25	<0.20		ppbv	
		Bromodichloromethane	2011/07/25	<0.20		ppbv	
		Dibromochloromethane	2011/07/25	<0.20		ppbv	
		Heptane	2011/07/25	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A7509

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2562142 VEA	Method Blank	Trichloroethylene	2011/07/25	<0.30		ppbv	
		Tetrachloroethylene	2011/07/25	<0.20		ppbv	
		Benzene	2011/07/25	<0.18		ppbv	
		Toluene	2011/07/25	<0.20		ppbv	
		Ethylbenzene	2011/07/25	<0.20		ppbv	
		p+m-Xylene	2011/07/25	<0.37		ppbv	
		o-Xylene	2011/07/25	<0.20		ppbv	
		Styrene	2011/07/25	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/25	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/25	<0.50		ppbv	
		4-ethyltoluene	2011/07/25	<2.2		ppbv	
		Chlorobenzene	2011/07/25	<0.20		ppbv	
		Benzyl chloride	2011/07/25	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/25	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/25	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/25	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/25	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/25	<3.0		ppbv	
		Hexane	2011/07/25	<0.30		ppbv	
		Cyclohexane	2011/07/25	<0.20		ppbv	
		Tetrahydrofuran	2011/07/25	<0.40		ppbv	
		1,4-Dioxane	2011/07/25	<2.0		ppbv	
		Xylene (Total)	2011/07/25	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane		TBA		%	25
		Carbon Disulfide		TBA		%	25
		Propene		TBA		%	25
		Vinyl Acetate		TBA		%	25
		Vinyl Bromide		TBA		%	25
		Dichlorodifluoromethane (FREON 12)		TBA		%	25
		1,2-Dichlorotetrafluoroethane		TBA		%	25
		Chloromethane		TBA		%	25
		Vinyl Chloride		TBA		%	25
		Chloroethane		TBA		%	25
		1,3-Butadiene		TBA		%	25
		Trichlorofluoromethane (FREON 11)		TBA		%	25
		Trichlorotrifluoroethane		TBA		%	25
		Ethanol		TBA		%	25
		2-propanol		TBA		%	25
		2-Propanone		TBA		%	25
		Methyl Ethyl Ketone (2-Butanone)		TBA		%	25
		Methyl Isobutyl Ketone		TBA		%	25
		Methyl Butyl Ketone (2-Hexanone)		TBA		%	25
		Methyl t-butyl ether (MTBE)		TBA		%	25
		Ethyl Acetate		TBA		%	25
		1,1-Dichloroethylene		TBA		%	25
		cis-1,2-Dichloroethylene		TBA		%	25
		trans-1,2-Dichloroethylene		TBA		%	25
		Methylene Chloride(Dichloromethane)		TBA		%	25
		Chloroform		TBA		%	25
		Carbon Tetrachloride		TBA		%	25
		1,1-Dichloroethane		TBA		%	25
		1,2-Dichloroethane		TBA		%	25
		Ethylene Dibromide		TBA		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A7509

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2562142 VEA	RPD - Sample/Sample Dup	1,1,1-Trichloroethane		TBA		%	25
		1,1,2-Trichloroethane		TBA		%	25
		1,1,2,2-Tetrachloroethane		TBA		%	25
		cis-1,3-Dichloropropene		TBA		%	25
		trans-1,3-Dichloropropene		TBA		%	25
		1,2-Dichloropropane		TBA		%	25
		Bromomethane		TBA		%	25
		Bromoform		TBA		%	25
		Bromodichloromethane		TBA		%	25
		Dibromochloromethane		TBA		%	25
		Heptane		TBA		%	25
		Trichloroethylene		TBA		%	25
		Tetrachloroethylene		TBA		%	25
		Benzene		TBA		%	25
		Toluene		TBA		%	25
		Ethylbenzene		TBA		%	25
		p+m-Xylene		TBA		%	25
		o-Xylene		TBA		%	25
		Styrene		TBA		%	25
		1,3,5-Trimethylbenzene		TBA		%	25
		1,2,4-Trimethylbenzene		TBA		%	25
		4-ethyltoluene		TBA		%	25
		Chlorobenzene		TBA		%	25
		Benzyl chloride		TBA		%	25
		1,3-Dichlorobenzene		TBA		%	25
		1,4-Dichlorobenzene		TBA		%	25
		1,2-Dichlorobenzene		TBA		%	25
		1,2,4-Trichlorobenzene		TBA		%	25
		Hexachlorobutadiene		TBA		%	25
		Hexane		TBA		%	25
		Cyclohexane		TBA		%	25
		Tetrahydrofuran		TBA		%	25
		1,4-Dioxane		TBA		%	25
		Xylene (Total)		TBA		%	25

TBA = Result to follow

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

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

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

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6167
Location: Cold Lake South Canister ID: S2396
Station ID: Lica 1 Canister Installation Date/Time: Jul 18, 2011 @ 8:30 mst
Field Sample ID: LICA VOC/CLS /Jul 20,11 Canister Removal Date/Time: Jul 21, 2011 @ 8:02 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jul-11	07/20/2011 0:00	07/21/2011 0:00	24.00

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

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	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 # 05091

Technician Signiture: Ting Xu



Your C.O.C. #: 05091

Attention: Michael Bisaga

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

Report Date: 2011/07/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B1B0348

Received: 2011/07/23, 10:55

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/26	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/26	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 #: B1B0348
 Report Date: 2011/07/29

RESULTS OF ANALYSES OF AIR

Maxxam ID		KH3480	KH3481	
Sampling Date		2011/07/20	2011/07/20	
COC Number		05091	05091	
	Units	LICA VOC/CLS/JULY 20,11 /S2396	LICA VOC/PORT/JULY 20,11 /7858	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2564106

QC Batch = Quality Control Batch

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3480				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/CLS/JULY 20,11 /S2396	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2564103
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2564103
Propene	ppbv	<0.30	0.30	<0.516	0.516	2564103
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2564103
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2564103
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	0.20	3.61	0.989	2564103
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2564103
Chloromethane	ppbv	0.64	0.30	1.33	0.620	2564103
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2564103
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2564103
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2564103
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	1.95	1.12	2564103
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2564103
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2564103
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2564103
2-Propanone	ppbv	3.34	0.80	7.93	1.90	2564103
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2564103
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2564103
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2564103
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2564103
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2564103
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2564103
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2564103
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2564103
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2564103
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2564103
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2564103
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2564103
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2564103
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2564103
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2564103

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3480				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/CLS/JULY 20,11 /S2396	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2564103
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2564103
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2564103
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2564103
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2564103
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2564103
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2564103
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2564103
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2564103
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2564103
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2564103
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2564103
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2564103
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2564103
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2564103
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2564103
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2564103
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2564103
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2564103
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2564103
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2564103
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2564103
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2564103
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2564103
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2564103
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2564103
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2564103
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2564103
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2564103
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2564103
QC Batch = Quality Control Batch						

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3480				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/CLS/JULY 20,11 /S2396	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2564103
D5-Chlorobenzene	%	92		N/A	N/A	2564103
Difluorobenzene	%	90		N/A	N/A	2564103

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

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3481				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/PORT/JULY 20,11 /7858	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2564103
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2564103
Propene	ppbv	<0.30	0.30	<0.516	0.516	2564103
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2564103
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2564103
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	0.20	3.61	0.989	2564103
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2564103
Chloromethane	ppbv	0.66	0.30	1.37	0.620	2564103
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2564103
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2564103
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2564103
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	1.95	1.12	2564103
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2564103
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2564103
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2564103
2-Propanone	ppbv	3.51	0.80	8.33	1.90	2564103
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2564103
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2564103
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2564103
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2564103
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2564103
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2564103
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2564103
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2564103
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2564103
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2564103
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2564103
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2564103
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2564103
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2564103
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2564103
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3481				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/PORT/JULY 20,11 /7858	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2564103
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2564103
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2564103
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2564103
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2564103
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2564103
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2564103
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2564103
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2564103
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2564103
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2564103
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2564103
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2564103
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2564103
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2564103
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2564103
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2564103
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2564103
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2564103
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2564103
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2564103
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2564103
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2564103
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2564103
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2564103
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2564103
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2564103
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2564103
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2564103
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2564103
QC Batch = Quality Control Batch						

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3481				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/PORT/JULY 20,11 /7858	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2564103
D5-Chlorobenzene	%	93		N/A	N/A	2564103
Difluorobenzene	%	90		N/A	N/A	2564103

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

Maxxam Job #: B1B0348
Report Date: 2011/07/29

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics
 Attention: Michael Bisaga
 Client Project #:
 P.O. #:
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Quality Assurance Report

Maxxam Job Number: GB1B0348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2564103 DBJ	Spiked Blank	Bromochloromethane	2011/07/26		94	%	60 - 140
		D5-Chlorobenzene	2011/07/26		92	%	60 - 140
		Difluorobenzene	2011/07/26		95	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/26		93	%	70 - 130
		Carbon Disulfide	2011/07/26		89	%	70 - 130
		Propene	2011/07/26		77	%	70 - 130
		Vinyl Acetate	2011/07/26		86	%	70 - 130
		Vinyl Bromide	2011/07/26		99	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/26		92	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/26		106	%	70 - 130
		Chloromethane	2011/07/26		83	%	70 - 130
		Vinyl Chloride	2011/07/26		91	%	70 - 130
		Chloroethane	2011/07/26		89	%	70 - 130
		1,3-Butadiene	2011/07/26		69 (1)	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/26		92	%	70 - 130
		Trichlorotrifluoroethane	2011/07/26		95	%	70 - 130
		Ethanol	2011/07/26		72	%	70 - 130
		2-propanol	2011/07/26		82	%	70 - 130
		2-Propanone	2011/07/26		82	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/26		79	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/26		82	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/26		83	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/26		93	%	70 - 130
		Ethyl Acetate	2011/07/26		85	%	70 - 130
		1,1-Dichloroethylene	2011/07/26		89	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/26		89	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/26		92	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/26		80	%	70 - 130
		Chloroform	2011/07/26		93	%	70 - 130
		Carbon Tetrachloride	2011/07/26		99	%	70 - 130
		1,1-Dichloroethane	2011/07/26		94	%	70 - 130
		1,2-Dichloroethane	2011/07/26		89	%	70 - 130
		Ethylene Dibromide	2011/07/26		95	%	70 - 130
		1,1,1-Trichloroethane	2011/07/26		93	%	70 - 130
		1,1,2-Trichloroethane	2011/07/26		97	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/26		85	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/26		96	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/26		93	%	70 - 130
		1,2-Dichloropropane	2011/07/26		93	%	70 - 130
		Bromomethane	2011/07/26		97	%	70 - 130
		Bromoform	2011/07/26		115	%	70 - 130
		Bromodichloromethane	2011/07/26		96	%	70 - 130
		Dibromochloromethane	2011/07/26		108	%	70 - 130
		Heptane	2011/07/26		88	%	70 - 130
		Trichloroethylene	2011/07/26		101	%	70 - 130
		Tetrachloroethylene	2011/07/26		104	%	70 - 130
		Benzene	2011/07/26		94	%	70 - 130
		Toluene	2011/07/26		95	%	70 - 130
		Ethylbenzene	2011/07/26		94	%	70 - 130
		p+m-Xylene	2011/07/26		93	%	70 - 130
		o-Xylene	2011/07/26		94	%	70 - 130
		Styrene	2011/07/26		93	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/26		84	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/26		79	%	70 - 130
		4-ethyltoluene	2011/07/26		88	%	70 - 130

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

Maxxam Job Number: GB1B0348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2564103 DBJ	Spiked Blank	Chlorobenzene	2011/07/26		99	%	70 - 130
		Benzyl chloride	2011/07/26		81	%	70 - 130
		1,3-Dichlorobenzene	2011/07/26		88	%	70 - 130
		1,4-Dichlorobenzene	2011/07/26		89	%	70 - 130
		1,2-Dichlorobenzene	2011/07/26		81	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/26		118	%	70 - 130
		Hexachlorobutadiene	2011/07/26		111	%	70 - 130
		Hexane	2011/07/26		93	%	70 - 130
		Cyclohexane	2011/07/26		94	%	70 - 130
		Tetrahydrofuran	2011/07/26		86	%	70 - 130
		1,4-Dioxane	2011/07/26		71	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/26		90	%	60 - 140
		D5-Chlorobenzene	2011/07/26		93	%	60 - 140
		Difluorobenzene	2011/07/26		93	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/26	<0.20		ppbv	
		Carbon Disulfide	2011/07/26	<0.50		ppbv	
		Propene	2011/07/26	<0.30		ppbv	
		Vinyl Acetate	2011/07/26	<0.20		ppbv	
		Vinyl Bromide	2011/07/26	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/26	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/26	<0.17		ppbv	
		Chloromethane	2011/07/26	<0.30		ppbv	
		Vinyl Chloride	2011/07/26	<0.18		ppbv	
		Chloroethane	2011/07/26	<0.30		ppbv	
		1,3-Butadiene	2011/07/26	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/26	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/26	<0.15		ppbv	
		Ethanol	2011/07/26	<2.3		ppbv	
		2-propanol	2011/07/26	<3.0		ppbv	
		2-Propanone	2011/07/26	0.98, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/26	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/26	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/26	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/26	<0.20		ppbv	
		Ethyl Acetate	2011/07/26	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/26	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/26	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/26	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/26	<0.80		ppbv	
		Chloroform	2011/07/26	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/26	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/26	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/26	<0.20		ppbv	
		Ethylene Dibromide	2011/07/26	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/26	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/26	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/26	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/26	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/26	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/26	<0.40		ppbv	
		Bromomethane	2011/07/26	<0.18		ppbv	
		Bromoform	2011/07/26	<0.20		ppbv	
		Bromodichloromethane	2011/07/26	<0.20		ppbv	
		Dibromochloromethane	2011/07/26	<0.20		ppbv	
		Heptane	2011/07/26	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B0348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2564103 DBJ	Method Blank	Trichloroethylene	2011/07/26	<0.30		ppbv	
		Tetrachloroethylene	2011/07/26	<0.20		ppbv	
		Benzene	2011/07/26	<0.18		ppbv	
		Toluene	2011/07/26	<0.20		ppbv	
		Ethylbenzene	2011/07/26	<0.20		ppbv	
		p+m-Xylene	2011/07/26	<0.37		ppbv	
		o-Xylene	2011/07/26	<0.20		ppbv	
		Styrene	2011/07/26	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/26	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/26	<0.50		ppbv	
		4-ethyltoluene	2011/07/26	<2.2		ppbv	
		Chlorobenzene	2011/07/26	<0.20		ppbv	
		Benzyl chloride	2011/07/26	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/26	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/26	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/26	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/26	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/26	<3.0		ppbv	
		Hexane	2011/07/26	<0.30		ppbv	
		Cyclohexane	2011/07/26	<0.20		ppbv	
		Tetrahydrofuran	2011/07/26	<0.40		ppbv	
		1,4-Dioxane	2011/07/26	<2.0		ppbv	
		Xylene (Total)	2011/07/26	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/07/26	NC		%	25
		Carbon Disulfide	2011/07/26	3.5		%	25
		Propene	2011/07/26	11.3		%	25
		Vinyl Acetate	2011/07/26	NC		%	25
		Vinyl Bromide	2011/07/26	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/07/26	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/07/26	NC		%	25
		Chloromethane	2011/07/26	5.8		%	25
		Vinyl Chloride	2011/07/26	NC		%	25
		Chloroethane	2011/07/26	NC		%	25
		1,3-Butadiene	2011/07/26	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/07/26	NC		%	25
		Trichlorotrifluoroethane	2011/07/26	NC		%	25
		Ethanol	2011/07/26	13.2		%	25
		2-propanol	2011/07/26	NC		%	25
		2-Propanone	2011/07/26	11.5		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/07/26	NC		%	25
		Methyl Isobutyl Ketone	2011/07/26	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/07/26	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/07/26	NC		%	25
		Ethyl Acetate	2011/07/26	NC		%	25
		1,1-Dichloroethylene	2011/07/26	NC		%	25
		cis-1,2-Dichloroethylene	2011/07/26	NC		%	25
		trans-1,2-Dichloroethylene	2011/07/26	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/07/26	NC		%	25
		Chloroform	2011/07/26	NC		%	25
		Carbon Tetrachloride	2011/07/26	NC		%	25
		1,1-Dichloroethane	2011/07/26	NC		%	25
		1,2-Dichloroethane	2011/07/26	NC		%	25
		Ethylene Dibromide	2011/07/26	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B0348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2564103 DBJ	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/07/26	NC		%	25
		1,1,2-Trichloroethane	2011/07/26	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/07/26	NC		%	25
		cis-1,3-Dichloropropene	2011/07/26	NC		%	25
		trans-1,3-Dichloropropene	2011/07/26	NC		%	25
		1,2-Dichloropropane	2011/07/26	NC		%	25
		Bromomethane	2011/07/26	NC		%	25
		Bromoform	2011/07/26	NC		%	25
		Bromodichloromethane	2011/07/26	NC		%	25
		Dibromochloromethane	2011/07/26	NC		%	25
		Heptane	2011/07/26	4.5		%	25
		Trichloroethylene	2011/07/26	NC		%	25
		Tetrachloroethylene	2011/07/26	NC		%	25
		Benzene	2011/07/26	1.9		%	25
		Toluene	2011/07/26	2.8		%	25
		Ethylbenzene	2011/07/26	5.7		%	25
		p+m-Xylene	2011/07/26	0.3		%	25
		o-Xylene	2011/07/26	0.5		%	25
		Styrene	2011/07/26	2.8		%	25
		1,3,5-Trimethylbenzene	2011/07/26	NC		%	25
		1,2,4-Trimethylbenzene	2011/07/26	5.5		%	25
		4-ethyltoluene	2011/07/26	NC		%	25
		Chlorobenzene	2011/07/26	NC		%	25
		Benzyl chloride	2011/07/26	NC		%	25
		1,3-Dichlorobenzene	2011/07/26	NC		%	25
		1,4-Dichlorobenzene	2011/07/26	NC		%	25
		1,2-Dichlorobenzene	2011/07/26	NC		%	25
		1,2,4-Trichlorobenzene	2011/07/26	NC		%	25
		Hexachlorobutadiene	2011/07/26	NC		%	25
		Hexane	2011/07/26	4.1		%	25
		Cyclohexane	2011/07/26	0.2		%	25
		Tetrahydrofuran	2011/07/26	NC		%	25
		1,4-Dioxane	2011/07/26	NC		%	25
		Xylene (Total)	2011/07/26	0.4		%	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: 7871
Station ID: Lica 1 Canister Installation Date/Time: Jul 25, 2011 @ 10:29 mst
Field Sample ID: LICA VOC/CLS /Jul 26,11 Canister Removal Date/Time: Jul 27, 2011 @ 7:25 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jul-11	07/26/2011 0:00	07/27/2011 0:00	23.99

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

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	21

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

Comments: System leak check prior to sampling. COC # 05121

Technician Signiture: Ting Xu

Your C.O.C. #: 05121

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

Report Date: 2011/08/15

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1B5658****Received: 2011/08/03, 10:00**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/08/12	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/08/12	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 #: B1B5658
 Report Date: 2011/08/15

RESULTS OF ANALYSES OF AIR

Maxxam ID		KJ8874	KJ8875	
Sampling Date		2011/07/26	2011/07/26	
COC Number		05121	05121	
	Units	LICA VOC\CLS\JULY 26,11 - 7871	LICA VOC\PORT\JULY 26,11 - 7802	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	20	2582396

QC Batch = Quality Control Batch

Maxxam Job #: B1B5658
 Report Date: 2011/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KJ8874				
Sampling Date		2011/07/26				
COC Number		05121				
	Units	LICA VOC\CLS\JULY 26,11 - 7871	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2582564
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2582564
Propene	ppbv	<0.30	0.30	<0.516	0.516	2582564
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2582564
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2582564
Dichlorodifluoromethane (FREON 12)	ppbv	0.67	0.20	3.30	0.989	2582564
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2582564
Chloromethane	ppbv	0.69	0.30	1.42	0.620	2582564
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2582564
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2582564
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2582564
Trichlorofluoromethane (FREON 11)	ppbv	0.36	0.20	2.00	1.12	2582564
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2582564
Ethanol	ppbv	2.5	2.3	4.62	4.33	2582564
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2582564
2-Propanone	ppbv	4.81	0.80	11.4	1.90	2582564
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2582564
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2582564
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2582564
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2582564
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2582564
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2582564
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2582564
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2582564
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2582564
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2582564
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2582564
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2582564
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2582564
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2582564
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2582564

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1B5658
 Report Date: 2011/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KJ8874				
Sampling Date		2011/07/26				
COC Number		05121				
	Units	LICA VOC\CLS\JULY 26,11 - 7871	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2582564
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2582564
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2582564
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2582564
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2582564
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2582564
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2582564
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2582564
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2582564
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2582564
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2582564
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2582564
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2582564
Toluene	ppbv	0.22	0.20	0.847	0.753	2582564
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2582564
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2582564
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2582564
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2582564
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2582564
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2582564
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2582564
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2582564
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2582564
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2582564
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2582564
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2582564
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2582564
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2582564
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2582564
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2582564
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2582564
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2582564
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2582564
QC Batch = Quality Control Batch						

Maxxam Job #: B1B5658
 Report Date: 2011/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KJ8874				
Sampling Date		2011/07/26				
COC Number		05121				
	Units	LICA VOC\CLS\JULY 26,11 - 7871	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2582564
D5-Chlorobenzene	%	86		N/A	N/A	2582564
Difluorobenzene	%	89		N/A	N/A	2582564

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

Maxxam Job #: B1B5658
 Report Date: 2011/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KJ8875				
Sampling Date		2011/07/26				
COC Number		05121				
	Units	LICA VOC PORT JULY 26,11 - 7802	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2582564
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2582564
Propene	ppbv	<0.30	0.30	<0.516	0.516	2582564
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2582564
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2582564
Dichlorodifluoromethane (FREON 12)	ppbv	0.69	0.20	3.39	0.989	2582564
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2582564
Chloromethane	ppbv	0.74	0.30	1.53	0.620	2582564
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2582564
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2582564
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2582564
Trichlorofluoromethane (FREON 11)	ppbv	0.32	0.20	1.78	1.12	2582564
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2582564
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2582564
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2582564
2-Propanone	ppbv	4.96	0.80	11.8	1.90	2582564
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2582564
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2582564
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2582564
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2582564
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2582564
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2582564
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2582564
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2582564
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2582564
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2582564
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2582564
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2582564
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2582564
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2582564
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2582564
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KJ8875				
Sampling Date		2011/07/26				
COC Number		05121				
	Units	LICA VOC/PORT/JULY 26,11 - 7802	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2582564
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2582564
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2582564
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2582564
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2582564
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2582564
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2582564
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2582564
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2582564
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2582564
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2582564
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2582564
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2582564
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2582564
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2582564
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2582564
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2582564
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2582564
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2582564
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2582564
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2582564
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2582564
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2582564
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2582564
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2582564
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2582564
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2582564
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2582564
Hexane	ppbv	0.55	0.30	1.94	1.06	2582564
Cyclohexane	ppbv	0.57	0.20	1.96	0.688	2582564
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2582564
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2582564
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2582564
QC Batch = Quality Control Batch						

Maxxam Job #: B1B5658
 Report Date: 2011/08/15

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KJ8875				
Sampling Date		2011/07/26				
COC Number		05121				
	Units	LICA VOC\PORT\JULY 26,11 - 7802	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2582564
D5-Chlorobenzene	%	84		N/A	N/A	2582564
Difluorobenzene	%	88		N/A	N/A	2582564

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

Maxxam Job #: B1B5658
 Report Date: 2011/08/15

Test Summary

Maxxam ID KJ8874 **Collected** 2011/07/26
Sample ID LICA VOC\CLS\JULY 26,11 - 7871 **Shipped**
Matrix AIR **Received** 2011/08/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2582396	N/A	2011/08/12	DIANE TEMNIUK
Volatile Organics in Air (TO-15)	GC/MS	2582564	N/A	2011/08/12	DIANE TEMNIUK

Maxxam ID KJ8875 **Collected** 2011/07/26
Sample ID LICA VOC\PORT\JULY 26,11 - 7802 **Shipped**
Matrix AIR **Received** 2011/08/03

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Canister Pressure (TO-15)	PRES	2582396	N/A	2011/08/12	DIANE TEMNIUK
Volatile Organics in Air (TO-15)	GC/MS	2582564	N/A	2011/08/12	DIANE TEMNIUK

Maxxam Job #: B1B5658
Report Date: 2011/08/15

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1B5658

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2582564	DVO	Spiked Blank					
		Bromochloromethane	2011/08/12		108	%	60 - 140
		D5-Chlorobenzene	2011/08/12		111	%	60 - 140
		Difluorobenzene	2011/08/12		111	%	60 - 140
		2,2,4-Trimethylpentane	2011/08/12		110	%	70 - 130
		Carbon Disulfide	2011/08/12		102	%	70 - 130
		Propene	2011/08/12		109	%	70 - 130
		Vinyl Acetate	2011/08/12		119	%	70 - 130
		Vinyl Bromide	2011/08/12		108	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/08/12		106	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/08/12		117	%	70 - 130
		Chloromethane	2011/08/12		111	%	70 - 130
		Vinyl Chloride	2011/08/12		104	%	70 - 130
		Chloroethane	2011/08/12		101	%	70 - 130
		1,3-Butadiene	2011/08/12		111	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/08/12		104	%	70 - 130
		Trichlorotrifluoroethane	2011/08/12		103	%	70 - 130
		Ethanol	2011/08/12		108	%	70 - 130
		2-propanol	2011/08/12		112	%	70 - 130
		2-Propanone	2011/08/12		101	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/08/12		118	%	70 - 130
		Methyl Isobutyl Ketone	2011/08/12		119	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/08/12		124	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/08/12		108	%	70 - 130
		Ethyl Acetate	2011/08/12		118	%	70 - 130
		1,1-Dichloroethylene	2011/08/12		105	%	70 - 130
		cis-1,2-Dichloroethylene	2011/08/12		107	%	70 - 130
		trans-1,2-Dichloroethylene	2011/08/12		110	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/08/12		104	%	70 - 130
		Chloroform	2011/08/12		106	%	70 - 130
		Carbon Tetrachloride	2011/08/12		101	%	70 - 130
		1,1-Dichloroethane	2011/08/12		104	%	70 - 130
		1,2-Dichloroethane	2011/08/12		108	%	70 - 130
		Ethylene Dibromide	2011/08/12		101	%	70 - 130
		1,1,1-Trichloroethane	2011/08/12		100	%	70 - 130
		1,1,2-Trichloroethane	2011/08/12		100	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/08/12		98	%	70 - 130
		cis-1,3-Dichloropropene	2011/08/12		105	%	70 - 130
		trans-1,3-Dichloropropene	2011/08/12		105	%	70 - 130
		1,2-Dichloropropane	2011/08/12		102	%	70 - 130
		Bromomethane	2011/08/12		103	%	70 - 130
		Bromoform	2011/08/12		111	%	70 - 130
		Bromodichloromethane	2011/08/12		106	%	70 - 130
		Dibromochloromethane	2011/08/12		109	%	70 - 130
		Heptane	2011/08/12		112	%	70 - 130
		Trichloroethylene	2011/08/12		97	%	70 - 130
		Tetrachloroethylene	2011/08/12		96	%	70 - 130
		Benzene	2011/08/12		100	%	70 - 130
		Toluene	2011/08/12		100	%	70 - 130
		Ethylbenzene	2011/08/12		100	%	70 - 130
		p+m-Xylene	2011/08/12		99	%	70 - 130
		o-Xylene	2011/08/12		99	%	70 - 130
		Styrene	2011/08/12		100	%	70 - 130
		1,3,5-Trimethylbenzene	2011/08/12		99	%	70 - 130
		1,2,4-Trimethylbenzene	2011/08/12		97	%	70 - 130
		4-ethyltoluene	2011/08/12		104	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B5658

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2582564 DVO	Spiked Blank	Chlorobenzene	2011/08/12		98	%	70 - 130
		Benzyl chloride	2011/08/12		115	%	70 - 130
		1,3-Dichlorobenzene	2011/08/12		98	%	70 - 130
		1,4-Dichlorobenzene	2011/08/12		101	%	70 - 130
		1,2-Dichlorobenzene	2011/08/12		94	%	70 - 130
		1,2,4-Trichlorobenzene	2011/08/12		100	%	70 - 130
		Hexachlorobutadiene	2011/08/12		90	%	70 - 130
		Hexane	2011/08/12		110	%	70 - 130
		Cyclohexane	2011/08/12		108	%	70 - 130
		Tetrahydrofuran	2011/08/12		117	%	70 - 130
		1,4-Dioxane	2011/08/12		105	%	70 - 130
	Method Blank	Bromochloromethane	2011/08/12		95	%	60 - 140
		D5-Chlorobenzene	2011/08/12		89	%	60 - 140
		Difluorobenzene	2011/08/12		95	%	60 - 140
		2,2,4-Trimethylpentane	2011/08/12	<0.20		ppbv	
		Carbon Disulfide	2011/08/12	<0.50		ppbv	
		Propene	2011/08/12	<0.30		ppbv	
		Vinyl Acetate	2011/08/12	<0.20		ppbv	
		Vinyl Bromide	2011/08/12	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/08/12	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/08/12	<0.17		ppbv	
		Chloromethane	2011/08/12	<0.30		ppbv	
		Vinyl Chloride	2011/08/12	<0.18		ppbv	
		Chloroethane	2011/08/12	<0.30		ppbv	
		1,3-Butadiene	2011/08/12	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/08/12	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/08/12	<0.15		ppbv	
		Ethanol	2011/08/12	<2.3		ppbv	
		2-propanol	2011/08/12	<3.0		ppbv	
		2-Propanone	2011/08/12	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/08/12	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/08/12	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/08/12	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/08/12	<0.20		ppbv	
		Ethyl Acetate	2011/08/12	<2.2		ppbv	
		1,1-Dichloroethylene	2011/08/12	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/08/12	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/08/12	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/08/12	<0.80		ppbv	
		Chloroform	2011/08/12	<0.15		ppbv	
		Carbon Tetrachloride	2011/08/12	<0.30		ppbv	
		1,1-Dichloroethane	2011/08/12	<0.20		ppbv	
		1,2-Dichloroethane	2011/08/12	<0.20		ppbv	
		Ethylene Dibromide	2011/08/12	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/08/12	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/08/12	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/08/12	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/08/12	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/08/12	<0.17		ppbv	
		1,2-Dichloropropane	2011/08/12	<0.40		ppbv	
		Bromomethane	2011/08/12	<0.18		ppbv	
		Bromoform	2011/08/12	<0.20		ppbv	
		Bromodichloromethane	2011/08/12	<0.20		ppbv	
		Dibromochloromethane	2011/08/12	<0.20		ppbv	
		Heptane	2011/08/12	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B5658

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2582564	DVO	Method Blank					
		Trichloroethylene	2011/08/12	<0.30		ppbv	
		Tetrachloroethylene	2011/08/12	<0.20		ppbv	
		Benzene	2011/08/12	<0.18		ppbv	
		Toluene	2011/08/12	<0.20		ppbv	
		Ethylbenzene	2011/08/12	<0.20		ppbv	
		p+m-Xylene	2011/08/12	<0.37		ppbv	
		o-Xylene	2011/08/12	<0.20		ppbv	
		Styrene	2011/08/12	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/08/12	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/08/12	<0.50		ppbv	
		4-ethyltoluene	2011/08/12	<2.2		ppbv	
		Chlorobenzene	2011/08/12	<0.20		ppbv	
		Benzyl chloride	2011/08/12	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/08/12	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/08/12	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/08/12	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/08/12	<2.0		ppbv	
		Hexachlorobutadiene	2011/08/12	<3.0		ppbv	
		Hexane	2011/08/12	<0.30		ppbv	
		Cyclohexane	2011/08/12	<0.20		ppbv	
		Tetrahydrofuran	2011/08/12	<0.40		ppbv	
		1,4-Dioxane	2011/08/12	<2.0		ppbv	
		Xylene (Total)	2011/08/12	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/08/12	NC		%	25
		Carbon Disulfide	2011/08/12	NC		%	25
		Propene	2011/08/12	1.9		%	25
		Vinyl Acetate	2011/08/12	NC		%	25
		Vinyl Bromide	2011/08/12	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/08/12	1.6		%	25
		1,2-Dichlorotetrafluoroethane	2011/08/12	NC		%	25
		Chloromethane	2011/08/12	NC		%	25
		Vinyl Chloride	2011/08/12	NC		%	25
		Chloroethane	2011/08/12	NC		%	25
		1,3-Butadiene	2011/08/12	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/08/12	NC		%	25
		Trichlorotrifluoroethane	2011/08/12	NC		%	25
		Ethanol	2011/08/12	0.1		%	25
		2-propanol	2011/08/12	NC		%	25
		2-Propanone	2011/08/12	0.9		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/08/12	NC		%	25
		Methyl Isobutyl Ketone	2011/08/12	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/08/12	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/08/12	NC		%	25
		Ethyl Acetate	2011/08/12	NC		%	25
		1,1-Dichloroethylene	2011/08/12	NC		%	25
		cis-1,2-Dichloroethylene	2011/08/12	NC		%	25
		trans-1,2-Dichloroethylene	2011/08/12	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/08/12	NC		%	25
		Chloroform	2011/08/12	1.4		%	25
		Carbon Tetrachloride	2011/08/12	NC		%	25
		1,1-Dichloroethane	2011/08/12	NC		%	25
		1,2-Dichloroethane	2011/08/12	NC		%	25
		Ethylene Dibromide	2011/08/12	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B5658

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2582564 DVO	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/08/12	NC		%	25
		1,1,2-Trichloroethane	2011/08/12	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/08/12	NC		%	25
		cis-1,3-Dichloropropene	2011/08/12	NC		%	25
		trans-1,3-Dichloropropene	2011/08/12	NC		%	25
		1,2-Dichloropropane	2011/08/12	NC		%	25
		Bromomethane	2011/08/12	NC		%	25
		Bromoform	2011/08/12	NC		%	25
		Bromodichloromethane	2011/08/12	2.3		%	25
		Dibromochloromethane	2011/08/12	4.6		%	25
		Heptane	2011/08/12	NC		%	25
		Trichloroethylene	2011/08/12	NC		%	25
		Tetrachloroethylene	2011/08/12	NC		%	25
		Benzene	2011/08/12	NC		%	25
		Toluene	2011/08/12	2.8		%	25
		Ethylbenzene	2011/08/12	NC		%	25
		p+m-Xylene	2011/08/12	NC		%	25
		o-Xylene	2011/08/12	NC		%	25
		Styrene	2011/08/12	NC		%	25
		1,3,5-Trimethylbenzene	2011/08/12	NC		%	25
		1,2,4-Trimethylbenzene	2011/08/12	NC		%	25
		4-ethyltoluene	2011/08/12	NC		%	25
		Chlorobenzene	2011/08/12	NC		%	25
		Benzyl chloride	2011/08/12	NC		%	25
		1,3-Dichlorobenzene	2011/08/12	NC		%	25
		1,4-Dichlorobenzene	2011/08/12	NC		%	25
		1,2-Dichlorobenzene	2011/08/12	NC		%	25
		1,2,4-Trichlorobenzene	2011/08/12	NC		%	25
		Hexachlorobutadiene	2011/08/12	NC		%	25
		Hexane	2011/08/12	NC		%	25
		Cyclohexane	2011/08/12	NC		%	25
		Tetrahydrofuran	2011/08/12	NC		%	25
		1,4-Dioxane	2011/08/12	NC		%	25
		Xylene (Total)	2011/08/12	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/Jul 08,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jul 07, 2011 @ 7:42 mst
Removal Date/Time: Jul 11, 2011 @ 7:50 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
08-Jul-11	07/08/2011 0:00	07/09/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
06-Jul-11	11-Jul-11	18-Jul-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)
700	229	18.3	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# 06741

GB180878 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 08, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06741

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

Report Date: 2011/07/26

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1A3362****Received: 2011/07/13, 11:07**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/07/14	2011/07/22	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

=====

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B1A3362
 Report Date: 2011/07/26

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

Maxxam ID		KD5902	KD5903		
Sampling Date		2011/07/08	2011/07/08		
COC Number		06741	06741		
	Units	LICA PUFF+QFF/CLS/JULY 08,11	LICA PUFF+QFF/PORT/JULY 08,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2550235
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2550235
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2550235
2-Methylantracene	ug	<0.10	<0.10	0.10	2550235
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2550235
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2550235
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2550235
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2550235
Acenaphthene	ug	<0.050	<0.050	0.050	2550235
Acenaphthylene	ug	<0.050	<0.050	0.050	2550235
Anthracene	ug	<0.050	<0.050	0.050	2550235
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2550235
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2550235
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2550235
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2550235
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2550235
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2550235
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2550235
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2550235
Biphenyl	ug	<0.10	<0.10	0.10	2550235
Chrysene	ug	<0.050	<0.050	0.050	2550235
Coronene	ug	<0.10	<0.10	0.10	2550235
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2550235
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2550235
Fluoranthene	ug	<0.050	<0.050	0.050	2550235
Fluorene	ug	<0.050	<0.050	0.050	2550235
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2550235
m-Terphenyl	ug	<0.10	<0.10	0.10	2550235
Naphthalene	ug	<0.072	<0.072	0.072	2550235
o-Terphenyl	ug	<0.10	<0.10	0.10	2550235
Perylene	ug	<0.10	<0.10	0.10	2550235

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1A3362
 Report Date: 2011/07/26

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

Maxxam ID		KD5902	KD5903		
Sampling Date		2011/07/08	2011/07/08		
COC Number		06741	06741		
	Units	LICA PUFF+QFF/CLS/JULY 08,11	LICA PUFF+QFF/PORT/JULY 08,11	RDL	QC Batch

Phenanthrene	ug	0.134	<0.050	0.050	2550235
p-Terphenyl	ug	<0.10	<0.10	0.10	2550235
Pyrene	ug	<0.050	<0.050	0.050	2550235
Quinoline	ug	<0.40	<0.40	0.40	2550235
Tetralin	ug	<0.10	<0.10	0.10	2550235
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	58		2550235
D10-Fluoranthene	%	82	86		2550235
D10-Fluorene (FS)	%	5.0 (1)	4.2 (1)		2550235
D10-Phenanthrene	%	76	80		2550235
D12-Benzo(a)anthracene	%	82	86		2550235
D12-Benzo(a)pyrene	%	76	80		2550235
D12-Benzo(b)fluoranthene	%	80	80		2550235
D12-Benzo(ghi)perylene	%	80	84		2550235
D12-Benzo(k)fluoranthene	%	78	84		2550235
D12-Chrysene	%	80	82		2550235
D12-Indeno(1,2,3-cd)pyrene	%	80	84		2550235
D12-Perylene	%	76	78		2550235
D14-Dibenzo(a,h)anthracene	%	82	88		2550235
D14-Terphenyl (FS)	%	76	32 (1)		2550235
D8-Acenaphthylene	%	64	62		2550235
D8-Naphthalene	%	58	54		2550235

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 #: B1A3362
Report Date: 2011/07/26

GENERAL COMMENTS

PAHMS-F

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

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene 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.

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 KD5902-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample KD5903-01: Low d10-fluorene and d14-terphenyl field spike recovery.

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB1A3362

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2550235 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/07/22		76	%	50 - 150
		D10-Fluoranthene	2011/07/22		84	%	50 - 150
		D10-Phenanthrene	2011/07/22		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/07/22		82	%	50 - 150
		D12-Benzo(a)pyrene	2011/07/22		80	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/07/22		78	%	50 - 150
		D12-Benzo(ghi)perylene	2011/07/22		80	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/07/22		80	%	50 - 150
		D12-Chrysene	2011/07/22		80	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/07/22		82	%	50 - 150
		D12-Perylene	2011/07/22		80	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/07/22		82	%	50 - 150
		RPD	D8-Acenaphthylene	2011/07/22		74	%
	D8-Naphthalene		2011/07/22		72	%	50 - 150
	Spiked Blank	Acenaphthene	2011/07/22		72	%	60 - 130
		Acenaphthene	2011/07/22	3.8		%	50
	RPD	Acenaphthylene	2011/07/22		72	%	60 - 130
		Acenaphthylene	2011/07/22	5.1		%	50
	Spiked Blank	Anthracene	2011/07/22		77	%	60 - 130
		Anthracene	2011/07/22	0.7		%	50
	Spiked Blank	Benzo(a)anthracene	2011/07/22		73	%	60 - 130
		Benzo(a)anthracene	2011/07/22	7.6		%	50
	Spiked Blank	Benzo(a)pyrene	2011/07/22		64	%	60 - 130
		Benzo(a)pyrene	2011/07/22	8.2		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/07/22		72	%	60 - 130
		Benzo(b)fluoranthene	2011/07/22	5.1		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/07/22		73	%	60 - 130
		Benzo(g,h,i)perylene	2011/07/22	8.2		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/07/22		78	%	60 - 130
		Benzo(k)fluoranthene	2011/07/22	8.9		%	50
	Spiked Blank	Chrysene	2011/07/22		74	%	60 - 130
		Chrysene	2011/07/22	7.5		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/07/22		73	%	60 - 130
		Dibenz(a,h)anthracene	2011/07/22	9.2		%	50
	Spiked Blank	Fluoranthene	2011/07/22		78	%	60 - 130
		Fluoranthene	2011/07/22	6.2		%	50
	Spiked Blank	Fluorene	2011/07/22		72	%	60 - 130
		Fluorene	2011/07/22	4.4		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/07/22		74	%	60 - 130
		Indeno(1,2,3-cd)pyrene	2011/07/22	8.8		%	50
Spiked Blank	Naphthalene	2011/07/22		73	%	60 - 130	
	Naphthalene	2011/07/22	1.0		%	50	
Spiked Blank	Phenanthrene	2011/07/22		74	%	60 - 130	
	Phenanthrene	2011/07/22	4.6		%	50	
Spiked Blank	Pyrene	2011/07/22		70	%	60 - 130	
	Pyrene	2011/07/22	6.2		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/07/22		78	%	50 - 150	
	D10-Fluoranthene	2011/07/22		86	%	50 - 150	
	D10-Phenanthrene	2011/07/22		82	%	50 - 150	
	D12-Benzo(a)anthracene	2011/07/22		84	%	50 - 150	
	D12-Benzo(a)pyrene	2011/07/22		84	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/07/22		80	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/07/22		88	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/07/22		82	%	50 - 150	
	D12-Chrysene	2011/07/22		82	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A3362

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2550235 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/07/22		88	%	50 - 150
		D12-Perylene	2011/07/22		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/07/22		90	%	50 - 150
		D8-Acenaphthylene	2011/07/22		78	%	50 - 150
		D8-Naphthalene	2011/07/22		76	%	50 - 150
		1-Methylnaphthalene	2011/07/22	<0.10		ug	
		1-Methylphenanthrene	2011/07/22	<0.10		ug	
		2-Chloronaphthalene	2011/07/22	<0.10		ug	
		2-Methylantracene	2011/07/22	<0.10		ug	
		2-Methylnaphthalene	2011/07/22	<0.10		ug	
		3-Methylcholanthrene	2011/07/22	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/07/22	<0.10		ug	
		9,10-Dimethylantracene	2011/07/22	<0.40		ug	
		Acenaphthene	2011/07/22	<0.050		ug	
		Acenaphthylene	2011/07/22	<0.050		ug	
		Anthracene	2011/07/22	<0.050		ug	
		Benzo(a)anthracene	2011/07/22	<0.050		ug	
		Benzo(a)fluorene	2011/07/22	<0.10		ug	
		Benzo(a)pyrene	2011/07/22	<0.050		ug	
		Benzo(b)fluoranthene	2011/07/22	<0.050		ug	
		Benzo(b)fluorene	2011/07/22	<0.10		ug	
		Benzo(e)pyrene	2011/07/22	<0.10		ug	
		Benzo(g,h,i)perylene	2011/07/22	<0.050		ug	
		Benzo(k)fluoranthene	2011/07/22	<0.050		ug	
		Biphenyl	2011/07/22	<0.10		ug	
		Chrysene	2011/07/22	<0.050		ug	
		Coronene	2011/07/22	<0.10		ug	
		Dibenz(a,h)anthracene	2011/07/22	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/07/22	<0.20		ug	
		Fluoranthene	2011/07/22	<0.050		ug	
		Fluorene	2011/07/22	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/07/22	<0.050		ug	
		m-Terphenyl	2011/07/22	<0.10		ug	
		Naphthalene	2011/07/22	<0.072		ug	
		o-Terphenyl	2011/07/22	<0.10		ug	
		Perylene	2011/07/22	<0.10		ug	
		Phenanthrene	2011/07/22	<0.050		ug	
		p-Terphenyl	2011/07/22	<0.10		ug	
		Pyrene	2011/07/22	<0.050		ug	
		Quinoline	2011/07/22	<0.40		ug	
		Tetralin	2011/07/22	<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/Jul 14,11

Puf+ s/n: 100-1020
Motor s/n: 1138
Installation Date/Time: Jul 13, 2011 @ 7:28 mst
Removal Date/Time: Jul 15, 2011 @ 7:50 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
14-Jul-11	07/14/2011 0:00	07/15/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
08-Jul-11	18-Jul-11	18-Jul-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)
704	229	19.9	330.33

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

Comments: COC# 05228

GB180874 PUFF # 1

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 14, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05228

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

Report Date: 2011/08/05

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1A7681****Received: 2011/07/20, 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	2011/07/21	2011/08/04	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

THERESA STEPHENSON, Project Manager
Email: TStephenson@maxxam.ca
Phone# (905) 817-5763=====
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 #: B1A7681
 Report Date: 2011/08/05

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

Maxxam ID		KF8209	KF8210		
Sampling Date		2011/07/14	2011/07/14		
COC Number		05228	05228		
	Units	LICA PUFF+QFF/CLS/JULY 14,11	LICA PUFF+QFF/PORT/JULY 14,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2558079
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2558079
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2558079
2-Methylantracene	ug	<0.10	<0.10	0.10	2558079
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2558079
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2558079
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2558079
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2558079
Acenaphthene	ug	<0.050	<0.050	0.050	2558079
Acenaphthylene	ug	<0.050	<0.050	0.050	2558079
Anthracene	ug	<0.050	<0.050	0.050	2558079
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2558079
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2558079
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2558079
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2558079
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2558079
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2558079
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2558079
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2558079
Biphenyl	ug	<0.10	<0.10	0.10	2558079
Chrysene	ug	<0.050	<0.050	0.050	2558079
Coronene	ug	<0.10	<0.10	0.10	2558079
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2558079
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2558079
Fluoranthene	ug	0.062	<0.050	0.050	2558079
Fluorene	ug	<0.050	<0.050	0.050	2558079
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2558079
m-Terphenyl	ug	<0.10	<0.10	0.10	2558079
Naphthalene	ug	<0.072	<0.072	0.072	2558079
o-Terphenyl	ug	<0.10	<0.10	0.10	2558079
Perylene	ug	<0.10	<0.10	0.10	2558079
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

Maxxam Job #: B1A7681
 Report Date: 2011/08/05

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

Maxxam ID		KF8209	KF8210		
Sampling Date		2011/07/14	2011/07/14		
COC Number		05228	05228		
	Units	LICA PUFF+QFF/CLS/JULY 14,11	LICA PUFF+QFF/PORT/JULY 14,11	RDL	QC Batch

Phenanthrene	ug	0.204	0.088	0.050	2558079
p-Terphenyl	ug	<0.10	<0.10	0.10	2558079
Pyrene	ug	<0.050	<0.050	0.050	2558079
Quinoline	ug	<0.40	<0.40	0.40	2558079
Tetralin	ug	<0.10	<0.10	0.10	2558079
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	60	62		2558079
D10-Fluoranthene	%	84	80		2558079
D10-Fluorene (FS)	%	7.6 (1)	7.6 (1)		2558079
D10-Phenanthrene	%	80	76		2558079
D12-Benzo(a)anthracene	%	84	84		2558079
D12-Benzo(a)pyrene	%	72	78		2558079
D12-Benzo(b)fluoranthene	%	76	78		2558079
D12-Benzo(ghi)perylene	%	80	82		2558079
D12-Benzo(k)fluoranthene	%	78	80		2558079
D12-Chrysene	%	76	74		2558079
D12-Indeno(1,2,3-cd)pyrene	%	82	84		2558079
D12-Perylene	%	74	76		2558079
D14-Dibenzo(a,h)anthracene	%	82	84		2558079
D14-Terphenyl (FS)	%	72	79		2558079
D8-Acenaphthylene	%	64	64		2558079
D8-Naphthalene	%	56	58		2558079

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 #: B1A7681
Report Date: 2011/08/05

GENERAL COMMENTS

PAHMS-F

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

Mspike native matrix degraded. The recovery of natives in spike and spike:dup was recalculated by comparing with that of natives in mspike.

Pyrene is statistically out of control at 92% recovery in the spike and 96% recovery in spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Chrysene is statistically out of control at 89% recovery in the spike and 93% recovery in spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Phenanthrene is statistically out of control at 95% recovery in spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene 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.

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 KF8209-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample KF8210-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1A7681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2558079 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/08/04		54	%	50 - 150
		D10-Fluoranthene	2011/08/04		76	%	50 - 150
		D10-Phenanthrene	2011/08/04		70	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/04		82	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/04		76	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/04		72	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/04		78	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/04		74	%	50 - 150
		D12-Chrysene	2011/08/04		74	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/08/04		78	%	50 - 150
		D12-Perylene	2011/08/04		76	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/04		80	%	50 - 150
		D8-Acenaphthylene	2011/08/04		58	%	50 - 150
		D8-Naphthalene	2011/08/04		52	%	50 - 150
		Acenaphthene	2011/08/04		67	%	60 - 130
	RPD	Acenaphthene	2011/08/04	16.7		%	50
	Spiked Blank	Acenaphthylene	2011/08/04		65	%	60 - 130
	RPD	Acenaphthylene	2011/08/04	19.0		%	50
	Spiked Blank	Anthracene	2011/08/04		83	%	60 - 130
	RPD	Anthracene	2011/08/04	7.0		%	50
	Spiked Blank	Benzo(a)anthracene	2011/08/04		92	%	60 - 130
	RPD	Benzo(a)anthracene	2011/08/04	4.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/08/04		93	%	60 - 130
	RPD	Benzo(a)pyrene	2011/08/04	8.2		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/08/04		91	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/08/04	5.5		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/08/04		91	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/08/04	5.2		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/08/04		94	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/08/04	2.1		%	50
	Spiked Blank	Chrysene	2011/08/04		89	%	60 - 130
	RPD	Chrysene	2011/08/04	4.2		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/08/04		92	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/08/04	1.8		%	50
	Spiked Blank	Fluoranthene	2011/08/04		92	%	60 - 130
	RPD	Fluoranthene	2011/08/04	5.7		%	50
	Spiked Blank	Fluorene	2011/08/04		74	%	60 - 130
	RPD	Fluorene	2011/08/04	12.2		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/08/04		91	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/08/04	5.1		%	50
	Spiked Blank	Naphthalene	2011/08/04		63	%	60 - 130
	RPD	Naphthalene	2011/08/04	24.9		%	50
	Spiked Blank	Phenanthrene	2011/08/04		86	%	60 - 130
	RPD	Phenanthrene	2011/08/04	10.2		%	50
	Spiked Blank	Pyrene	2011/08/04		92	%	60 - 130
	RPD	Pyrene	2011/08/04	4.5		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/08/04		70	%	50 - 150
		D10-Fluoranthene	2011/08/04		80	%	50 - 150
		D10-Phenanthrene	2011/08/04		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/04		84	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/04		78	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/04		78	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/04		80	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/04		74	%	50 - 150
		D12-Chrysene	2011/08/04		78	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A7681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2558079 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/08/04		80	%	50 - 150
		D12-Perylene	2011/08/04		80	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/04		80	%	50 - 150
		D8-Acenaphthylene	2011/08/04		74	%	50 - 150
		D8-Naphthalene	2011/08/04		68	%	50 - 150
		1-Methylnaphthalene	2011/08/04	<0.10		ug	
		1-Methylphenanthrene	2011/08/04	<0.10		ug	
		2-Chloronaphthalene	2011/08/04	<0.10		ug	
		2-Methylanthracene	2011/08/04	<0.10		ug	
		2-Methylnaphthalene	2011/08/04	<0.10		ug	
		3-Methylcholanthrene	2011/08/04	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/08/04	<0.10		ug	
		9,10-Dimethylanthracene	2011/08/04	<0.40		ug	
		Acenaphthene	2011/08/04	<0.050		ug	
		Acenaphthylene	2011/08/04	<0.050		ug	
		Anthracene	2011/08/04	<0.050		ug	
		Benzo(a)anthracene	2011/08/04	<0.050		ug	
		Benzo(a)fluorene	2011/08/04	<0.10		ug	
		Benzo(a)pyrene	2011/08/04	<0.050		ug	
		Benzo(b)fluoranthene	2011/08/04	<0.050		ug	
		Benzo(b)fluorene	2011/08/04	<0.10		ug	
		Benzo(e)pyrene	2011/08/04	<0.10		ug	
		Benzo(g,h,i)perylene	2011/08/04	<0.050		ug	
		Benzo(k)fluoranthene	2011/08/04	<0.050		ug	
		Biphenyl	2011/08/04	<0.10		ug	
		Chrysene	2011/08/04	<0.050		ug	
		Coronene	2011/08/04	<0.10		ug	
		Dibenz(a,h)anthracene	2011/08/04	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/08/04	<0.20		ug	
		Fluoranthene	2011/08/04	<0.050		ug	
		Fluorene	2011/08/04	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/08/04	<0.050		ug	
		m-Terphenyl	2011/08/04	<0.10		ug	
		Naphthalene	2011/08/04	<0.072		ug	
		o-Terphenyl	2011/08/04	<0.10		ug	
		Perylene	2011/08/04	<0.10		ug	
		Phenanthrene	2011/08/04	<0.050		ug	
		p-Terphenyl	2011/08/04	<0.10		ug	
		Pyrene	2011/08/04	<0.050		ug	
		Quinoline	2011/08/04	<0.40		ug	
		Tetralin	2011/08/04	<0.10		ug	

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

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

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

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

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: Cold Lake South
 Station ID: Lica1
 Field Sample ID: LICA PUF/CLS/Jul 20,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jul 18, 2011 @ 8:46 mst
 Removal Date/Time: Jul 21, 2011 @ 8:12 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
20-Jul-11	07/20/2011 0:00	07/21/2010 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
14-Jul-11	21-Jul-11	27-Jul-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)
704	229	16.9	330.33

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

Comments: COC# 05092
GB199578 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 20, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05092

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

Report Date: 2011/08/15

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1B0338****Received: 2011/07/23, 10:55**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/07/27	2011/08/13	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B1B0338
 Report Date: 2011/08/15

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

Maxxam ID		KH3447	KH3448		
Sampling Date		2011/07/20	2011/07/20		
COC Number		05092	05092		
	Units	LICA PUFF+QFF/CLS/JULY 20,11	LICA PUFF+QFF/PORT/JULY 20,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2563437
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2563437
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2563437
2-Methylantracene	ug	<0.10	<0.10	0.10	2563437
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2563437
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2563437
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2563437
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2563437
Acenaphthene	ug	<0.050	<0.050	0.050	2563437
Acenaphthylene	ug	<0.050	<0.050	0.050	2563437
Anthracene	ug	<0.050	<0.050	0.050	2563437
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2563437
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2563437
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2563437
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2563437
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2563437
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2563437
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2563437
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2563437
Biphenyl	ug	<0.10	<0.10	0.10	2563437
Chrysene	ug	<0.050	<0.050	0.050	2563437
Coronene	ug	<0.10	<0.10	0.10	2563437
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2563437
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2563437
Fluoranthene	ug	<0.050	<0.050	0.050	2563437
Fluorene	ug	0.050	<0.050	0.050	2563437
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2563437
m-Terphenyl	ug	<0.10	<0.10	0.10	2563437
Naphthalene	ug	<0.072	<0.072	0.072	2563437
o-Terphenyl	ug	<0.10	<0.10	0.10	2563437
Perylene	ug	<0.10	<0.10	0.10	2563437

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1B0338
 Report Date: 2011/08/15

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

Maxxam ID		KH3447	KH3448		
Sampling Date		2011/07/20	2011/07/20		
COC Number		05092	05092		
	Units	LICA PUFF+QFF/CLS/JULY 20,11	LICA PUFF+QFF/PORT/JULY 20,11	RDL	QC Batch

Phenanthrene	ug	0.294	0.102	0.050	2563437
p-Terphenyl	ug	<0.10	<0.10	0.10	2563437
Pyrene	ug	<0.050	<0.050	0.050	2563437
Quinoline	ug	<0.40	<0.40	0.40	2563437
Tetralin	ug	<0.10	<0.10	0.10	2563437
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	74	70		2563437
D10-Fluoranthene	%	100	102		2563437
D10-Fluorene (FS)	%	15 (1)	16 (1)		2563437
D10-Phenanthrene	%	90	90		2563437
D12-Benzo(a)anthracene	%	90	94		2563437
D12-Benzo(a)pyrene	%	84	84		2563437
D12-Benzo(b)fluoranthene	%	80	82		2563437
D12-Benzo(ghi)perylene	%	88	86		2563437
D12-Benzo(k)fluoranthene	%	74	76		2563437
D12-Chrysene	%	74	76		2563437
D12-Indeno(1,2,3-cd)pyrene	%	90	88		2563437
D12-Perylene	%	80	80		2563437
D14-Dibenzo(a,h)anthracene	%	92	90		2563437
D14-Terphenyl (FS)	%	98	101		2563437
D8-Acenaphthylene	%	82	80		2563437
D8-Naphthalene	%	70	64		2563437

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 #: B1B0338
Report Date: 2011/08/15

GENERAL COMMENTS

PAHMS-F

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

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene 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.

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 KH3447-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample KH3448-01: 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. #:
 Site Location:

Quality Assurance Report

Maxxam Job Number: GB1B0338

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2563437 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/08/13		70	%	50 - 150
		D10-Fluoranthene	2011/08/13		92	%	50 - 150
		D10-Phenanthrene	2011/08/13		82	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/13		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/13		78	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/13		78	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/13		78	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/13		74	%	50 - 150
		D12-Chrysene	2011/08/13		80	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/08/13		78	%	50 - 150
		D12-Perylene	2011/08/13		76	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/13		80	%	50 - 150
		D8-Acenaphthylene	2011/08/13		74	%	50 - 150
		D8-Naphthalene	2011/08/13		64	%	50 - 150
		Acenaphthene	2011/08/13		71	%	60 - 130
	RPD	Acenaphthene	2011/08/13	11.9		%	50
	Spiked Blank	Acenaphthylene	2011/08/13		72	%	60 - 130
	RPD	Acenaphthylene	2011/08/13	14.2		%	50
	Spiked Blank	Anthracene	2011/08/13		74	%	60 - 130
	RPD	Anthracene	2011/08/13	14.7		%	50
	Spiked Blank	Benzo(a)anthracene	2011/08/13		75	%	60 - 130
	RPD	Benzo(a)anthracene	2011/08/13	4.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/08/13		61	%	60 - 130
	RPD	Benzo(a)pyrene	2011/08/13	11.9		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/08/13		67	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/08/13	10.9		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/08/13		65	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/08/13	11.9		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/08/13		75	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/08/13	1.3		%	50
	Spiked Blank	Chrysene	2011/08/13		75	%	60 - 130
	RPD	Chrysene	2011/08/13	1.4		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/08/13		68	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/08/13	13.5		%	50
	Spiked Blank	Fluoranthene	2011/08/13		84	%	60 - 130
	RPD	Fluoranthene	2011/08/13	12.0		%	50
	Spiked Blank	Fluorene	2011/08/13		75	%	60 - 130
	RPD	Fluorene	2011/08/13	11.7		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/08/13		67	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/08/13	12.2		%	50
	Spiked Blank	Naphthalene	2011/08/13		66	%	60 - 130
	RPD	Naphthalene	2011/08/13	11.1		%	50
	Spiked Blank	Phenanthrene	2011/08/13		76	%	60 - 130
	RPD	Phenanthrene	2011/08/13	11.2		%	50
	Spiked Blank	Pyrene	2011/08/13		78	%	60 - 130
	RPD	Pyrene	2011/08/13	12.1		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/08/13		66	%	50 - 150
		D10-Fluoranthene	2011/08/13		98	%	50 - 150
		D10-Phenanthrene	2011/08/13		88	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/13		92	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/13		84	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/13		80	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/13		84	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/13		78	%	50 - 150
		D12-Chrysene	2011/08/13		78	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B0338

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2563437 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/08/13		86	%	50 - 150
		D12-Perylene	2011/08/13		82	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/13		88	%	50 - 150
		D8-Acenaphthylene	2011/08/13		78	%	50 - 150
		D8-Naphthalene	2011/08/13		60	%	50 - 150
		1-Methylnaphthalene	2011/08/13	<0.10		ug	
		1-Methylphenanthrene	2011/08/13	<0.10		ug	
		2-Chloronaphthalene	2011/08/13	<0.10		ug	
		2-Methylanthracene	2011/08/13	<0.10		ug	
		2-Methylnaphthalene	2011/08/13	<0.10		ug	
		3-Methylcholanthrene	2011/08/13	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/08/13	<0.10		ug	
		9,10-Dimethylanthracene	2011/08/13	<0.40		ug	
		Acenaphthene	2011/08/13	<0.050		ug	
		Acenaphthylene	2011/08/13	<0.050		ug	
		Anthracene	2011/08/13	<0.050		ug	
		Benzo(a)anthracene	2011/08/13	<0.050		ug	
		Benzo(a)fluorene	2011/08/13	<0.10		ug	
		Benzo(a)pyrene	2011/08/13	<0.050		ug	
		Benzo(b)fluoranthene	2011/08/13	<0.050		ug	
		Benzo(b)fluorene	2011/08/13	<0.10		ug	
		Benzo(e)pyrene	2011/08/13	<0.10		ug	
		Benzo(g,h,i)perylene	2011/08/13	<0.050		ug	
		Benzo(k)fluoranthene	2011/08/13	<0.050		ug	
		Biphenyl	2011/08/13	<0.10		ug	
		Chrysene	2011/08/13	<0.050		ug	
		Coronene	2011/08/13	<0.10		ug	
		Dibenz(a,h)anthracene	2011/08/13	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/08/13	<0.20		ug	
		Fluoranthene	2011/08/13	<0.050		ug	
		Fluorene	2011/08/13	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/08/13	<0.050		ug	
		m-Terphenyl	2011/08/13	<0.10		ug	
		Naphthalene	2011/08/13	<0.072		ug	
		o-Terphenyl	2011/08/13	<0.10		ug	
		Perylene	2011/08/13	<0.10		ug	
		Phenanthrene	2011/08/13	<0.050		ug	
		p-Terphenyl	2011/08/13	<0.10		ug	
		Pyrene	2011/08/13	<0.050		ug	
		Quinoline	2011/08/13	<0.40		ug	
		Tetralin	2011/08/13	<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/Jul 26,11

Puf+ s/n: 100-1020
 Motor s/n: 1138
 Installation Date/Time: Jul 25, 2011 @ 7:39 mst
 Removal Date/Time: Jul 27, 2011 @ 7:32 mst

Date and Time Information			
Sample Date	Start Time (MST)		Elapsed Time (Hours)
26-Jul-11	07/26/2011 0:00	07/27/2010 0:00	23.985

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
21-Jul-11	27-Jul-11	06-Aug-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)
704	229	16.7	330.08

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# 05386
GB1A4639 PUFF # 1
Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/CLS/Jul 26, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05386

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

Report Date: 2011/08/15

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1B3933**

Received: 2011/07/29, 09:09

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/08/02	2011/08/13	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 #: B1B3933
 Report Date: 2011/08/15

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

Maxxam ID		KJ0931	KJ0932		
Sampling Date		2011/07/26	2011/07/26		
COC Number		05386	05386		
	Units	LICA	LICA	RDL	QC Batch
		PUFF/QFF/CLS/JULY26,11	PUFF/QFF/PORT/JULY26,11		

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2568572
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2568572
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2568572
2-Methylantracene	ug	<0.10	<0.10	0.10	2568572
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2568572
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2568572
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2568572
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2568572
Acenaphthene	ug	<0.050	<0.050	0.050	2568572
Acenaphthylene	ug	<0.050	<0.050	0.050	2568572
Anthracene	ug	<0.050	<0.050	0.050	2568572
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2568572
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2568572
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2568572
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2568572
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2568572
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2568572
Benzo(g,h,i)perylene	ug	<0.050	0.052	0.050	2568572
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2568572
Biphenyl	ug	<0.10	<0.10	0.10	2568572
Chrysene	ug	<0.050	<0.050	0.050	2568572
Coronene	ug	<0.10	<0.10	0.10	2568572
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2568572
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2568572
Fluoranthene	ug	0.060	<0.050	0.050	2568572
Fluorene	ug	0.076	<0.050	0.050	2568572
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2568572
m-Terphenyl	ug	<0.10	<0.10	0.10	2568572
Naphthalene	ug	<0.072	<0.072	0.072	2568572
o-Terphenyl	ug	<0.10	<0.10	0.10	2568572
Perylene	ug	<0.10	<0.10	0.10	2568572
Phenanthrene	ug	0.518	0.162	0.050	2568572

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1B3933
Report Date: 2011/08/15

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

Maxxam ID		KJ0931	KJ0932		
Sampling Date		2011/07/26	2011/07/26		
COC Number		05386	05386		
	Units	LICA	LICA	RDL	QC Batch
		PUFF/QFF/CLS/JULY26,11	PUFF/QFF/PORT/JULY26,11		

p-Terphenyl	ug	<0.10	<0.10	0.10	2568572
Pyrene	ug	<0.050	<0.050	0.050	2568572
Quinoline	ug	<0.40	<0.40	0.40	2568572
Tetralin	ug	<0.10	<0.10	0.10	2568572
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	80	82		2568572
D10-Fluoranthene	%	98	106		2568572
D10-Fluorene (FS)	%	13 (1)	15 (1)		2568572
D10-Phenanthrene	%	92	96		2568572
D12-Benzo(a)anthracene	%	94	98		2568572
D12-Benzo(a)pyrene	%	86	88		2568572
D12-Benzo(b)fluoranthene	%	82	84		2568572
D12-Benzo(ghi)perylene	%	86	88		2568572
D12-Benzo(k)fluoranthene	%	76	80		2568572
D12-Chrysene	%	78	82		2568572
D12-Indeno(1,2,3-cd)pyrene	%	88	90		2568572
D12-Perylene	%	82	86		2568572
D14-Dibenzo(a,h)anthracene	%	90	92		2568572
D14-Terphenyl (FS)	%	94	103		2568572
D8-Acenaphthylene	%	88	92		2568572
D8-Naphthalene	%	76	78		2568572

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 #: B1B3933
Report Date: 2011/08/15

GENERAL COMMENTS

PAHMS-F

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

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.

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 KJ0931-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample KJ0932-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1B3933

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2568572 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/08/13		84	%	50 - 150
		D10-Fluoranthene	2011/08/13		94	%	50 - 150
		D10-Phenanthrene	2011/08/13		88	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/13		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/13		84	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/13		82	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/13		88	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/13		80	%	50 - 150
		D12-Chrysene	2011/08/13		82	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/08/13		90	%	50 - 150
		D12-Perylene	2011/08/13		82	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/13		90	%	50 - 150
		D8-Acenaphthylene	2011/08/13		86	%	50 - 150
		D8-Naphthalene	2011/08/13		80	%	50 - 150
	Acenaphthene	2011/08/13		80	%	60 - 130	
	RPD	Acenaphthene	2011/08/13	3.1		%	50
	Spiked Blank	Acenaphthylene	2011/08/13		82	%	60 - 130
	RPD	Acenaphthylene	2011/08/13	4.2		%	50
	Spiked Blank	Anthracene	2011/08/13		79	%	60 - 130
	RPD	Anthracene	2011/08/13	6.1		%	50
	Spiked Blank	Benzo(a)anthracene	2011/08/13		76	%	60 - 130
	RPD	Benzo(a)anthracene	2011/08/13	3.2		%	50
	Spiked Blank	Benzo(a)pyrene	2011/08/13		68	%	60 - 130
	RPD	Benzo(a)pyrene	2011/08/13	3.4		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/08/13		74	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/08/13	6.3		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/08/13		74	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/08/13	0.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/08/13		74	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/08/13	5.9		%	50
	Spiked Blank	Chrysene	2011/08/13		76	%	60 - 130
	RPD	Chrysene	2011/08/13	2.0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/08/13		77	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/08/13	0.3		%	50
	Spiked Blank	Fluoranthene	2011/08/13		85	%	60 - 130
	RPD	Fluoranthene	2011/08/13	6.8		%	50
	Spiked Blank	Fluorene	2011/08/13		81	%	60 - 130
	RPD	Fluorene	2011/08/13	3.6		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/08/13		76	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/08/13	1		%	50
Spiked Blank	Naphthalene	2011/08/13		84	%	60 - 130	
RPD	Naphthalene	2011/08/13	0.3		%	50	
Spiked Blank	Phenanthrene	2011/08/13		78	%	60 - 130	
RPD	Phenanthrene	2011/08/13	6.5		%	50	
Spiked Blank	Pyrene	2011/08/13		79	%	60 - 130	
RPD	Pyrene	2011/08/13	5.6		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/08/13		86	%	50 - 150	
	D10-Fluoranthene	2011/08/13		94	%	50 - 150	
	D10-Phenanthrene	2011/08/13		88	%	50 - 150	
	D12-Benzo(a)anthracene	2011/08/13		90	%	50 - 150	
	D12-Benzo(a)pyrene	2011/08/13		86	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/08/13		84	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/08/13		88	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/08/13		80	%	50 - 150	
	D12-Chrysene	2011/08/13		82	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B3933

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2568572	JIW	Method Blank					
		D12-Indeno(1,2,3-cd)pyrene	2011/08/13		90	%	50 - 150
		D12-Perylene	2011/08/13		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/13		92	%	50 - 150
		D8-Acenaphthylene	2011/08/13		90	%	50 - 150
		D8-Naphthalene	2011/08/13		82	%	50 - 150
		1-Methylnaphthalene	2011/08/13	<0.10		ug	
		1-Methylphenanthrene	2011/08/13	<0.10		ug	
		2-Chloronaphthalene	2011/08/13	<0.10		ug	
		2-Methylanthracene	2011/08/13	<0.10		ug	
		2-Methylnaphthalene	2011/08/13	<0.10		ug	
		3-Methylcholanthrene	2011/08/13	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/08/13	<0.10		ug	
		9,10-Dimethylanthracene	2011/08/13	<0.40		ug	
		Acenaphthene	2011/08/13	<0.050		ug	
		Acenaphthylene	2011/08/13	<0.050		ug	
		Anthracene	2011/08/13	<0.050		ug	
		Benzo(a)anthracene	2011/08/13	<0.050		ug	
		Benzo(a)fluorene	2011/08/13	<0.10		ug	
		Benzo(a)pyrene	2011/08/13	<0.050		ug	
		Benzo(b)fluoranthene	2011/08/13	<0.050		ug	
		Benzo(b)fluorene	2011/08/13	<0.10		ug	
		Benzo(e)pyrene	2011/08/13	<0.10		ug	
		Benzo(g,h,i)perylene	2011/08/13	<0.050		ug	
		Benzo(k)fluoranthene	2011/08/13	<0.050		ug	
		Biphenyl	2011/08/13	<0.10		ug	
		Chrysene	2011/08/13	<0.050		ug	
		Coronene	2011/08/13	<0.10		ug	
		Dibenz(a,h)anthracene	2011/08/13	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/08/13	<0.20		ug	
		Fluoranthene	2011/08/13	<0.050		ug	
		Fluorene	2011/08/13	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/08/13	<0.050		ug	
		m-Terphenyl	2011/08/13	<0.10		ug	
		Naphthalene	2011/08/13	0.128, RDL=0.072		ug	
		o-Terphenyl	2011/08/13	<0.10		ug	
		Perylene	2011/08/13	<0.10		ug	
		Phenanthrene	2011/08/13	<0.050		ug	
		p-Terphenyl	2011/08/13	<0.10		ug	
		Pyrene	2011/08/13	<0.050		ug	
		Quinoline	2011/08/13	<0.40		ug	
		Tetralin	2011/08/13	<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
July 2011

Prepared By:



August 23, 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: July 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 – July 2011

LICA MASKWA SITE						MAXIMUM VALUES						OPERATIONAL TIME (PERCENT)	
						OBJECTIVES			EXCEEDENCES		MONTHLY AVERAGE		1-HOUR
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING			DAY
SO2 (PPB)	172	48	0	0	0.35	9	27	22	4.8	305(WNW)	1.8	8	100.0
H2S (PPB)	10	3	0	0	0.26	4	7	2	0.5	105(ESE)	0.9	31	100.0
THC (PPM)	-	-	-	-	2.06	2.9	27, 29	3, 5	5.9, 0.6	294(WNW), 263(W)	2.2	11, 29	100.0
NOx (PPB)	-	-	-	-	1.81	20	27	4	6	286(WNW)	5.7	22	99.7
NO (PPB)	-	-	-	-	0.35	8	27	3	5.9	294(WNW)	1.7	22	99.7
NO ₂ (PPB)	159	-	0	-	1.67	15	27	4	6	286(WNW)	3.9	22	99.7
VECTOR WS (KPH)	-	-	-	-	4.76	15.3	10	14	-	23(NNE)	7.3	10	100.0
VECTOR WD (DEGREES)	-	-	-	-	204(SSW)	-	-	-	-	-	-	-	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	71.22	93	VAR	VAR	VAR	VAR	86.2	22	100.0
TEMPERATURE (DEG C)	-	-	-	-	16.74	28.5	18	16	4.6	205(SSW)	20.3	18	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	-	-	939	951	11	9	6	111(ESE)	948.8	11	100.0
PRECIPITATION (MM)	-	-	-	-	0.17	28.2	3	17	4.8	314(NW)	29.8	3	100.0

NA-NOT APPLICABLE VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – Maskwa

Sulphur Dioxide (PPB)

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

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

Hydrogen Sulphide (PPB)

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

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

Total HydroCarbon (PPM)

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

No operational issue was observed during this month. The inlet filter was changed before the monthly calibration was started. The Hydrogen gas cylinder was changed on July 28th. 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 sample pump was rebuilt following the as found points on July 12th. A post-repair calibration was performed on July 13th. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

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

- System make / model - RM Young 5103VK, S/N: 46553

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

No issue was observed during the month. The last wind system calibration was performed on March 10th, 2011.

Relative Humidity (PERCENT)

- System make / model - Met One 083

No operational issues observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Precipitation (MM)

- System make / model - Met One 387

No operational issues observed during this month.

Barometric Pressure (MILLIBAR)

- System make / model - Met One 092

No operation issue was observed during the month.

Ambient Temperature (DEGC)

- System make / model - Met One 060

No operational issue was observed during the month.

Trailer Temperature (DEG C)

- System make / model – R&R 61

No operational issue was observed during the month.

Standard Deviation Wind Direction (DEG)

- System make / model –Met One 50.5H

No operational issue was observed during the month.

General Monthly Summary

AQM STATION – LICA – Maskwa

Datalogger

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

No operational issue was observed during the month.

Trailer

The manifold was cleaned on July 13th.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Sulphur Dioxide

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

MST

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

STATUS FLAG CODES

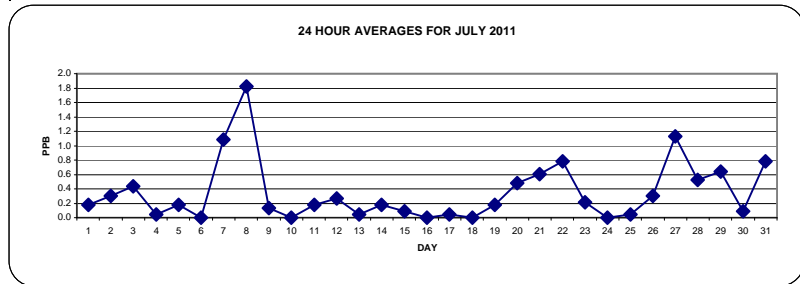
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

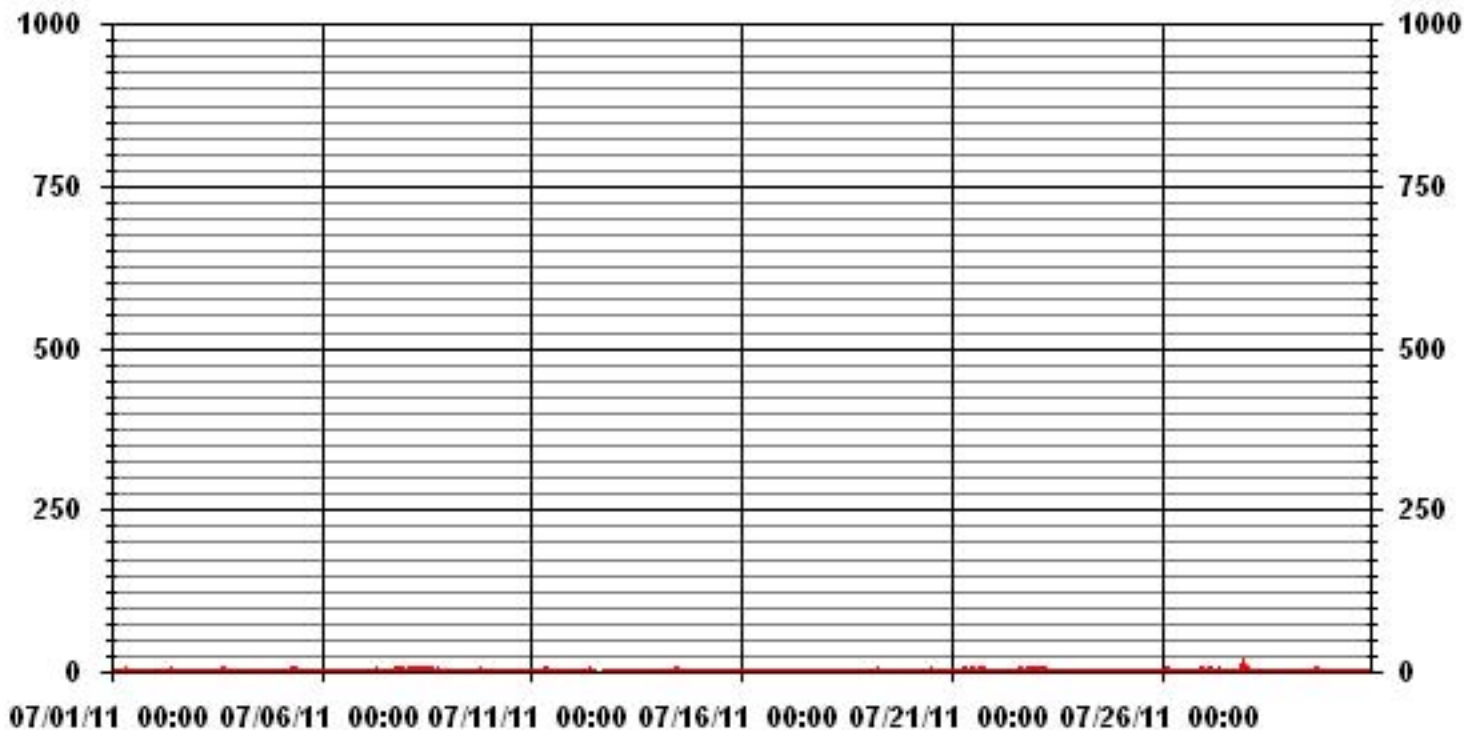
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	154
MAXIMUM 1-HR AVERAGE:	9 PPB @ HOUR(S) 22 ON DAY(S) 27
MAXIMUM 24-HR AVERAGE:	1.8 PPB ON DAY(S) 8
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	4 HRS
STANDARD DEVIATION:	0.84
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
MONTHLY AVERAGE:	0.35 PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

JULY 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY	24-HOUR	
DAY	HR	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		0	0	0	0	0	IZS	6	1	3	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	0.7	24
2		0	1	1	1	IZS	2	2	1	1	2	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.3	24
3		0	1	0	IZS	0	0	2	1	1	1	2	1	7	8	5	1	9	10	1	3	1	1	0	1	10	2.4	24	
4		1	0	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	0	2	0.3	24	
5		0	IZS	0	0	0	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	2	0.9	24	
6		IZS	0	0	0	0	0	0	3	3	2	5	0	2	1	0	1	2	0	0	0	0	1	0	IZS	5	0.9	24	
7		0	0	1	1	0	3	5	2	6	4	4	7	2	1	3	7	5	6	2	3	2	3	IZS	3	7	3.0	24	
8		3	2	2	2	2	7	7	6	7	6	2	2	2	2	2	2	2	2	2	3	2	IZS	0	0	7	2.9	24	
9		0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	2	9	IZS	0	0	0	9	0.7	24		
10		1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	1	0.1	24	
11		0	1	0	0	0	0	0	3	3	3	3	2	1	2	0	0	3	1	IZS	0	1	0	1	0	3	1.0	24	
12		0	0	0	0	0	0	2	5	1	6	5	0	C	C	C	C	0	IZS	1	0	0	0	0	0	6	1.1	24	
13		0	0	0	0	0	0	0	0	0	0	1	2	1	3	1	0	IZS	0	0	0	0	0	0	0	3	0.3	24	
14		0	0	0	0	0	0	1	2	1	1	2	2	3	1	0	IZS	0	0	1	1	0	0	0	0	3	0.7	24	
15		0	0	0	1	1	1	2	1	1	1	1	1	1	1	IZS	0	0	1	1	1	1	0	0	0	2	0.7	24	
16		0	0	0	0	0	0	0	1	0	1	1	1	1	1	IZS	0	0	2	0	0	0	0	0	0	2	0.3	24	
17		0	0	0	0	0	0	0	0	2	4	2	1	IZS	0	0	0	1	0	0	0	0	1	0	0	4	0.5	24	
18		0	0	0	0	0	0	1	0	3	0	0	IZS	2	0	0	0	0	1	1	1	0	1	0	1	3	0.5	24	
19		1	0	0	0	1	5	4	3	1	0	IZS	0	1	1	1	0	0	1	1	0	1	1	0	0	5	1.0	24	
20		0	0	0	1	1	0	0	1	5	IZS	6	2	3	5	1	1	1	5	6	1	4	3	3	1	6	2.2	24	
21		1	1	1	1	1	1	1	12	IZS	6	2	3	3	3	1	1	3	3	3	2	1	0	0	1	12	2.2	24	
22		1	2	0	1	1	1	1	1	IZS	2	2	2	1	4	3	4	5	4	2	3	2	2	2	2	5	2.1	24	
23		2	3	2	2	3	2	IZS	0	0	0	0	0	1	0	1	1	0	1	0	1	1	1	0	1	3	1.0	24	
24		0	0	0	0	1	IZS	0	0	0	0	1	0	0	1	0	0	0	1	1	1	1	0	1	0	1	0.3	24	
25		0	0	0	0	IZS	0	1	3	2	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	3	0.9	24	
26		1	7	10	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	10	1.7	24	
27		2	1	IZS	8	3	3	2	1	2	2	1	1	1	1	1	1	7	2	1	1	1	6	15	5	15	3.0	24	
28		21	IZS	1	2	1	0	1	3	10	1	0	1	1	0	0	0	0	0	0	0	1	1	1	1	21	2.0	24	
29		IZS	0	1	1	0	1	4	1	3	1	1	5	6	5	1	1	12	11	1	1	1	1	1	1	IZS	12	2.7	24
30		0	0	1	0	0	0	0	1	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	IZS	3	3	0.7	24
31		1	1	1	1	4	6	7	2	4	4	2	1	1	1	1	1	1	1	1	1	13	IZS	0	9	13	2.8	24	
HOURLY MAX		21	7	10	8	4	7	7	12	10	6	6	7	8	5	7	12	11	6	9	13	6	15	9					
HOURLY AVG		1.2	0.7	0.7	0.8	0.7	1.2	1.7	1.8	2.2	1.8	1.7	1.4	1.6	1.5	0.9	1.0	2.0	1.8	1.1	1.2	1.3	1.0	1.0	1.1				

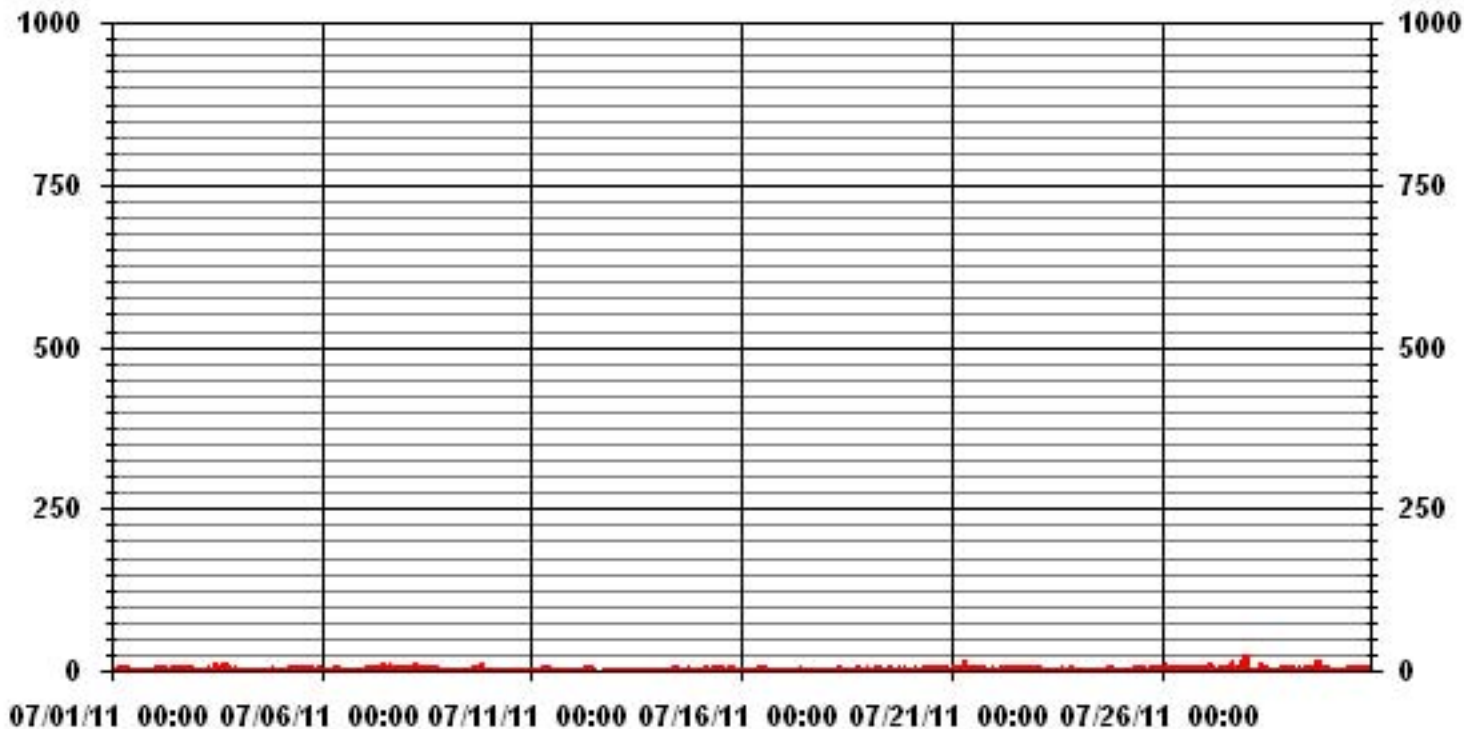
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	420					
MAXIMUM INSTANTANEOUS VALUE:	21	PPB	@ HOUR(S)	0	ON DAY(S)	28
IZS CALIBRATION TIME:	33	HRS		OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	4	HRS				
STANDARD DEVIATION:	2.08					

01 Hour Averages



LICA30
SO2_ / WDR Joint Frequency Distribution (Percent)

July 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	1.55	3.53	4.24	4.24	5.51	8.62	6.93	3.25	6.22	14.85	12.87	8.48	10.46	5.94	1.98	1.27	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.55	3.53	4.24	4.24	5.51	8.62	6.93	3.25	6.22	14.85	12.87	8.48	10.46	5.94	1.98	1.27	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	11	25	30	30	39	61	49	23	44	105	91	60	74	42	14	9	707
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	11	25	30	30	39	61	49	23	44	105	91	60	74	42	14	9	

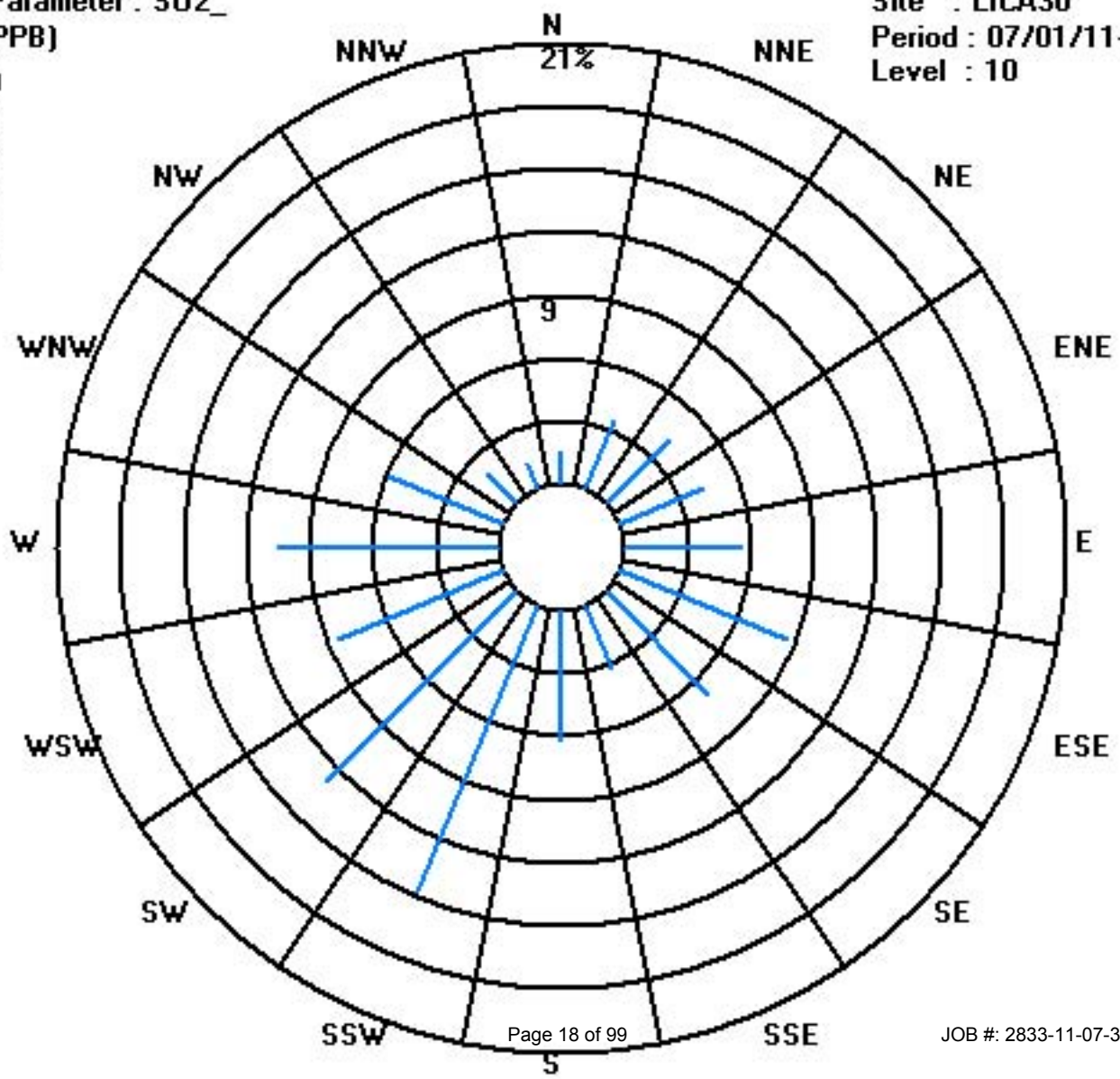
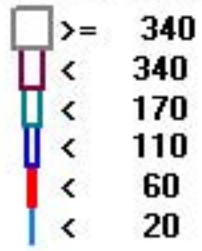
Calm : .00 %

Total # Operational Hours : 707

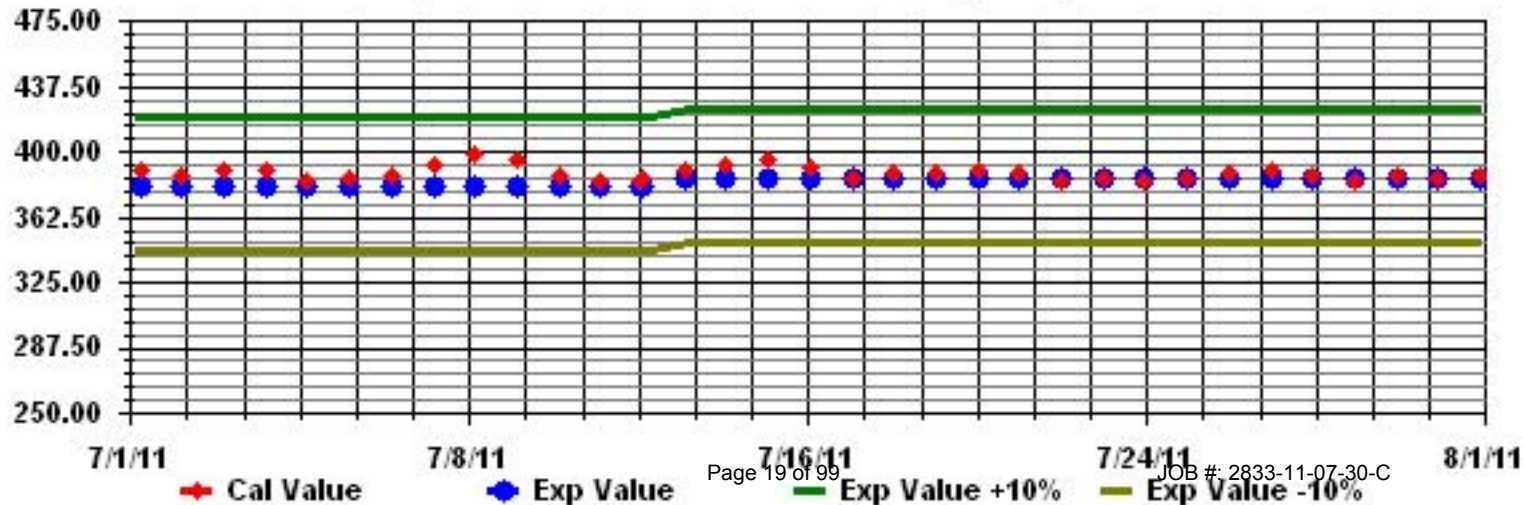
Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



Calibration Graph for Site: LICA30 Parameter: SO2_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

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

STATUS FLAG CODES

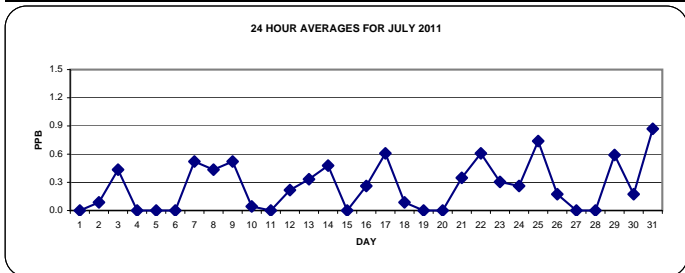
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

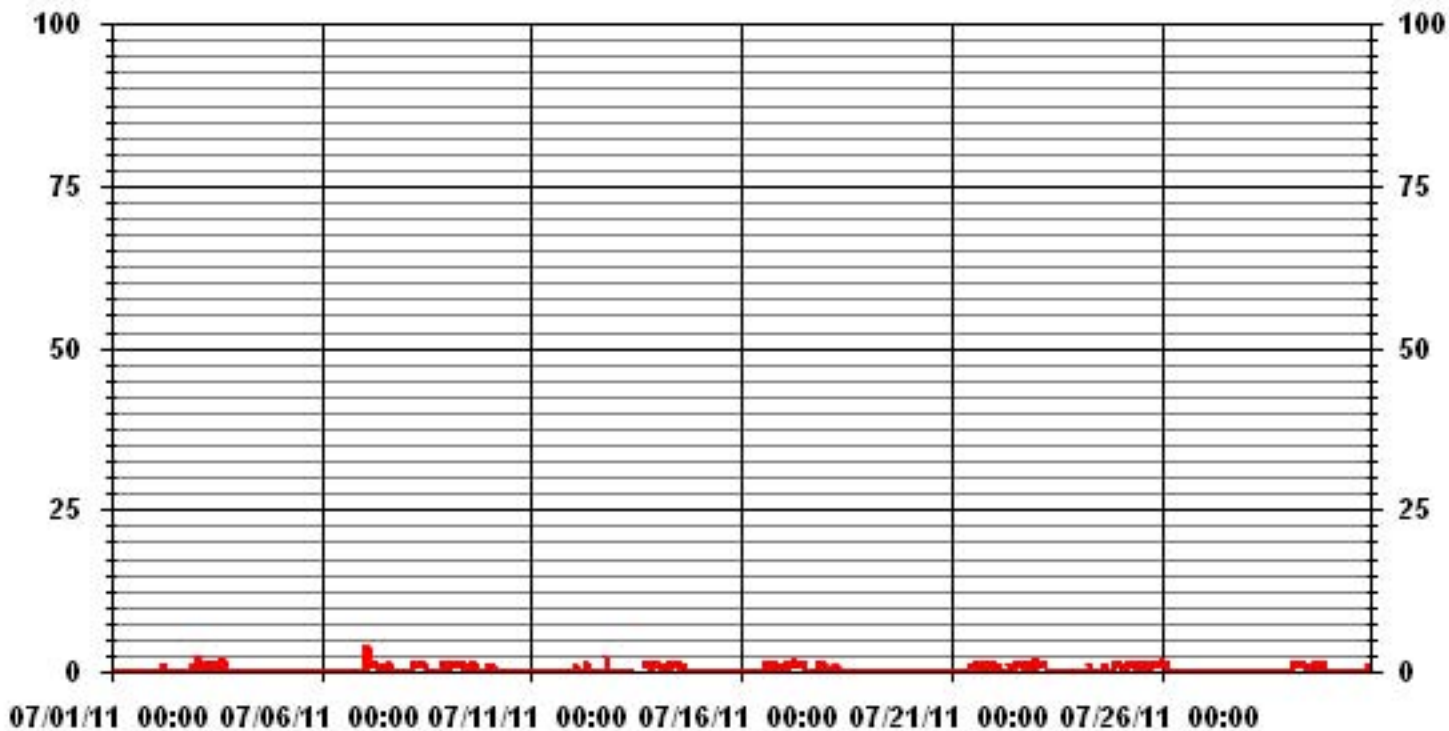
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	168
MAXIMUM 1-HR AVERAGE:	4 PPB @ HOUR(S) 2 ON DAY(S) 7
MAXIMUM 24-HR AVERAGE:	0.9 PPB ON DAY(S) 31
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	744 HRS
AMD OPERATION UPTIME:	100.0 %
STANDARD DEVIATION:	0.50
MONTHLY AVERAGE:	0.26 PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

JULY 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	0	1	IZS	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0.2	24	
2	0	1	1	0	0	IZS	1	1	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0.4	24	
3	1	5	4	IZS	1	1	2	2	0	1	1	1	1	1	1	2	4	1	0	1	1	0	0	0	0	5	1.3	24	
4	0	0	IZS	1	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
5	0	IZS	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	1	1	0.3	24		
6	IZS	1	0	0	1	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	IZS	1	0.3	24	
7	1	1	6	4	1	3	2	2	2	1	1	2	0	1	1	1	1	0	1	0	0	0	0	IZS	1	6	1.4	24	
8	1	1	0	1	1	4	1	1	1	3	1	1	1	0	1	1	1	1	1	0	1	0	1	IZS	1	1	4	1.1	24
9	1	1	1	3	2	1	1	1	1	1	1	1	0	0	2	1	1	1	1	0	1	0	IZS	1	1	1	3	1.0	24
10	1	1	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	1	IZS	0	0	0	0	1	0.4	24	
11	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	0	1	0.2	24	
12	1	2	1	0	0	0	1	1	2	1	1	0	0	0	0	0	0	0	IZS	3	0	1	1	0	1	3	0.7	24	
13	1	1	0	1	1	1	0	0	1	1	C	C	C	C	C	1	IZS	1	1	1	1	1	1	1	1	1	0.8	24	
14	1	2	1	1	1	1	1	2	1	2	1	2	2	1	1	IZS	0	0	1	0	0	0	0	0	0	2	0.9	24	
15	0	0	1	1	1	1	0	0	1	0	1	1	1	0	IZS	0	0	0	0	0	0	0	0	0	0	1	0.3	24	
16	0	0	0	0	0	1	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	0.5	24	
17	1	1	1	1	1	2	3	2	2	2	1	1	IZS	0	0	0	0	0	0	0	0	4	2	2	5	5	1.3	24	
18	5	0	0	0	0	0	3	0	1	0	0	IZS	0	0	0	1	1	0	0	0	1	0	1	0	5	0.6	24		
19	0	0	1	1	0	1	0	0	0	0	IZS	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	IZS	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0.1	24	
21	0	0	0	0	1	0	0	0	0	IZS	1	1	1	1	1	1	1	1	2	1	1	1	0	1	1	2	0.7	24	
22	1	1	1	1	0	1	1	IZS	1	1	1	1	1	1	1	2	2	1	1	3	3	2	1	1	3	1.3	24		
23	5	3	2	2	1	2	IZS	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.8	24	
24	0	0	0	0	0	IZS	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0.7	24	
25	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.0	24	
26	2	1	1	IZS	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0.3	24	
27	1	0	IZS	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24	
28	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	
29	IZS	1	1	1	2	2	1	1	1	1	1	1	1	0	0	1	1	1	1	2	2	1	1	1	IZS	2	1.1	24	
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	IZS	6	6	0.4	24	
31	1	1	4	4	6	1	3	3	2	2	2	1	1	1	1	1	1	1	2	2	2	1	IZS	0	6	1.8	24		
HOURLY MAX	5	5	6	4	6	4	3	4	2	3	2	2	2	1	2	2	4	2	3	3	4	3	2	6					
HOURLY AVG	0.9	0.9	1.0	0.9	0.8	0.9	0.9	0.8	0.7	0.7	0.6	0.6	0.4	0.3	0.4	0.5	0.6	0.4	0.6	0.5	0.8	0.6	0.4	0.9					

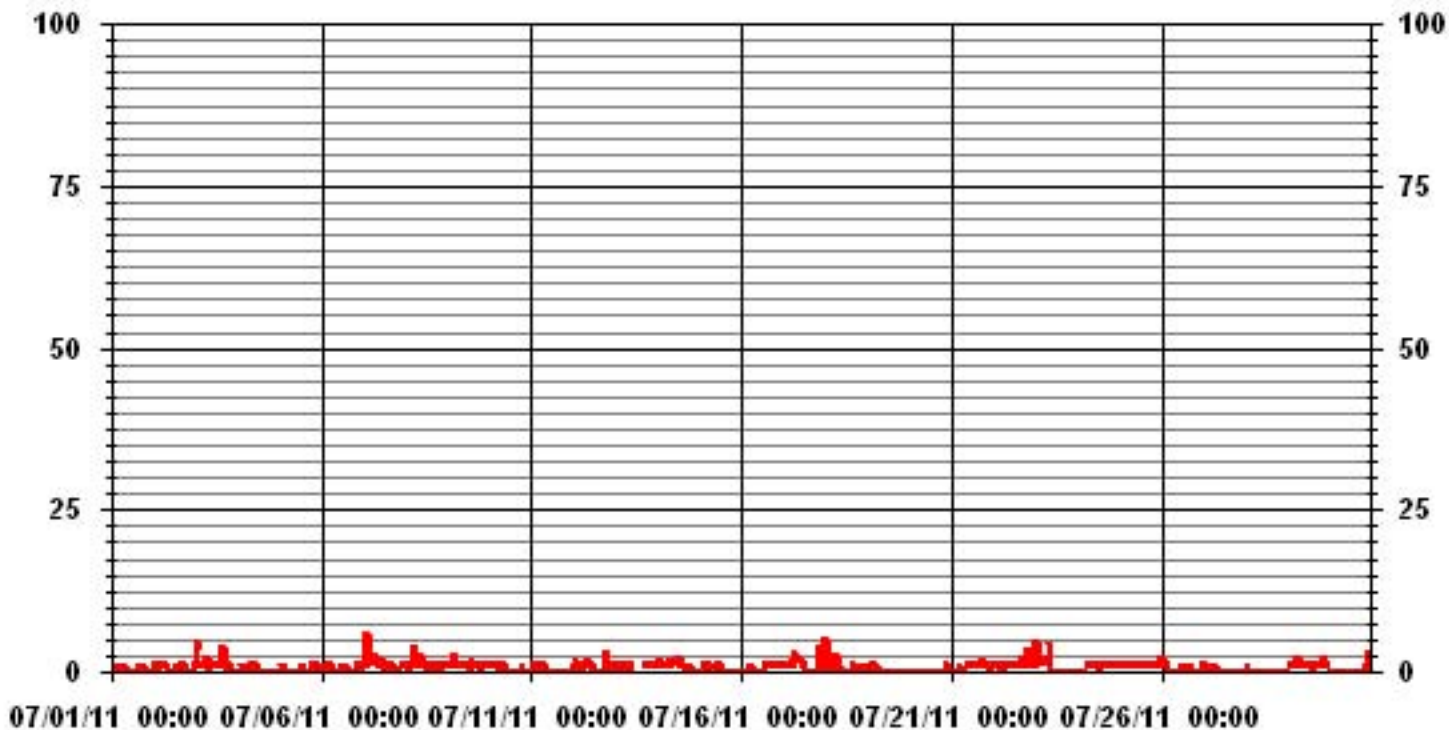
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	351					
MAXIMUM INSTANTANEOUS VALUE:	6	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.90					

01 Hour Averages



LICA30
H2S_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	1.55	3.54	4.24	4.24	4.95	8.49	7.36	3.11	6.09	14.87	12.88	8.49	10.48	5.94	1.98	1.27	99.57
< 10	.00	.00	.00	.00	.14	.14	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.42
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.55	3.54	4.24	4.24	5.09	8.64	7.50	3.11	6.09	14.87	12.88	8.49	10.48	5.94	1.98	1.27	

Calm : .00 %

Total # Operational Hours : 706

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	11	25	30	30	35	60	52	22	43	105	91	60	74	42	14	9	703
< 10					1	1	1										3
< 50																	
>= 50																	
Totals	11	25	30	30	36	61	53	22	43	105	91	60	74	42	14	9	

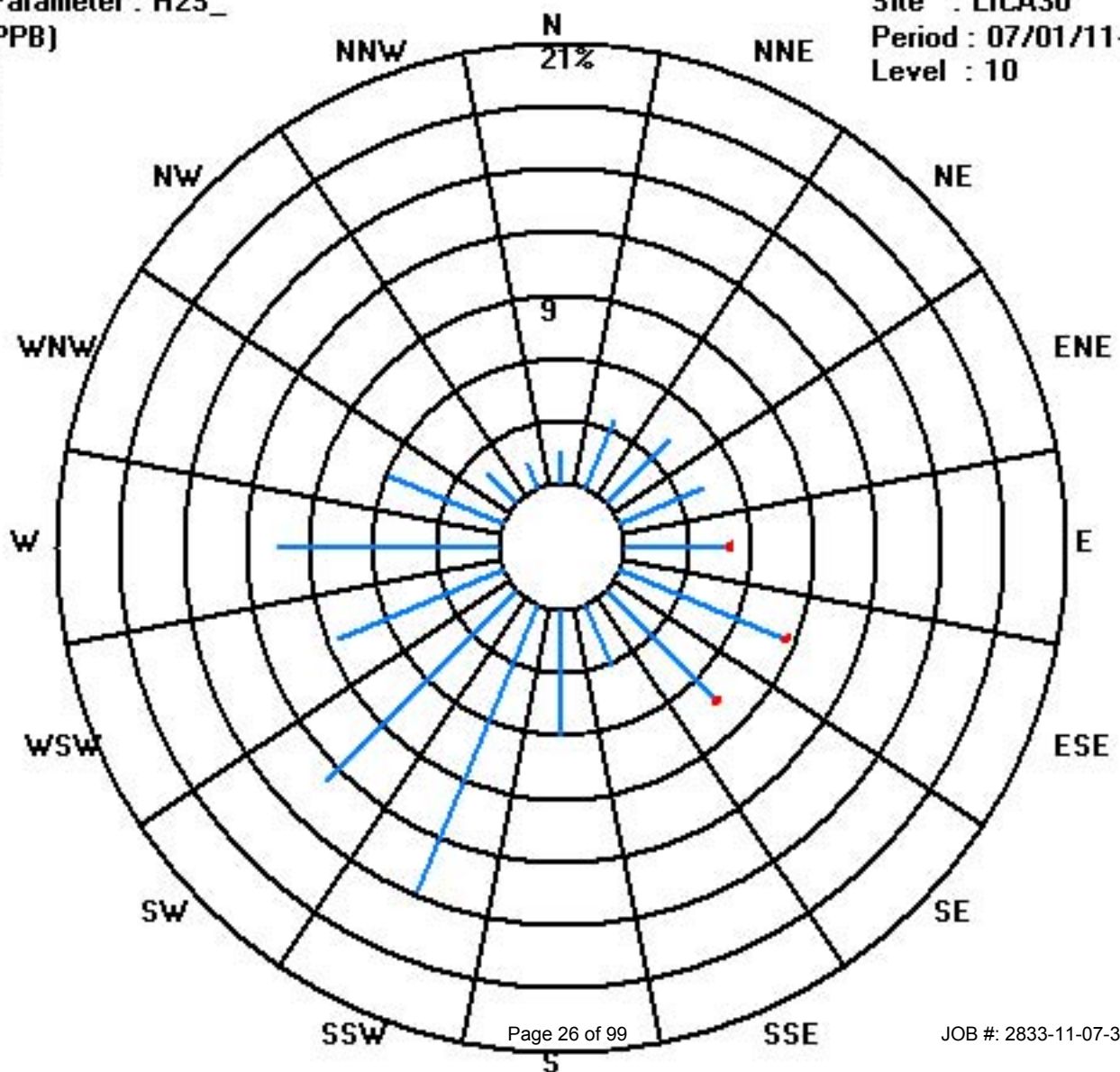
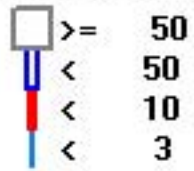
Calm : .00 %

Total # Operational Hours : 706

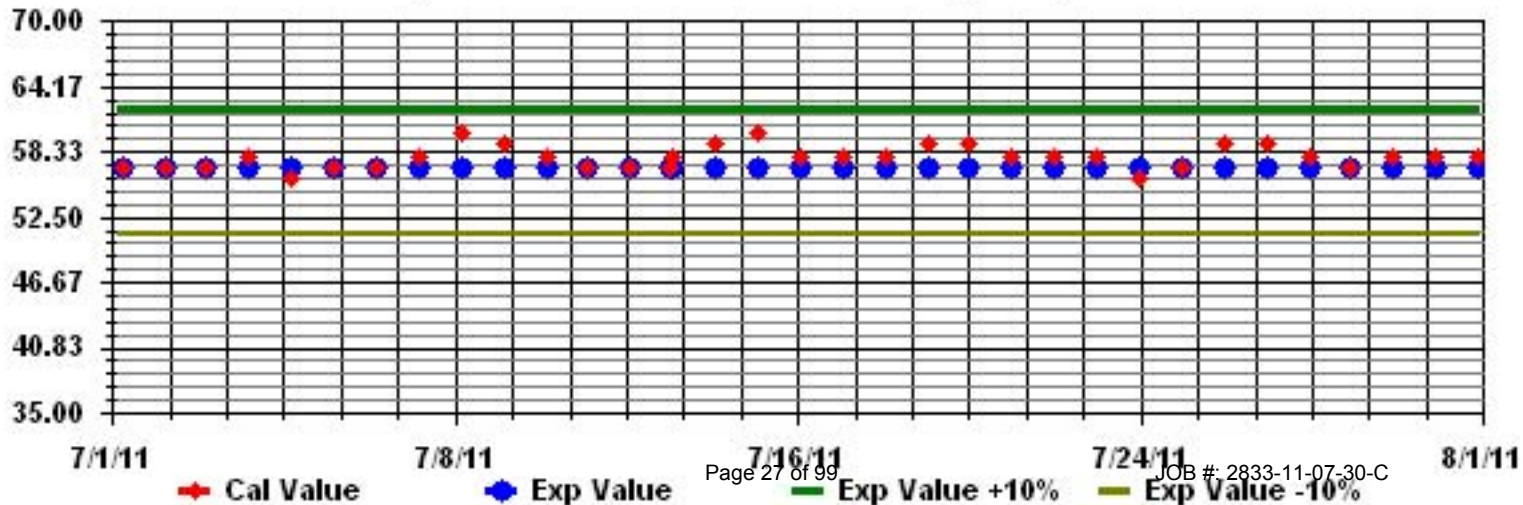
Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -MASKWA

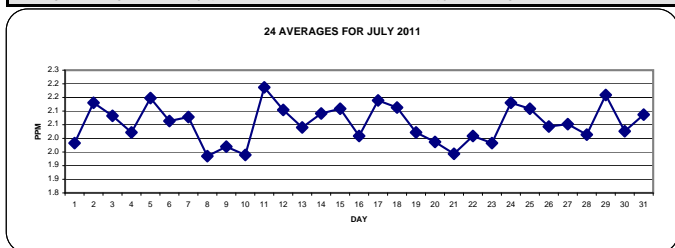
JULY 2011

TOTAL HYDROCARBONS hourly averages in ppm

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

STATUS FLAG CODES

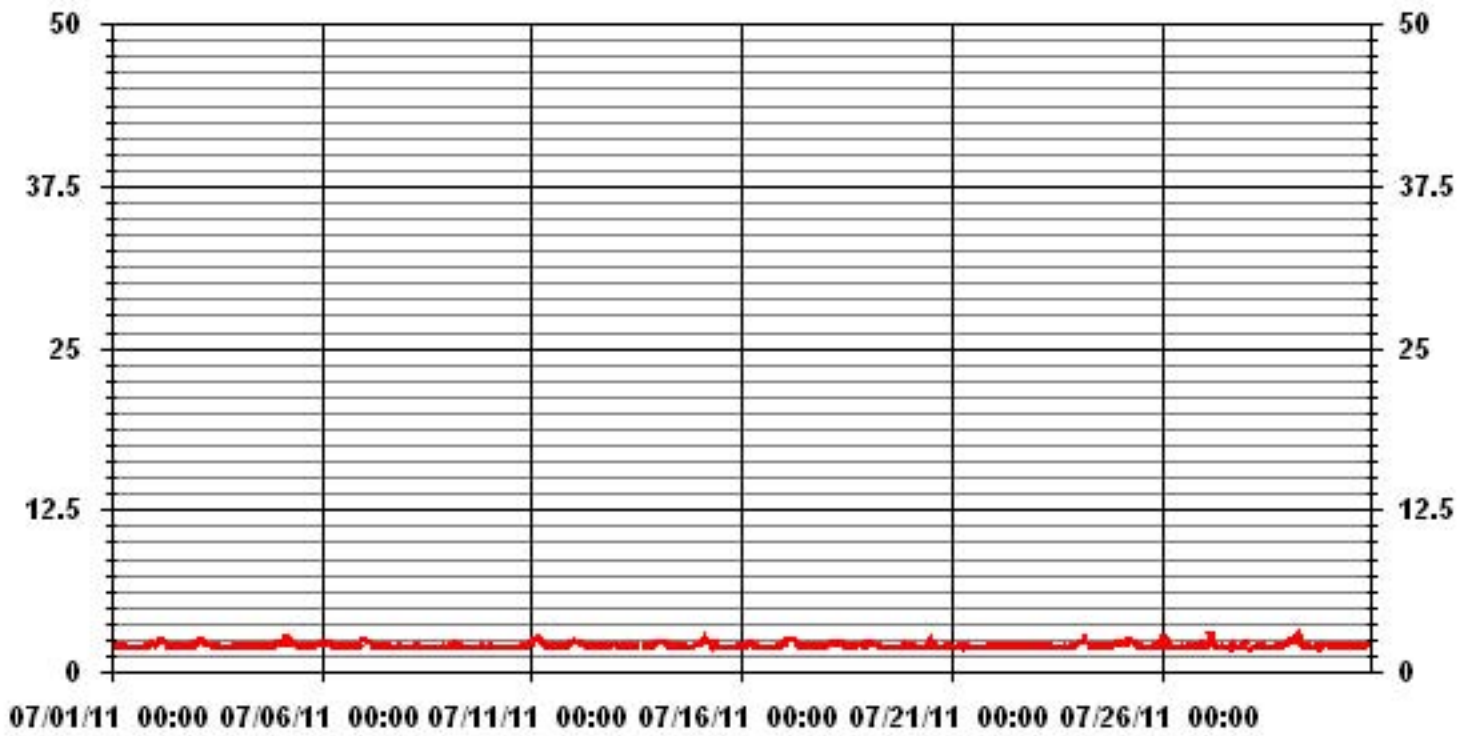
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	707					
MAXIMUM 1-HR AVERAGE:	2.9	PPM	@ HOUR(S)	3, 5	ON DAY(S)	27, 29
MAXIMUM 24-HR AVERAGE:	2.2	PPM			ON DAY(S)	11, 29
					VAR- VARIOUS	
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.16		MONTHLY AVERAGE:	2.06	PPM	

01 Hour Averages



— LICA30 THC PPM

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR			
HOURLY MAX	HOURLY AVG	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.		
DAY																														
1		2	2	2	2.1	2.1	IZS	2.2	2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.2	2.2	2.0	24		
2		2.2	2.2	2.2	2.7	IZS	2.7	2.5	2.4	2.4	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.7	2.2	24		
3		2.4	2.5	2.5	IZS	2.5	2.4	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2	2	2.1	2	1.9	2.2	1.9	2	2	2	2.5	2.2	24		
4		2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.3	2.3	2.0	24	
5		2.3	IZS	2.2	2.3	2.7	2.7	2.5	2.3	2.3	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.2	2.7	2.2	24	
6		IZS	2.3	2.2	2.3	2.3	2.3	2.2	2.1	2	2	2.1	2	2	2	2.1	2	2	2	2	2	2.1	2.1	2.1	2.2	IZS	2.3	2.1	24	
7		2.6	2.6	2.5	2.5	2.4	2.3	2.2	2	2.1	2.2	2.1	2	2	2	2.1	2.2	2	2.1	2	2.1	2.1	2.2	IZS	2.1	2.6	2.2	24		
8		2	2	1.9	2	2	2.2	2.3	2.3	2.2	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	2	2	2.3	2.0	24	
9		2	2	2.1	2.2	2.4	2.3	2.2	2.1	2.1	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.2	IZS	1.9	2	2	2.4	2.0	24	
10		2	2	2	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	1.9	1.9	IZS	2	2.1	2.1	2.3	2.3	2.0	24	
11		2.4	2.5	2.7	2.7	2.7	2.6	2.2	2.1	2.1	2	2.1	2	2	2	2	2.1	2	2	2	IZS	2	2.1	2.2	2.4	2.3	2.7	2.3	24	
12		2.5	2.5	2.4	2.4	2.4	2.4	2.3	2.2	2	2.3	2.2	2	2	2	2	2	2	IZS	2	2	2	2	2.1	2.2	2.1	2.5	2.2	24	
13		2.1	2.1	2.1	2	2.1	2.1	2	2	2	2	2	2.1	2.1	C	C	C	C	C	2	2	2	2.1	2.2	2.2	2.3	2.3	2.1	24	
14		2.4	2.5	2.4	2.5	2.4	2.3	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.2	IZS	2.1	2	2	2	1.9	2	2.1	2.2	2.5	2.2	24		
15		2.3	2.4	2.5	3.3	2.5	2.8	3	2.1	2.6	2.6	2	1.9	2	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	3.3	2.2	24	
16		2	2	2	2.2	2.3	2.2	2.2	2	2	2	2	1.9	1.9	IZS	1.9	2	2	1.9	1.9	2	2	2.1	2.1	2.3	2.3	2.0	24		
17		2.3	2.4	2.5	2.6	2.7	2.7	2.8	2.3	2.2	2.1	2	2	IZS	2	2	2	2	2	2	2	2.1	2.2	2.2	2.1	2	2.8	2.2	24	
18		2	2.2	2.1	2.2	2.3	2.4	2.2	2.3	3.1	2.3	2.1	IZS	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	2.1	2.1	3.3	3.3	2.3	24	
19		2.4	2.5	2.2	2.2	2.2	2.3	2.5	2.6	1.9	1.9	IZS	1.9	1.9	2.1	1.9	1.9	2	1.9	1.9	2	2.1	2.3	2.1	2	2.6	2.1	24		
20		2	2	2	3.2	2.5	1.9	1.9	1.9	2	IZS	2.6	2.9	2.8	2.2	2.4	2.4	2	2.7	2.5	1.9	2.9	2.7	2.1	1.9	3.2	2.3	24		
21		1.9	1.9	2	2	2.1	2	1.9	2.7	IZS	2.3	2.1	2.1	2.1	2.2	1.9	1.9	2	2	2	2	2	2	2	2.1	2.1	2.7	2.1	24	
22		2	2	2	2	2	2	2.1	IZS	2.1	2.1	2.1	2.1	2.2	2.1	2.1	2.2	2.2	2	2.2	2.1	2.2	2.1	2.1	2.2	2.2	2.1	24		
23		2.1	2.2	2.1	2.1	2.1	2	IZS	2	2.1	2	2	2	2	1.9	1.9	2	2	2	2	2	2	2	2.1	2.1	2.2	2.2	2.0	24	
24		2.3	2.3	2.5	2.6	2.7	IZS	2.5	2.1	2	2.1	2	2	2	2.4	2.7	2	2	2	2	2	2	2	2.1	2.2	2.3	2.2	2.7	2.2	24
25		2.4	2.5	2.3	2.3	IZS	2.4	2.4	2.3	2.4	2.4	2.1	2.1	2	2	2	1.9	1.9	1.9	2	2	2	2	2.1	2.3	2.4	2.5	2.2	24	
26		2.6	3.5	2.5	IZS	2.3	2.1	2	2	1.9	1.9	2	2	2.2	1.9	1.9	2	2.1	2	2	2	2.2	2.2	2.5	2.5	3.5	2.5	2.2	24	
27		2	2	IZS	3.7	3.1	2.3	2.1	2	2.5	2.1	2.4	2.6	1.9	2	2.9	2.2	2.6	3.2	1.9	1.9	1.9	2.2	2.9	3.1	3.7	2.4	24		
28		3.1	IZS	2	2	1.9	2	C	C	2.9	2.6	2.3	2	2.1	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.3	3.1	2.2	24	
29		IZS	2.5	2.5	2.6	2.9	3.7	3	2.3	2.1	2	2	2	2	2.5	2	2	2.2	2.7	2.4	1.9	2.1	2.2	2.2	IZS	3.7	2.4	24		
30		2	2	2	2	2.1	2.2	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	IZS	2.1	2.2	2.0	24
31		2.1	2.1	2.1	2.1	2.2	2.2	2.2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.3	2.8	IZS	1.9	2.4	2.8	2.2	24	
HOURLY MAX		3	4	3	4	3	4	3	3	3	3	3	3	3	3	3	2	3	3	3	2	3	3	3	3					
HOURLY AVG		2.2	2.3	2.2	2.4	2.3	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.1	2.1	2.2	2.3					

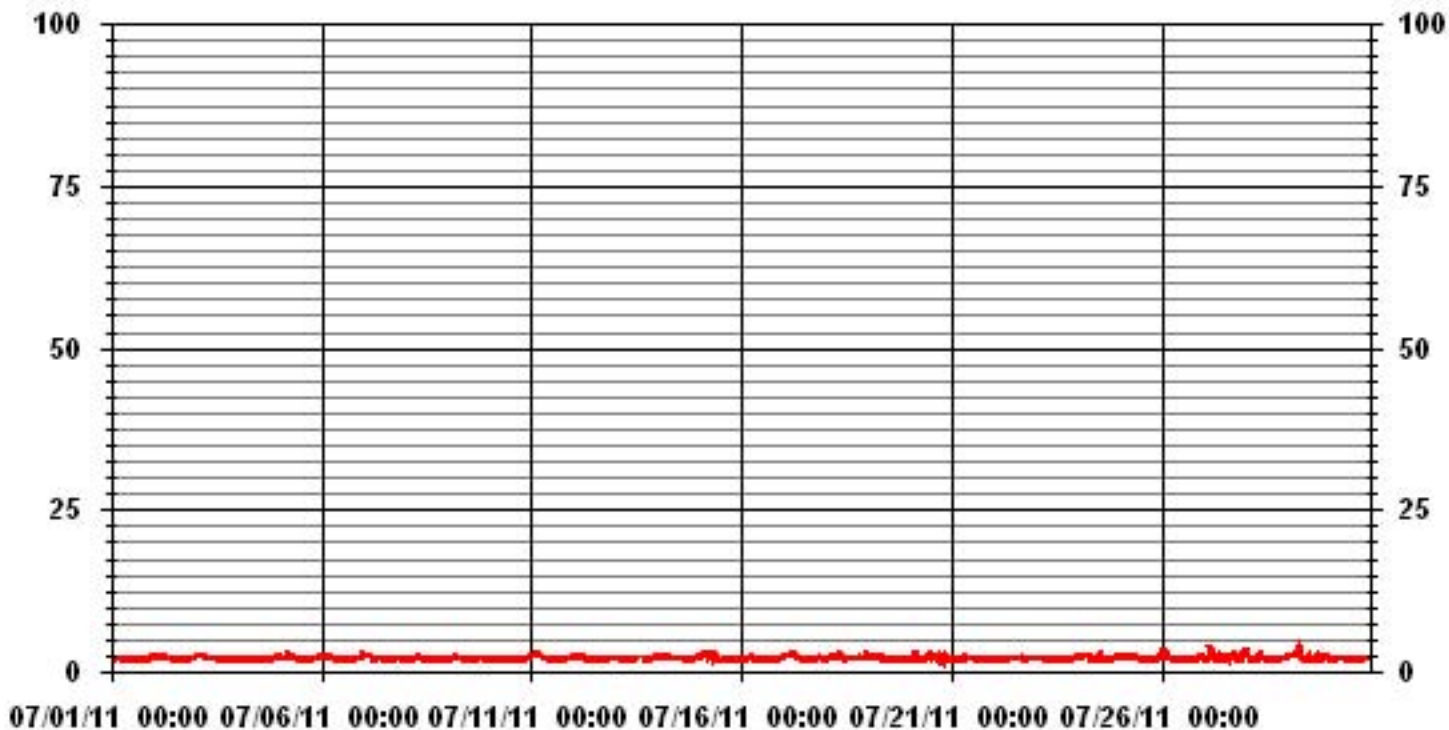
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706
MAXIMUM INSTANTANEOUS VALUE:	3.7 PPM @ HOUR(S) 5 ON DAY(S) 29
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION:	0.26
OPERATIONAL TIME:	744 HRS

01 Hour Averages



— LICA30 THCMAX PPM

LICA30
 THC / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : THC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	1.55	3.53	4.24	4.24	5.51	8.62	7.49	3.11	5.94	14.85	12.87	8.48	10.46	5.79	1.98	1.27	100.00
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.55	3.53	4.24	4.24	5.51	8.62	7.49	3.11	5.94	14.85	12.87	8.48	10.46	5.79	1.98	1.27	

Calm : .00 %

Total # Operational Hours : 707

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	11	25	30	30	39	61	53	22	42	105	91	60	74	41	14	9	707
< 10.0																	
< 50.0																	
>= 50.0																	
Totals	11	25	30	30	39	61	53	22	42	105	91	60	74	41	14	9	

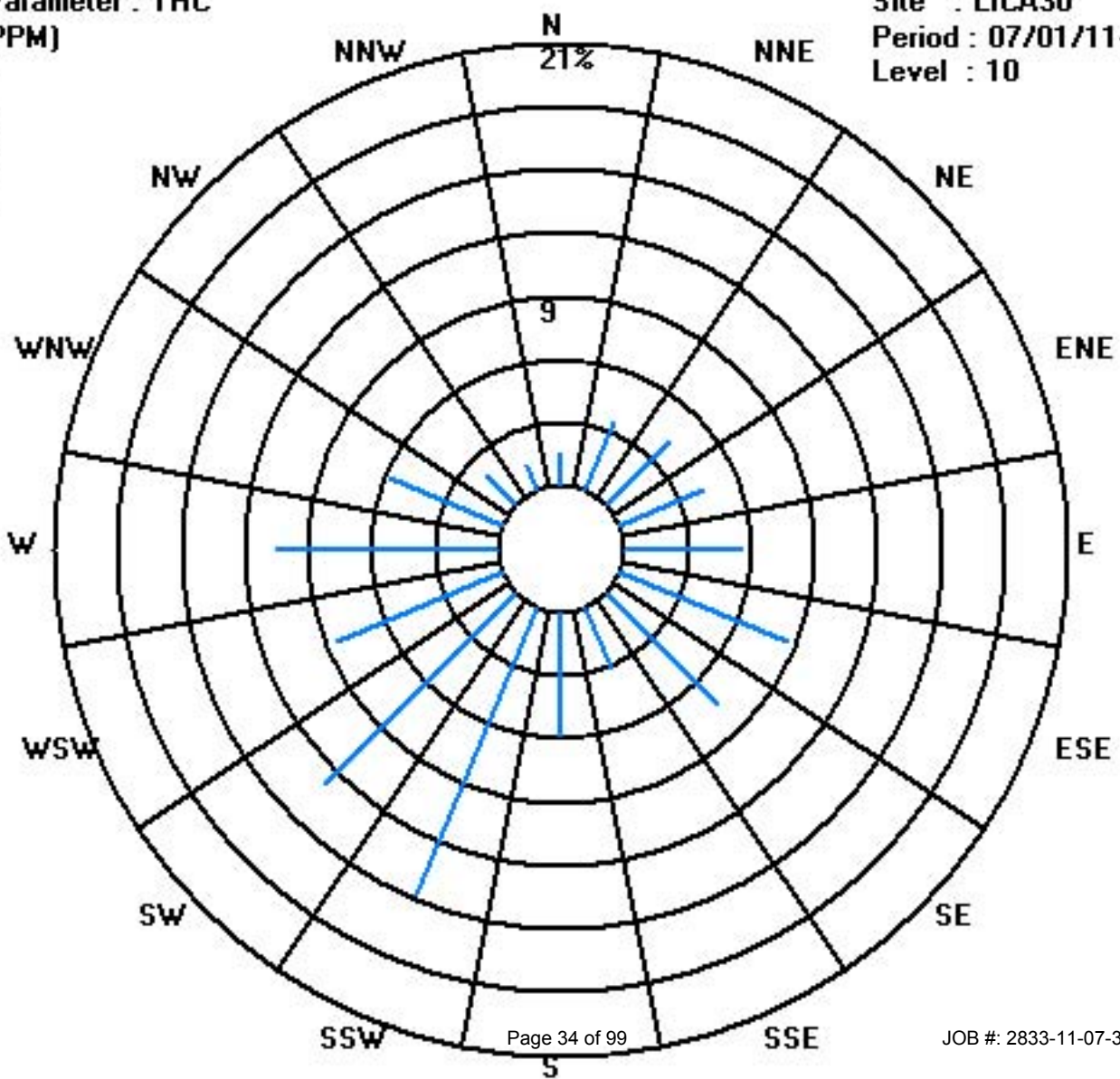
Calm : .00 %

Total # Operational Hours : 707

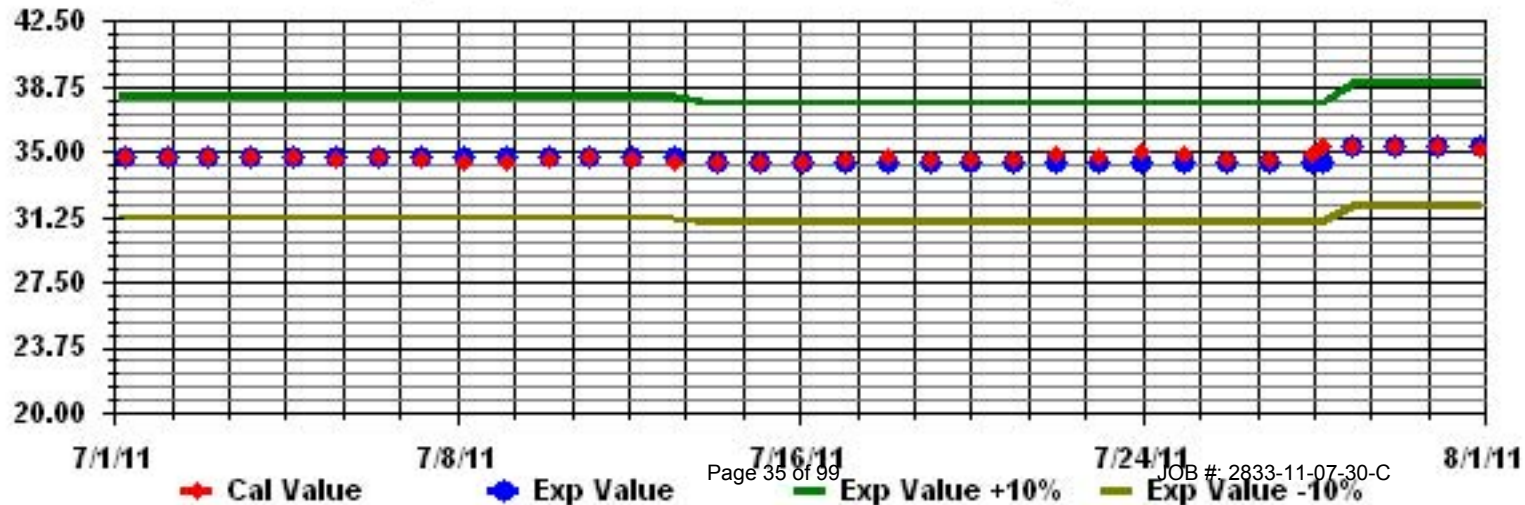
Class Limits (PPM)

Period : 07/01/11-07/31/11

Level : 10



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2011

NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY 1	0	1	1	1	2	IZS	7	1	2	1	0	0	0	0	0	0	0	0	0	0	0	1	2	7	0.8	24		
2	2	2	4	8	IZS	3	2	2	2	2	3	1	1	1	1	1	0	0	0	0	1	2	1	1	8	1.7	24	
3	1	1	1	IZS	1	0	1	1	0	0	1	1	2	2	0	0	5	3	1	6	3	0	0	0	6	1.3	24	
4	0	0	IZS	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	2	3	0.4	24	
5	1	IZS	2	2	6	5	3	3	3	3	2	1	1	1	1	1	1	1	0	0	0	0	1	3	6	1.8	24	
6	IZS	5	2	5	6	4	2	4	3	2	1	0	1	1	0	0	1	0	0	0	0	0	1	IZS	6	1.7	24	
7	0	0	1	2	2	3	4	1	3	3	2	2	1	1	1	3	1	2	1	1	2	2	IZS	0	4	1.7	24	
8	1	0	0	0	0	4	9	4	3	2	1	1	0	0	1	0	0	0	1	3	0	IZS	1	0	9	1.3	24	
9	0	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	1	1	3	6	IZS	0	1	2	6	0.8	24	
10	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	0	0	0	0	2	0.3	24	
11	0	0	0	0	0	0	0	2	2	2	1	1	0	0	0	1	0	1	0	IZS	0	0	0	0	1	2	0.5	24
12	1	0	0	0	0	0	2	3	1	C	C	M	M	0	0	C	0	IZS	0	0	0	0	0	0	3	0.4	22	
13	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	1	1	1	1	1	1	1	1	1	0.4	24
14	1	1	1	1	1	0	1	4	2	3	3	2	2	1	3	IZS	1	1	1	1	2	1	2	1	1	4	1.6	24
15	4	3	6	13	10	3	6	2	4	4	2	2	1	1	IZS	1	1	1	1	1	2	3	1	2	1	13	3.2	24
16	1	1	1	3	3	2	2	2	1	1	1	1	1	1	IZS	1	1	1	1	0	0	0	0	1	0	3	1.1	24
17	1	1	2	2	2	2	1	1	2	4	3	2	IZS	1	1	1	1	1	1	1	1	1	3	1	1	4	1.6	24
18	1	1	1	1	1	1	3	2	5	2	1	IZS	2	1	1	1	1	1	1	1	1	2	1	3	5	1.5	24	
19	4	4	2	1	3	7	3	4	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	2	2	1	7	2.0	24
20	1	1	1	1	2	0	1	1	4	IZS	7	5	3	2	1	0	0	1	4	1	4	13	14	1	14	3.0	24	
21	1	1	6	1	6	5	1	5	IZS	3	2	2	2	2	1	1	2	2	1	1	1	1	2	6	2.2	24		
22	4	3	0	1	2	1	2	IZS	2	2	1	1	2	4	7	8	7	4	9	6	5	6	6	7	9	3.9	24	
23	6	7	3	5	9	4	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	9	2.3	24	
24	2	2	4	5	7	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	2	7	1.8	24	
25	2	1	2	2	IZS	3	3	4	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	4	1.7	24	
26	1	6	5	IZS	0	0	0	0	1	0	0	2	1	0	0	2	2	1	1	0	0	1	9	14	14	2.0	24	
27	5	2	IZS	10	15	11	4	2	3	2	1	1	1	1	1	3	2	0	0	1	2	12	8	15	3.8	24		
28	9	IZS	1	3	0	1	1	3	5	1	1	1	0	1	1	1	0	0	0	1	1	1	3	9	1.5	24		
29	IZS	3	2	2	1	3	6	1	2	1	1	2	3	2	1	1	9	7	1	2	2	3	1	IZS	9	2.5	24	
30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	2	0.1	24	
31	1	1	1	1	5	4	6	2	2	2	2	1	1	1	1	1	1	1	1	1	4	IZS	1	6	6	2.0	24	
HOURLY MAX	9	7	6	13	15	11	9	5	5	4	7	5	3	4	7	8	9	7	9	6	5	13	14	14				
HOURLY AVG	1.8	1.7	1.8	2.4	2.9	2.3	2.4	1.9	2.0	1.6	1.4	1.2	1.1	0.9	0.9	1.0	1.4	1.2	1.1	1.3	1.2	1.7	2.3	2.3				

STATUS FLAG CODES

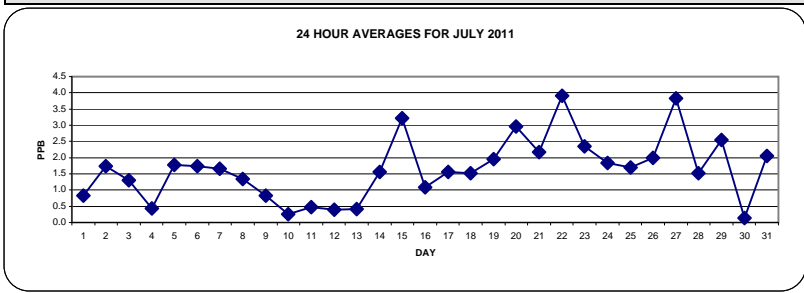
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

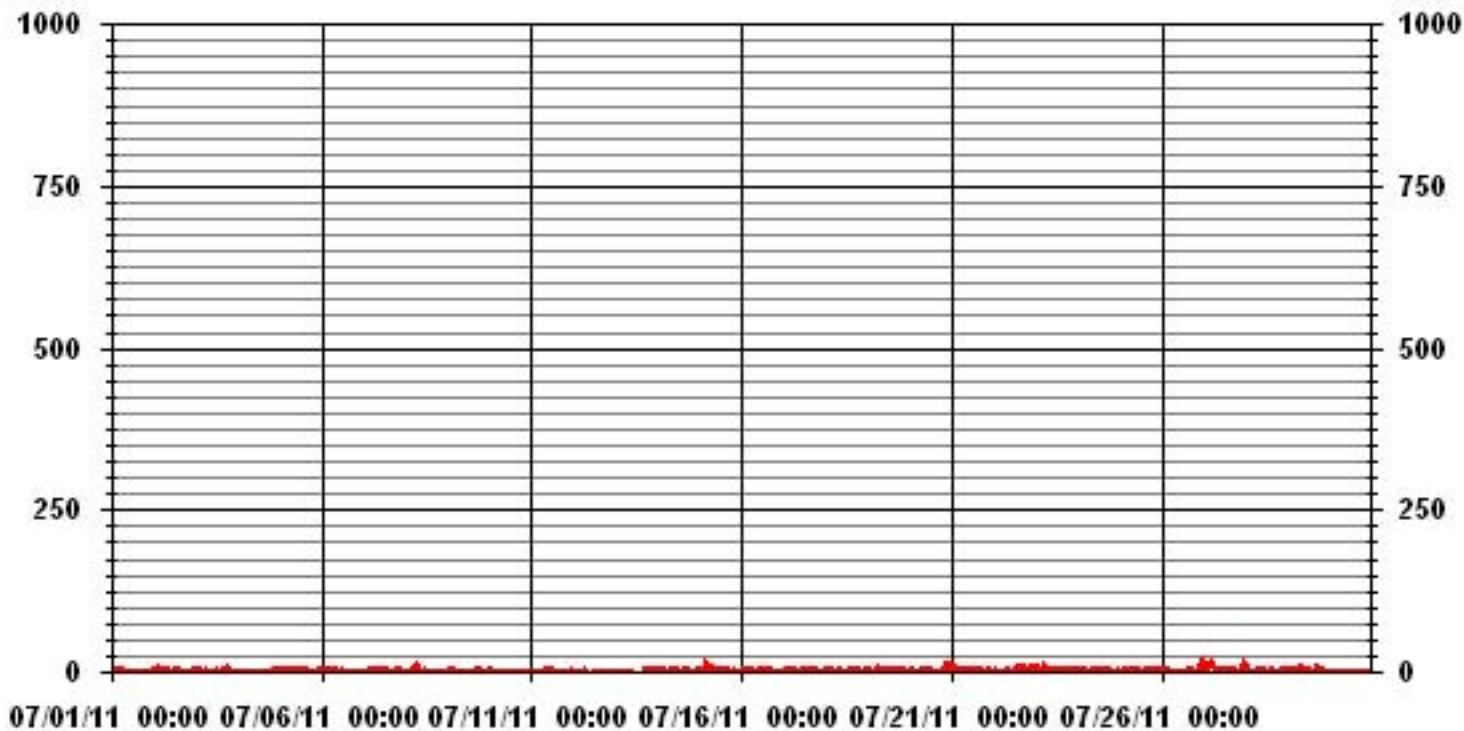
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	511					
MAXIMUM 1-HR AVERAGE:	15	PPB	@ HOUR(S)	4	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	3.9	PPB			ON DAY(S)	22
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	2.11		MONTHLY AVERAGE:	1.67	PPB	



01 Hour Averages



— LICA30 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2011

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	2	1	2	2	3	IZS	12	3	5	4	1	1	1	1	1	1	1	1	1	0	1	1	3	3	12	2.2	24	
2	3	3	5	10	IZS	5	5	3	3	2	4	2	1	1	2	1	1	1	1	1	2	3	2	2	10	2.7	24	
3	2	1	1	IZS	1	1	2	2	1	1	3	3	6	6	5	1	11	13	2	12	5	1	1	1	13	3.6	24	
4	1	1	IZS	1	1	1	13	1	1	1	2	1	1	1	1	1	1	1	1	1	7	6	4	3	13	2.3	24	
5	2	IZS	2	4	8	7	5	5	4	4	3	2	2	3	2	2	1	1	1	1	1	1	1	2	5	8	3.0	24
6	IZS	8	3	7	8	7	4	7	6	5	7	1	4	4	1	2	3	1	1	1	1	1	1	1	IZS	8	3.8	24
7	1	1	1	3	3	7	6	4	6	6	4	6	4	2	3	7	6	6	2	3	4	5	5	IZS	2	7	4.0	24
8	2	2	1	2	2	9	12	11	7	5	2	1	2	1	2	1	1	1	3	6	1	IZS	2	1	12	3.3	24	
9	1	1	2	2	2	1	1	1	1	2	1	1	1	1	1	2	2	2	6	14	IZS	1	4	3	14	2.3	24	
10	4	5	3	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	IZS	1	0	1	1	5	1.3	24	
11	1	1	1	1	1	1	1	5	6	5	3	2	2	2	1	1	4	2	IZS	1	1	1	1	1	1	6	2.0	24
12	1	1	1	1	1	1	5	6	C	C	C	M	M	1	C	C	1	IZS	3	1	1	1	1	1	1	6	1.7	22
13	1	1	0	1	0	1	0	1	1	1	C	C	C	C	C	C	C	2	2	1	2	1	1	1	2	1.0	24	
14	1	1	1	2	1	1	5	7	7	5	6	6	7	2	20	IZS	2	2	2	2	2	4	3	2	20	4.0	24	
15	5	4	13	15	13	6	14	3	7	6	3	3	3	2	IZS	2	3	2	1	4	5	2	2	2	15	5.2	24	
16	2	2	1	5	4	3	3	3	2	2	2	2	1	IZS	1	2	4	1	1	1	1	1	1	1	5	2.0	24	
17	1	3	3	3	3	4	2	2	5	8	5	4	IZS	2	1	2	2	2	1	1	4	5	2	2	8	2.9	24	
18	2	2	2	2	2	2	8	4	19	5	2	IZS	5	2	2	2	2	2	3	2	3	4	2	8	19	3.8	24	
19	7	7	5	4	6	15	11	8	3	2	IZS	6	2	1	1	2	1	2	2	3	2	4	2	2	15	4.3	24	
20	2	2	2	2	9	1	2	3	11	IZS	13	7	6	5	3	1	1	10	11	6	15	21	24	2	24	6.9	24	
21	5	4	16	2	14	15	2	12	IZS	7	3	4	5	4	2	1	5	6	6	3	2	1	5	5	16	5.6	24	
22	7	9	1	3	5	4	5	IZS	6	6	5	4	7	8	12	12	10	6	12	10	10	11	12	13	13	7.7	24	
23	11	12	10	13	14	9	IZS	3	2	1	2	1	2	2	1	1	2	2	3	2	2	2	3	14	4.4	24		
24	3	3	6	6	9	IZS	3	2	2	2	4	2	2	2	2	1	1	2	2	3	3	2	3	3	9	3.0	24	
25	2	2	2	2	IZS	3	4	9	5	3	3	10	3	2	3	2	2	1	1	2	1	2	2	2	10	3.0	24	
26	2	20	22	IZS	0	1	1	2	2	1	5	17	3	0	0	4	5	2	2	1	1	3	13	16	22	5.3	24	
27	16	8	IZS	16	20	19	13	3	5	5	1	3	1	1	3	2	7	5	1	1	1	8	19	16	20	7.6	24	
28	22	IZS	3	9	1	2	2	6	9	2	1	1	1	1	2	2	1	1	1	1	2	2	3	4	22	3.4	24	
29	IZS	4	3	3	2	16	14	3	8	5	2	6	6	6	3	2	19	15	2	4	3	5	3	IZS	19	6.1	24	
30	0	0	4	0	1	1	1	1	1	1	0	1	1	1	2	1	1	0	0	1	1	1	1	IZS	4	4	1.0	24
31	1	1	2	2	12	10	11	3	4	4	4	2	1	2	2	2	2	2	2	2	2	15	IZS	2	17	17	4.6	24
HOURLY MAX	22	20	22	16	20	19	14	12	19	8	13	17	7	8	20	12	19	15	12	14	15	21	24	17				
HOURLY AVG	3.8	3.8	4.1	4.3	5.1	5.3	5.6	4.1	4.9	3.5	3.3	3.6	2.9	2.3	2.9	2.2	3.4	3.1	2.5	3.1	3.3	3.4	4.2	4.3				

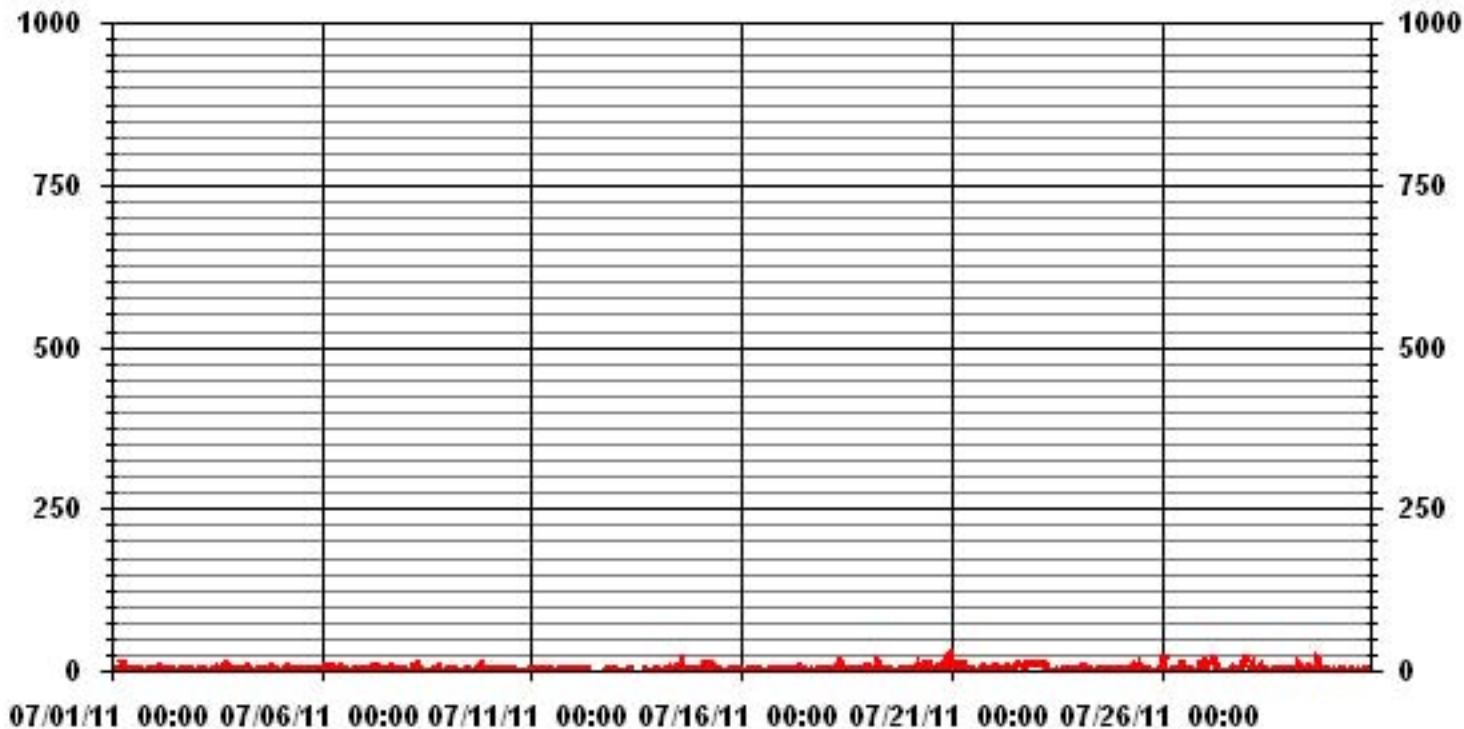
STATUS FLAG CODES

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:	682
MAXIMUM INSTANTANEOUS VALUE:	24 PPB @ HOUR(S) 22 ON DAY(S) 20
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	12 HRS
OPERATIONAL TIME:	742 HRS
STANDARD DEVIATION	3.98

01 Hour Averages



— LICA30 NO2MAX PPB

LICA30
 NO2_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 30
 Site Name : LICA30
 Parameter : NO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.57	3.57	4.28	4.28	5.14	8.57	7.00	3.14	6.00	15.00	13.00	8.57	10.57	6.00	2.00	1.28	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.57	3.57	4.28	4.28	5.14	8.57	7.00	3.14	6.00	15.00	13.00	8.57	10.57	6.00	2.00	1.28	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	25	30	30	36	60	49	22	42	105	91	60	74	42	14	9	700
< 110																	
< 210																	
>= 210																	
Totals	11	25	30	30	36	60	49	22	42	105	91	60	74	42	14	9	

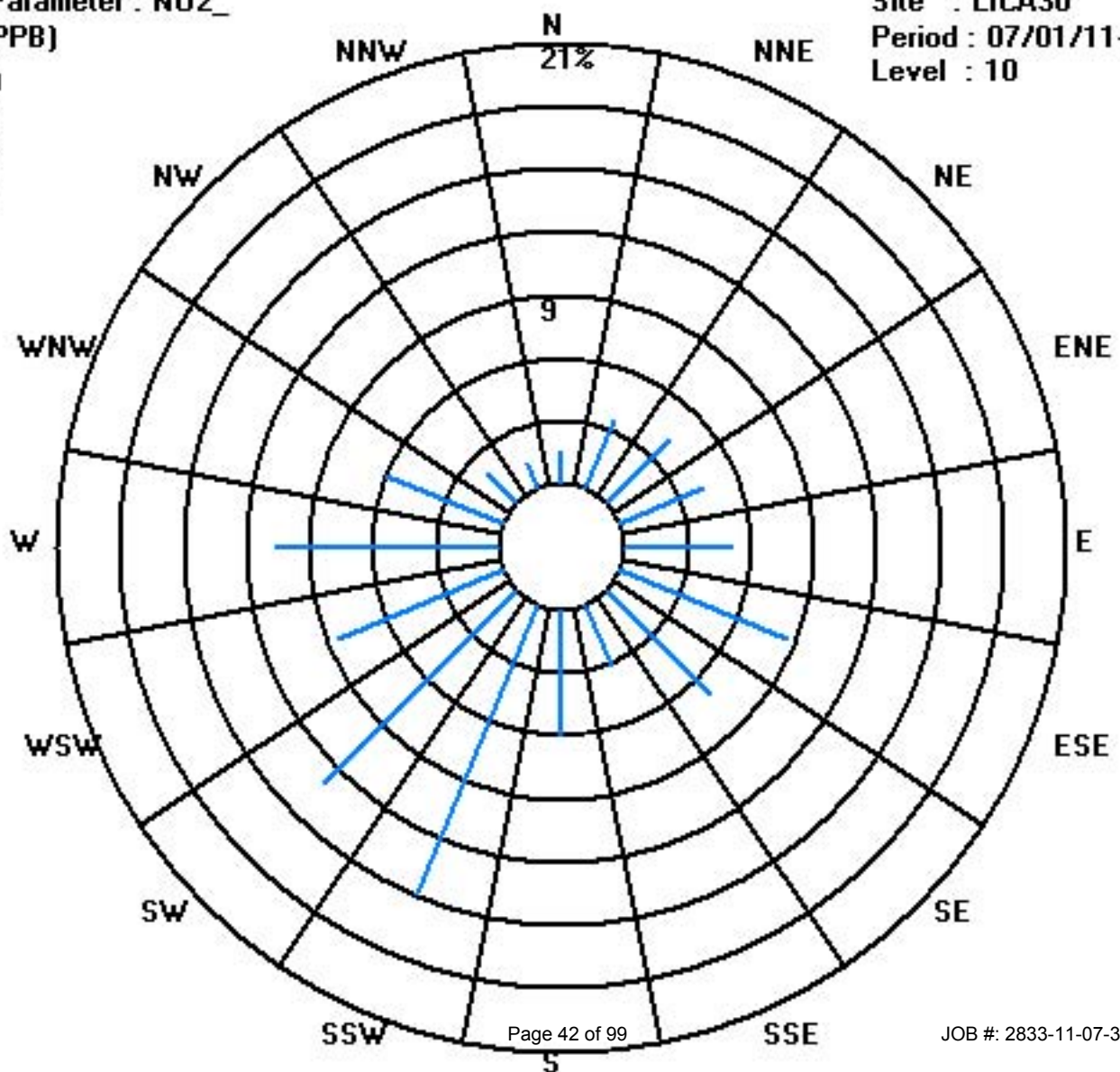
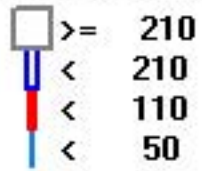
Calm : .00 %

Total # Operational Hours : 700

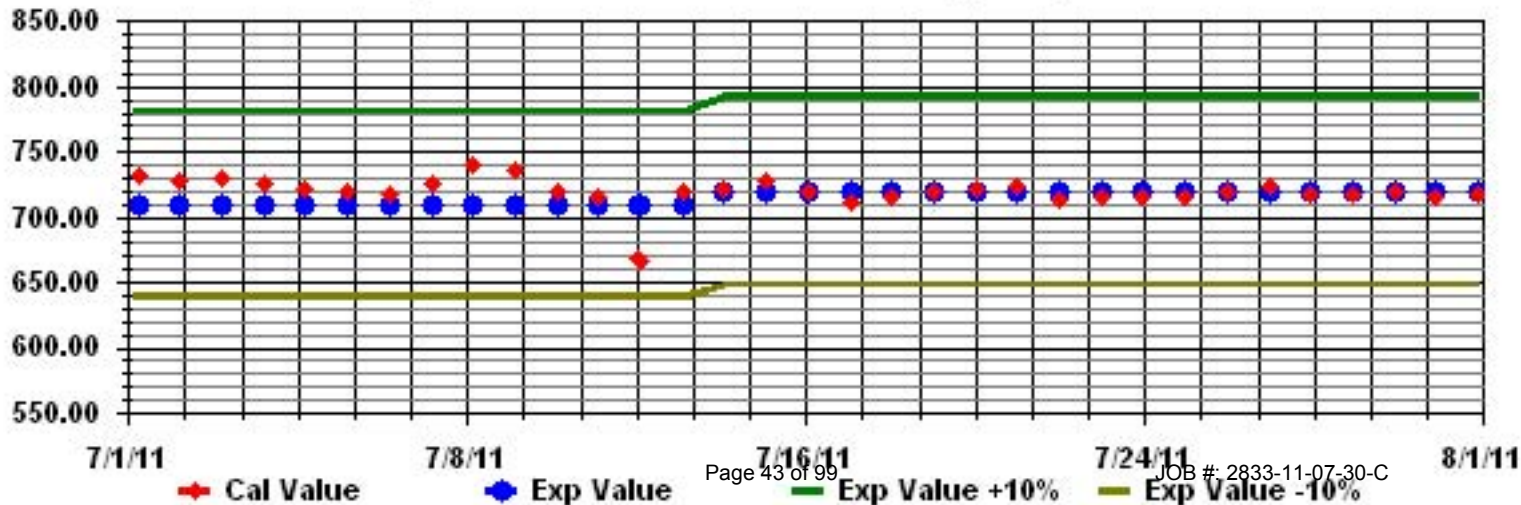
Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOICATION - MASKWA

JULY 2011

NITRIC OXIDE hourly averages in ppb

MST

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

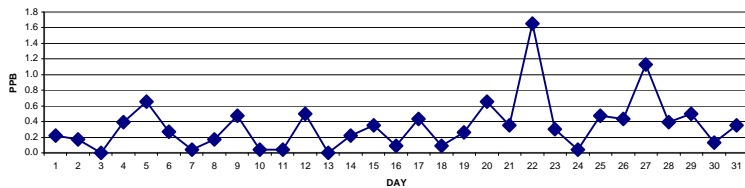
STATUS FLAG CODES

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

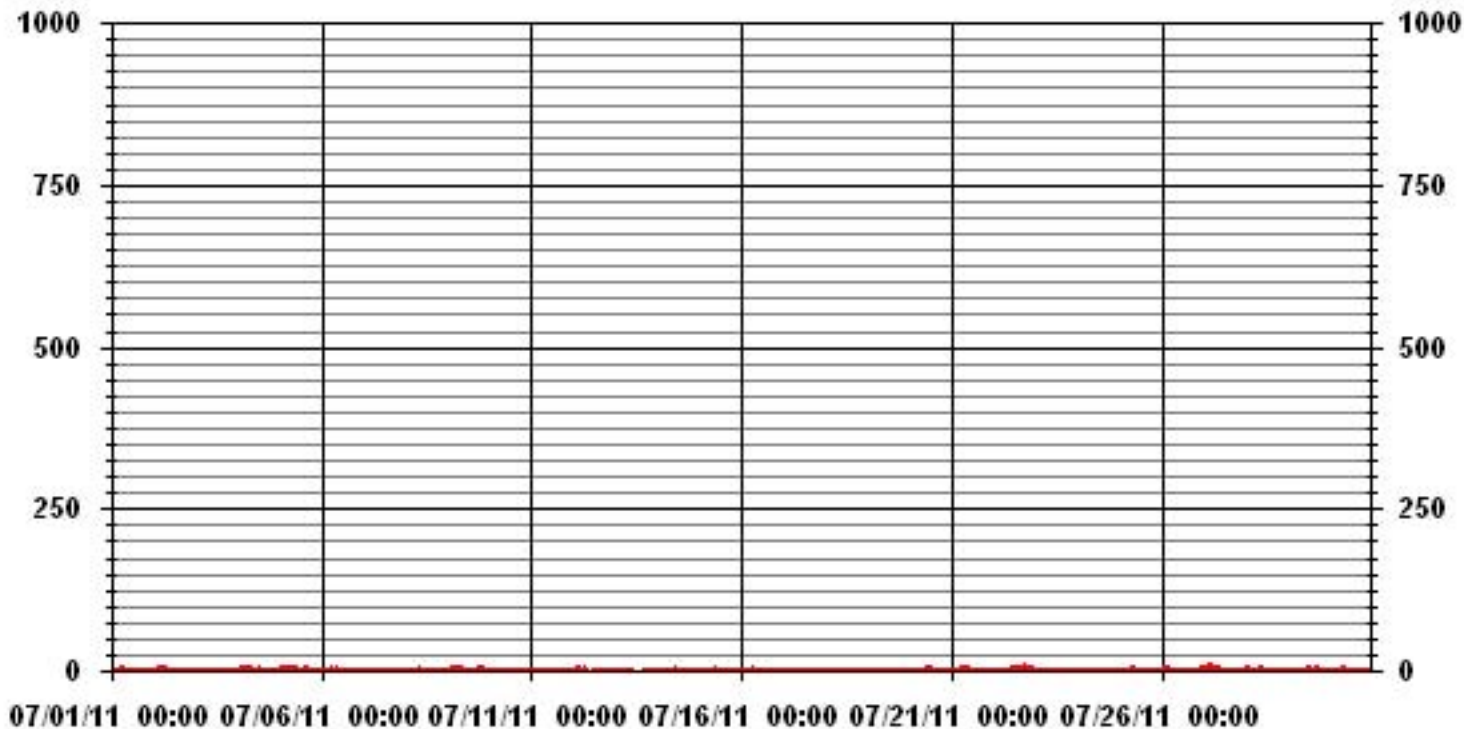
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	152
MAXIMUM 1-HR AVERAGE:	8 PPB @ HOUR(S) 3 ON DAY(S) 27
MAXIMUM 24-HR AVERAGE:	1.7 PPB ON DAY(S) 22
IZS CALIBRATION TIME:	32 HRS
MONTHLY CALIBRATION TIME:	10 HRS
OPERATIONAL TIME:	742 HRS
AMD OPERATION UPTIME:	99.7 %
STANDARD DEVIATION:	0.85
MONTHLY AVERAGE:	0.35 PPB

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 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	0	0	0	IZS	10	1	5	4	1	0	0	-1	0	0	0	0	0	0	0	0	0	0	10	0.9	24	
2	0	0	1	1	IZS	4	3	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0.7	24	
3	0	0	0	IZS	1	1	0	0	0	0	1	0	2	2	1	0	0	1	0	0	0	0	0	0	2	0.4	24	
4	0	0	IZS	1	1	2	16	2	1	1	2	1	1	2	3	1	2	1	1	1	1	1	1	16	1.9	24		
5	1	IZS	1	2	4	3	4	3	3	2	1	1	1	2	1	2	1	1	1	1	1	1	1	1	4	1.7	24	
6	IZS	0	0	1	1	2	1	5	4	3	6	0	2	2	1	1	1	0	0	0	0	0	0	IZS	6	1.4	24	
7	0	0	0	0	0	1	2	0	1	2	1	1	1	0	0	2	1	1	0	0	0	0	0	IZS	0	2	0.6	24
8	0	0	0	0	0	2	3	5	3	3	0	0	0	0	0	0	0	0	0	1	0	IZS	1	1	5	0.8	24	
9	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	2	1	1	4	IZS	1	1	1	4	1.3	24	
10	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	3	0.9	24	
11	0	0	0	0	0	1	1	3	3	3	1	1	0	0	0	1	0	IZS	1	1	1	1	1	1	3	0.8	24	
12	1	1	1	1	1	2	4	5	C	C	C	M	M	0	C	C	0	IZS	0	0	0	0	0	0	5	1.0	22	
13	0	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	1	1	1	1	1	1	1	1	0.4	24	
14	0	0	1	0	0	0	3	5	2	2	2	3	3	0	13	IZS	1	1	1	0	0	0	0	0	13	1.6	24	
15	0	1	2	4	4	3	6	1	2	4	1	1	1	1	IZS	1	1	1	0	1	0	1	1	1	6	1.7	24	
16	1	1	0	0	1	1	2	1	1	1	1	1	1	IZS	1	1	3	1	1	1	0	0	1	0	3	0.9	24	
17	1	1	1	1	2	6	2	1	4	7	3	2	IZS	1	1	1	0	1	0	1	1	0	1	1	7	1.7	24	
18	0	1	1	1	1	1	1	0	9	1	0	IZS	2	0	0	0	0	0	1	0	0	0	1	0	9	0.9	24	
19	1	1	2	2	1	13	6	5	1	1	IZS	6	2	1	1	1	1	1	1	1	0	1	1	1	13	2.2	24	
20	0	0	0	0	3	0	1	1	10	IZS	13	5	4	6	2	1	1	5	5	1	3	2	3	0	13	2.9	24	
21	1	0	2	0	2	4	1	15	IZS	6	1	1	2	1	0	0	0	0	1	0	0	0	0	0	15	1.6	24	
22	1	2	0	0	1	0	1	IZS	4	5	4	2	7	6	6	6	7	3	10	7	9	6	5	7	10	4.3	24	
23	5	6	4	3	5	2	IZS	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	0	6	1.8	24		
24	1	1	1	1	4	IZS	1	1	0	5	6	0	0	0	0	0	0	0	0	1	0	0	0	0	6	1.0	24	
25	0	0	0	0	IZS	2	3	16	5	2	1	6	1	1	2	1	1	1	0	1	1	0	0	1	16	2.0	24	
26	0	8	10	IZS	1	1	1	1	1	1	1	27	2	0	1	1	1	0	0	2	1	1	5	11	27	3.3	24	
27	8	2	IZS	22	10	9	8	2	3	4	1	2	0	1	2	1	5	2	1	1	0	2	5	4	22	4.1	24	
28	14	IZS	1	1	1	1	1	4	9	2	1	0	1	1	2	1	1	0	1	1	0	1	1	1	14	2.0	24	
29	IZS	1	1	1	1	49	5	1	3	2	1	4	4	3	2	1	8	8	1	1	1	1	1	IZS	49	4.5	24	
30	1	1	1	1	1	1	1	2	1	1	1	0	1	1	2	1	1	1	1	1	1	0	IZS	1	2	1.0	24	
31	1	1	0	1	1	4	5	1	2	2	2	1	1	1	1	0	1	1	1	1	1	4	IZS	1	11	1.9	24	
HOURLY MAX	14	8	10	22	10	49	16	16	10	7	13	27	7	6	13	6	8	8	10	7	9	6	5	11				
HOURLY AVG	1.3	1.1	1.1	1.6	1.7	4.0	3.2	2.9	2.8	2.3	2.0	2.5	1.5	1.2	1.6	0.9	1.4	1.1	1.0	1.1	0.9	0.7	1.1	1.6				

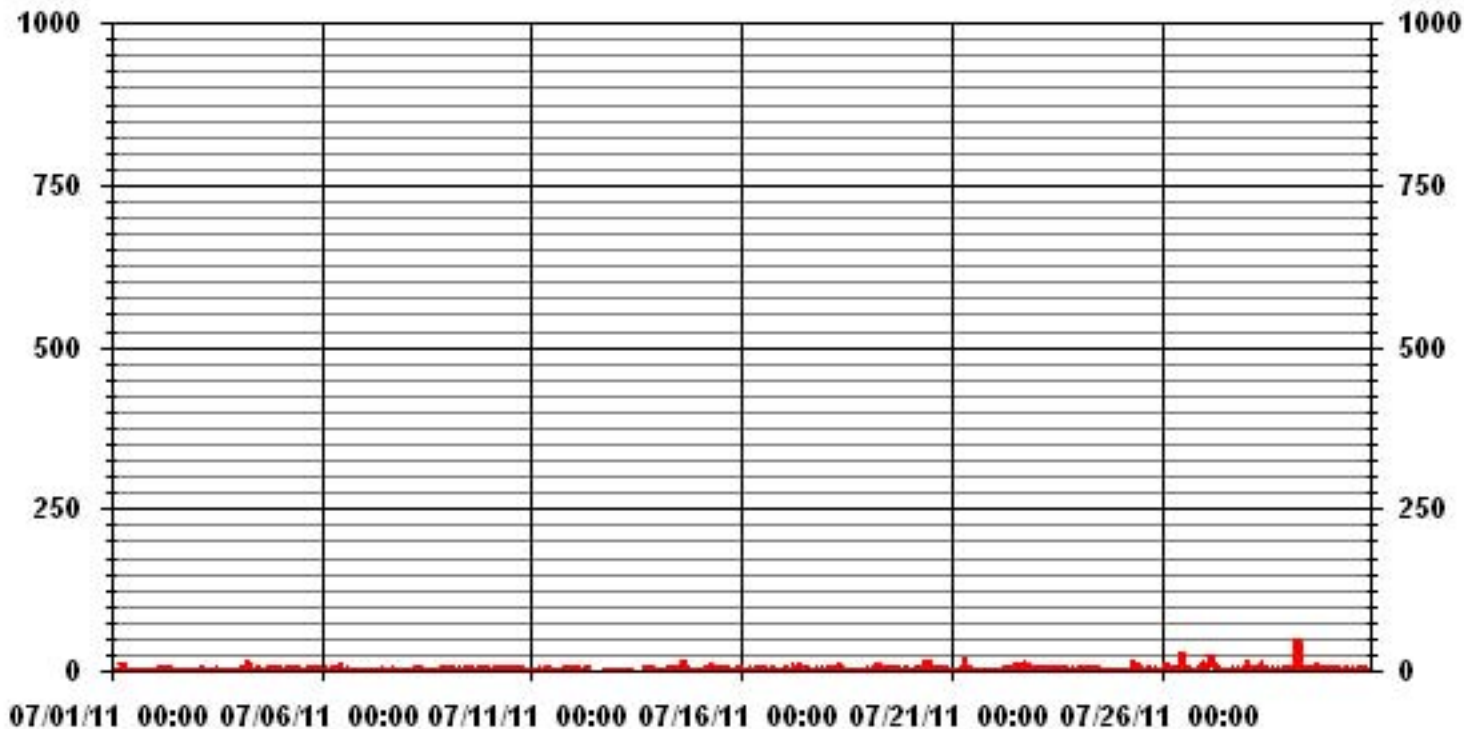
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	490					
MAXIMUM INSTANTANEOUS VALUE:	49	PPB	@ HOUR(S)	5	ON DAY(S)	29
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	12	HRS				
STANDARD DEVIATION	3.14					

01 Hour Averages



LICA30
 NO_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.57	3.57	4.28	4.28	5.14	8.57	7.00	3.14	6.00	15.00	13.00	8.57	10.57	6.00	2.00	1.28	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.57	3.57	4.28	4.28	5.14	8.57	7.00	3.14	6.00	15.00	13.00	8.57	10.57	6.00	2.00	1.28	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	25	30	30	36	60	49	22	42	105	91	60	74	42	14	9	700
< 110																	
< 210																	
>= 210																	
Totals	11	25	30	30	36	60	49	22	42	105	91	60	74	42	14	9	

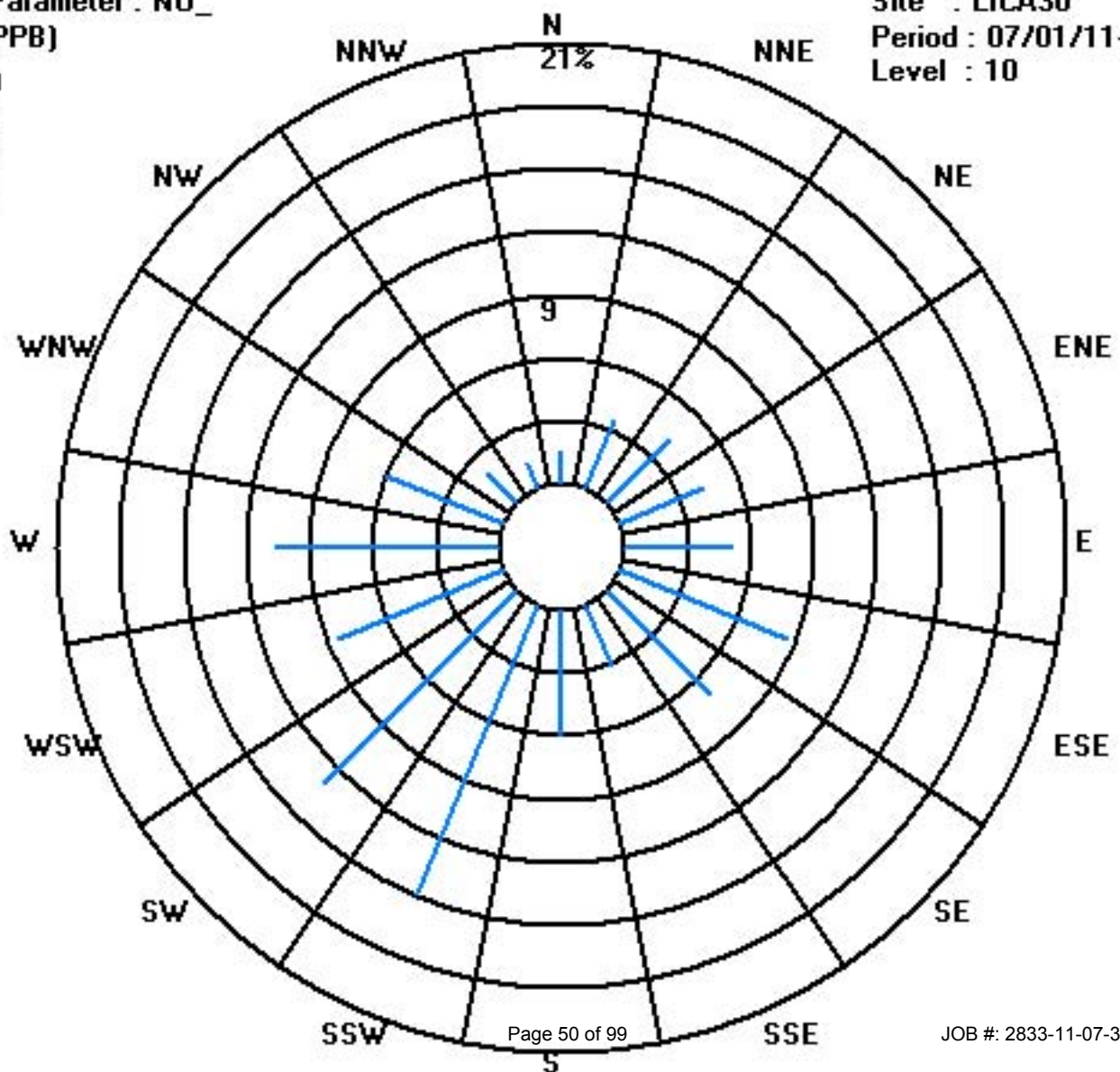
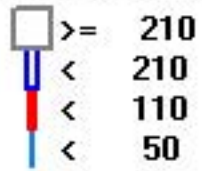
Calm : .00 %

Total # Operational Hours : 700

Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2011

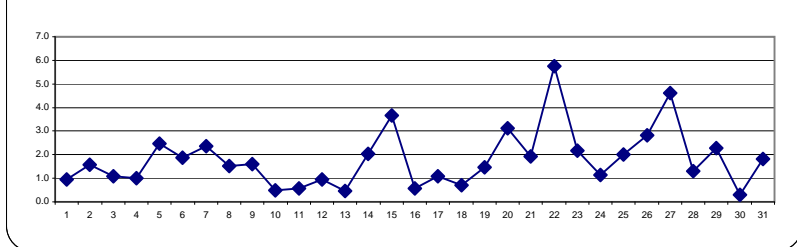
OXIDES OF NITROGEN hourly averages in ppb

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	0	0	1	0	1	IZS	11	2	4	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	11	1.0	24	
2	1	1	4	8	IZS	5	3	3	3	2	3	1	0	0	0	0	0	0	0	0	0	0	1	1	0	8	1.6	24
3	0	0	0	IZS	0	0	1	1	0	0	1	1	2	2	0	0	5	3	1	6	2	0	0	0	0	6	1.1	24
4	0	0	IZS	1	1	1	2	1	1	1	1	0	0	1	1	1	0	0	0	0	0	2	4	3	2	4	1.0	24
5	2	IZS	2	2	8	8	5	5	4	4	2	2	1	1	1	1	1	1	1	0	1	1	1	3	8	2.5	24	
6	IZS	5	1	5	6	5	3	6	5	2	2	0	0	1	0	0	0	0	0	0	0	0	0	0	IZS	6	1.9	24
7	1	1	1	2	2	4	6	2	4	4	3	4	2	1	2	5	1	3	1	1	2	2	IZS	0	6	2.3	24	
8	1	0	0	0	0	3	11	5	4	3	1	0	0	0	0	0	0	0	1	3	0	IZS	2	1	11	1.5	24	
9	1	1	1	2	2	1	1	1	2	1	1	1	0	0	0	1	2	1	4	8	IZS	1	2	3	8	1.6	24	
10	2	3	2	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	0	IZS	0	0	0	0	3	0.5	24
11	0	0	0	0	0	0	0	2	2	3	2	1	0	0	0	0	0	0	IZS	0	1	1	0	0	1	3	0.6	24
12	1	1	1	1	1	1	3	5	1	C	C	M	M	0	0	C	0	IZS	1	0	0	1	0	0	5	0.9	22	
13	1	0	0	0	0	0	0	0	0	0	C	C	C	C	C	C	C	1	1	1	1	1	1	1	1	0.5	24	
14	1	1	1	1	1	1	2	6	3	4	4	3	3	1	4	IZS	2	1	1	2	1	2	1	1	6	2.0	24	
15	4	3	7	15	13	5	9	2	5	6	2	2	2	1	IZS	0	0	0	0	2	3	1	1	1	1	15	3.7	24
16	0	0	0	2	2	2	2	2	1	1	0	0	0	IZS	0	0	1	0	0	0	0	0	0	0	0	2	0.6	24
17	0	0	2	1	2	3	1	1	2	6	3	1	IZS	0	0	0	0	0	0	0	0	1	2	0	0	6	1.1	24
18	0	0	0	0	0	0	2	1	6	1	0	IZS	2	0	0	0	0	0	0	0	0	1	1	0	2	6	0.7	24
19	3	3	2	1	2	10	4	6	1	0	IZS	0	0	0	0	0	0	0	0	0	0	1	1	0	10	1.5	24	
20	1	0	0	0	2	0	0	1	6	IZS	11	7	4	2	1	0	0	1	5	0	4	13	14	0	14	3.1	24	
21	1	0	5	0	5	5	0	9	IZS	4	2	2	3	1	0	0	1	2	1	1	1	0	0	1	9	1.9	24	
22	4	3	0	0	2	1	2	IZS	4	4	3	2	4	6	11	12	10	6	15	9	7	8	9	10	15	5.7	24	
23	8	10	4	6	11	5	IZS	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	2	11	2.2	24	
24	1	1	3	5	7	IZS	2	1	0	0	1	0	0	0	0	0	0	0	1	1	1	0	1	1	7	1.1	24	
25	1	1	1	1	IZS	4	5	6	5	3	2	3	2	1	2	1	1	1	1	1	1	1	1	1	6	2.0	24	
26	1	7	6	IZS	0	1	0	1	1	1	1	2	2	0	0	2	2	2	1	1	1	2	12	19	19	2.8	24	
27	7	2	IZS	17	20	14	5	2	4	3	0	1	0	0	1	0	4	2	0	0	0	2	13	9	20	4.6	24	
28	12	IZS	0	3	0	0	0	3	8	0	0	0	0	0	0	0	0	0	0	0	1	1	2	12	12	1.3	24	
29	IZS	2	1	1	1	4	7	1	2	1	0	2	3	2	0	0	10	9	0	1	1	2	0	IZS	10	2.3	24	
30	0	0	1	0	0	1	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	IZS	1	1	0.3	24
31	0	0	0	0	5	5	8	2	2	2	2	0	0	0	0	0	1	1	0	1	4	IZS	1	8	8	1.8	24	
HOURLY MAX	12	10	7	17	20	14	11	9	8	6	11	7	4	6	11	12	10	9	15	9	7	13	14	19				
HOURLY AVG	1.9	1.6	1.6	2.6	3.2	3.1	3.2	2.6	2.7	2.0	1.7	1.3	1.1	0.7	0.8	0.9	1.4	1.2	1.2	1.3	1.2	1.7	2.3	2.4				

STATUS FLAG CODES

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

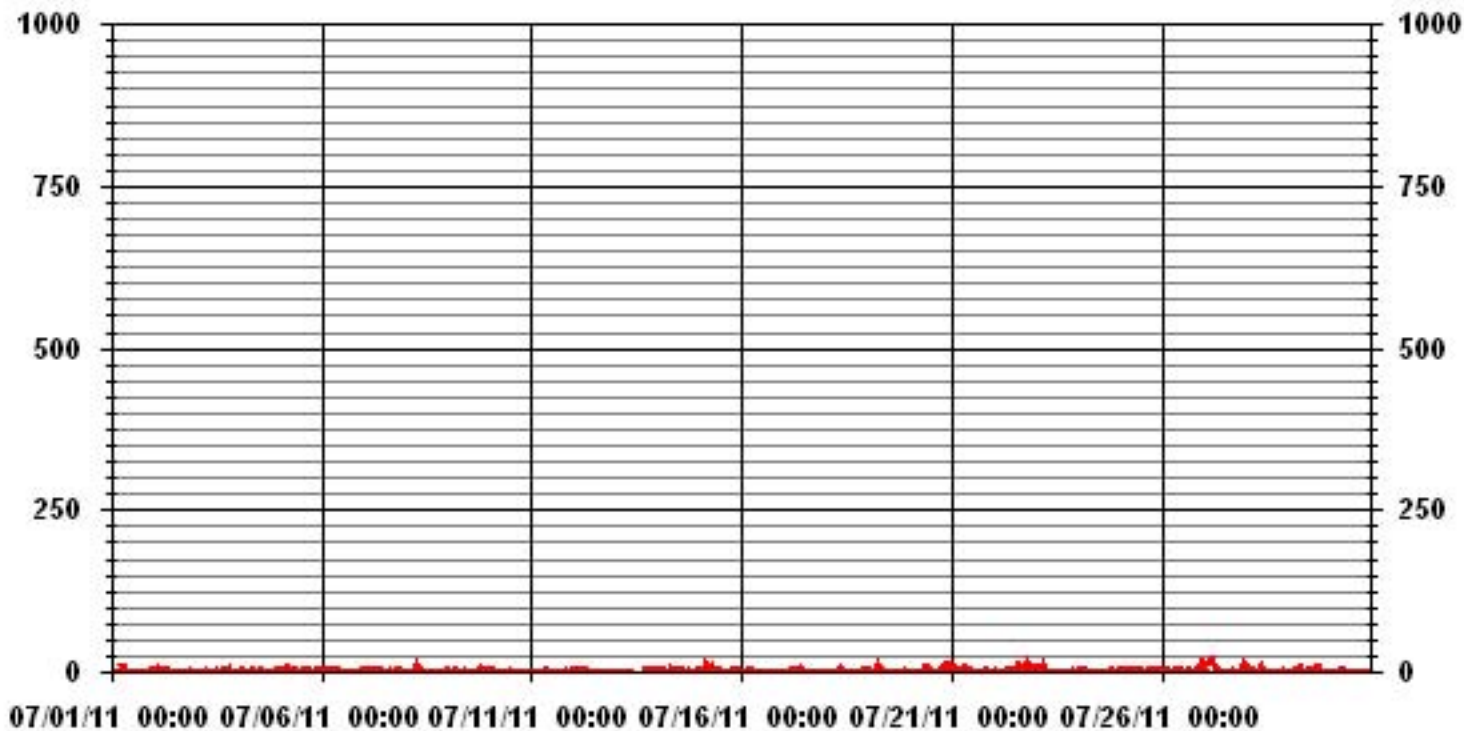
24 HOUR AVERAGES FOR JULY 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	425					
MAXIMUM 1-HR AVERAGE:	20	PPB	@ HOUR(S)	4	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	5.7	PPB			ON DAY(S)	22
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	10	HRS	AMD OPERATION UPTIME:	99.7	%	
STANDARD DEVIATION:	2.81		MONTHLY AVERAGE:	1.81	PPB	

01 Hour Averages



— LICA30 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2011

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1		2	1	1	1	3	IZS	21	4	10	8	1	0	0	0	0	1	0	0	0	0	0	0	2	2	21	2.5	24
2		2	3	5	11	IZS	8	8	4	3	3	4	3	1	1	1	1	1	0	1	1	2	1	1	11	2.9	24	
3		1	1	1	IZS	1	1	2	1	1	1	4	3	9	7	6	1	10	14	2	13	5	1	1	1	14	3.8	24
4		0	0	IZS	2	2	2	28	3	2	1	3	1	1	2	3	2	2	1	1	1	7	7	4	3	28	3.4	24
5		2	IZS	3	4	12	9	8	8	7	5	4	3	3	5	3	3	2	2	1	1	1	2	2	5	12	4.1	24
6		IZS	7	3	8	9	9	4	11	10	7	12	1	5	5	2	3	4	0	0	0	0	0	1	IZS	12	4.6	24
7		2	2	2	3	3	9	8	5	8	8	6	9	6	3	5	9	8	7	3	4	4	5	IZS	2	9	5.3	24
8		2	2	0	1	1	11	15	16	10	8	2	1	2	1	3	1	0	1	3	7	1	IZS	3	1	16	4.0	24
9		1	2	2	3	3	2	2	2	3	2	2	1	1	1	1	3	4	3	7	17	IZS	1	4	4	17	3.1	24
10		5	8	4	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	8	1.5	24
11		0	0	0	0	0	1	1	8	8	8	3	3	2	2	0	0	4	2	IZS	2	2	1	1	2	8	2.2	24
12		2	2	2	2	1	2	9	12	C	C	C	M	M	1	C	C	1	IZS	4	1	1	1	1	1	12	2.7	22
13		1	1	1	1	1	1	0	1	1	1	C	C	C	C	C	C	C	2	2	2	2	2	2	2	2	1.4	24
14		2	1	2	2	2	1	8	11	9	6	8	9	9	2	26	IZS	2	2	2	2	2	4	3	2	26	5.1	24
15		6	4	15	19	18	9	20	4	9	11	3	3	4	3	IZS	1	3	1	1	3	5	1	1	1	20	6.3	24
16		1	1	0	4	3	3	3	2	2	2	1	1	1	IZS	1	1	5	1	1	0	0	0	1	0	5	1.6	24
17		0	2	3	3	3	9	2	3	8	14	8	5	IZS	1	1	1	1	1	0	1	3	4	1	1	14	3.3	24
18		1	1	1	1	1	1	8	4	27	4	1	IZS	7	1	1	1	1	1	3	1	2	3	1	7	27	3.4	24
19		6	7	6	6	6	27	16	12	3	2	IZS	11	2	1	1	1	1	1	2	2	1	3	1	1	27	5.2	24
20		2	1	1	1	11	0	2	2	20	IZS	25	11	10	10	4	1	1	15	15	6	17	22	27	1	27	8.9	24
21		4	3	16	2	15	16	1	26	IZS	13	4	6	7	5	1	0	6	6	7	2	1	1	4	5	26	6.6	24
22		8	11	0	2	6	5	6	IZS	11	11	9	6	14	13	17	17	17	8	22	17	19	17	17	19	22	11.8	24
23		16	18	14	17	19	12	IZS	3	1	1	1	1	1	1	1	1	1	1	1	4	1	1	1	2	19	5.2	24
24		2	2	5	5	11	IZS	4	4	1	4	6	1	1	2	1	1	1	1	2	4	2	1	3	3	11	2.9	24
25		2	2	2	2	IZS	5	6	23	10	4	4	15	4	2	4	2	3	1	1	2	1	2	2	2	23	4.4	24
26		2	28	32	IZS	2	2	2	3	3	2	6	44	5	1	2	6	7	4	3	4	3	4	19	28	44	9.2	24
27		24	11	IZS	38	30	29	21	4	8	9	2	5	1	1	4	3	13	7	1	1	1	10	24	20	38	11.6	24
28		36	IZS	2	9	1	2	2	10	17	2	1	1	1	1	2	1	0	0	0	0	2	1	3	3	36	4.2	24
29		IZS	4	2	2	1	62	18	3	9	6	1	9	10	8	3	1	25	21	2	3	2	4	2	IZS	62	9.0	24
30		1	1	4	1	1	2	2	2	2	1	1	1	2	1	3	1	1	1	0	1	1	1	IZS	3	4	1.5	24
31		1	1	1	1	12	13	14	3	6	6	5	1	1	2	1	1	1	1	1	1	18	IZS	3	28	28	5.3	24
HOURLY MAX	36	28	32	38	30	62	28	26	27	14	25	44	14	13	26	17	25	21	22	17	19	22	27	28				
HOURLY AVG	4.6	4.4	4.5	5.2	6.2	8.8	8.1	6.6	7.2	5.2	4.6	5.6	4.0	2.9	3.5	2.3	4.2	3.6	2.9	3.4	3.5	3.5	4.7	5.2				

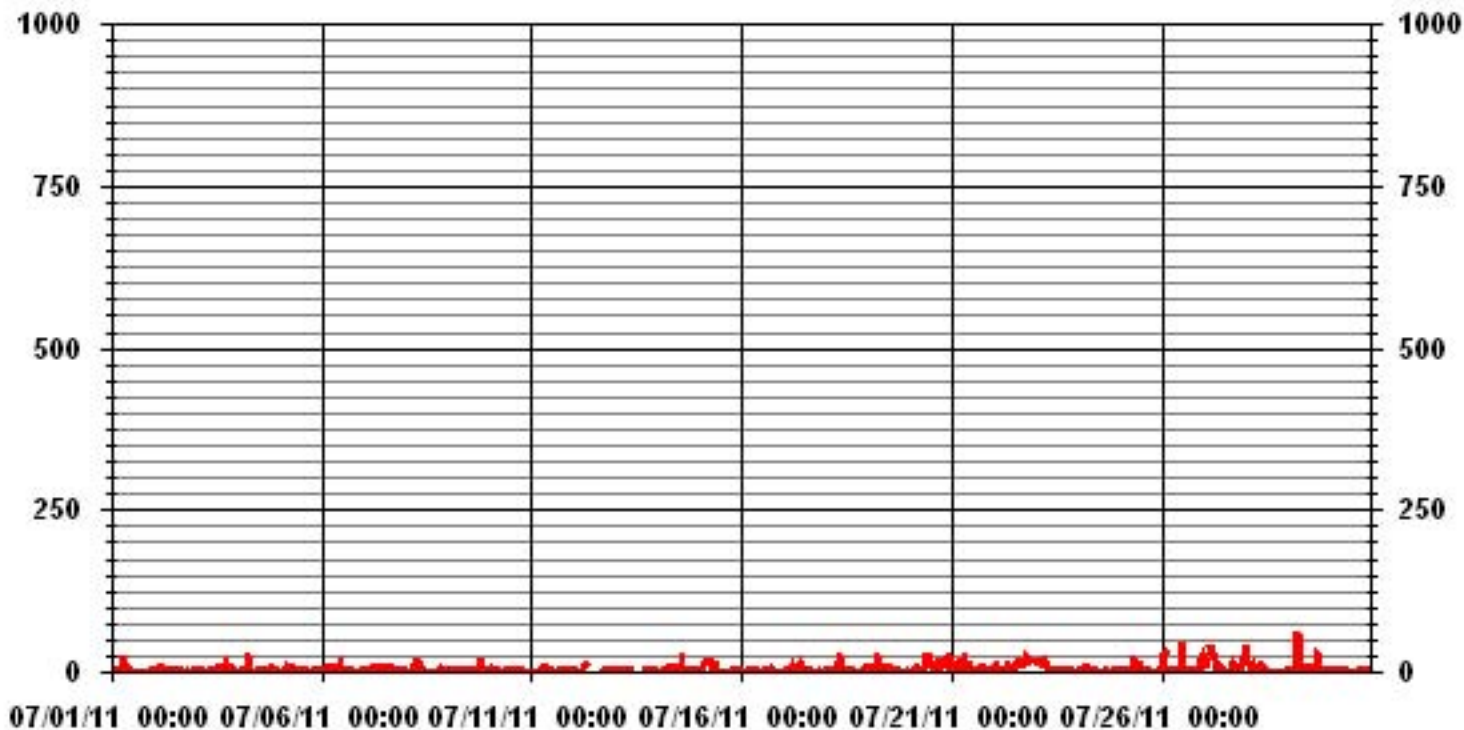
STATUS FLAG CODES

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:	651					
MAXIMUM INSTANTANEOUS VALUE:	62	PPB	@ HOUR(S)	5	ON DAY(S)	29
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	742	HRS	
MONTHLY CALIBRATION TIME:	12	HRS				
STANDARD DEVIATION	6.52					

01 Hour Averages



— LICA30 NOXMAX PPB

LICA30
 NOX_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	1.57	3.57	4.28	4.28	5.14	8.57	7.00	3.14	6.00	15.00	13.00	8.57	10.57	6.00	2.00	1.28	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.57	3.57	4.28	4.28	5.14	8.57	7.00	3.14	6.00	15.00	13.00	8.57	10.57	6.00	2.00	1.28	

Calm : .00 %

Total # Operational Hours : 700

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	11	25	30	30	36	60	49	22	42	105	91	60	74	42	14	9	700
< 110																	
< 210																	
>= 210																	
Totals	11	25	30	30	36	60	49	22	42	105	91	60	74	42	14	9	

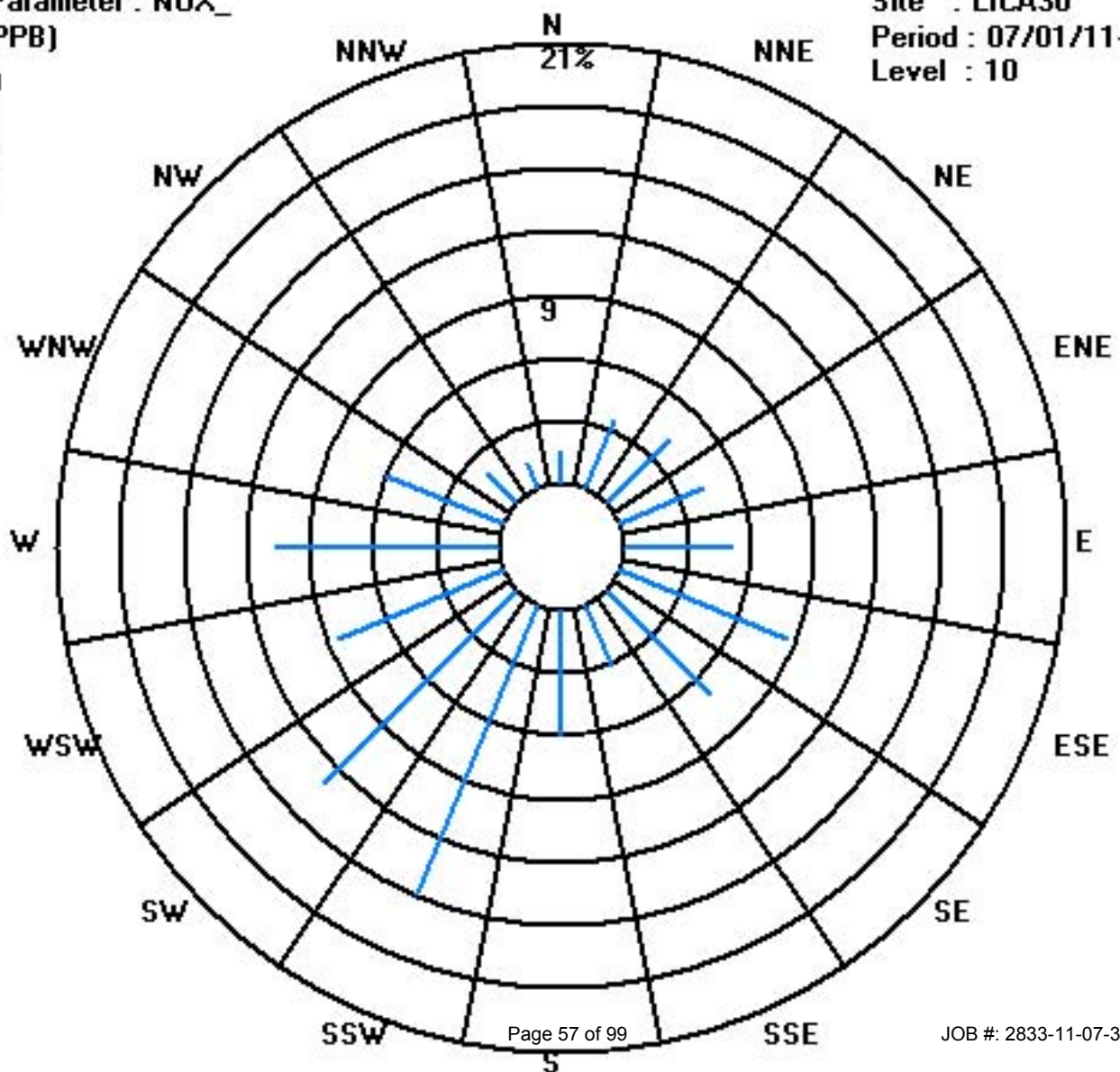
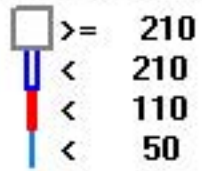
Calm : .00 %

Total # Operational Hours : 700

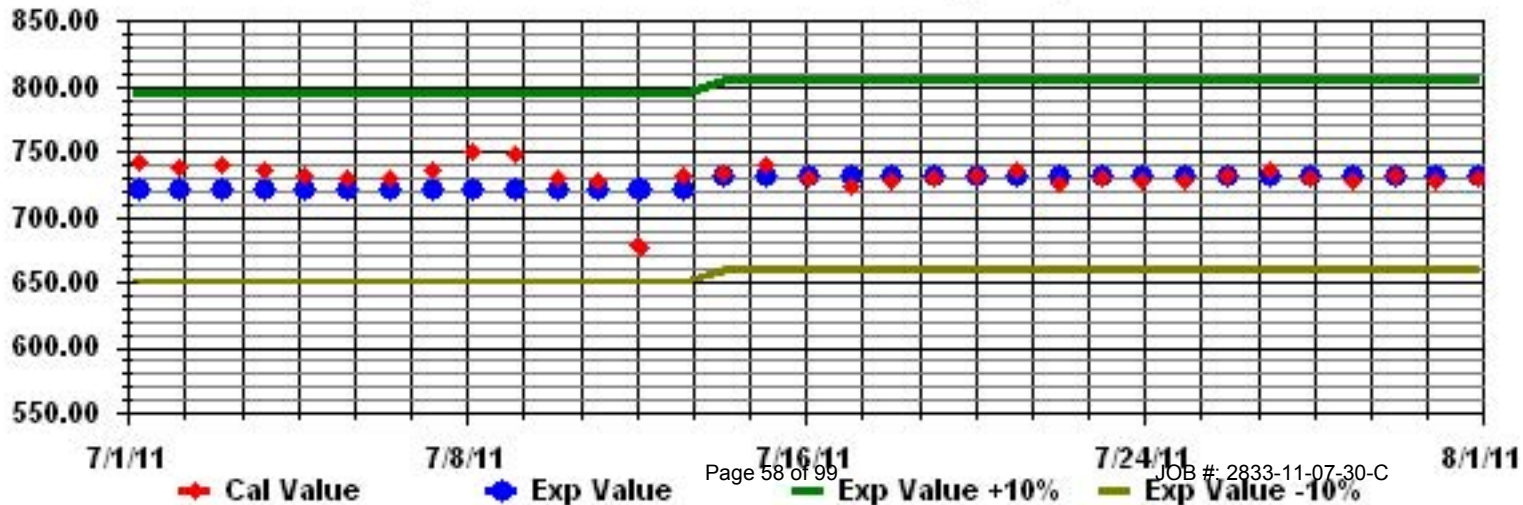
Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



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



Temperature

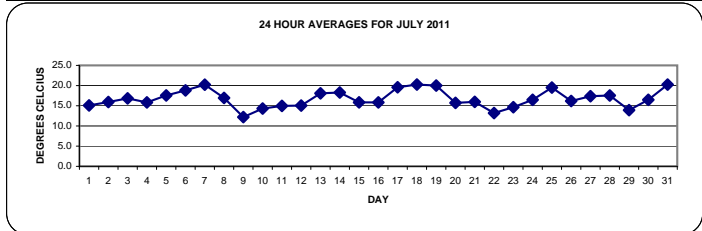
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA
JULY 2011

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	
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		11.5	10.4	9.6	8.9	7.7	10.6	13.7	14.6	16.7	17.8	18.8	18.6	19	19.3	19.3	19.6	20	19.6	18.8	17.5	15.1	12.9	11.3	10.7	20.0	15.1	24
2		8.6	8.3	7.5	7.3	7.7	10.3	12.7	15.2	16.9	19.1	20.2	21.6	22.6	22.7	22.6	22.3	22.6	23	22.3	20.9	15.7	12.2	10.5	9.6	23.0	15.9	24
3		8.5	8.2	8.1	7.1	7.6	11.1	16.9	20.1	21.6	22.8	23.8	25.3	25.8	26.7	27	26.2	22.1	16.2	13.9	13.9	13.6	13	12.2	12.3	27.0	16.8	24
4		11.8	11.3	10.7	10.1	10	11.6	13.3	14.8	16.1	17.4	18.2	19.3	20.1	20.6	21.2	21.1	21.1	21	20.2	18.5	15.7	13	11.7	11.3	21.2	15.8	24
5		9	8.7	7.9	8.4	9.6	11	13.5	16.9	19	20.6	22.2	23.3	23.9	22.9	23.2	24.3	24.4	24.6	24.3	22.3	18	15.7	14.6	13	24.6	17.6	24
6		12.5	11.7	10.6	9.9	10.3	13.9	16.7	19.1	21.2	22.9	23.1	24.1	25	25.3	25.7	25.7	26.1	25.2	24.7	19.8	17.5	14.7	13.3	12.4	26.1	18.8	24
7		12.1	12.8	13.4	14.9	14.7	14.3	17.9	18.3	21	21.8	23.1	22.6	24.2	25.8	26.3	26	25.5	25.4	22.9	20.7	19.7	18.9	18.4	26.3	20.2	24	
8		17.9	17.3	16.6	16.1	15.8	16.8	15.9	16	17.6	20.4	18.2	20.3	21.7	21.4	21.5	21.8	22.2	18.7	12.7	14.1	12	10.8	10.8	10.1	22.2	16.9	24
9		9.9	7.9	6.6	5.8	6.3	7.5	9.5	10.7	12	13.2	13.9	12.8	14.3	16.7	16.8	17.3	16.2	15	14.1	14	13.4	13	12.9	13	17.3	12.2	24
10		13.3	13.6	13.7	13.7	13.9	14.1	14.3	14.8	15.3	15.7	16.7	17.2	17.4	15.3	16.1	15.3	15.2	15.3	16.2	15.5	12.7	10.5	9.2	8.5	17.4	14.3	24
11		7.8	7	6.5	5.7	5.7	8.7	13.1	17	18.5	19.6	19.9	20.7	21.1	21.3	21.4	21.4	21.8	20.5	20.2	18.1	13.7	11.2	9.9	8.3	21.8	15.0	24
12		7.8	7.2	7.5	6.9	7.7	10.6	14.1	17	17.9	19.2	19.8	18.6	19.4	19.3	19	18.8	18.4	17.9	17.8	16.4	15.8	14.9	14.4	14.7	19.8	15.0	24
13		14.7	14.5	14.3	14.3	14.2	14.2	14.8	16.5	17.5	18.5	20	19.5	20.7	22.5	23.5	22.7	23.1	22.8	22	20.4	17.6	16.7	14.8	14.1	23.5	18.1	24
14		13.6	13.9	14.1	14	13.7	14.6	18.1	21.4	20.9	21.2	20.6	21.4	21.7	20.5	19.8	19.3	19.3	20.4	21.8	20	18.6	17	16.6	16.2	21.8	18.3	24
15		15.7	14.8	14.1	13.4	12.7	14	15.6	14.7	14.2	14	14	17.5	19.6	20.9	19.1	19.8	18.9	18.5	18	16.9	15.2	14	12.6	12.2	20.9	15.9	24
16		12.4	12	12.4	11.7	10.8	12.8	15.2	16.4	16	16.1	17.5	18.6	18.8	19	19.8	20.3	20.3	19.3	20.4	18.7	15.3	13	12	11.3	20.4	15.8	24
17		10.7	10	9.3	9.5	9.2	11.4	15.2	19.2	20.7	23.3	23.8	24.7	25.2	26.3	26.7	26.9	26.9	26.5	25.7	22.9	20	17.9	18.6	19.2	26.9	19.6	24
18		18	15.8	14.1	13.5	13.2	15.7	16.7	16.5	16.2	16.5	20.5	23.6	25.2	26.4	27.5	27.9	28.5	26.2	24.2	21.8	21.4	20.2	19.1	17.6	28.5	20.3	24
19		15.7	15.5	15.5	15.1	14.4	15.9	17.8	20.2	21.8	22.8	23.5	23.9	24.4	25.2	25.1	25.3	25.1	23.5	22	19.3	17.8	17.6	17.3	15.6	25.3	20.0	24
20		14.7	14.1	14.3	14.1	14	13.5	13.3	13.3	13.4	13.5	14.5	15.5	17.5	19.7	19.8	20.3	20.8	19.5	17.4	16.7	15.3	14.6	14.1	13.4	20.8	15.7	24
21		12.6	11.4	11	10.6	10.3	10.7	12	14.4	17	18.7	19.2	20.7	21.1	21.3	20.7	19.7	21.5	19.8	19.8	18	14.3	12.5	12.5	13.5	21.5	16.0	24
22		14.4	14	13.6	13.4	12.9	12.8	13.1	13.5	13.9	14.4	14.6	13.8	14.2	14.1	13.8	13.6	13.5	12.5	12.1	11.9	11.7	11.7	11.6	11.5	14.6	13.2	24
23		11.4	11.3	11.4	11.3	11.3	11.5	11.6	12.3	13.5	14	14.8	16.3	17.1	18.4	18.9	20.2	19.9	19.4	18.2	16.8	15.1	13	11.7	12.1	20.2	14.6	24
24		10.7	10.6	10.3	10.6	10.8	10.8	11.6	12.9	14.9	17.6	18.7	20.3	21	21.6	22.3	22.3	22.7	22.1	22.2	20.1	17.1	16.2	15.1	13	22.7	16.5	24
25		12	11.2	12.7	13.2	13	14.2	16	19.6	20.7	21.4	23.6	24.6	25.9	26.3	26.2	26.8	26.7	26.3	25.3	20.5	17.5	15.8	14.5	14.1	26.8	19.5	24
26		13.8	15.1	17.1	14.4	12.8	14.3	16.6	20.1	21.2	21	19.9	17	16.4	16.2	16.2	15.6	15.4	15.4	15.3	15	14.5	14.7	15.3	15.1	21.2	16.2	24
27		14.3	14	13.9	13.9	13.7	13.7	14.3	15.5	16.8	18.3	20.8	21.5	22.3	22.4	22.4	21	20.2	20.1	18.7	17	15.6	15.6	15.7	15	22.4	17.4	24
28		15	14.2	14.1	14.2	13.9	14	15.8	17.4	19.5	20.7	21.4	22	22	21.8	20.4	19.8	20.2	20.1	20.5	17.8	14.3	13.4	14.4	14.3	22.0	17.6	24
29		12.1	11.8	11.4	10.2	9.5	11.2	12.4	12.7	12.7	14	15	15.7	18.9	19.5	19.5	18.2	13.4	15.9	16.3	14.7	13	12.9	11.9	11.2	19.5	13.9	24
30		10.3	9.8	9.3	8.7	8.3	9.1	11.4	14.1	16.5	18.1	20.1	20.7	21.6	22.7	23.2	23.5	23.6	23	22.7	19	15.5	13.8	15.1	15.4	23.6	16.5	24
31		15.3	15.2	15.1	14.8	13.9	13.5	16.2	18.4	19.9	21.4	22.6	23.8	24.9	25.7	26.1	26.5	26.5	26	25	21.9	20.2	20.3	17.7	15.1	26.5	20.3	24
HOURLY MAX		18.0	17.3	17.1	16.1	15.8	16.8	18.1	21.4	21.8	23.3	23.8	25.3	25.9	26.7	27.5	27.9	28.5	26.5	25.7	22.9	21.4	20.3	19.1	19.2			
HOURLY AVG		12.5	12.1	11.8	11.5	11.3	12.5	14.5	16.2	17.5	18.6	19.5	20.2	21.1	21.5	21.6	21.6	21.4	20.6	19.9	18.2	15.9	14.6	13.9	13.3			

STATUS FLAG CODES

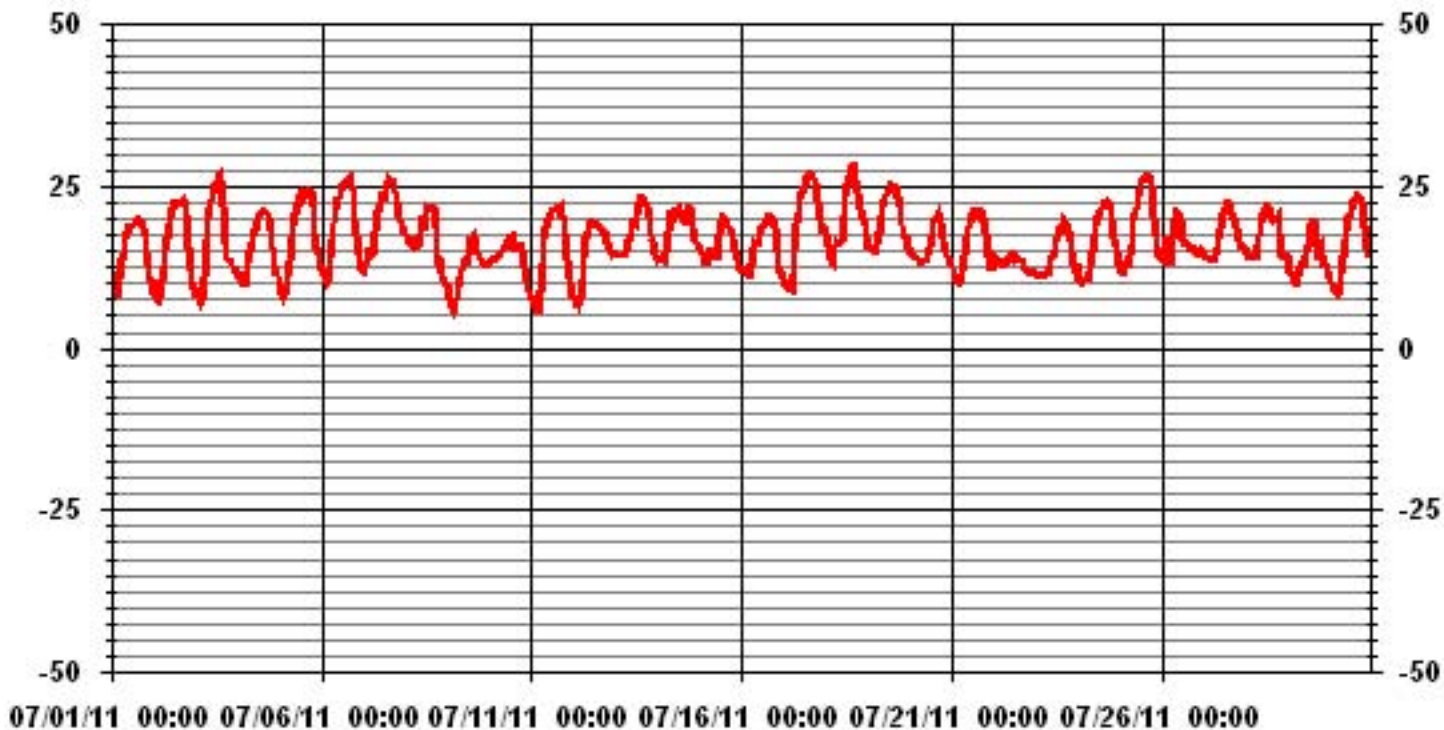
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	5.7 °C	@ HOUR(S)	3, 4	ON DAY(S)	11
MAXIMUM 1-HR AVERAGE:	28.5 °C	@ HOUR(S)	16	ON DAY(S)	18
MAXIMUM 24-HR AVERAGE:	20.3 °C			ON DAY(S)	18
CALIBRATION TIME:	0	HRS		OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION:	4.79			AMD OPERATION UPTIME:	100.0 %
				MONTHLY AVERAGE:	16.74 °C

01 Hour Averages



Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 2011

PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	23:00	DAILY MAX.	DAILY TOTAL	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				
1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28.2	1.4	0.1	0	0	0	0.1	28.2	29.8	24	
4	4	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
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	0	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	0	0	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	0.4	0.4	0.2	0	0	0	0	0	0	0	0	0	2.4	0.8	0	0	0	0	0	0	2.4	4.2	24
9	9	0	0	0	0	0	0	0	0	0	0	0	1.3	0.3	0	0	0	0.6	0	0	0	0	0.2	0.1	0	1.3	2.5	24	
10	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	11	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	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	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
14	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.5	0	0	0	0	0	0	0	0	0.5	0.7	24	
15	15	0	0	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.2	24	
16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0.1	0.1	24	
17	17	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	
18	18	0	0	0	0	0	0	0	0.2	24.6	1.2	0	0	0	0	0	0	0	0	0	0.2	1.4	0.1	0	0	24.6	27.7	24	
19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	1.1	1.1	1.3	24		
20	20	0.5	0.1	0.6	5.4	6.9	1.1	2.2	0.5	0.6	0.2	0.1	0	0	0	0	0	0	0	0.1	0	0	0	0	0	6.9	18.3	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	0.2	2.6	3.3	3.6	1.1	0.1	1.2	3.2	3.6	15.3	24		
23	23	1.9	0.9	0.3	0.1	0	0	3.4	0.5	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.4	7.3	24	
24	24	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
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	0.1	5	3.3	0.7	0.1	1.1	1.2	1.3	0.1	0	0	0.1	0.1	0	5.0	13.1	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	0.1	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	
29	29	0	0	0	0	0	0.1	0.7	0.6	0	0.4	0	0	0	0	1.5	0.5	0	0	0	0	0	0	0	0	1.5	3.8	24	
30	30	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	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	2.1	2.1	24		
HOURLY MAX		1.9	0.9	0.6	5.4	6.9	1.1	3.4	0.6	24.6	1.2	0.1	5.0	3.3	0.7	0.1	1.5	1.2	28.2	3.3	3.6	1.4	0.2	1.2	3.2				

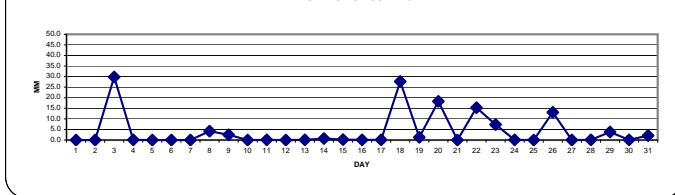
STATUS FLAG CODES

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

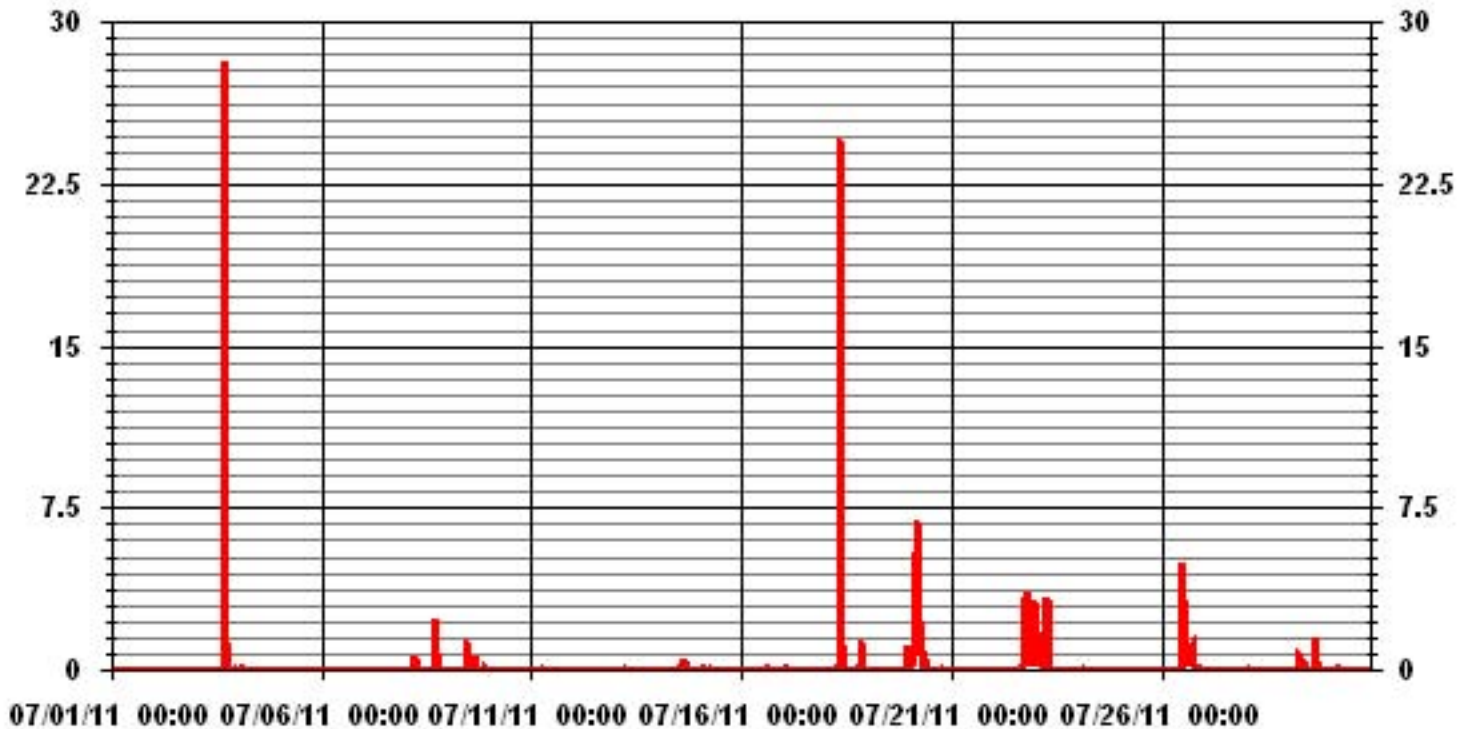
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	28.2	MM	HOUR(S)	17	ON DAY(S)	3
MAXIMUM DAILY TOTAL	29.8	MM	ON DAY(S)		3	
MONTHLY TOTAL	127.1	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	1.46		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.17	MM	

DAILY TOTALS FOR JULY 2011



01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

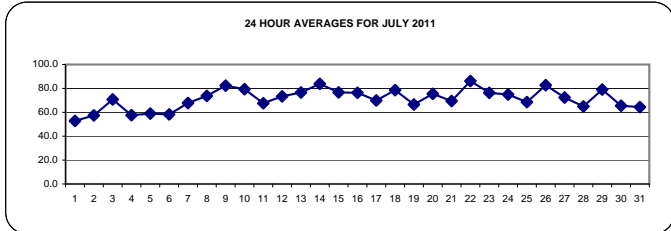
JULY 2011

RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																												
1		60	68	75	81	88	76	61	57	49	44	42	39	38	39	36	32	33	35	39	48	57	64	67	88	52.8	24	
2		76	74	78	82	83	73	64	60	57	46	43	39	31	31	34	37	38	36	38	44	65	78	83	88	88	57.4	24
3		91	92	92	92	92	89	70	56	51	48	49	44	40	39	37	39	49	79	91	91	91	92	92	92	92	70.8	24
4		91	89	89	87	85	77	70	65	58	54	46	40	36	32	33	34	33	33	35	41	51	64	68	71	91	57.6	24
5		80	80	85	83	81	78	69	60	56	53	47	41	40	40	41	40	40	39	37	42	60	69	74	80	85	59.0	24
6		79	83	86	88	87	75	67	56	46	42	37	34	33	34	33	33	33	36	37	57	69	79	84	90	90	58.3	24
7		90	88	86	81	85	86	72	70	63	59	56	59	57	52	52	53	53	55	59	63	69	71	73	75	90	67.8	24
8		77	79	80	83	84	82	87	88	84	75	73	59	50	52	49	47	44	58	86	82	87	88	89	86	89	73.7	24
9		84	89	91	92	92	92	91	85	81	73	71	80	76	66	65	62	74	83	83	85	88	90	91	92	92	82.3	24
10		91	91	90	87	85	82	79	77	77	77	71	67	66	76	70	72	72	70	73	84	91	92	92	92	92	79.3	24
11		92	92	93	92	92	93	86	69	60	51	49	45	44	43	44	43	42	47	48	56	74	85	91	91	93	67.6	24
12		92	92	93	92	93	92	83	69	63	59	57	57	55	55	59	62	64	65	66	74	75	80	82	82	93	73.4	24
13		82	81	81	82	84	87	83	79	78	75	71	72	68	63	62	65	64	64	67	73	84	88	92	93	93	76.6	24
14		93	93	93	93	93	93	84	74	76	76	79	78	78	84	86	87	84	76	70	74	78	87	90	92	93	83.8	24
15		92	93	93	93	93	92	86	87	89	83	79	63	60	57	61	56	59	58	62	66	72	77	83	86	93	76.7	24
16		84	84	82	85	89	82	75	71	72	73	69	66	65	67	64	65	67	71	67	74	84	91	92	93	93	76.3	24
17		93	93	93	93	93	93	84	73	67	59	57	51	53	50	50	51	51	54	56	65	72	77	76	74	93	69.9	24
18		79	87	92	93	93	91	89	90	91	90	76	67	64	60	58	55	55	64	73	85	86	84	80	83	93	78.5	24
19		90	91	91	91	90	82	74	65	61	57	50	48	47	43	42	41	42	50	57	68	75	76	78	88	91	66.5	24
20		89	91	91	91	91	90	90	89	87	84	83	79	72	62	61	57	53	54	61	68	69	64	66	69	91	75.5	24
21		73	78	78	77	78	78	77	71	64	60	59	54	53	52	55	58	56	63	63	68	82	88	90	91	91	69.4	24
22		88	87	87	88	89	89	88	87	86	84	81	84	80	80	80	80	81	88	90	90	91	90	90	90	91	86.2	24
23		91	91	91	91	91	91	91	90	87	81	75	66	63	60	58	55	54	53	59	65	71	80	88	89	91	76.3	24
24		91	92	92	92	91	92	91	87	79	69	67	61	57	55	54	54	54	57	59	69	80	81	83	90	92	74.9	24
25		92	92	91	88	88	85	79	67	66	63	56	54	49	45	43	40	39	41	49	71	80	85	90	92	92	68.5	24
26		92	87	67	78	86	80	74	66	62	61	72	87	90	86	86	90	91	91	90	90	91	92	89	86	92	82.7	24
27		87	86	85	83	82	83	82	78	75	71	62	59	59	57	55	59	62	64	66	73	78	78	75	78	87	72.4	24
28		77	81	81	80	81	80	74	66	58	53	48	46	45	46	50	51	52	54	54	65	79	82	77	78	82	64.9	24
29		86	89	90	92	92	92	89	88	88	84	80	78	64	59	59	64	72	70	67	74	83	81	79	77	92	79.0	24
30		81	83	85	88	90	88	81	74	67	60	53	49	43	41	39	40	41	43	49	67	77	82	76	75	90	65.5	24
31		74	71	68	70	74	78	68	61	58	57	57	56	56	56	55	54	53	56	60	73	74	65	68	83	83	64.4	24
HOURLY MAX		93	93	93	93	93	93	91	90	91	90	83	87	90	86	86	90	91	91	91	91	91	91	92	92	93		
HOURLY AVG		85.1	86.0	86.1	86.7	87.6	85.2	79.3	73.4	69.5	65.2	61.8	58.8	55.9	54.3	54.0	54.2	55.0	58.3	61.4	68.5	76.4	80.4	82.1	84.3			

STATUS FLAG CODES

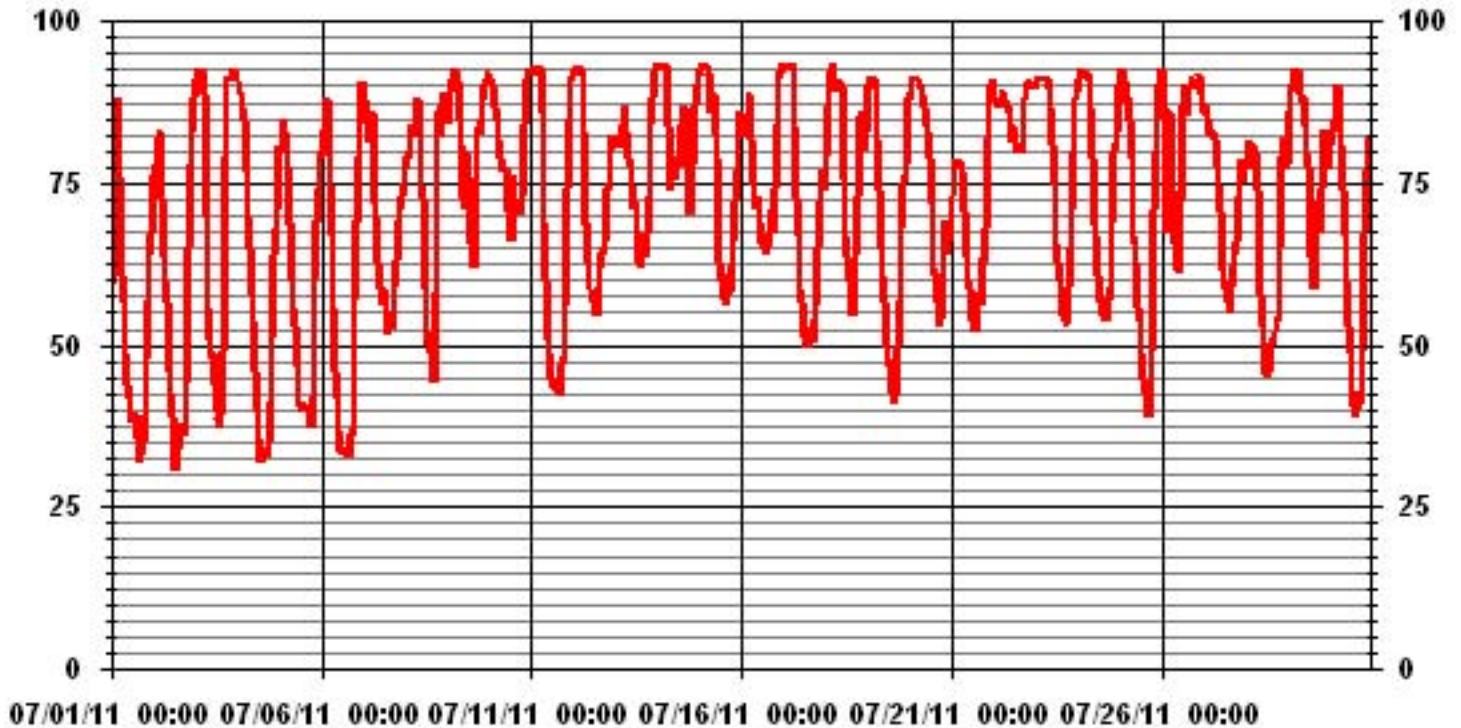
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	93	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	86.2	%			ON DAY(S)	22
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
			AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	17.01		MONTHLY AVERAGE:	71.22	%	

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

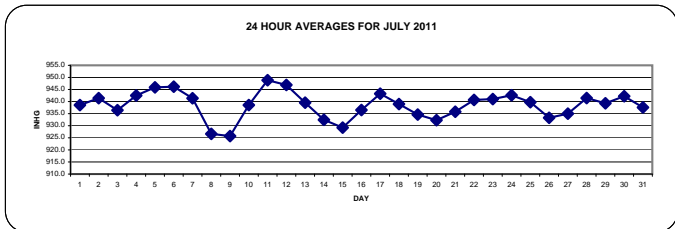
JULY 2011

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		
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	935	935	935	935	936	937	938	938	939	939	939	939	939	940	940	940	940	940	940	940	940	940	940	940	941	941	938.5	24	
2	941	941	941	941	942	942	943	943	943	943	943	943	943	942	942	942	942	941	941	941	941	940	940	939	939	939	943	941.4	24
3	939	939	938	938	938	938	939	939	939	938	938	938	937	936	935	935	934	932	933	933	934	935	936	936	936	936	939	936.4	24
4	937	938	938	939	939	941	942	943	943	944	944	944	944	944	944	944	944	944	944	944	944	944	944	944	945	945	949	942.5	24
5	945	945	945	945	945	946	947	947	947	947	947	947	947	947	947	946	946	946	945	946	945	945	945	945	945	947	945.9	24	
6	945	946	946	946	946	947	947	948	948	948	948	948	948	947	947	946	946	946	945	945	945	945	945	944	944	948	946.2	24	
7	944	944	944	944	944	944	944	944	944	944	944	943	943	942	942	941	940	939	939	938	937	936	935	934	944	941.4	24		
8	933	931	930	929	928	927	926	926	925	925	926	926	927	927	927	926	926	926	925	925	925	925	924	924	924	933	926.6	24	
9	923	921	921	922	922	923	923	924	924	925	925	926	926	927	927	928	928	928	928	929	929	929	929	929	929	929	929	925.7	24
10	929	930	930	931	932	933	934	935	936	937	938	939	940	941	942	943	943	944	944	944	945	945	945	945	945	945	945	938.5	24
11	946	946	946	947	947	948	949	950	950	951	950	950	950	950	950	950	950	950	949	949	949	949	948	948	951	948.8	24		
12	948	948	948	948	948	949	949	949	949	949	949	948	948	948	947	947	946	945	945	944	944	944	944	943	942	949	946.9	24	
13	942	942	941	941	940	940	940	941	940	940	940	940	940	940	940	940	939	938	938	938	938	938	937	936	942	939.5	24		
14	936	936	935	935	935	934	934	934	934	934	934	933	932	932	931	931	931	931	930	930	930	929	929	929	929	936	932.5	24	
15	928	928	928	928	927	928	928	927	928	929	929	929	929	929	930	930	930	930	930	931	931	931	931	931	932	932	929.2	24	
16	932	933	933	933	933	934	934	935	935	935	936	937	937	937	938	938	938	939	939	939	940	940	940	941	941	936.5	24		
17	941	941	941	941	942	942	943	944	944	945	945	945	945	944	944	944	944	944	944	943	943	943	943	943	945	943.3	24		
18	942	942	942	942	941	941	941	941	944	941	940	940	939	939	938	938	937	937	936	936	936	934	934	934	944	939.0	24		
19	933	933	934	934	935	935	936	936	936	936	936	936	936	936	935	935	935	934	934	934	934	933	933	934	934	936	934.6	24	
20	933	932	932	932	931	932	932	931	932	932	931	932	933	933	933	932	932	932	932	932	933	933	933	933	933	933	932.3	24	
21	933	932	933	933	933	933	934	935	935	935	936	936	936	937	937	937	937	938	938	938	938	938	938	939	939	935.8	24		
22	940	940	940	940	940	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	941	940	940	940	941	940.7	24	
23	940	940	940	940	939	939	940	940	940	940	941	942	942	942	942	942	942	942	942	942	942	942	942	942	942	942	941.0	24	
24	942	941	941	941	942	942	943	943	943	944	944	944	944	944	944	943	943	943	942	942	942	942	942	942	944	942.6	24		
25	941	941	941	941	941	941	941	941	942	942	942	941	941	940	940	939	939	938	938	938	937	937	936	936	942	939.8	24		
26	936	936	935	935	934	934	934	934	934	934	933	933	933	932	932	932	932	932	932	931	932	932	932	932	936	933.3	24		
27	932	931	931	932	933	933	933	934	934	935	935	935	935	935	936	936	936	936	937	937	937	937	938	938	939	939	935.0	24	
28	939	939	939	940	940	941	941	942	942	942	942	943	943	943	943	943	943	942	942	942	941	941	941	941	943	941.5	24		
29	941	940	940	939	939	939	940	939	939	939	939	939	940	940	939	939	938	939	939	939	939	939	939	940	941	939.3	24		
30	940	940	941	941	942	942	943	943	944	944	945	944	944	944	943	943	942	942	942	942	941	941	940	940	945	942.2	24		
31	940	939	939	938	938	938	938	938	938	938	937	937	937	937	937	937	937	937	937	937	937	936	937	937	938	940	937.6	24	
HOURLY MAX	948	948	948	948	948	949	949	950	950	951	950	950	950	950	950	950	950	949	949	949	949	949	948	948					
HOURLY AVG	938	938	938	938	938	938	939	939	939	939	939	939	939	939	939	939	939	939	939	938	938	938	938	938					

STATUS FLAG CODES

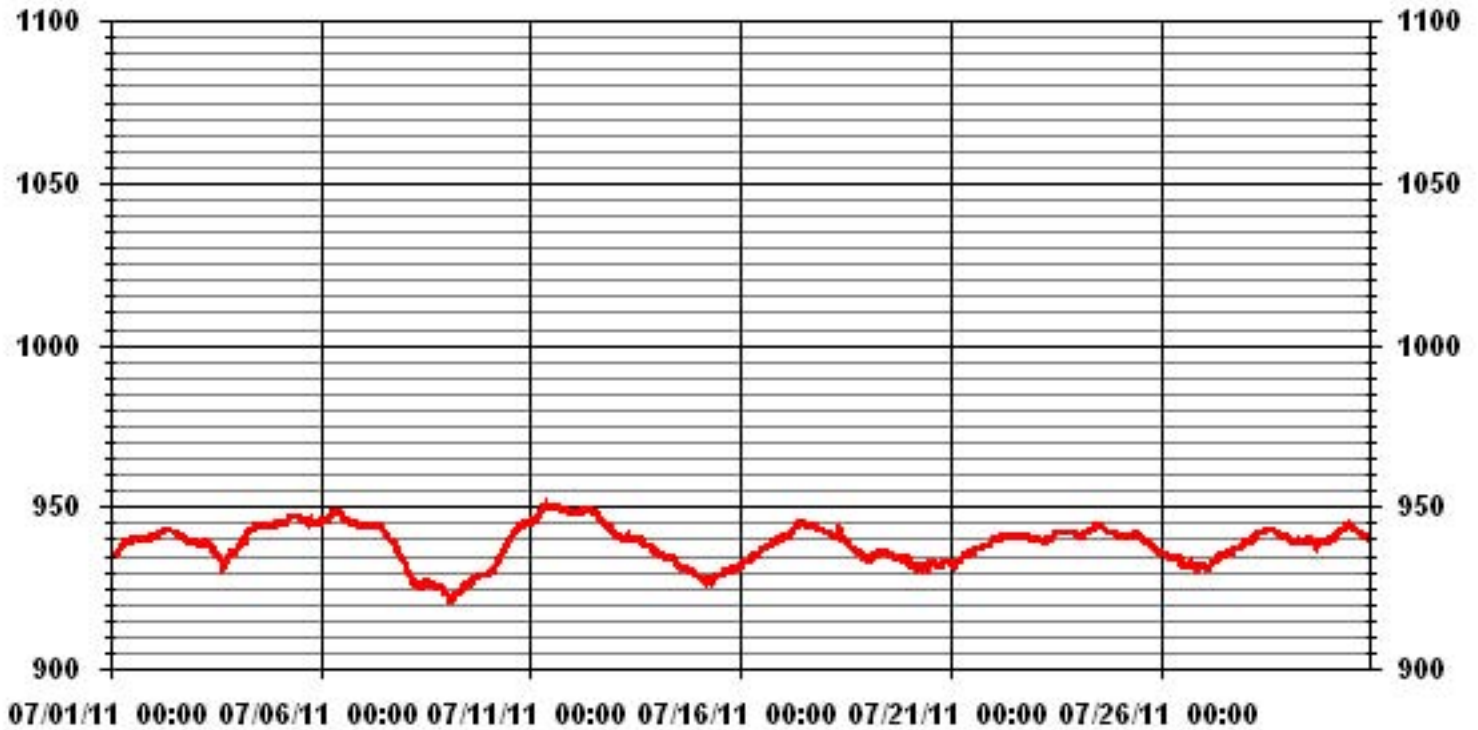
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	951 MB	@ HOUR(S)	9	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	948.8 MB			ON DAY(S)	11
				VAR-VARIOUS	
CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS		
		AMD OPERATION UPTIME:	100.0 %		
STANDARD DEVIATION:	5.86	MONTHLY AVERAGE:	939 MB		

01 Hour Averages



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 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		2.5	2.3	2	2.1	2.8	4	5.2	6.4	6.8	8	6.9	6.7	8.2	8.4	7	8.3	7.8	8.2	6.3	4.7	3.8	3.2	4.2	4.2	8.4	5.1	24	
2		3	4.7	5	5.6	6.7	4.7	5.4	6.6	7.2	6	7.1	7.6	8.4	7.7	8.7	6.2	6.6	5.9	5.2	1.8	3.2	2.8	1.9	0.6	8.7	5.2	24	
3		0.3	0.4	1.2	0.8	0.6	3.2	2.1	5.4	8.3	7.9	8.1	9	10.2	9.9	5.3	4.8	3.4	2.3	2.8	3.4	2.8	3.4	2.8	3.7	10.2	2.9	24	
4		3.3	4.2	3.8	4.1	5.1	3.8	4.3	5.5	6.3	6.2	8	8.7	9.2	9.8	7.8	8	6.7	6.6	5.4	3.4	4.1	4.4	3.8	2.7	9.8	5.3	24	
5		2.4	4.4	3.5	4.4	3	4.5	7.7	5.1	6.9	6.8	6.6	6	9.5	5.9	5.6	5.2	5.8	5.4	4.1	3	2.8	4	2.1	1.3	9.5	4.6	24	
6		1.5	2	1.8	1.9	2.7	4.7	2.9	4.4	6.4	6.4	8.1	6.8	5	4.3	4.4	3.9	3.2	4.6	3.2	3.1	2.6	1.5	1.3	1.1	8.1	2.9	24	
7		1.3	0.7	0.5	6.2	3.3	2.8	4.1	4.1	5.3	5	4.9	8.2	6.2	4.6	5.4	6.1	6.2	5.9	6.1	5.1	6.3	6.3	5.3	7.5	8.2	4.3	24	
8		7.4	6.5	6.6	6.9	8.3	7.8	6.4	6.9	9.2	9	12.4	14.5	14.4	11.3	11.1	8.8	7.3	6.1	1.6	2.1	1.9	1.5	0.9	3.7	14.5	4.1	24	
9		3.6	0.2	1.9	1	0.8	1.1	1.9	2.4	2.5	4.7	4.6	5.9	4.6	4	4.7	1.5	0.9	2.4	2.9	2.8	3	3	3.5	2.2	5.9	0.9	24	
10		1.5	3.3	5.2	7	7.7	8.3	9.8	12.5	12	10.8	13.5	12.8	10.9	12	15.3	13	12.7	6.9	4.3	2.9	0.8	1.6	0.7	0.2	15.3	7.3	24	
11		0.6	0.5	0.5	0.2	0.1	0.4	0.1	0.9	2.7	6	7.6	7.5	8.7	9	7.8	6.9	7.6	7.1	5.9	4.6	2.5	2.3	2.7	1.7	9	3.6	24	
12		2.5	2.2	3.2	2.4	2.6	2.4	3.2	5.2	7.4	7.1	7.9	8.8	8.5	7.4	4.6	3.7	4.4	3.9	3.8	1.8	2.3	0.5	1.4	1.9	8.8	3.6	24	
13		3.5	2.8	3.5	3	2.7	4.5	5.9	4.9	5.1	4.3	4.7	3.9	3.2	3.4	4.7	7.1	7	5.4	5.2	3.6	2	1.1	1	2.7	7.1	2.2	24	
14		0.8	2.3	2.4	1.3	2.5	3.3	3.9	4.8	3.1	4.3	5.2	5.3	5.8	7.3	6.4	6.7	6.3	8.6	6	5.9	4.6	3.6	4.3	4.7	8.6	3	24	
15		4	4.4	2	1.1	0.9	1.4	2.8	1.3	5.3	6	5.2	4.4	9.5	7.3	6.4	8.4	6.7	8.2	8.1	5.8	4.8	3.6	2	2.5	9.5	4.1	24	
16		3.7	3.1	3	5.5	4.4	5.4	6	5	6.2	5.4	7.1	6.8	5.8	4.8	3.5	2.7	1.1	3	2.3	1.8	0.6	1.6	1.9	1.2	7.1	3.5	24	
17		1.6	0.6	1.2	2.2	0.6	0.7	1.7	1	1.2	3.2	4.5	5.7	4.9	5.1	5.5	5.9	5.7	5.6	4.6	3.7	3.3	3.1	4	5.9	5.9	3	24	
18		3.8	2.2	2.3	1.7	2.1	3.6	2.3	0.8	5.4	6.6	8.2	6.5	6.4	6.8	7.4	7.9	4.6	5.2	3.1	3	7.8	7.9	7.3	2.4	8.2	2.7	24	
19		2	4.6	4	3	2.5	3.1	3.9	4.1	3.4	4.9	5.8	6.3	5.3	4.8	6	4.7	3.2	2.8	3.1	3.7	3.6	4.2	7.6	8.4	8.4	4	24	
20		1.6	0.9	3.1	1.9	5.3	5.3	5.8	7.4	6.5	6.1	7.7	6.1	7.6	6.4	6.9	5.8	8.2	4.2	2.4	4.9	5.9	6.9	6.6	8.2	4.9	24		
21		4.9	3.5	5.2	4.6	4.6	4.1	3.9	5.5	5.3	4.8	4.4	3.7	3.8	3.2	1.4	6.1	4.9	4.8	4.1	3.1	1.7	1.9	2.3	4	6.1	1.4	24	
22		5.5	5.4	4.8	4.9	4.1	4.3	4.6	5	6	6.6	7.6	7.9	9.6	7.9	7.4	7	8.1	8	7.3	7.5	7.9	7.6	9.3	8.5	9.6	6.6	24	
23		7.4	8.5	7.7	6.6	5.7	5.7	6.1	6.1	5	8.4	7.1	7.3	6.2	8.4	7.9	6.1	6.2	5.6	4.1	3.6	1.6	2.8	2.6	2.9	8.5	3.9	24	
24		1	2.7	4.3	3.2	4.5	3.3	2.5	3.9	4.6	4.3	6.8	6.3	4.9	4.8	5.7	4.4	4.8	5.3	5.1	3.7	3.8	4.5	0.2	0.7	6.8	3.7	24	
25		2.7	2.4	5.2	6.5	4.9	4.4	5.6	0.8	6.6	7.6	6.2	7	5.8	7.4	6.3	7.4	5.6	5.3	4.7	2.4	3.2	1.7	0.8	0.9	7.6	4.5	24	
26		0.8	4.2	3.9	0.9	0.9	2.8	3.6	5.1	8.2	6.2	1.2	2.8	1.9	4.5	2.4	2	2.7	1	1.7	1.9	3.1	2.9	4.8	4.4	8.2	1.2	24	
27		3.5	4.4	5.5	5.9	6	5.5	6.3	7.6	6.2	6.5	6.1	6.6	6.5	7.7	6.4	7.5	7.9	5.2	4.7	3.2	2.7	3	4.8	4.9	7.9	5.5	24	
28		5.3	4.1	4.5	4.9	4.4	4	4	5.9	5	5.3	7.1	6.8	6.3	7.1	6.8	6.6	6.1	4.4	3.6	1.9	4	4.5	4.6	2.9	7.1	4.5	24	
29		3.4	3.3	2.3	0.5	1.1	0.6	2.5	4.2	4.7	5.4	3.4	2.8	3.7	2.9	2.6	5.5	6.3	1.6	3.7	4.8	4.8	5	3.9	3.5	6.3	1.8	24	
30		3.4	3.3	3.4	3.1	3	3.7	4.4	4.6	5	5.4	5.1	5.7	5.9	5.9	5.1	4.8	4.7	6.4	4.1	3.3	3.4	3.4	4.8	5.1	6.4	3.3	24	
31		6.9	8.6	7.8	7.2	3.9	3.2	4.9	5.7	5.8	6.1	6	4.1	5.2	4.4	4.2	4.4	4.4	5.1	4.8	3.1	3.2	7.8	8.9	4.2	8.9	2.5	24	
HOURLY MAX		7.4	8.6	7.8	7.2	8.3	8.3	9.8	12.5	12.0	10.8	13.5	14.5	14.4	12.0	15.3	13.0	12.7	8.6	8.1	7.5	7.9	7.9	9.3	8.5				
HOURLY AVG		3.1	3.3	3.6	3.6	3.5	3.8	4.3	4.8	5.8	6.2	6.6	6.8	6.8	6.6	6.3	6.2	5.7	5.4	4.4	3.4	3.5	3.6	3.6	3.5				

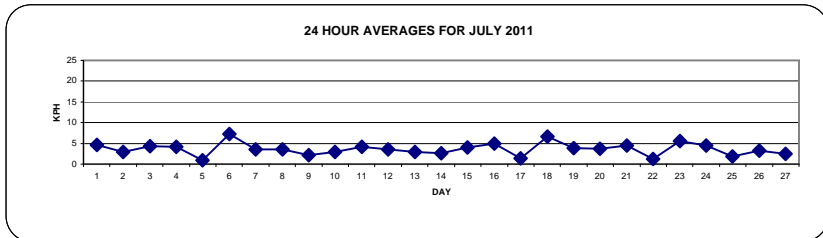
STATUS FLAG CODES

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

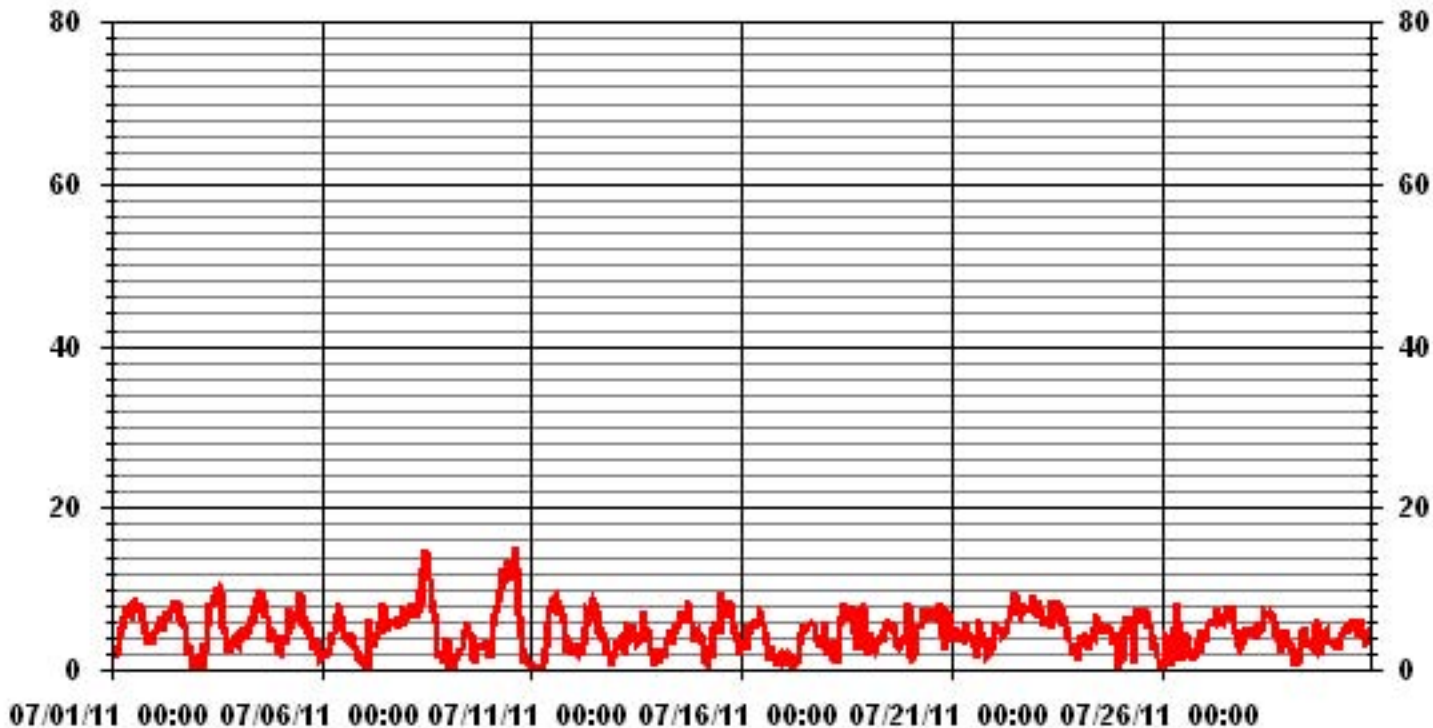
LAST CALIBRATION: March 10, 2011

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	15.3 KPH	@ HOUR(S)	14	ON DAY(S)	10
MAXIMUM 24-HR AVERAGE:	7.3 KPH			ON DAY(S)	10
CALMS (≤ 1 KPH)	4.44 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	2.47	MONTHLY AVERAGE	4.76	KPH	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 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		10.5	9	7.9	8.3	8.5	21.1	25.3	22.9	30.6	30.9	31.5	31	36.9	30.9	36.3	33	32.9	34.6	34.6	23.1	15.1	13.3	11.1	10.1	36.9	
2		7	9.6	9.8	10.9	12.9	11	13.6	13.8	17.9	23	23.5	23.4	28.5	37.4	31.5	34.2	20.4	24	21.3	16.6	10.9	5	5.2	4.7	4	37.4
3		2.4	3.8	5	4.7	3.8	6.2	9.7	20.5	24.3	25.1	27.5	29.5	31.5	31.3	34.2	30.3	17.9	46.4	16	14.5	10.8	14.8	14.7	15.4	46.4	
4		13.9	13.7	13.6	15.6	18.4	17.6	20	30.3	27.6	26.9	35.4	33.3	40	46.5	29.4	32.2	27.6	28.5	20.6	13.6	13.8	10.3	13.3	9	46.5	
5		7.3	9.1	6.4	12.3	10.7	11.1	20.7	15.6	21	26	27.3	28.7	27.3	32.9	21.1	25.8	22.4	23.9	21.6	15.7	7.4	7.5	7.9	4.1	32.9	
6		6.6	5.2	6.2	4.6	6.8	9.8	9.4	17.6	23.1	27.6	26.9	27.4	27.6	25.2	20.4	14.7	15.2	15.1	12.6	8.9	5.7	5.3	4.7	4.3	27.6	
7		3.8	4.9	5.7	16.1	14.2	10.9	13.3	17.4	17.5	20.8	21.2	24.8	22.9	19.2	20.3	21.6	21	21.1	21.2	19.7	21.9	23.3	20.5	28.2	28.2	
8		28.2	23.2	24.3	24.4	26.5	32	22.4	27.7	37.3	46.5	37.8	38.7	36.9	32.7	29.9	24.6	24	31.2	13.5	12.7	7.3	7.1	3.6	8.5	46.5	
9		8.5	6.4	6.5	4.7	5.3	4.7	9.9	7.4	7.6	11.8	13.3	17	12	14.5	16.2	12.4	10.4	11.1	11.6	12.1	14.4	10.4	10	9.4	17	
10		8.9	11.6	19.2	20.5	19.9	24.7	26.6	33.1	29.2	30.9	33	29.2	32.2	33.6	34	28.7	27	23	17	10.1	5.6	3.6	3.5	3.2	34	
11		3	2.7	2.4	3	3	3.1	2.9	5.1	12.8	22	26.3	23	32.2	27.6	23.1	25.2	22.3	20.3	17.6	12.6	5.2	4.8	5	4.2	32.2	
12		6.1	4.9	8.9	7.2	5.7	6.9	12.2	18.5	25.8	23.1	29.3	25.3	27.7	21.9	18.1	11.8	14.6	15.7	11.6	5.9	9.7	3.6	5.1	6.7	29.3	
13		8	8.7	10.1	7.5	7.1	12.9	13.3	11.7	16.6	14.6	16.7	16.6	13.4	11.9	15.8	16	20.6	18.5	13.4	11.2	5.3	5.5	3.1	6.3	20.6	
14		5.2	6.8	6.5	6.1	6.5	7.7	11.5	15.5	17.4	14.4	17.8	25.4	18.7	26.5	22.4	21.2	17.4	25.6	18.4	19.1	12.8	10.4	11.4	10	26.5	
15		10.2	9.7	9.7	4.2	6.2	12.3	12.7	6.1	17.4	26.9	16.5	19.3	24.4	24.4	29	34.8	25.4	29	25.2	21.8	17.8	15.6	11.6	10.4	34.8	
16		14.9	14.5	11.3	12.3	9.1	12.1	13.9	15.7	15.8	14.6	24.6	24.6	22.5	19.7	13.6	13.8	8.4	8.6	8.2	6.2	6.7	5.3	6	4.4	24.6	
17		5.6	4.5	5.3	6.9	4.3	4.7	5.8	4.4	8	15	16.6	18.7	21.3	16.9	21.5	18.3	18.9	17.8	14.3	9	9.4	10.4	11.9	15.4	21.5	
18		12	7.3	5.7	5.6	6.9	13.5	8.1	18.7	34.4	19.7	23.2	25	22.3	20.2	21.7	18.7	13.4	13.7	12.5	9.9	26.1	22.5	26.1	14.7	34.4	
19		7.1	12	8.8	11.4	10.9	13.2	18.4	16.7	16.1	22.3	23.7	22.7	23.4	21.7	22.2	18.9	15.8	10.2	11.4	8.8	9.9	12.6	16.9	18	23.7	
20		11.2	8.5	12.8	12.5	22.4	22.6	19.6	21.3	28.8	23.4	28.9	26	22.8	27.5	24.8	28.3	24.9	38.9	29.1	11.6	25.2	25.4	30.2	26.1	38.9	
21		16.6	13.4	20.7	16.7	15.3	17	17.3	22	22.7	17.7	19	17.9	16.7	15.6	9.3	20.1	20.2	15.7	14.7	11.1	5.9	7.8	9.1	13.1	22.7	
22		17.9	19	16.5	15.3	15.7	16.4	15.9	15.4	21.2	22.5	32.2	26.9	33.4	26.5	24.4	27.3	30.5	27.5	25.5	26.1	27.8	26.7	29.2	31.6	33.4	
23		25.5	36.9	27.3	25.7	19.5	18.8	21.5	18.5	15.9	23.4	28.3	23.2	23.7	25.9	24.3	23.9	23.3	20.9	15.5	14.8	8.8	6.4	6.6	6.3	36.9	
24		4.4	5.9	9.3	9.4	12.7	16.2	12	12.4	15.4	18.1	19.3	20.8	24.8	24.5	26	16.9	18.8	22.4	20.4	13.5	8.5	10.2	13.2	6.3	26	
25		7.2	8	10.2	12	12.3	10	20.7	7.6	16.9	16.9	15.4	20.2	21.2	21.7	22.7	22.8	19.5	13.5	15.1	4.8	6.1	5.1	3.5	3.7	22.8	
26		4.5	27.7	25.8	6.9	9.4	8.1	8.9	19.5	19.7	21.5	12.6	13.4	9.9	13.5	10.6	6.2	7	5.9	9.4	5.9	6.8	9.1	19	19.9	27.7	
27		13.1	19	21.2	21.6	19.1	19.1	23	26.4	26.7	23.3	23.4	26.1	26.8	33.8	26.3	38.2	33.3	25.1	21	17.2	11.2	15.2	18.7	22.1	38.2	
28		19.9	16.6	17	19.8	22	15.3	20.7	20	18.9	23.4	29.1	31.2	27.5	33.1	25.6	27	25.3	21.6	15.4	12.6	8	7.7	11.6	8.3	33.1	
29		7.5	6.6	6.1	4.4	7	11.3	15	15	16.7	17.8	17.9	10.8	15	12.1	16.3	44.5	32.9	17.5	16.9	18	16.8	20	17.8	15.8	44.5	
30		15.3	13.8	13.7	12	12.3	12.9	14.8	18	17	19.2	20.5	22.5	23	22.8	20.1	20.7	14.5	15.4	12.7	6.9	7.2	8	15.2	14	23	
31		19.5	23.5	21.5	19.4	20.6	14.7	18	19.5	20	16.1	16.9	20.1	21.4	17.6	15.8	15.6	14	11.4	11.8	10.7	22.5	39.2	37.9	28.6	39.2	
PEAK		28.2	36.9	27.3	25.7	26.5	32.0	26.6	33.1	37.3	46.5	37.8	38.7	40.0	46.5	36.3	44.5	33.3	46.4	34.6	26.1	27.8	39.2	37.9	31.6		

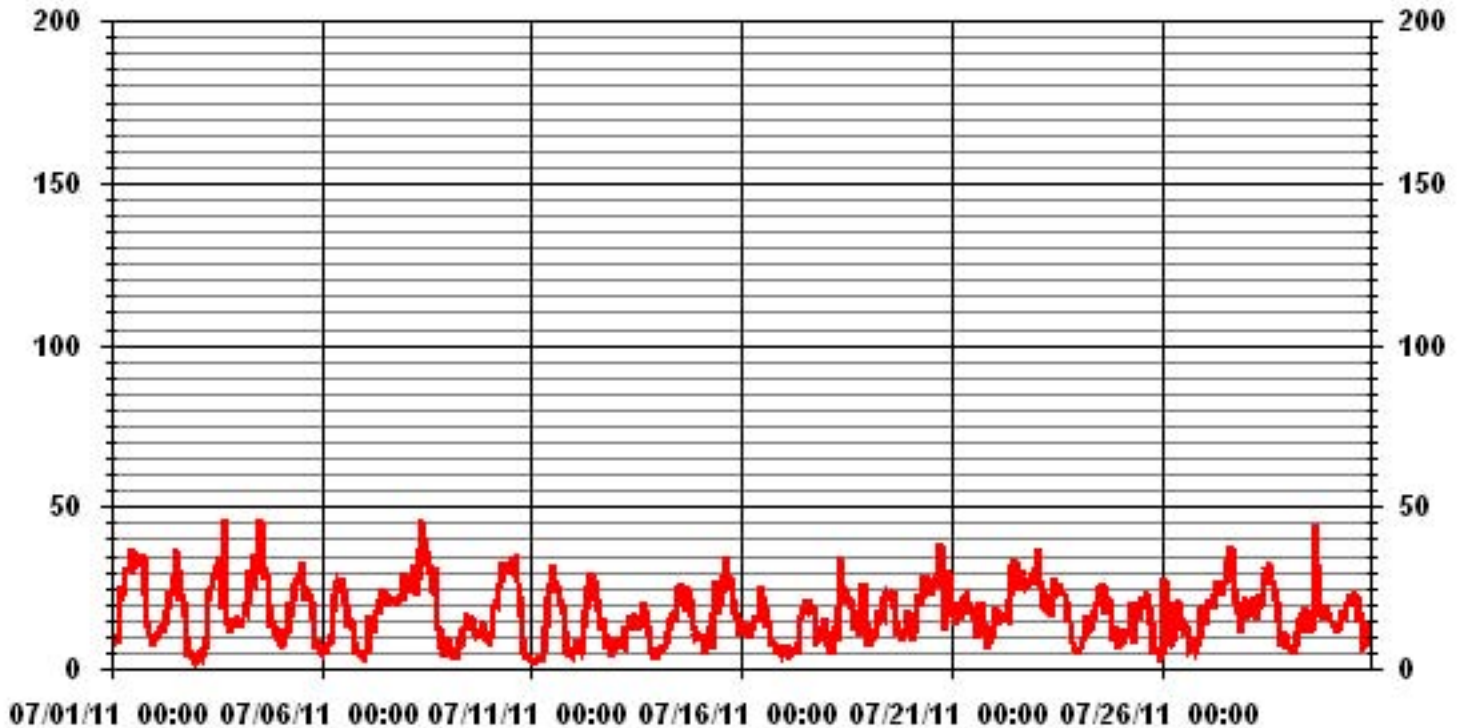
STATUS FLAG CODES

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	46.5	KPH	@ HOUR(S)	9
			ON DAY(S)	8

01 Hour Averages



LICA30
WSP / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 30
Site Name : LICA30
Parameter : WSP
Units : KPH

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	
< 6.0	.94	1.88	3.89	3.22	3.62	5.10	3.76	2.95	5.10	9.54	9.67	8.06	6.58	2.55	1.74	1.07	69.75
< 12.0	.80	.53	.26	.80	1.74	3.62	3.62	.40	.94	4.97	3.09	.53	3.62	3.22	.40	.13	28.76
< 20.0	.00	1.07	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00	.00	1.47
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	1.74	3.49	4.16	4.03	5.37	8.73	7.39	3.36	6.04	14.91	12.76	8.60	10.21	5.77	2.15	1.20	

Calm : .00 %

Total # Operational Hours : 744

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 6.0	7	14	29	24	27	38	28	22	38	71	72	60	49	19	13	8	519
< 12.0	6	4	2	6	13	27	27	3	7	37	23	4	27	24	3	1	214
< 20.0		8								3							11
< 29.0																	
< 39.0																	
>= 39.0																	
Totals	13	26	31	30	40	65	55	25	45	111	95	64	76	43	16	9	

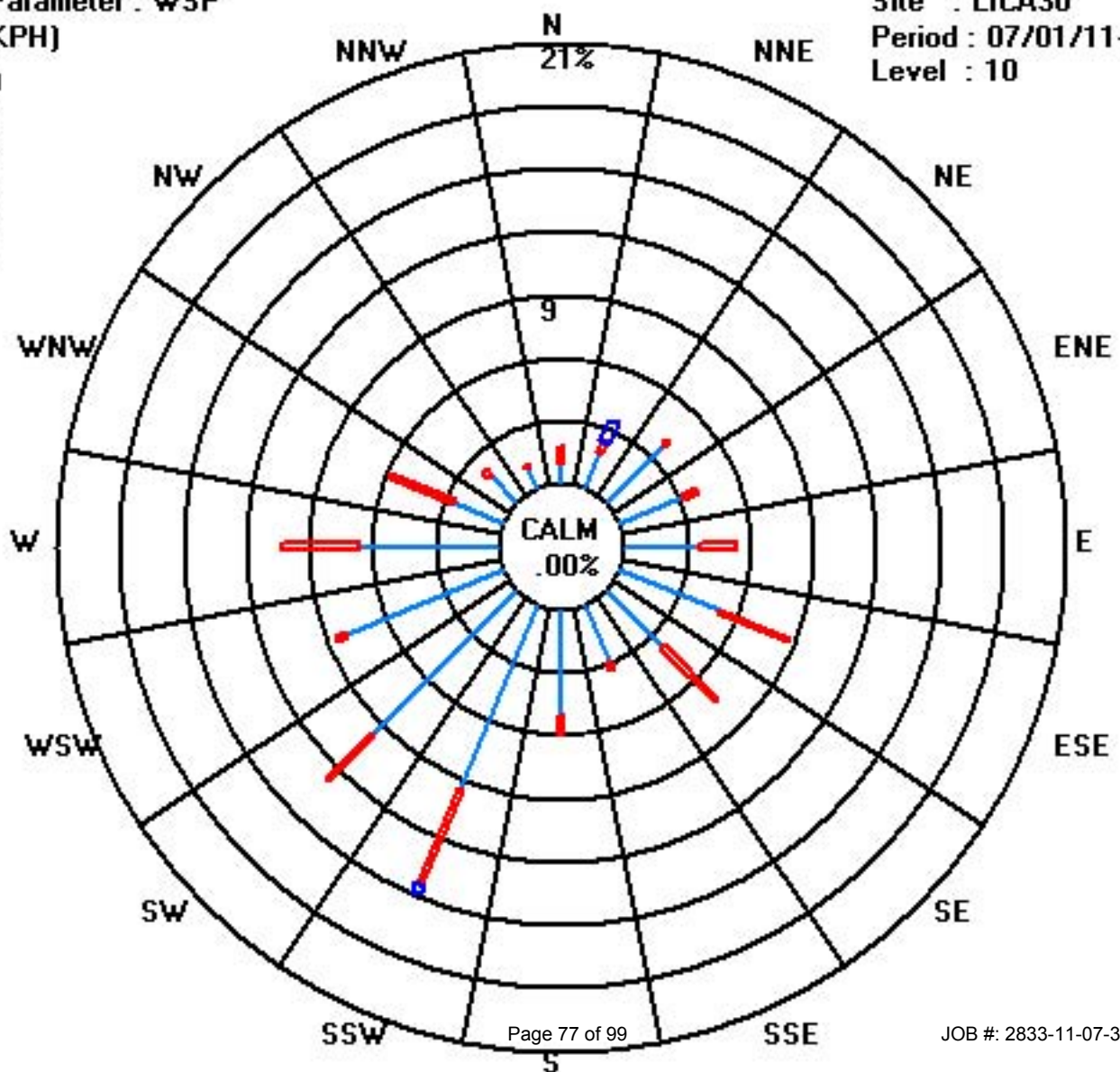
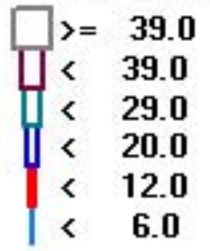
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 07/01/11-07/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 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			
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		255	238	248	220	213	262	278	282	292	289	267	268	260	277	264	268	269	268	260	257	230	225	217	216	263		W	24	
2		212	208	203	206	203	207	205	193	196	222	216	214	212	221	213	210	205	219	224	244	187	183	182	99	209		SSW	24	
3		178	99	57	28	39	28	82	124	137	139	133	119	123	123	124	130	97	314	17	254	231	273	261	266	126		SE	24	
4		259	258	236	262	274	265	269	270	258	252	260	269	265	276	265	281	266	275	254	235	215	207	213	215	259		WSW	24	
5		209	202	200	203	216	214	209	217	213	233	232	242	216	230	236	253	247	244	262	254	216	208	216	206	225		SW	24	
6		245	214	207	211	208	207	225	270	291	291	291	291	297	253	251	244	238	220	240	204	195	180	147	159	250		WSW	24	
7		156	188	105	203	178	80	105	110	111	92	98	123	130	124	136	105	106	106	86	85	93	89	90	77	109		ESE	24	
8		86	68	78	84	78	104	97	86	105	128	196	199	194	199	203	199	195	236	245	268	246	211	142	163	156		SSE	24	
9		178	137	122	61	15	71	47	30	11	38	48	28	27	49	37	78	174	260	280	309	256	242	212	233	27		NNE	24	
10		320	329	355	9	11	10	9	15	15	10	17	21	14	18	23	25	28	39	59	50	59	185	186	175	18		NNE	24	
11		181	170	151	151	60	29	209	273	75	111	123	112	131	129	139	130	137	145	141	165	165	153	152	97	133		SE	24	
12		76	73	67	55	54	55	87	119	128	120	124	140	138	143	132	129	134	131	120	124	123	58	57	46	118		ESE	24	
13		30	46	46	47	48	38	35	46	74	76	96	97	90	158	170	180	172	173	152	163	185	209	139	117	106		ESE	24	
14		89	53	40	47	48	54	60	112	118	120	89	103	125	136	177	206	194	189	164	166	173	160	190	207	148		SE	24	
15		205	209	243	203	203	280	316	12	211	212	128	196	210	222	227	228	217	222	224	223	225	235	236	241	219		SW	24	
16		226	246	229	201	193	191	192	225	203	208	214	226	239	233	268	286	267	220	237	221	224	194	192	169	219		SW	24	
17		201	159	115	183	105	32	44	38	113	64	107	140	155	140	137	124	116	124	125	121	105	110	120	126	124		ESE	24	
18		121	91	67	82	47	122	74	80	263	28	54	106	132	165	180	201	205	170	195	190	168	173	183	250	153		SSE	24	
19		186	211	216	252	235	252	281	282	243	236	243	236	239	233	226	234	248	223	219	209	193	203	198	199	227		SW	24	
20		236	252	264	243	319	339	334	327	321	355	295	293	290	287	282	285	276	284	307	253	280	284	285	279	295		WNW	24	
21		275	259	276	271	270	260	271	289	310	305	296	294	298	315	39	57	74	88	114	114	99	60	64	75	308		NW	24	
22		108	130	125	130	91	80	87	111	86	87	83	77	88	104	102	101	101	112	102	112	113	112	110	108	102		E	24	
23		112	106	115	112	109	115	121	130	170	201	216	220	212	205	211	212	221	229	221	250	230	180	150	157	173		S	24	
24		212	205	202	212	215	234	256	230	233	247	220	230	254	287	242	237	233	221	223	212	194	196	64	158	227		SW	24	
25		183	196	204	202	207	203	243	208	201	212	213	214	208	213	210	213	204	187	176	181	183	111	160	204		SSW	24		
26		180	292	334	10	51	53	25	5	13	19	179	216	346	360	12	194	218	246	255	184	206	229	281	278	326		NW	24	
27		252	269	291	294	286	281	281	282	284	282	288	291	274	275	277	283	293	282	273	256	259	302	305	292	283		W	24	
28		303	273	275	271	272	270	272	286	288	271	289	258	266	275	269	259	259	261	252	233	196	190	199	211	263		W	24	
29		194	197	192	131	92	263	313	4	1	23	340	320	318	244	244	267	304	260	242	222	215	235	246	250	270		W	24	
30		253	256	247	227	225	222	232	246	226	226	236	236	242	236	243	227	202	195	158	132	116	118	120	127	215		SSW	24	
31		134	139	132	128	91	84	107	109	118	128	135	128	169	204	190	214	199	203	197	215	299	315	347	334	145		SE	24	
HOURLY AVG		320	329	355	294	319	339	334	327	321	355	340	320	346	360	282	286	304	314	307	309	299	315	347	334					

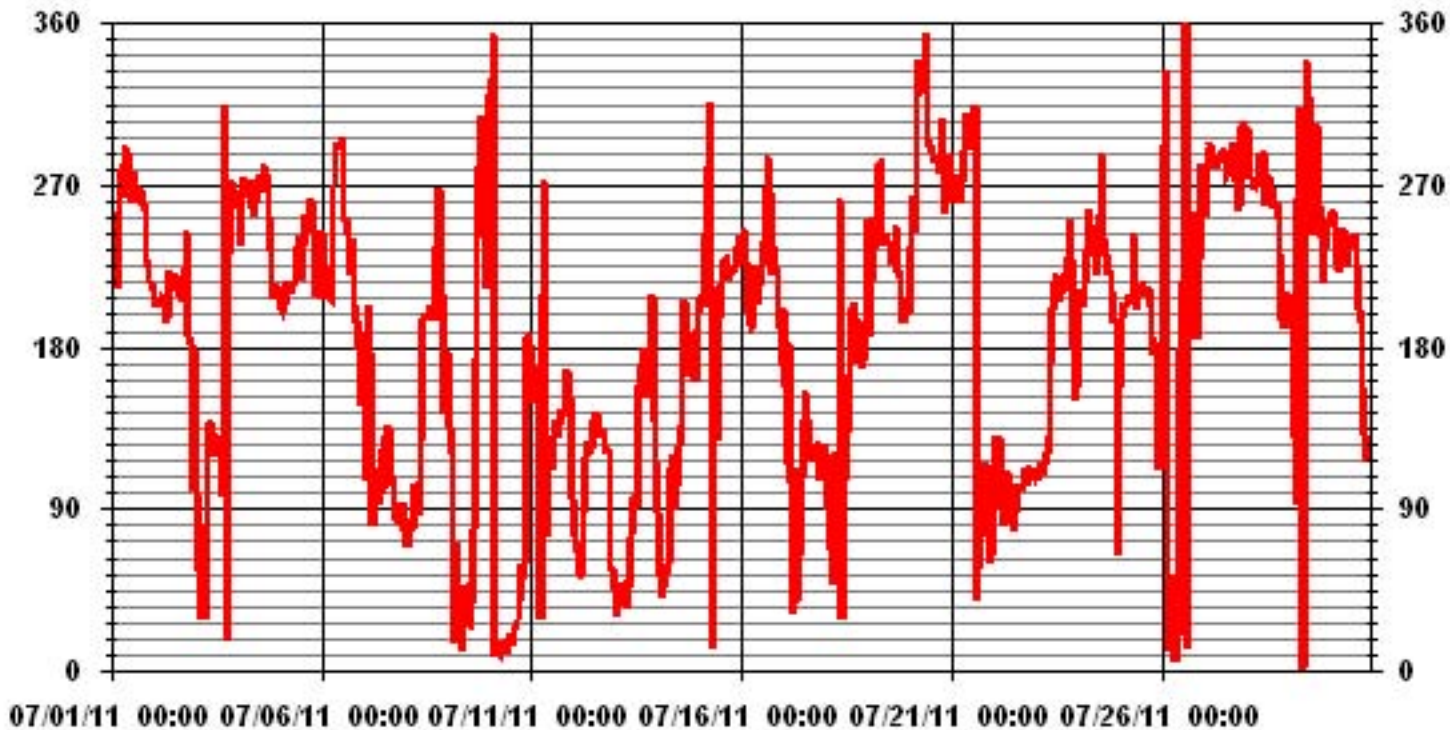
STATUS FLAG CODES

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

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

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION	81.37	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	204 DEG

01 Hour Averages



Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - MASKWA

JULY 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	39	28	33	21	18	36	38	39	44	41	47	45	45	44	45	45	45	44	46	43	33	29	18	18
2	17	14	10	12	13	17	18	18	23	31	30	35	34	39	31	33	25	33	34	41	8	2	10	38
3	1	14	25	9	21	10	27	30	25	33	32	35	34	36	35	29	25	43	31	39	28	39	35	43
4	40	36	33	40	38	43	43	44	42	46	45	44	42	42	43	40	43	46	44	36	22	13	18	17
5	18	8	6	15	29	18	19	25	28	38	38	45	31	38	37	45	40	44	48	39	18	12	26	33
6	34	15	21	20	18	14	29	36	33	41	36	41	51	49	49	46	58	31	36	12	11	8	34	34
7	9	9	59	17	37	25	31	33	33	42	45	33	41	41	45	38	34	33	33	33	35	33	35	31
8	34	31	31	31	30	36	36	33	35	32	21	22	24	27	25	28	29	45	70	46	36	19	39	18
9	16	50	26	31	24	24	23	18	48	25	31	18	24	36	33	38	43	44	34	43	41	33	23	35
10	31	32	29	21	19	22	23	20	21	26	22	19	23	19	18	18	17	23	28	21	39	2	6	9
11	5	5	9	1	39	25	20	48	49	38	36	39	37	34	36	34	28	30	23	16	6	7	7	8
12	10	7	15	12	10	17	28	32	29	36	35	26	30	26	30	27	26	25	24	18	15	22	12	15
13	12	16	18	17	17	19	18	26	30	37	38	35	46	40	46	24	32	31	23	17	7	6	18	13
14	7	19	13	10	15	16	26	30	33	38	34	34	33	26	24	21	22	20	26	22	21	15	14	16
15	14	15	31	22	49	46	37	32	25	29	33	33	29	34	37	37	30	32	29	33	34	36	33	36
16	28	40	29	14	10	16	18	35	21	29	30	36	40	39	44	49	45	25	30	24	44	19	35	23
17	53	58	34	9	23	49	36	34	54	48	42	38	44	43	41	36	34	29	26	15	16	15	21	21
18	23	25	12	14	20	25	25	57	36	27	26	37	39	31	29	25	31	22	12	16	26	22	18	46
19	34	11	18	35	31	35	44	41	51	43	40	44	46	54	38	40	43	31	21	14	8	13	14	16
20	30	23	35	42	37	39	41	38	39	32	41	35	42	40	42	41	45	39	38	41	34	35	36	33
21	34	33	35	36	34	37	41	39	43	44	46	50	53	53	42	31	40	33	31	23	12	20	17	27
22	30	28	28	28	33	32	32	31	34	34	37	34	33	35	33	35	34	34	34	36	36	33	31	35
23	33	35	34	33	33	32	28	28	28	23	30	33	28	29	29	35	33	35	32	36	37	12	28	11
24	32	12	12	19	24	36	40	35	35	45	35	39	50	41	38	44	37	33	30	24	10	9	60	78
25	24	8	12	12	18	18	22	37	26	23	30	29	35	33	34	30	28	25	18	6	6	8	33	7
26	10	36	45	32	35	18	23	29	23	28	29	34	31	20	26	34	15	38	36	35	9	28	34	35
27	34	40	33	28	34	38	36	38	42	39	40	39	43	41	45	44	39	39	40	36	37	36	37	36
28	40	39	33	38	38	36	44	41	42	43	42	43	47	45	43	44	42	42	43	32	9	6	14	20
29	11	6	9	40	28	39	44	31	33	31	37	37	47	52	44	42	39	49	35	28	26	37	40	41
30	38	37	32	26	27	27	32	38	33	35	41	42	44	46	44	40	36	21	16	10	10	9	16	22
31	23	22	24	25	30	24	30	35	35	32	34	43	38	44	49	40	36	24	17	24	33	37	36	50

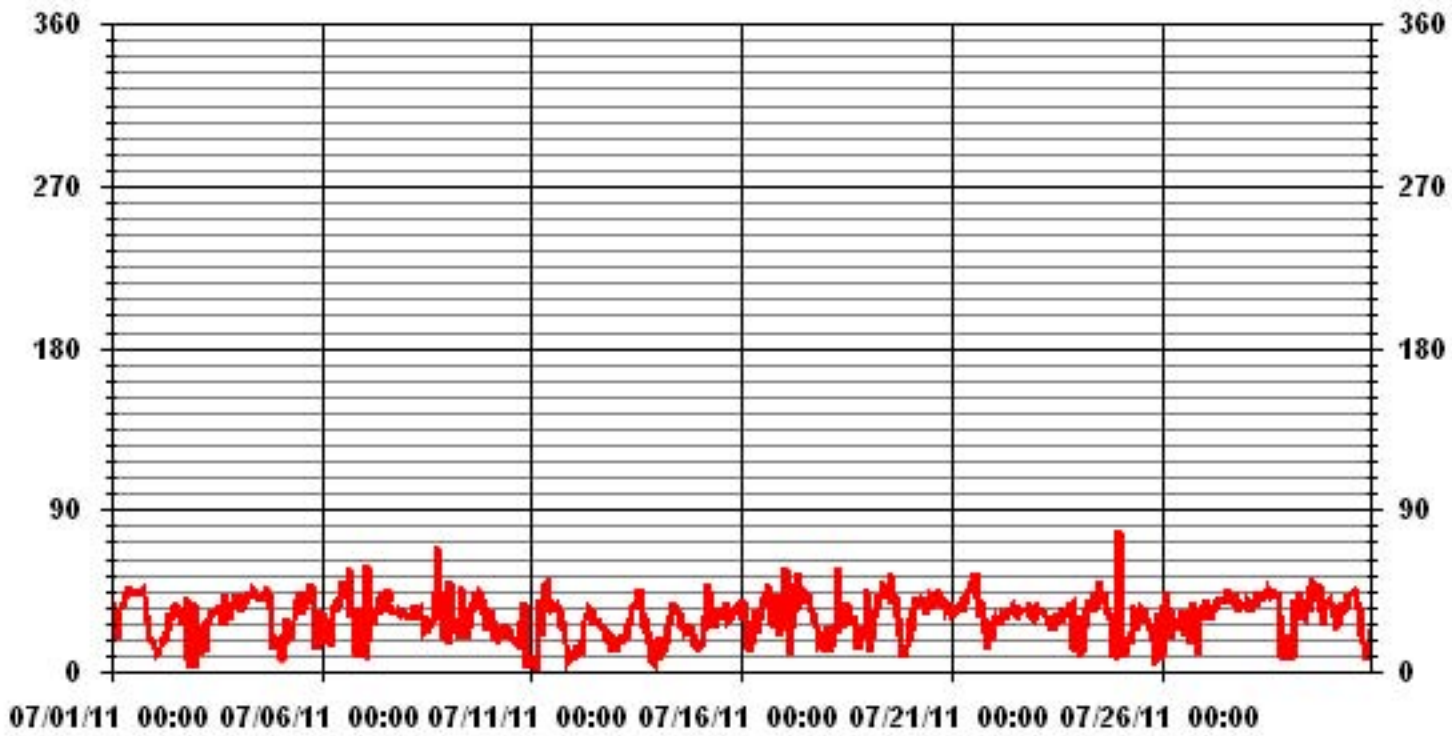
STATUS FLAG CODES

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

LAST CALIBRATION: March 10, 2011

CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 744 HRS

01 Hour Averages



Calibration Reports

Sulphur Dioxide

SO2 Calibration Report

Station Information

Calibration Date	July 12, 2011	Previous Calibration	June 9, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	12:02	End Time (MST)	15:32
Reason:	Monthly Calibration		
Barometric Pressure	945 mmHg	Station Temperature	24 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 4, 2013
		Chart Rec. Output	0 - 1 Volts

Equipment Information

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

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 1000	ppb	
Sample Flow / Box Temp	599 ccm, 32.6 Deg C	595 ccm, 33 Deg C	
HVPS / Lamp Setting	494, 2899	494, 2897	
PMT / RxCell Temp	7.7 Deg C, 50 Deg C	7.7 Deg C, 50 Deg C	
Converter / IZS Temp	NA Deg C, 45 Deg C	NA Deg C, 45.0 Deg C	
Offset / Slope	36.1, 1.127	37.4, 1.128	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	N/A
4995	0	0	0	N/A
4922	76.5	750	751	0.9986
	No Adju Needed			
4960	40.8	400	397	1.0070
4981	17.3	170	170	1.0000
4996	0	0	0	N/A
Sum of Least Squares				#VALUE!
New Correction Factor				0.9986

	Before Calibration	After Calibration
Auto Zero	1.4	0.4
Auto Span	383.0	385.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	0.9986
Current Correction Factor Before Span Adjust:	0.9986
Percent Change:	0.0%

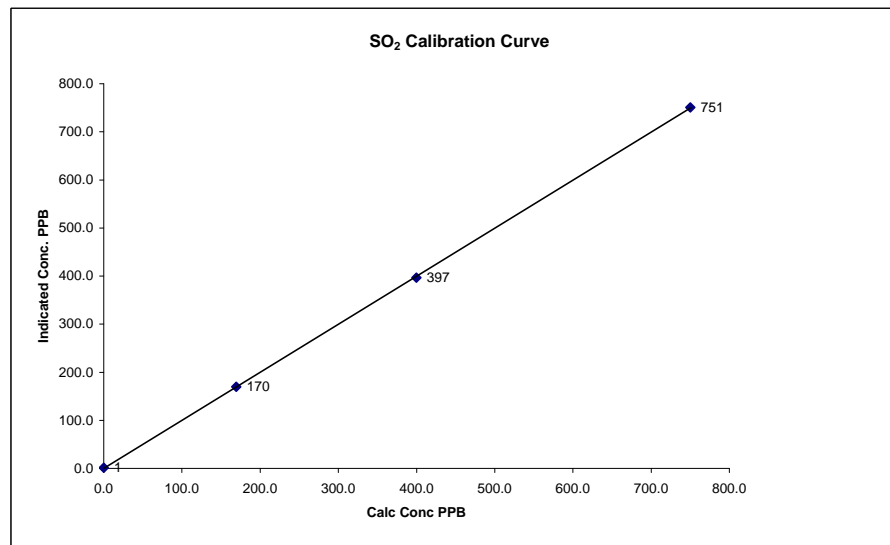
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

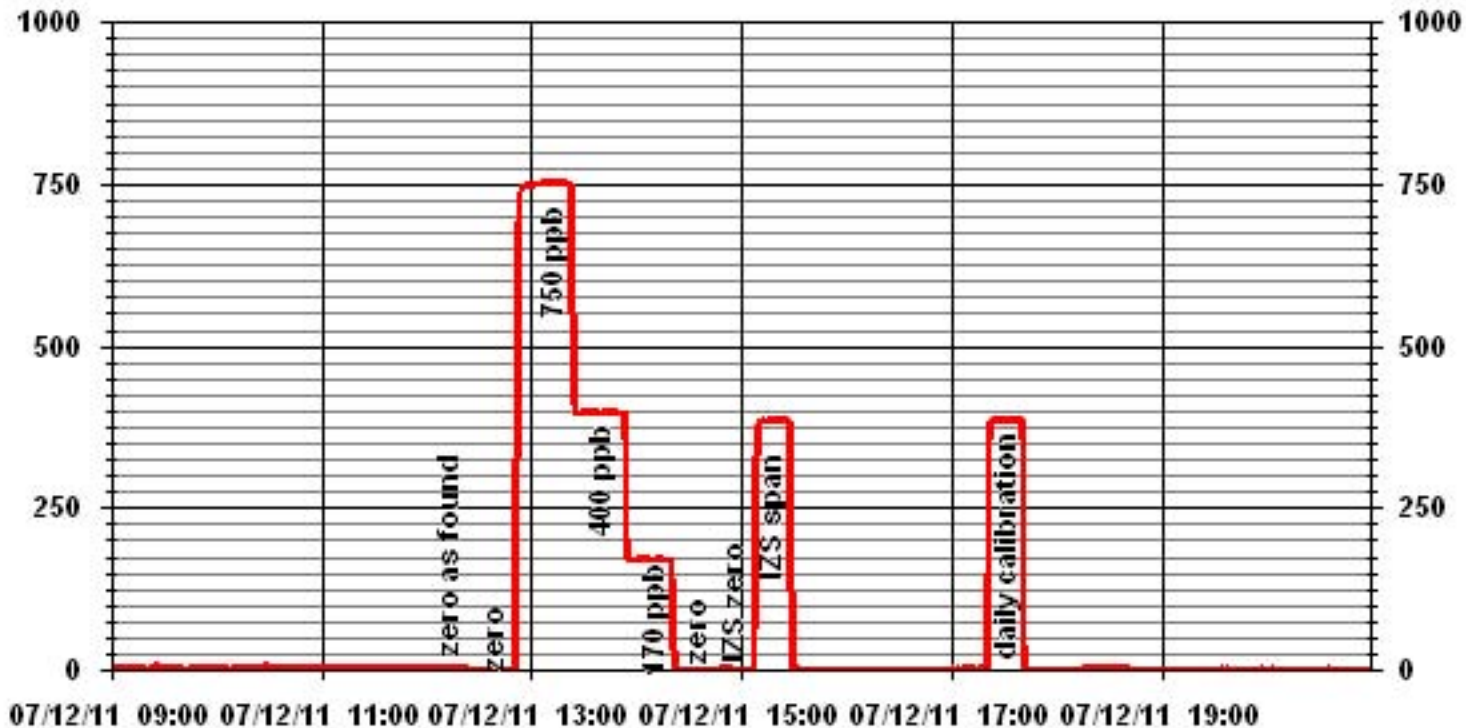
Calibration Date	July 12, 2011
Company	Lakeland Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	12:02
End Time (MST)	15:32

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept (± 3% F.S.)	(≥ 0.995)
0	1	n/a	0.999968	0.999968
170	170	0.9976	0.999567	0.999567
400	397	1.0070	0.068253	0.068253
750	751	0.9986		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	July 13, 2011	Previous Calibration	June 10, 2011
Company	Lakelnad Industry & Community Association		
Plant / Location	Cold Lake - Maskwa		
Start Time (MST)	10:20	End Time (MST)	14:25
Reason:	Monthly Calibration		
Barometric Pressure	942 mBar	Station Temperature	22 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	b1m000804
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 22, 2012
		Chart Rec. Output	0 - 1 Volts

Equipment Information

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

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100	ppb	
Sample Flow / Box Temp	516 ccm 39.8 Deg C	520 ccm 36.4 Deg C	
HVPS / Lamp Setting	552 2089	552 2088	
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	314.5 Deg C 45.0 Deg C	
Offset / Slope	30 1.027	29.2 1.035	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	-1	NA
4996	0	0	0	NA
4959	39.2	80	79	1.0126
4959	39.2	80	80	1.0000
4979	19.6	40	41	0.9755
4986	11.2	23	24	0.9525
4996	0	0	0	NA
Sum of Least Squares				0.9923
New Correction Factor				1.0000

Before Calibration

After Calibration

Auto Zero	-0.2	0.2
Auto Span	57.0	57.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	1.0126
Percent Change:	-1.2%

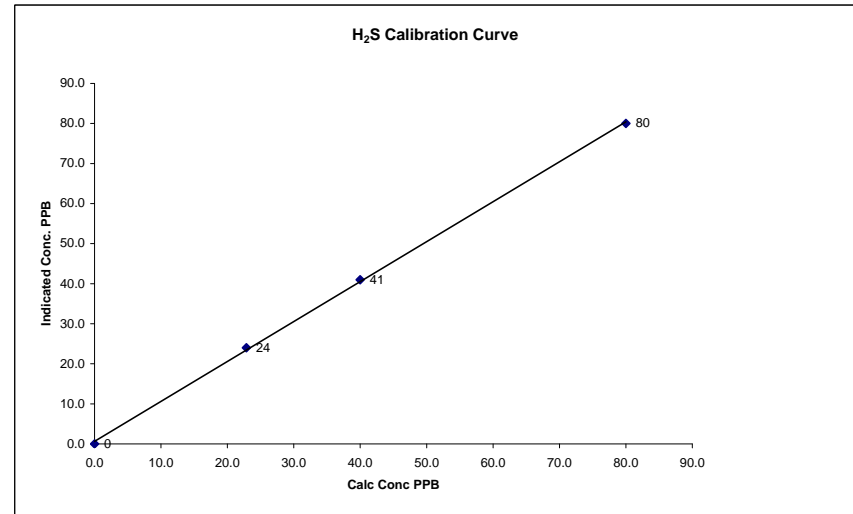
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

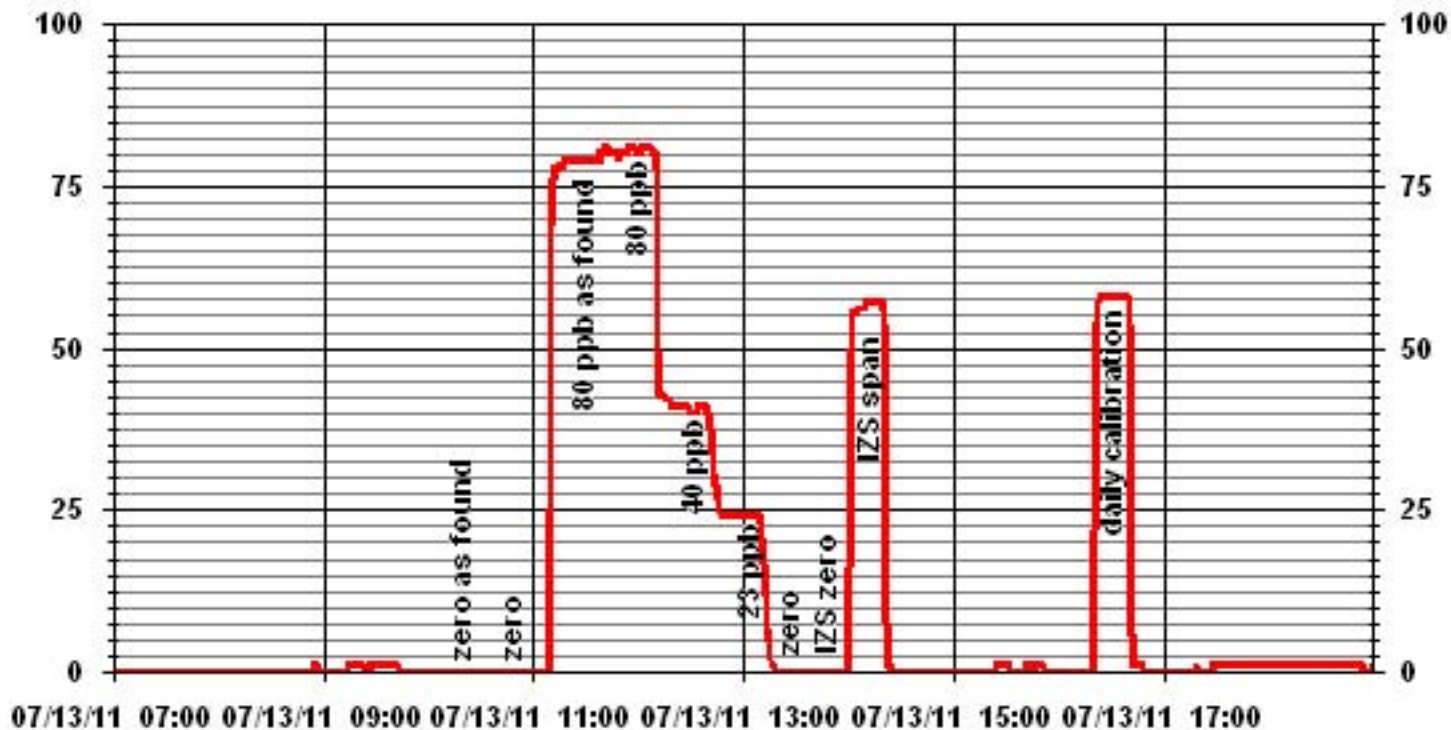
Calibration Date	July 13, 2011
Company	Lakelnad Industry & Community Association
Plant / Location	Cold Lake - Maskwa
Start Time (MST)	10:20
End Time (MST)	14:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999669
0	0		Intercept	(± 3% F.S.)	0.643283
23	24	0.9525			
40	41	0.9755			
80	80	1.0000			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	July 13, 2011	Previous Calibration	June 13, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	Maskwa		
Start Time (MST)	13:44	End Time (MST)	16:57
Reason:	Monthly Calibration		
Barometric Pressure:	940 mmHg	Station Temperature:	25 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 602 PPM	C3H8 207 PPM	
	TOTAL CH4 1171.3 PPM	Gas Cyl. # LL84150	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	AO 791
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

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

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

Calibration Data				
Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0.0	0.0	0.0	NA
	No Adj Needed			
1998	70.0	39.6	40.1	0.9887
1998	70.0	39.6	39.9	0.9936
1998	35.0	20.2	20.0	1.0082
1998	20.0	11.6	11.6	1.0000
1999	0.0	0.0	0.0	NA
New Correction Factor:				0.9936

Percent Change	
Previous Calibration Correction Factor:	0.9936
Current Correction Factor Before Span Adjust:	0.9887
Percent Change:	0.5%

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	34.5	34.4
Sample Lines Connected	YES	

Cylinder Pressures			
Span	500 psi	Hydrogen	1450 psi
		Zero Air	32 psi

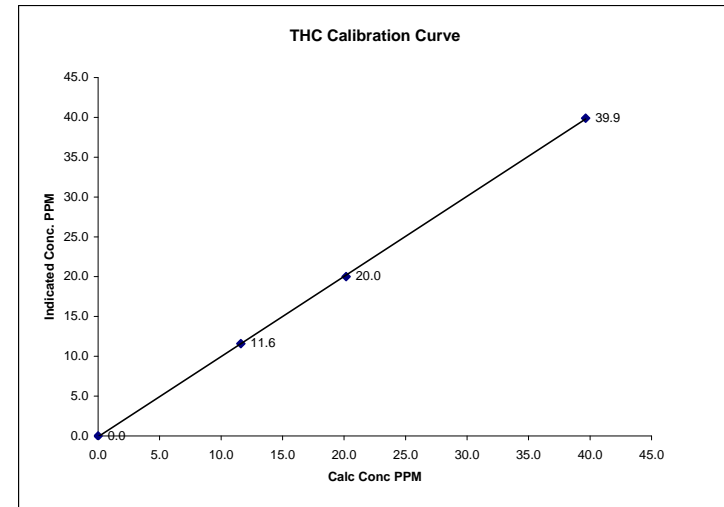
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

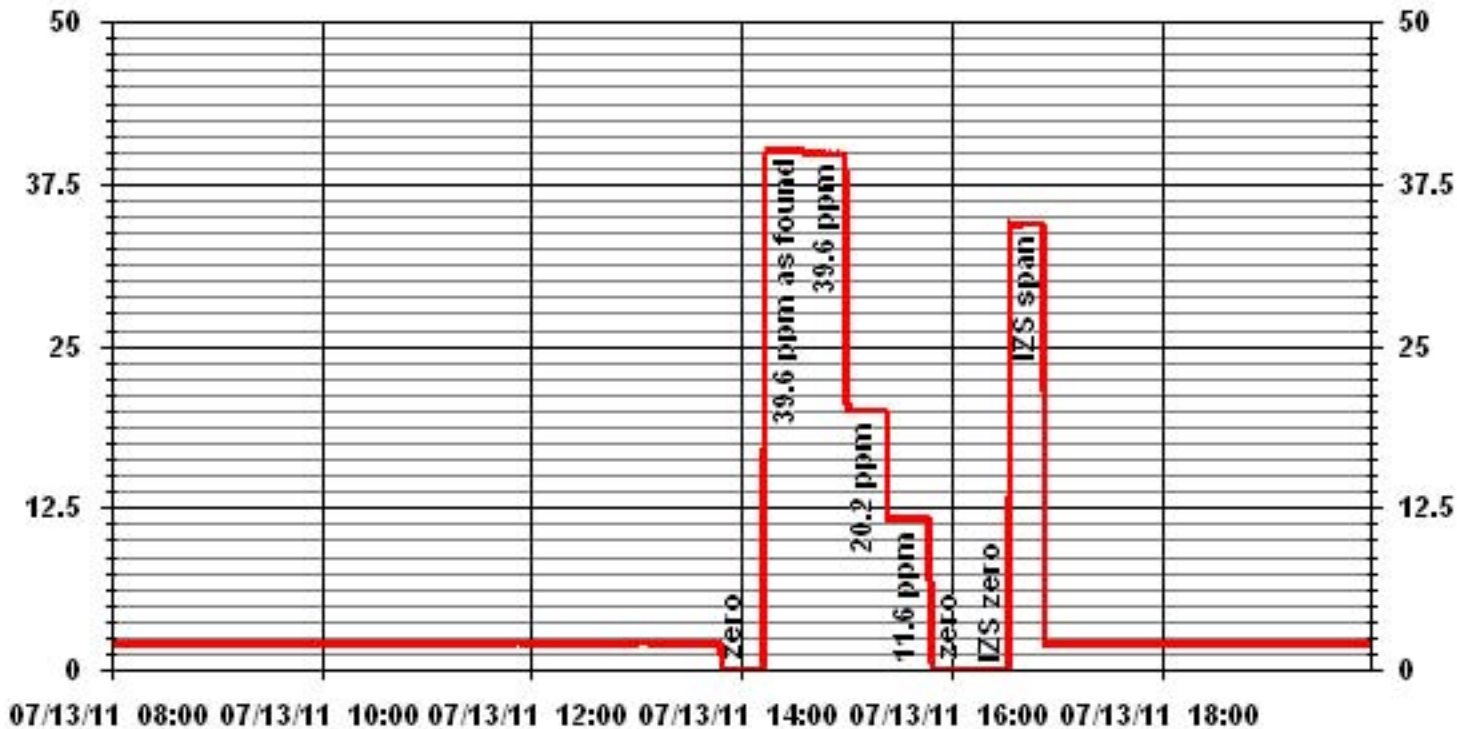
Calibration Date	July 13, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Maskwa		
Start Time (MST)	13:44	End Time (MST)	16:57

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	Correlation Coefficient Intercept (±3% F.S.)
0.0	0.0	NA	0.99932	1.006218
11.6	11.6	1.0007		-0.09051
20.2	20.0	1.0082		
39.6	39.9	0.9936		



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	July 12, 2011	Previous Calibration	June 10, 2011
Company	LICA	Plant/Location	Maskwa
Start Time (MST)	8:54	End Time (MST)	12:28
Reason:	As Found Calibration		
Barometric Pressure	949 mBar	Station Temperature	25 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO	50.4 ppm
Cal Gas Cylinder #		Cal Gas Expiry date	February 4, 2013
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

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

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000				
Sample Flow/Conv. Temp	459 ccm	314.4 Deg C	462 ccm	316 Deg C	
Ozone Flow / Vacuum	79 ccm	6.8 *Hg-A	79 ccm	5.5 *Hg-A	
HVPS / A ZERO	767 Volts	17.5 MV	767 Volts	17.7 MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.6 Deg C	50.0 Deg C	6.6 Deg C	
Box Temp / IZS Temp	32.2 Deg C	45.2 Deg C	33.5 Deg C	45.2 Deg C	
Offset	2.2 NOx	1.2 NO	2.2 NOx	1.2 NO	
Slope	1.094 NOx	1.079 NO	1.094 NOx	1.079 NO	
NO ₂ COEF / Conv Efficiency	NA NO ₂	0.994	NA NO ₂	0.994	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	0	-1	0	NA	NA
4921	74.2	NA	768	749	NA	779	766	14	0.9858	0.9761

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	NO2	NOx	NO	NO2		

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 0.9858	NO= 0.9761	NO2=
				Average Converter Efficiency=		

Before Calibration

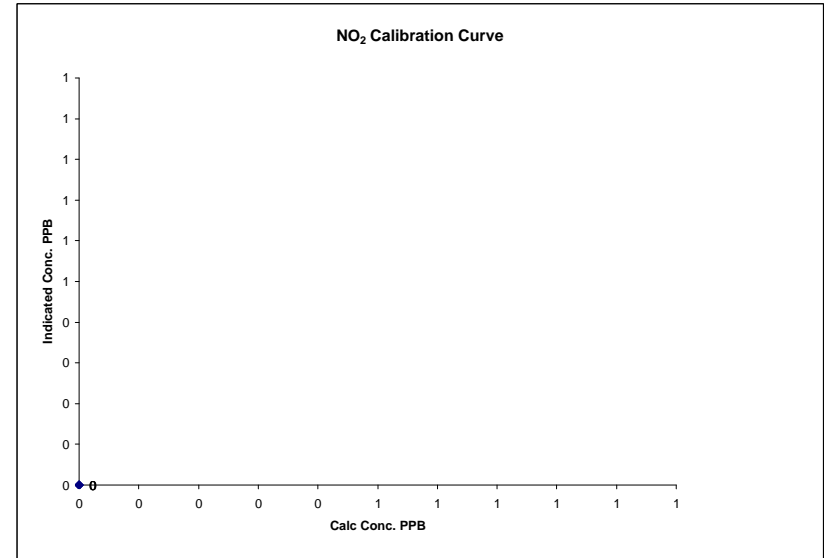
After Calibration

Auto Zero	-0.2 NOx	0.2 NO2	-0.9 NOx	-0.2 NO2
Auto Span	727 NOx	716 NO2	679 NOx	669 NO2
Sample Lines Connected: YES				
Percent Change from Previous Calibration	NOx 1.6%	NO 2.1%	NO2 NA	
Notes	NA : Not Applicable			
	Followed as foundp oints, the pump was rebuilt.			
Calibration Performed by:	Ting Xu.			

NO₂ Calibration Curve

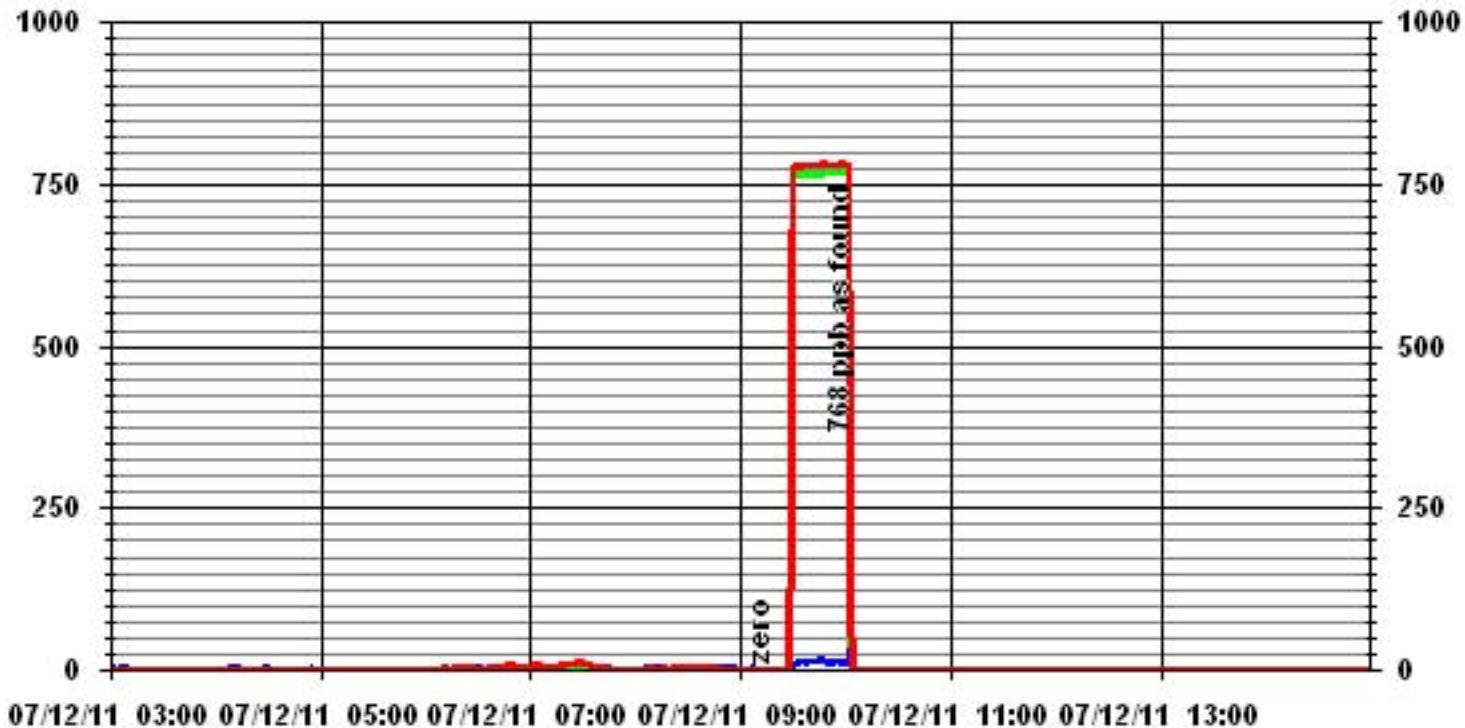
Calibration Date	July 12, 2011	Company	LICA
Plant / Location	Maskwa	Start Time (MST)	8:54
End Time (MST)	12:28		

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



Notes:

01 Minute Averages



— LICA30 HNOX_ PPB

— LICA30 HNO_ PPB

— LICA30 HNO2_ PPB

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	July 13, 2011	Previous Calibration	July 12, 2011
Company	LICA	Plant/Location	Maskwa
Start Time (MST)	10:21	End Time (MST)	16:24
Reason:	Post Repair Calibration		
Barometric Pressure	941 mBar	Station Temperature	25 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO	50.4 ppm
Cal Gas Cylinder #		Cal Gas Expiry date	February 4, 2013
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 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:	Not in use	S/N :	NA		
Flow Meter:	ESC 8832	S/N :	4760		

Analyzer Settings

Before Calibration			After Calibration		
0 - 1000					
Concentration Range					
Sample Flow/Conv. Temp	459 ccm	315.8 Deg C	458 ccm	315 Deg C	
Ozone Flow / Vacuum	79 ccm	5.4 °Hg-A	79 ccm	5.4 °Hg-A	
HVPS / A ZERO	767 Volts	17.4 MV	767 Volts	17.7 MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.6 Deg C	50.0 Deg C	6.6 Deg C	
Box Temp / IZS Temp	33.1 Deg C	45.2 Deg C	32.4 Deg C	45.1 Deg C	
Offset	2.2 NOx	1.2 NO	0.2 NOx	0.0 NO	
Slope	1.094 NOx	1.079 NO	1.172 NOx	1.141 NO	
NO ₂ COEF / Conv Efficiency	NA NO ₂	0.994	NA NO ₂	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	NA	0	0	NA	0	-1	0	NA	NA
4995	0.0	NA	0	0	NA	0	0	0	NA	NA
4921	74.2	NA	768	749	NA	715	708	7	1.0741	1.0559
4921	74.2	NA	768	749	NA	768	748	19	1.0000	0.9995
4960	34.6	NA	358	349	NA	359	349	9	0.9976	1.0000
4973	19.8	NA	205	200	NA	206	201	4	0.9953	0.9895
4995	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO ₂ Correction Factor	NO ₂ Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.2	NA	768	749	NA	768	749	19	NA	NA
No Adj needed										
4921	74.2	600	768	NA	537	768	231	536	1.0019	99.81%
4921	74.2	250	768	NA	238	768	530	238	1.0000	100.00%
4921	74.2	140	768	NA	140	770	628	142	0.9859	101.65%

Linearity OK?	Yes	No	Sum of Least Squares Correction Factors:	NOx= 0.999	NO= 1.000	NO2= 1.001
				NOx= 1.0000	NO= 0.9995	NO2= 1.0019
Average Converter Efficiency= 100.49%						

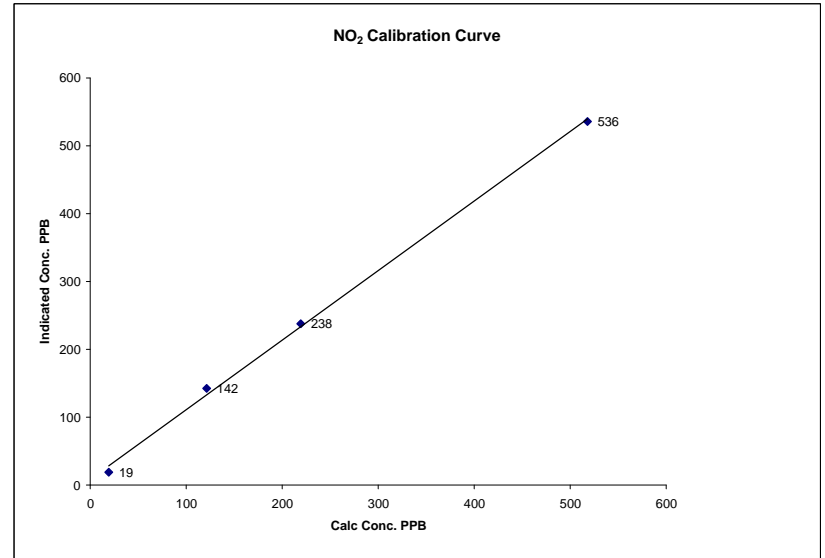
Before Calibration **After Calibration**

Auto Zero	-0.8 NOx	-0.4 NO2		0.5 NOx	0.1 NO2
Auto Span	676 NOx	666 NO2		732 NOx	720 NO2
Sample Lines Connected: YES					
Percent Change from Previous Calibration: NOx NA NO NA NO2 NA					
Notes:	NA : Not Applicable				
Calibration Performed by: Ting Xu.					

NO₂ Calibration Curve

Calibration Date	July 13, 2011	Company	LICA
Plant / Location	Maskwa	Start Time (MST)	10:21
End Time (MST)	16:24		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.998587
19	19	N/A	Intercept		1.023809
121	142	0.8521			9.27998
219	238	0.9202			
518	536	0.9664			

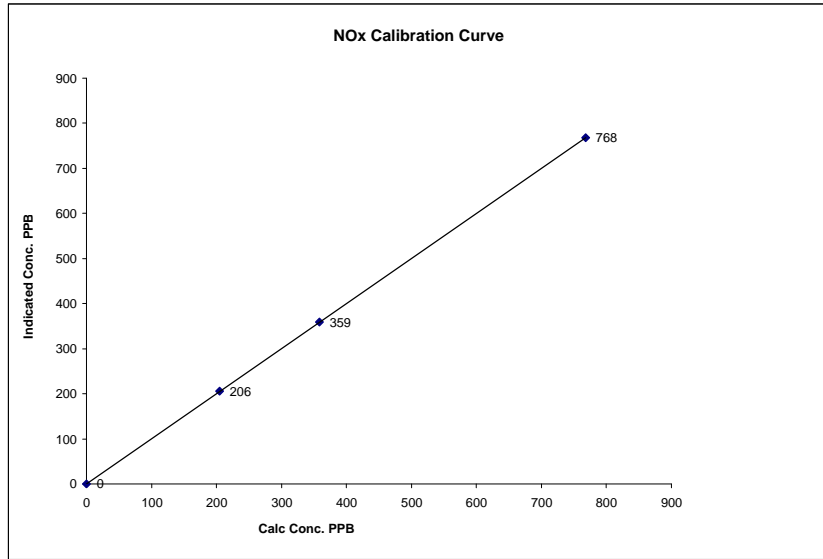


Notes:

NOx Calibration Curve

Calibration Date	July 13, 2011	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	10:21	End Time (MST) 16:24

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

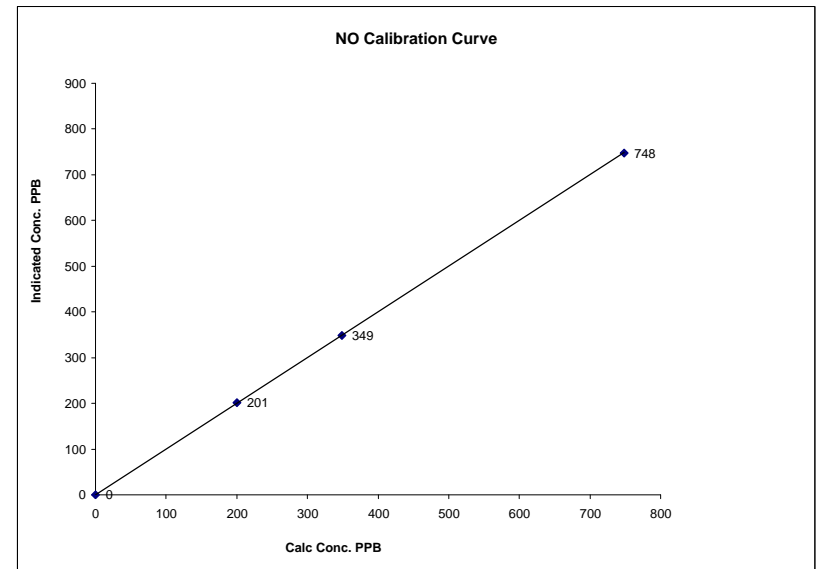


Notes:

NO Calibration Curve

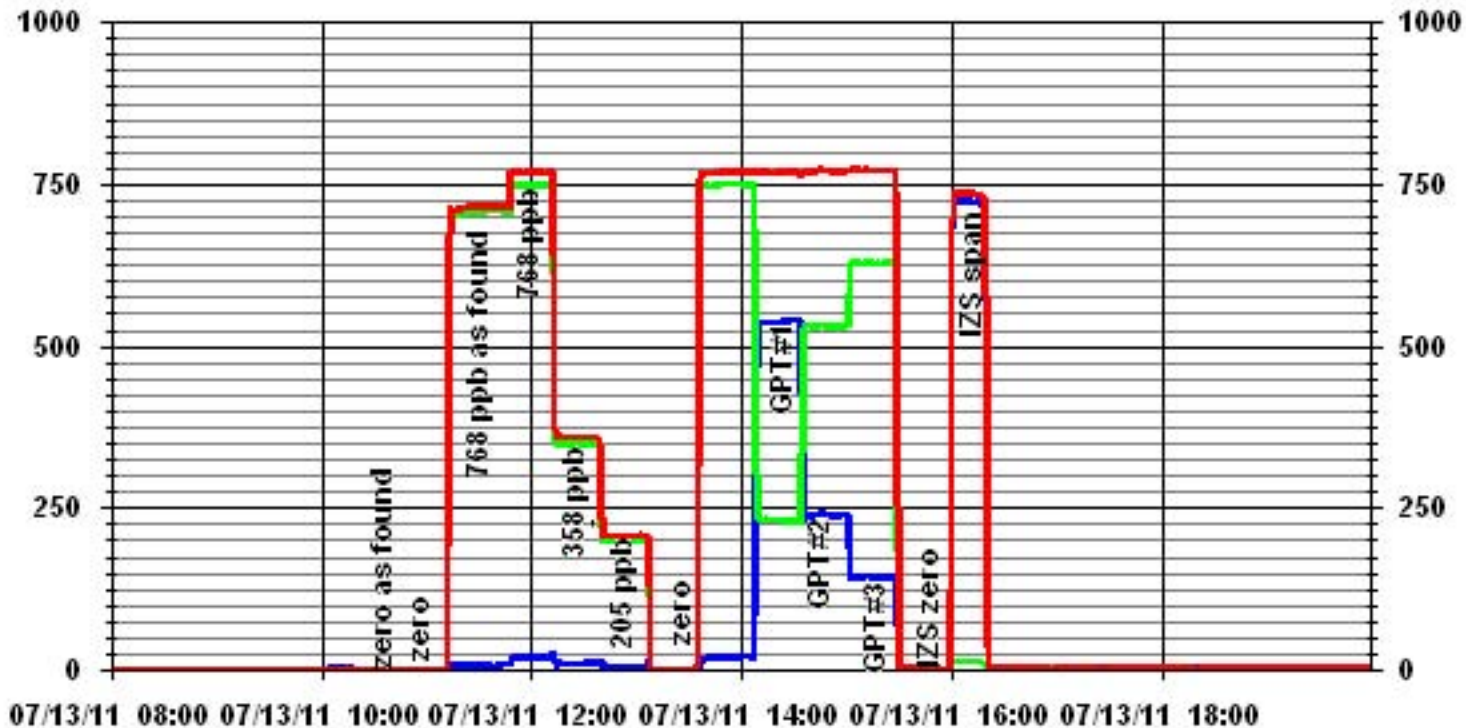
Calibration Date	July 13, 2011	
Company	LICA	
Plant / Location	Maskwa	
Start Time (MST)	10:21	End Time (MST) 16:24

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient (≥ 0.995)	0.999996
0	0	N/A	Slope (0.85 to 1.15)	0.997160
200	201	0.9944	Intercept (± 3% F.S.)	0.3003
349	349	1.0004		
749	748	1.0009		



Notes:

01 Minute Averages



— LICA30 NOX_ PPB

— LICA30 NO_ PPB

— LICA30 NO2_ PPB

Lakeland Industry & Community Association

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

Ambient Air Monitoring Data Report

For

July 2011

Prepared By:



August 26, 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: July 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 – July 2011

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PORTABEL / DEVON WELLSITE 13-16-62-5 W4M SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						OBJECTIVES				EXCEEDENCES		MONTHLY AVERAGE	
PARAMETER	1-HR	24-HR	1-HR	24-HR	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY		
SO ₂ (PPB)	172	48	0	0	0.04	1	VAR	VAR	VAR	VAR	0.3	5, 18	100.0
H ₂ S (PPB)	10	3	0	0	0.17	8	9	2	7.3	126(SE)	1.0	9	99.9
THC (PPM)	-	-	-	-	2.26	8.0	11	5	1.2	60(ENE)	3.5	11	99.9
NO ₂ (PPB)	159	-	0	-	1.80	9	1	2	6.6	251(WSW)	3.3	26	99.9
NO (PPB)	-	-	-	-	0.65	12	11	5	1.2	60(ENE)	2.2	11	99.9
NO _x (PPB)	-	-	-	-	2.18	15	11	5	1.2	60(ENE)	4.5	11	99.9
O ₃ (PPB)	82	-	0	-	19.38	45	3	13	25.5	132(SE)	27.0	3	100.0
PM 2.5 (UG/M ³)	-	30	-	0	3.35	21.3	18	7	5.3	254(WSW)	6.9	18	98.4
VECTOR WS (KPH)	-	-	-	-	9.17	25.5	3	13	-	132(SE)	17.1	22	100.0
VECTOR WD (DEGREES)	-	-	-	-	234(SW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Volatile Organics Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

Xontech Model 910A – July 2, 2011

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

Xontech Model 910A – July 8, 2011

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

Xontech Model 910A – July 14, 2011

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

Xontech Model 910A – July 20, 2011

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

Xontech Model 910A – July 26, 2011

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

Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

PUF cartridge – July 2, 2011

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

No sample was collected on July 2nd as the PUF sampler was not received on time.

PUF cartridge – July 8, 2011

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

PUF cartridge – July 14, 2011

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

PUF cartridge – July 20, 2011

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

PUF cartridge – July 26, 2011

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

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – PORTABLE

Sulphur Dioxide (PPB)

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

No operational issue observed during this month. The inlet filter was replaced before the monthly calibration was performed. The daily calibration check was not initiated on July 29th due to a small power outage. Three hour of the maximum reading were invalidated due to power failures. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

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

No operational issue observed during this month. The inlet filter was replaced before the monthly calibration was performed. The daily calibration check was not initiated on July 29th due to a small power outage. Three hour of the maximum reading were invalidated due to power failures. Data was corrected using daily zero information.

Nitrogen Dioxide (PPB)

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

No operational issue observed during this month. The inlet filter was replaced before the monthly calibration was performed. The daily calibration check was not initiated on July 29th due to a small power outage. Three hour of the maximum reading were invalidated due to power failures. Data was corrected using daily zero information.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Ozone (PPB)

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

No operational issues observed during the month. The inlet filter was replaced before the monthly calibration was started. The daily calibration check was not initiated on July 29th due to a small power outage. Three hour of the maximum reading were invalidated due to power failures. Data was corrected using daily zero information.

THC (PPM)

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

No operational issues observed during the month. The H2 gas cylinder was replaced on July 20th. The inlet filter was replaced before the monthly calibration was performed. The daily calibration check was not initiated on July 29th due to a small power outage. Three hour of the maximum reading were invalidated due to power failures. Data was corrected using daily zero information.

Particulate Matter 2.5 (ug/m³)

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

No operational issues observed during the month. A routine Teom audit was performed on July 15th. The Teom filter and FDMS filter were replaced on July 15th. Data was corrected using Alberta air quality guideline for PM2.5 analyzer. If the data was between 0 to –3, the data was corrected to 0. If the data was below –3, the data was invalidated. 12 hours of data were invalidated as they were below –3.0 ug/m³.

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. Three hour of the maximum reading were invalidated due to power failures. It was noticed that data between 17:00 and 19:00 on July 3rd had flags of “Overrange” and “ Invalid”, but no flag attached on the maximum reading during the same period of time. After reviewing minute data, no issue was noticed. It is likely due to faulty flags. Removed the flags and considered data as valid readings.

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 July 15th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. All AQI values were within the Good range. The highest hourly concentration of Ozone was 45 ppb and an AQI value of 23, on July 3rd, hour of 13. The highest hourly concentration of PM2.5 was 21.3 ug/m3 and an AQI value of 18 on July 18th at hour of 73.

General Monthly Summary

AQM STATION – LICA – PORTABLE

Volatile Organics (VOCs)

The volatile organics were sampled from July 3rd to July 27th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle.

The values for the VOCs in this report were reported as ug/m3 in 3 significant figures.

Polycyclic Aromatic Hydrocarbons (PAHs)

The PAHs scheduled to be sampled from July 2nd to July 26th. The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs in this report were reported as ng/m3.

No sample was collected on July 2nd, as the PUF sampler was not received on time.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLESITE

JULY 2011

AIR QUALITY INDEX (AQI)

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

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%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
GOOD (1-25)	634	85.2%	23	13	3	54	7.3%	18	7	18	0	0.0%	-	-	-	0	0.0%	-	-	-	688	92.5%
OVERALL	634	85.2%	-	-	-	54	7.3%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	688	92.5%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	56	7.5%

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

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

STATUS FLAG CODES

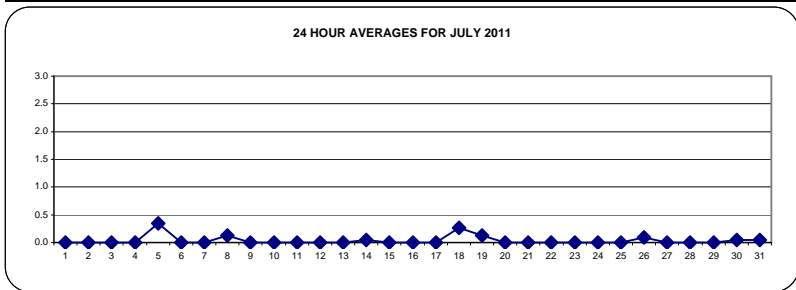
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

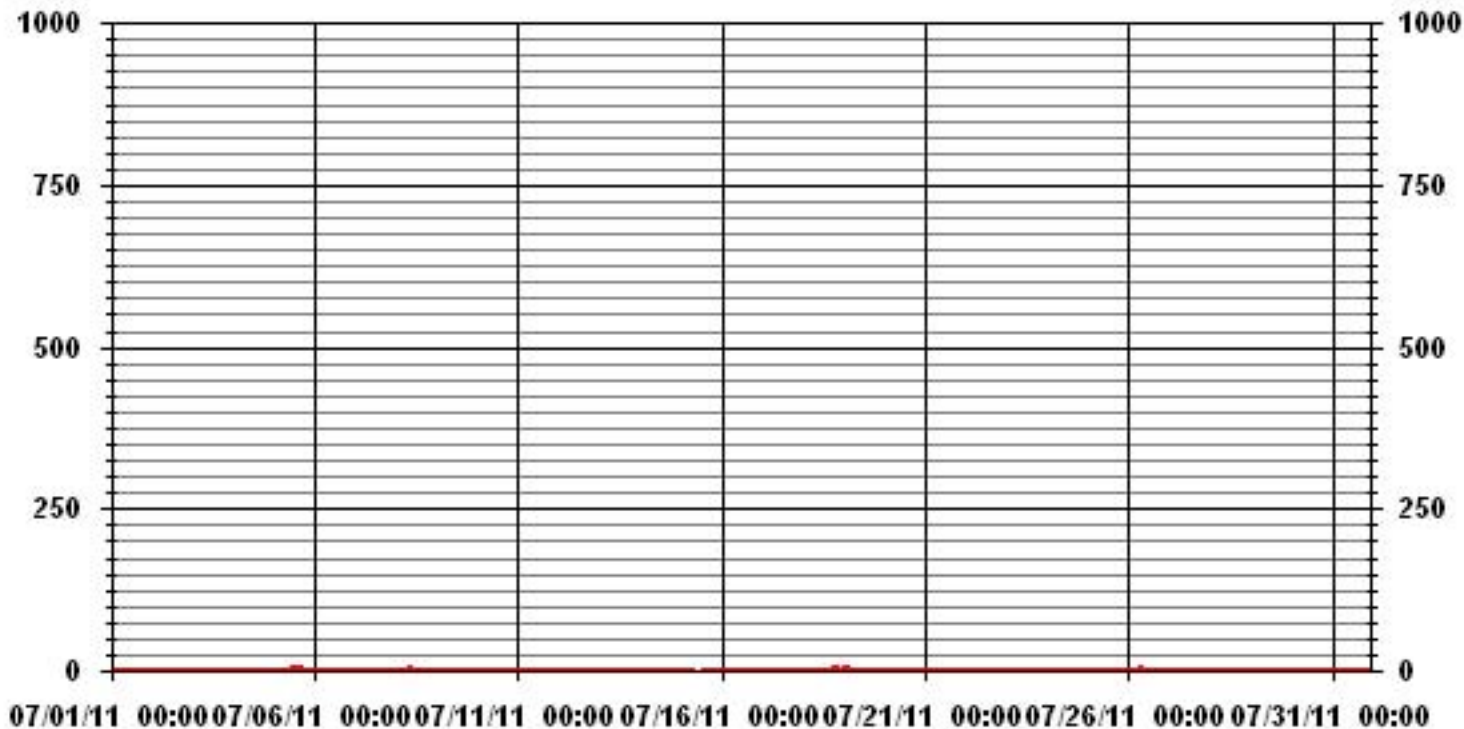
ALBERTA ENVIRONMENT:	1-HR	172	PPB	24-HR	48	PPB
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	25					
MAXIMUM 1-HR AVERAGE:	1	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	0.3	PPB			ON DAY(S)	5, 18
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.18		MONTHLY AVERAGE:	0.04	PPB	



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -PORTABLE SITE

JULY 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	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	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	1	1	1	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.4	24
2	0	0	0	0	0	0	1	1	1	1	2	1	1	0	1	1	1	1	1	0	1	0	1	1	0	2	0.7	24	
3	0	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	0.9	24	
4	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	IZS	1	1	2	1	1	2	0.4	24		
5	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	IZS	1	1	1	1	1	1	2	1.4	24		
6	1	2	1	1	1	1	1	1	1	1	2	2	1	1	2	1	IZS	2	1	1	0	1	0	0	2	1.1	24		
7	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	0.9	24		
8	1	1	1	1	2	1	1	1	2	2	2	1	1	1	IZS	0	0	0	0	1	0	0	0	0	0	2	0.8	24	
9	1	1	1	0	1	1	0	2	1	1	2	1	1	IZS	1	1	0	0	0	0	0	0	0	0	0	2	0.7	24	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	0.5	24	
11	1	1	0	1	1	1	0	0	0	0	0	0	IZS	1	1	0	0	1	0	0	0	0	0	0	0	1	0.3	24	
12	0	0	1	1	1	0	1	1	0	1	0	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	0.8	24	
13	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	P	1	1	1	1	1	1	1	1	1	1.0	23	
14	1	2	1	1	1	2	1	2	IZS	0	0	1	1	1	1	1	0	1	1	0	1	1	1	1	1	2	1.0	24	
15	1	2	1	1	1	1	1	1	IZS	1	C	C	C	C	C	2	1	0	0	0	1	0	1	1	1	2	0.9	24	
16	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	
17	0	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	0.8	24	
18	1	1	1	1	IZS	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	1.4	24	
19	2	2	2	IZS	1	1	1	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1	5	1.2	24
20	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	
21	1	IZS	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	1	0	1	0.9	24	
22	IZS	0	0	1	1	1	0	0	0	1	0	0	1	1	0	0	1	1	1	1	0	0	1	0	1	0	0.5	24	
23	1	1	0	0	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0	1	1	IZS	1	1	0.8	24	
24	1	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	1	1	1	0	IZS	1	1	1	1	0.6	24	
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1.0	24	
26	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	0	0	0	0	2	1.0	24	
27	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	
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1.0	24	
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	P	1	1	1	1	1	1	1	1	1	1.0	23	
30	1	1	1	1	1	1	C	C	1	1	1	1	1	1	2	1	IZS	1	1	1	1	1	1	1	1	2	1.0	24	
31	1	1	1	1	1	1	1	1	1	2	2	2	2	2	1	IZS	1	1	1	1	1	1	0	P	0	2	1.1	23	
HOURLY MAX	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	5	2				
HOURLY AVG	0.8	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.9	0.7				

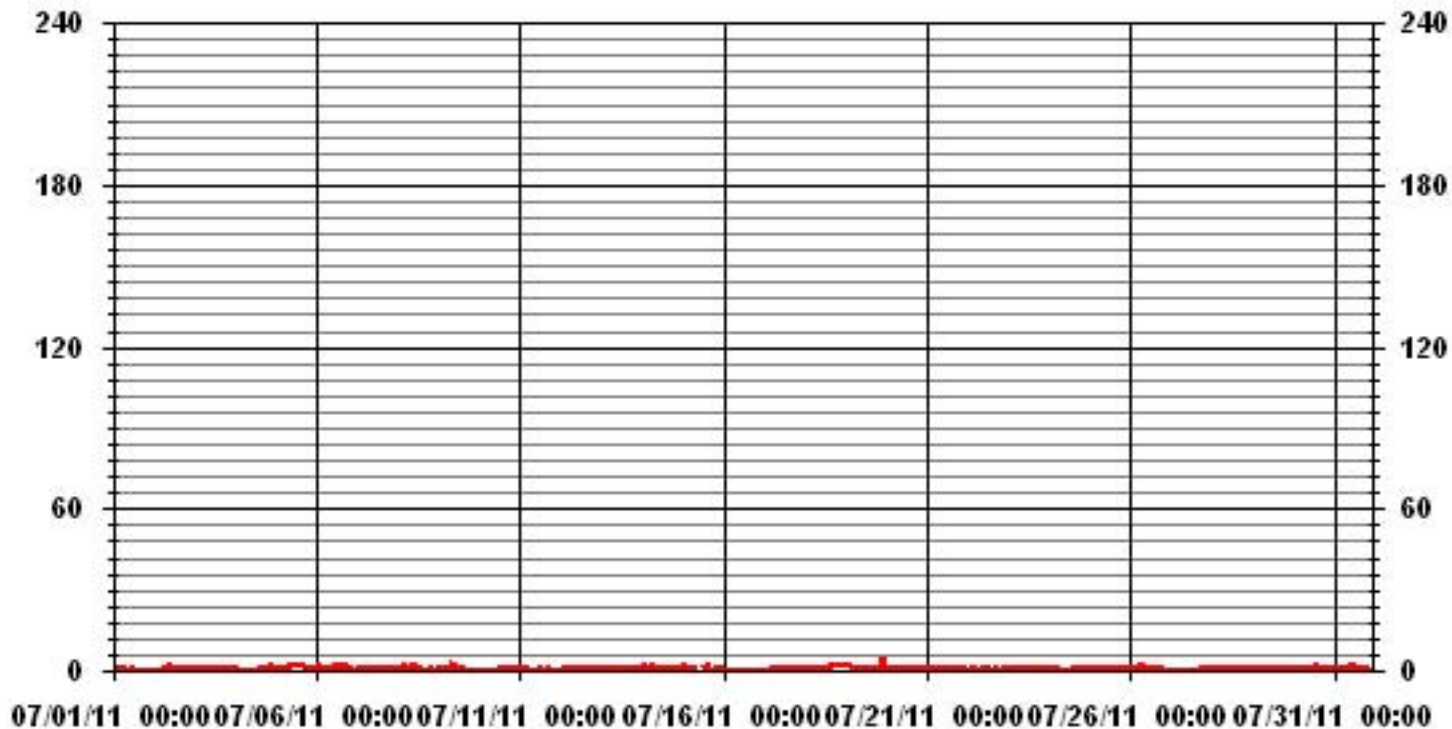
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	518					
MAXIMUM INSTANTANEOUS VALUE:	5	PPB	@ HOUR(S)	22	ON DAY(S)	19
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	741	HRS	
MONTHLY CALIBRATION TIME:	7	HRS				
STANDARD DEVIATION:	0.56					

01 Hour Averages



LICA33
 SO2_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 20	2.26	1.27	2.69	3.25	13.03	6.79	4.67	2.69	2.83	3.39	12.46	13.73	15.58	7.79	4.39	3.11	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.26	1.27	2.69	3.25	13.03	6.79	4.67	2.69	2.83	3.39	12.46	13.73	15.58	7.79	4.39	3.11	

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	16	9	19	23	92	48	33	19	20	24	88	97	110	55	31	22	706
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	16	9	19	23	92	48	33	19	20	24	88	97	110	55	31	22	

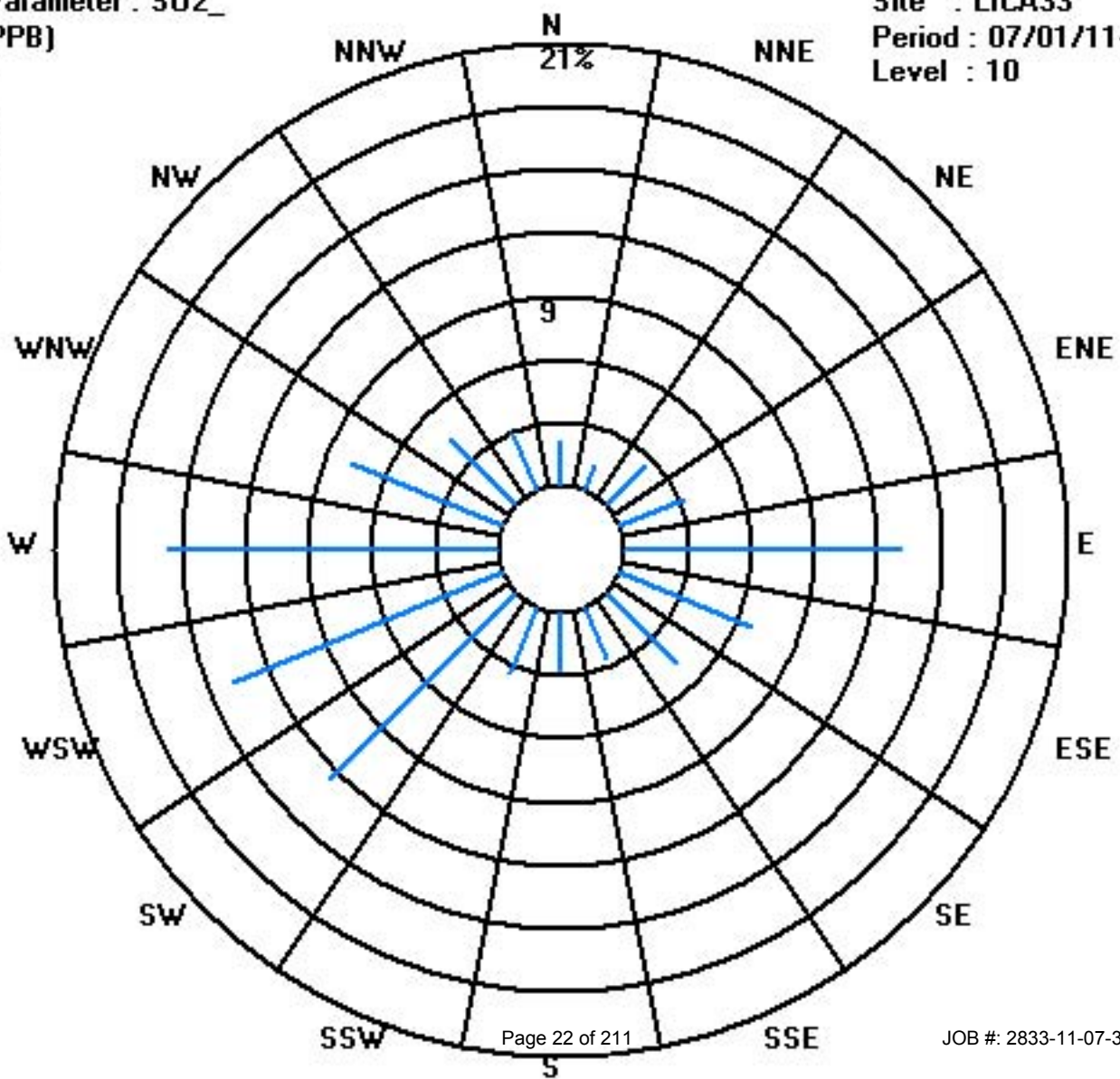
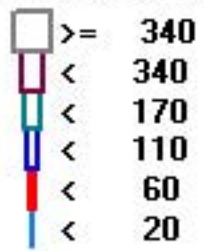
Calm : .00 %

Total # Operational Hours : 706

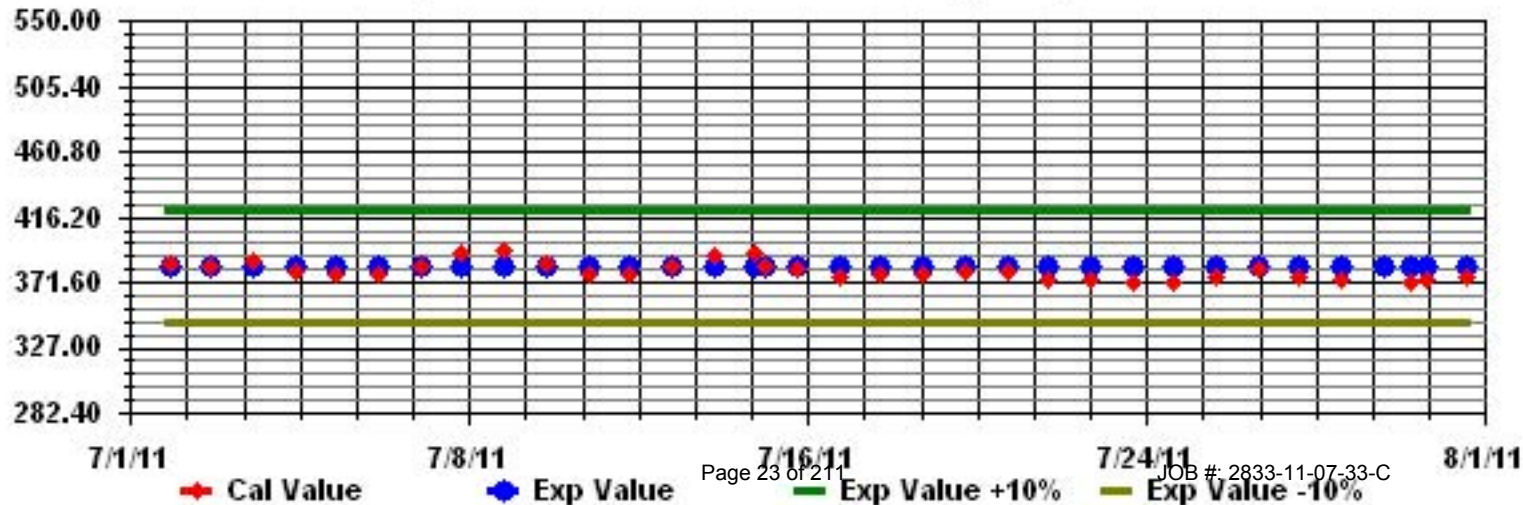
Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



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



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE

JULY 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

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

STATUS FLAG CODES

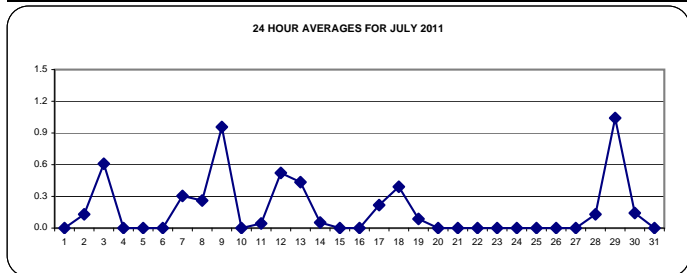
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

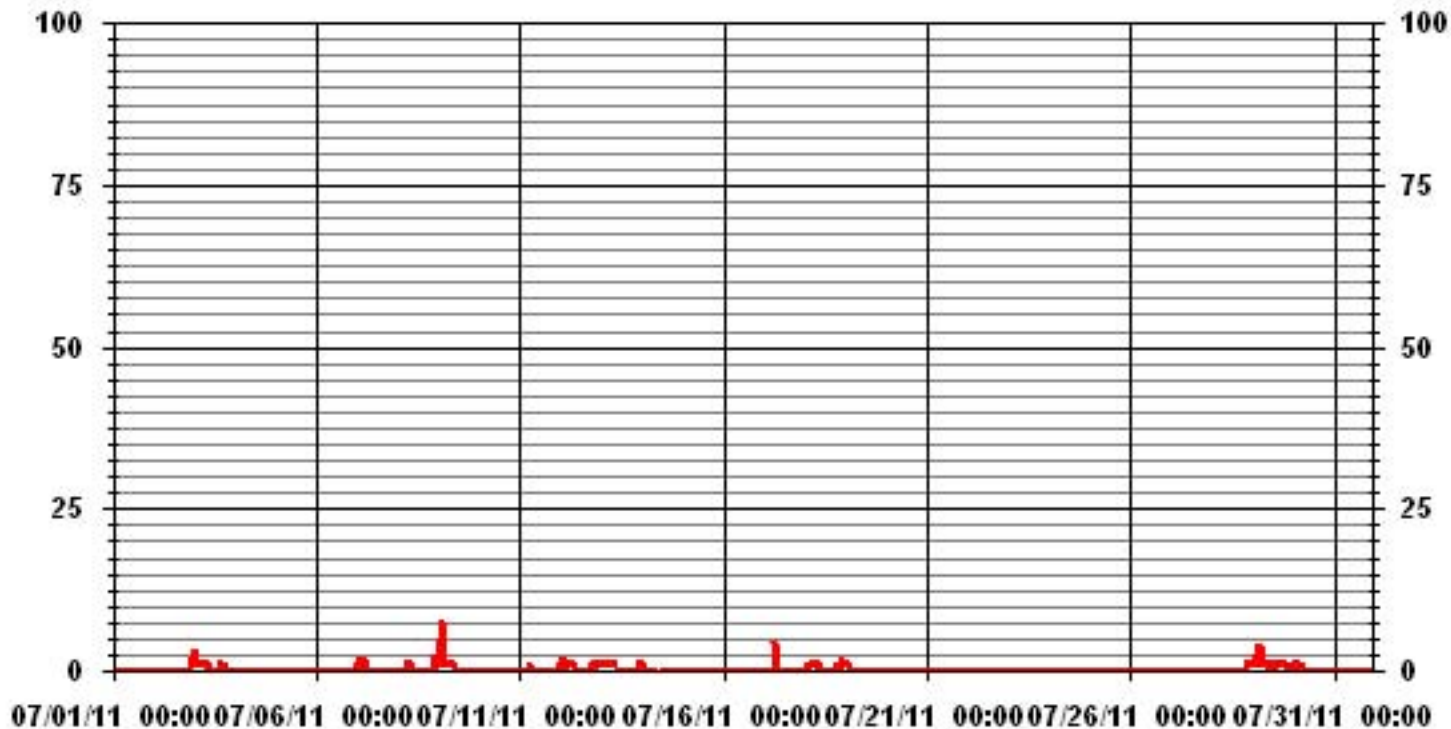
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

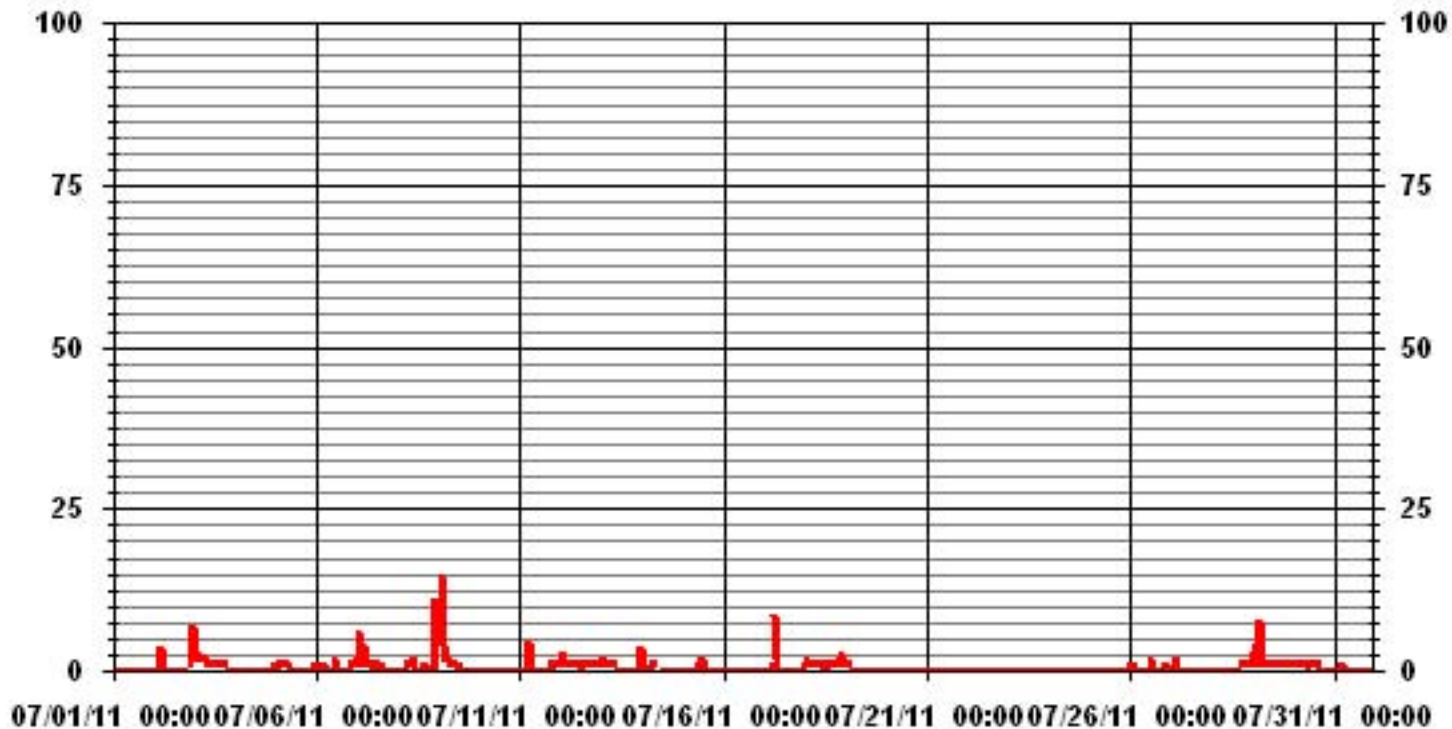
NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF 24-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	91				
MAXIMUM 1-HR AVERAGE:	8	PPB	@ HOUR(S)	2	ON DAY(S) 9
MAXIMUM 24-HR AVERAGE:	1.0	PPB			ON DAY(S) 9
					VAR-VARIOUS
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%
STANDARD DEVIATION:	0.58		MONTHLY AVERAGE:	0.17	PPB



01 Hour Averages



01 Hour Averages



LICA33
H2S_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
Parameter : H2S_
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	2.26	1.27	2.54	3.25	12.74	6.51	4.10	2.69	2.97	3.39	12.60	13.88	15.58	7.79	4.39	3.11	99.15
< 10	.00	.00	.14	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00	.00	.00	.00	.84
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.26	1.27	2.69	3.25	12.74	6.51	4.81	2.69	2.97	3.39	12.60	13.88	15.58	7.79	4.39	3.11	

Calm : .00 %

Total # Operational Hours : 706

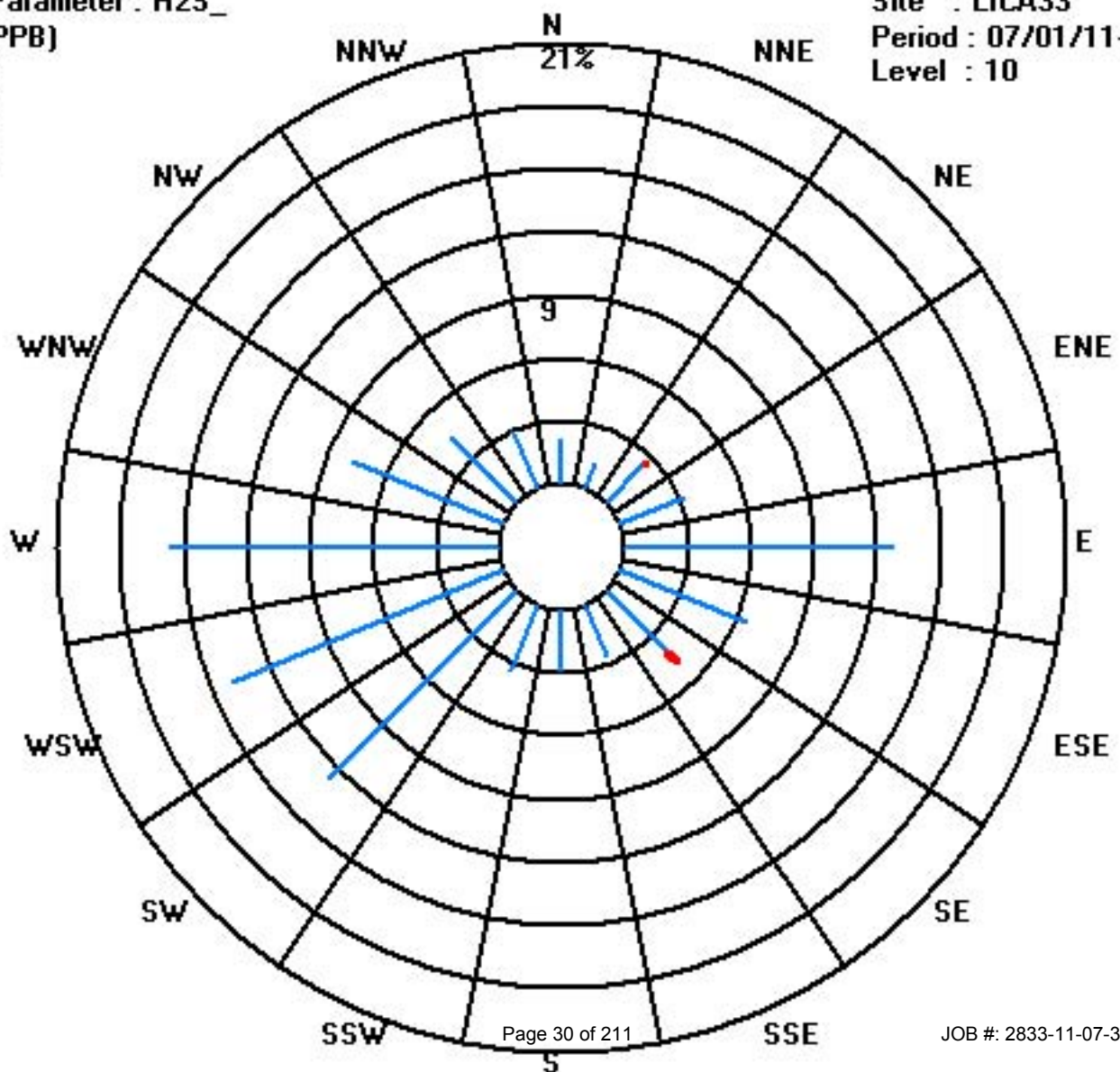
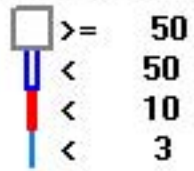
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	16	9	18	23	90	46	29	19	21	24	89	98	110	55	31	22	700
< 10			1				5										6
< 50																	
>= 50																	
Totals	16	9	19	23	90	46	34	19	21	24	89	98	110	55	31	22	

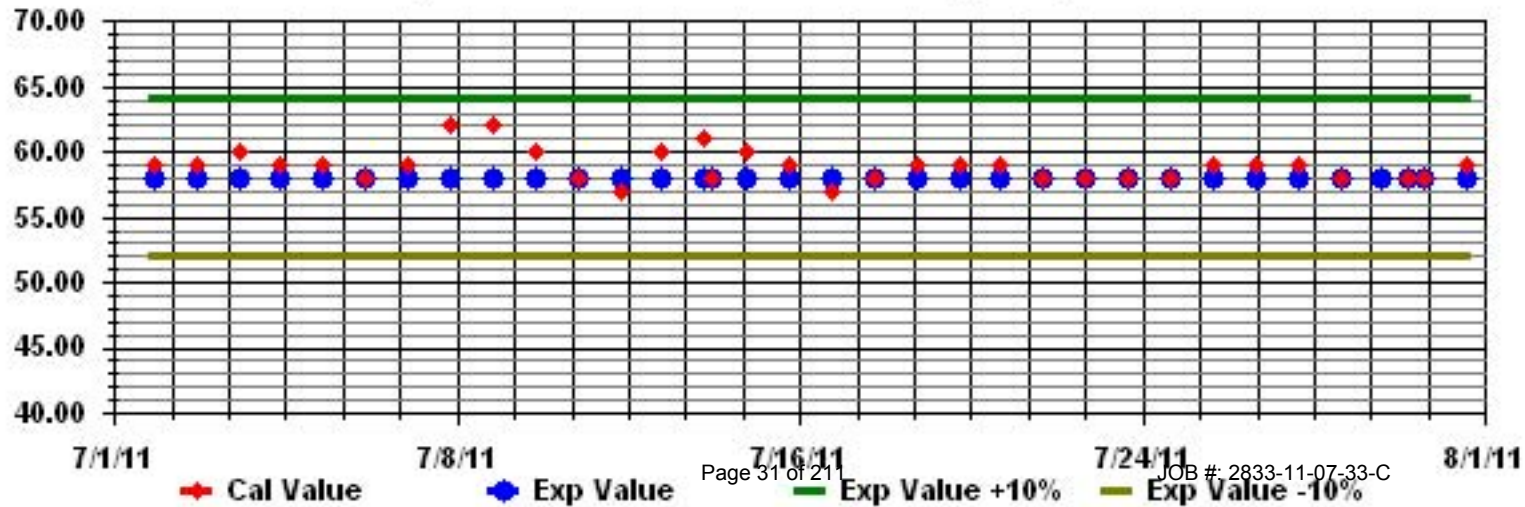
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2011

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY	24-HOUR	
HOURLY MAX	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		5.3	0.8	0.8	2.8	5.3	3.3	4.8	0	0	0.3	0.8	1.8	5.8	3.3	2.8	2.8	0	0.8	0	2.8	0.3	5.3	0	3.3	5.8	2.2	24	
2		2.3	1.8	6.8	4.8	0.3	0.8	6.3	3.3	0.3	2.8	6.3	2.3	0.3	4.8	2.3	2.8	1.3	3.8	1.3	2.3	4.3	3.3	5.3	4.8	6.8	3.1	24	
3		3.3	5.3	2.8	3.8	3.8	4.8	3.8	1.8	6.3	4.8	3.3	8.3	4.8	4.3	3.3	5.8	11.3	N	7.8	5.8	6.8	5.8	8.3	7.3	11.3	5.4	23	
4		2.8	3.3	3.3	0.3	1.8	0	0	1.8	1.3	1.8	0.8	N	0	3.8	0	N	0.8	0	4.3	N	1.3	0.3	3.8	2.3	4.3	1.6	21	
5		2.3	2.8	1.8	3.3	3.8	1.3	0	4.8	0.8	6.8	4.3	5.8	2.8	0.8	0	4.3	4.3	4.8	1.3	1.8	0.8	4.8	4.8	4.8	6.8	3.0	24	
6		1.8	4.3	9.3	3.8	7.3	4.3	3.8	6.3	4.3	3.8	5.8	1.8	2.3	4.8	2.8	1.3	4.8	3.8	2.3	1.8	8.3	5.3	4.8	6.3	9.3	4.4	24	
7		5.8	3.8	2.8	5.3	3.8	1.3	1.8	3.3	4.8	N	6.3	0.8	4.8	1.8	5.8	2.8	3.8	6.3	5.3	4.3	5.3	4.8	6.3	2.3	6.3	4.1	23	
8		5.8	5.8	1.8	4.8	4.3	10.8	0	6.8	4.3	8.3	3.8	0.8	0	0.3	3.3	0.3	2.8	7.8	1.3	0	6.3	0	0.8	0	10.8	3.3	24	
9		0	1.8	2.8	0.8	0	0	0	4.3	2.8	0	6.8	0	3.8	1.3	1.3	0	3.8	5.3	6.3	2.8	4.3	7.3	4.8	1.3	7.3	2.6	24	
10		0	2.3	2.8	2.8	0	4.3	1.3	0	0.3	0.8	0.8	0	3.8	2.8	1.8	0.3	1.8	2.8	1.3	N	1.3	4.8	0	1.8	4.8	1.6	23	
11		3.3	0.8	0.3	0.8	3.3	0	1.3	4.8	0	3.8	0	5.3	0.8	1.3	2.8	3.3	2.8	0	0.3	0.3	2.8	4.8	0.8	3.3	5.3	2.0	24	
12		5.3	3.3	3.3	0.8	3.8	4.3	3.8	4.8	4.8	3.8	5.8	4.3	2.3	3.8	1.8	4.8	1.8	5.3	1.3	3.3	2.8	6.8	4.3	2.8	6.8	3.7	24	
13		6.8	6.8	0.8	4.3	4.3	5.8	3.8	5.3	4.8	12.3	5.8	6.3	5.3	N	6.3	4.8	0.3	2.3	6.3	6.3	2.8	7.3	4.8	6.3	12.3	5.2	23	
14		6.8	5.3	0	6.3	7.3	5.8	2.3	0.3	5.3	6.8	5.8	5.8	11.3	2.7	5.8	5.3	0	4.3	5.3	0	3.8	4.8	0	8.3	11.3	4.6	24	
15		12.3	9.3	8.3	9.8	10.3	0.8	1.3	9.3	9.8	0.3	4.3	2.3	C	1.8	0	0.3	3.8	3.3	0.3	2.3	2.3	1.8	1.3	2.3	12.3	4.2	24	
16		0.3	2.8	5.3	0	1.8	0	0	1.8	2.3	1.3	3.3	0	6.3	3.8	0	1.3	4.8	7.3	2.3	0	3.8	2.3	0	5.8	7.3	2.4	24	
17		4.3	2.3	0.8	3.3	3.8	0.8	3.3	3.8	3.3	4.3	4.3	4.8	3.3	3.8	3.8	4.3	3.8	6.8	3.8	5.3	2.8	4.8	6.3	6.8	6.8	3.9	24	
18		4.8	6.3	1.8	7.3	3.8	3.8	9.8	21.3	9.8	N	0.3	0.8	2.8	6.8	6.8	5.3	5.3	8.3	8.3	6.8	15.3	11.8	1.3	10.3	21.3	6.9	23	
19		0.3	9.3	4.3	4.8	6.3	1.8	0.3	5.8	2.8	2.8	4.8	3.3	0.8	0	2.3	2.8	2.8	6.3	4.8	6.3	3.8	4.3	0.3	1.3	9.3	3.4	24	
20		0	0	5.3	3.8	8.3	2.3	5.8	6.8	1.8	0	4.3	3.3	0	5.3	5.3	3.3	2.3	0	4.8	2.3	2.3	3.8	2.8	8.3	3.3	24		
21		1.8	0.3	0	0.8	0	0.3	0	0.8	0.3	0.3	N	3.3	3.3	0	0.8	2.3	0	4.8	2.3	4.8	4.8	6.8	2.8	5.8	6.8	2.0	23	
22		3.8	6.3	2.8	1.8	4.3	0	4.3	1.8	2.8	3.8	2.3	6.3	1.3	0.3	5.8	1.3	3.3	1.3	0.3	N	0	0	2.8	1.8	6.3	2.5	23	
23		1.3	0	0	0	0	2.8	4.3	0.8	1.8	1.3	3.8	3.3	3.8	1.3	3.3	7.8	1.3	5.8	2.8	3.3	1.8	0.8	N	1.8	7.8	2.3	23	
24		0.3	0.3	4.8	0.8	0	0.3	2.8	0	1.3	5.8	0.3	0.8	0.3	0	5.8	2.3	4.3	1.3	3.8	3.3	8.8	3.8	2.3	4.8	8.8	2.4	24	
25		3.8	6.3	5.3	1.8	2.8	1.8	2.3	7.8	0	2.8	1.8	8.8	4.3	5.3	3.8	4.3	3.8	3.3	6.3	4.3	4.8	2.8	5.3	4.8	8.8	4.1	24	
26		6.3	5.3	0.3	3.8	4.8	3.3	2.8	0.8	2.3	0	7.3	5.3	5.8	4.8	5.3	3.3	5.3	5.3	3.3	4.3	3.3	4.8	2.3	7.3	3.9	24		
27		6.8	4.3	5.3	2.3	3.8	1.8	N	0	4.3	4.8	3.3	2.8	2.8	0.3	4.3	2.8	7.3	1.3	2.8	3.3	2.3	1.8	1.3	2.3	7.3	3.1	23	
28		6.3	3.8	1.8	1.3	3.3	3.3	2.8	2.8	3.3	1.3	3.8	2.3	0.8	1.8	3.3	7.3	2.3	7.8	3.3	5.8	6.8	1.8	5.3	3.8	7.8	3.6	24	
29		1.3	3.3	0.8	5.8	3.3	5.8	3.8	2.3	3.8	3.3	2.3	0	5.3	6.3	6.3	0	0.3	3.3	1.3	3.3	3.8	1.3	0.3	2.3	6.3	2.9	24	
30		0	4.3	0	0	2.8	3.3	4.8	1.3	1.8	3.3	0.8	1.3	2.3	2.8	2.8	0	1.8	4.8	0.3	4.3	1.8	6.8	3.8	6.3	6.8	2.6	24	
31		1.3	4.3	3.3	3.3	4.8	0.8	2.8	0	2.3	1.8	2.8	3.3	2.3	5.3	6.3	3.3	3.3	8.8	2.7	5.8	4.8	3.8	0.3	3.3	8.8	3.4	24	
HOURLY MAX		12	9	9	10	10	11	10	21	10	12	7	9	11	7	7	8	11	9	8	7	15	12	8	10				
HOURLY AVG		3.4	3.8	2.9	3.1	3.7	2.6	2.8	3.7	3.0	3.2	3.5	3.2	3.1	2.9	3.4	3.1	3.0	4.3	3.1	3.5	4.0	4.1	3.0	4.0				

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:

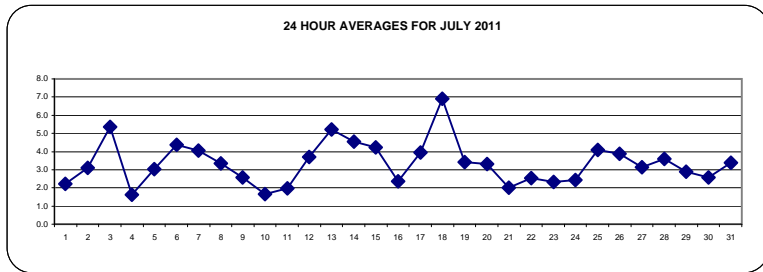
ALBERTA ENVIRONMENT:

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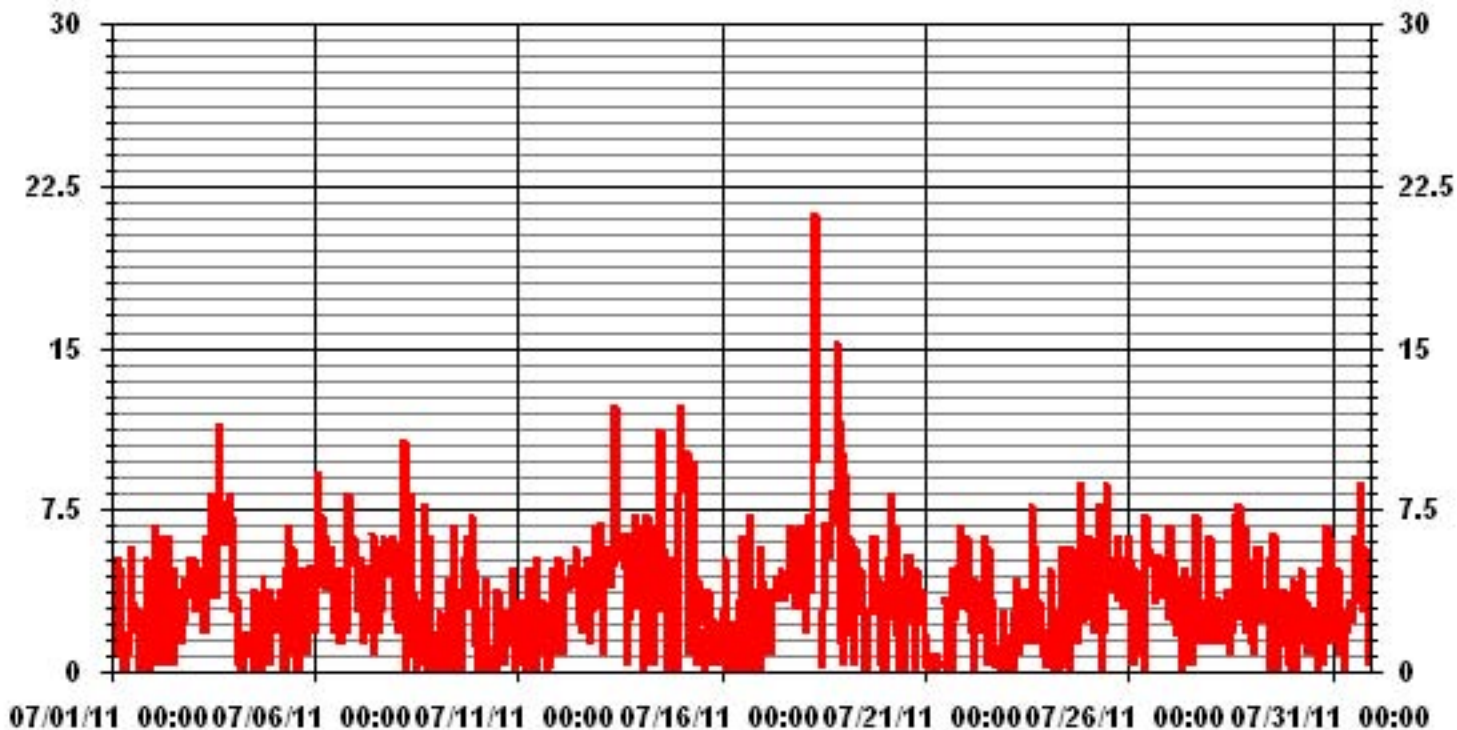
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-			
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE		
NUMBER OF NON-ZERO READINGS:	655			
MAXIMUM 1-HR AVERAGE:	21.3	UG/M ³	@ HOUR(S)	7 ON DAY(S)
MAXIMUM 24-HR AVERAGE:	6.9	UG/M ³		ON DAY(S)
IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	732 HRS
MONTHLY CALIBRATION TIME:	1	HRS	AMD OPERATION UPTIME:	98.4 %
STANDARD DEVIATION:	2.54		MONTHLY AVERAGE:	3.35 UG/M ³

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



— LICA33 PM2 UG/M3

LICA33
 PM2 / WDR Joint Frequency Distribution (Percent)

July 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	2.18	1.23	2.46	3.00	12.99	6.97	4.78	2.59	3.14	3.41	13.13	13.40	15.45	7.93	4.24	3.00	100.00	
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
Totals	2.18	1.23	2.46	3.00	12.99	6.97	4.78	2.59	3.14	3.41	13.13	13.40	15.45	7.93	4.24	3.00		

Calm : .00 %

Total # Operational Hours : 731

Distribution By Samples

	Direction																	
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq	
< 30.0	16	9	18	22	95	51	35	19	23	25	96	98	113	58	31	22	731	
< 60.0																		
< 80.0																		
< 120.0																		
< 240.0																		
>= 240.0																		
Totals	16	9	18	22	95	51	35	19	23	25	96	98	113	58	31	22		

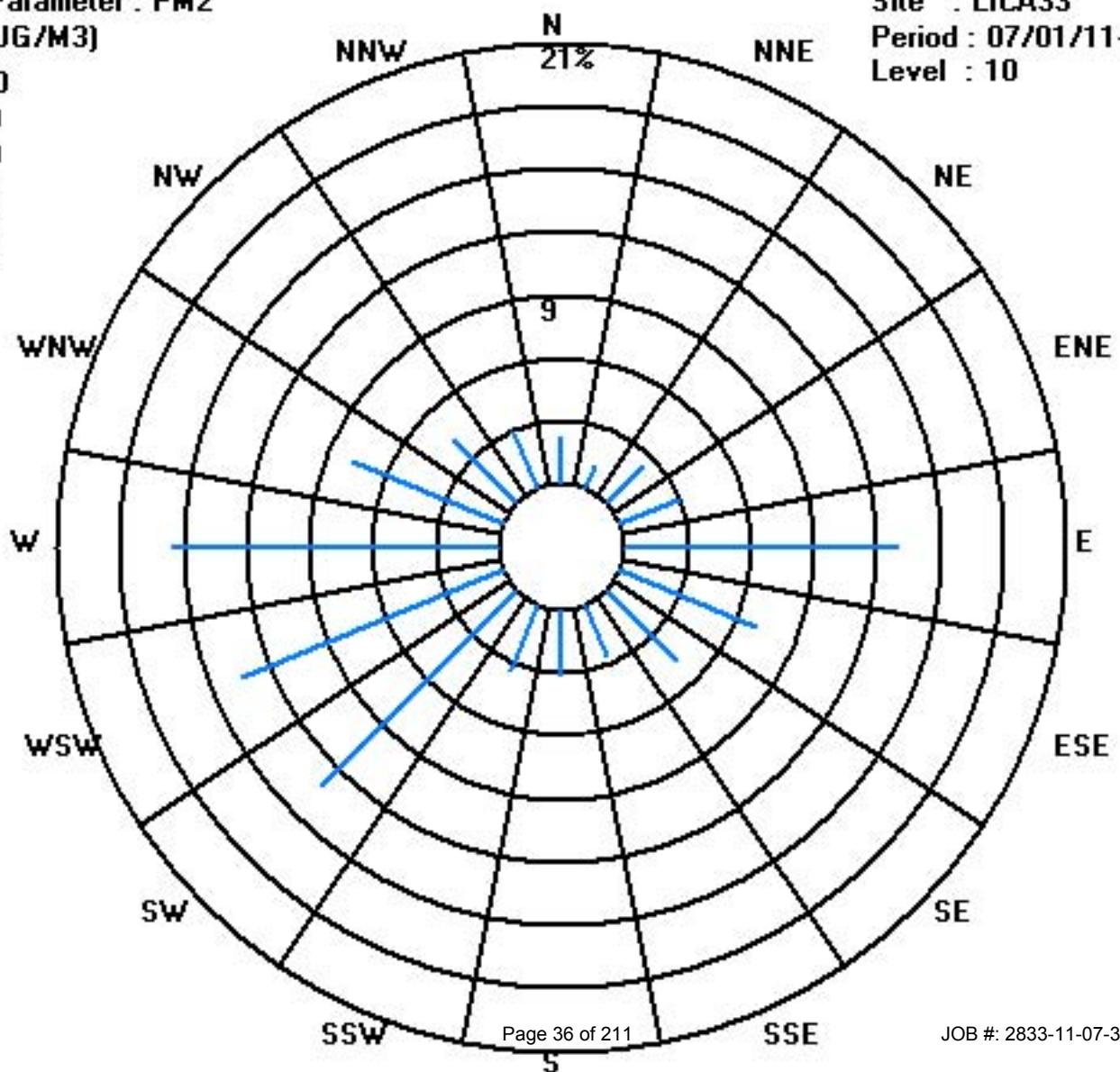
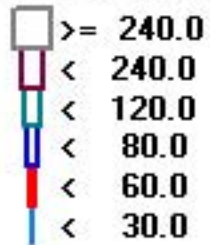
Calm : .00 %

Total # Operational Hours : 731

Class Limits (UG/M3)

Period : 07/01/11-07/31/11

Level : 10



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2011

NITROGEN DIOXIDE hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00				
DAY																												
1	7	6	9	5	4	3	1	1	0	0	0	0	0	0	0	0	0	0	2	3	IZS	2	3	9	2.0	24		
2	5	2	2	2	2	2	3	3	2	2	2	1	1	1	1	1	1	1	3	4	IZS	2	3	4	5	2.2	24	
3	4	3	5	5	6	4	3	2	2	1	1	1	1	1	1	1	2	2	IZS	2	2	5	5	6	2.6	24		
4	3	3	2	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	3	1.5	24	
5	3	5	1	2	2	2	2	2	2	1	1	1	0	0	0	0	1	IZS	0	2	1	4	1	4	5	1.6	24	
6	4	8	5	4	4	5	3	2	0	0	0	0	0	0	0	0	IZS	1	1	2	3	5	4	5	8	2.4	24	
7	8	7	5	1	1	2	1	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	8	1.8	24
8	1	1	1	1	1	1	1	1	1	2	2	1	1	1	IZS	0	0	0	1	2	0	0	0	0	0	2	0.8	24
9	1	1	1	3	3	5	2	2	3	1	1	1	1	IZS	1	1	1	1	0	1	0	1	1	1	1	5	1.4	24
10	1	1	1	1	1	2	1	1	0	0	0	0	IZS	0	0	0	0	1	0	0	1	5	3	3	5	1.0	24	
11	3	4	3	3	4	2	4	3	0	0	0	IZS	0	0	0	1	1	1	1	1	1	3	6	4	6	2.0	24	
12	5	6	5	4	3	3	2	1	1	1	1	IZS	0	1	1	1	1	1	1	2	3	1	5	6	6	2.4	24	
13	6	5	3	3	4	3	3	2	1	IZS	1	1	1	1	1	1	1	1	1	1	1	2	5	5	6	2.3	24	
14	7	8	4	4	5	3	2	2	IZS	C	C	C	C	C	C	C	0	0	0	0	1	1	1	2	8	2.5	24	
15	4	1	4	2	4	2	5	IZS	2	2	2	1	1	M	1	1	0	1	1	2	1	2	3	1	5	2.0	23	
16	4	1	4	2	1	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	6	5	6	1.9	24	
17	4	4	2	3	3	IZS	3	4	2	1	1	1	1	1	1	1	1	1	1	2	2	2	3	1	4	2.0	24	
18	2	2	7	4	IZS	2	3	3	2	2	2	1	1	1	1	1	1	1	1	2	1	1	1	2	7	1.9	24	
19	2	3	4	IZS	3	2	2	1	1	1	1	1	1	1	1	1	1	2	2	3	1	2	1	1	4	1.7	24	
20	2	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	6	6	1.5	24	
21	2	IZS	1	1	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	3	1.3	24		
22	IZS	0	1	2	1	0	1	1	1	0	0	0	0	1	1	1	1	0	1	1	0	1	1	IZS	2	0.7	24	
23	0	0	0	0	0	0	1	2	1	1	1	1	1	1	1	2	1	3	3	5	2	IZS	2	5	1.3	24		
24	3	2	2	2	3	3	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1	IZS	1	1	3	1.5	24	
25	2	4	4	4	2	1	3	2	2	2	2	1	1	1	1	1	1	1	1	1	IZS	2	5	4	5	2.1	24	
26	4	2	2	2	6	3	5	6	3	4	3	4	3	2	2	3	4	3	4	IZS	4	2	2	2	6	3.3	24	
27	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	0	5	2	4	2	5	1.5	24	
28	2	1	2	8	2	2	1	1	2	2	1	1	1	1	1	1	1	IZS	2	1	2	2	3	2	8	1.8	24	
29	2	1	1	5	5	6	5	4	2	1	1	1	1	1	1	1	2	2	1	1	1	2	3	6	2.1	24		
30	1	1	2	1	1	3	C	C	1	1	1	1	2	1	1	IZS	0	1	1	2	4	2	3	2	4	1.5	24	
31	2	3	3	2	2	1	2	1	1	1	1	1	1	1	IZS	1	1	1	1	1	2	1	1	2	3	1.4	24	
HOURLY MAX	8	8	9	8	6	6	5	6	3	4	3	4	3	2	2	3	4	3	4	4	5	5	6	6				
HOURLY AVG	3.2	3.0	2.9	2.8	2.7	2.4	2.3	1.9	1.3	1.1	1.1	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.2	1.5	1.8	1.9	2.7	2.7				

STATUS FLAG CODES

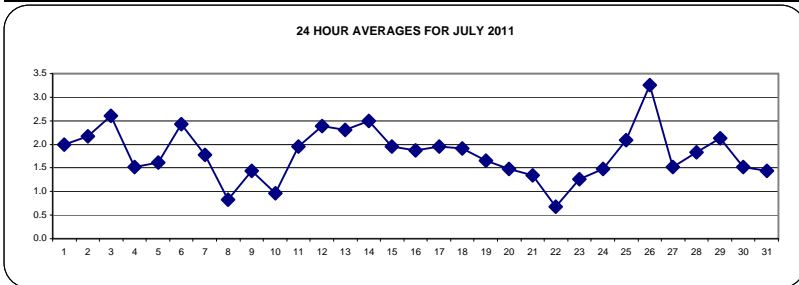
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

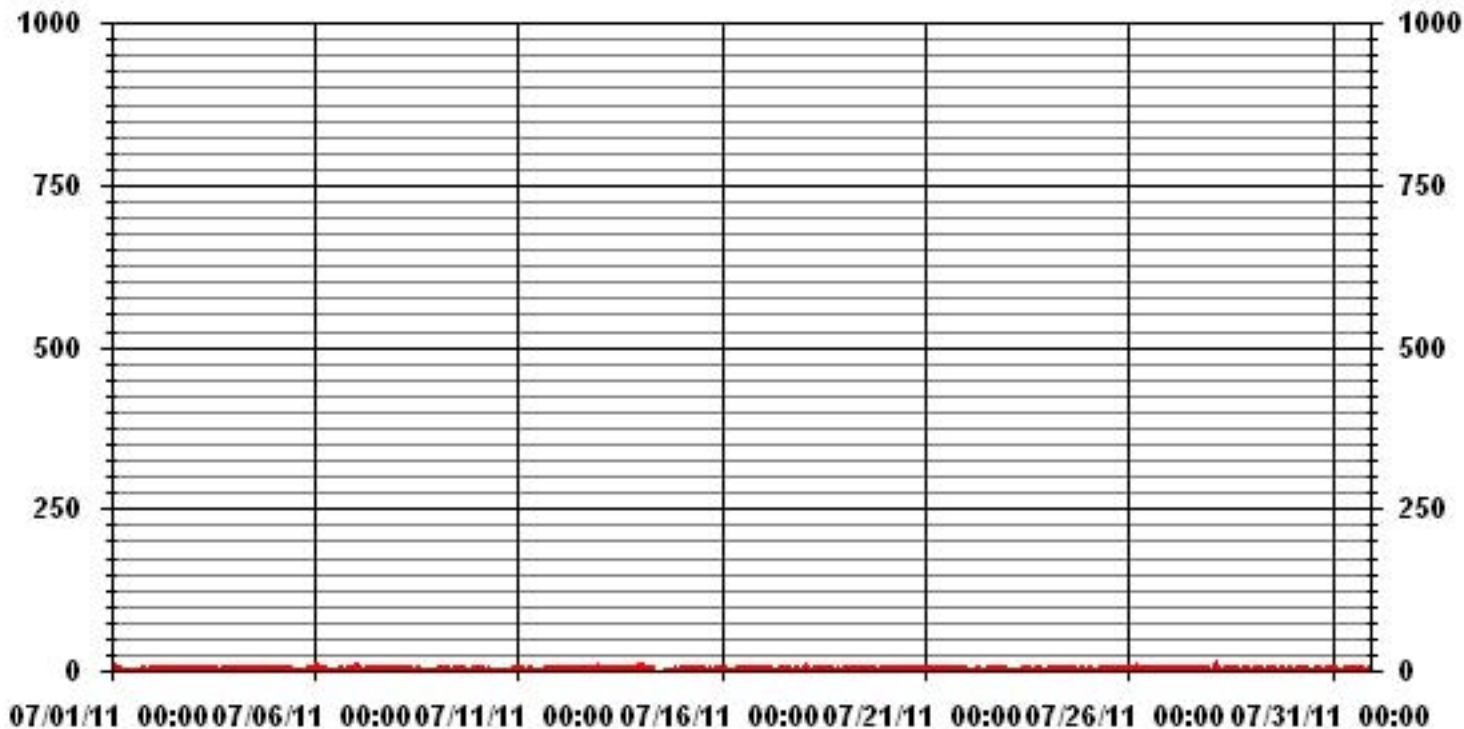
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	632					
MAXIMUM 1-HR AVERAGE:	9	PPB	@ HOUR(S)	2	ON DAY(S)	1
MAXIMUM 24-HR AVERAGE:	3.3	PPB			ON DAY(S)	26
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	1.49		MONTHLY AVERAGE:	1.80	PPB	



01 Hour Averages



— LICA33 H02_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 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	14	15	15	12	8	8	3	3	1	1	1	1	1	1	1	1	2	2	6	7	IZS	3	6	15	4.9	24		
2	8	3	2	2	3	3	3	5	3	3	2	2	2	2	2	2	3	6	10	IZS	3	4	6	10	3.5	24		
3	4	5	6	7	10	5	4	4	2	2	2	1	2	2	1	2	2	3	5	IZS	6	3	13	7	13	4.3	24	
4	7	6	4	7	6	5	4	7	2	2	2	2	2	2	2	2	2	IZS	6	6	2	2	3	7	3.7	24		
5	5	13	2	2	3	3	3	15	8	9	10	10	1	1	2	2	1	IZS	1	10	3	9	6	13	15	5.7	24	
6	17	19	8	5	7	7	5	4	1	2	1	1	0	0	0	1	IZS	1	2	4	4	22	5	9	22	5.4	24	
7	12	9	9	2	3	4	2	2	2	3	2	1	5	3	1	IZS	1	1	2	1	2	2	2	2	12	3.2	24	
8	2	2	2	2	2	2	2	2	2	3	3	2	1	2	IZS	0	2	1	3	4	2	1	1	1	4	1.9	24	
9	2	1	2	6	7	8	4	5	5	2	2	2	2	IZS	2	2	3	2	1	2	1	4	3	5	8	3.2	24	
10	2	2	2	2	3	3	2	2	1	1	1	1	IZS	1	1	1	1	2	1	3	3	8	4	7	8	2.3	24	
11	6	6	4	5	5	4	7	7	1	0	0	IZS	1	1	1	10	23	1	1	2	2	5	10	6	23	4.7	24	
12	6	11	10	5	4	4	3	2	2	1	IZS	1	15	4	3	11	1	1	4	3	5	2	8	12	15	5.1	24	
13	11	11	7	6	6	4	5	3	2	IZS	1	2	2	2	2	2	P	2	2	1	2	4	7	7	11	4.1	23	
14	11	10	7	7	8	4	3	2	IZS	C	C	C	C	C	C	C	0	0	0	1	1	1	1	4	11	3.8	24	
15	7	2	8	7	6	5	7	IZS	3	4	3	3	2	M	2	1	1	1	1	3	4	4	3	6	4	8	3.9	23
16	7	3	8	4	2	3	IZS	4	2	2	3	2	2	3	3	2	2	1	2	2	4	2	9	9	9	3.5	24	
17	7	7	4	10	4	IZS	5	6	3	2	1	1	1	1	1	1	1	1	1	3	3	3	6	2	10	3.2	24	
18	4	3	11	8	IZS	4	5	5	4	4	2	2	2	2	2	2	2	2	2	3	5	2	2	2	4	11	3.6	24
19	3	6	13	IZS	15	3	3	2	2	3	2	2	2	2	3	1	1	9	3	4	2	6	2	2	15	4.0	24	
20	4	4	IZS	3	2	2	2	2	2	2	2	6	2	1	1	1	2	1	1	1	2	2	12	13	13	3.0	24	
21	7	IZS	5	3	8	5	2	2	2	1	1	2	1	1	2	1	1	2	1	3	4	3	3	4	8	2.8	24	
22	IZS	1	1	4	3	1	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	IZS	4	1.3	24	
23	1	1	1	1	1	1	2	3	2	3	2	2	1	1	2	4	5	2	8	6	14	4	IZS	3	14	3.0	24	
24	5	3	2	4	5	5	4	3	2	2	2	2	1	2	2	3	2	1	3	4	2	IZS	2	2	5	2.7	24	
25	5	5	7	14	4	3	8	2	3	3	3	2	2	2	1	1	1	1	1	2	IZS	7	10	5	14	4.0	24	
26	6	4	3	3	9	5	8	8	5	7	7	7	6	3	3	10	8	4	8	IZS	10	3	3	2	10	5.7	24	
27	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	1	2	IZS	1	12	9	11	2	12	2.9	24		
28	2	2	6	10	2	3	2	1	3	2	2	1	2	2	3	2	2	IZS	6	2	4	2	7	3	10	3.1	24	
29	4	2	2	12	10	9	8	6	3	2	2	2	3	1	1	2	P	5	2	2	4	3	6	6	12	4.2	23	
30	3	3	8	4	3	5	C	C	3	2	2	3	4	3	2	IZS	1	2	3	4	6	4	4	4	8	3.5	24	
31	4	5	4	4	3	2	3	2	1	2	1	2	2	2	IZS	2	2	2	2	2	3	2	P	4	5	2.5	23	
HOURLY MAX	17	19	15	14	15	9	8	15	8	9	10	10	15	4	3	11	23	9	8	10	14	22	13	13				
HOURLY AVG	5.9	5.5	5.5	5.4	5.1	4.1	3.9	3.9	2.5	2.5	2.2	2.3	2.4	1.8	1.7	2.5	2.6	2.0	2.7	3.4	4.2	4.2	5.3	5.2				

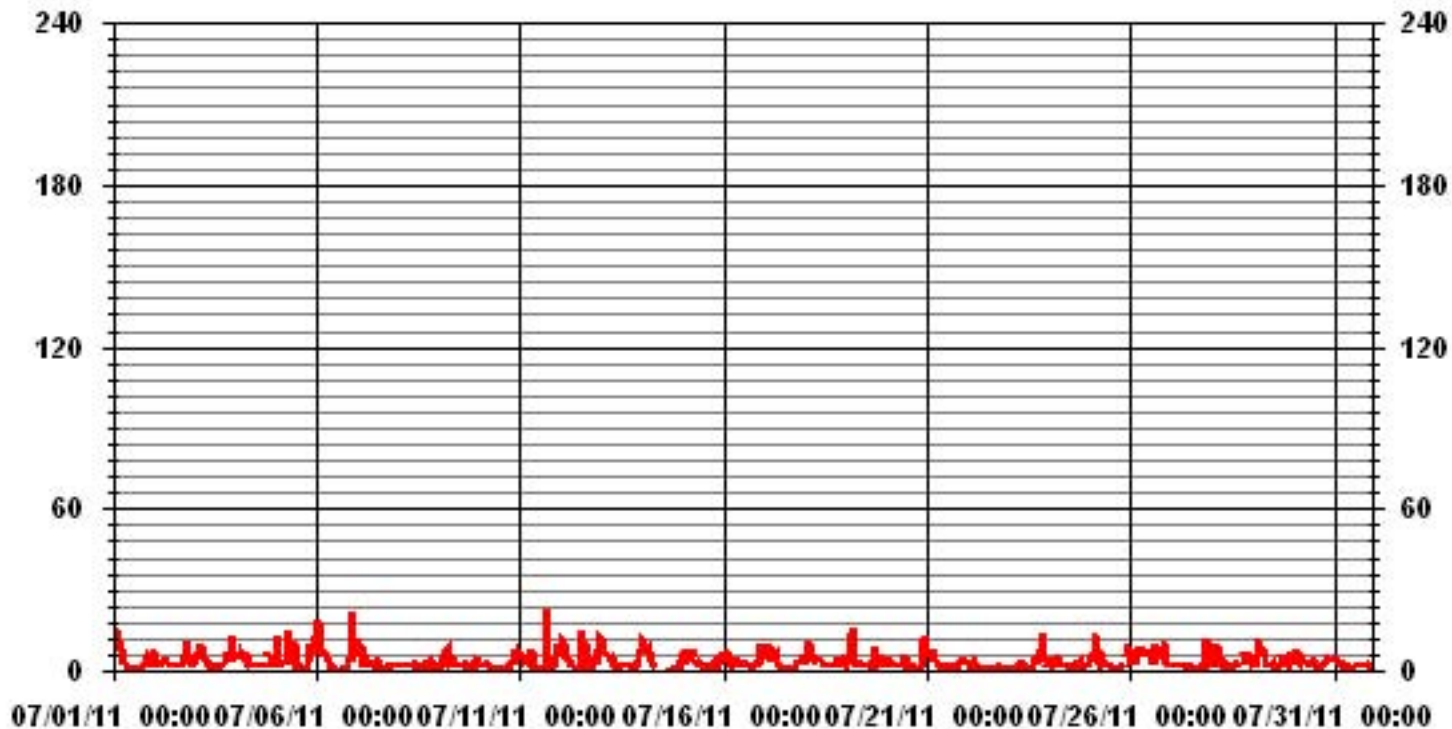
STATUS FLAG CODES

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:	691					
MAXIMUM INSTANTANEOUS VALUE:	23	PPB	@ HOUR(S)	16	ON DAY(S)	11
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	3.15					

01 Hour Averages



— LICA33 IIO2MAX PPB

LICA33
 NO2_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : NO2_
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	2.27	1.28	2.70	3.27	12.80	6.54	4.83	2.56	2.84	3.27	12.66	13.94	15.64	7.82	4.40	3.12	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.27	1.28	2.70	3.27	12.80	6.54	4.83	2.56	2.84	3.27	12.66	13.94	15.64	7.82	4.40	3.12	

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	16	9	19	23	90	46	34	18	20	23	89	98	110	55	31	22	703
< 110																	
< 210																	
>= 210																	
Totals	16	9	19	23	90	46	34	18	20	23	89	98	110	55	31	22	

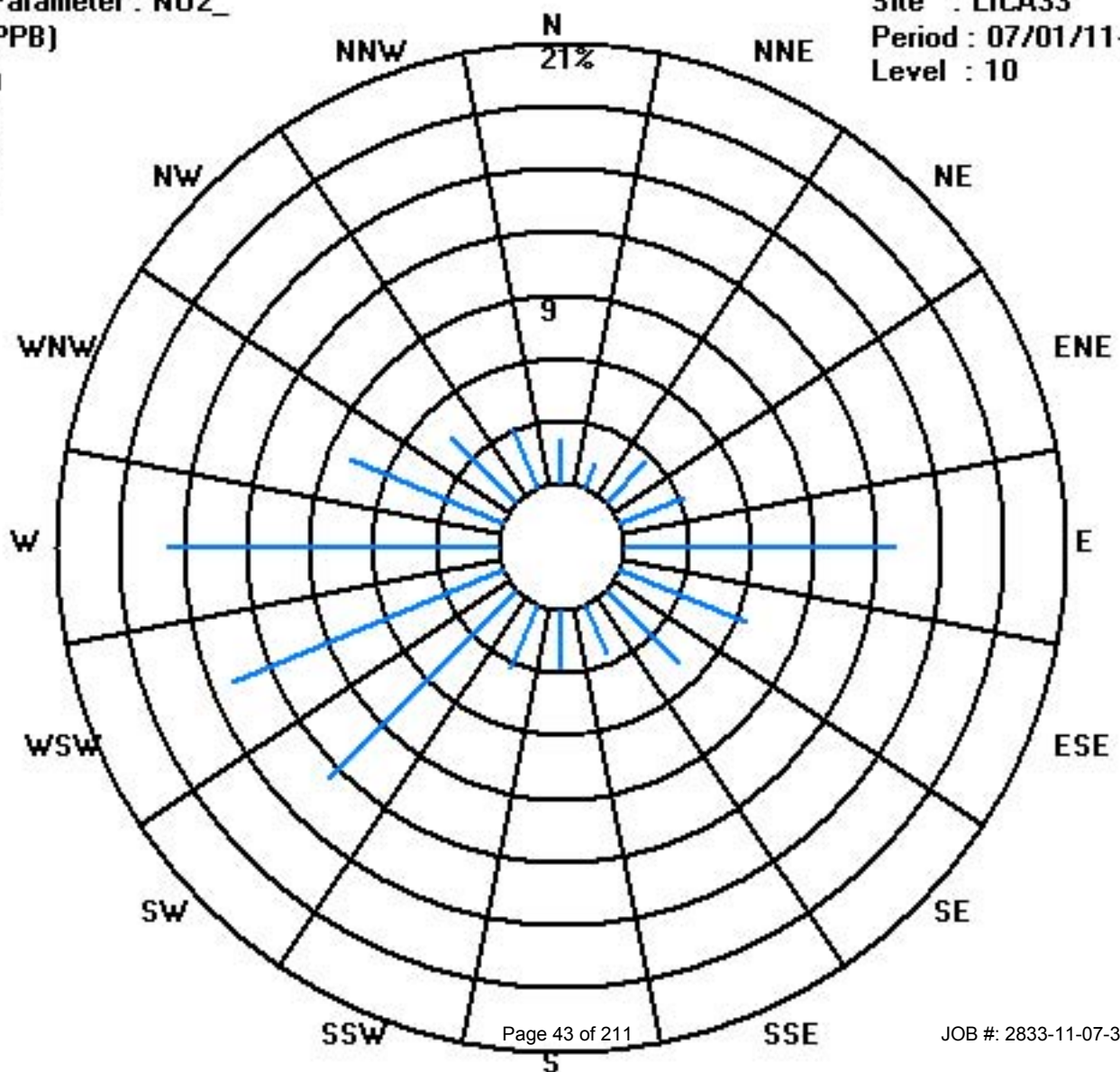
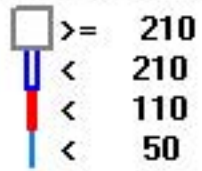
Calm : .00 %

Total # Operational Hours : 703

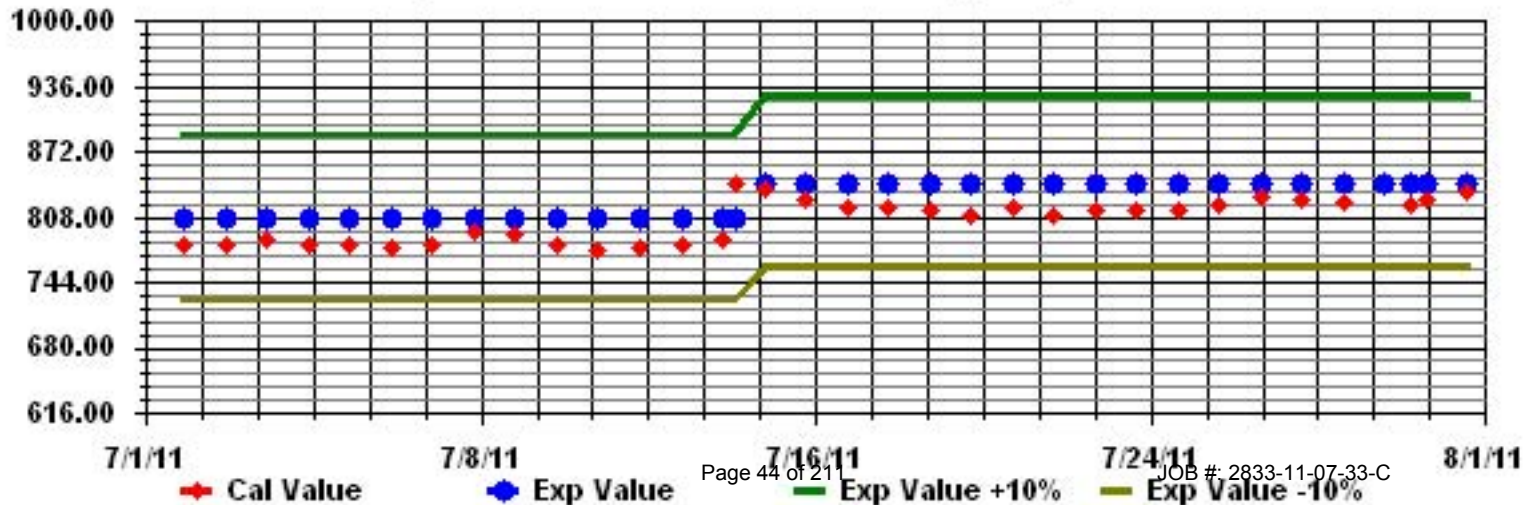
Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



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



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 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	2	1	3	1	1	1	1	1	1	1	0	0	1	1	0	0	1	1	1	2	1	IZS	1	1	3	1.0	24	
2	1	0	0	0	1	1	2	2	1	1	1	0	0	0	0	0	0	0	1	1	IZS	1	1	1	2	0.7	24	
3	1	0	0	0	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	IZS	1	1	1	1	2	0.6	24	
4	1	0	1	1	2	1	1	1	1	1	1	1	0	1	1	0	1	0	IZS	1	1	1	0	0	2	0.8	24	
5	1	1	0	0	0	1	1	1	1	1	1	1	1	0	1	0	0	IZS	1	1	1	0	1	1	1	0.7	24	
6	1	3	1	0	1	2	2	2	1	0	0	0	0	0	0	0	IZS	1	1	1	1	3	0	1	3	0.9	24	
7	1	1	1	0	0	1	0	0	0	1	0	0	1	1	0	IZS	1	0	0	0	0	0	0	0	1	0.3	24	
8	0	0	0	0	0	0	0	0	0	0	0	1	0	0	IZS	1	1	0	1	1	0	0	0	0	1	0.2	24	
9	0	0	0	1	1	4	2	2	2	2	1	1	1	IZS	1	1	1	1	0	0	0	0	0	1	4	1.0	24	
10	0	0	0	0	0	0	0	1	0	0	1	1	IZS	1	1	1	1	1	0	0	0	1	0	1	1	0.4	24	
11	2	3	3	3	9	12	9	4	0	0	0	IZS	1	1	0	2	1	0	0	0	0	0	0	1	12	2.2	24	
12	0	1	1	0	1	1	1	0	1	0	IZS	1	1	0	1	0	0	0	0	0	0	0	1	1	1	0.5	24	
13	2	1	0	0	0	1	1	1	0	IZS	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	2	0.5	24
14	1	2	1	2	2	1	1	1	IZS	C	C	C	C	C	C	C	0	0	0	0	0	0	0	0	2	0.7	24	
15	0	0	0	0	1	1	1	IZS	2	1	1	1	1	1	M	1	1	1	1	2	1	1	1	1	1	2	0.9	23
16	3	1	1	1	1	1	IZS	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	4	5	0.8	24
17	3	3	0	6	4	IZS	9	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1.4	24
18	0	0	2	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24
19	1	1	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	0	0	2	1.0	24
20	0	1	IZS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	0.2	24
21	0	IZS	1	1	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.1	24
22	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	IZS	1	1.0	24
23	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	IZS	0	1	0.1	24	
24	0	0	0	0	1	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	4	0.3	24
25	0	0	0	3	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	3	0.3	24
26	0	0	0	0	1	1	2	2	1	0	0	1	1	0	0	0	0	0	0	IZS	2	0	0	0	2	0.5	24	
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	2	1	1	0	2	0.2	24	
28	0	0	0	3	0	0	0	0	1	1	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	3	0.3	24
29	0	0	0	1	2	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0.3	24	
30	0	0	0	0	0	1	C	C	1	0	0	0	1	0	0	IZS	1	0	0	0	0	0	0	0	1	0.2	24	
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0	0	0	0	0	0	0	0	1	0.0	24	
HOURLY MAX	3	3	3	6	9	12	9	6	2	2	1	1	1	1	1	2	1	2	1	2	2	3	5	4				
HOURLY AVG	0.7	0.7	0.6	0.8	1.2	1.5	1.4	1.1	0.7	0.4	0.4	0.4	0.5	0.3	0.4	0.4	0.4	0.3	0.4	0.5	0.5	0.5	0.6	0.7				

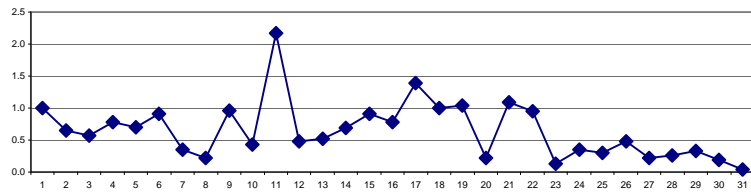
STATUS FLAG CODES

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

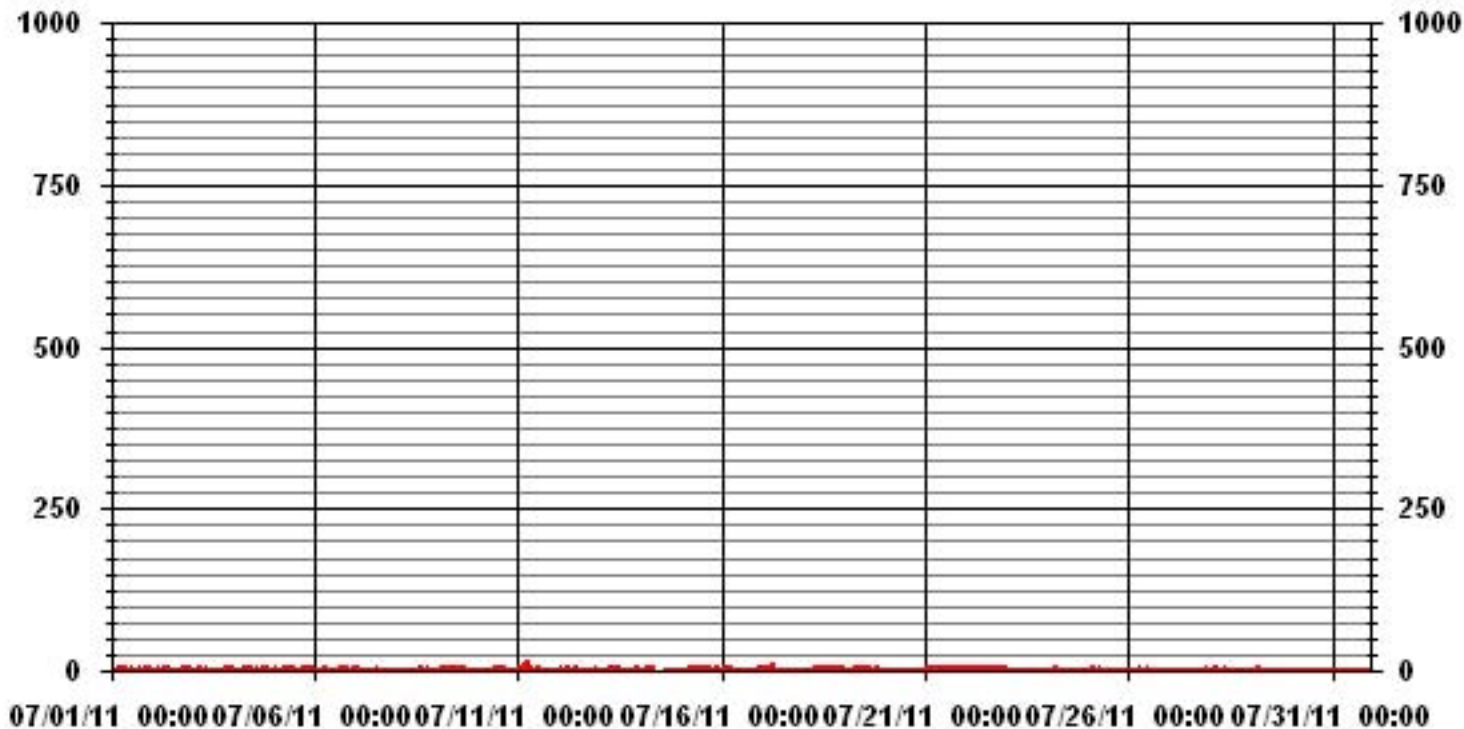
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	329					
MAXIMUM 1-HR AVERAGE:	12	PPB	@ HOUR(S)	5	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	2.2	PPB			ON DAY(S)	11
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	9	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	1.07		MONTHLY AVERAGE:	0.65	PPB	

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



— LICA33 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 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	8	9	6	5	4	1	3	1	1	1	2	2	1	1	1	1	2	2	4	3	IZS	2	1	9	2.9	24	
2	1	1	1	1	1	2	2	3	2	1	1	1	1	1	1	1	1	1	2	2	IZS	2	1	1	3	1.3	24	
3	1	1	1	1	6	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	1	4	3	6	1.7	24
4	3	2	2	4	3	3	3	12	1	1	2	2	1	1	2	1	1	1	IZS	3	3	1	1	1	12	2.3	24	
5	1	3	1	1	1	2	2	7	16	10	9	9	2	1	1	1	1	IZS	2	3	1	1	2	7	16	3.7	24	
6	30	29	3	1	2	3	4	4	1	1	1	1	1	1	1	2	IZS	2	1	1	1	96	1	2	96	8.2	24	
7	4	2	2	1	1	1	1	1	2	1	1	1	3	2	1	IZS	2	1	1	1	1	1	1	1	4	1.4	24	
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	1	1	2	2	1	1	1	1	3	1.2	24	
9	1	1	1	3	6	8	3	5	4	3	2	2	2	IZS	3	2	2	1	1	1	1	2	1	2	8	2.5	24	
10	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	2	1	1	1	1	1	1	1	3	3	1.2	24	
11	5	7	4	6	13	18	20	10	1	1	1	1	IZS	2	1	1	18	30	1	1	1	1	1	1	30	6.3	24	
12	1	6	4	1	1	2	2	2	1	1	IZS	2	12	2	14	11	1	1	1	1	1	1	1	3	14	3.1	24	
13	6	5	1	1	1	2	2	1	1	IZS	2	1	1	1	1	1	P	1	1	1	1	3	2	2	6	1.7	23	
14	2	5	1	6	9	1	1	1	IZS	C	C	C	C	C	C	C	1	1	0	0	0	0	0	0	9	1.8	24	
15	0	0	3	1	5	2	3	IZS	3	2	2	2	2	1	M	2	1	2	1	2	4	1	1	2	1	5	1.9	23
16	7	1	6	2	1	2	IZS	3	1	2	1	1	1	1	2	1	1	0	0	0	2	1	12	18	18	2.9	24	
17	8	9	4	41	7	IZS	13	12	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	4.2	24	
18	0	2	7	5	IZS	3	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	7	1.7	24	
19	1	2	7	IZS	14	2	2	2	2	2	2	2	2	2	3	1	1	21	4	2	1	2	1	1	21	3.4	24	
20	1	1	IZS	2	0	0	0	0	0	1	1	9	1	0	0	1	1	1	0	0	0	0	6	9	9	1.4	24	
21	3	IZS	4	3	9	5	2	3	3	1	1	1	1	2	2	1	1	1	1	9	1	1	1	1	9	2.5	24	
22	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.0	24
23	1	0	0	0	0	0	1	2	1	1	1	0	0	0	0	1	2	0	4	1	7	0	IZS	1	7	1.0	24	
24	1	0	0	1	7	8	6	3	1	2	1	1	0	1	1	2	0	1	1	1	1	IZS	2	0	8	1.8	24	
25	1	0	0	27	1	1	6	2	2	1	2	2	1	1	0	0	0	0	0	0	IZS	2	3	1	27	2.3	24	
26	1	0	0	0	3	3	3	3	2	1	1	3	4	0	0	3	2	1	2	IZS	8	1	0	0	8	1.8	24	
27	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	1	IZS	2	5	5	7	0	7	1.0	24	
28	0	0	2	5	0	1	1	0	2	2	1	1	1	1	1	1	1	IZS	3	1	1	0	2	0	5	1.2	24	
29	0	0	0	6	14	14	2	2	0	0	0	0	1	0	0	1	P	2	1	0	2	1	3	3	14	2.3	23	
30	1	2	4	0	1	5	C	C	4	2	2	2	2	1	1	IZS	1	1	1	1	1	0	0	0	5	1.5	24	
31	0	0	0	1	0	1	1	1	0	0	0	0	1	IZS	2	0	0	1	0	0	0	P	0	2	0.4	23		
HOURLY MAX	30	29	9	41	14	18	20	12	16	10	9	9	12	2	14	18	30	21	4	9	8	96	12	18				
HOURLY AVG	2.9	3.0	2.3	4.3	3.8	3.3	3.0	3.1	2.0	1.5	1.4	1.8	1.6	1.0	1.5	2.1	2.0	1.6	1.3	1.5	1.7	4.4	2.1	2.1				

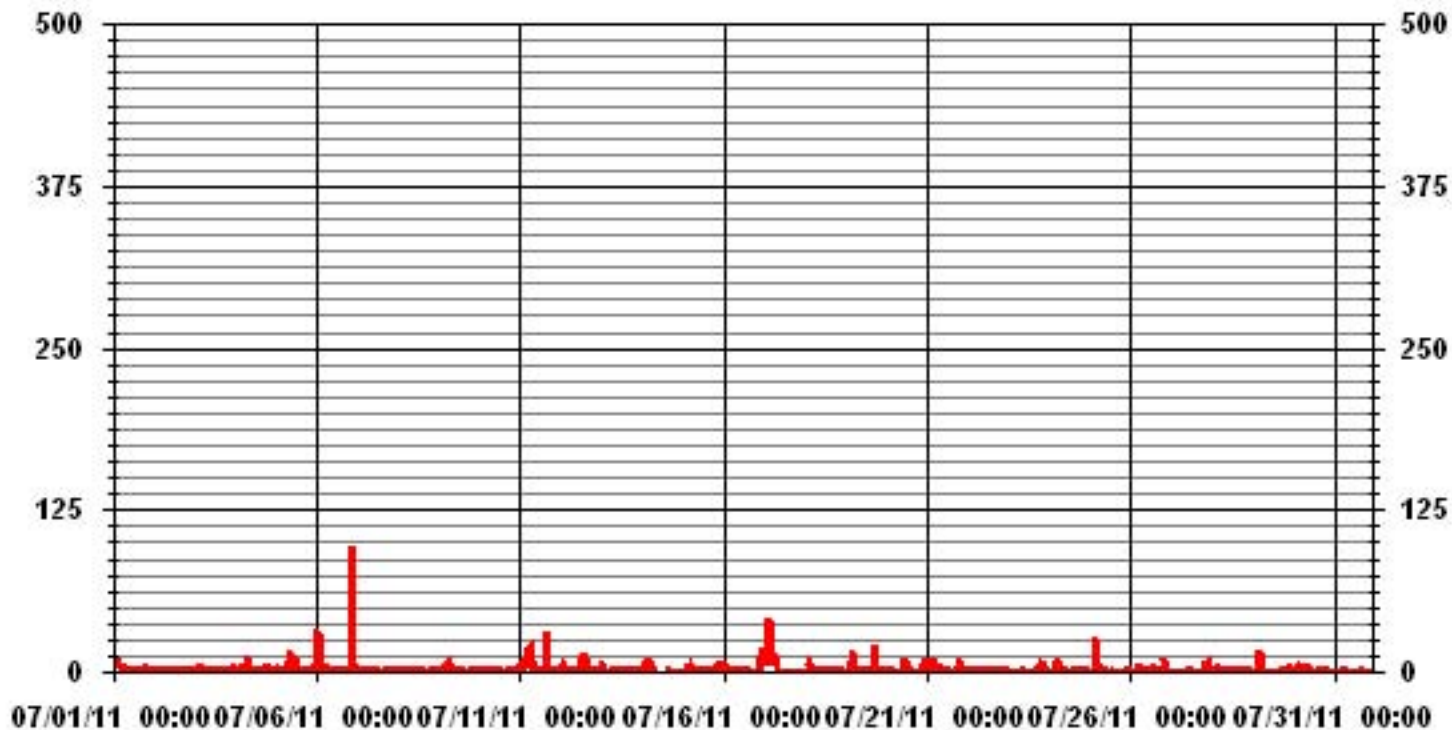
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	583					
MAXIMUM INSTANTANEOUS VALUE:	96	PPB	@ HOUR(S)	21	ON DAY(S)	6
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	740	HRS	
MONTHLY CALIBRATION TIME:	9	HRS				
STANDARD DEVIATION	5.12					

01 Hour Averages



LICA33
 NO_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : NO
 Units : PPB

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	2.27	1.28	2.70	3.27	12.80	6.54	4.83	2.56	2.84	3.27	12.66	13.94	15.64	7.82	4.40	3.12	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.27	1.28	2.70	3.27	12.80	6.54	4.83	2.56	2.84	3.27	12.66	13.94	15.64	7.82	4.40	3.12	

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	16	9	19	23	90	46	34	18	20	23	89	98	110	55	31	22	703
< 110																	
< 210																	
>= 210																	
Totals	16	9	19	23	90	46	34	18	20	23	89	98	110	55	31	22	

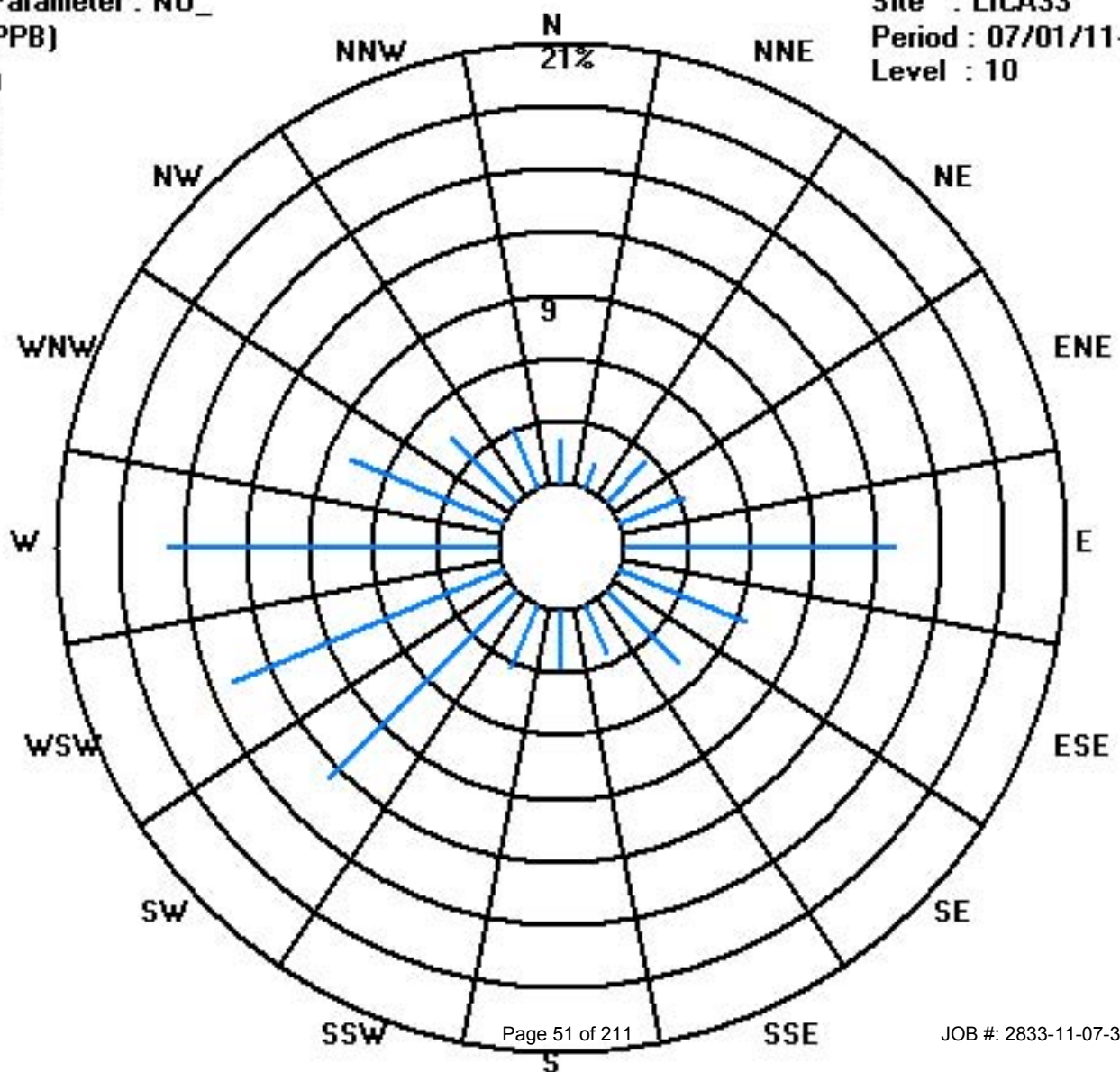
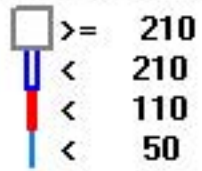
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2011

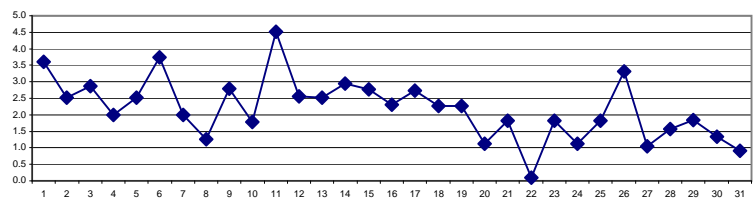
OXIDES OF NITROGEN hourly averages in ppb

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	8	13	7	6	5	3	3	1	1	1	1	2	1	1	1	2	2	1	4	4	IZS	3	3	13	3.6	24	
2	5	2	2	2	2	3	4	5	3	2	2	1	1	1	1	1	1	1	3	5	IZS	3	3	5	5	2.5	24	
3	4	3	5	5	7	5	4	3	2	1	1	1	1	1	1	1	1	1	2	IZS	3	2	6	6	7	2.9	24	
4	4	3	2	4	5	4	3	2	1	2	2	1	1	1	1	1	1	1	1	IZS	2	2	1	1	1	5	2.0	24
5	3	6	1	2	2	3	2	3	3	1	2	1	1	0	1	1	1	IZS	2	4	3	6	3	7	7	2.5	24	
6	6	12	6	5	5	8	6	5	2	1	1	1	1	1	1	1	IZS	1	1	2	3	8	4	5	12	3.7	24	
7	9	7	6	1	1	2	1	1	1	2	1	1	2	2	1	IZS	1	1	1	1	1	1	1	1	1	9	2.0	24
8	1	1	1	1	1	1	1	2	1	2	2	1	1	1	IZS	1	1	1	2	3	1	1	1	1	1	3	1.3	24
9	2	2	2	4	5	9	4	5	6	4	3	3	3	IZS	2	2	1	1	1	1	0	1	1	2	9	2.8	24	
10	1	1	1	1	1	2	1	1	1	0	0	0	IZS	2	2	2	2	2	2	2	2	2	6	4	5	6	1.8	24
11	6	8	6	7	13	15	14	8	1	1	1	1	IZS	1	1	0	2	2	1	1	1	1	3	6	5	15	4.5	24
12	5	6	5	4	3	3	3	1	1	1	1	IZS	1	2	1	1	1	1	1	2	3	1	5	7	7	2.6	24	
13	8	6	3	3	4	3	3	2	1	IZS	1	2	2	1	1	1	1	1	1	1	1	2	5	5	8	2.5	24	
14	8	9	4	6	6	3	2	2	IZS	C	C	C	C	C	C	C	1	0	0	1	1	1	1	2	9	2.9	24	
15	4	2	5	3	6	4	6	IZS	3	3	2	2	1	M	2	1	1	1	2	4	2	2	4	1	6	2.8	23	
16	7	2	5	3	2	3	IZS	3	1	1	1	0	0	1	1	1	0	0	1	1	1	1	10	8	10	2.3	24	
17	7	7	3	9	7	IZS	12	10	2	1	0	0	0	0	0	0	0	0	0	1	1	1	2	0	12	2.7	24	
18	1	1	8	4	IZS	4	4	4	3	3	2	2	1	1	1	1	1	2	2	2	1	1	1	2	8	2.3	24	
19	2	4	6	IZS	5	3	2	2	2	2	2	1	2	1	2	1	1	3	3	3	1	2	1	1	6	2.3	24	
20	2	2	IZS	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	5	9	9	1.1	24	
21	2	IZS	2	2	6	4	2	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	6	1.8	24	
22	IZS	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	IZS	1	0.1	24
23	1	1	1	1	1	1	1	3	1	2	1	1	1	1	1	2	2	2	4	3	7	2	IZS	2	7	1.8	24	
24	2	2	1	1	3	6	3	1	1	1	0	0	0	0	1	0	0	1	1	1	1	IZS	1	0	6	1.1	24	
25	1	3	4	7	2	1	4	2	2	1	2	0	1	0	0	0	0	0	0	0	0	IZS	3	5	4	7	1.8	24
26	4	1	2	1	6	3	6	8	4	4	3	4	4	2	1	2	4	3	4	IZS	6	2	1	1	8	3.3	24	
27	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	IZS	1	6	3	5	1	6	1.0	24
28	1	1	1	11	1	2	1	0	2	2	1	0	0	1	1	1	0	IZS	3	1	1	1	3	1	11	1.6	24	
29	1	1	1	6	6	9	5	4	1	0	0	0	1	0	0	0	0	2	1	0	1	0	2	3	9	1.8	24	
30	0	1	2	1	1	3	C	C	2	1	1	1	2	1	0	IZS	0	0	1	1	4	2	3	1	4	1.3	24	
31	1	2	2	2	1	1	2	1	0	0	0	0	0	1	IZS	1	1	1	1	1	1	0	1	1	2	0.9	24	
HOURLY MAX	10	12	13	11	13	15	14	10	6	4	3	4	4	2	2	2	4	3	4	5	7	8	10	9				
HOURLY AVG	3.6	3.5	3.4	3.6	3.7	3.7	3.5	2.9	1.7	1.4	1.1	0.9	1.1	0.8	0.8	1.0	0.9	1.0	1.4	1.7	2.1	2.0	3.0	3.1				

STATUS FLAG CODES

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

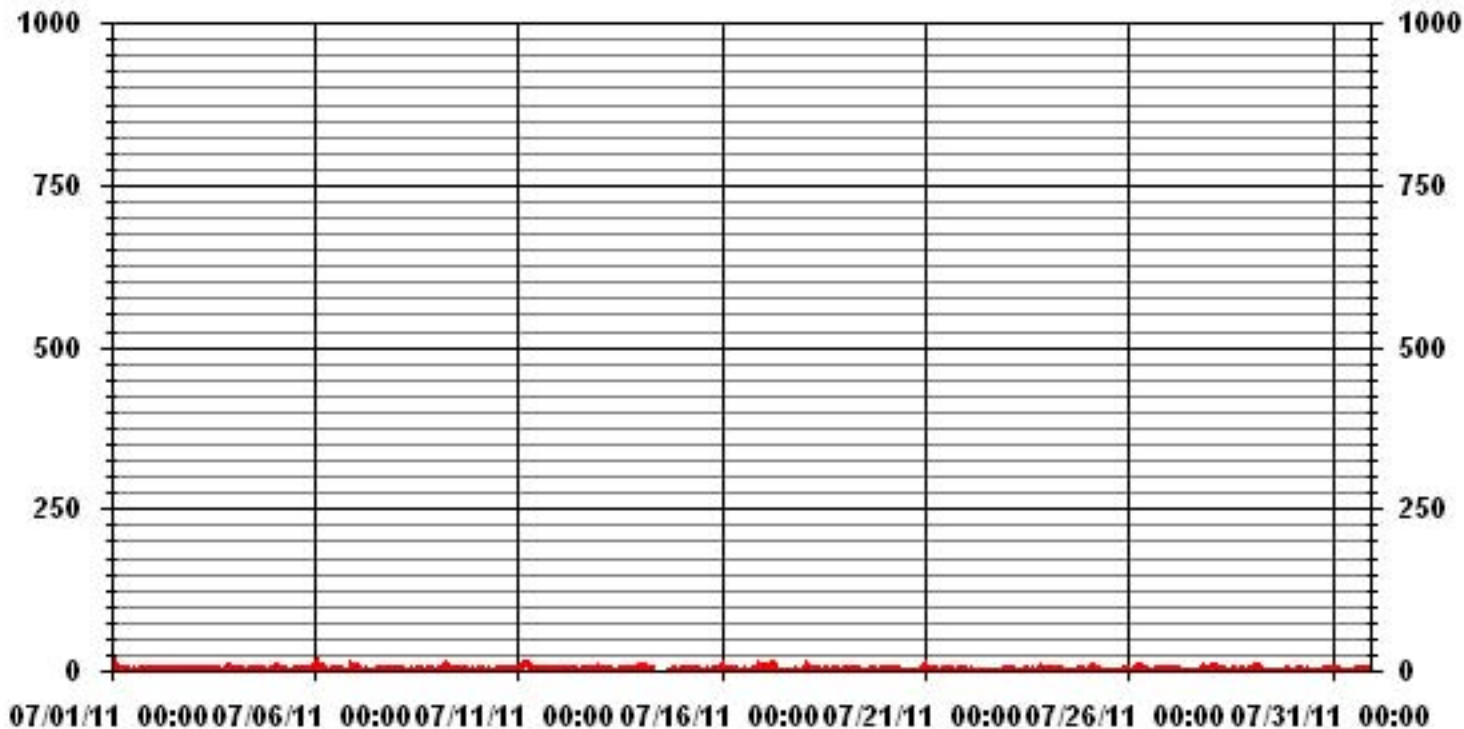
24 HOUR AVERAGES FOR JULY 2011



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	600
MAXIMUM 1-HR AVERAGE:	15 PPB @ HOUR(S) 5 ON DAY(S) 11
MAXIMUM 24-HR AVERAGE:	4.5 PPB ON DAY(S) 11
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	9 HRS
STANDARD DEVIATION:	2.26
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
MONTHLY AVERAGE:	2.18 PPB

01 Hour Averages



— LICA33 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2011

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	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	21	24	25	19	13	13	4	6	3	3	2	3	3	2	2	2	3	4	3	11	10	IZS	4	6	25	8.1	24	
2	9	3	3	3	3	5	5	6	4	4	2	2	1	2	3	2	1	3	8	12	IZS	4	4	6	12	4.1	24	
3	5	5	6	7	15	6	5	5	3	2	1	1	2	1	1	1	2	2	5	IZS	8	3	17	10	17	4.9	24	
4	9	8	5	11	8	7	6	18	2	3	3	3	2	2	3	2	3	2	IZS	8	9	2	2	3	18	5.3	24	
5	6	15	2	3	3	4	4	22	24	18	14	16	2	1	2	3	2	IZS	3	13	4	10	9	20	24	8.7	24	
6	47	47	11	6	10	10	9	8	3	3	2	2	1	1	1	2	IZS	2	2	4	5	117	5	10	117	13.4	24	
7	16	10	10	2	3	4	2	2	3	4	2	2	7	4	1	IZS	2	1	2	2	2	2	2	2	2	16	3.8	24
8	2	2	2	2	2	2	2	2	2	3	3	2	1	3	IZS	2	3	2	5	6	3	2	2	2	2	6	2.5	24
9	3	3	3	9	13	17	7	11	10	5	4	4	4	IZS	3	3	4	3	1	2	1	5	3	6	17	5.4	24	
10	2	1	1	1	3	3	2	2	2	1	1	2	IZS	3	3	3	3	3	3	4	5	9	6	11	11	3.2	24	
11	11	13	8	11	18	22	24	18	2	1	1	IZS	1	1	1	24	52	1	1	2	2	5	11	6	52	10.3	24	
12	6	16	14	5	4	4	4	3	2	1	IZS	2	27	4	16	21	1	1	4	4	5	1	9	14	27	7.3	24	
13	17	16	7	6	7	5	6	3	2	IZS	2	2	2	2	2	2	P	2	2	1	2	6	8	9	17	5.0	23	
14	12	14	8	13	17	4	4	2	IZS	C	C	C	C	C	C	C	2	1	1	1	2	2	2	4	17	5.6	24	
15	8	2	11	8	11	7	11	IZS	5	5	5	5	2	M	3	2	2	2	4	7	5	4	7	4	11	5.5	23	
16	14	3	14	6	3	4	IZS	6	2	2	3	1	2	3	4	2	2	1	1	1	6	3	19	26	26	5.6	24	
17	13	15	7	49	10	IZS	17	17	4	3	1	0	0	0	1	0	1	0	1	2	2	2	6	1	49	6.6	24	
18	3	4	17	13	IZS	7	6	7	5	5	3	3	2	2	3	3	3	2	2	5	2	2	2	5	17	4.6	24	
19	3	8	20	IZS	29	4	3	3	3	5	3	3	3	3	6	2	1	28	6	5	2	8	2	2	29	6.6	24	
20	4	5	IZS	3	2	2	2	1	2	2	2	9	2	1	1	2	2	1	1	1	1	1	18	22	22	3.8	24	
21	9	IZS	8	4	17	9	3	4	5	2	2	2	2	2	2	1	2	2	10	5	3	3	5	17	4.5	24		
22	IZS	1	1	3	2	0	1	1	1	0	0	0	0	1	1	1	1	0	1	1	0	1	0	IZS	3	0.8	24	
23	2	2	1	2	1	1	3	5	3	3	2	2	2	2	2	5	7	2	12	7	21	4	IZS	3	21	4.1	24	
24	5	3	2	4	11	12	9	4	3	3	2	2	1	2	2	4	1	1	3	4	3	IZS	2	1	12	3.7	24	
25	5	4	6	39	4	3	13	3	3	3	4	2	2	2	1	0	1	1	1	1	IZS	9	10	5	39	5.3	24	
26	6	3	2	3	10	6	10	11	6	8	8	9	8	2	2	12	8	4	9	IZS	18	2	2	2	18	6.6	24	
27	2	2	2	1	1	1	1	1	1	1	2	2	2	1	1	0	0	2	IZS	2	16	14	17	2	17	3.2	24	
28	2	1	7	15	1	3	2	1	5	3	2	2	2	2	3	2	1	IZS	9	2	3	2	8	3	15	3.5	24	
29	3	1	1	16	23	22	8	6	2	1	1	1	4	1	1	2	P	5	2	2	5	3	8	7	23	5.4	23	
30	3	4	11	4	3	9	C	C	7	3	3	4	5	3	1	IZS	1	1	2	3	5	4	4	3	11	4.0	24	
31	4	4	3	3	2	2	3	2	1	1	1	1	1	2	IZS	2	2	1	2	1	2	1	P	4	4	2.0	23	
HOURLY MAX	47	47	25	49	29	22	24	22	24	18	14	16	27	4	16	24	52	28	12	13	21	117	19	26				
HOURLY AVG	8.4	8.0	7.3	9.0	8.3	6.6	6.1	6.2	4.0	3.4	2.8	3.1	3.2	2.0	2.6	3.9	4.0	2.8	3.4	4.3	5.3	8.0	6.6	6.8				

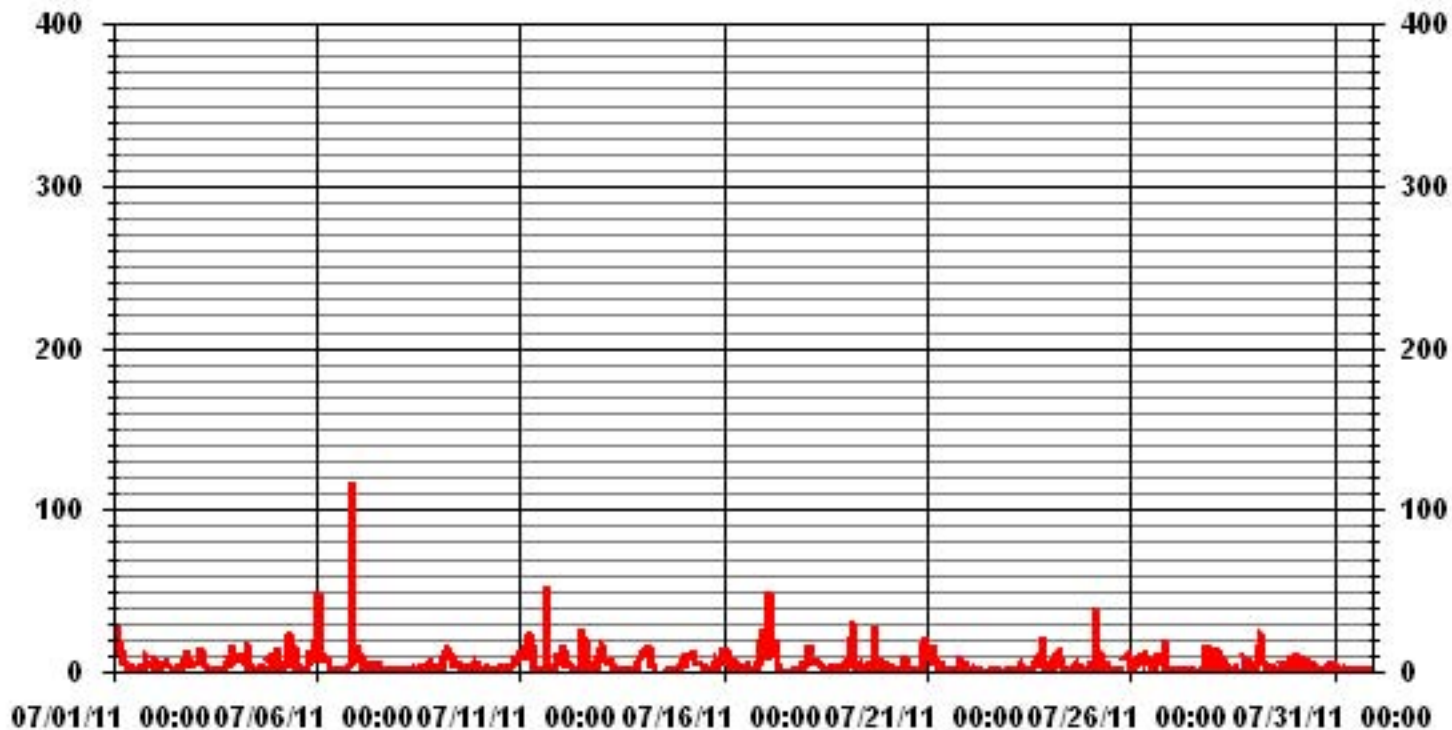
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	684
MAXIMUM INSTANTANEOUS VALUE:	117 PPB @ HOUR(S) 21 ON DAY(S) 6
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	9 HRS
STANDARD DEVIATION	7.46
OPERATIONAL TIME:	740 HRS

01 Hour Averages



LICA33
 NOX_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

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

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	2.27	1.28	2.70	3.27	12.80	6.54	4.83	2.56	2.84	3.27	12.66	13.94	15.64	7.82	4.40	3.12	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.27	1.28	2.70	3.27	12.80	6.54	4.83	2.56	2.84	3.27	12.66	13.94	15.64	7.82	4.40	3.12	

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	16	9	19	23	90	46	34	18	20	23	89	98	110	55	31	22	703
< 110																	
< 210																	
>= 210																	
Totals	16	9	19	23	90	46	34	18	20	23	89	98	110	55	31	22	

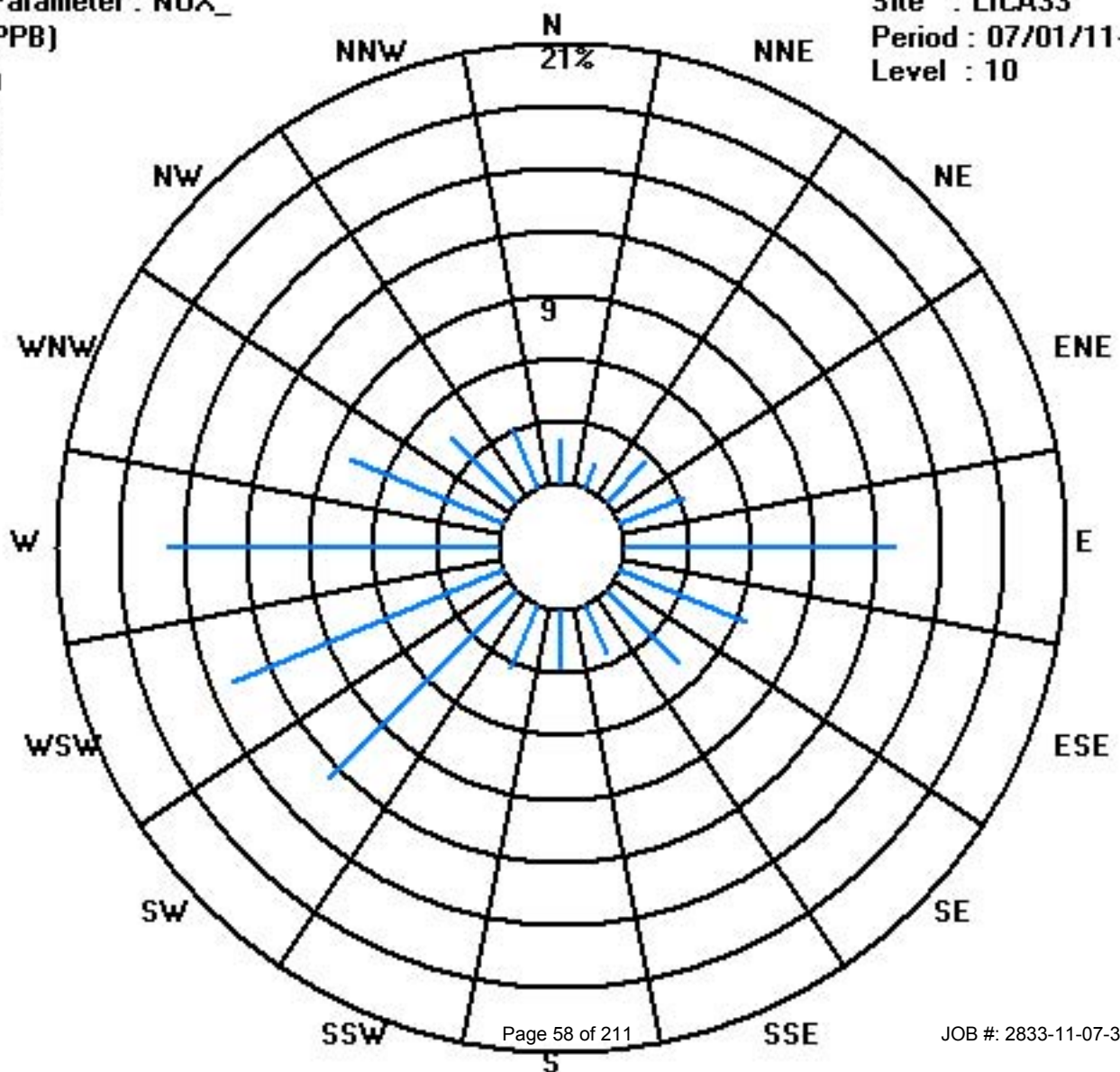
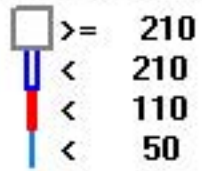
Calm : .00 %

Total # Operational Hours : 703

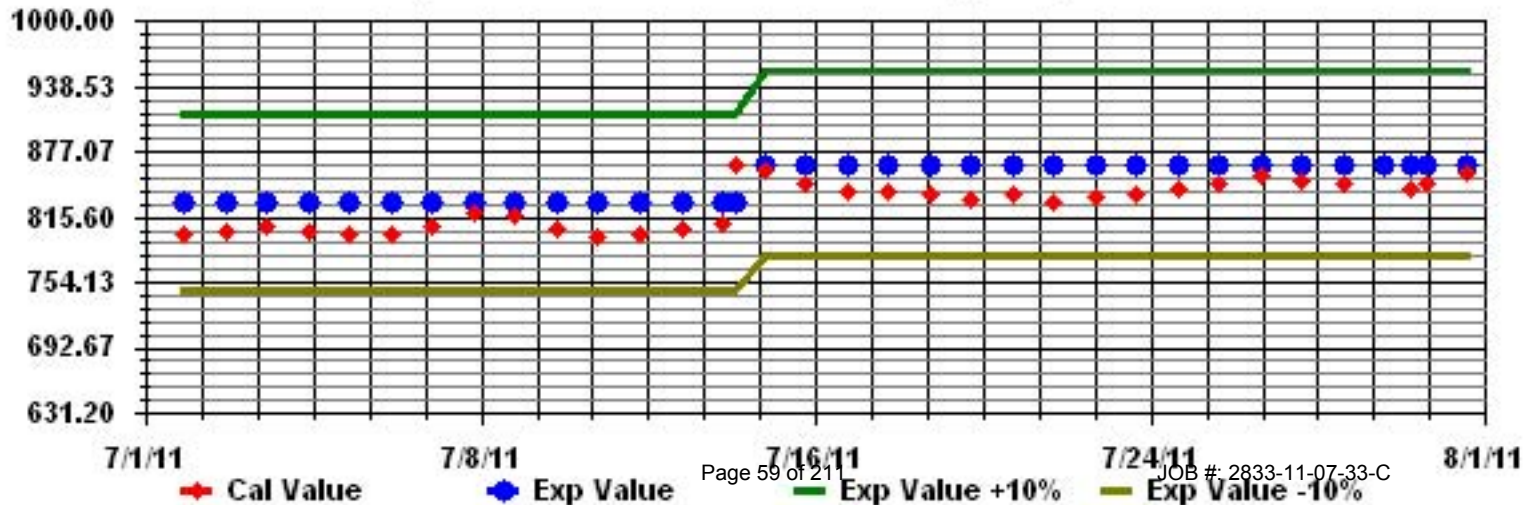
Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



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



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2011

OZONE (O₃) hourly averages in ppb

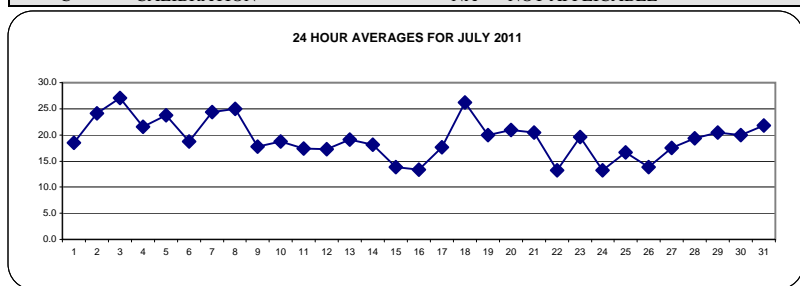
MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	RDGS.	
		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.		
DAY																													
1		16	13	13	12	11	14	15	18	22	23	22	23	23	22	23	23	23	23	23	20	16	IZS	14	13	23	18.5	24	
2		11	13	13	12	9	10	13	19	21	25	31	33	34	37	39	39	39	39	36	34	IZS	21	16	11	39	24.1	24	
3		11	11	11	9	7	11	16	21	30	37	39	42	44	45	43	39	40	42	35	IZS	28	25	18	18	45	27.0	24	
4		20	19	19	18	17	18	18	20	21	22	23	23	24	25	26	27	28	28	IZS	26	20	18	18	17	28	21.5	24	
5		15	12	14	13	11	15	19	21	28	31	34	37	38	35	33	34	34	IZS	32	26	19	18	17	11	38	23.8	24	
6		12	8	12	11	10	10	12	18	23	24	26	26	28	29	29	30	IZS	32	30	24	16	9	7	5	32	18.7	24	
7		4	4	11	26	27	23	23	25	25	26	27	27	31	35	36	IZS	32	30	28	26	24	24	23	24	36	24.4	24	
8		25	24	22	20	19	17	15	15	17	23	33	44	39	37	IZS	39	37	32	30	22	20	18	14	13	44	25.0	24	
9		11	11	9	7	5	6	9	11	13	19	21	21	19	IZS	24	23	24	29	27	24	27	28	23	17	29	17.7	24	
10		12	10	11	17	18	18	21	23	24	23	24	25	IZS	27	23	23	23	24	26	24	19	8	6	3	27	18.8	24	
11		2	0	0	0	0	1	6	16	29	30	29	IZS	31	30	32	31	29	29	29	25	19	14	10	8	32	17.4	24	
12		10	7	7	7	8	8	12	15	20	23	IZS	27	28	28	28	26	25	24	20	17	17	19	12	9	28	17.3	24	
13		8	11	12	13	14	14	14	17	18	IZS	24	22	24	30	28	29	29	30	30	26	22	11	7	7	30	19.1	24	
14		3	3	9	5	5	11	13	15	IZS	19	19	18	16	25	26	29	33	35	31	27	21	18	19	17	35	18.1	24	
15		11	12	11	10	6	8	6	IZS	14	C	C	C	C	C	26	23	20	18	17	16	14	12	11	14	26	13.8	24	
16		11	10	8	10	7	10	IZS	14	16	17	17	20	19	18	20	21	19	17	16	16	13	7	1	1	21	13.4	24	
17		1	1	1	1	0	IZS	3	6	16	21	23	25	26	27	31	34	35	34	30	25	20	19	15	12	35	17.7	24	
18		10	11	6	5	IZS	9	8	10	31	33	32	34	38	43	44	41	40	37	31	21	31	31	33	24	44	26.2	24	
19		19	13	16	IZS	18	19	20	22	23	23	23	24	22	23	24	26	26	23	13	14	16	15	17	19	26	19.9	24	
20		19	18	IZS	23	20	18	20	17	18	21	21	20	22	23	24	25	25	25	25	24	22	22	16	13	25	20.9	24	
21		17	IZS	15	14	11	13	14	18	21	23	24	26	27	27	27	28	28	26	27	23	18	15	15	14	28	20.5	24	
22		IZS	15	15	13	13	12	12	14	16	14	13	13	12	14	14	15	15	14	13	12	11	10	11	IZS	16	13.2	24	
23		13	14	14	14	16	15	14	16	20	24	24	24	23	25	29	28	29	30	22	20	14	13	IZS	10	30	19.6	24	
24		7	7	7	5	5	4	7	9	11	15	18	20	21	22	23	21	20	18	16	12	11	IZS	11	13	23	13.2	24	
25		12	6	5	3	5	6	7	12	17	22	26	27	27	27	28	28	28	29	26	23	IZS	9	5	4	29	16.6	24	
26		6	24	23	21	8	8	14	17	20	18	12	10	12	15	15	16	12	13	15	IZS	9	8	10	12	24	13.8	24	
27		12	13	13	12	13	14	15	16	16	19	20	21	21	21	22	26	24	22	IZS	23	16	16	14	15	26	17.6	24	
28		17	20	20	13	15	14	15	16	17	20	22	22	23	23	23	26	27	IZS	25	21	16	13	19	17	27	19.3	24	
29		16	14	14	5	4	5	17	19	22	27	28	29	31	32	33	31	28	25	25	19	15	19	17	16	33	20.5	24	
30		13	14	13	12	11	9	C	C	17	20	22	25	28	32	30	IZS	34	34	34	28	20	15	16	14	11	34	19.9	24
31		13	11	10	12	12	13	13	17	20	23	26	28	29	33	IZS	34	34	34	29	26	22	20	23	19	34	21.8	24	
HOURLY MAX		25	24	23	26	27	23	23	25	31	37	39	44	44	45	44	41	40	42	36	34	31	31	33	24				
HOURLY AVG		11.9	11.6	11.8	11.4	10.8	11.8	13.5	16.4	20.2	22.9	24.2	25.4	26.2	27.9	27.7	28.1	28.0	27.4	25.3	21.9	18.3	16.4	14.5	12.9				

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:

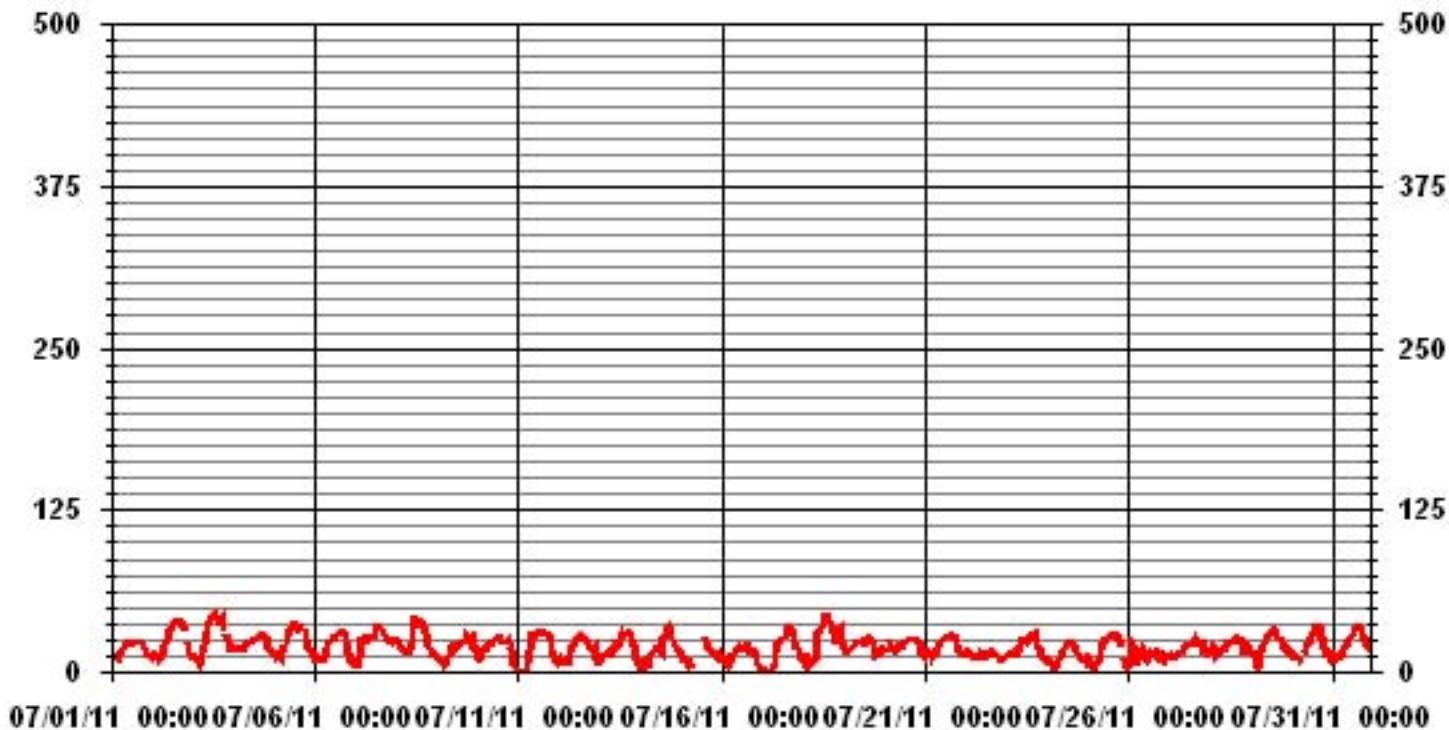
ALBERTA ENVIRONMENT: 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	701					
MAXIMUM 1-HR AVERAGE:	45	PPB	@ HOUR(S)	13	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	27.0	PPB			ON DAY(S)	3
					VAR-VARIOUS	
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	8.81		MONTHLY AVERAGE	19.38	PPB	

01 Hour Averages



— LICA33_03_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 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	17	19	15	12	15	18	20	23	24	23	24	23	23	24	24	24	24	24	24	21	IZS	15	15	24	20.5	24	
2	13	14	13	13	12	12	16	23	23	28	34	35	36	40	41	41	42	41	40	38	IZS	37	20	18	42	27.4	24	
3	16	13	13	13	9	14	22	24	35	39	42	44	46	46	45	43	49	49	41	IZS	30	27	24	21	49	30.7	24	
4	23	21	20	20	18	19	20	21	22	23	24	24	25	26	27	28	29	29	IZS	29	23	20	19	20	29	23.0	24	
5	18	18	16	15	13	17	21	26	31	34	36	40	40	38	37	36	36	IZS	34	31	24	24	22	15	40	27.0	24	
6	15	11	15	13	13	12	15	23	24	26	27	28	29	30	30	32	IZS	33	31	30	21	14	12	8	33	21.4	24	
7	9	7	18	31	30	24	26	27	27	27	28	28	37	37	37	IZS	34	32	30	28	26	25	24	25	37	26.8	24	
8	26	25	23	22	20	18	16	17	26	27	41	46	44	40	IZS	41	39	34	34	26	22	21	19	15	46	27.9	24	
9	13	14	10	11	8	10	11	12	16	21	23	24	21	IZS	25	25	28	33	29	26	28	30	26	21	33	20.2	24	
10	15	11	13	19	19	20	23	25	26	25	26	26	IZS	29	25	25	24	27	28	27	21	15	12	7	29	21.2	24	
11	5	1	1	1	1	2	10	29	32	31	31	IZS	32	31	33	33	31	31	31	29	23	18	12	11	33	20.0	24	
12	11	11	8	8	9	10	15	17	24	26	IZS	28	30	30	29	27	27	26	24	20	24	24	18	12	30	19.9	24	
13	14	15	15	15	17	16	17	18	20	IZS	26	24	29	34	32	31	P	33	31	30	26	16	15	9	34	22.0	23	
14	7	5	11	8	10	13	15	18	IZS	21	20	20	M	34	29	31	37	37	34	32	25	22	22	20	37	21.4	23	
15	13	14	15	12	10	11	8	IZS	24	C	C	C	C	C	28	26	22	19	18	18	17	13	13	14	28	16.4	24	
16	13	12	15	14	10	11	IZS	17	18	19	19	22	23	21	22	22	22	18	17	17	17	10	8	3	23	16.1	24	
17	4	5	4	2	1	IZS	4	12	18	23	24	29	28	31	33	36	37	37	35	27	23	20	18	15	37	20.3	24	
18	12	12	10	9	IZS	11	10	20	40	37	34	36	42	45	46	43	45	39	35	32	34	35	36	29	46	30.1	24	
19	23	15	20	IZS	20	20	21	24	24	25	25	24	24	24	26	27	28	27	21	17	20	18	19	22	28	22.3	24	
20	22	21	IZS	25	23	19	21	20	21	24	24	23	24	24	25	27	27	27	26	24	23	23	21	18	27	23.1	24	
21	19	IZS	16	15	13	15	15	20	22	24	25	27	28	28	28	29	30	29	28	27	19	17	17	16	30	22.0	24	
22	IZS	16	16	14	14	13	13	16	17	15	14	14	13	15	15	16	16	15	14	13	12	11	12	IZS	17	14.3	23	
23	13	15	15	15	17	17	16	20	25	25	25	26	24	29	31	32	32	32	28	22	21	17	IZS	11	32	22.1	24	
24	8	8	8	6	6	6	9	10	13	19	19	22	22	23	24	23	22	20	19	16	12	IZS	12	14	24	14.8	24	
25	14	9	10	6	9	10	9	17	22	24	28	30	29	30	31	30	30	30	30	27	IZS	16	9	6	31	19.8	24	
26	17	26	26	25	16	12	17	19	22	23	14	12	17	17	19	16	15	18	IZS	14	9	12	13	26	17.2	24		
27	13	13	13	13	14	15	16	17	18	20	21	22	22	22	24	30	29	24	IZS	24	21	19	18	16	30	19.3	24	
28	19	21	22	17	17	15	16	18	19	22	23	24	24	25	25	29	29	IZS	28	26	19	21	23	23	29	22.0	24	
29	22	20	18	10	9	13	20	22	26	29	31	31	33	34	35	34	P	28	27	24	22	22	21	21	35	24.0	23	
30	14	15	15	14	12	11	C	C	20	22	24	28	34	34	32	IZS	35	35	33	24	17	19	16	13	35	22.2	24	
31	15	13	12	14	13	14	15	19	22	26	29	30	31	35	IZS	37	37	37	32	30	24	23	P	22	37	24.1	23	
HOURLY MAX	26	26	26	31	30	24	26	29	40	39	42	46	46	46	46	43	49	49	41	38	34	37	36	29				
HOURLY AVG	14.9	13.9	14.3	13.8	13.2	13.8	15.7	19.7	23.3	25.1	26.2	27.3	28.9	30.2	29.5	30.2	30.6	29.7	28.3	25.4	21.7	20.2	17.8	15.8				

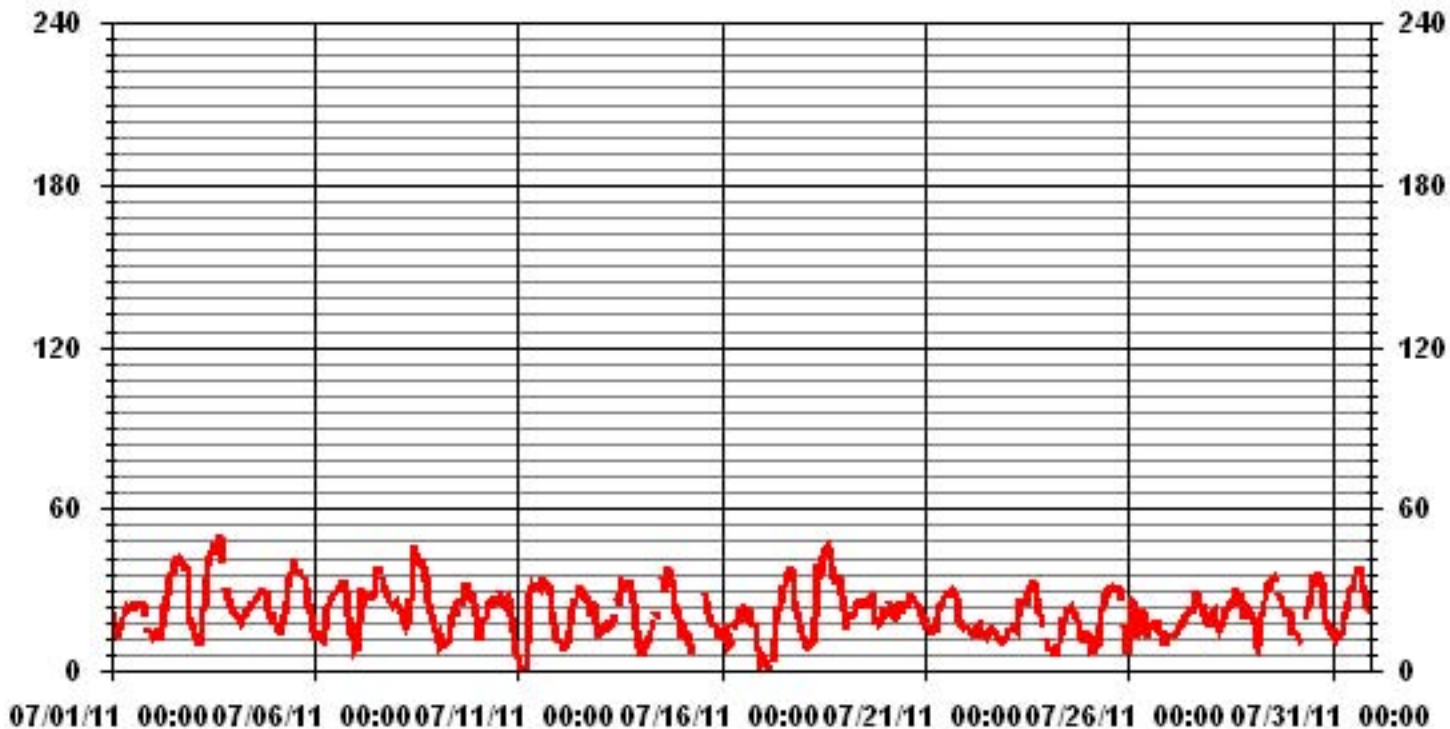
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	702				
MAXIMUM INSTANTANEOUS VALUE:	49	PPB	@ HOUR(S)	16, 17	ON DAY(S) 3
IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	739 HRS	
MONTHLY CALIBRATION TIME:	7	HRS			
STANDARD DEVIATION	8.89				

01 Hour Averages



LICA33
O3_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 33
Site Name : LICA33
Parameter : O3
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	2.26	1.27	2.69	3.25	13.03	6.79	4.67	2.69	2.83	3.39	12.46	13.73	15.58	7.79	4.39	3.11	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	2.26	1.27	2.69	3.25	13.03	6.79	4.67	2.69	2.83	3.39	12.46	13.73	15.58	7.79	4.39	3.11	

Calm : .00 %

Total # Operational Hours : 706

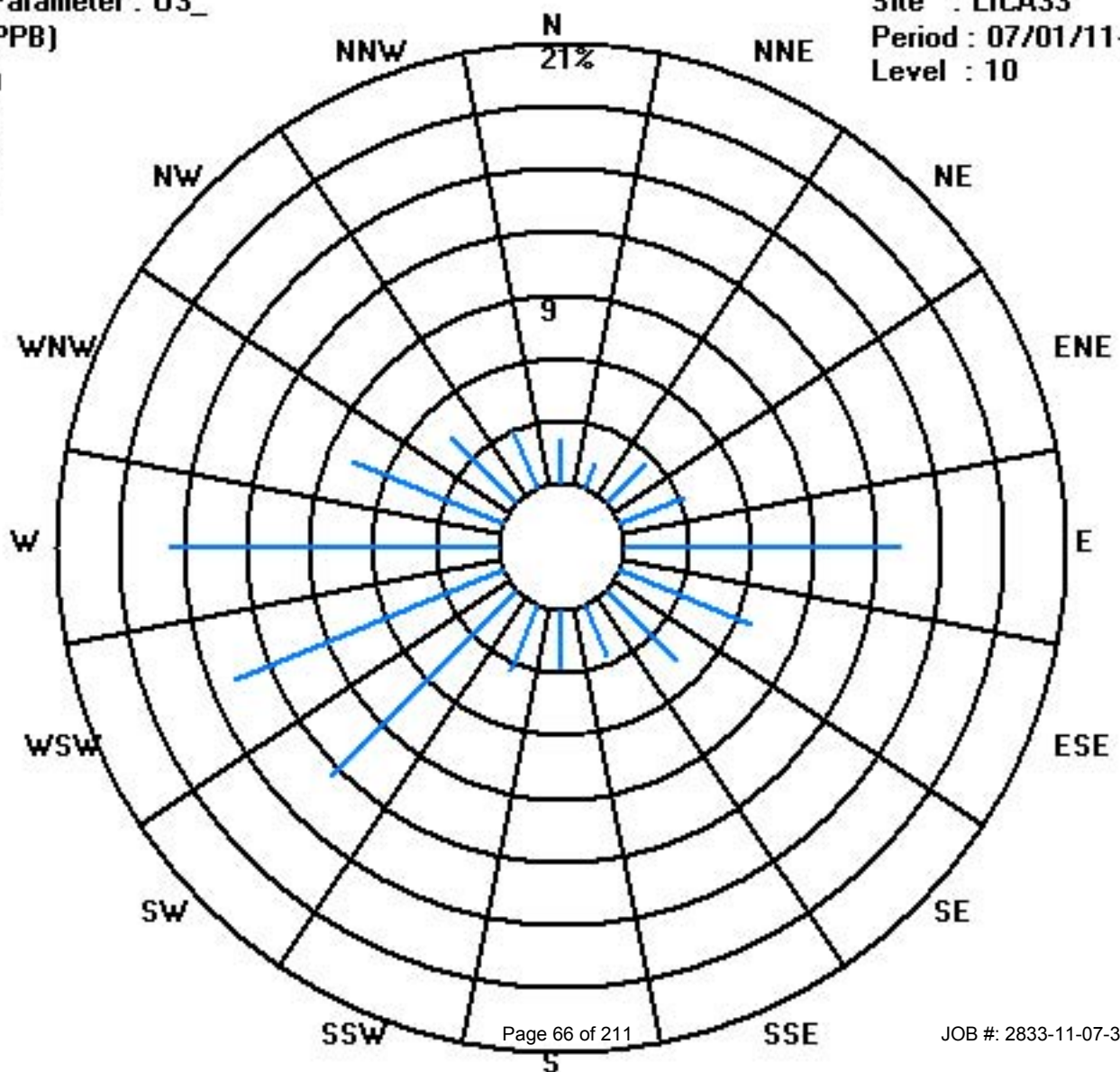
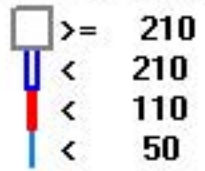
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	16	9	19	23	92	48	33	19	20	24	88	97	110	55	31	22	706
< 110																	
< 210																	
>= 210																	
Totals	16	9	19	23	92	48	33	19	20	24	88	97	110	55	31	22	

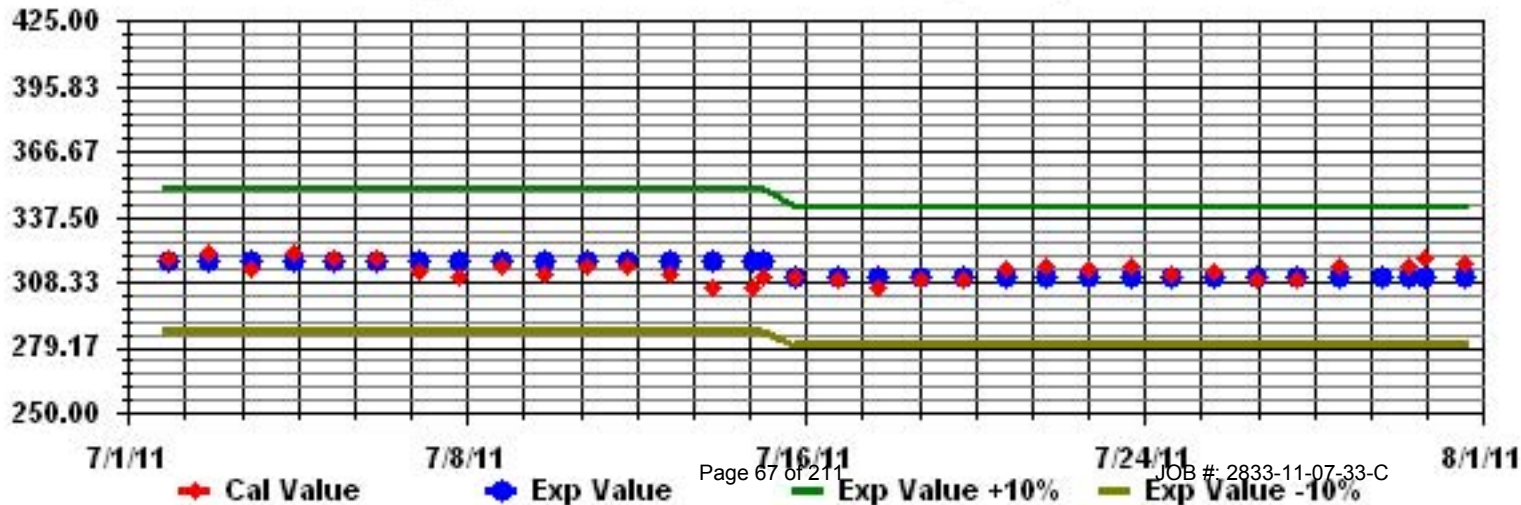
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

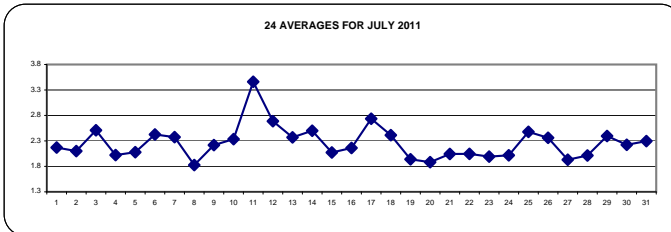
JULY 2011

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	RDGS.	
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	2.9	2.4	2.7	2.2	2.3	2.2	2.2	2.2	2	2	2	2	2	2	2	2.1	2.1	2	2.3	2.2	IZS	2	2.1	2.9	2.2	24		
2	2.1	2.1	2	2.1	2.3	2.4	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2	2	IZS	2.1	2.5	3.5	3.5	2.1	24			
3	3.8	3.5	3.7	4.2	3.7	3	2.9	2.6	2.3	2	2	2	1.9	1.9	1.8	1.9	2	1.8	2	IZS	2	2.1	2.3	2.3	4.2	2.5	24	
4	2	2	2.1	2.2	2.3	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	IZS	2	1.9	1.9	1.9	2	2.3	2.0	24	
5	2.3	2.3	2.2	2.2	2.2	2.1	2	2	2	2	2	1.9	1.9	1.9	1.9	2	1.9	IZS	1.9	2	2.1	2.1	2.3	2.6	2.6	2.1	24	
6	2.5	3	2.6	2.6	2.5	2.5	2.3	2.2	2.1	2	2	1.9	1.9	1.9	1.9	2	IZS	1.9	1.9	2.7	4.1	2.6	2.7	4	4.1	2.4	24	
7	4.5	8	3.1	1.9	2	2.2	2	2.1	2	2	2	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	8.0	2.4	24
8	1.8	1.9	1.9	1.8	1.8	1.9	1.9	2	1.9	1.8	1.7	1.7	1.7	1.7	IZS	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.9	2.0	1.8	24
9	2.3	2.3	2.4	2.8	3	3.7	2.7	2.1	2.2	2.1	2	2	2	IZS	2	1.9	1.9	2.1	1.9	1.9	1.9	1.9	1.9	1.9	2	3.7	2.2	24
10	2.1	2	2	2	2.4	3.2	2.2	2.3	2.2	2.1	2	2.2	IZS	1.9	1.9	2	1.9	2	2	2	2.2	3.8	3.4	3.9	3.9	2.3	24	
11	4.9	6.7	5.9	5.4	6.7	8	5.3	2.6	2.1	2.1	2	IZS	1.9	2	2	2	2	2	2	2	2.1	2.8	3.5	3.6	8.0	3.5	24	
12	3.8	6.3	3.8	3.1	3.2	3	2.6	2.4	2.2	2.1	IZS	1.9	1.9	1.9	1.9	2	2	2	2.2	2.4	2.5	2.3	2.8	3.5	6.3	2.7	24	
13	2.9	2.7	2.5	2.6	2.2	2.3	2.6	2.1	2.1	IZS	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2.2	4.1	4.6	4.6	2.4	24		
14	4.7	3.9	2.9	3	3.9	2.6	2.3	2.3	IZS	2.2	2.2	2.2	C	C	C	C	1.8	1.8	1.9	1.9	1.9	2	2	2	4.7	2.5	24	
15	2.1	2	2.2	2.1	2.8	2.5	2.9	IZS	2.1	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	2.1	1.9	1.9	2	1.9	2.9	2.1	23
16	2.1	2	2.3	2.1	2.1	2.1	IZS	1.9	1.9	1.9	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2.1	4.7	3.6	4.7	2.2	24	
17	4	3.3	2.8	3.9	4.9	IZS	4.1	4.1	2.5	2.2	2.1	2	2	2	2	2.1	2.1	2.2	2.5	2.6	2.5	2.5	4.9	2.7	2.4	24		
18	2.9	3.1	4.3	3.6	IZS	3	3.1	2.8	2.2	2.2	2.1	2.1	2	2	2	2	2	2.1	2.2	2.2	2	1.9	1.8	1.9	4.3	2.4	24	
19	2.1	2.1	2.3	IZS	2	1.9	2	2	2	1.9	1.9	1.9	1.8	1.9	1.8	1.8	1.8	2	1.9	1.9	1.8	2	1.8	1.9	2.3	1.9	24	
20	2	1.9	IZS	1.8	1.9	1.9	1.8	2	1.9	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.1	2.2	2.2	1.9	24
21	2	IZS	1.9	2	2.2	2	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.3	2.3	2.4	2.3	2.3	2.4	2.0	2.0	24		
22	IZS	2	2.1	2	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.1	2.1	IZS	2.1	2.0	24	
23	2	2.1	2.1	2.1	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2	1.9	2.3	2	IZS	2	2.3	2.0	24	
24	2	2	2	2.1	2.1	2.3	2.1	2	2	2	2	2	2	2	2	2	2	1.9	1.9	2	2	IZS	2	2	2.3	2.0	24	
25	2.2	3.3	2.9	2.7	2.3	2.3	2.3	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	4	4.7	5.1	5.1	2.5	24	
26	4.2	2	2	2.2	3.1	2.9	3.1	2.6	2.4	3	2.2	2.1	2	2	2	2.1	2.1	2	2	IZS	2.3	1.9	2.1	2	4.2	2.4	24	
27	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8	IZS	1.8	2.2	2.1	2	2	2.2	1.9	24	
28	2	2.1	2.1	2.5	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	2	1.9	2	2.2	2.1	2.1	2.5	2.0	24	
29	2.2	2.8	2.4	3.6	4.7	4.7	2.8	2.7	2.4	2	1.9	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2	2.1	4.7	2.4	24	
30	1.9	2.1	2.1	2	2	2.1	C	C	2	1.9	1.9	2	1.9	1.9	1.9	IZS	1.9	1.9	2	2.7	3.3	3	3.1	3.1	3.3	2.2	24	
31	3.1	3	2.9	2.6	2.6	2.4	2.4	2.2	2.2	2.1	2.1	2	2.1	IZS	2.1	2.1	2.1	2.2	2.2	2.1	1.9	2	2.2	3.1	2.3	24		
HOURLY MAX	4.9	8.0	5.9	5.4	6.7	8.0	5.3	4.1	2.5	3.0	2.2	2.2	2.0	2.1	2.0	2.1	2.1	2.1	2.2	2.7	4.1	4.0	4.7	5.1				
HOURLY AVG	2.7	2.9	2.6	2.6	2.7	2.7	2.5	2.2	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.1	2.2	2.3	2.5	2.6				

STATUS FLAG CODES

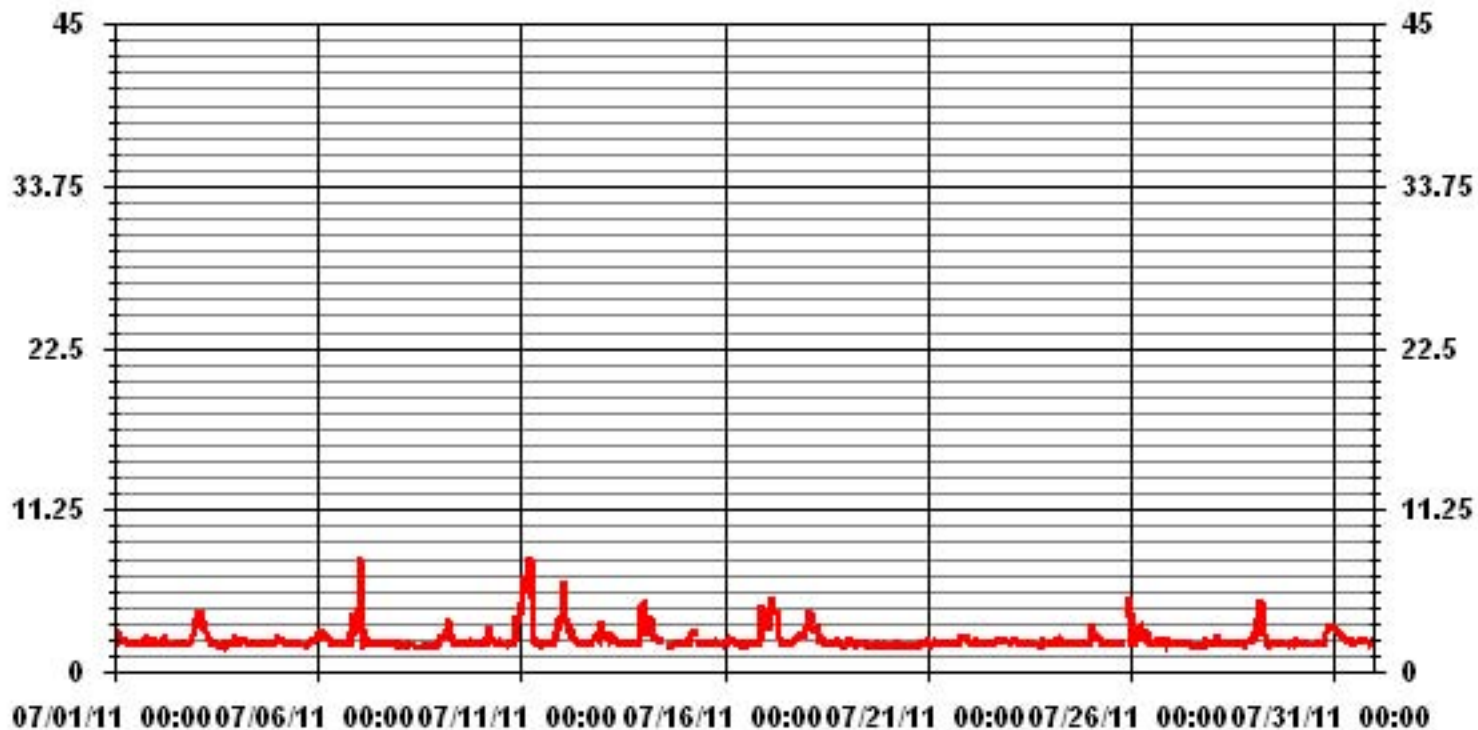
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706					
MAXIMUM 1-HR AVERAGE:	8.0	PPM	@ HOUR(S)	5	ON DAY(S)	11
MAXIMUM 24-HR AVERAGE:	3.5	PPM			ON DAY(S)	11
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.72		MONTHLY AVERAGE:	2.26	PPM	

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	5.4	5.5	4.1	3.5	3.5	3	2.3	2.6	2.3	2.3	2.5	2.3	2.3	2.3	2.3	2.4	2.7	2.7	3	2.9	IZS	2.1	3.3	5.5	2.9	24	
2	2.4	2.1	2.1	2.2	3.8	4.4	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.4	2.7	IZS	3.7	4.8	4.9	4.9	2.6	24	
3	5.2	5.1	5.6	5.8	5.9	4.3	3.6	3.2	2.7	2.3	2.2	2.1	2.1	2	1.9	2.6	2.9	2.8	4.7	IZS	2.1	2.1	3.2	2.9	5.9	3.4	24
4	2.6	2.8	3	2.8	2.7	2.6	2.6	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.2	2.7	2.2	IZS	2.5	2.5	2	2	2.7	3	2.4	24
5	3.4	2.5	2.3	2.3	2.3	2.2	2.1	2.1	2.3	2	2	2	2	2.1	2.2	3	2.1	IZS	2.1	2.9	2.9	2.3	5.3	7.4	7.4	2.7	24
6	4.9	5	3.6	6.7	3	2.9	3.1	2.8	2.1	2.1	2.8	2	2	1.9	1.9	5.5	IZS	1.9	2	10.3	31	4.7	4.5	12.2	31	5.2	24
7	7.8	32.9	5.4	2	2.6	2.8	2.5	2.5	2.5	2.7	2.5	2.6	2.2	2.2	2.5	IZS	2.2	2.2	2.4	2.1	2.1	2.3	2.2	2.6	32.9	4.1	24
8	2	2.2	2.1	2.1	2	2.5	2.2	2.2	2.1	2	1.7	1.7	1.7	1.7	IZS	1.8	2.1	2.2	2.2	2.3	2.1	1.8	3	2.6	3	2.1	24
9	3.3	2.7	3.1	5	4.9	5.6	4	3.1	4.2	3.1	2.2	2.1	2.6	IZS	3.8	2.2	2.9	2.8	2	2.1	1.9	2.8	2.4	2.7	5.6	3.1	24
10	2.2	2.1	2	2.1	3.6	5	3.4	2.8	2.7	2.6	2.4	2.6	IZS	2.2	2.2	2.2	2.1	2.3	2.5	2.9	4.4	8	4.3	6.5	8	3.2	24
11	7.9	9.6	8.3	13.7	9.2	10.5	10	3.6	2.8	2.5	2.3	IZS	2.1	2.2	2.2	2.2	2.1	2.4	2	2	2.2	4.6	4.3	4.9	13.7	4.9	24
12	4.3	37	7.5	4.4	4.6	4.6	3.3	2.7	2.6	2.5	IZS	2.1	2.2	2.1	2	2.4	2.5	2.4	3	4.8	3.9	4.2	5.5	5.3	37	5.0	24
13	4.1	4.1	4.9	4.8	4.6	3.9	4.6	3.6	3	IZS	2.9	2.8	3.4	9.8	3.1	2.9	P	2.1	2.7	1.9	2.3	4.1	8.4	7.4	9.8	4.2	23
14	7.6	6.2	4.5	6.2	23.5	3.4	2.7	2.9	IZS	3.1	2.5	2.5	C	C	C	C	1.9	1.9	1.9	2	2.1	2.1	2.2	2.1	23.5	4.3	24
15	2.2	2.1	4	3.6	5.3	4	5	IZS	2.5	2.4	2.6	2.2	2.2	M	2.2	2.1	1.9	1.9	2.5	2.5	2	2	2.8	2.1	5.3	2.7	23
16	2.6	2.5	5.5	4.5	2.2	2.2	IZS	2.1	2.1	2.4	2.4	2	2.2	2.1	2.5	2.3	2.1	2	2	2.9	5.6	6.9	5.7	6.9	3.0	24	
17	11.3	8.4	6.1	11.5	9	IZS	6.2	6.3	3.7	2.8	2.5	2.4	2.3	2.5	2.3	2	2.1	2.1	2.8	3.1	3.5	3.2	3.5	2.7	11.5	4.4	24
18	7.1	7.8	7.6	6.3	IZS	3.9	4.7	4.1	2.6	3.1	2.5	2.4	2.3	2	2	2.1	2.1	2.1	2.3	4	2.8	2.4	1.9	2.4	7.8	3.5	24
19	2.2	3	3.6	IZS	3.3	2.1	2.1	2.2	2	2.4	2.1	2.1	2.1	2	2.1	2	1.9	3.4	2.3	2.5	1.9	3.5	1.9	1.9	3.6	2.4	24
20	4	2.5	IZS	1.9	1.9	2	1.9	1.9	2.8	2.6	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	3.1	2.8	4	2.2	24
21	2.8	IZS	2.4	2.5	2.9	2.7	2.2	2.1	1.9	1.9	1.9	1.9	2.4	2.2	2.1	3.4	3	2.6	2.6	4.2	4.3	3.8	3.4	3	4.3	2.7	24
22	IZS	2.4	2.7	2.5	2.9	2.5	2.5	2.5	2.4	2.3	2.3	2.2	2.2	2.3	2.5	2.2	2.4	2.5	2.5	2.5	2.4	2.5	2.4	IZS	2.9	2.4	24
23	2.3	2.4	2.6	2.5	2.5	2.5	2.7	2.5	1.9	2.2	2	2	1.9	2.4	2	2.3	2.3	2.1	2.4	2.2	3.4	5.1	IZS	2.2	5.1	2.5	24
24	2.1	2.1	2.2	2.2	2.7	2.8	2.6	2.5	2.2	2.3	2.1	2.1	2	2.1	2.5	2.2	2.5	2.1	2.4	2.4	2.4	IZS	2.1	2.2	2.8	2.3	24
25	3	8.9	4.5	4.1	2.8	4.8	3.4	2.2	2.1	2.2	2.3	2	2	2.2	1.9	1.9	1.9	1.9	1.9	2	IZS	11.2	9.8	17.3	17.3	4.2	24
26	6.3	2.5	2.1	4.1	6	4.4	5.1	3.5	3.7	5.5	3.8	3.2	2.4	2.1	2.1	2.6	2.9	2.1	2.4	IZS	3.2	2	2.1	2.1	6.3	3.3	24
27	2	2	2	2	2	2	2	2	1.9	1.9	2.1	2.1	2	1.9	2	1.9	1.9	2	IZS	1.9	3	2.8	2.5	2	3	2.1	24
28	2.2	2.2	3	4	2	2	2.1	2	2.4	2.4	2.1	2.1	2.1	2.1	2.1	2	2.1	IZS	2.3	2.1	2.1	4.3	2.7	2.8	4.3	2.4	24
29	5	5.6	4.8	7.7	13.6	10.2	3.7	3.6	3.4	2.7	2	4.7	4.4	1.9	2	2.2	P	2.2	2.1	2	3.1	2.5	2.8	2.5	13.6	4.1	23
30	2.2	2.5	2.6	2.2	2.1	2.8	C	C	2.3	2.1	2.1	2.2	2.1	2.2	2	IZS	1.9	1.9	2.5	4.1	3.7	4.4	4.5	5.4	5.4	2.8	24
31	4.9	5	4.1	4	3.6	2.7	3.3	3	2.8	2.6	2.5	2.5	2.1	2.1	IZS	2.3	2.2	2.2	2.3	2.3	2	P	3.5	5	2.9	23	
HOURLY MAX	11	37	8	14	24	11	10	6	4	6	4	5	4	10	4	6	3	3	5	10	31	11	10	17			
HOURLY AVG	4.2	6.1	3.9	4.3	4.7	3.7	3.4	2.8	2.5	2.5	2.3	2.3	2.3	2.4	2.2	2.4	2.2	2.2	2.4	2.9	3.7	3.6	3.7	4.3			

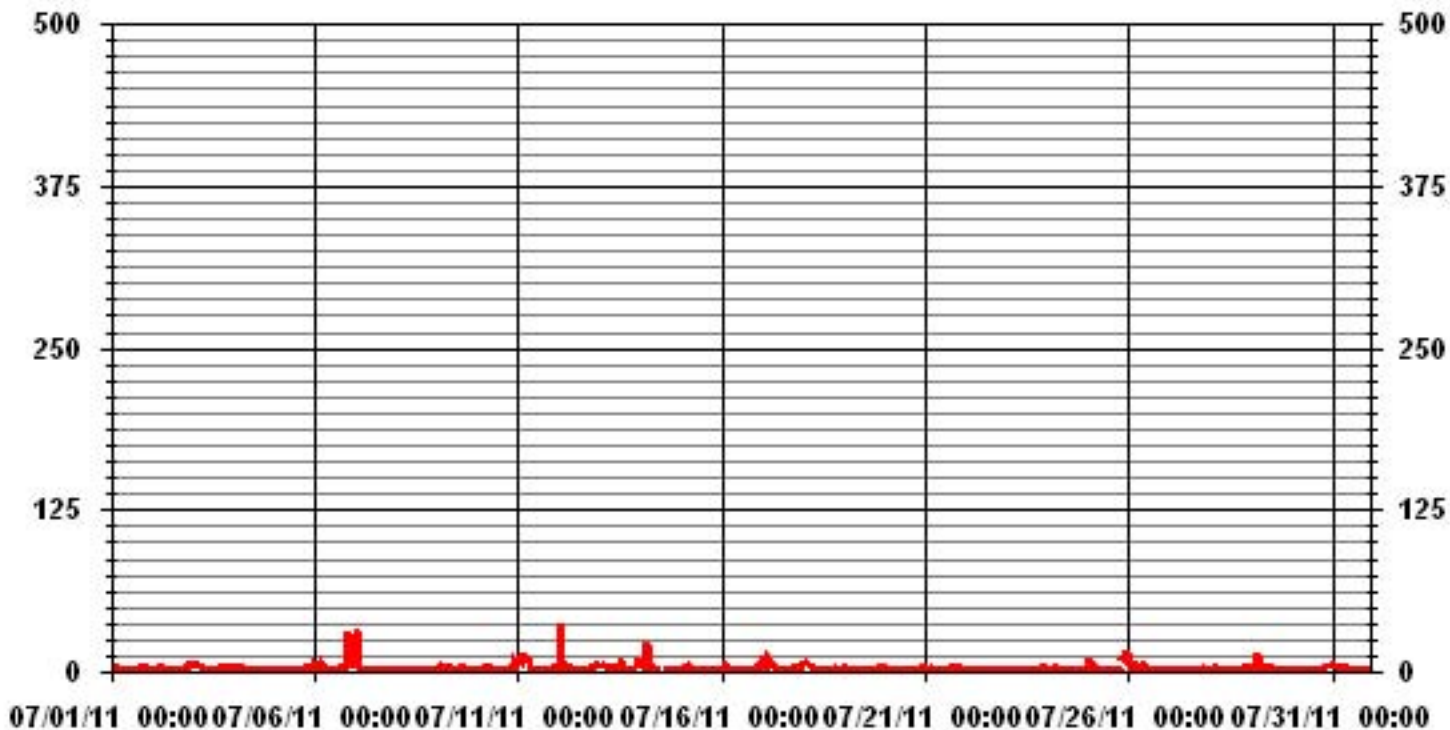
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	703
MAXIMUM INSTANTANEOUS VALUE:	37.0 PPB @ HOUR(S) 1 ON DAY(S) 12
IZS CALIBRATION TIME:	31 HRS
MONTHLY CALIBRATION TIME:	6 HRS
STANDARD DEVIATION	2.78
OPERATIONAL TIME:	740 HRS

01 Hour Averages



— LICA33 THCMAX PPM

LICA33
 THC / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 33
 Site Name : LICA33
 Parameter : THC
 Units : PPM

Wind Parameter : WDR
 Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	1.69	.84	1.98	1.84	10.19	5.94	4.24	2.54	2.83	2.97	12.32	13.31	15.43	7.36	4.10	2.26	89.94
< 10.0	.56	.42	.70	1.41	2.83	.70	.56	.00	.00	.28	.28	.56	.14	.42	.28	.84	10.05
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.26	1.27	2.69	3.25	13.03	6.65	4.81	2.54	2.83	3.25	12.60	13.88	15.58	7.79	4.39	3.11	

Calm : .00 %

Total # Operational Hours : 706

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	12	6	14	13	72	42	30	18	20	21	87	94	109	52	29	16	635
< 10.0	4	3	5	10	20	5	4			2	2	4	1	3	2	6	71
< 50.0																	
>= 50.0																	
Totals	16	9	19	23	92	47	34	18	20	23	89	98	110	55	31	22	

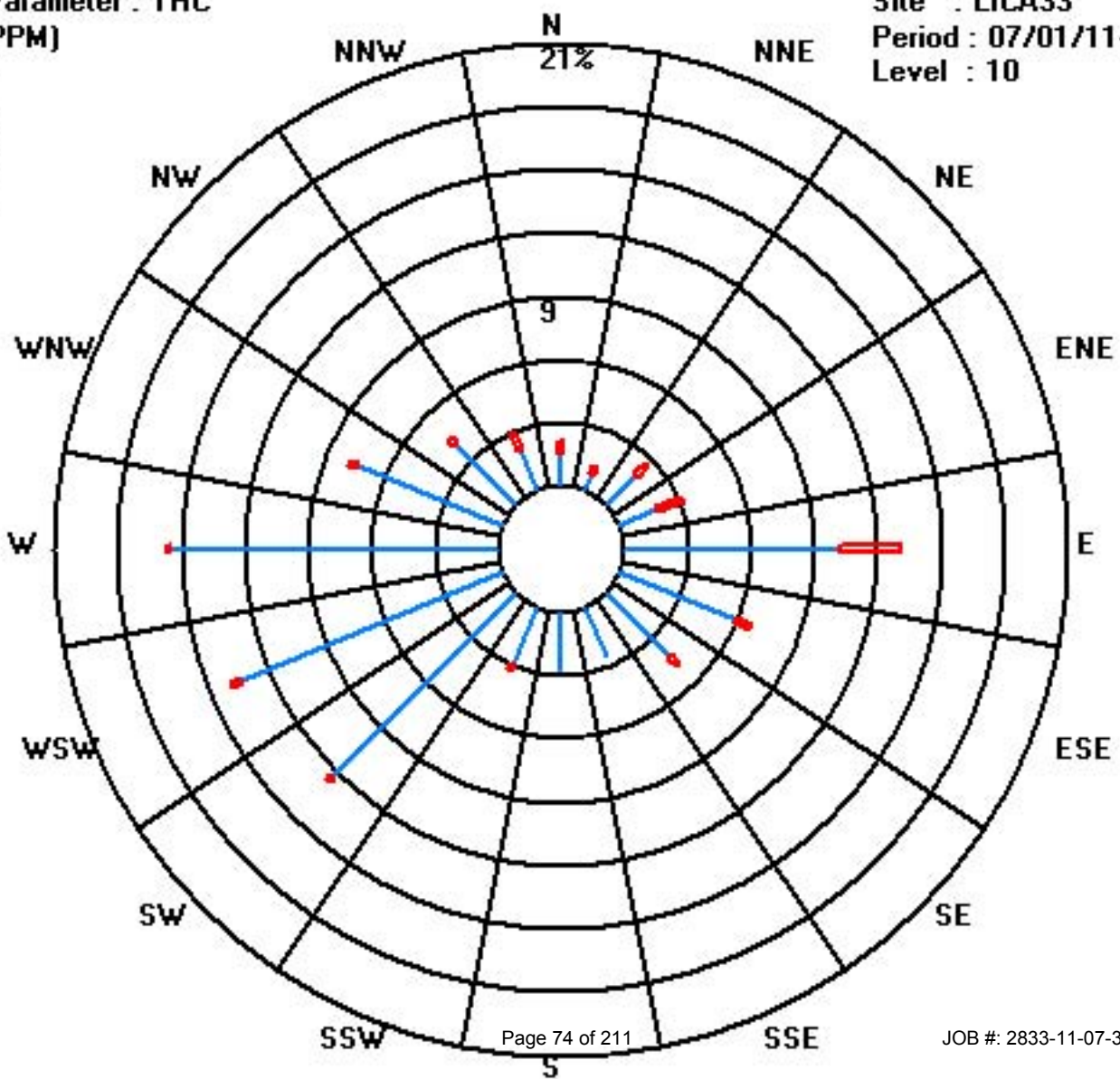
Calm : .00 %

Total # Operational Hours : 706

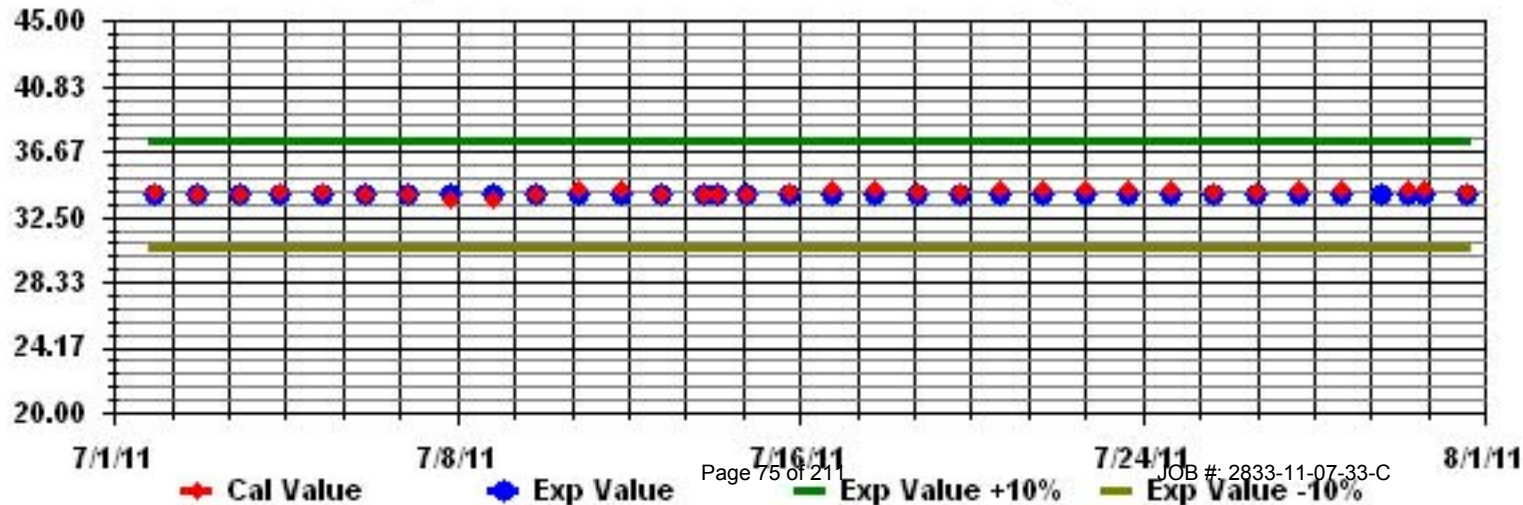
Class Limits (PPM)

Period : 07/01/11-07/31/11

Level : 10



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



Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 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		4.2	4.8	6.6	5.6	5.6	8.9	11.9	8.9	13.7	13.6	13.4	14.7	17.8	17	18.5	18.8	14.7	16.9	14.9	8.8	7.1	9.8	11.1	6.5	18.8	11.1	24
2		7.1	6.5	5.4	4.2	1.3	2.1	6.1	10.9	7.3	9.7	12.5	15.4	16.3	15.6	15.3	11.8	12.9	8.6	7	4.2	3.8	3.6	3.6	5.6	16.3	7.7	24
3		4.6	5.1	6.2	4.6	6.1	6.1	7.7	9.4	13.9	17.3	19	20.5	24.4	25.5	24	18.8	3.4	12	3.6	5.2	9.7	10.4	6.1	6.9	25.5	8.2	24
4		9.4	8	9	8	8	8.9	9.6	13.3	17.4	15.1	15.7	19.1	19.4	18.5	16.8	15.7	15.1	14	14.4	7.9	7	8.4	9.8	5.4	19.4	11.9	24
5		3.9	8.4	4.5	4.7	5.6	8.5	8.7	11.1	10.6	11.3	13.9	15.7	15.4	13	11.7	12	10	9.6	9.2	4.4	4	5.4	4.1	4.8	15.7	8.8	24
6		4.9	4	4.1	3.5	4	4.2	5.3	5.6	10.8	11.1	7.5	9.9	9.5	8.9	10.3	7.3	7.5	6.7	5.6	1.2	1.4	0.7	0.6	2.5	11.1	5.7	24
7		3.1	2.9	9.2	12	13.3	11.1	10.6	10.5	9.3	10.4	12.3	13.2	12.9	11.1	10.7	13.3	13.4	15.2	14.7	17.2	14.9	16.6	16	18.9	18.9	12.2	24
8		18.5	16.5	16.3	18.2	23.6	17.7	23.3	20.6	19.9	18.2	12.8	20	20.6	19.3	17.7	9.6	10.6	9.8	7.7	7.7	5.2	4.1	5.5	7.9	23.6	14.6	24
9		7.2	5.8	7.3	5	7.3	7	5.5	5.7	4.3	3.9	4	6.5	11.3	5.2	1.6	5.2	6.5	5.3	14.1	8.3	10.9	9.3	7.6	6	14.1	6.7	24
10		6.1	11.4	10	10.3	8.2	8.6	9.5	13.3	14.9	13.2	17.1	14.3	13.2	12	16.7	16.9	15.2	13.1	12	8.7	4	2	3.7	0.3	17.1	10.6	24
11		2.1	0.8	0.3	0.7	0.2	1.2	3.1	5.1	8.3	12.1	16.3	18	18.7	18.7	16.1	12	9.8	6.3	10.1	8.3	5.9	3	3.5	1.8	18.7	7.6	24
12		4.6	2.5	3.3	4.1	5.5	5.8	9.9	13.1	14.8	15.7	17.7	16.1	17.4	15.4	13.3	11.7	12.7	11.7	7	6.4	8.7	4.5	3.4	6.1	17.7	9.6	24
13		7.1	6.1	4.4	5	4.6	5.1	3.2	7.9	8.1	7.7	6.6	5.7	3.6	4.7	5.4	4.1	5.2	6.8	6.6	5.3	2.8	0.4	2.9	4.1	8.1	5.1	24
14		2.8	5.1	4.3	5	5.1	11.2	11.8	7.1	8.1	12.1	14.2	14.1	12.7	11.3	10.5	8.5	12.2	12.1	8.9	5.2	4.7	5.2	4.4	8.5	14.2	8.5	24
15		5.6	6.4	6.2	4.1	2.7	4.5	1.6	6.1	11.8	6.8	2.7	11	16.3	21.1	13.5	15.2	19.9	15.2	12.2	9.7	9.5	9.3	7	10.7	21.1	9.5	24
16		8	4.4	6.4	4.2	3.5	7.9	7.8	5.8	10	8.1	6.1	11.2	12.2	8.1	9.5	9.4	6.4	7.9	3.2	3.6	2.7	2.7	1.5	2.1	12.2	6.4	24
17		0.8	2.1	1.7	0.6	0.6	1.6	1.9	4.1	6.3	9.2	9.1	9.5	10.2	8.8	10.1	12.7	13.2	12.1	9	8.8	7.7	9.1	7.7	7.3	13.2	6.8	24
18		3.3	3.7	4.8	5.4	6.6	7.2	5.3	5.3	17.4	13.9	17.1	15.8	12.2	11.9	10	6.9	6.2	11.6	3.9	4.9	8	10.3	9.4	5.5	17.4	8.6	24
19		2.9	5.1	6.7	7.7	7.7	11.8	9.6	9.8	13.3	8.9	9.4	10	10.1	9.2	9	7.3	5.8	2.4	4.4	6.1	5.9	4.8	5.5	5	13.3	7.4	24
20		2.5	1.5	9.3	10.6	13.1	12.6	10.5	12	10.7	14.1	15.8	17.4	17.9	19.2	18.8	15.5	17.7	17.7	15	13.1	11.5	8	7.7	19.2	12.9	24	
21		9.2	7.4	8.1	8.1	6.7	10.3	10.7	13.2	13.2	11.1	10.5	8.3	8.6	7.8	6.8	4	5.3	12.4	13.6	8.7	7.1	6.7	9.2	11.4	13.6	9.1	24
22		16.3	15.7	11.8	11.9	12.9	12.4	12	15	18.2	19.8	19.7	23.7	22.1	22.7	17.7	18.9	18.4	19.3	19.1	17.4	17.1	15.1	16.8	17.1	23.7	17.1	24
23		17.6	15.4	16.4	15.6	15.4	12.4	7	6.5	11.1	9.2	7.5	5.4	3.6	5.5	10.1	8.5	7.8	8.1	6.4	6.9	3.7	2.6	3.3	6.7	17.6	8.9	24
24		7.3	5.6	5.9	6.5	7.1	5.4	7.2	8.9	10.4	8.2	8.6	8.2	6.5	7.3	6.2	7.5	6.1	8.1	8.5	6.3	5.4	8.8	8	7.4	10.4	7.3	24
25		4.9	1.8	2.6	1.7	4.5	1.4	3.3	7.8	8	7.8	6.8	6.7	7.5	7.3	6.7	6.6	4.5	4.3	6.1	4.8	2.1	2.2	2.8	0.9	8.0	4.7	24
26		4.9	11.6	6.9	3.4	1.4	0.8	4.4	7.6	5.6	3.5	5.7	3.4	7.9	8.1	8.8	5.9	3.5	6.4	3.7	4.5	4.7	7.3	10.2	11.5	11.6	5.9	24
27		11.6	11.9	13.1	12.5	13.7	14.3	15.8	16.5	15.3	16.3	13.6	14.9	15.9	17.1	15.9	19.9	14.4	8.2	15.4	11.7	6.7	7.2	7.8	9.7	19.9	13.3	24
28		8.1	10.4	7.6	8.1	13.2	11.6	14.4	14.2	10.2	8.3	10.6	14.5	16.6	14.3	13.9	15.6	13.3	10.1	7.3	5.8	3.9	3.1	6.1	4.1	16.6	10.2	24
29		2.8	0.9	5.2	3.6	1.4	5.9	8.8	8.1	7.7	7.5	10.3	9.1	7	7.6	9.5	11.1	8.7	3.5	7.1	8.4	9.4	9.8	9.6	9.5	11.1	7.2	24
30		7.2	8	7.5	10	7.8	7	5.5	5.4	7.4	7.5	9.6	11.8	9.1	6.8	8.9	9.6	6	7.6	6.6	7.6	8.3	8.1	7.1	6.7	11.8	7.8	24
31		7.3	7	9.5	10.2	8.4	10.4	10.5	9.8	10.5	10.3	8.7	4.8	6	5.2	4.5	2.7	5.2	7.1	7.3	7.3	13.3	18.3	11.8	4.1	18.3	8.3	24
HOURLY MAX		18.5	16.5	16.4	18.2	23.6	17.7	23.3	20.6	19.9	19.8	19.7	23.7	24.4	25.5	24.0	19.9	19.9	19.3	19.1	17.4	17.1	18.3	16.8	18.9			
HOURLY AVG		6.6	6.7	7.1	6.9	7.3	7.9	8.5	9.6	11.2	11.0	11.4	12.5	13.0	12.4	11.9	11.2	10.0	10.0	9.3	7.6	7.1	7.1	6.9	6.9			

STATUS FLAG CODES

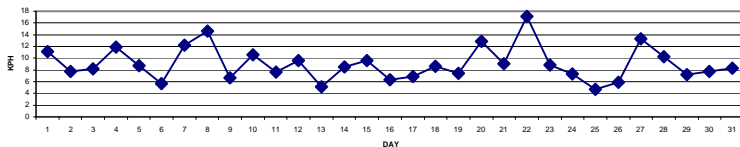
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

LAST CALIBRATION: September 24, 2009

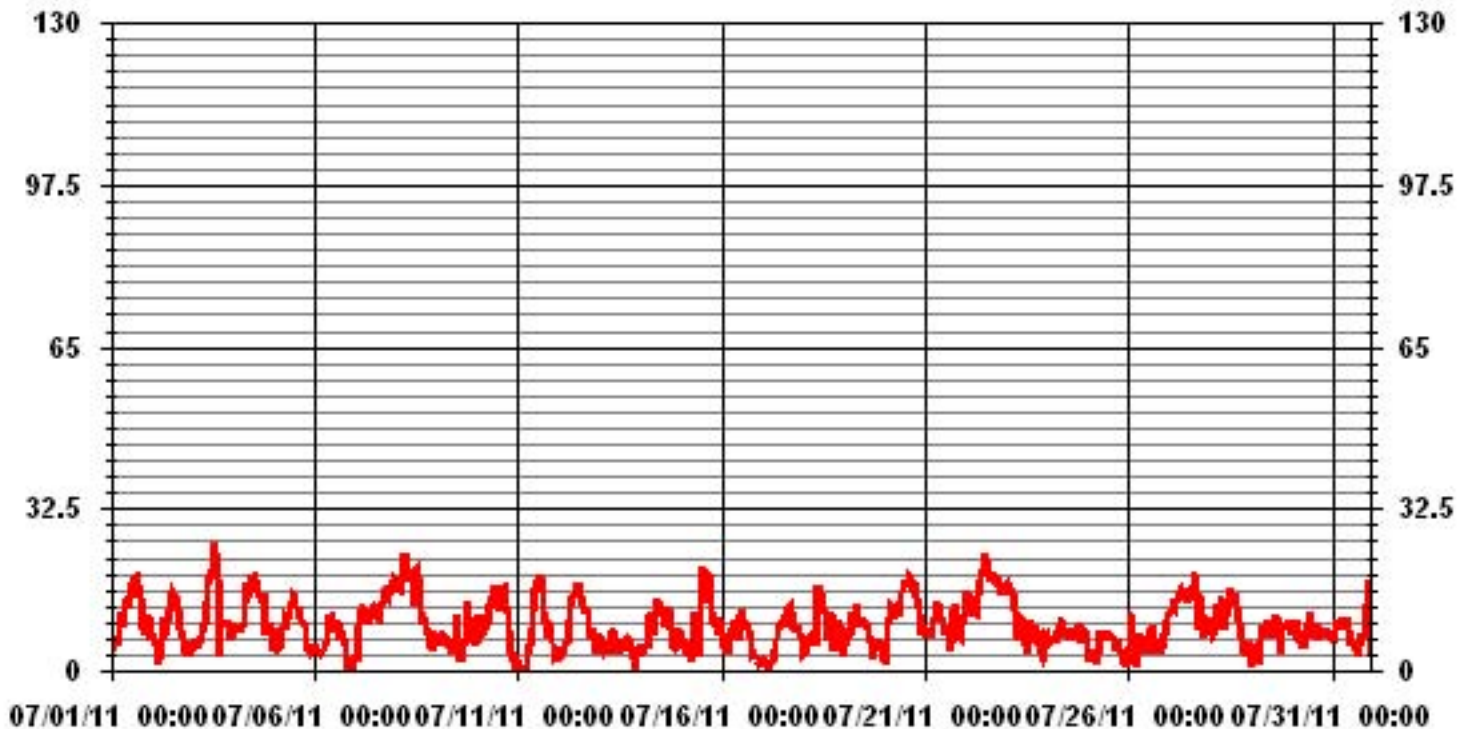
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	25.5 KPH	@ HOUR(S)	13	ON DAY(S)	3
MAXIMUM 24-HR AVERAGE:	17.1 KPH			ON DAY(S)	22
CALMS (≤ 0 KPH)	0.40 %	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0 HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION:	4.88	MONTHLY AVERAGE	9.17	KPH	

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



— LICA33 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 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	11.1	12.6	14.1	10.5	11.5	17.9	20.4	24.3	27.1	31.7	42.9	35	39.2	41.3	34.7	38.8	39.2	36.9	34.7	25.6	15.6	12.6	14.4	11.7	42.9	
2	10.8	10	10.6	8.9	6.8	8.3	10.5	19.5	16.1	19	25.9	32.9	34.2	30.9	27.4	25.3	25.4	20	17.1	14.7	10.6	8.9	6.9	8.7	34.2	
3	6.8	7.1	8.1	7	10.1	8.9	12.2	15	23.1	28.1	30.6	34.9	38.6	39.1	39.7	40.9	66.9	32.6	16.7	19.6	22.1	18.5	14.2	17.9	66.9	
4	19.5	17	17.9	19.2	19.8	21.4	29.8	29.8	37.1	35	35.7	41.3	36.9	43.8	38	34.1	33.1	32.4	32.1	23.6	10.6	11.2	12.4	11.7	43.8	
5	8.9	12.4	9.8	9	12.2	16.1	16	20.6	19.4	22.6	26	29.5	30.3	30	27.2	25.7	24.4	25.3	19.5	9	7	9	10	16	30.3	
6	7.1	8.9	8.9	6	7.8	8.7	9.7	17.2	20.9	21	22	20.7	22.7	20.9	24.7	18.2	15.6	14.2	11	5.4	6.4	3.8	3.6	6.1	24.7	
7	9.8	5.3	25.7	29.9	21.1	18	19.8	18.7	15.7	19.7	21.2	21.4	22.7	21.2	20.7	26.9	22.6	23.6	22.6	29	25.5	25.7	25.3	30.7	30.7	
8	30	28.1	24.9	29.8	37.6	36.2	40.5	31.2	34.8	39.1	34.1	37.7	43.8	36.2	32	32.9	41	36.7	24.9	21.7	13.1	10.7	10.6	12	43.8	
9	10.3	8.4	10.5	9.5	11	12.5	10.9	12.5	8.8	11.5	18.1	18.6	20	15.4	9.1	14.9	16	26.4	27.2	19.2	25.7	22.8	14.8	12.7	27.2	
10	12.6	19.9	17.8	19.7	15.9	19.1	20.3	27.1	30.3	26.9	30.6	28.2	27.2	27.5	29.6	31.5	30.4	25.2	22.3	15.8	7.5	4.5	5.8	3	31.5	
11	4.2	2.9	2.8	3	0.4	3.4	6.3	10	17.8	23.5	28	29.7	29.8	31.9	28.9	23.5	17.7	14.7	17.6	14.4	8.3	4.8	5.1	4.8	31.9	
12	6.5	5.2	7.1	7.1	8.9	10.8	17.1	19.5	22.2	23.8	28.6	26.5	27.3	24.5	23.4	18.2	23.8	19.2	12.1	10.1	23.8	11.4	8	8.8	28.6	
13	9.6	10.2	8.2	10.9	7.5	10.6	8.1	13.4	12.8	12.4	11.9	10.1	9.5	9.3	11	9	P	13.6	12.9	10	6	6.1	4.7	7.5	13.6	
14	7.9	7.5	9.1	7.7	13.6	16.6	21.5	12.6	12.7	22	21.2	20.9	26.6	27.1	24.8	20	24.2	19.7	18.1	11.4	11.8	10.8	10	17.8	27.1	
15	10	18.7	17.4	10.1	7	18.9	11.5	25.8	34.1	30.8	12.9	29	35.9	39.8	32.2	30.1	36	31.4	27.1	27.5	16.7	16.1	17.3	20.9	39.8	
16	19.2	11.5	16.7	10	10.1	13.2	16.8	22.2	21.1	18.8	14.9	26.3	23.7	25.1	22.8	22	24.7	16.9	5.9	8.7	4.8	5.5	6.8	6.9	26.3	
17	10.7	9.3	8.3	6.3	2.9	4.9	4.5	8.2	11.4	15.2	18.3	16.8	19.4	20.5	18.3	22.6	21.4	20.8	17.2	12.1	12.4	13.7	11.6	10.5	22.6	
18	6.5	8.1	7.8	10.8	11.4	11.6	8.5	64.1	48.5	28.6	25.5	24.6	21.1	23.9	24.8	15.1	20.6	20.3	11.6	22.6	31	24.7	22.3	12.6	64.1	
19	11.9	9	16.1	17.2	15.5	20.9	18.8	20.1	22.9	22	20.5	26.5	22.6	21.4	23.5	19.3	17	6.2	8.4	12.6	12	15.6	12.3	14.4	26.5	
20	10.7	6.3	19.5	19.2	22.8	24.2	21.5	21.7	22.3	31.3	30.7	29.5	31.6	32.5	33.7	36.8	31.9	38	34.6	27.1	30.2	18.3	16.7	20	38	
21	19.5	15.6	19.7	17.3	15.9	19.7	19	24.3	25.9	23.4	18	19.2	19.7	18.1	16.9	13.4	14.2	22.2	21.2	15.1	10.5	10.4	15.8	16.6	25.9	
22	25.8	25.4	21.5	19.5	20.6	19.2	18	26.5	27.1	32.3	34.6	37.1	35.8	35.7	29.6	31.5	32.6	31.7	33.4	26.6	26.6	25	25.6	26.5	37.1	
23	28.6	24.8	27	23.6	24.9	20.7	19	17.9	21	26.3	22.6	13.5	10.4	18.9	25.6	25.1	20.5	16.6	17.9	15.8	11.8	5.8	9.7	10.1	28.6	
24	11.3	8.7	10.8	14.2	19.1	13.2	18.5	17.5	20.5	20.6	19.2	18	17.5	18	24.3	19	18.4	21.4	19.9	12.1	11	11.5	12.5	10.8	24.3	
25	12.2	8.3	4.7	7	11.1	12.1	13	18.7	15.9	18.1	18	15.9	17.3	17.3	19.9	16.4	13	9.5	11.8	7.3	5.9	4.4	6.6	4	19.9	
26	34.3	33.2	14.8	8.5	8.2	8.2	9.8	16.3	14.6	11.4	14.9	10.1	15.1	16.3	14.1	12.4	8	12.1	11.1	11.8	9	15.7	15.6	19	34.3	
27	21.3	21.7	21	20.1	21.6	23.7	29.9	28	27.8	28.2	28.3	31.5	32.4	33.6	31.8	41.3	27.6	23.3	26.4	26	13.9	19.6	16.6	17.2	41.3	
28	13.4	19	17	20.4	22.6	24.5	23.4	24	23.4	20.4	28	30.1	31.9	31.5	28.2	34.1	29.3	20.6	17.4	13.3	7.4	15.3	14	7.6	34.1	
29	6.4	6	13.2	8.6	8.6	21	22	16.3	17.8	17.4	19.3	17.9	22.8	18.2	20.4	43.1	P	9.3	15.8	12	22.5	23.8	25.5	24.5	43.1	
30	15	17.7	19.9	19.7	15.5	15.8	14.5	12.5	15.5	16.7	22.7	27.5	25.1	20.6	21.6	25.9	13.9	14.5	13.8	10.7	10.9	11.7	10.9	9.3	27.5	
31	10.4	11.7	13.9	15.9	12.8	17.9	17.6	16.2	18	17.6	15.5	15.8	15.3	13.4	12.1	13.1	11.7	14	13.7	14.2	26.9	39.3	P	14.7	39.3	
PEAK	34.3	33.2	27.0	29.9	37.6	36.2	40.5	64.1	48.5	39.1	42.9	41.3	43.8	43.8	39.7	43.1	66.9	38.0	34.7	29.0	31.0	39.3	25.6	30.7		

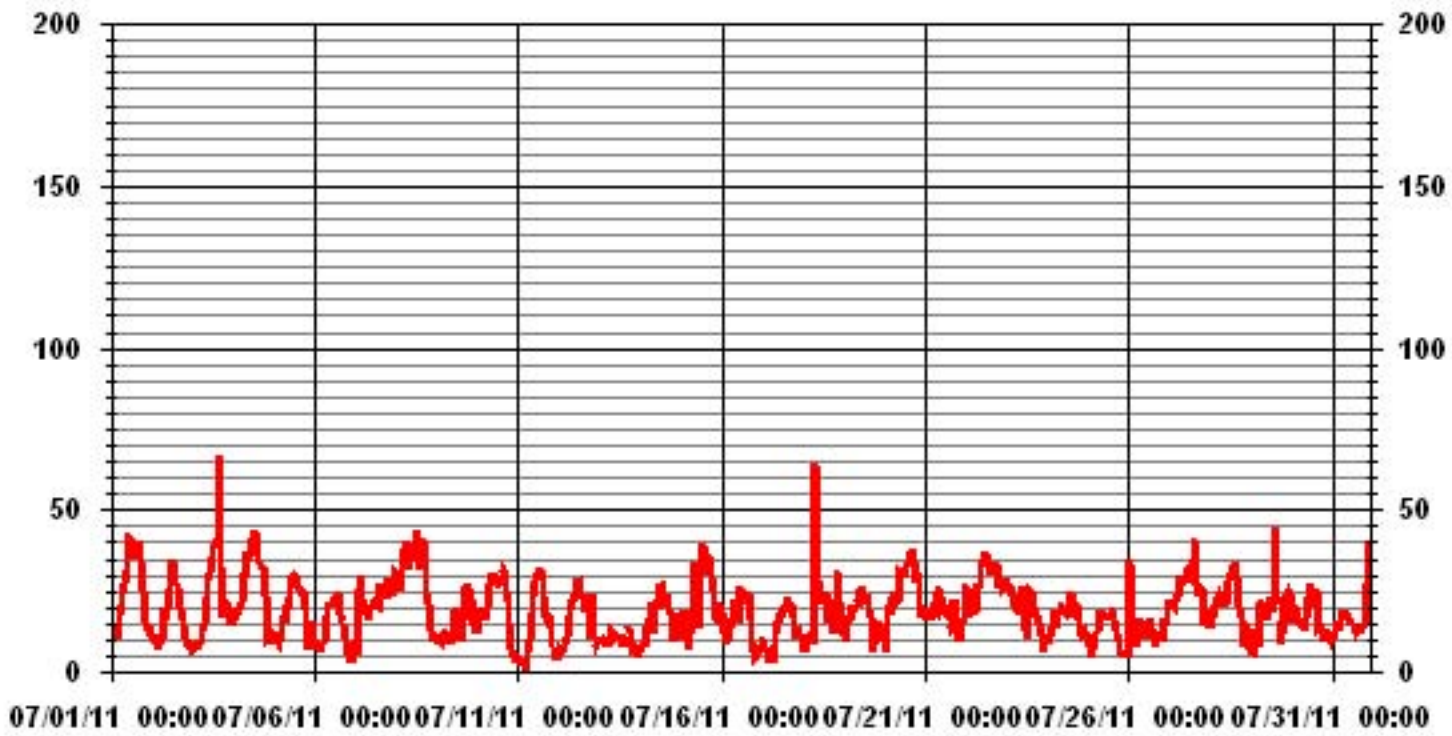
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	66.9	KPH	@ HOUR(S)	16
			ON DAY(S)	3

01 Hour Averages



LICA33
WSP / WDR Joint Frequency Distribution (Percent)

July 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	.80	.80	1.34	1.47	2.55	1.20	1.61	.67	1.88	2.01	4.70	3.36	1.74	1.34	1.47	1.34	28.36
< 12.0	.80	.13	.80	1.07	4.83	2.68	.94	1.47	.94	1.07	6.18	9.13	7.93	3.36	2.41	1.20	45.02
< 20.0	.67	.26	.53	.67	4.83	2.68	1.74	.40	.26	.26	1.74	.80	6.04	3.09	.40	.40	24.86
< 29.0	.00	.00	.00	.00	.67	.26	.40	.00	.00	.00	.40	.00	.00	.00	.00	.00	1.74
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.28	1.20	2.68	3.22	12.90	6.85	4.70	2.55	3.09	3.36	13.03	13.30	15.72	7.79	4.30	2.95	

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	6	6	10	11	19	9	12	5	14	15	35	25	13	10	11	10	211
< 12.0	6	1	6	8	36	20	7	11	7	8	46	68	59	25	18	9	335
< 20.0	5	2	4	5	36	20	13	3	2	2	13	6	45	23	3	3	185
< 29.0					5	2	3				3						13
< 39.0																	
>= 39.0																	
Totals	17	9	20	24	96	51	35	19	23	25	97	99	117	58	32	22	

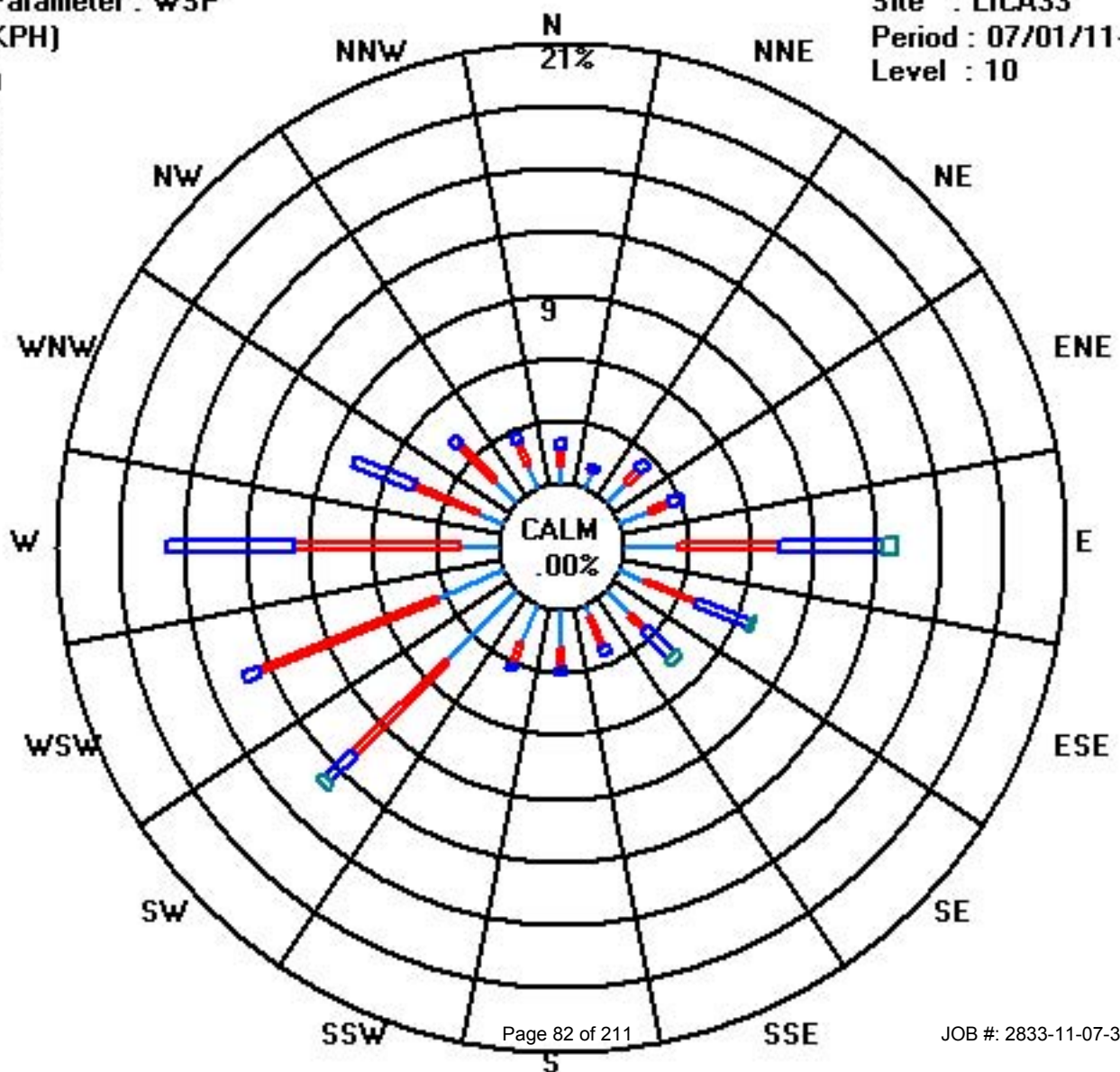
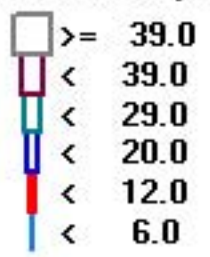
Calm : .00 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 07/01/11-07/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 2011

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	24-HOUR QUADRANT	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	RDGS.	
DAY																												
1	256	245	251	228	241	273	277	261	277	277	274	263	263	264	274	274	264	266	269	261	240	232	233	241	263	W	24	
2	226	226	223	221	181	234	218	223	211	217	223	217	223	223	222	219	226	232	247	251	205	184	133	130	219	SW	24	
3	136	104	95	90	75	83	91	109	127	132	124	131	123	132	143	134	307	358	342	303	282	276	273	257	129	SE	21	
4	271	248	246	262	255	259	264	271	278	265	263	274	272	262	267	265	271	271	273	267	228	227	227	263	263	W	24	
5	241	225	219	220	222	225	229	224	230	227	222	223	234	240	243	241	250	269	278	255	239	225	227	287	236	SW	24	
6	244	284	253	236	233	235	238	266	302	316	296	305	298	303	305	309	320	323	316	19	77	157	138	25	295	WNW	24	
7	132	79	237	176	110	103	112	99	106	72	82	91	109	114	98	103	106	95	93	86	82	82	85	79	98	E	24	
8	83	82	84	88	91	107	93	104	122	209	212	221	223	227	209	259	270	271	252	238	176	143	146	154	154	SSE	24	
9	126	129	126	51	1	360	351	309	329	323	319	335	50	34	23	246	241	297	281	267	269	252	228	273	304	WNW	24	
10	291	293	307	322	333	341	332	343	348	342	357	357	7	9	36	30	29	34	45	53	26	342	235	256	359	N	24	
11	308	341	344	242	212	60	69	46	83	95	97	107	111	114	125	134	160	157	149	134	132	95	87	89	115	ESE	24	
12	111	95	75	96	97	92	96	100	107	114	132	129	127	133	135	117	115	123	98	84	117	112	30	32	113	ESE	24	
13	39	51	84	84	63	43	5	53	70	75	84	109	88	77	101	117	132	155	127	172	207	239	42	105	87	E	24	
14	110	62	90	33	65	99	115	96	91	86	96	107	116	161	191	206	172	165	153	185	174	185	196	230	132	SE	24	
15	229	230	232	240	277	299	349	187	258	187	137	229	239	230	263	237	231	243	247	252	235	238	240	245	239	WSW	24	
16	255	242	239	222	207	217	221	228	241	246	264	235	229	278	268	253	263	283	290	308	210	221	333	220	246	WSW	24	
17	239	197	220	302	84	121	125	68	83	101	113	113	107	122	123	154	154	136	111	95	83	89	118	121	118	ESE	24	
18	111	99	76	56	98	101	72	254	305	42	84	105	134	161	205	242	193	160	182	218	165	173	173	274	138	SE	24	
19	222	230	257	264	271	279	281	277	284	265	257	260	256	258	254	296	319	321	221	217	209	230	185	215	260	WSW	24	
20	330	283	276	279	300	306	319	301	319	298	297	292	296	281	288	285	286	280	284	280	284	282	272	265	290	WNW	24	
21	275	268	250	249	252	276	292	293	298	313	305	327	345	4	347	40	86	69	74	73	77	80	76	94	336	NNW	24	
22	96	96	95	85	77	74	83	82	93	76	79	79	82	93	92	92	109	101	95	97	100	95	101	100	91	E	24	
23	94	105	104	99	103	104	135	245	230	244	256	226	194	160	214	239	234	237	251	268	251	179	221	226	172	S	24	
24	228	226	222	229	245	259	264	281	279	262	280	280	259	240	283	251	240	227	236	236	214	223	221	221	247	WSW	24	
25	238	359	153	218	213	210	161	187	229	239	243	237	237	235	208	203	210	211	165	176	180	46	86	96	212	SSW	24	
26	264	306	307	331	307	296	344	359	359	4	173	250	300	286	284	280	260	283	257	253	272	272	283	274	291	WNW	24	
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29	198	134	173	37	52	299	338	353	1	47	316	333	323	302	288	294	300	271	240	227	238	245	256	257	293	WNW	24	
30	246	249	251	243	245	246	259	259	250	240	237	247	256	225	219	219	187	165	138	100	97	92	95	110	219	SW	24	
31	96	84	93	84	75	86	83	86	97	108	120	157	200	232	236	267	313	297	285	281	295	309	320	328	56	NE	24	
HOURLY AVG	330	359	344	331	333	360	351	359	359	342	357	357	345	303	347	309	320	358	342	308	295	342	333	328				

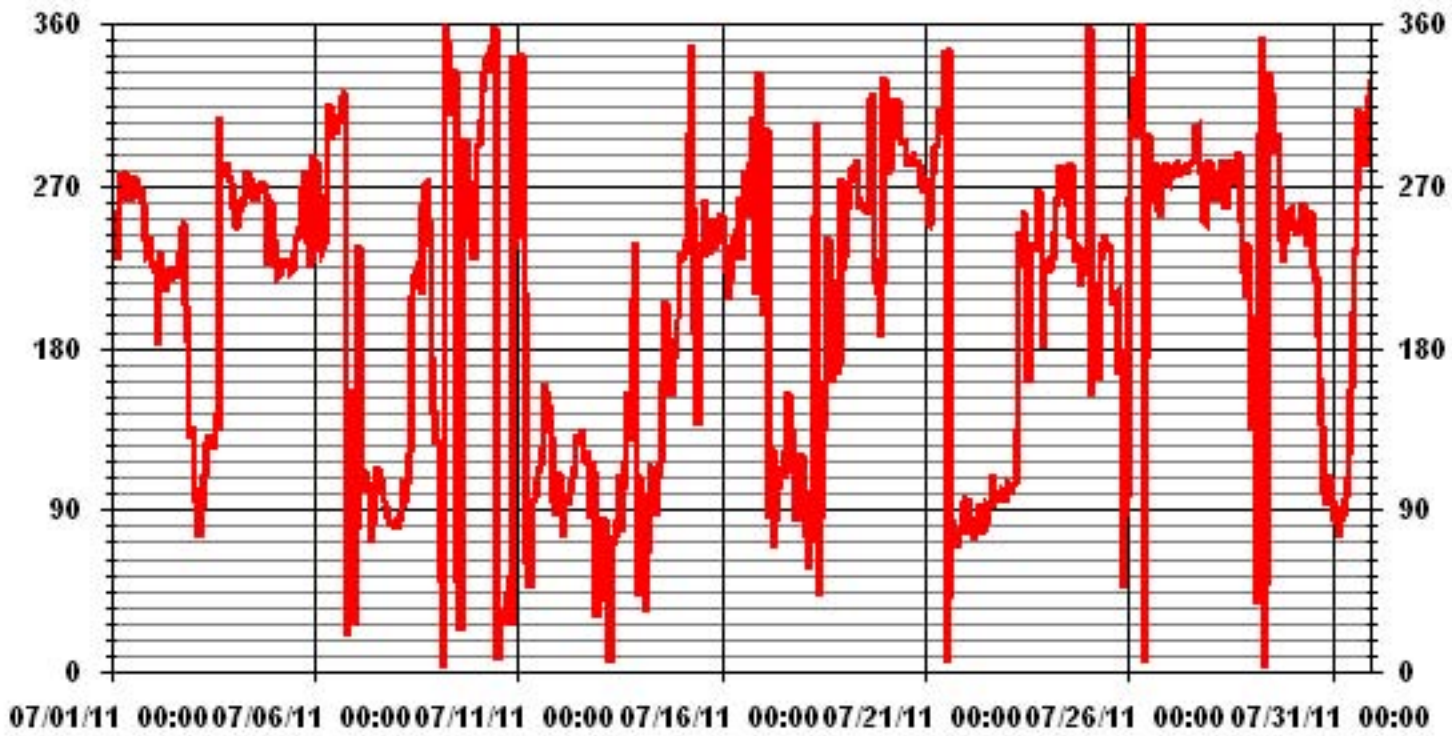
STATUS FLAG CODES

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:	741 HRS
STANDARD DEVIATION	86.79	AMD OPERATION UPTIME	99.6 %
		MONTHLY AVERAGE	234 DEG

01 Hour Averages



— LICA33 WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - PORTABLE SITE

JULY 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	22	14	21	15	17	19	12	25	19	22	24	24	20	22	17	20	22	22	21	25	14	4	4	16
2	8	9	9	15	22	44	12	10	22	18	14	20	18	16	17	19	12	20	24	22	11	21	17	7
3	7	9	4	8	6	7	10	10	10	10	9	11	10	10	11	9	27	5	44	42	16	13	23	24
4	18	17	18	21	24	24	26	20	17	22	22	19	18	21	21	22	20	19	16	23	8	6	4	16
5	22	6	13	13	14	13	11	12	17	16	14	16	16	18	19	21	21	23	16	18	15	5	12	17
6	10	15	17	12	10	13	16	28	16	15	25	22	26	27	24	28	21	17	14	43	40	38	49	16
7	18	28	15	17	6	8	9	9	10	12	13	14	14	18	18	12	11	9	11	8	7	8	8	8
8	8	8	8	8	8	10	10	8	10	18	23	16	16	12	15	26	25	36	21	24	19	18	15	8
9	8	8	6	16	11	12	11	16	20	45	43	21	14	31	39	27	30	39	14	22	20	19	15	18
10	18	9	11	13	14	13	15	16	15	16	15	16	13	17	13	12	11	12	11	7	9	13	10	36
11	13	32	57	32	31	24	15	16	22	13	14	13	13	12	15	14	16	16	11	6	5	9	8	21
12	12	14	9	8	7	9	9	8	10	9	12	12	11	10	10	9	8	8	7	8	11	16	21	8
13	5	7	10	12	11	12	18	11	12	15	12	14	28	21	17	19	41	18	14	9	18	31	6	10
14	41	10	8	10	8	8	10	13	11	10	9	8	10	17	20	17	11	11	10	17	16	15	20	11
15	9	18	18	18	21	44	40	17	19	24	43	25	17	13	21	15	12	17	20	24	12	10	16	16
16	22	15	16	22	24	14	17	22	21	24	25	18	15	21	21	24	18	12	13	20	15	15	43	37
17	40	20	32	44	26	19	25	14	16	14	21	18	16	29	20	12	12	9	7	5	6	7	6	4
18	12	15	11	11	9	7	16	53	13	14	11	11	16	13	24	22	26	9	22	21	35	22	18	18
19	27	14	20	19	17	11	15	16	13	24	24	25	25	24	23	23	17	27	14	19	17	21	19	18
20	30	23	16	13	10	12	14	11	15	17	13	12	13	16	14	13	12	15	11	11	12	9	16	22
21	15	19	20	19	21	16	10	12	13	14	15	23	20	30	30	41	30	15	8	6	5	6	7	8
22	8	9	8	7	8	9	9	9	9	8	9	9	9	9	9	9	8	8	8	8	7	8	8	8
23	9	9	8	8	8	9	22	26	13	24	25	21	24	36	24	23	17	16	23	20	21	22	28	8
24	6	7	11	9	22	27	24	16	17	26	24	24	25	23	32	22	22	24	17	12	20	6	6	8
25	38	53	26	50	15	66	39	17	18	23	28	28	24	28	36	26	30	23	10	11	29	18	23	37
26	34	15	18	31	54	62	24	13	20	25	19	24	16	13	9	18	19	11	25	24	19	13	8	12
27	15	13	11	8	9	10	13	13	13	14	18	18	16	15	18	14	14	17	11	15	17	18	14	12
28	11	12	17	22	11	17	12	12	21	25	22	22	16	23	19	18	17	14	20	14	18	23	16	20
29	23	31	44	17	45	26	14	14	19	23	16	22	31	25	23	26	21	23	17	9	15	14	19	21
30	17	18	21	14	15	17	26	24	23	20	21	22	23	28	25	22	27	11	8	5	4	6	8	5
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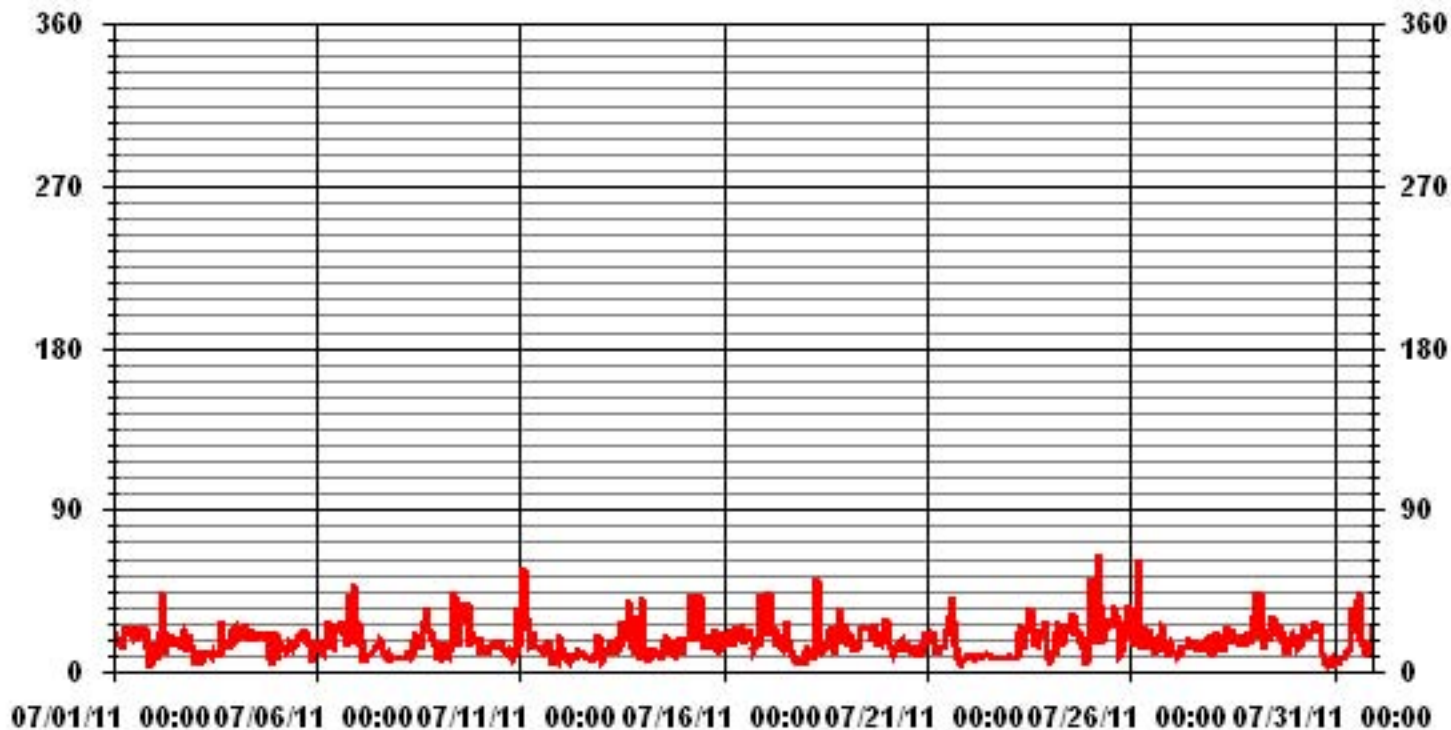
STATUS FLAG CODES

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

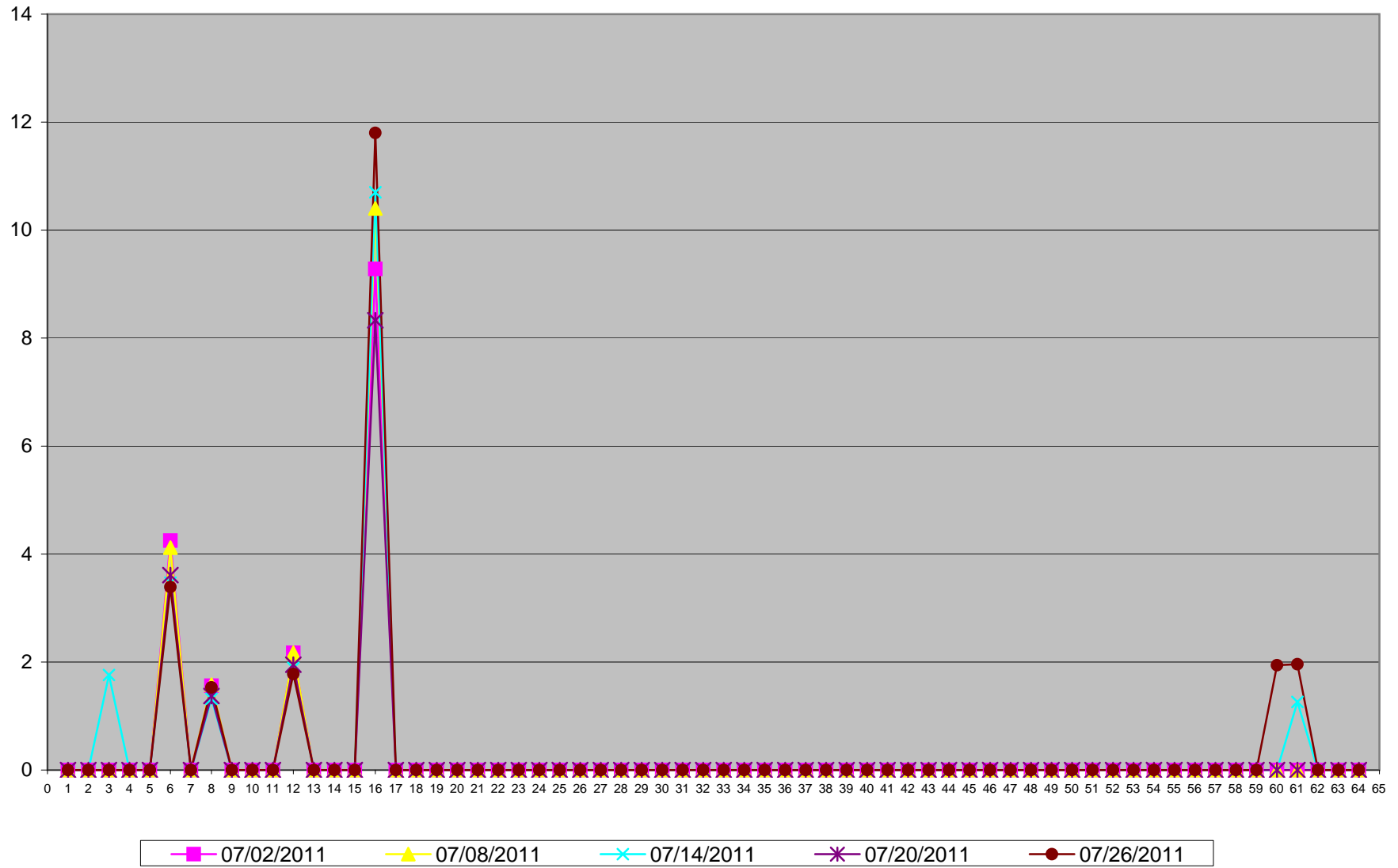
CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 741 HRS

01 Hour Averages



Volatile Organics

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



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

Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) Results for July 2011

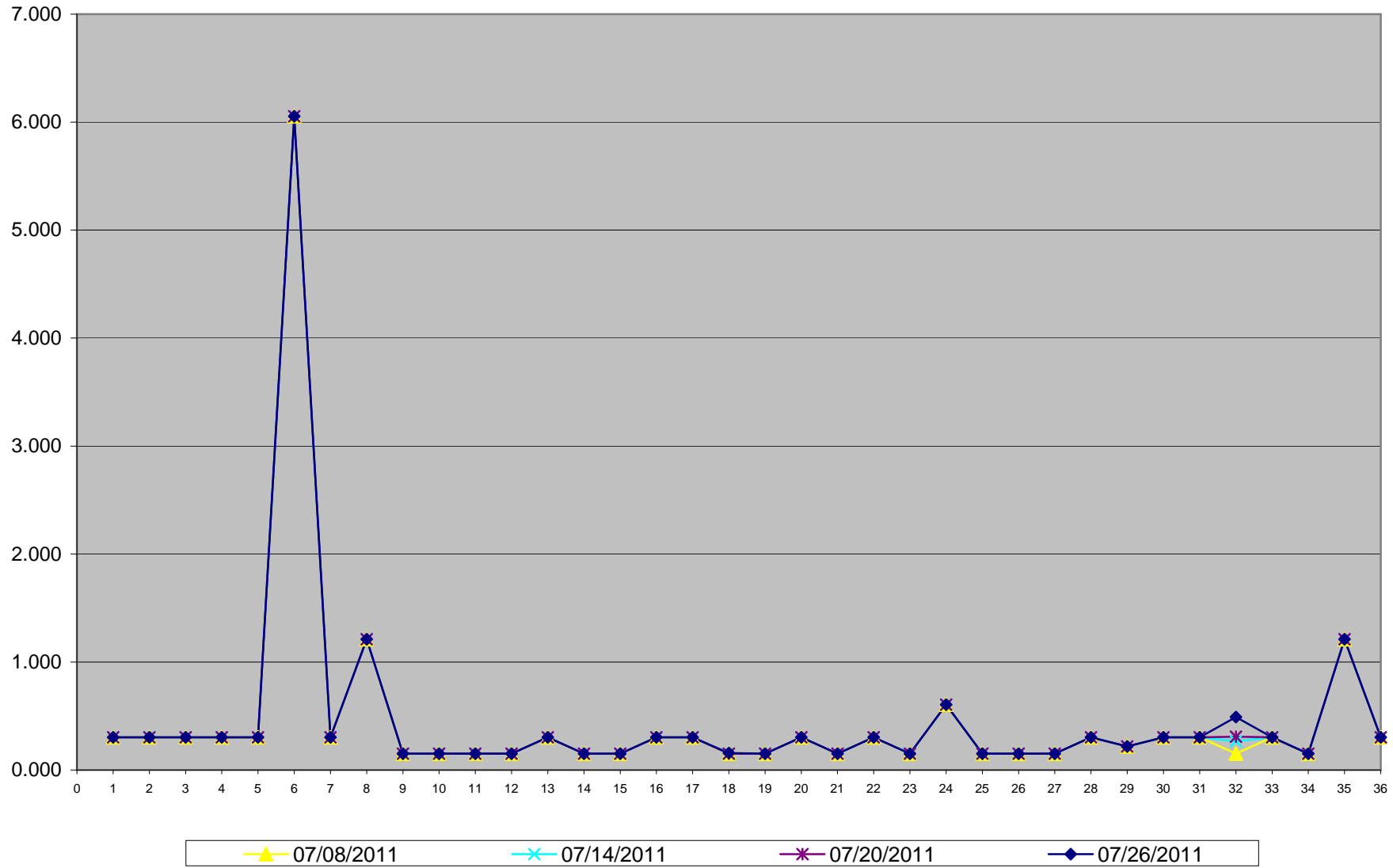
LICA- Portable Site

Unit: ng/m3

PAHs	07/02/2011	07/08/2011	07/14/2011	07/20/2011	07/26/2011
Sample Volume (unit: m3)	NA	330.37	330.28	330.33	330.34
1 1-Methylnaphthalene	NA	0.303	0.303	0.303	0.303
2 1-Methylphenanthrene	NA	0.303	0.303	0.303	0.303
3 2-Chloronaphthalene	NA	0.303	0.303	0.303	0.303
4 2-Methylantracene	NA	0.303	0.303	0.303	0.303
5 2-Methylnaphthalene	NA	0.303	0.303	0.303	0.303
6 3-Methylcholanthrene	NA	6.054	6.054	6.055	6.054
7 7,12-Dimethylbenzo(a)anthracene	NA	0.303	0.303	0.303	0.303
8 9,10-Dimethylantracene	NA	1.211	1.211	1.211	1.211
9 Acenaphthene	NA	0.151	0.151	0.151	0.151
10 Acenaphthylene	NA	0.151	0.151	0.151	0.151
11 Anthracene	NA	0.151	0.151	0.151	0.151
12 Benzo(a)anthracene	NA	0.151	0.151	0.151	0.151
13 Benzo(a)fluorene	NA	0.303	0.303	0.303	0.303
14 Benzo(a)pyrene	NA	0.151	0.151	0.151	0.151
15 Benzo(b)fluoranthene	NA	0.151	0.151	0.151	0.151
16 Benzo(b)fluorene	NA	0.303	0.303	0.303	0.303
17 Benzo(e)pyrene	NA	0.303	0.303	0.303	0.303
18 Benzo(g,h,i)perylene	NA	0.151	0.151	0.151	0.157
19 Benzo(k)fluoranthene	NA	0.151	0.151	0.151	0.151
20 Biphenyl	NA	0.303	0.303	0.303	0.303
21 Chrysene	NA	0.151	0.151	0.151	0.151
22 Coronene	NA	0.303	0.303	0.303	0.303
23 Dibenz(a,h)anthracene	NA	0.151	0.151	0.151	0.151
24 Dibenzo(a,e)pyrene	NA	0.605	0.605	0.605	0.605
25 Fluoranthene	NA	0.151	0.151	0.151	0.151
26 Fluorene	NA	0.151	0.151	0.151	0.151
27 Indeno(1,2,3-cd)pyrene	NA	0.151	0.151	0.151	0.151
28 m-Terphenyl	NA	0.303	0.303	0.303	0.303
29 Naphthalene	NA	0.218	0.218	0.218	0.218
30 o-Terphenyl	NA	0.303	0.303	0.303	0.303
31 Perylene	NA	0.303	0.303	0.303	0.303
32 Phenanthrene	NA	0.151	0.266	0.309	0.490
33 p-Terphenyl	NA	0.303	0.303	0.303	0.303
34 Pyrene	NA	0.151	0.151	0.151	0.151
35 Quinoline	NA	1.211	1.211	1.211	1.211
36 Tetralin	NA	0.303	0.303	0.303	0.303

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

PAHs in ng/m3 Site: LICA - Portable Site



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

Calibration Reports

Sulphur Dioxide

SO₂ Calibration Report Station Information

Calibration Date	July 15, 2011	Previous Calibration	June 22, 2011
Company	Lakeland Community and Industry Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	9:40	End Time (MST)	13:34
Reason:	Monthly Calibration		
Barometric Pressure	0.923 atm	Station Temperature	25 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822 Cal Gas Expiry date
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	467	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000 ppb				
Sample Flow / Box Temp	569 ccm	33.5 Deg C	570 ccm	32.2 Deg C	
HVPS / Lamp Setting	612	1989	612	1994	
PMT / RxCell Temp	8.1 Deg C	50 Deg C	8.1 Deg C	50 Deg C	
Converter / IZS Temp	NA Deg C	45 Deg C	NA Deg C	45.0 Deg C	
Offset / Slope	72.9	1.038	77	1.025	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	2	N/A
4996	0	0	0	N/A
4923	76.5	750	760	0.9865
4923	76.5	750	751	0.9984
4959	40.8	400	397	1.0072
4981	17.3	170	170	1.0000
4996	0	0	0	N/A
Sum of Least Squares				0.9913
New Correction Factor				0.9984

	Before Calibration	After Calibration
Auto Zero	3.2	0.7
Auto Span	392.0	382.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9865
Percent Change:	1.4%

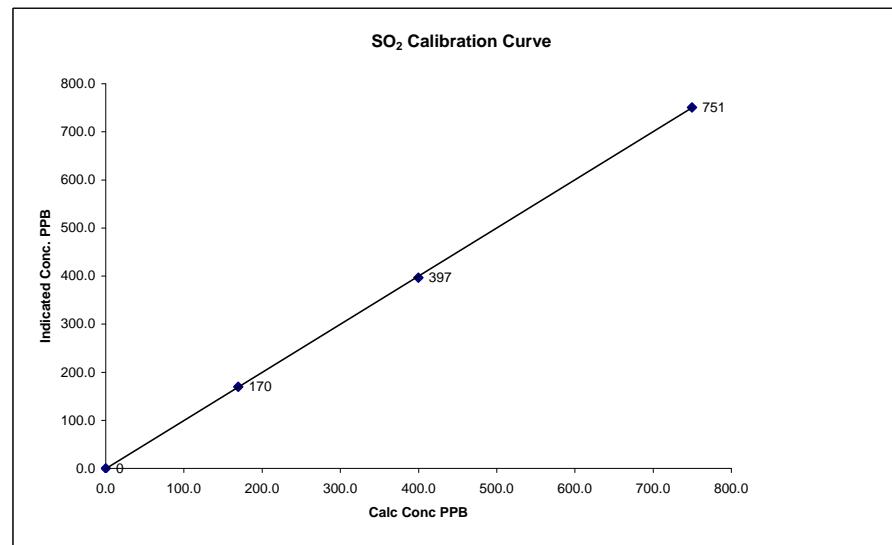
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO₂ Calibration Curve

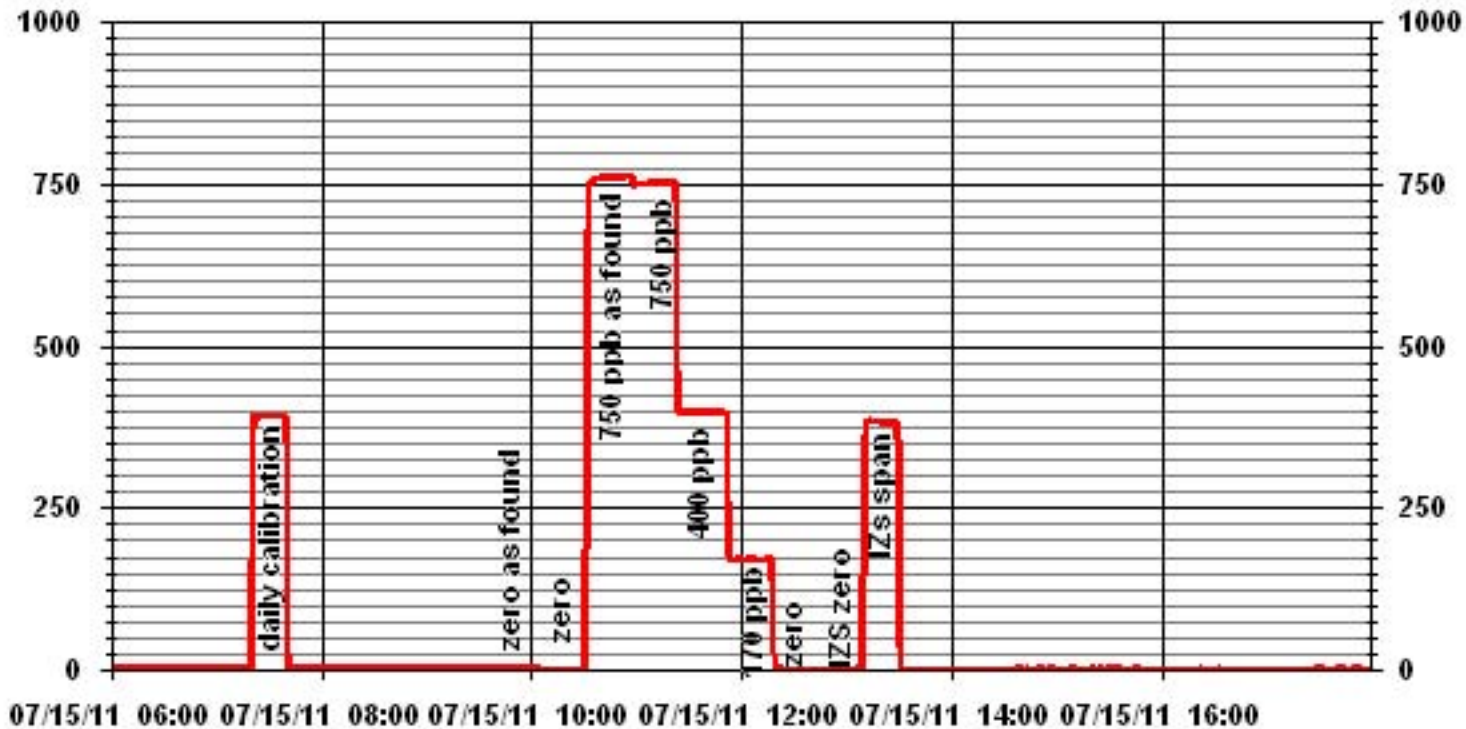
Calibration Date	July 15, 2011
Company	Lakeland Community and Industry Association
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M
Start Time (MST)	9:40
End Time (MST)	13:34

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept (± 3% F.S.)	(≥ 0.995) 1.000792 -0.568264
0	0	n/a		
170	170	0.9976		
400	397	1.0072		
750	751	0.9984		



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	July 14, 2011	Previous Calibration	June 20, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M		
Start Time (MST)	8:49	End Time (MST)	12:49
Reason:	Monthly Calibration		
Barometric Pressure	0.927 atm	Station Temperature	24 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	bim000804
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 2, 2012
		Chart Rec. Output	0 - 1 Volts

Equipment Information

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

Analyzer Settings

Before Calibration		0 - 100		After Calibration	
Concentration Range	522 ccm	33.6 Deg C	522 ccm	31.9 Deg C	
Sample Flow / Box Temp	540	2049	540	2051	
HVPS / Lamp Setting	7.9 Deg C	50 Deg C	7.9 Deg C	50 Deg C	
PMT / RxCell Temp	315.7 Deg C	45 Deg C	314 Deg C	45.0 Deg C	
Converter / IZS Temp	57.7	1.077	58.9	1.049	
Offset / Slope					

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	NA
4995	0	0	0	1.0000
4959	39.2	80	83	0.9638
4959	39.2	80	80	1.0000
4981	19.6	40	40	1.0000
4885	11.2	23	23	1.0000
4996	0	0	0	NA
Sum of Least Squares				1.0008
New Correction Factor				1.0000

Before Calibration		After Calibration	
Auto Zero	1.3	Auto Zero	0.7
Auto Span	61.0	Auto Span	58.0
Sample Lines Connected		Sample Lines Connected	YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9638
Percent Change:	3.8%

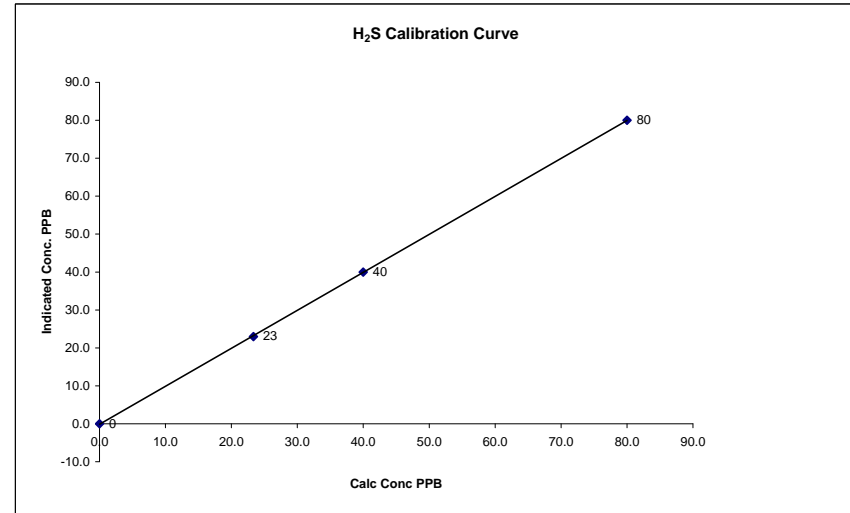
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

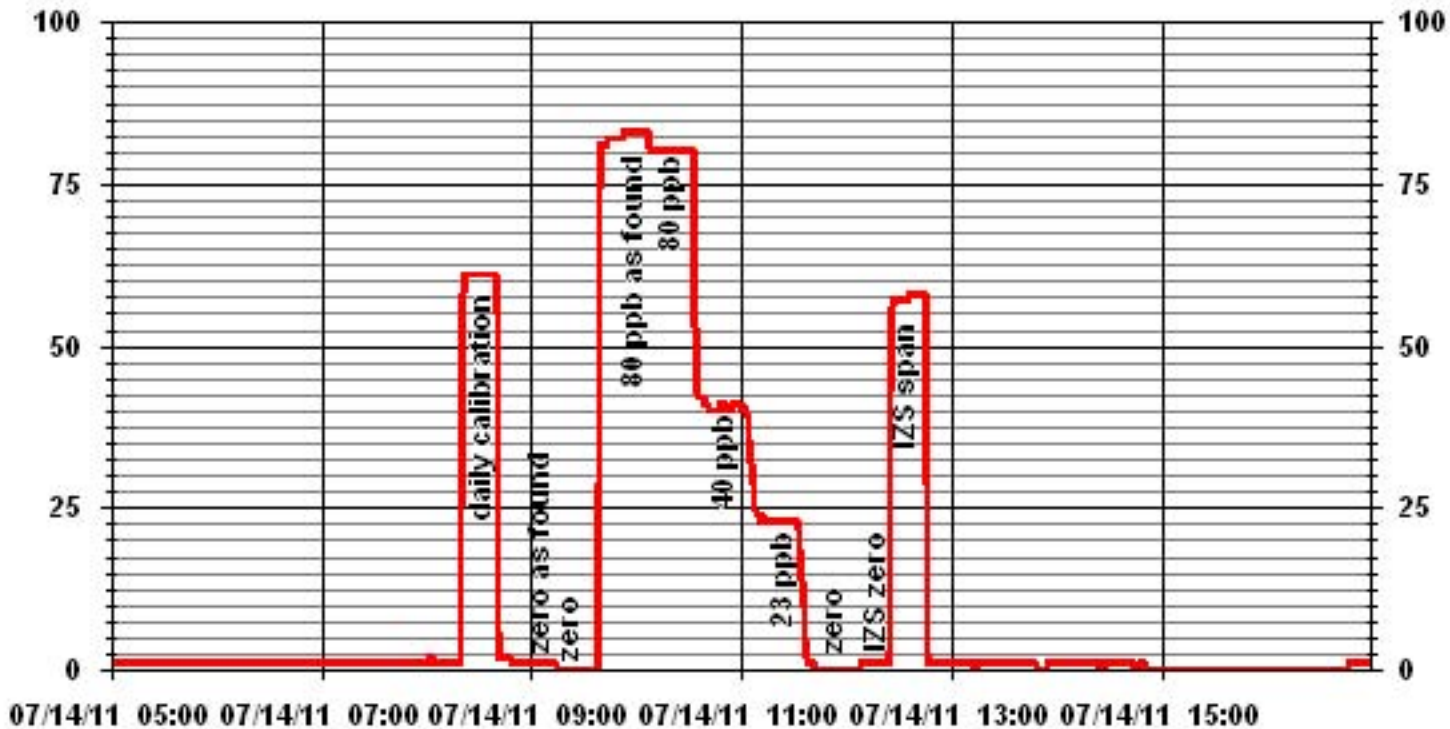
Calibration Date	July 14, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	Portable/ Devon Wellsite 13-16-62-5-W4M
Start Time (MST)	8:49
End Time (MST)	12:49

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	Intercept (± 3% F.S.)
0	0			0.999976	1.001285
23	23	1.0145			-0.123150
40	40	0.9995			
80	80	1.0000			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOM 1405F Audit

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

	<u>Sampler</u>		<u>Set-up and current Sampler readings</u>
Make/Model	Thermo Scientific Series 1405F	F-Main Set Pt (l/min)	3.00
Unit #	NA	F-Aux Set Pt (l/min)	13.67
Unit s/n	1405A207691003	Filter Load (%)	25.5%
Firmware Ver.	1.51	K _o Factor	15634.0
Parameter	PM 2.5 (with FDMS)	Temp (°C)	19.3
		Press (ATM)	0.924

Conversion from mmHg or "Hg to ATM (Atmospheres)

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

Note: Tolerances are noted as BOLD in Brackets

Audit

Status			
Noise <0.10ug	0.002	Warnings	None
0.32	0.32	Pump Gauge (inHg)	-19
Temperature/Pressure			
Measured Temp (± 2 °C)	19.5	D °C	-0.3
Measured Press (± 0.01atm)	0.925	DATM	-0.001
Flow Audit			
Indicated Main Flow (l/min)	3.00	Main Flow Drift (±10.0%)	0.79%
Measured Main Flow (l/min)	2.99	Flow Adjusted to Measured?	Yes
Indicated Bypass Flow (l/min)	13.67	Bypass Flow Drift (±10.0%)	0.64%
Measured Bypass Flow (l/min)	13.72	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 = Actual	
K_o Factor			
Measured	NA		
K _o Difference (± 2.5%)	NA		

Start Time: 12:20 **Finish Time:** 13:46

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 17.2%

Comments:

Auditor/s: Ting Xu

Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	July 14, 2011	Previous Calibration	June 20, 2011
Company	LICA	Plant/Location	Portable/ 13-16-62-5W4M
Start Time (MST)	8:49	End Time (MST)	15:23
Reason:	Monthly Calibration		
Barometric Pressure	0.927 atm	Station Temperature	24 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822		
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

Analyzer Make / Model:	TAPI 200E	S/N :	593	Method:	Chemiluminescent
Calibrator Make / Model:	Envionics 6100	S/N :	1991		
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N :	NA		
Flow Meter:	Envionics 6100	S/N :	1991		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000				
Sample Flow/Conv. Temp	481 ccm	314.3 Deg C	478 ccm	316 Deg C	
Ozone Flow / Vacuum	78 ccm	4.1 Hg-A	77 ccm	4.1 Hg-A	
HVPS / A ZERO	662 Volts	7.1 MV	662 Volts	7.2 MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.8 Deg C	50.0 Deg C	6.7 Deg C	
Box Temp / IZS Temp	33.6 Deg C	45.3 Deg C	33.5 Deg C	45.2 Deg C	
Offset	2.9 NOx	-0.2 NO	1.1 NOx	0.9 NO	
Slope	1.190 NOx	1.163 NO	1.254 NOx	1.206 NO	
NO2 COEF / Conv Efficiency	NA NO2	0.996	NA NO2	0.996	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	-1	1	-2	NA	NA
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
4921	74.2	NA	768	749	NA	727	722	5	1.0549	1.0384
4921	74.2	NA	768	749	NA	770	750	20	0.9961	0.9995
4954	39.6	NA	410	400	NA	410	399	11	1.0000	1.0042
4973	19.8	NA	205	200	NA	206	201	5	0.9905	0.9994
4995	0.0	NA	0	0	NA	0	0	0	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	74.2	NA	768	749	NA	772	750	22	NA	NA
No Adj Required										
4921	74.2	600	768	NA	547	772	225	547	0.9964	100.00%
4921	74.2	250	768	NA	241	774	531	243	0.9837	100.91%
4921	74.2	140	768	NA	143	776	629	147	0.9597	103.31%

Linearity	Sum of Least Squares		NOx= 0.998	NO= 0.999	NO2= 0.997
OK?	Yes	No	Correction Factors: NOx= 0.9961	NO= 0.9995	NO2= 0.9964
Average Converter Efficiency= 101.41%					

Before Calibration			After Calibration		
Auto Zero	-1.6 NOx	-1.6 NO2	0.4 NOx	-0.6 NO2	
Auto Span	809 NOx	786 NO2	866 NOx	842 NO2	
Sample Lines Connected YES					
Percent Change from Previous Calibration			NOx -4.8%	NO -3.9%	NO2 0.9%

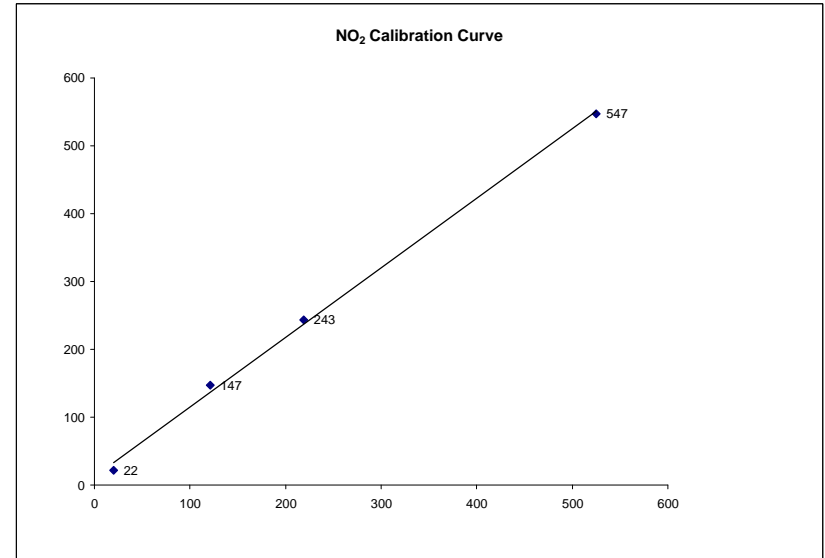
Notes: **NA : Not Applicable**
Additional GPT was done for O3 claibration. O3 set point 420, NOx=774, NO=380, NO2=394

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	July 14, 2011
Company	LICA
Plant / Location	Portable/ 13-16-62-5W4M
Start Time (MST)	8:49
End Time (MST)	15:23

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998144
20	22	N/A	Intercept	(± 3% F.S.)	12.89287
121	147	0.8231			
219	243	0.9012			
525	547	0.9598			

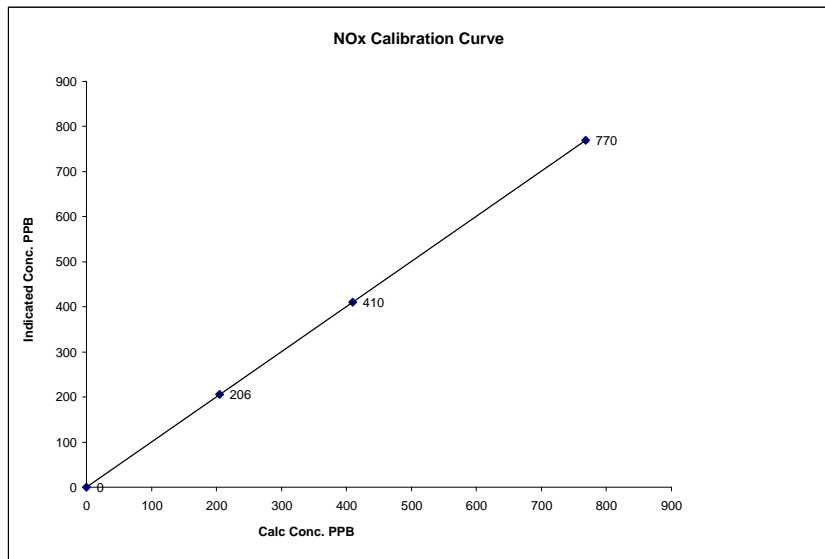


Notes:

NOx Calibration Curve

Calibration Date July 14, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:49 End Time (MST) 15:23

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999996
0	0	N/A	Intercept	(± 3% F.S.)	-0.02221
205	206	0.9953			
410	410	1.0000			
768	770	0.9974			

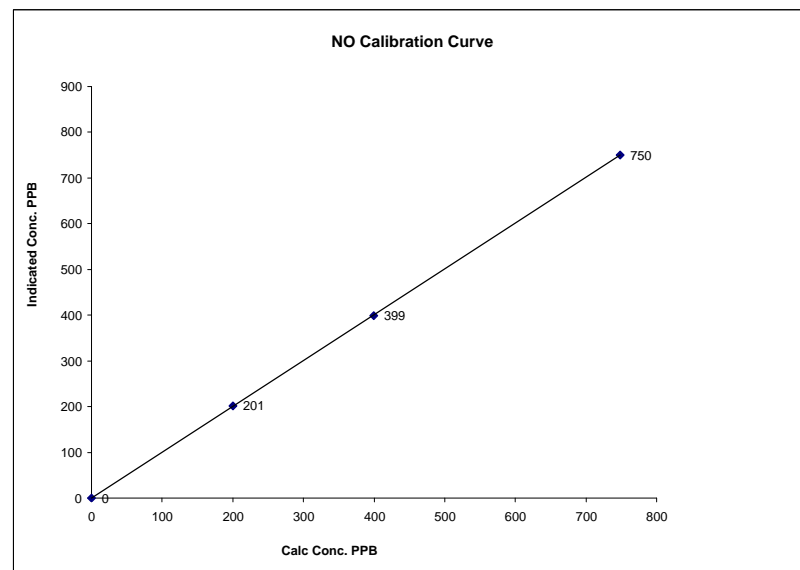


Notes:

NO Calibration Curve

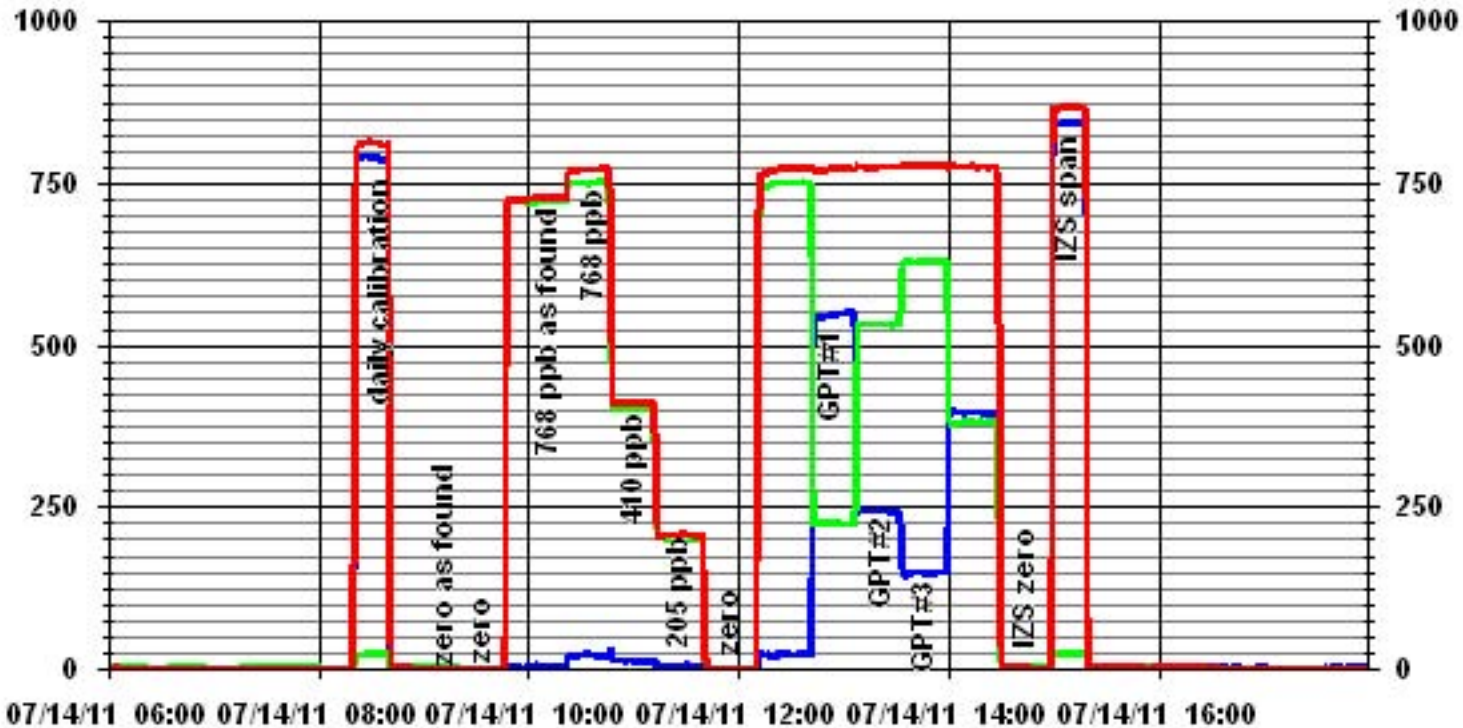
Calibration Date July 14, 2011
 Company LICA
 Plant / Location Portable/ 13-16-62-5W4M
 Start Time (MST) 8:49 End Time (MST) 15:23

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999992
0	0	N/A	Intercept	(± 3% F.S.)	-2.9987
200	201	0.9944			
400	399	1.0017			
749	750	0.9982			



Notes:

01 Minute Averages



Ozone

O₃ Calibration Report

Station Information

Calibration Date	July 15, 2011	Previous Calibration	June 22, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	9:40	End Time (MST)	13:20
Reason:	Monthly Calibration		
Barometric Pressure	0.923 atm	Station Temperature	25 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	Thermo 49i	S/N :	1002240372	Method:	Photometric
Calibrator Make / Model:	EnviroNics 2000		1991	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
Cell A Flow / Cell B Flow	747 ccm	ccm	748 ccm	ccm
Pressure	690 mmHg		691 mmHg	
Bench Lamp	54.1 Deg C		54.1 Deg C	
O3 Lamp / Box Temp	68.3 Deg C	33.1 Deg C	68.2 Deg C	32.4 Deg C
Offset / Slope	0	0.935	0	0.94

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	NA
	No Adj Required			
4995	420	370	367	1.0082
4995	420	370	371	0.9973
4995	250	219	221	0.9910
4995	140	121	124	0.9758
4995	0	0	0	NA
Sum of Least Squares				0.9942
New Correction Factor				0.9973

	Before Calibration	After Calibration
Auto Zero	-0.1	-0.2
Auto Span	306.0	311.0
Sample Lines Connected		YES
Previous Calibration Correction Factor:		1.0000
Current Correctio Factor Before Span Adjust:		0.9973
Percent Change:		0.3%

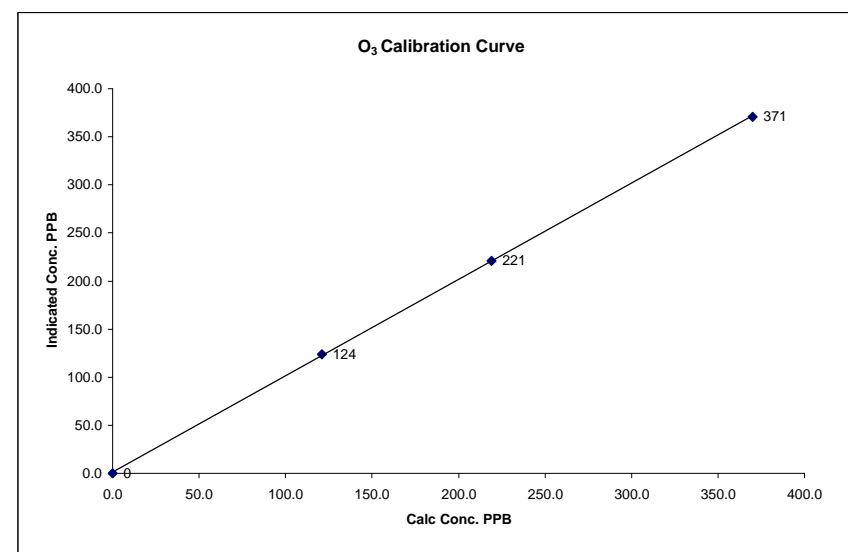
Note: NA : Not Applicable

Calibration Performed by: Ting Xu

O₃ Calibration Curve

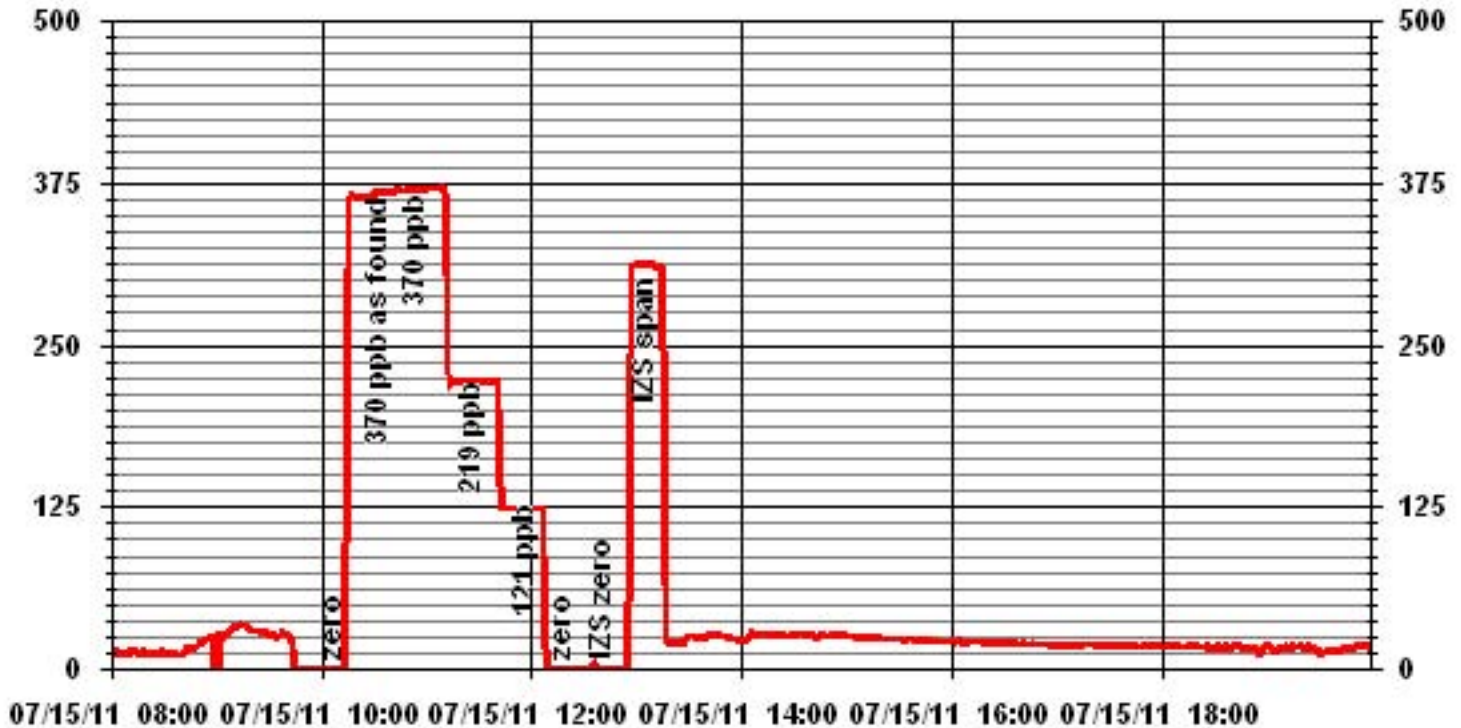
Calibration Date	July 15, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	Portable / Devon Wellsite 13-16-62-5 W4M		
Start Time (MST)	9:40	End Time (MST)	13:20

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	0.999934 1.001443 1.243933
0	0	n/a			
121	124	0.9758			
219	221	0.9910			
370	371	0.9973			



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	July 14, 2011	Previous Calibration	June 20, 2011
Company:	Lakeland Industry and Community Association		
Plant / Location:	Portable Station Devon Wellsite 13-16-62-5W4M		
Start Time (MST)	12:08	End Time (MST)	15:59
Reason:	Monthly Calibration		
Barometric Pressure:	0.926 atm	Station Temperature:	24 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 602 PPM	C3H8 207 PPM	
	TOTAL CH4 1171.3 PPM	Gas Cyl. # LL84150	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	AO 717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information

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

Analyzer Settings

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

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0.0	0.0	-0.1	NA
1999	0.0	0.0	0.0	NA
1999	70.0	39.6	39.7	0.9982
1999	70.0	39.6	39.9	0.9931
1998	34.9	20.1	19.8	1.0155
1998	20.0	11.6	11.4	1.0182
1998	0.0	0.0	0.0	NA
New Correction Factor:				0.9931

Percent Change

Previous Calibration Correction Factor:	0.9931
Current Correction Factor Before Span Adjust:	0.9982
Percent Change:	-0.5%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	-0.1	0.0
Auto Span	33.9	34.0
Sample Lines Connected		YES

Cylinder Pressures			
Span	1100 psi	Hydrogen	1400 psi
		Zero Air	35 psi

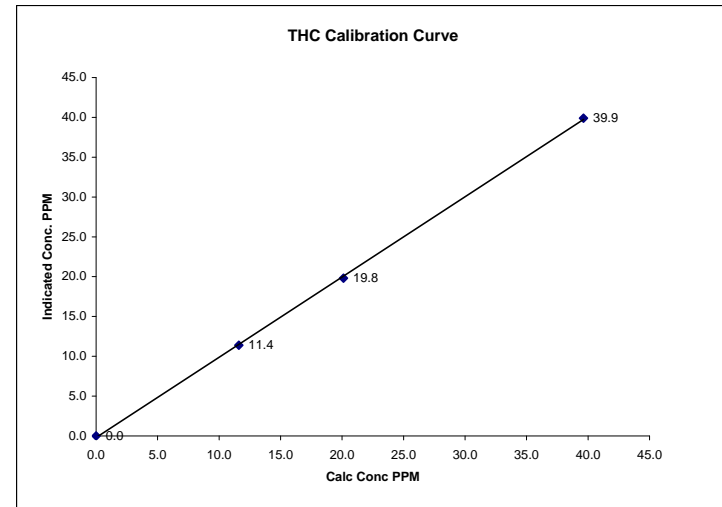
Notes: **NA : Not Applicable**
 At beginning of the as found point, the calibration gas pressure was not stable, increased the pressure, re-did the point.

Calibration Performed by: Ting Xu

THC Calibration Curve

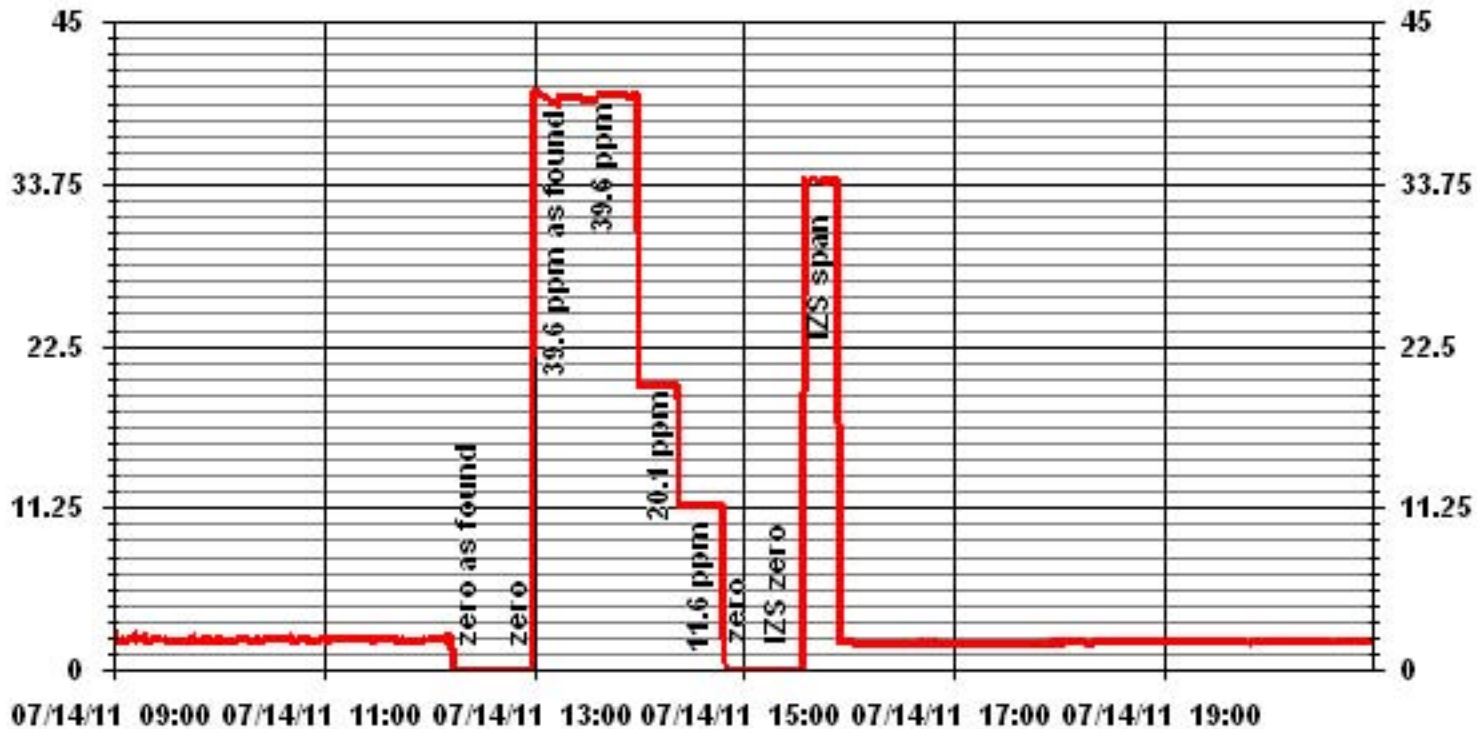
Calibration Date	July 14, 2011		
Company	Lakeland Industry and Community Association		
Plant / Location	Portable Station Devon Wellsite 13-16-62-5W4M		
Start Time (MST)	12:08	End Time (MST)	15:59

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	Correlation Coefficient Intercept (±3% F.S.)
0.0	0.0	NA	0.999828	1.007831
11.6	11.4	1.0182		-0.20022
20.1	19.8	1.0155		
39.6	39.9	0.9931		



Notes:

01 Minute Averages



Volatile Organics Laboratory Analysis

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7824
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jun 30, 11 @ 7:55 mst
Field Sample ID: LICA VOC/PORT/ Jul 02, 11 Canister Removal Date/Time: Jul 04, 11 @ 11:35 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
2-Jul-11	07/02/2011 0:00	07/03/2011 0:00	24.00

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

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-28	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 # 05120

Technician Signiture: Ting Xu_____



Your C.O.C. #: 05120

Attention: Michael Bisaga

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

Report Date: 2011/07/14

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B198961

Received: 2011/07/06, 09:31

Sample Matrix: AIR
 # Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/12	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/12	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 #: B198961
 Report Date: 2011/07/14

RESULTS OF ANALYSES OF AIR

Maxxam ID		KB4004	KB4005	
Sampling Date		2011/07/02	2011/07/02	
COC Number		05120	05120	
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	LICA VOC\ PORT\ JULY 02,11 - 7824	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2549321

QC Batch = Quality Control Batch

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	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	2549807
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2549807
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2549807
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2549807
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2549807
Dichlorodifluoromethane (FREON 12)	ppbv	0.80	3.97	0.989	0.86	0.20	4.25	0.989	2549807
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2549807
Chloromethane	ppbv	0.69	1.43	0.620	0.75	0.30	1.56	0.620	2549807
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2549807
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2549807
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2549807
Trichlorofluoromethane (FREON 11)	ppbv	0.36	2.03	1.12	0.39	0.20	2.17	1.12	2549807
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2549807
Ethanol	ppbv	4.2	7.85	4.33	<2.3	2.3	<4.33	4.33	2549807
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2549807
2-Propanone	ppbv	3.76	8.94	1.90	3.91	0.80	9.28	1.90	2549807
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2549807
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2549807
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2549807
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2549807
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2549807
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2549807
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2549807
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2549807
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2549807
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2549807
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2549807
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2549807
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2549807
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2549807
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2549807

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	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	2549807
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2549807
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2549807
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2549807
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2549807
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2549807
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2549807
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2549807
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2549807
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2549807
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2549807
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2549807
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2549807
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2549807
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2549807
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2549807
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2549807
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2549807
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2549807
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2549807
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2549807
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2549807
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2549807
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2549807
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2549807
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2549807
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2549807
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2549807
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2549807
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2549807
QC Batch = Quality Control Batch									

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	93	N/A	N/A	88		N/A	N/A	2549807
D5-Chlorobenzene	%	98	N/A	N/A	93		N/A	N/A	2549807
Difluorobenzene	%	96	N/A	N/A	90		N/A	N/A	2549807

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

Maxxam Job #: B198961
Report Date: 2011/07/14

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: GB198961

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2549807 LSY	Spiked Blank	Bromochloromethane	2011/07/12		97	%	60 - 140
		D5-Chlorobenzene	2011/07/12		100	%	60 - 140
		Difluorobenzene	2011/07/12		100	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/12		105	%	70 - 130
		Carbon Disulfide	2011/07/12		99	%	70 - 130
		Propene	2011/07/12		99	%	70 - 130
		Vinyl Acetate	2011/07/12		102	%	70 - 130
		Vinyl Bromide	2011/07/12		106	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/12		105	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/12		120	%	70 - 130
		Chloromethane	2011/07/12		104	%	70 - 130
		Vinyl Chloride	2011/07/12		107	%	70 - 130
		Chloroethane	2011/07/12		104	%	70 - 130
		1,3-Butadiene	2011/07/12		87	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/12		102	%	70 - 130
		Trichlorotrifluoroethane	2011/07/12		104	%	70 - 130
		Ethanol	2011/07/12		92	%	70 - 130
		2-propanol	2011/07/12		95	%	70 - 130
		2-Propanone	2011/07/12		94	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/12		94	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/12		97	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/12		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/12		103	%	70 - 130
		Ethyl Acetate	2011/07/12		102	%	70 - 130
		1,1-Dichloroethylene	2011/07/12		103	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/12		102	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/12		106	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/12		96	%	70 - 130
		Chloroform	2011/07/12		104	%	70 - 130
		Carbon Tetrachloride	2011/07/12		105	%	70 - 130
		1,1-Dichloroethane	2011/07/12		106	%	70 - 130
		1,2-Dichloroethane	2011/07/12		103	%	70 - 130
		Ethylene Dibromide	2011/07/12		99	%	70 - 130
		1,1,1-Trichloroethane	2011/07/12		101	%	70 - 130
		1,1,2-Trichloroethane	2011/07/12		102	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/12		94	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/12		104	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/12		100	%	70 - 130
		1,2-Dichloropropane	2011/07/12		103	%	70 - 130
		Bromomethane	2011/07/12		106	%	70 - 130
		Bromoform	2011/07/12		114	%	70 - 130
		Bromodichloromethane	2011/07/12		105	%	70 - 130
		Dibromochloromethane	2011/07/12		112	%	70 - 130
		Heptane	2011/07/12		103	%	70 - 130
		Trichloroethylene	2011/07/12		102	%	70 - 130
		Tetrachloroethylene	2011/07/12		103	%	70 - 130
		Benzene	2011/07/12		102	%	70 - 130
		Toluene	2011/07/12		100	%	70 - 130
		Ethylbenzene	2011/07/12		102	%	70 - 130
		p+m-Xylene	2011/07/12		100	%	70 - 130
		o-Xylene	2011/07/12		101	%	70 - 130
		Styrene	2011/07/12		98	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/12		90	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/12		86	%	70 - 130
		4-ethyltoluene	2011/07/12		96	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB198961

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2549807 LSY	Spiked Blank	Chlorobenzene	2011/07/12		104	%	70 - 130
		Benzyl chloride	2011/07/12		87	%	70 - 130
		1,3-Dichlorobenzene	2011/07/12		90	%	70 - 130
		1,4-Dichlorobenzene	2011/07/12		90	%	70 - 130
		1,2-Dichlorobenzene	2011/07/12		86	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/12		118	%	70 - 130
		Hexachlorobutadiene	2011/07/12		114	%	70 - 130
		Hexane	2011/07/12		105	%	70 - 130
		Cyclohexane	2011/07/12		104	%	70 - 130
		Tetrahydrofuran	2011/07/12		103	%	70 - 130
		1,4-Dioxane	2011/07/12		100	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/12		93	%	60 - 140
		D5-Chlorobenzene	2011/07/12		96	%	60 - 140
		Difluorobenzene	2011/07/12		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/12	<0.20		ppbv	
		Carbon Disulfide	2011/07/12	<0.50		ppbv	
		Propene	2011/07/12	<0.30		ppbv	
		Vinyl Acetate	2011/07/12	<0.20		ppbv	
		Vinyl Bromide	2011/07/12	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/12	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/12	<0.17		ppbv	
		Chloromethane	2011/07/12	<0.30		ppbv	
		Vinyl Chloride	2011/07/12	<0.18		ppbv	
		Chloroethane	2011/07/12	<0.30		ppbv	
		1,3-Butadiene	2011/07/12	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/12	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/12	<0.15		ppbv	
		Ethanol	2011/07/12	<2.3		ppbv	
		2-propanol	2011/07/12	<3.0		ppbv	
		2-Propanone	2011/07/12	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/12	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/12	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/12	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/12	<0.20		ppbv	
		Ethyl Acetate	2011/07/12	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/12	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/12	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/12	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/12	<0.80		ppbv	
		Chloroform	2011/07/12	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/12	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/12	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/12	<0.20		ppbv	
		Ethylene Dibromide	2011/07/12	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/12	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/12	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/12	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/12	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/12	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/12	<0.40		ppbv	
		Bromomethane	2011/07/12	<0.18		ppbv	
		Bromoform	2011/07/12	<0.20		ppbv	
		Bromodichloromethane	2011/07/12	<0.20		ppbv	
		Dibromochloromethane	2011/07/12	<0.20		ppbv	
		Heptane	2011/07/12	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB198961

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2549807 LSY	Method Blank	Trichloroethylene	2011/07/12	<0.30		ppbv	
		Tetrachloroethylene	2011/07/12	<0.20		ppbv	
		Benzene	2011/07/12	<0.18		ppbv	
		Toluene	2011/07/12	<0.20		ppbv	
		Ethylbenzene	2011/07/12	<0.20		ppbv	
		p+m-Xylene	2011/07/12	<0.37		ppbv	
		o-Xylene	2011/07/12	<0.20		ppbv	
		Styrene	2011/07/12	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/12	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/12	<0.50		ppbv	
		4-ethyltoluene	2011/07/12	<2.2		ppbv	
		Chlorobenzene	2011/07/12	<0.20		ppbv	
		Benzyl chloride	2011/07/12	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/12	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/12	<3.0		ppbv	
		Hexane	2011/07/12	<0.30		ppbv	
		Cyclohexane	2011/07/12	<0.20		ppbv	
		Tetrahydrofuran	2011/07/12	<0.40		ppbv	
		1,4-Dioxane	2011/07/12	<2.0		ppbv	
		Xylene (Total)	2011/07/12	<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

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7828
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jul 07, 11 @ 9:17 mst
Field Sample ID: LICA VOC/PORT/ Jul 08, 11 Canister Removal Date/Time: Jul 11, 11 @ 9:04 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
8-Jul-11	07/08/2011 0:00	07/09/2011 0:00	24.00

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	24

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 # 05191

Technician Signiture: Ting Xu_____

Your C.O.C. #: 05191

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/07/22****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B1A3524****Received: 2011/07/13, 10:30**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/18	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/18	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

=====

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

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Total cover pages: 1

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JOB #: 2833-11-07-33-C

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

RESULTS OF ANALYSES OF AIR

Maxxam ID		KD6600	KD6601	
Sampling Date		2011/07/08	2011/07/08	
COC Number		05191	05191	
	Units	LICA VOC/CLS/JULY 8,11 - 7834	LICA VOC/PORT/JULY 8,11 - 7828	QC Batch

Volatile Organics				
Pressure on Receipt	psig	21	21	2555243

QC Batch = Quality Control Batch

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6600				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/CLS/JULY 8,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2555273
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2555273
Propene	ppbv	<0.30	0.30	<0.516	0.516	2555273
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2555273
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2555273
Dichlorodifluoromethane (FREON 12)	ppbv	0.84	0.20	4.17	0.989	2555273
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2555273
Chloromethane	ppbv	0.76	0.30	1.56	0.620	2555273
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2555273
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2555273
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2555273
Trichlorofluoromethane (FREON 11)	ppbv	0.39	0.20	2.19	1.12	2555273
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2555273
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2555273
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2555273
2-Propanone	ppbv	4.66	0.80	11.1	1.90	2555273
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2555273
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2555273
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2555273
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2555273
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2555273
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2555273
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2555273
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2555273
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2555273
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2555273
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2555273
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2555273
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2555273
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2555273
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2555273

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6600				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/CLS/JULY 8,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2555273
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2555273
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2555273
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2555273
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2555273
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2555273
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2555273
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2555273
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2555273
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2555273
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2555273
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2555273
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2555273
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2555273
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2555273
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2555273
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2555273
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2555273
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2555273
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2555273
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2555273
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2555273
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2555273
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2555273
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2555273
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2555273
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2555273
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2555273
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2555273
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2555273
QC Batch = Quality Control Batch						

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6600				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/CLS/JULY 8,11 - 7834	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	92		N/A	N/A	2555273
D5-Chlorobenzene	%	102		N/A	N/A	2555273
Difluorobenzene	%	95		N/A	N/A	2555273

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

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6601				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/PORT/JULY 8,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2555273
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2555273
Propene	ppbv	<0.30	0.30	<0.516	0.516	2555273
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2555273
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2555273
Dichlorodifluoromethane (FREON 12)	ppbv	0.83	0.20	4.12	0.989	2555273
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2555273
Chloromethane	ppbv	0.76	0.30	1.58	0.620	2555273
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2555273
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2555273
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2555273
Trichlorofluoromethane (FREON 11)	ppbv	0.39	0.20	2.17	1.12	2555273
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2555273
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2555273
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2555273
2-Propanone	ppbv	4.40	0.80	10.4	1.90	2555273
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2555273
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2555273
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2555273
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2555273
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2555273
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2555273
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2555273
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2555273
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2555273
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2555273
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2555273
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2555273
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2555273
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2555273
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2555273
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6601				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA VOC/PORT/JULY 8,11 - 7828	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2555273
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2555273
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2555273
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2555273
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2555273
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2555273
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2555273
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2555273
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2555273
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2555273
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2555273
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2555273
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2555273
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2555273
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2555273
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2555273
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2555273
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2555273
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2555273
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2555273
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2555273
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2555273
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2555273
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2555273
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2555273
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2555273
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2555273
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2555273
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2555273
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2555273
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2555273
QC Batch = Quality Control Batch						

Maxxam Job #: B1A3524
 Report Date: 2011/07/22

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KD6601				
Sampling Date		2011/07/08				
COC Number		05191				
	Units	LICA	RDL	ug/m3	DL (ug/m3)	QC Batch
		VOC/PORT/JULY				
		8,11 - 7828				

Surrogate Recovery (%)						
Bromochloromethane	%	92		N/A	N/A	2555273
D5-Chlorobenzene	%	103		N/A	N/A	2555273
Difluorobenzene	%	94		N/A	N/A	2555273

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

Maxxam Job #: B1A3524
Report Date: 2011/07/22

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: GB1A3524

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2555273 LSY	Spiked Blank	Bromochloromethane	2011/07/18		99	%	60 - 140
		D5-Chlorobenzene	2011/07/18		102	%	60 - 140
		Difluorobenzene	2011/07/18		101	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/18		107	%	70 - 130
		Carbon Disulfide	2011/07/18		101	%	70 - 130
		Propene	2011/07/18		98	%	70 - 130
		Vinyl Acetate	2011/07/18		103	%	70 - 130
		Vinyl Bromide	2011/07/18		108	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/18		103	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/18		121	%	70 - 130
		Chloromethane	2011/07/18		103	%	70 - 130
		Vinyl Chloride	2011/07/18		108	%	70 - 130
		Chloroethane	2011/07/18		105	%	70 - 130
		1,3-Butadiene	2011/07/18		86	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/18		103	%	70 - 130
		Trichlorotrifluoroethane	2011/07/18		105	%	70 - 130
		Ethanol	2011/07/18		89	%	70 - 130
		2-propanol	2011/07/18		98	%	70 - 130
		2-Propanone	2011/07/18		97	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/18		95	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/18		96	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/18		96	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/18		105	%	70 - 130
		Ethyl Acetate	2011/07/18		102	%	70 - 130
		1,1-Dichloroethylene	2011/07/18		104	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/18		104	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/18		108	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/18		97	%	70 - 130
		Chloroform	2011/07/18		105	%	70 - 130
		Carbon Tetrachloride	2011/07/18		106	%	70 - 130
		1,1-Dichloroethane	2011/07/18		107	%	70 - 130
		1,2-Dichloroethane	2011/07/18		102	%	70 - 130
		Ethylene Dibromide	2011/07/18		102	%	70 - 130
		1,1,1-Trichloroethane	2011/07/18		102	%	70 - 130
		1,1,2-Trichloroethane	2011/07/18		104	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/18		95	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/18		106	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/18		104	%	70 - 130
		1,2-Dichloropropane	2011/07/18		105	%	70 - 130
		Bromomethane	2011/07/18		108	%	70 - 130
		Bromoform	2011/07/18		119	%	70 - 130
		Bromodichloromethane	2011/07/18		106	%	70 - 130
		Dibromochloromethane	2011/07/18		113	%	70 - 130
		Heptane	2011/07/18		105	%	70 - 130
		Trichloroethylene	2011/07/18		105	%	70 - 130
		Tetrachloroethylene	2011/07/18		105	%	70 - 130
		Benzene	2011/07/18		105	%	70 - 130
		Toluene	2011/07/18		103	%	70 - 130
		Ethylbenzene	2011/07/18		105	%	70 - 130
		p+m-Xylene	2011/07/18		103	%	70 - 130
		o-Xylene	2011/07/18		103	%	70 - 130
		Styrene	2011/07/18		104	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/18		90	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/18		85	%	70 - 130
		4-ethyltoluene	2011/07/18		97	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A3524

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2555273 LSY	Spiked Blank	Chlorobenzene	2011/07/18		108	%	70 - 130
		Benzyl chloride	2011/07/18		91	%	70 - 130
		1,3-Dichlorobenzene	2011/07/18		93	%	70 - 130
		1,4-Dichlorobenzene	2011/07/18		95	%	70 - 130
		1,2-Dichlorobenzene	2011/07/18		86	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/18		113	%	70 - 130
		Hexachlorobutadiene	2011/07/18		104	%	70 - 130
		Hexane	2011/07/18		107	%	70 - 130
		Cyclohexane	2011/07/18		107	%	70 - 130
		Tetrahydrofuran	2011/07/18		104	%	70 - 130
		1,4-Dioxane	2011/07/18		98	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/18		93	%	60 - 140
		D5-Chlorobenzene	2011/07/18		98	%	60 - 140
		Difluorobenzene	2011/07/18		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/18	<0.20		ppbv	
		Carbon Disulfide	2011/07/18	<0.50		ppbv	
		Propene	2011/07/18	<0.30		ppbv	
		Vinyl Acetate	2011/07/18	<0.20		ppbv	
		Vinyl Bromide	2011/07/18	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/18	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/18	<0.17		ppbv	
		Chloromethane	2011/07/18	<0.30		ppbv	
		Vinyl Chloride	2011/07/18	<0.18		ppbv	
		Chloroethane	2011/07/18	<0.30		ppbv	
		1,3-Butadiene	2011/07/18	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/18	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/18	<0.15		ppbv	
		Ethanol	2011/07/18	<2.3		ppbv	
		2-propanol	2011/07/18	<3.0		ppbv	
		2-Propanone	2011/07/18	0.84, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/18	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/18	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/18	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/18	<0.20		ppbv	
		Ethyl Acetate	2011/07/18	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/18	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/18	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/18	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/18	<0.80		ppbv	
		Chloroform	2011/07/18	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/18	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/18	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/18	<0.20		ppbv	
		Ethylene Dibromide	2011/07/18	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/18	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/18	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/18	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/18	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/18	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/18	<0.40		ppbv	
		Bromomethane	2011/07/18	<0.18		ppbv	
		Bromoform	2011/07/18	<0.20		ppbv	
		Bromodichloromethane	2011/07/18	<0.20		ppbv	
		Dibromochloromethane	2011/07/18	<0.20		ppbv	
		Heptane	2011/07/18	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A3524

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2555273 LSY	Method Blank	Trichloroethylene	2011/07/18	<0.30		ppbv	
		Tetrachloroethylene	2011/07/18	<0.20		ppbv	
		Benzene	2011/07/18	<0.18		ppbv	
		Toluene	2011/07/18	<0.20		ppbv	
		Ethylbenzene	2011/07/18	<0.20		ppbv	
		p+m-Xylene	2011/07/18	<0.37		ppbv	
		o-Xylene	2011/07/18	<0.20		ppbv	
		Styrene	2011/07/18	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/18	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/18	<0.50		ppbv	
		4-ethyltoluene	2011/07/18	<2.2		ppbv	
		Chlorobenzene	2011/07/18	<0.20		ppbv	
		Benzyl chloride	2011/07/18	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/18	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/18	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/18	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/18	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/18	<3.0		ppbv	
		Hexane	2011/07/18	<0.30		ppbv	
		Cyclohexane	2011/07/18	<0.20		ppbv	
		Tetrahydrofuran	2011/07/18	<0.40		ppbv	
		1,4-Dioxane	2011/07/18	<2.0		ppbv	
		Xylene (Total)	2011/07/18	<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

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7927
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jul 13, 11 @ 8:39 mst
Field Sample ID: LICA VOC/PORT/ Jul 14, 11 Canister Removal Date/Time: Jul 15, 11 @ 9:10 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jul-11	07/14/2011 0:00	07/15/2011 0:00	24.0000

Flow Settings		
Meter Reading (sccm)	Pot Set Pt.	Pump Pressure Setting (psig)
10.0	1472	24

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 # 05227

Technician Signiture: Ting Xu_____

Your C.O.C. #: 05227

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/07/27****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B1A7509****Received: 2011/07/20, 10:00**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/25	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/25	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

=====

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

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Total cover pages: 1

Page 1 of 11

Maxxam Job #: B1A7509
 Report Date: 2011/07/27

RESULTS OF ANALYSES OF AIR

Maxxam ID		KF7124	KF7125	
Sampling Date		2011/07/14	2011/07/14	
COC Number		05227	05227	
	Units	LICA VOC/CLS/ JULY 14,11 - 7827	LICA VOC/PORT/ JULY 14,11 - 7927	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2562141
QC Batch = Quality Control Batch				

Maxxam Job #: B1A7509
 Report Date: 2011/07/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KF7124			KF7125				
Sampling Date		2011/07/14			2011/07/14				
COC Number		05227			05227				
	Units	LICA VOC/CLS/ JULY 14,11 - 7827	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JULY 14,11 - 7927	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	2562142
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2562142
Propene	ppbv	0.61	1.05	0.516	1.02	0.30	1.76	0.516	2562142
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2562142
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2562142
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	3.60	0.989	0.70	0.20	3.47	0.989	2562142
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2562142
Chloromethane	ppbv	0.67	1.37	0.620	0.64	0.30	1.32	0.620	2562142
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2562142
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2562142
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2562142
Trichlorofluoromethane (FREON 11)	ppbv	0.33	1.85	1.12	0.34	0.20	1.89	1.12	2562142
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2562142
Ethanol	ppbv	<2.3	<4.33	4.33	<2.3	2.3	<4.33	4.33	2562142
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2562142
2-Propanone	ppbv	4.74	11.3	1.90	4.49	0.80	10.7	1.90	2562142
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2562142
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2562142
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2562142
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2562142
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2562142
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2562142
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2562142
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2562142
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2562142
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2562142
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2562142
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2562142
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2562142
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2562142

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1A7509
 Report Date: 2011/07/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KF7124			KF7125				
Sampling Date		2011/07/14			2011/07/14				
COC Number		05227			05227				
	Units	LICA VOC/CLS/ JULY 14,11 - 7827	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JULY 14,11 - 7927	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	2562142
1,1,2-Trichloroethane	ppbv	<0.15	<0.818	0.818	<0.15	0.15	<0.818	0.818	2562142
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2562142
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2562142
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2562142
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2562142
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2562142
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2562142
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2562142
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2562142
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2562142
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2562142
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2562142
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2562142
Toluene	ppbv	0.39	1.47	0.753	<0.20	0.20	<0.753	0.753	2562142
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2562142
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2562142
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2562142
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2562142
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2562142
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2562142
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2562142
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2562142
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2562142
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2562142
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2562142
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2562142
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2562142
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2562142
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2562142
Cyclohexane	ppbv	<0.20	<0.688	0.688	0.37	0.20	1.26	0.688	2562142
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2562142

QC Batch = Quality Control Batch

Maxxam Job #: B1A7509
 Report Date: 2011/07/27

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KF7124			KF7125				
Sampling Date		2011/07/14			2011/07/14				
COC Number		05227			05227				
	Units	LICA VOC/CLS/ JULY 14,11 - 7827	ug/m3	DL (ug/m3)	LICA VOC/PORT/ JULY 14,11 - 7927	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	2562142
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2562142
Surrogate Recovery (%)									
Bromochloromethane	%	73	N/A	N/A	74		N/A	N/A	2562142
D5-Chlorobenzene	%	75	N/A	N/A	76		N/A	N/A	2562142
Difluorobenzene	%	73	N/A	N/A	75		N/A	N/A	2562142

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

Maxxam Job #: B1A7509
Report Date: 2011/07/27

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report

Maxxam Job Number: GB1A7509

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2562142 VEA	Spiked Blank	Bromochloromethane	2011/07/25		96	%	60 - 140
		D5-Chlorobenzene	2011/07/25		96	%	60 - 140
		Difluorobenzene	2011/07/25		98	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/25		100	%	70 - 130
		Carbon Disulfide	2011/07/25		95	%	70 - 130
		Propene	2011/07/25		95	%	70 - 130
		Vinyl Acetate	2011/07/25		99	%	70 - 130
		Vinyl Bromide	2011/07/25		102	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/25		98	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/25		114	%	70 - 130
		Chloromethane	2011/07/25		99	%	70 - 130
		Vinyl Chloride	2011/07/25		103	%	70 - 130
		Chloroethane	2011/07/25		100	%	70 - 130
		1,3-Butadiene	2011/07/25		83	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/25		97	%	70 - 130
		Trichlorotrifluoroethane	2011/07/25		99	%	70 - 130
		Ethanol	2011/07/25		90	%	70 - 130
		2-propanol	2011/07/25		89	%	70 - 130
		2-Propanone	2011/07/25		95	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/25		91	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/25		91	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/25		91	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/25		98	%	70 - 130
		Ethyl Acetate	2011/07/25		97	%	70 - 130
		1,1-Dichloroethylene	2011/07/25		98	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/25		97	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/25		100	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/25		91	%	70 - 130
		Chloroform	2011/07/25		99	%	70 - 130
		Carbon Tetrachloride	2011/07/25		100	%	70 - 130
		1,1-Dichloroethane	2011/07/25		100	%	70 - 130
		1,2-Dichloroethane	2011/07/25		96	%	70 - 130
		Ethylene Dibromide	2011/07/25		96	%	70 - 130
		1,1,1-Trichloroethane	2011/07/25		97	%	70 - 130
		1,1,2-Trichloroethane	2011/07/25		98	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/25		87	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/25		99	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/25		97	%	70 - 130
		1,2-Dichloropropane	2011/07/25		98	%	70 - 130
		Bromomethane	2011/07/25		102	%	70 - 130
		Bromoform	2011/07/25		109	%	70 - 130
		Bromodichloromethane	2011/07/25		99	%	70 - 130
		Dibromochloromethane	2011/07/25		106	%	70 - 130
		Heptane	2011/07/25		98	%	70 - 130
		Trichloroethylene	2011/07/25		99	%	70 - 130
		Tetrachloroethylene	2011/07/25		101	%	70 - 130
		Benzene	2011/07/25		98	%	70 - 130
		Toluene	2011/07/25		97	%	70 - 130
		Ethylbenzene	2011/07/25		96	%	70 - 130
		p+m-Xylene	2011/07/25		94	%	70 - 130
		o-Xylene	2011/07/25		95	%	70 - 130
		Styrene	2011/07/25		90	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/25		82	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/25		78	%	70 - 130
		4-ethyltoluene	2011/07/25		88	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A7509

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2562142 VEA	Spiked Blank	Chlorobenzene	2011/07/25		99	%	70 - 130
		Benzyl chloride	2011/07/25		81	%	70 - 130
		1,3-Dichlorobenzene	2011/07/25		85	%	70 - 130
		1,4-Dichlorobenzene	2011/07/25		86	%	70 - 130
		1,2-Dichlorobenzene	2011/07/25		79	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/25		106	%	70 - 130
		Hexachlorobutadiene	2011/07/25		100	%	70 - 130
		Hexane	2011/07/25		100	%	70 - 130
		Cyclohexane	2011/07/25		100	%	70 - 130
		Tetrahydrofuran	2011/07/25		98	%	70 - 130
		1,4-Dioxane	2011/07/25		90	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/25		83	%	60 - 140
		D5-Chlorobenzene	2011/07/25		87	%	60 - 140
		Difluorobenzene	2011/07/25		85	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/25	<0.20		ppbv	
		Carbon Disulfide	2011/07/25	<0.50		ppbv	
		Propene	2011/07/25	<0.30		ppbv	
		Vinyl Acetate	2011/07/25	<0.20		ppbv	
		Vinyl Bromide	2011/07/25	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/25	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/25	<0.17		ppbv	
		Chloromethane	2011/07/25	<0.30		ppbv	
		Vinyl Chloride	2011/07/25	<0.18		ppbv	
		Chloroethane	2011/07/25	<0.30		ppbv	
		1,3-Butadiene	2011/07/25	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/25	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/25	<0.15		ppbv	
		Ethanol	2011/07/25	<2.3		ppbv	
		2-propanol	2011/07/25	<3.0		ppbv	
		2-Propanone	2011/07/25	1.12, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/25	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/25	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/25	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/25	<0.20		ppbv	
		Ethyl Acetate	2011/07/25	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/25	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/25	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/25	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/25	<0.80		ppbv	
		Chloroform	2011/07/25	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/25	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/25	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/25	<0.20		ppbv	
		Ethylene Dibromide	2011/07/25	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/25	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/25	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/25	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/25	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/25	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/25	<0.40		ppbv	
		Bromomethane	2011/07/25	<0.18		ppbv	
		Bromoform	2011/07/25	<0.20		ppbv	
		Bromodichloromethane	2011/07/25	<0.20		ppbv	
		Dibromochloromethane	2011/07/25	<0.20		ppbv	
		Heptane	2011/07/25	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A7509

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2562142 VEA	Method Blank	Trichloroethylene	2011/07/25	<0.30		ppbv	
		Tetrachloroethylene	2011/07/25	<0.20		ppbv	
		Benzene	2011/07/25	<0.18		ppbv	
		Toluene	2011/07/25	<0.20		ppbv	
		Ethylbenzene	2011/07/25	<0.20		ppbv	
		p+m-Xylene	2011/07/25	<0.37		ppbv	
		o-Xylene	2011/07/25	<0.20		ppbv	
		Styrene	2011/07/25	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/25	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/25	<0.50		ppbv	
		4-ethyltoluene	2011/07/25	<2.2		ppbv	
		Chlorobenzene	2011/07/25	<0.20		ppbv	
		Benzyl chloride	2011/07/25	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/25	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/25	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/25	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/25	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/25	<3.0		ppbv	
		Hexane	2011/07/25	<0.30		ppbv	
		Cyclohexane	2011/07/25	<0.20		ppbv	
		Tetrahydrofuran	2011/07/25	<0.40		ppbv	
		1,4-Dioxane	2011/07/25	<2.0		ppbv	
		Xylene (Total)	2011/07/25	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane		TBA		%	25
		Carbon Disulfide		TBA		%	25
		Propene		TBA		%	25
		Vinyl Acetate		TBA		%	25
		Vinyl Bromide		TBA		%	25
		Dichlorodifluoromethane (FREON 12)		TBA		%	25
		1,2-Dichlorotetrafluoroethane		TBA		%	25
		Chloromethane		TBA		%	25
		Vinyl Chloride		TBA		%	25
		Chloroethane		TBA		%	25
		1,3-Butadiene		TBA		%	25
		Trichlorofluoromethane (FREON 11)		TBA		%	25
		Trichlorotrifluoroethane		TBA		%	25
		Ethanol		TBA		%	25
		2-propanol		TBA		%	25
		2-Propanone		TBA		%	25
		Methyl Ethyl Ketone (2-Butanone)		TBA		%	25
		Methyl Isobutyl Ketone		TBA		%	25
		Methyl Butyl Ketone (2-Hexanone)		TBA		%	25
		Methyl t-butyl ether (MTBE)		TBA		%	25
		Ethyl Acetate		TBA		%	25
		1,1-Dichloroethylene		TBA		%	25
		cis-1,2-Dichloroethylene		TBA		%	25
		trans-1,2-Dichloroethylene		TBA		%	25
		Methylene Chloride(Dichloromethane)		TBA		%	25
		Chloroform		TBA		%	25
		Carbon Tetrachloride		TBA		%	25
		1,1-Dichloroethane		TBA		%	25
		1,2-Dichloroethane		TBA		%	25
		Ethylene Dibromide		TBA		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A7509

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2562142 VEA	RPD - Sample/Sample Dup	1,1,1-Trichloroethane		TBA		%	25
		1,1,2-Trichloroethane		TBA		%	25
		1,1,2,2-Tetrachloroethane		TBA		%	25
		cis-1,3-Dichloropropene		TBA		%	25
		trans-1,3-Dichloropropene		TBA		%	25
		1,2-Dichloropropane		TBA		%	25
		Bromomethane		TBA		%	25
		Bromoform		TBA		%	25
		Bromodichloromethane		TBA		%	25
		Dibromochloromethane		TBA		%	25
		Heptane		TBA		%	25
		Trichloroethylene		TBA		%	25
		Tetrachloroethylene		TBA		%	25
		Benzene		TBA		%	25
		Toluene		TBA		%	25
		Ethylbenzene		TBA		%	25
		p+m-Xylene		TBA		%	25
		o-Xylene		TBA		%	25
		Styrene		TBA		%	25
		1,3,5-Trimethylbenzene		TBA		%	25
		1,2,4-Trimethylbenzene		TBA		%	25
		4-ethyltoluene		TBA		%	25
		Chlorobenzene		TBA		%	25
		Benzyl chloride		TBA		%	25
		1,3-Dichlorobenzene		TBA		%	25
		1,4-Dichlorobenzene		TBA		%	25
		1,2-Dichlorobenzene		TBA		%	25
		1,2,4-Trichlorobenzene		TBA		%	25
		Hexachlorobutadiene		TBA		%	25
		Hexane		TBA		%	25
		Cyclohexane		TBA		%	25
		Tetrahydrofuran		TBA		%	25
		1,4-Dioxane		TBA		%	25
		Xylene (Total)		TBA		%	25

TBA = Result to follow

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

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

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

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7858
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jul 18, 11 @ 10:09 mst
Field Sample ID: LICA VOC/PORT/ Jul 20, 11 Canister Removal Date/Time: Jul 21, 11 @ 10:14 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jul-11	07/20/2011 0:00	07/21/2011 0:00	24.0000

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

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	20

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

Comments: System leak check prior to sampling. COC # 05091

Technician Signiture: Ting Xu_____

Your C.O.C. #: 05091

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/07/29****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B1B0348****Received: 2011/07/23, 10:55**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/26	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/26	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 14

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

RESULTS OF ANALYSES OF AIR

Maxxam ID		KH3480	KH3481	
Sampling Date		2011/07/20	2011/07/20	
COC Number		05091	05091	
	Units	LICA VOC/CLS/JULY 20,11 /S2396	LICA VOC/PORT/JULY 20,11 /7858	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2564106

QC Batch = Quality Control Batch

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3480				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/CLS/JULY 20,11 /S2396	RDL	ug/m3	DL (ug/m3)	QC Batch

Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2564103
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2564103
Propene	ppbv	<0.30	0.30	<0.516	0.516	2564103
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2564103
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2564103
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	0.20	3.61	0.989	2564103
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2564103
Chloromethane	ppbv	0.64	0.30	1.33	0.620	2564103
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2564103
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2564103
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2564103
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	1.95	1.12	2564103
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2564103
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2564103
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2564103
2-Propanone	ppbv	3.34	0.80	7.93	1.90	2564103
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2564103
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2564103
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2564103
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2564103
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2564103
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2564103
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2564103
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2564103
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2564103
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2564103
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2564103
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2564103
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2564103
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2564103
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2564103

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3480				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/CLS/JULY 20,11 /S2396	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2564103
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2564103
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2564103
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2564103
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2564103
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2564103
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2564103
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2564103
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2564103
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2564103
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2564103
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2564103
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2564103
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2564103
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2564103
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2564103
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2564103
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2564103
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2564103
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2564103
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2564103
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2564103
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2564103
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2564103
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2564103
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2564103
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2564103
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2564103
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2564103
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2564103
QC Batch = Quality Control Batch						

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3480				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/CLS/JULY 20,11 /S2396	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2564103
D5-Chlorobenzene	%	92		N/A	N/A	2564103
Difluorobenzene	%	90		N/A	N/A	2564103

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

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3481				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/PORT/JULY 20,11 /7858	RDL	ug/m3	DL (ug/m3)	QC Batch
Volatile Organics						
2,2,4-Trimethylpentane	ppbv	<0.20	0.20	<0.934	0.934	2564103
Carbon Disulfide	ppbv	<0.50	0.50	<1.56	1.56	2564103
Propene	ppbv	<0.30	0.30	<0.516	0.516	2564103
Vinyl Acetate	ppbv	<0.20	0.20	<0.704	0.704	2564103
Vinyl Bromide	ppbv	<0.20	0.20	<0.875	0.875	2564103
Dichlorodifluoromethane (FREON 12)	ppbv	0.73	0.20	3.61	0.989	2564103
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	0.17	<1.19	1.19	2564103
Chloromethane	ppbv	0.66	0.30	1.37	0.620	2564103
Vinyl Chloride	ppbv	<0.18	0.18	<0.460	0.460	2564103
Chloroethane	ppbv	<0.30	0.30	<0.792	0.792	2564103
1,3-Butadiene	ppbv	<0.50	0.50	<1.11	1.11	2564103
Trichlorofluoromethane (FREON 11)	ppbv	0.35	0.20	1.95	1.12	2564103
Trichlorotrifluoroethane	ppbv	<0.15	0.15	<1.15	1.15	2564103
Ethanol	ppbv	<2.3	2.3	<4.33	4.33	2564103
2-propanol	ppbv	<3.0	3.0	<7.37	7.37	2564103
2-Propanone	ppbv	3.51	0.80	8.33	1.90	2564103
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	3.0	<8.85	8.85	2564103
Methyl Isobutyl Ketone	ppbv	<3.2	3.2	<13.1	13.1	2564103
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	2.0	<8.19	8.19	2564103
Methyl t-butyl ether (MTBE)	ppbv	<0.20	0.20	<0.721	0.721	2564103
Ethyl Acetate	ppbv	<2.2	2.2	<7.93	7.93	2564103
1,1-Dichloroethylene	ppbv	<0.25	0.25	<0.991	0.991	2564103
cis-1,2-Dichloroethylene	ppbv	<0.19	0.19	<0.753	0.753	2564103
trans-1,2-Dichloroethylene	ppbv	<0.20	0.20	<0.793	0.793	2564103
Methylene Chloride(Dichloromethane)	ppbv	<0.80	0.80	<2.78	2.78	2564103
Chloroform	ppbv	<0.15	0.15	<0.732	0.732	2564103
Carbon Tetrachloride	ppbv	<0.30	0.30	<1.89	1.89	2564103
1,1-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2564103
1,2-Dichloroethane	ppbv	<0.20	0.20	<0.809	0.809	2564103
Ethylene Dibromide	ppbv	<0.17	0.17	<1.31	1.31	2564103
1,1,1-Trichloroethane	ppbv	<0.30	0.30	<1.64	1.64	2564103
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3481				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/PORT/JULY 20,11 /7858	RDL	ug/m3	DL (ug/m3)	QC Batch
1,1,2-Trichloroethane	ppbv	<0.15	0.15	<0.818	0.818	2564103
1,1,2,2-Tetrachloroethane	ppbv	<0.20	0.20	<1.37	1.37	2564103
cis-1,3-Dichloropropene	ppbv	<0.18	0.18	<0.817	0.817	2564103
trans-1,3-Dichloropropene	ppbv	<0.17	0.17	<0.772	0.772	2564103
1,2-Dichloropropane	ppbv	<0.40	0.40	<1.85	1.85	2564103
Bromomethane	ppbv	<0.18	0.18	<0.699	0.699	2564103
Bromoform	ppbv	<0.20	0.20	<2.07	2.07	2564103
Bromodichloromethane	ppbv	<0.20	0.20	<1.34	1.34	2564103
Dibromochloromethane	ppbv	<0.20	0.20	<1.70	1.70	2564103
Heptane	ppbv	<0.30	0.30	<1.23	1.23	2564103
Trichloroethylene	ppbv	<0.30	0.30	<1.61	1.61	2564103
Tetrachloroethylene	ppbv	<0.20	0.20	<1.36	1.36	2564103
Benzene	ppbv	<0.18	0.18	<0.575	0.575	2564103
Toluene	ppbv	<0.20	0.20	<0.753	0.753	2564103
Ethylbenzene	ppbv	<0.20	0.20	<0.868	0.868	2564103
p+m-Xylene	ppbv	<0.37	0.37	<1.61	1.61	2564103
o-Xylene	ppbv	<0.20	0.20	<0.868	0.868	2564103
Styrene	ppbv	<0.20	0.20	<0.852	0.852	2564103
1,3,5-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2564103
1,2,4-Trimethylbenzene	ppbv	<0.50	0.50	<2.46	2.46	2564103
4-ethyltoluene	ppbv	<2.2	2.2	<10.8	10.8	2564103
Chlorobenzene	ppbv	<0.20	0.20	<0.921	0.921	2564103
Benzyl chloride	ppbv	<1.0	1.0	<5.18	5.18	2564103
1,3-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,4-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,2-Dichlorobenzene	ppbv	<0.40	0.40	<2.40	2.40	2564103
1,2,4-Trichlorobenzene	ppbv	<2.0	2.0	<14.8	14.8	2564103
Hexachlorobutadiene	ppbv	<3.0	3.0	<32.0	32.0	2564103
Hexane	ppbv	<0.30	0.30	<1.06	1.06	2564103
Cyclohexane	ppbv	<0.20	0.20	<0.688	0.688	2564103
Tetrahydrofuran	ppbv	<0.40	0.40	<1.18	1.18	2564103
1,4-Dioxane	ppbv	<2.0	2.0	<7.21	7.21	2564103
Xylene (Total)	ppbv	<0.60	0.60	<2.61	2.61	2564103
QC Batch = Quality Control Batch						

Maxxam Job #: B1B0348
 Report Date: 2011/07/29

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KH3481				
Sampling Date		2011/07/20				
COC Number		05091				
	Units	LICA VOC/PORT/JULY 20,11 /7858	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)						
Bromochloromethane	%	88		N/A	N/A	2564103
D5-Chlorobenzene	%	93		N/A	N/A	2564103
Difluorobenzene	%	90		N/A	N/A	2564103

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

Maxxam Job #: B1B0348
Report Date: 2011/07/29

GENERAL COMMENTS

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1B0348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2564103 DBJ	Spiked Blank	Bromochloromethane	2011/07/26		94	%	60 - 140
		D5-Chlorobenzene	2011/07/26		92	%	60 - 140
		Difluorobenzene	2011/07/26		95	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/26		93	%	70 - 130
		Carbon Disulfide	2011/07/26		89	%	70 - 130
		Propene	2011/07/26		77	%	70 - 130
		Vinyl Acetate	2011/07/26		86	%	70 - 130
		Vinyl Bromide	2011/07/26		99	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/26		92	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/26		106	%	70 - 130
		Chloromethane	2011/07/26		83	%	70 - 130
		Vinyl Chloride	2011/07/26		91	%	70 - 130
		Chloroethane	2011/07/26		89	%	70 - 130
		1,3-Butadiene	2011/07/26		69 (1)	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/26		92	%	70 - 130
		Trichlorotrifluoroethane	2011/07/26		95	%	70 - 130
		Ethanol	2011/07/26		72	%	70 - 130
		2-propanol	2011/07/26		82	%	70 - 130
		2-Propanone	2011/07/26		82	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/26		79	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/26		82	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/26		83	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/26		93	%	70 - 130
		Ethyl Acetate	2011/07/26		85	%	70 - 130
		1,1-Dichloroethylene	2011/07/26		89	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/26		89	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/26		92	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/26		80	%	70 - 130
		Chloroform	2011/07/26		93	%	70 - 130
		Carbon Tetrachloride	2011/07/26		99	%	70 - 130
		1,1-Dichloroethane	2011/07/26		94	%	70 - 130
		1,2-Dichloroethane	2011/07/26		89	%	70 - 130
		Ethylene Dibromide	2011/07/26		95	%	70 - 130
		1,1,1-Trichloroethane	2011/07/26		93	%	70 - 130
		1,1,2-Trichloroethane	2011/07/26		97	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/26		85	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/26		96	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/26		93	%	70 - 130
		1,2-Dichloropropane	2011/07/26		93	%	70 - 130
		Bromomethane	2011/07/26		97	%	70 - 130
		Bromoform	2011/07/26		115	%	70 - 130
		Bromodichloromethane	2011/07/26		96	%	70 - 130
		Dibromochloromethane	2011/07/26		108	%	70 - 130
		Heptane	2011/07/26		88	%	70 - 130
		Trichloroethylene	2011/07/26		101	%	70 - 130
		Tetrachloroethylene	2011/07/26		104	%	70 - 130
		Benzene	2011/07/26		94	%	70 - 130
		Toluene	2011/07/26		95	%	70 - 130
		Ethylbenzene	2011/07/26		94	%	70 - 130
		p+m-Xylene	2011/07/26		93	%	70 - 130
		o-Xylene	2011/07/26		94	%	70 - 130
		Styrene	2011/07/26		93	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/26		84	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/26		79	%	70 - 130
		4-ethyltoluene	2011/07/26		88	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B0348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2564103 DBJ	Spiked Blank	Chlorobenzene	2011/07/26		99	%	70 - 130
		Benzyl chloride	2011/07/26		81	%	70 - 130
		1,3-Dichlorobenzene	2011/07/26		88	%	70 - 130
		1,4-Dichlorobenzene	2011/07/26		89	%	70 - 130
		1,2-Dichlorobenzene	2011/07/26		81	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/26		118	%	70 - 130
		Hexachlorobutadiene	2011/07/26		111	%	70 - 130
		Hexane	2011/07/26		93	%	70 - 130
		Cyclohexane	2011/07/26		94	%	70 - 130
		Tetrahydrofuran	2011/07/26		86	%	70 - 130
		1,4-Dioxane	2011/07/26		71	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/26		90	%	60 - 140
		D5-Chlorobenzene	2011/07/26		93	%	60 - 140
		Difluorobenzene	2011/07/26		93	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/26	<0.20		ppbv	
		Carbon Disulfide	2011/07/26	<0.50		ppbv	
		Propene	2011/07/26	<0.30		ppbv	
		Vinyl Acetate	2011/07/26	<0.20		ppbv	
		Vinyl Bromide	2011/07/26	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/26	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/26	<0.17		ppbv	
		Chloromethane	2011/07/26	<0.30		ppbv	
		Vinyl Chloride	2011/07/26	<0.18		ppbv	
		Chloroethane	2011/07/26	<0.30		ppbv	
		1,3-Butadiene	2011/07/26	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/26	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/26	<0.15		ppbv	
		Ethanol	2011/07/26	<2.3		ppbv	
		2-propanol	2011/07/26	<3.0		ppbv	
		2-Propanone	2011/07/26	0.98, RDL=0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/26	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/26	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/26	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/26	<0.20		ppbv	
		Ethyl Acetate	2011/07/26	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/26	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/26	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/26	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/26	<0.80		ppbv	
		Chloroform	2011/07/26	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/26	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/26	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/26	<0.20		ppbv	
		Ethylene Dibromide	2011/07/26	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/26	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/26	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/26	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/26	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/26	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/26	<0.40		ppbv	
		Bromomethane	2011/07/26	<0.18		ppbv	
		Bromoform	2011/07/26	<0.20		ppbv	
		Bromodichloromethane	2011/07/26	<0.20		ppbv	
		Dibromochloromethane	2011/07/26	<0.20		ppbv	
		Heptane	2011/07/26	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B0348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2564103 DBJ	Method Blank	Trichloroethylene	2011/07/26	<0.30		ppbv	
		Tetrachloroethylene	2011/07/26	<0.20		ppbv	
		Benzene	2011/07/26	<0.18		ppbv	
		Toluene	2011/07/26	<0.20		ppbv	
		Ethylbenzene	2011/07/26	<0.20		ppbv	
		p+m-Xylene	2011/07/26	<0.37		ppbv	
		o-Xylene	2011/07/26	<0.20		ppbv	
		Styrene	2011/07/26	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/26	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/26	<0.50		ppbv	
		4-ethyltoluene	2011/07/26	<2.2		ppbv	
		Chlorobenzene	2011/07/26	<0.20		ppbv	
		Benzyl chloride	2011/07/26	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/26	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/26	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/26	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/26	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/26	<3.0		ppbv	
		Hexane	2011/07/26	<0.30		ppbv	
		Cyclohexane	2011/07/26	<0.20		ppbv	
		Tetrahydrofuran	2011/07/26	<0.40		ppbv	
		1,4-Dioxane	2011/07/26	<2.0		ppbv	
		Xylene (Total)	2011/07/26	<0.60		ppbv	
	RPD - Sample/Sample Dup	2,2,4-Trimethylpentane	2011/07/26	NC		%	25
		Carbon Disulfide	2011/07/26	3.5		%	25
		Propene	2011/07/26	11.3		%	25
		Vinyl Acetate	2011/07/26	NC		%	25
		Vinyl Bromide	2011/07/26	NC		%	25
		Dichlorodifluoromethane (FREON 12)	2011/07/26	NC		%	25
		1,2-Dichlorotetrafluoroethane	2011/07/26	NC		%	25
		Chloromethane	2011/07/26	5.8		%	25
		Vinyl Chloride	2011/07/26	NC		%	25
		Chloroethane	2011/07/26	NC		%	25
		1,3-Butadiene	2011/07/26	NC		%	25
		Trichlorofluoromethane (FREON 11)	2011/07/26	NC		%	25
		Trichlorotrifluoroethane	2011/07/26	NC		%	25
		Ethanol	2011/07/26	13.2		%	25
		2-propanol	2011/07/26	NC		%	25
		2-Propanone	2011/07/26	11.5		%	25
		Methyl Ethyl Ketone (2-Butanone)	2011/07/26	NC		%	25
		Methyl Isobutyl Ketone	2011/07/26	NC		%	25
		Methyl Butyl Ketone (2-Hexanone)	2011/07/26	NC		%	25
		Methyl t-butyl ether (MTBE)	2011/07/26	NC		%	25
		Ethyl Acetate	2011/07/26	NC		%	25
		1,1-Dichloroethylene	2011/07/26	NC		%	25
		cis-1,2-Dichloroethylene	2011/07/26	NC		%	25
		trans-1,2-Dichloroethylene	2011/07/26	NC		%	25
		Methylene Chloride(Dichloromethane)	2011/07/26	NC		%	25
		Chloroform	2011/07/26	NC		%	25
		Carbon Tetrachloride	2011/07/26	NC		%	25
		1,1-Dichloroethane	2011/07/26	NC		%	25
		1,2-Dichloroethane	2011/07/26	NC		%	25
		Ethylene Dibromide	2011/07/26	NC		%	25

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B0348

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2564103 DBJ	RPD - Sample/Sample Dup	1,1,1-Trichloroethane	2011/07/26	NC		%	25
		1,1,2-Trichloroethane	2011/07/26	NC		%	25
		1,1,2,2-Tetrachloroethane	2011/07/26	NC		%	25
		cis-1,3-Dichloropropene	2011/07/26	NC		%	25
		trans-1,3-Dichloropropene	2011/07/26	NC		%	25
		1,2-Dichloropropane	2011/07/26	NC		%	25
		Bromomethane	2011/07/26	NC		%	25
		Bromoform	2011/07/26	NC		%	25
		Bromodichloromethane	2011/07/26	NC		%	25
		Dibromochloromethane	2011/07/26	NC		%	25
		Heptane	2011/07/26	4.5		%	25
		Trichloroethylene	2011/07/26	NC		%	25
		Tetrachloroethylene	2011/07/26	NC		%	25
		Benzene	2011/07/26	1.9		%	25
		Toluene	2011/07/26	2.8		%	25
		Ethylbenzene	2011/07/26	5.7		%	25
		p+m-Xylene	2011/07/26	0.3		%	25
		o-Xylene	2011/07/26	0.5		%	25
		Styrene	2011/07/26	2.8		%	25
		1,3,5-Trimethylbenzene	2011/07/26	NC		%	25
		1,2,4-Trimethylbenzene	2011/07/26	5.5		%	25
		4-ethyltoluene	2011/07/26	NC		%	25
		Chlorobenzene	2011/07/26	NC		%	25
		Benzyl chloride	2011/07/26	NC		%	25
		1,3-Dichlorobenzene	2011/07/26	NC		%	25
		1,4-Dichlorobenzene	2011/07/26	NC		%	25
		1,2-Dichlorobenzene	2011/07/26	NC		%	25
		1,2,4-Trichlorobenzene	2011/07/26	NC		%	25
		Hexachlorobutadiene	2011/07/26	NC		%	25
		Hexane	2011/07/26	4.1		%	25
		Cyclohexane	2011/07/26	0.2		%	25
		Tetrahydrofuran	2011/07/26	NC		%	25
		1,4-Dioxane	2011/07/26	NC		%	25
		Xylene (Total)	2011/07/26	0.4		%	25

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

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

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

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

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

MAXXAM

Xontech Model 910A VOC Sample Collection Data Sheet

Client: LICA Sampler s/n: 6200
Location: 13-16-62-5 W4M Canister ID: 7802
Station ID: Lica 33 (Portable) Canister Installation Date/Time: Jul 25, 11 @ 12:20 mst
Field Sample ID: LICA VOC/PORT/ Jul 26, 11 Canister Removal Date/Time: Jul 27, 11 @ 8:45 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jul-11	07/26/2011 0:00	07/27/2011 0:00	24.0000

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

Canister Information	
Initial Canister Vacuum (inHg)	Final Canister Pressure (psig)
-29	20

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

Comments: System leak check prior to sampling. COC # 05121

Technician Signiture: Ting Xu_____

Your C.O.C. #: 05120

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

Report Date: 2011/07/14

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B198961****Received: 2011/07/06, 09:31**Sample Matrix: AIR
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Canister Pressure (TO-15)	2	N/A	2011/07/12	BRL SOP-00304	EPA TO-15
Volatile Organics in Air (TO-15) ¶	2	N/A	2011/07/12	BRL SOP-00304	EPA TO-15

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

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

Encryption Key

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

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

=====

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

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Total cover pages: 1

Page 1 of 10

Maxxam Job #: B198961
 Report Date: 2011/07/14

RESULTS OF ANALYSES OF AIR

Maxxam ID		KB4004	KB4005	
Sampling Date		2011/07/02	2011/07/02	
COC Number		05120	05120	
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	LICA VOC\ PORT\ JULY 02,11 - 7824	QC Batch

Volatile Organics				
Pressure on Receipt	psig	22	21	2549321

QC Batch = Quality Control Batch

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	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	2549807
Carbon Disulfide	ppbv	<0.50	<1.56	1.56	<0.50	0.50	<1.56	1.56	2549807
Propene	ppbv	<0.30	<0.516	0.516	<0.30	0.30	<0.516	0.516	2549807
Vinyl Acetate	ppbv	<0.20	<0.704	0.704	<0.20	0.20	<0.704	0.704	2549807
Vinyl Bromide	ppbv	<0.20	<0.875	0.875	<0.20	0.20	<0.875	0.875	2549807
Dichlorodifluoromethane (FREON 12)	ppbv	0.80	3.97	0.989	0.86	0.20	4.25	0.989	2549807
1,2-Dichlorotetrafluoroethane	ppbv	<0.17	<1.19	1.19	<0.17	0.17	<1.19	1.19	2549807
Chloromethane	ppbv	0.69	1.43	0.620	0.75	0.30	1.56	0.620	2549807
Vinyl Chloride	ppbv	<0.18	<0.460	0.460	<0.18	0.18	<0.460	0.460	2549807
Chloroethane	ppbv	<0.30	<0.792	0.792	<0.30	0.30	<0.792	0.792	2549807
1,3-Butadiene	ppbv	<0.50	<1.11	1.11	<0.50	0.50	<1.11	1.11	2549807
Trichlorofluoromethane (FREON 11)	ppbv	0.36	2.03	1.12	0.39	0.20	2.17	1.12	2549807
Trichlorotrifluoroethane	ppbv	<0.15	<1.15	1.15	<0.15	0.15	<1.15	1.15	2549807
Ethanol	ppbv	4.2	7.85	4.33	<2.3	2.3	<4.33	4.33	2549807
2-propanol	ppbv	<3.0	<7.37	7.37	<3.0	3.0	<7.37	7.37	2549807
2-Propanone	ppbv	3.76	8.94	1.90	3.91	0.80	9.28	1.90	2549807
Methyl Ethyl Ketone (2-Butanone)	ppbv	<3.0	<8.85	8.85	<3.0	3.0	<8.85	8.85	2549807
Methyl Isobutyl Ketone	ppbv	<3.2	<13.1	13.1	<3.2	3.2	<13.1	13.1	2549807
Methyl Butyl Ketone (2-Hexanone)	ppbv	<2.0	<8.19	8.19	<2.0	2.0	<8.19	8.19	2549807
Methyl t-butyl ether (MTBE)	ppbv	<0.20	<0.721	0.721	<0.20	0.20	<0.721	0.721	2549807
Ethyl Acetate	ppbv	<2.2	<7.93	7.93	<2.2	2.2	<7.93	7.93	2549807
1,1-Dichloroethylene	ppbv	<0.25	<0.991	0.991	<0.25	0.25	<0.991	0.991	2549807
cis-1,2-Dichloroethylene	ppbv	<0.19	<0.753	0.753	<0.19	0.19	<0.753	0.753	2549807
trans-1,2-Dichloroethylene	ppbv	<0.20	<0.793	0.793	<0.20	0.20	<0.793	0.793	2549807
Methylene Chloride(Dichloromethane)	ppbv	<0.80	<2.78	2.78	<0.80	0.80	<2.78	2.78	2549807
Chloroform	ppbv	<0.15	<0.732	0.732	<0.15	0.15	<0.732	0.732	2549807
Carbon Tetrachloride	ppbv	<0.30	<1.89	1.89	<0.30	0.30	<1.89	1.89	2549807
1,1-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2549807
1,2-Dichloroethane	ppbv	<0.20	<0.809	0.809	<0.20	0.20	<0.809	0.809	2549807
Ethylene Dibromide	ppbv	<0.17	<1.31	1.31	<0.17	0.17	<1.31	1.31	2549807
1,1,1-Trichloroethane	ppbv	<0.30	<1.64	1.64	<0.30	0.30	<1.64	1.64	2549807

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	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	2549807
1,1,2,2-Tetrachloroethane	ppbv	<0.20	<1.37	1.37	<0.20	0.20	<1.37	1.37	2549807
cis-1,3-Dichloropropene	ppbv	<0.18	<0.817	0.817	<0.18	0.18	<0.817	0.817	2549807
trans-1,3-Dichloropropene	ppbv	<0.17	<0.772	0.772	<0.17	0.17	<0.772	0.772	2549807
1,2-Dichloropropane	ppbv	<0.40	<1.85	1.85	<0.40	0.40	<1.85	1.85	2549807
Bromomethane	ppbv	<0.18	<0.699	0.699	<0.18	0.18	<0.699	0.699	2549807
Bromoform	ppbv	<0.20	<2.07	2.07	<0.20	0.20	<2.07	2.07	2549807
Bromodichloromethane	ppbv	<0.20	<1.34	1.34	<0.20	0.20	<1.34	1.34	2549807
Dibromochloromethane	ppbv	<0.20	<1.70	1.70	<0.20	0.20	<1.70	1.70	2549807
Heptane	ppbv	<0.30	<1.23	1.23	<0.30	0.30	<1.23	1.23	2549807
Trichloroethylene	ppbv	<0.30	<1.61	1.61	<0.30	0.30	<1.61	1.61	2549807
Tetrachloroethylene	ppbv	<0.20	<1.36	1.36	<0.20	0.20	<1.36	1.36	2549807
Benzene	ppbv	<0.18	<0.575	0.575	<0.18	0.18	<0.575	0.575	2549807
Toluene	ppbv	<0.20	<0.753	0.753	<0.20	0.20	<0.753	0.753	2549807
Ethylbenzene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2549807
p+m-Xylene	ppbv	<0.37	<1.61	1.61	<0.37	0.37	<1.61	1.61	2549807
o-Xylene	ppbv	<0.20	<0.868	0.868	<0.20	0.20	<0.868	0.868	2549807
Styrene	ppbv	<0.20	<0.852	0.852	<0.20	0.20	<0.852	0.852	2549807
1,3,5-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2549807
1,2,4-Trimethylbenzene	ppbv	<0.50	<2.46	2.46	<0.50	0.50	<2.46	2.46	2549807
4-ethyltoluene	ppbv	<2.2	<10.8	10.8	<2.2	2.2	<10.8	10.8	2549807
Chlorobenzene	ppbv	<0.20	<0.921	0.921	<0.20	0.20	<0.921	0.921	2549807
Benzyl chloride	ppbv	<1.0	<5.18	5.18	<1.0	1.0	<5.18	5.18	2549807
1,3-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,4-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,2-Dichlorobenzene	ppbv	<0.40	<2.40	2.40	<0.40	0.40	<2.40	2.40	2549807
1,2,4-Trichlorobenzene	ppbv	<2.0	<14.8	14.8	<2.0	2.0	<14.8	14.8	2549807
Hexachlorobutadiene	ppbv	<3.0	<32.0	32.0	<3.0	3.0	<32.0	32.0	2549807
Hexane	ppbv	<0.30	<1.06	1.06	<0.30	0.30	<1.06	1.06	2549807
Cyclohexane	ppbv	<0.20	<0.688	0.688	<0.20	0.20	<0.688	0.688	2549807
Tetrahydrofuran	ppbv	<0.40	<1.18	1.18	<0.40	0.40	<1.18	1.18	2549807
1,4-Dioxane	ppbv	<2.0	<7.21	7.21	<2.0	2.0	<7.21	7.21	2549807
Xylene (Total)	ppbv	<0.60	<2.61	2.61	<0.60	0.60	<2.61	2.61	2549807
QC Batch = Quality Control Batch									

Maxxam Job #: B198961
 Report Date: 2011/07/14

VOLATILE ORGANICS BY GC/MS (AIR)

Maxxam ID		KB4004			KB4005				
Sampling Date		2011/07/02			2011/07/02				
COC Number		05120			05120				
	Units	LICA VOC\ CLS\ JULY 02,11 - 7838	ug/m3	DL (ug/m3)	LICA VOC\ PORT\ JULY 02,11 - 7824	RDL	ug/m3	DL (ug/m3)	QC Batch

Surrogate Recovery (%)									
Bromochloromethane	%	93	N/A	N/A	88		N/A	N/A	2549807
D5-Chlorobenzene	%	98	N/A	N/A	93		N/A	N/A	2549807
Difluorobenzene	%	96	N/A	N/A	90		N/A	N/A	2549807

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

Maxxam Job #: B198961
Report Date: 2011/07/14

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: GB198961

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2549807 LSY	Spiked Blank	Bromochloromethane	2011/07/12		97	%	60 - 140
		D5-Chlorobenzene	2011/07/12		100	%	60 - 140
		Difluorobenzene	2011/07/12		100	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/12		105	%	70 - 130
		Carbon Disulfide	2011/07/12		99	%	70 - 130
		Propene	2011/07/12		99	%	70 - 130
		Vinyl Acetate	2011/07/12		102	%	70 - 130
		Vinyl Bromide	2011/07/12		106	%	70 - 130
		Dichlorodifluoromethane (FREON 12)	2011/07/12		105	%	70 - 130
		1,2-Dichlorotetrafluoroethane	2011/07/12		120	%	70 - 130
		Chloromethane	2011/07/12		104	%	70 - 130
		Vinyl Chloride	2011/07/12		107	%	70 - 130
		Chloroethane	2011/07/12		104	%	70 - 130
		1,3-Butadiene	2011/07/12		87	%	70 - 130
		Trichlorofluoromethane (FREON 11)	2011/07/12		102	%	70 - 130
		Trichlorotrifluoroethane	2011/07/12		104	%	70 - 130
		Ethanol	2011/07/12		92	%	70 - 130
		2-propanol	2011/07/12		95	%	70 - 130
		2-Propanone	2011/07/12		94	%	70 - 130
		Methyl Ethyl Ketone (2-Butanone)	2011/07/12		94	%	70 - 130
		Methyl Isobutyl Ketone	2011/07/12		97	%	70 - 130
		Methyl Butyl Ketone (2-Hexanone)	2011/07/12		95	%	70 - 130
		Methyl t-butyl ether (MTBE)	2011/07/12		103	%	70 - 130
		Ethyl Acetate	2011/07/12		102	%	70 - 130
		1,1-Dichloroethylene	2011/07/12		103	%	70 - 130
		cis-1,2-Dichloroethylene	2011/07/12		102	%	70 - 130
		trans-1,2-Dichloroethylene	2011/07/12		106	%	70 - 130
		Methylene Chloride(Dichloromethane)	2011/07/12		96	%	70 - 130
		Chloroform	2011/07/12		104	%	70 - 130
		Carbon Tetrachloride	2011/07/12		105	%	70 - 130
		1,1-Dichloroethane	2011/07/12		106	%	70 - 130
		1,2-Dichloroethane	2011/07/12		103	%	70 - 130
		Ethylene Dibromide	2011/07/12		99	%	70 - 130
		1,1,1-Trichloroethane	2011/07/12		101	%	70 - 130
		1,1,2-Trichloroethane	2011/07/12		102	%	70 - 130
		1,1,2,2-Tetrachloroethane	2011/07/12		94	%	70 - 130
		cis-1,3-Dichloropropene	2011/07/12		104	%	70 - 130
		trans-1,3-Dichloropropene	2011/07/12		100	%	70 - 130
		1,2-Dichloropropane	2011/07/12		103	%	70 - 130
		Bromomethane	2011/07/12		106	%	70 - 130
		Bromoform	2011/07/12		114	%	70 - 130
		Bromodichloromethane	2011/07/12		105	%	70 - 130
		Dibromochloromethane	2011/07/12		112	%	70 - 130
		Heptane	2011/07/12		103	%	70 - 130
		Trichloroethylene	2011/07/12		102	%	70 - 130
		Tetrachloroethylene	2011/07/12		103	%	70 - 130
		Benzene	2011/07/12		102	%	70 - 130
		Toluene	2011/07/12		100	%	70 - 130
		Ethylbenzene	2011/07/12		102	%	70 - 130
		p+m-Xylene	2011/07/12		100	%	70 - 130
		o-Xylene	2011/07/12		101	%	70 - 130
		Styrene	2011/07/12		98	%	70 - 130
		1,3,5-Trimethylbenzene	2011/07/12		90	%	70 - 130
		1,2,4-Trimethylbenzene	2011/07/12		86	%	70 - 130
		4-ethyltoluene	2011/07/12		96	%	70 - 130

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB198961

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2549807 LSY	Spiked Blank	Chlorobenzene	2011/07/12		104	%	70 - 130
		Benzyl chloride	2011/07/12		87	%	70 - 130
		1,3-Dichlorobenzene	2011/07/12		90	%	70 - 130
		1,4-Dichlorobenzene	2011/07/12		90	%	70 - 130
		1,2-Dichlorobenzene	2011/07/12		86	%	70 - 130
		1,2,4-Trichlorobenzene	2011/07/12		118	%	70 - 130
		Hexachlorobutadiene	2011/07/12		114	%	70 - 130
		Hexane	2011/07/12		105	%	70 - 130
		Cyclohexane	2011/07/12		104	%	70 - 130
		Tetrahydrofuran	2011/07/12		103	%	70 - 130
		1,4-Dioxane	2011/07/12		100	%	70 - 130
	Method Blank	Bromochloromethane	2011/07/12		93	%	60 - 140
		D5-Chlorobenzene	2011/07/12		96	%	60 - 140
		Difluorobenzene	2011/07/12		96	%	60 - 140
		2,2,4-Trimethylpentane	2011/07/12	<0.20		ppbv	
		Carbon Disulfide	2011/07/12	<0.50		ppbv	
		Propene	2011/07/12	<0.30		ppbv	
		Vinyl Acetate	2011/07/12	<0.20		ppbv	
		Vinyl Bromide	2011/07/12	<0.20		ppbv	
		Dichlorodifluoromethane (FREON 12)	2011/07/12	<0.20		ppbv	
		1,2-Dichlorotetrafluoroethane	2011/07/12	<0.17		ppbv	
		Chloromethane	2011/07/12	<0.30		ppbv	
		Vinyl Chloride	2011/07/12	<0.18		ppbv	
		Chloroethane	2011/07/12	<0.30		ppbv	
		1,3-Butadiene	2011/07/12	<0.50		ppbv	
		Trichlorofluoromethane (FREON 11)	2011/07/12	<0.20		ppbv	
		Trichlorotrifluoroethane	2011/07/12	<0.15		ppbv	
		Ethanol	2011/07/12	<2.3		ppbv	
		2-propanol	2011/07/12	<3.0		ppbv	
		2-Propanone	2011/07/12	<0.80		ppbv	
		Methyl Ethyl Ketone (2-Butanone)	2011/07/12	<3.0		ppbv	
		Methyl Isobutyl Ketone	2011/07/12	<3.2		ppbv	
		Methyl Butyl Ketone (2-Hexanone)	2011/07/12	<2.0		ppbv	
		Methyl t-butyl ether (MTBE)	2011/07/12	<0.20		ppbv	
		Ethyl Acetate	2011/07/12	<2.2		ppbv	
		1,1-Dichloroethylene	2011/07/12	<0.25		ppbv	
		cis-1,2-Dichloroethylene	2011/07/12	<0.19		ppbv	
		trans-1,2-Dichloroethylene	2011/07/12	<0.20		ppbv	
		Methylene Chloride(Dichloromethane)	2011/07/12	<0.80		ppbv	
		Chloroform	2011/07/12	<0.15		ppbv	
		Carbon Tetrachloride	2011/07/12	<0.30		ppbv	
		1,1-Dichloroethane	2011/07/12	<0.20		ppbv	
		1,2-Dichloroethane	2011/07/12	<0.20		ppbv	
		Ethylene Dibromide	2011/07/12	<0.17		ppbv	
		1,1,1-Trichloroethane	2011/07/12	<0.30		ppbv	
		1,1,2-Trichloroethane	2011/07/12	<0.15		ppbv	
		1,1,2,2-Tetrachloroethane	2011/07/12	<0.20		ppbv	
		cis-1,3-Dichloropropene	2011/07/12	<0.18		ppbv	
		trans-1,3-Dichloropropene	2011/07/12	<0.17		ppbv	
		1,2-Dichloropropane	2011/07/12	<0.40		ppbv	
		Bromomethane	2011/07/12	<0.18		ppbv	
		Bromoform	2011/07/12	<0.20		ppbv	
		Bromodichloromethane	2011/07/12	<0.20		ppbv	
		Dibromochloromethane	2011/07/12	<0.20		ppbv	
		Heptane	2011/07/12	<0.30		ppbv	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB198961

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2549807 LSY	Method Blank	Trichloroethylene	2011/07/12	<0.30		ppbv	
		Tetrachloroethylene	2011/07/12	<0.20		ppbv	
		Benzene	2011/07/12	<0.18		ppbv	
		Toluene	2011/07/12	<0.20		ppbv	
		Ethylbenzene	2011/07/12	<0.20		ppbv	
		p+m-Xylene	2011/07/12	<0.37		ppbv	
		o-Xylene	2011/07/12	<0.20		ppbv	
		Styrene	2011/07/12	<0.20		ppbv	
		1,3,5-Trimethylbenzene	2011/07/12	<0.50		ppbv	
		1,2,4-Trimethylbenzene	2011/07/12	<0.50		ppbv	
		4-ethyltoluene	2011/07/12	<2.2		ppbv	
		Chlorobenzene	2011/07/12	<0.20		ppbv	
		Benzyl chloride	2011/07/12	<1.0		ppbv	
		1,3-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,4-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,2-Dichlorobenzene	2011/07/12	<0.40		ppbv	
		1,2,4-Trichlorobenzene	2011/07/12	<2.0		ppbv	
		Hexachlorobutadiene	2011/07/12	<3.0		ppbv	
		Hexane	2011/07/12	<0.30		ppbv	
		Cyclohexane	2011/07/12	<0.20		ppbv	
		Tetrahydrofuran	2011/07/12	<0.40		ppbv	
		1,4-Dioxane	2011/07/12	<2.0		ppbv	
		Xylene (Total)	2011/07/12	<0.60		ppbv	

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

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

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

Polycyclic Aromatic Hydrocarbons Laboratory Analysis

MAXXAM

Tisch Hi-Vol PUF+ Sample Collection Data Sheet

Client: Lica
 Location: 13-16-62-5 W4M
 Station ID: Lica 33 (Portable)
 Field Sample ID: LICA PUF/PORT/Jul 08, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Jul 07, 2011 @ 9:26 mst
 Removal Date/Time: Jul 11, 2011 @ 9:09 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
08-Jul-11	07/08/2011 0:00	07/09/2011 0:00	24.00

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
06-Jul-11	11-Jul-11	18-Jul-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)
699	229	16.7	330.37

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

Comments: COC# 06741

GB180878 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 08, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 06741

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/07/26****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B1A3362****Received: 2011/07/13, 11:07**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/07/14	2011/07/22	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B1A3362
 Report Date: 2011/07/26

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

Maxxam ID		KD5902	KD5903		
Sampling Date		2011/07/08	2011/07/08		
COC Number		06741	06741		
	Units	LICA PUFF+QFF/CLS/JULY 08,11	LICA PUFF+QFF/PORT/JULY 08,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2550235
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2550235
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2550235
2-Methylanthracene	ug	<0.10	<0.10	0.10	2550235
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2550235
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2550235
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2550235
9,10-Dimethylanthracene	ug	<0.40	<0.40	0.40	2550235
Acenaphthene	ug	<0.050	<0.050	0.050	2550235
Acenaphthylene	ug	<0.050	<0.050	0.050	2550235
Anthracene	ug	<0.050	<0.050	0.050	2550235
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2550235
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2550235
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2550235
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2550235
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2550235
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2550235
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2550235
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2550235
Biphenyl	ug	<0.10	<0.10	0.10	2550235
Chrysene	ug	<0.050	<0.050	0.050	2550235
Coronene	ug	<0.10	<0.10	0.10	2550235
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2550235
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2550235
Fluoranthene	ug	<0.050	<0.050	0.050	2550235
Fluorene	ug	<0.050	<0.050	0.050	2550235
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2550235
m-Terphenyl	ug	<0.10	<0.10	0.10	2550235
Naphthalene	ug	<0.072	<0.072	0.072	2550235
o-Terphenyl	ug	<0.10	<0.10	0.10	2550235
Perylene	ug	<0.10	<0.10	0.10	2550235

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

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

Maxxam ID		KD5902	KD5903		
Sampling Date		2011/07/08	2011/07/08		
COC Number		06741	06741		
	Units	LICA PUFF+QFF/CLS/JULY 08,11	LICA PUFF+QFF/PORT/JULY 08,11	RDL	QC Batch

Phenanthrene	ug	0.134	<0.050	0.050	2550235
p-Terphenyl	ug	<0.10	<0.10	0.10	2550235
Pyrene	ug	<0.050	<0.050	0.050	2550235
Quinoline	ug	<0.40	<0.40	0.40	2550235
Tetralin	ug	<0.10	<0.10	0.10	2550235
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	62	58		2550235
D10-Fluoranthene	%	82	86		2550235
D10-Fluorene (FS)	%	5.0 (1)	4.2 (1)		2550235
D10-Phenanthrene	%	76	80		2550235
D12-Benzo(a)anthracene	%	82	86		2550235
D12-Benzo(a)pyrene	%	76	80		2550235
D12-Benzo(b)fluoranthene	%	80	80		2550235
D12-Benzo(ghi)perylene	%	80	84		2550235
D12-Benzo(k)fluoranthene	%	78	84		2550235
D12-Chrysene	%	80	82		2550235
D12-Indeno(1,2,3-cd)pyrene	%	80	84		2550235
D12-Perylene	%	76	78		2550235
D14-Dibenzo(a,h)anthracene	%	82	88		2550235
D14-Terphenyl (FS)	%	76	32 (1)		2550235
D8-Acenaphthylene	%	64	62		2550235
D8-Naphthalene	%	58	54		2550235

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 #: B1A3362
Report Date: 2011/07/26

GENERAL COMMENTS

PAHMS-F

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

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene 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.

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 KD5902-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample KD5903-01: Low d10-fluorene and d14-terphenyl field spike recovery.

Results relate only to the items tested.

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

Quality Assurance Report
 Maxxam Job Number: GB1A3362

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2550235 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/07/22		76	%	50 - 150
		D10-Fluoranthene	2011/07/22		84	%	50 - 150
		D10-Phenanthrene	2011/07/22		80	%	50 - 150
		D12-Benzo(a)anthracene	2011/07/22		82	%	50 - 150
		D12-Benzo(a)pyrene	2011/07/22		80	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/07/22		78	%	50 - 150
		D12-Benzo(ghi)perylene	2011/07/22		80	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/07/22		80	%	50 - 150
		D12-Chrysene	2011/07/22		80	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/07/22		82	%	50 - 150
		D12-Perylene	2011/07/22		80	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/07/22		82	%	50 - 150
		D8-Acenaphthylene	2011/07/22		74	%	50 - 150
		D8-Naphthalene	2011/07/22		72	%	50 - 150
		Acenaphthene	2011/07/22		72	%	60 - 130
	RPD	Acenaphthene	2011/07/22	3.8		%	50
	Spiked Blank	Acenaphthylene	2011/07/22		72	%	60 - 130
	RPD	Acenaphthylene	2011/07/22	5.1		%	50
	Spiked Blank	Anthracene	2011/07/22		77	%	60 - 130
	RPD	Anthracene	2011/07/22	0.7		%	50
	Spiked Blank	Benzo(a)anthracene	2011/07/22		73	%	60 - 130
	RPD	Benzo(a)anthracene	2011/07/22	7.6		%	50
	Spiked Blank	Benzo(a)pyrene	2011/07/22		64	%	60 - 130
	RPD	Benzo(a)pyrene	2011/07/22	8.2		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/07/22		72	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/07/22	5.1		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/07/22		73	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/07/22	8.2		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/07/22		78	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/07/22	8.9		%	50
	Spiked Blank	Chrysene	2011/07/22		74	%	60 - 130
	RPD	Chrysene	2011/07/22	7.5		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/07/22		73	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/07/22	9.2		%	50
	Spiked Blank	Fluoranthene	2011/07/22		78	%	60 - 130
	RPD	Fluoranthene	2011/07/22	6.2		%	50
	Spiked Blank	Fluorene	2011/07/22		72	%	60 - 130
	RPD	Fluorene	2011/07/22	4.4		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/07/22		74	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/07/22	8.8		%	50
	Spiked Blank	Naphthalene	2011/07/22		73	%	60 - 130
	RPD	Naphthalene	2011/07/22	1.0		%	50
	Spiked Blank	Phenanthrene	2011/07/22		74	%	60 - 130
	RPD	Phenanthrene	2011/07/22	4.6		%	50
	Spiked Blank	Pyrene	2011/07/22		70	%	60 - 130
	RPD	Pyrene	2011/07/22	6.2		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/07/22		78	%	50 - 150
		D10-Fluoranthene	2011/07/22		86	%	50 - 150
		D10-Phenanthrene	2011/07/22		82	%	50 - 150
		D12-Benzo(a)anthracene	2011/07/22		84	%	50 - 150
		D12-Benzo(a)pyrene	2011/07/22		84	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/07/22		80	%	50 - 150
		D12-Benzo(ghi)perylene	2011/07/22		88	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/07/22		82	%	50 - 150
		D12-Chrysene	2011/07/22		82	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A3362

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2550235 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/07/22		88	%	50 - 150
		D12-Perylene	2011/07/22		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/07/22		90	%	50 - 150
		D8-Acenaphthylene	2011/07/22		78	%	50 - 150
		D8-Naphthalene	2011/07/22		76	%	50 - 150
		1-Methylnaphthalene	2011/07/22	<0.10		ug	
		1-Methylphenanthrene	2011/07/22	<0.10		ug	
		2-Chloronaphthalene	2011/07/22	<0.10		ug	
		2-Methylanthracene	2011/07/22	<0.10		ug	
		2-Methylnaphthalene	2011/07/22	<0.10		ug	
		3-Methylcholanthrene	2011/07/22	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/07/22	<0.10		ug	
		9,10-Dimethylanthracene	2011/07/22	<0.40		ug	
		Acenaphthene	2011/07/22	<0.050		ug	
		Acenaphthylene	2011/07/22	<0.050		ug	
		Anthracene	2011/07/22	<0.050		ug	
		Benzo(a)anthracene	2011/07/22	<0.050		ug	
		Benzo(a)fluorene	2011/07/22	<0.10		ug	
		Benzo(a)pyrene	2011/07/22	<0.050		ug	
		Benzo(b)fluoranthene	2011/07/22	<0.050		ug	
		Benzo(b)fluorene	2011/07/22	<0.10		ug	
		Benzo(e)pyrene	2011/07/22	<0.10		ug	
		Benzo(g,h,i)perylene	2011/07/22	<0.050		ug	
		Benzo(k)fluoranthene	2011/07/22	<0.050		ug	
		Biphenyl	2011/07/22	<0.10		ug	
		Chrysene	2011/07/22	<0.050		ug	
		Coronene	2011/07/22	<0.10		ug	
		Dibenz(a,h)anthracene	2011/07/22	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/07/22	<0.20		ug	
		Fluoranthene	2011/07/22	<0.050		ug	
		Fluorene	2011/07/22	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/07/22	<0.050		ug	
		m-Terphenyl	2011/07/22	<0.10		ug	
		Naphthalene	2011/07/22	<0.072		ug	
		o-Terphenyl	2011/07/22	<0.10		ug	
		Perylene	2011/07/22	<0.10		ug	
		Phenanthrene	2011/07/22	<0.050		ug	
		p-Terphenyl	2011/07/22	<0.10		ug	
		Pyrene	2011/07/22	<0.050		ug	
		Quinoline	2011/07/22	<0.40		ug	
		Tetralin	2011/07/22	<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/Jul 14, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jul 13, 2011 @ 8:50 mst
Removal Date/Time: Jul 15, 2011 @ 9:15 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
14-Jul-11	07/14/2011 0:00	07/15/2011 0:00	23.9975

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
08-Jul-11	18-Jul-11	18-Jul-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)
703	229	18.0	330.28

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# 05228

GB180874 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 14, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05228

Attention: Michael BisagaMaxxam Analytics
2608 6A Ave.
Cold Lake, AB
CANADA T9M 2C7**Report Date: 2011/08/05****CERTIFICATE OF ANALYSIS****MAXXAM JOB #: B1A7681****Received: 2011/07/20, 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	2011/07/21	2011/08/04	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B1A7681
 Report Date: 2011/08/05

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

Maxxam ID		KF8209	KF8210		
Sampling Date		2011/07/14	2011/07/14		
COC Number		05228	05228		
	Units	LICA PUFF+QFF/CLS/JULY 14,11	LICA PUFF+QFF/PORT/JULY 14,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2558079
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2558079
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2558079
2-Methylantracene	ug	<0.10	<0.10	0.10	2558079
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2558079
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2558079
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2558079
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2558079
Acenaphthene	ug	<0.050	<0.050	0.050	2558079
Acenaphthylene	ug	<0.050	<0.050	0.050	2558079
Anthracene	ug	<0.050	<0.050	0.050	2558079
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2558079
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2558079
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2558079
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2558079
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2558079
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2558079
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2558079
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2558079
Biphenyl	ug	<0.10	<0.10	0.10	2558079
Chrysene	ug	<0.050	<0.050	0.050	2558079
Coronene	ug	<0.10	<0.10	0.10	2558079
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2558079
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2558079
Fluoranthene	ug	0.062	<0.050	0.050	2558079
Fluorene	ug	<0.050	<0.050	0.050	2558079
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2558079
m-Terphenyl	ug	<0.10	<0.10	0.10	2558079
Naphthalene	ug	<0.072	<0.072	0.072	2558079
o-Terphenyl	ug	<0.10	<0.10	0.10	2558079
Perylene	ug	<0.10	<0.10	0.10	2558079

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1A7681
 Report Date: 2011/08/05

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

Maxxam ID		KF8209	KF8210		
Sampling Date		2011/07/14	2011/07/14		
COC Number		05228	05228		
	Units	LICA PUFF+QFF/CLS/JULY 14,11	LICA PUFF+QFF/PORT/JULY 14,11	RDL	QC Batch

Phenanthrene	ug	0.204	0.088	0.050	2558079
p-Terphenyl	ug	<0.10	<0.10	0.10	2558079
Pyrene	ug	<0.050	<0.050	0.050	2558079
Quinoline	ug	<0.40	<0.40	0.40	2558079
Tetralin	ug	<0.10	<0.10	0.10	2558079
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	60	62		2558079
D10-Fluoranthene	%	84	80		2558079
D10-Fluorene (FS)	%	7.6 (1)	7.6 (1)		2558079
D10-Phenanthrene	%	80	76		2558079
D12-Benzo(a)anthracene	%	84	84		2558079
D12-Benzo(a)pyrene	%	72	78		2558079
D12-Benzo(b)fluoranthene	%	76	78		2558079
D12-Benzo(ghi)perylene	%	80	82		2558079
D12-Benzo(k)fluoranthene	%	78	80		2558079
D12-Chrysene	%	76	74		2558079
D12-Indeno(1,2,3-cd)pyrene	%	82	84		2558079
D12-Perylene	%	74	76		2558079
D14-Dibenzo(a,h)anthracene	%	82	84		2558079
D14-Terphenyl (FS)	%	72	79		2558079
D8-Acenaphthylene	%	64	64		2558079
D8-Naphthalene	%	56	58		2558079

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 #: B1A7681
Report Date: 2011/08/05

GENERAL COMMENTS

PAHMS-F

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

Mspike native matrix degraded. The recovery of natives in spike and spike:dup was recalculated by comparing with that of natives in mspike.

Pyrene is statistically out of control at 92% recovery in the spike and 96% recovery in spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Chrysene is statistically out of control at 89% recovery in the spike and 93% recovery in spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Phenanthrene is statistically out of control at 95% recovery in spike:dup. Acceptance criteria met for both spike and dup. Data reported and flagged.

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene 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.

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 KF8209-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample KF8210-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1A7681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2558079 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/08/04		54	%	50 - 150
		D10-Fluoranthene	2011/08/04		76	%	50 - 150
		D10-Phenanthrene	2011/08/04		70	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/04		82	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/04		76	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/04		72	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/04		78	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/04		74	%	50 - 150
		D12-Chrysene	2011/08/04		74	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/08/04		78	%	50 - 150
		D12-Perylene	2011/08/04		76	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/04		80	%	50 - 150
		D8-Acenaphthylene	2011/08/04		58	%	50 - 150
		D8-Naphthalene	2011/08/04		52	%	50 - 150
		Acenaphthene	2011/08/04		67	%	60 - 130
	RPD	Acenaphthene	2011/08/04	16.7		%	50
	Spiked Blank	Acenaphthylene	2011/08/04		65	%	60 - 130
	RPD	Acenaphthylene	2011/08/04	19.0		%	50
	Spiked Blank	Anthracene	2011/08/04		83	%	60 - 130
	RPD	Anthracene	2011/08/04	7.0		%	50
	Spiked Blank	Benzo(a)anthracene	2011/08/04		92	%	60 - 130
	RPD	Benzo(a)anthracene	2011/08/04	4.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/08/04		93	%	60 - 130
	RPD	Benzo(a)pyrene	2011/08/04	8.2		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/08/04		91	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/08/04	5.5		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/08/04		91	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/08/04	5.2		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/08/04		94	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/08/04	2.1		%	50
	Spiked Blank	Chrysene	2011/08/04		89	%	60 - 130
	RPD	Chrysene	2011/08/04	4.2		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/08/04		92	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/08/04	1.8		%	50
	Spiked Blank	Fluoranthene	2011/08/04		92	%	60 - 130
	RPD	Fluoranthene	2011/08/04	5.7		%	50
	Spiked Blank	Fluorene	2011/08/04		74	%	60 - 130
	RPD	Fluorene	2011/08/04	12.2		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/08/04		91	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/08/04	5.1		%	50
	Spiked Blank	Naphthalene	2011/08/04		63	%	60 - 130
	RPD	Naphthalene	2011/08/04	24.9		%	50
	Spiked Blank	Phenanthrene	2011/08/04		86	%	60 - 130
	RPD	Phenanthrene	2011/08/04	10.2		%	50
	Spiked Blank	Pyrene	2011/08/04		92	%	60 - 130
	RPD	Pyrene	2011/08/04	4.5		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/08/04		70	%	50 - 150
		D10-Fluoranthene	2011/08/04		80	%	50 - 150
		D10-Phenanthrene	2011/08/04		78	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/04		84	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/04		78	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/04		78	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/04		80	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/04		74	%	50 - 150
		D12-Chrysene	2011/08/04		78	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1A7681

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2558079 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/08/04		80	%	50 - 150
		D12-Perylene	2011/08/04		80	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/04		80	%	50 - 150
		D8-Acenaphthylene	2011/08/04		74	%	50 - 150
		D8-Naphthalene	2011/08/04		68	%	50 - 150
		1-Methylnaphthalene	2011/08/04	<0.10		ug	
		1-Methylphenanthrene	2011/08/04	<0.10		ug	
		2-Chloronaphthalene	2011/08/04	<0.10		ug	
		2-Methylanthracene	2011/08/04	<0.10		ug	
		2-Methylnaphthalene	2011/08/04	<0.10		ug	
		3-Methylcholanthrene	2011/08/04	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/08/04	<0.10		ug	
		9,10-Dimethylanthracene	2011/08/04	<0.40		ug	
		Acenaphthene	2011/08/04	<0.050		ug	
		Acenaphthylene	2011/08/04	<0.050		ug	
		Anthracene	2011/08/04	<0.050		ug	
		Benzo(a)anthracene	2011/08/04	<0.050		ug	
		Benzo(a)fluorene	2011/08/04	<0.10		ug	
		Benzo(a)pyrene	2011/08/04	<0.050		ug	
		Benzo(b)fluoranthene	2011/08/04	<0.050		ug	
		Benzo(b)fluorene	2011/08/04	<0.10		ug	
		Benzo(e)pyrene	2011/08/04	<0.10		ug	
		Benzo(g,h,i)perylene	2011/08/04	<0.050		ug	
		Benzo(k)fluoranthene	2011/08/04	<0.050		ug	
		Biphenyl	2011/08/04	<0.10		ug	
		Chrysene	2011/08/04	<0.050		ug	
		Coronene	2011/08/04	<0.10		ug	
		Dibenz(a,h)anthracene	2011/08/04	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/08/04	<0.20		ug	
		Fluoranthene	2011/08/04	<0.050		ug	
		Fluorene	2011/08/04	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/08/04	<0.050		ug	
		m-Terphenyl	2011/08/04	<0.10		ug	
		Naphthalene	2011/08/04	<0.072		ug	
		o-Terphenyl	2011/08/04	<0.10		ug	
		Perylene	2011/08/04	<0.10		ug	
		Phenanthrene	2011/08/04	<0.050		ug	
		p-Terphenyl	2011/08/04	<0.10		ug	
		Pyrene	2011/08/04	<0.050		ug	
		Quinoline	2011/08/04	<0.40		ug	
		Tetralin	2011/08/04	<0.10		ug	

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

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/Jul 20, 11

Puf+ s/n: 100-1015
Motor s/n: 1139
Installation Date/Time: Jul 18, 2011 @ 10:22 mst
Removal Date/Time: Jul 21, 2011 @ 10:24 mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
20-Jul-11	07/20/2011 0:00	07/21/2011 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
14-Jul-11	21-Jul-11	27-Jul-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)
703	229	16.0	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# 05092

GB199578 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 20, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05092

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

Report Date: 2011/08/15

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1B0338****Received: 2011/07/23, 10:55**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/07/27	2011/08/13	BRL SOP-00201	CARB429(ARBM1,M2)mod

Encryption Key

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

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

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B1B0338
 Report Date: 2011/08/15

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

Maxxam ID		KH3447	KH3448		
Sampling Date		2011/07/20	2011/07/20		
COC Number		05092	05092		
	Units	LICA PUFF+QFF/CLS/JULY 20,11	LICA PUFF+QFF/PORT/JULY 20,11	RDL	QC Batch

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2563437
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2563437
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2563437
2-Methylantracene	ug	<0.10	<0.10	0.10	2563437
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2563437
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2563437
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2563437
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2563437
Acenaphthene	ug	<0.050	<0.050	0.050	2563437
Acenaphthylene	ug	<0.050	<0.050	0.050	2563437
Anthracene	ug	<0.050	<0.050	0.050	2563437
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2563437
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2563437
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2563437
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2563437
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2563437
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2563437
Benzo(g,h,i)perylene	ug	<0.050	<0.050	0.050	2563437
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2563437
Biphenyl	ug	<0.10	<0.10	0.10	2563437
Chrysene	ug	<0.050	<0.050	0.050	2563437
Coronene	ug	<0.10	<0.10	0.10	2563437
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2563437
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2563437
Fluoranthene	ug	<0.050	<0.050	0.050	2563437
Fluorene	ug	0.050	<0.050	0.050	2563437
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2563437
m-Terphenyl	ug	<0.10	<0.10	0.10	2563437
Naphthalene	ug	<0.072	<0.072	0.072	2563437
o-Terphenyl	ug	<0.10	<0.10	0.10	2563437
Perylene	ug	<0.10	<0.10	0.10	2563437

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1B0338
 Report Date: 2011/08/15

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

Maxxam ID		KH3447	KH3448		
Sampling Date		2011/07/20	2011/07/20		
COC Number		05092	05092		
	Units	LICA PUFF+QFF/CLS/JULY 20,11	LICA PUFF+QFF/PORT/JULY 20,11	RDL	QC Batch

Phenanthrene	ug	0.294	0.102	0.050	2563437
p-Terphenyl	ug	<0.10	<0.10	0.10	2563437
Pyrene	ug	<0.050	<0.050	0.050	2563437
Quinoline	ug	<0.40	<0.40	0.40	2563437
Tetralin	ug	<0.10	<0.10	0.10	2563437
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	74	70		2563437
D10-Fluoranthene	%	100	102		2563437
D10-Fluorene (FS)	%	15 (1)	16 (1)		2563437
D10-Phenanthrene	%	90	90		2563437
D12-Benzo(a)anthracene	%	90	94		2563437
D12-Benzo(a)pyrene	%	84	84		2563437
D12-Benzo(b)fluoranthene	%	80	82		2563437
D12-Benzo(ghi)perylene	%	88	86		2563437
D12-Benzo(k)fluoranthene	%	74	76		2563437
D12-Chrysene	%	74	76		2563437
D12-Indeno(1,2,3-cd)pyrene	%	90	88		2563437
D12-Perylene	%	80	80		2563437
D14-Dibenzo(a,h)anthracene	%	92	90		2563437
D14-Terphenyl (FS)	%	98	101		2563437
D8-Acenaphthylene	%	82	80		2563437
D8-Naphthalene	%	70	64		2563437

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 #: B1B0338
Report Date: 2011/08/15

GENERAL COMMENTS

PAHMS-F

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

Not calibrated for benzo(b)anthracene, picene, dibenzo(a,c)anthracene 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.

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 KH3447-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample KH3448-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1B0338

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2563437 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/08/13		70	%	50 - 150
		D10-Fluoranthene	2011/08/13		92	%	50 - 150
		D10-Phenanthrene	2011/08/13		82	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/13		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/13		78	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/13		78	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/13		78	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/13		74	%	50 - 150
		D12-Chrysene	2011/08/13		80	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/08/13		78	%	50 - 150
		D12-Perylene	2011/08/13		76	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/13		80	%	50 - 150
		D8-Acenaphthylene	2011/08/13		74	%	50 - 150
		D8-Naphthalene	2011/08/13		64	%	50 - 150
		Acenaphthene	2011/08/13		71	%	60 - 130
	RPD	Acenaphthene	2011/08/13	11.9		%	50
	Spiked Blank	Acenaphthylene	2011/08/13		72	%	60 - 130
	RPD	Acenaphthylene	2011/08/13	14.2		%	50
	Spiked Blank	Anthracene	2011/08/13		74	%	60 - 130
	RPD	Anthracene	2011/08/13	14.7		%	50
	Spiked Blank	Benzo(a)anthracene	2011/08/13		75	%	60 - 130
	RPD	Benzo(a)anthracene	2011/08/13	4.9		%	50
	Spiked Blank	Benzo(a)pyrene	2011/08/13		61	%	60 - 130
	RPD	Benzo(a)pyrene	2011/08/13	11.9		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/08/13		67	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/08/13	10.9		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/08/13		65	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/08/13	11.9		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/08/13		75	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/08/13	1.3		%	50
	Spiked Blank	Chrysene	2011/08/13		75	%	60 - 130
	RPD	Chrysene	2011/08/13	1.4		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/08/13		68	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/08/13	13.5		%	50
	Spiked Blank	Fluoranthene	2011/08/13		84	%	60 - 130
	RPD	Fluoranthene	2011/08/13	12.0		%	50
	Spiked Blank	Fluorene	2011/08/13		75	%	60 - 130
	RPD	Fluorene	2011/08/13	11.7		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/08/13		67	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/08/13	12.2		%	50
	Spiked Blank	Naphthalene	2011/08/13		66	%	60 - 130
	RPD	Naphthalene	2011/08/13	11.1		%	50
	Spiked Blank	Phenanthrene	2011/08/13		76	%	60 - 130
	RPD	Phenanthrene	2011/08/13	11.2		%	50
	Spiked Blank	Pyrene	2011/08/13		78	%	60 - 130
	RPD	Pyrene	2011/08/13	12.1		%	50
	Method Blank	D10-2-Methylnaphthalene	2011/08/13		66	%	50 - 150
		D10-Fluoranthene	2011/08/13		98	%	50 - 150
		D10-Phenanthrene	2011/08/13		88	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/13		92	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/13		84	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/13		80	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/13		84	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/13		78	%	50 - 150
		D12-Chrysene	2011/08/13		78	%	50 - 150

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B0338

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2563437 JIW	Method Blank	D12-Indeno(1,2,3-cd)pyrene	2011/08/13		86	%	50 - 150
		D12-Perylene	2011/08/13		82	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/13		88	%	50 - 150
		D8-Acenaphthylene	2011/08/13		78	%	50 - 150
		D8-Naphthalene	2011/08/13		60	%	50 - 150
		1-Methylnaphthalene	2011/08/13	<0.10		ug	
		1-Methylphenanthrene	2011/08/13	<0.10		ug	
		2-Chloronaphthalene	2011/08/13	<0.10		ug	
		2-Methylanthracene	2011/08/13	<0.10		ug	
		2-Methylnaphthalene	2011/08/13	<0.10		ug	
		3-Methylcholanthrene	2011/08/13	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/08/13	<0.10		ug	
		9,10-Dimethylanthracene	2011/08/13	<0.40		ug	
		Acenaphthene	2011/08/13	<0.050		ug	
		Acenaphthylene	2011/08/13	<0.050		ug	
		Anthracene	2011/08/13	<0.050		ug	
		Benzo(a)anthracene	2011/08/13	<0.050		ug	
		Benzo(a)fluorene	2011/08/13	<0.10		ug	
		Benzo(a)pyrene	2011/08/13	<0.050		ug	
		Benzo(b)fluoranthene	2011/08/13	<0.050		ug	
		Benzo(b)fluorene	2011/08/13	<0.10		ug	
		Benzo(e)pyrene	2011/08/13	<0.10		ug	
		Benzo(g,h,i)perylene	2011/08/13	<0.050		ug	
		Benzo(k)fluoranthene	2011/08/13	<0.050		ug	
		Biphenyl	2011/08/13	<0.10		ug	
		Chrysene	2011/08/13	<0.050		ug	
		Coronene	2011/08/13	<0.10		ug	
		Dibenz(a,h)anthracene	2011/08/13	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/08/13	<0.20		ug	
		Fluoranthene	2011/08/13	<0.050		ug	
		Fluorene	2011/08/13	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/08/13	<0.050		ug	
		m-Terphenyl	2011/08/13	<0.10		ug	
		Naphthalene	2011/08/13	<0.072		ug	
		o-Terphenyl	2011/08/13	<0.10		ug	
		Perylene	2011/08/13	<0.10		ug	
		Phenanthrene	2011/08/13	<0.050		ug	
		p-Terphenyl	2011/08/13	<0.10		ug	
		Pyrene	2011/08/13	<0.050		ug	
		Quinoline	2011/08/13	<0.40		ug	
		Tetralin	2011/08/13	<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/Jul 26, 11

Puf+ s/n: 100-1015
 Motor s/n: 1139
 Installation Date/Time: Jul 25, 2011 @ 09:38 mst
 Removal Date/Time: Jul 27, 2011 @ 08: 50mst

Date and Time Information			
Sample Date	Start Time (MST)	End Time (MST)	Elapsed Time (Hours)
26-Jul-11	07/26/2011 0:00	07/27/2011 0:00	24.0000

PUF and QFF Information			
Date Received	Date Shipped	Puf Expiration Date	QFF Prep Date
21-Jul-11	27-Jul-11	06-Aug-11	????

Set Flow Rate (slpm): 230

Date of Last Calibration: 29-Mar-10

Sampling Data			
Average Pressure(mmHg)	AverageFlow (Qstd slpm)	Average Temperature (C)	Volume (Vstd m ³)
704	229	16.1	330.34

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

Comments: COC# 05386

GB1A4639 Puff #2

Ran with a 102mm Quartz Fiber Filter - Sample ID - LICA QFF/PORT/Jul 26, 11

Technician Signiture: Ting Xu

Your C.O.C. #: 05386

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

Report Date: 2011/08/15

CERTIFICATE OF ANALYSIS**MAXXAM JOB #: B1B3933****Received: 2011/07/29, 09:09**

Sample Matrix: PUF AND FILTER

Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PAH's in Air (CARB429mod)	2	2011/08/02	2011/08/13	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 #: B1B3933
 Report Date: 2011/08/15

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

Maxxam ID		KJ0931	KJ0932		
Sampling Date		2011/07/26	2011/07/26		
COC Number		05386	05386		
	Units	LICA	LICA	RDL	QC Batch
		PUFF/QFF/CLS/JULY26,11	PUFF/QFF/PORT/JULY26,11		

Semivolatile Organics					
1-Methylnaphthalene	ug	<0.10	<0.10	0.10	2568572
1-Methylphenanthrene	ug	<0.10	<0.10	0.10	2568572
2-Chloronaphthalene	ug	<0.10	<0.10	0.10	2568572
2-Methylantracene	ug	<0.10	<0.10	0.10	2568572
2-Methylnaphthalene	ug	<0.10	<0.10	0.10	2568572
3-Methylcholanthrene	ug	<2.0	<2.0	2.0	2568572
7,12-Dimethylbenzo(a)anthracene	ug	<0.10	<0.10	0.10	2568572
9,10-Dimethylantracene	ug	<0.40	<0.40	0.40	2568572
Acenaphthene	ug	<0.050	<0.050	0.050	2568572
Acenaphthylene	ug	<0.050	<0.050	0.050	2568572
Anthracene	ug	<0.050	<0.050	0.050	2568572
Benzo(a)anthracene	ug	<0.050	<0.050	0.050	2568572
Benzo(a)fluorene	ug	<0.10	<0.10	0.10	2568572
Benzo(a)pyrene	ug	<0.050	<0.050	0.050	2568572
Benzo(b)fluoranthene	ug	<0.050	<0.050	0.050	2568572
Benzo(b)fluorene	ug	<0.10	<0.10	0.10	2568572
Benzo(e)pyrene	ug	<0.10	<0.10	0.10	2568572
Benzo(g,h,i)perylene	ug	<0.050	0.052	0.050	2568572
Benzo(k)fluoranthene	ug	<0.050	<0.050	0.050	2568572
Biphenyl	ug	<0.10	<0.10	0.10	2568572
Chrysene	ug	<0.050	<0.050	0.050	2568572
Coronene	ug	<0.10	<0.10	0.10	2568572
Dibenz(a,h)anthracene	ug	<0.050	<0.050	0.050	2568572
Dibenzo(a,e)pyrene	ug	<0.20	<0.20	0.20	2568572
Fluoranthene	ug	0.060	<0.050	0.050	2568572
Fluorene	ug	0.076	<0.050	0.050	2568572
Indeno(1,2,3-cd)pyrene	ug	<0.050	<0.050	0.050	2568572
m-Terphenyl	ug	<0.10	<0.10	0.10	2568572
Naphthalene	ug	<0.072	<0.072	0.072	2568572
o-Terphenyl	ug	<0.10	<0.10	0.10	2568572
Perylene	ug	<0.10	<0.10	0.10	2568572
Phenanthrene	ug	0.518	0.162	0.050	2568572

 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B1B3933
 Report Date: 2011/08/15

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

Maxxam ID		KJ0931	KJ0932		
Sampling Date		2011/07/26	2011/07/26		
COC Number		05386	05386		
	Units	LICA	LICA	RDL	QC Batch
		PUFF/QFF/CLS/JULY26,11	PUFF/QFF/PORT/JULY26,11		

p-Terphenyl	ug	<0.10	<0.10	0.10	2568572
Pyrene	ug	<0.050	<0.050	0.050	2568572
Quinoline	ug	<0.40	<0.40	0.40	2568572
Tetralin	ug	<0.10	<0.10	0.10	2568572
Surrogate Recovery (%)					
D10-2-Methylnaphthalene	%	80	82		2568572
D10-Fluoranthene	%	98	106		2568572
D10-Fluorene (FS)	%	13 (1)	15 (1)		2568572
D10-Phenanthrene	%	92	96		2568572
D12-Benzo(a)anthracene	%	94	98		2568572
D12-Benzo(a)pyrene	%	86	88		2568572
D12-Benzo(b)fluoranthene	%	82	84		2568572
D12-Benzo(ghi)perylene	%	86	88		2568572
D12-Benzo(k)fluoranthene	%	76	80		2568572
D12-Chrysene	%	78	82		2568572
D12-Indeno(1,2,3-cd)pyrene	%	88	90		2568572
D12-Perylene	%	82	86		2568572
D14-Dibenzo(a,h)anthracene	%	90	92		2568572
D14-Terphenyl (FS)	%	94	103		2568572
D8-Acenaphthylene	%	88	92		2568572
D8-Naphthalene	%	76	78		2568572

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 #: B1B3933
 Report Date: 2011/08/15

Test Summary

Maxxam ID	KJ0931	Collected	2011/07/26
Sample ID	LICA PUFF/QFF/CLS/JULY26,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/07/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2568572	2011/08/02	2011/08/13	JIE WU

Maxxam ID	KJ0932	Collected	2011/07/26
Sample ID	LICA PUFF/QFF/PORT/JULY26,11	Shipped	
Matrix	PUF AND FILTER	Received	2011/07/29

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH's in Air (CARB429mod)	GC/MS	2568572	2011/08/02	2011/08/13	JIE WU

Maxxam Job #: B1B3933
Report Date: 2011/08/15

GENERAL COMMENTS

PAHMS-F

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

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.

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 KJ0931-01: Low d10-fluorene field spike recovery. Suspect sample matrix as cause due to acceptable recovery of d14-terphenyl field spike.

Sample KJ0932-01: 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. #:
 Site Location:

Quality Assurance Report
 Maxxam Job Number: GB1B3933

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2568572 JIW	Spiked Blank	D10-2-Methylnaphthalene	2011/08/13		84	%	50 - 150
		D10-Fluoranthene	2011/08/13		94	%	50 - 150
		D10-Phenanthrene	2011/08/13		88	%	50 - 150
		D12-Benzo(a)anthracene	2011/08/13		88	%	50 - 150
		D12-Benzo(a)pyrene	2011/08/13		84	%	50 - 150
		D12-Benzo(b)fluoranthene	2011/08/13		82	%	50 - 150
		D12-Benzo(ghi)perylene	2011/08/13		88	%	50 - 150
		D12-Benzo(k)fluoranthene	2011/08/13		80	%	50 - 150
		D12-Chrysene	2011/08/13		82	%	50 - 150
		D12-Indeno(1,2,3-cd)pyrene	2011/08/13		90	%	50 - 150
		D12-Perylene	2011/08/13		82	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/13		90	%	50 - 150
		D8-Acenaphthylene	2011/08/13		86	%	50 - 150
		D8-Naphthalene	2011/08/13		80	%	50 - 150
	RPD	Acenaphthene	2011/08/13		80	%	60 - 130
	RPD	Acenaphthene	2011/08/13	3.1		%	50
	Spiked Blank	Acenaphthylene	2011/08/13		82	%	60 - 130
	RPD	Acenaphthylene	2011/08/13	4.2		%	50
	Spiked Blank	Anthracene	2011/08/13		79	%	60 - 130
	RPD	Anthracene	2011/08/13	6.1		%	50
	Spiked Blank	Benzo(a)anthracene	2011/08/13		76	%	60 - 130
	RPD	Benzo(a)anthracene	2011/08/13	3.2		%	50
	Spiked Blank	Benzo(a)pyrene	2011/08/13		68	%	60 - 130
	RPD	Benzo(a)pyrene	2011/08/13	3.4		%	50
	Spiked Blank	Benzo(b)fluoranthene	2011/08/13		74	%	60 - 130
	RPD	Benzo(b)fluoranthene	2011/08/13	6.3		%	50
	Spiked Blank	Benzo(g,h,i)perylene	2011/08/13		74	%	60 - 130
	RPD	Benzo(g,h,i)perylene	2011/08/13	0.3		%	50
	Spiked Blank	Benzo(k)fluoranthene	2011/08/13		74	%	60 - 130
	RPD	Benzo(k)fluoranthene	2011/08/13	5.9		%	50
	Spiked Blank	Chrysene	2011/08/13		76	%	60 - 130
	RPD	Chrysene	2011/08/13	2.0		%	50
	Spiked Blank	Dibenz(a,h)anthracene	2011/08/13		77	%	60 - 130
	RPD	Dibenz(a,h)anthracene	2011/08/13	0.3		%	50
	Spiked Blank	Fluoranthene	2011/08/13		85	%	60 - 130
	RPD	Fluoranthene	2011/08/13	6.8		%	50
	Spiked Blank	Fluorene	2011/08/13		81	%	60 - 130
	RPD	Fluorene	2011/08/13	3.6		%	50
	Spiked Blank	Indeno(1,2,3-cd)pyrene	2011/08/13		76	%	60 - 130
	RPD	Indeno(1,2,3-cd)pyrene	2011/08/13	1		%	50
Spiked Blank	Naphthalene	2011/08/13		84	%	60 - 130	
RPD	Naphthalene	2011/08/13	0.3		%	50	
Spiked Blank	Phenanthrene	2011/08/13		78	%	60 - 130	
RPD	Phenanthrene	2011/08/13	6.5		%	50	
Spiked Blank	Pyrene	2011/08/13		79	%	60 - 130	
RPD	Pyrene	2011/08/13	5.6		%	50	
Method Blank	D10-2-Methylnaphthalene	2011/08/13		86	%	50 - 150	
	D10-Fluoranthene	2011/08/13		94	%	50 - 150	
	D10-Phenanthrene	2011/08/13		88	%	50 - 150	
	D12-Benzo(a)anthracene	2011/08/13		90	%	50 - 150	
	D12-Benzo(a)pyrene	2011/08/13		86	%	50 - 150	
	D12-Benzo(b)fluoranthene	2011/08/13		84	%	50 - 150	
	D12-Benzo(ghi)perylene	2011/08/13		88	%	50 - 150	
	D12-Benzo(k)fluoranthene	2011/08/13		80	%	50 - 150	
	D12-Chrysene	2011/08/13		82	%	50 - 150	

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

Quality Assurance Report (Continued)

Maxxam Job Number: GB1B3933

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2568572	JIW	Method Blank					
		D12-Indeno(1,2,3-cd)pyrene	2011/08/13		90	%	50 - 150
		D12-Perylene	2011/08/13		84	%	50 - 150
		D14-Dibenzo(a,h)anthracene	2011/08/13		92	%	50 - 150
		D8-Acenaphthylene	2011/08/13		90	%	50 - 150
		D8-Naphthalene	2011/08/13		82	%	50 - 150
		1-Methylnaphthalene	2011/08/13	<0.10		ug	
		1-Methylphenanthrene	2011/08/13	<0.10		ug	
		2-Chloronaphthalene	2011/08/13	<0.10		ug	
		2-Methylanthracene	2011/08/13	<0.10		ug	
		2-Methylnaphthalene	2011/08/13	<0.10		ug	
		3-Methylcholanthrene	2011/08/13	<2.0		ug	
		7,12-Dimethylbenzo(a)anthracene	2011/08/13	<0.10		ug	
		9,10-Dimethylanthracene	2011/08/13	<0.40		ug	
		Acenaphthene	2011/08/13	<0.050		ug	
		Acenaphthylene	2011/08/13	<0.050		ug	
		Anthracene	2011/08/13	<0.050		ug	
		Benzo(a)anthracene	2011/08/13	<0.050		ug	
		Benzo(a)fluorene	2011/08/13	<0.10		ug	
		Benzo(a)pyrene	2011/08/13	<0.050		ug	
		Benzo(b)fluoranthene	2011/08/13	<0.050		ug	
		Benzo(b)fluorene	2011/08/13	<0.10		ug	
		Benzo(e)pyrene	2011/08/13	<0.10		ug	
		Benzo(g,h,i)perylene	2011/08/13	<0.050		ug	
		Benzo(k)fluoranthene	2011/08/13	<0.050		ug	
		Biphenyl	2011/08/13	<0.10		ug	
		Chrysene	2011/08/13	<0.050		ug	
		Coronene	2011/08/13	<0.10		ug	
		Dibenz(a,h)anthracene	2011/08/13	<0.050		ug	
		Dibenzo(a,e)pyrene	2011/08/13	<0.20		ug	
		Fluoranthene	2011/08/13	<0.050		ug	
		Fluorene	2011/08/13	<0.050		ug	
		Indeno(1,2,3-cd)pyrene	2011/08/13	<0.050		ug	
		m-Terphenyl	2011/08/13	<0.10		ug	
		Naphthalene	2011/08/13	0.128, RDL=0.072		ug	
		o-Terphenyl	2011/08/13	<0.10		ug	
		Perylene	2011/08/13	<0.10		ug	
		Phenanthrene	2011/08/13	<0.050		ug	
		p-Terphenyl	2011/08/13	<0.10		ug	
		Pyrene	2011/08/13	<0.050		ug	
		Quinoline	2011/08/13	<0.40		ug	
		Tetralin	2011/08/13	<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
July 2011

Prepared By:



August 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: July 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 – July 2011

LICA ST. LINA SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO2 (PPB)	172	48	0	0	0.05	2	8	10	18.3	270(W)	0.7	8	100.0
H2S (PPB)	10	3	0	0	0.15	2	8	1	4.2	327(NW)	0.9	7	99.9
THC (PPM)	-	-	-	-	2.05	5.5	26	13	4.1	295(WNW)	2.2	VAR	99.9
OZONE (PPB)	82	-	0	-	22.5	44	3	13	18.3	204(SSW)	35.0	3	100.0
NOx (PPB)	-	-	-	-	1.22	15	21	15	8.8	296(WNW)	2.1	5	99.9
NO (PPB)	-	-	-	-	0.27	5	21	15	8.8	296(WNW)	0.7	5, 30	99.9
NO ₂ (PPB)	159	-	0	-	0.90	10	21	15	8.8	296(WNW)	1.4	5	99.9
PM2.5 (ug/m3)	-	30	-	0	4.28	18.2	7	12	11.7	246(WSW)	7.7	14	99.3
TEMPERATURE (DEGREE C)	-	-	-	-	16.58	27.4	18	15	12.6	339(NNW)	20.7	25	100.0
BP (MILLIBAR)	-	-	-	-	929	940	6, 11	VAR	VAR	VAR	938.6	11	100.0
RH (%)	-	-	-	-	70.21	92	VAR	VAR	VAR	VAR	87.5	22	100.0
PRECIPITATION (MM)	-	-	-	-	0.14	9.4	9	16	4.3	29(NNE)	20.6	26	100.0
VECTOR WS (KPH)	-	-	-	-	9.09	22.1	8	12	-	271(W)	10.4	5	100.0
VECTOR WD (DEGREES)	-	-	-	-	161(SSE)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

General Monthly Summary

Equipment Operation

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

AQM STATION – LICA – St. Lina

Sulphur Dioxide (PPB)

Analyzer make / model - API 100E, S/N: 468

The analyzer was working well throughout the month. The monthly calibration was performed on July 6th. The inlet filter was changed before the monthly calibration was started. Seven hours of maximum concentration were invalidated this month due to power failures. Data was corrected using daily zero information.

Hydrogen Sulphide (PPB)

Analyzer make / model - API 101E, S/N: 510

The analyzer was working well throughout the month. The monthly calibration was performed on July 5th. The inlet filter was changed before the monthly calibration was started. Seven hours of maximum concentration were invalidated this month due to power failures. Data was corrected using daily zero information.

Total HydroCarbon (PPM)

Analyzer make / model –TECO 51C, S/N: 77021-384

The monthly calibration was performed on July 7th. The monthly calibration was performed on July 6th. The inlet filter was changed before the monthly calibration was started. One maximum hourly concentration went above the full scale on July 26th at hour of 13; the real concentration may be higher than the recorded reading. Seven hours of maximum concentration were invalidated this month due to power failures. 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 monthly calibration was performed on July 6th. The inlet filter was changed before the monthly calibration was started. Seven hours of maximum concentration were invalidated this month due to power failures. 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 monthly calibration was performed on July 5th. The inlet filter was changed before the monthly calibration was started. Seven hours of maximum concentration were invalidated this month due to power failures. 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 July 6th. 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. Five hours of data were invalidated as the data were above –3 ug/m³.

Temperature (Degree C)

Analyzer make / model – Met One 060

No operational issue was observed during the month.

General Monthly Summary

AQM STATION – LICA – St. Lina

Barometric Pressure (Millibar)

Analyzer make / model - Met One 092

No operational issue was observed during this month.

Relative Humidity (%)

Analyzer make / model - Met One 083

No operational issue was observed during this month.

Precipitation (MM)

Analyzer make / model - Met One 387

No operational issue was observed during this month.

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

System make / model – Met 50.5, S/N: H12635

The wind system is reported as vector wind speed and vector wind direction. Seven hours of hourly data for the maximum wind speed were invalidated due to power failures. Furthermore, three hours of hourly data for the maximum wind speed were invalidated because the readings went above the full scale.

Datalogger

System make / model - ESC 8832, S/N: AO717

Software make/version - ESC v 5.51a

The station is connected to a modem to allow for daily polling of the station.

General Monthly Summary

AQM STATION – LICA – St. Lina

Trailer

No issue was observed this month. The manifold was cleaned on July 6th.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. All hours of AQI values recorded in July 2011 were within the Good range. The highest hourly concentration of Ozone was 44 ppb and an AQI value of 22, on July 3rd, hour of 13. The highest hourly AQI value for PM2.5 was 12, on July 6th, hour of 21 and on July 14th, hour of 13.

Continuous Monitoring

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JULY 2011

AIR QUALITY INDEX (AQI)

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

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%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	0	0.0%
GOOD (1-25)	683	91.8%	22	VAR	3	12	1.6%	12	21, 13	6, 14	0	0.0%	-	-	-	0	0.0%	-	-	-	695	93.4%
OVERALL	519	91.8%	-	-	-	167	1.6%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	744	100.0%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49	6.6%

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

SULPHUR DIOXIDE (SO₂) hourly averages in ppb

MST

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

STATUS FLAG CODES

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

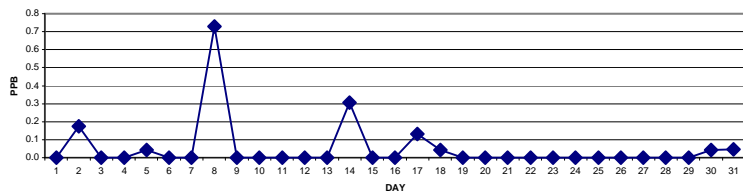
OBJECTIVE LIMIT:

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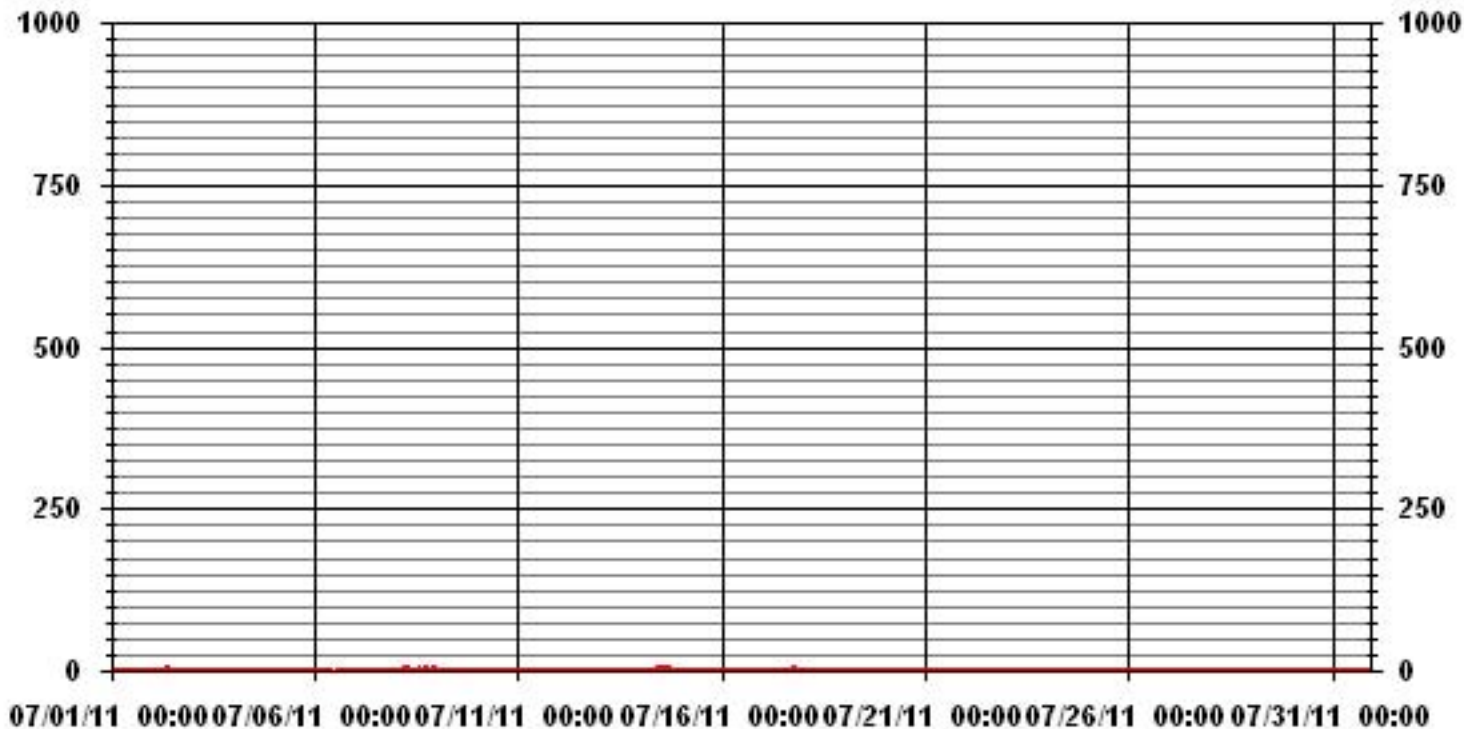
MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	33					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	10	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	0.7	PPB			ON DAY(S)	8
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME:	100.0	%	
STANDARD DEVIATION:	0.22		MONTHLY AVERAGE:	0.05	PPB	

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

SULPHUR DIOXIDE MAX instantaneous maximum in ppt

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

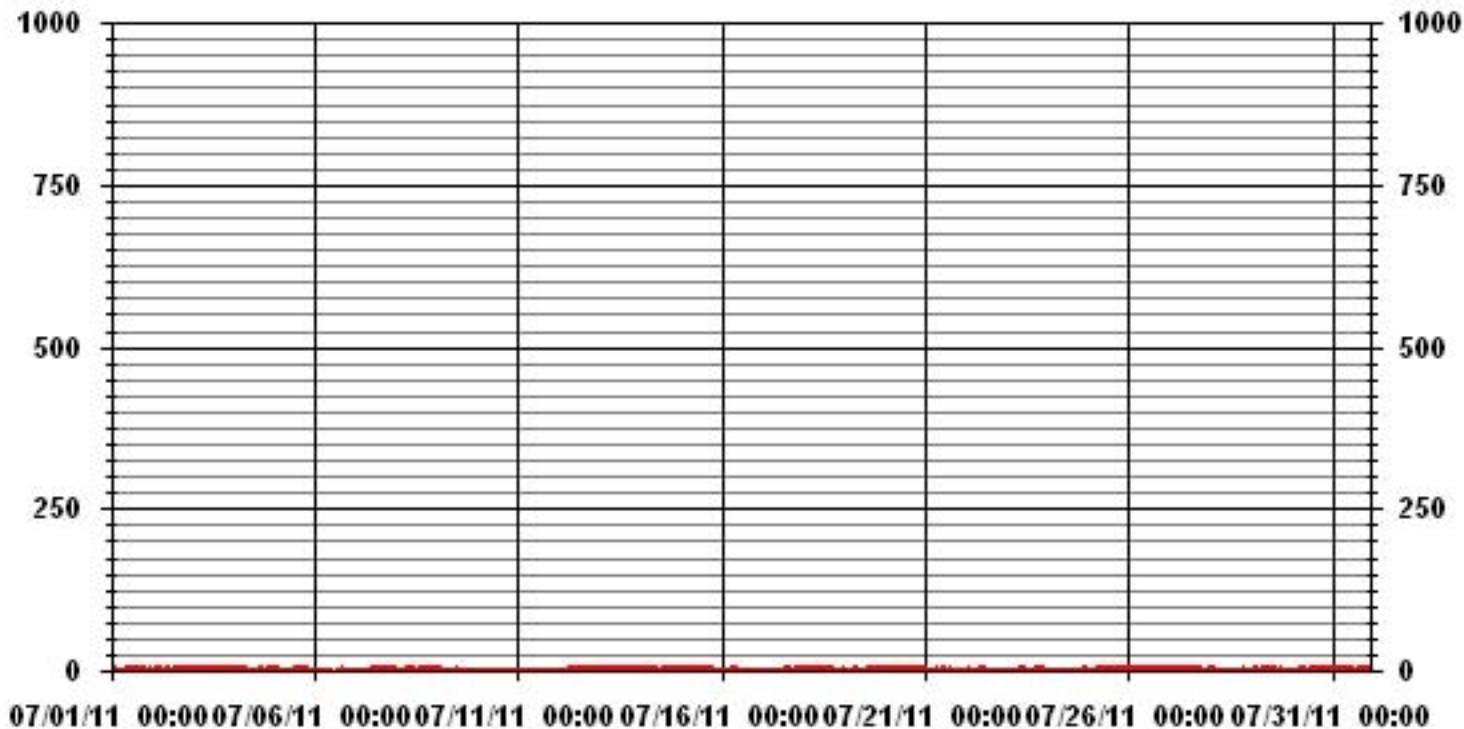
STATUS FLAG CODES

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:	445					
MAXIMUM INSTANTANEOUS VALUE:	4	PPB	@ HOUR(S)	10	ON DAY(S)	8
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	737	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.56					

01 Hour Averages



LICA31
 SO2_ / WDR Joint Frequency Distribution (Percent)

July 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	2.40	2.83	3.39	4.67	13.45	12.32	7.08	7.50	4.95	5.80	8.64	7.93	7.93	6.23	3.11	1.69	100.00
< 60	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 170	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 340	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.40	2.83	3.39	4.67	13.45	12.32	7.08	7.50	4.95	5.80	8.64	7.93	7.93	6.23	3.11	1.69	

Calm : .00 %

Total # Operational Hours : 706

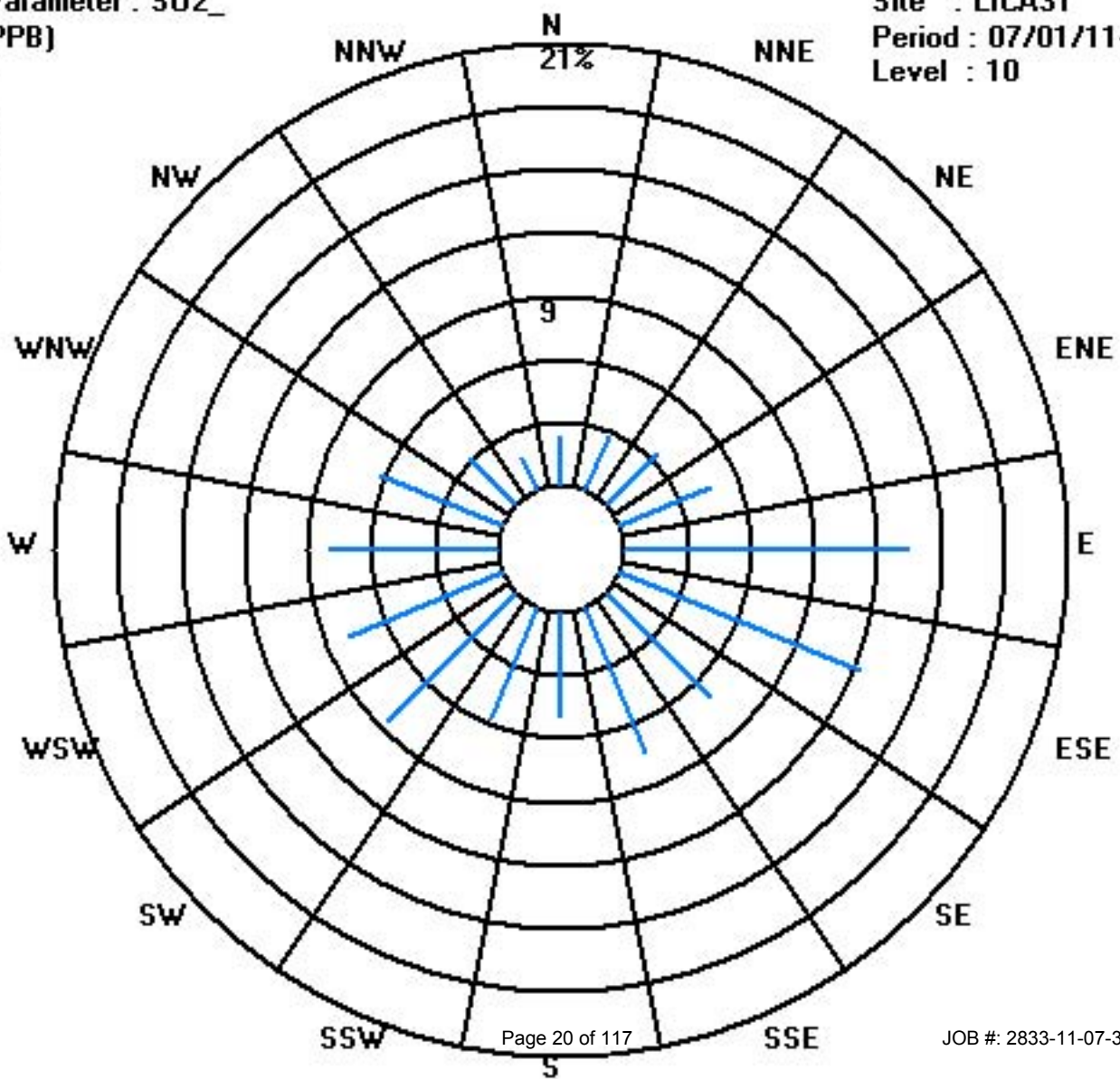
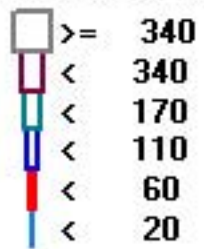
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 20	17	20	24	33	95	87	50	53	35	41	61	56	56	44	22	12	706
< 60																	
< 110																	
< 170																	
< 340																	
>= 340																	
Totals	17	20	24	33	95	87	50	53	35	41	61	56	56	44	22	12	

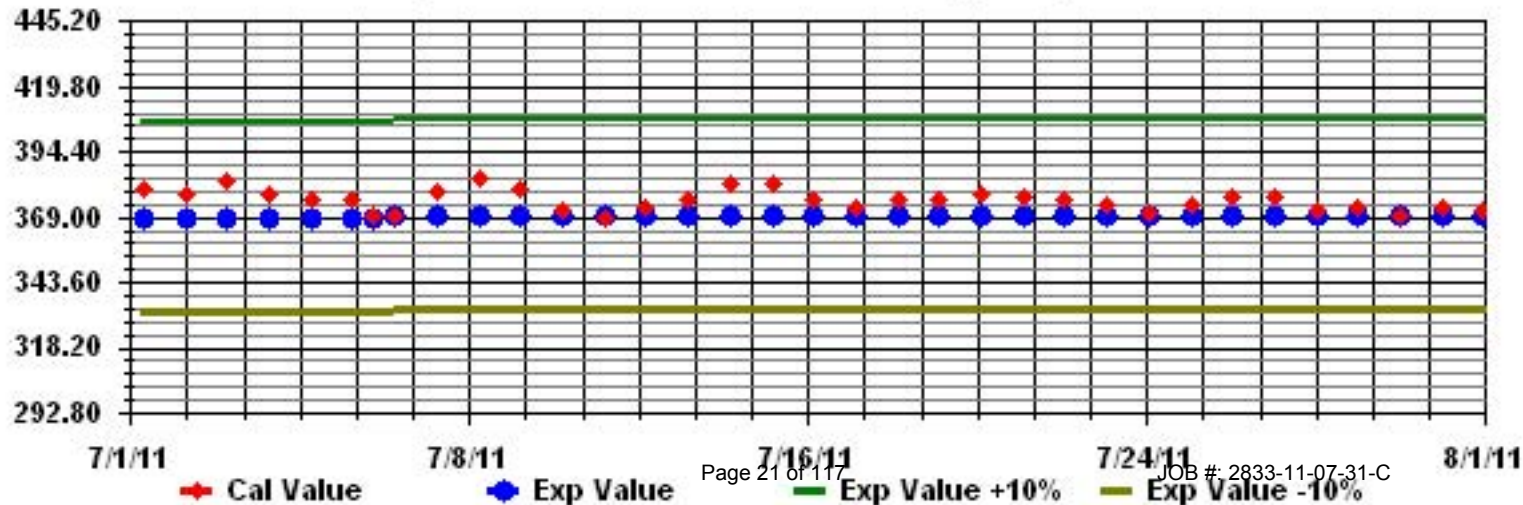
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: S02_ Sequence: S02 Phase: SPAll



Hydrogen Sulphide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

HYDROGEN SULPHIDE (H₂S) hourly averages in ppb

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

STATUS FLAG CODES

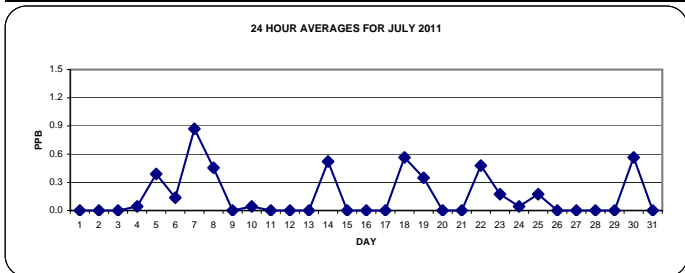
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

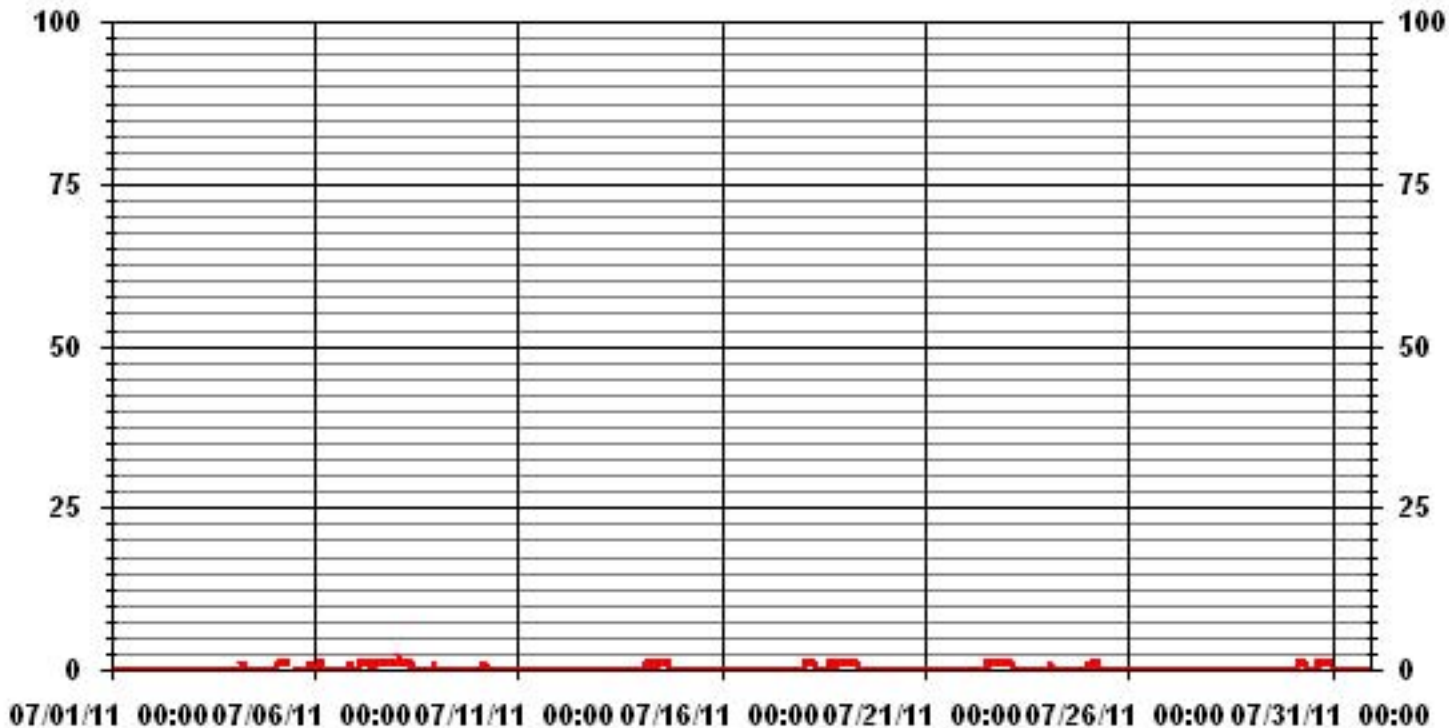
ALBERTA ENVIRONMENT: 1-HR 10 PPB 24-HR 3 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0
NUMBER OF 24-HR EXCEEDENCES:	0
NUMBER OF NON-ZERO READINGS:	107
MAXIMUM 1-HR AVERAGE:	2 PPB @ HOUR(S) 1 ON DAY(S) 8
MAXIMUM 24-HR AVERAGE:	0.9 PPB ON DAY(S) 7
	VAR-VARIOUS
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	5 HRS
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.36
MONTHLY AVERAGE:	0.15 PPB



01 Hour Averages



— LICA31 H2S_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

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

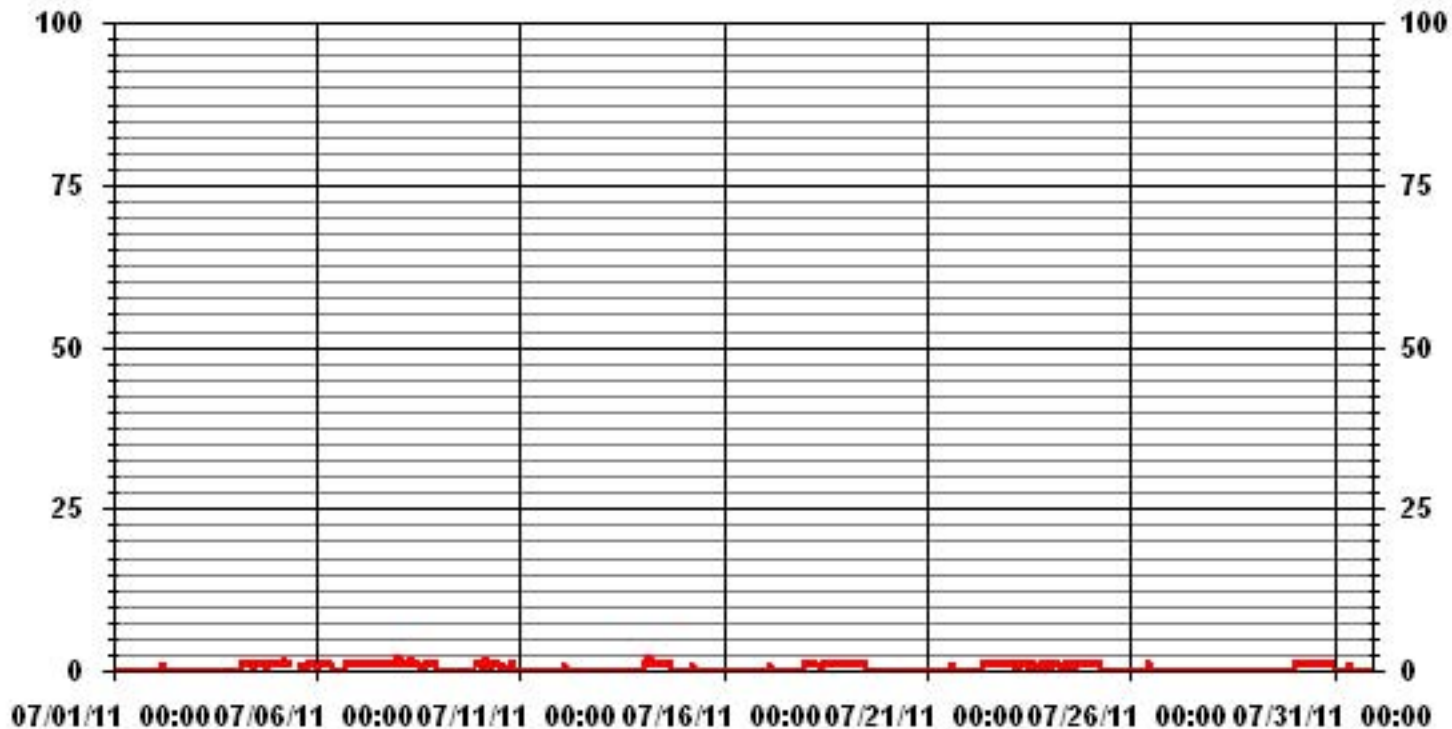
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	231					
MAXIMUM INSTANTANEOUS VALUE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	736	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	0.49					

01 Hour Averages



LICA31
H2S_ / WDR Joint Frequency Distribution (Percent)

July 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	2.55	2.83	3.40	4.96	13.61	12.34	6.80	7.09	4.96	5.81	8.65	7.94	7.94	6.24	3.12	1.70	100.00
< 10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.55	2.83	3.40	4.96	13.61	12.34	6.80	7.09	4.96	5.81	8.65	7.94	7.94	6.24	3.12	1.70	

Calm : .00 %

Total # Operational Hours : 705

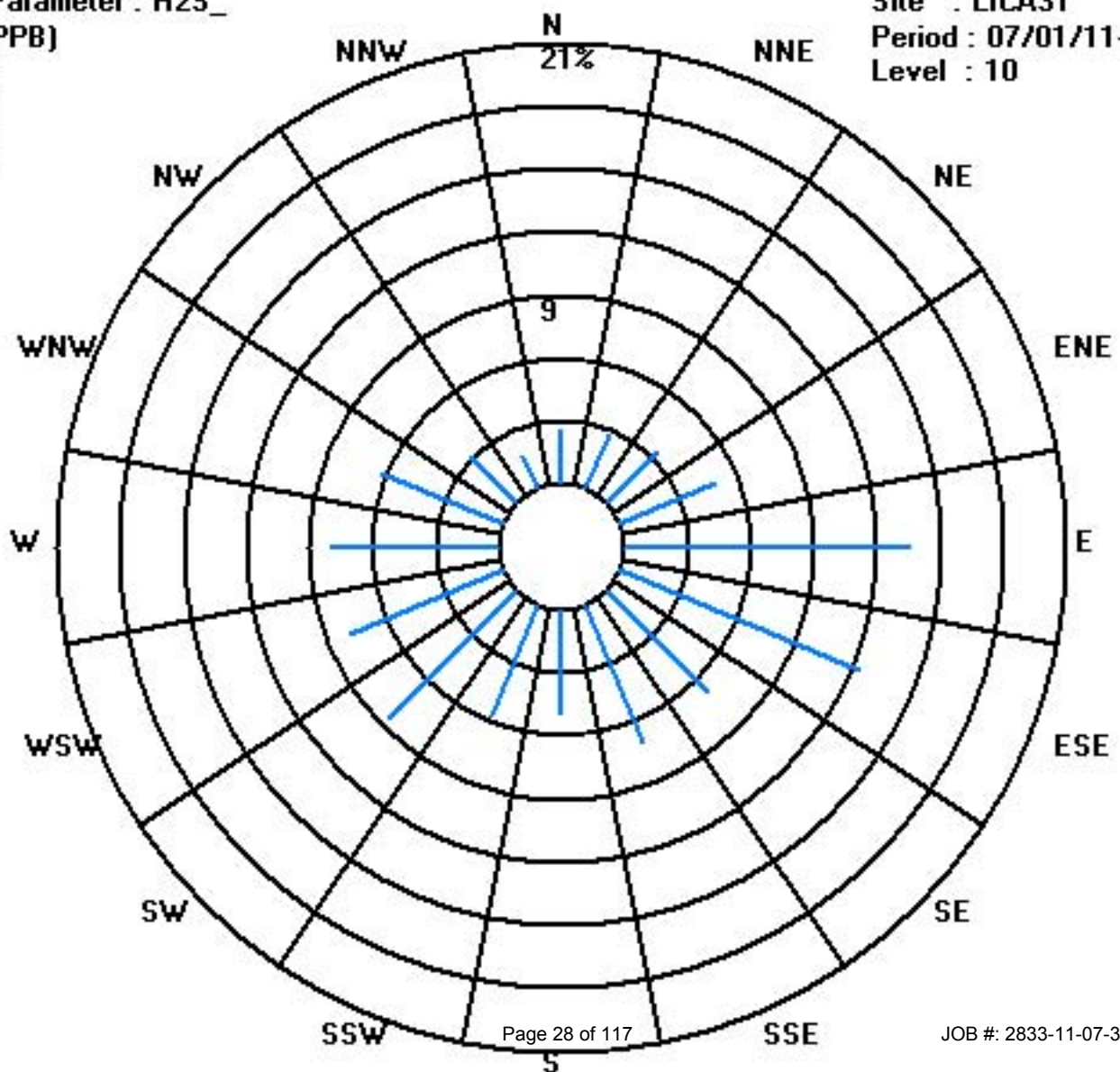
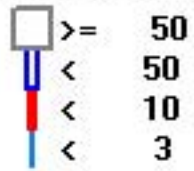
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3	18	20	24	35	96	87	48	50	35	41	61	56	56	44	22	12	705
< 10																	
< 50																	
>= 50																	
Totals	18	20	24	35	96	87	48	50	35	41	61	56	56	44	22	12	

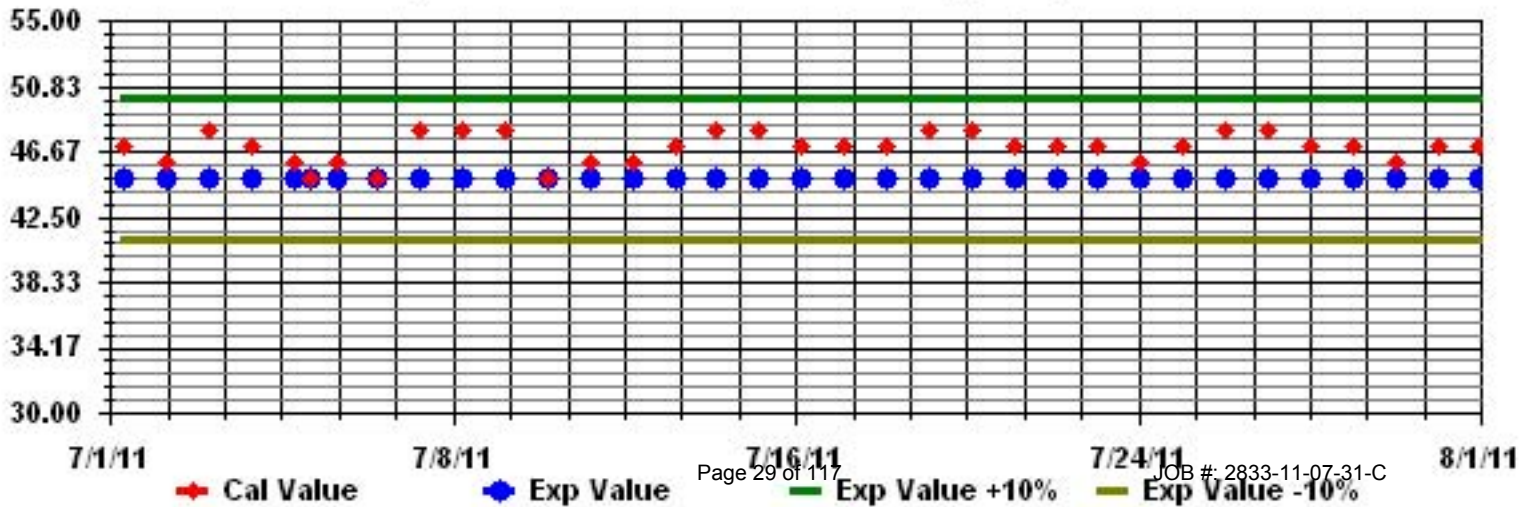
Calm : .00 %

Total # Operational Hours : 705

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: H2S_ Sequence: H2S Phase: SPAll



Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

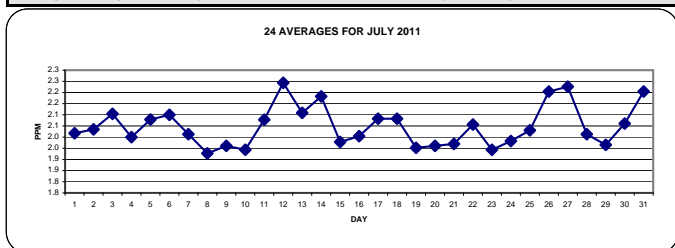
JULY 2011

TOTAL HYDROCARBONS hourly averages in ppm

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
DAY	HOURLY MAX	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
1		2	2	2	2	2.2	2.1	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2.2	2.0	24	
2		2	2	2.1	2.1	2.1	2.2	IZS	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.2	2.0	24	
3		2	2.1	2.1	2.2	2.3	IZS	2.4	2.3	2.3	2.4	2.3	2.1	2.1	2	1.9	1.9	2	2	2	2.1	2	2	1.9	2	2.4	2.1	24	
4		2	2	2	2	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.0	2.0	24	
5		2.1	2.4	2.1	IZS	2.1	2.2	2.2	2.1	2.1	2	2	2	C	C	C	C	2	2	2	2	2	2	2	2.2	2.4	2.1	24	
6		2	2.2	IZS	2.4	2.3	2.2	2	2.1	2	2	2	2	2	2	M	2	2	2	2	2	2.1	2.2	2.3	2.2	2.4	2.1	23	
7		2.3	IZS	1.9	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2	2.3	2.0	24	
8		IZS	2	2	2	2.1	2.1	2.1	2.1	1.9	1.8	1.8	1.8	1.9	1.9	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	IZS	2.1	1.9	24	
9		1.9	1.9	2	2	2.2	2.1	2.1	2	1.9	1.9	2	2	1.9	1.9	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	IZS	2	2.2	2.0	24	
10		2	2.1	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	2	2	2	2	2	IZS	2	2	2.1	1.9	24	
11		2	2	2.1	2.2	2.2	2.4	2.3	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	IZS	2.1	2.1	2.1	2.4	2.1	24
12		2.2	2.4	2.5	2.6	2.6	2.6	2.5	2.4	2.2	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.2	IZS	2.1	2	2.1	2.1	2.6	2.2	24	
13		2.1	2.1	2.2	2.2	2.3	2.2	2.3	2.2	2.1	2.1	2	2	2	2	2.1	2.1	2	2	IZS	2	2.1	2.1	2.1	2.2	2.3	2.1	24	
14		2.3	2.2	2.3	2.2	2.2	2.3	2.4	2.4	2.3	2.4	2.4	2.4	2.3	2.3	2.1	2	2	IZS	2	1.9	1.9	1.9	2	2	2.4	2.2	24	
15		2	2	2	2	1.9	2.2	2.1	2.1	2	2	1.9	1.9	1.9	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9	2.3	2.3	2.0	24
16		2.2	2.1	2	2.4	2.3	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2	1.9	1.9	2.2	2	2	2	2.4	2.0	24	
17		2	2.1	2	2	2	2.1	2.2	2.1	2.1	2	2	2	2.2	2.1	IZS	2.4	2.1	2	2	2	2	2	2.1	2.2	2.2	2.4	2.1	24
18		2.3	2.2	2.2	2.3	2.5	2.5	2.6	2.1	1.9	1.9	2	2	2	IZS	1.9	1.9	1.9	2	2	1.9	1.9	1.9	1.9	2.1	2.6	2.1	24	
19		1.9	2.1	2	2	2	2	2	2	2	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	2	2.1	2.1	2.0	24	
20		2.2	2	2	2	2	2	1.9	2	2	1.9	2	IZS	1.9	1.9	2	1.9	1.9	1.9	1.9	1.9	2	1.9	1.9	2	2.2	2.0	24	
21		2	1.9	1.9	1.9	1.9	1.9	2	2	2	1.9	IZS	2	1.9	2	2	1.9	1.9	1.9	1.9	2	2	2.1	2.1	2.2	2.2	2.0	24	
22		2.1	2.1	2.2	2.1	2.1	2	2.1	2	2.1	IZS	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.1	2.1	2.2	2.1	24	
23		2.1	2.1	2	1.9	1.9	2	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	2	2	2	2	2.1	1.9	24	
24		2	2	2.1	2	2	2	2	IZS	2	2	2	2	2	2	2	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2.1	2.0	24	
25		2	2.1	2.1	2.1	2.2	2.2	IZS	2.2	2.1	2	2	2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2.1	2.2	2.2	2.0	24	
26		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	5.5	3.1	2.7	3.2	1.9	1.9	1.9	1.9	1.9	2	5.5	2.2	2.4	24	
27		2	2	2.5	3.3	IZS	1.9	2.1	2	2.3	2.5	2.4	2.3	2.4	2.5	2.4	2.3	2	2	1.9	1.9	1.9	2	2.2	2.4	3.3	2.2	24	
28		2.2	1.9	2	IZS	2	2.1	2	2	2.2	2.2	2.1	2	1.9	2	2	1.9	1.9	1.9	1.9	2	2	2	2.1	2	2.2	2.0	24	
29		2	2	IZS	2.1	2.1	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	2	2	2	2	2.1	2.0	24	
30		2	IZS	2	2	2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2.1	2.2	2.3	2.3	2.1	24	
31		IZS	2.5	2.3	2.4	2.3	2.4	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.1	1.9	1.9	IZS	2.5	2.2	24		
HOURLY MAX		2.3	2.5	2.5	3.3	2.6	2.6	2.6	2.4	2.3	2.5	2.4	2.4	2.4	5.5	3.1	2.7	3.2	2.1	2.2	2.1	2.2	2.3	2.3	2.4				
HOURLY AVG		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.1				

STATUS FLAG CODES

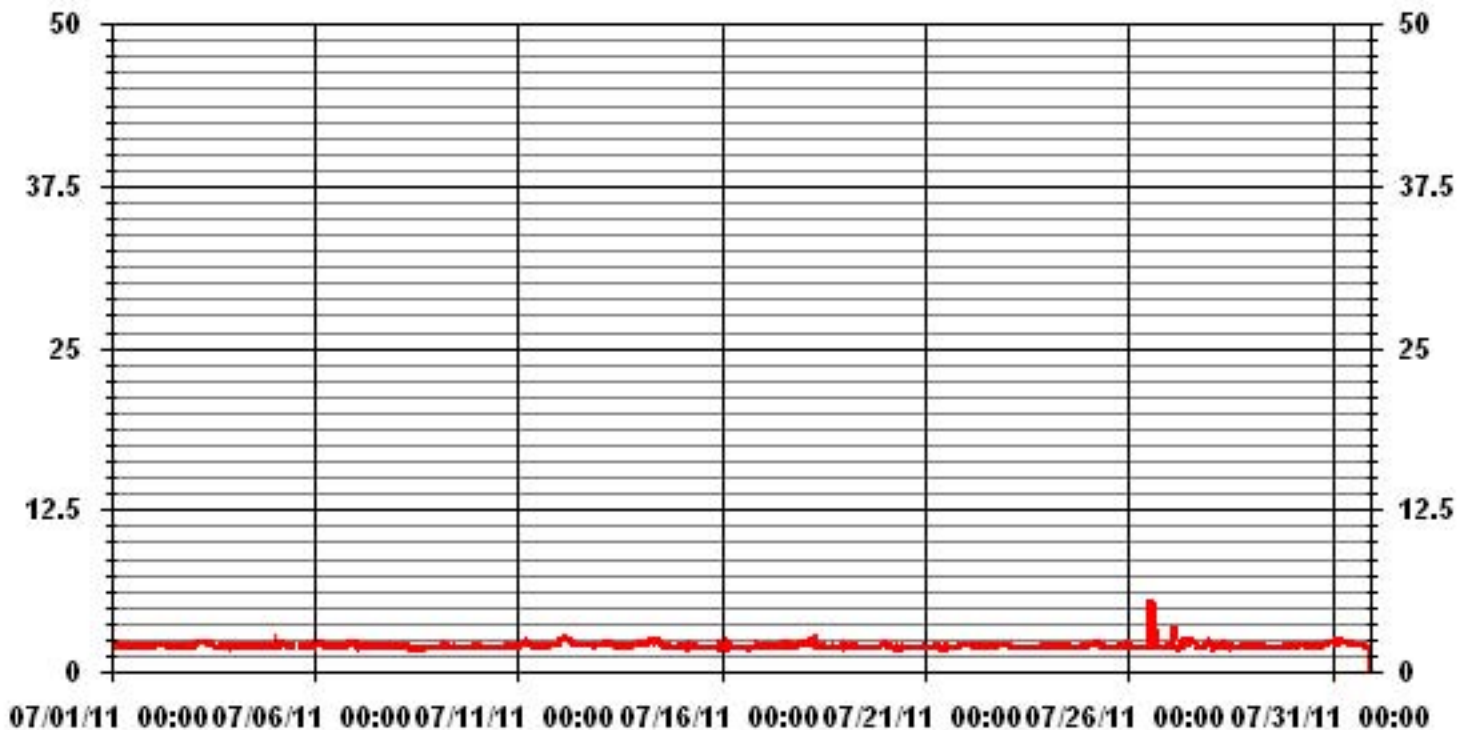
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	706			
MAXIMUM 1-HR AVERAGE:	5.5	PPM	@ HOUR(S)	13
MAXIMUM 24-HR AVERAGE:	2.2	PPM		ON DAY(S) 26
				VAR- VARIOUS
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	99.9
STANDARD DEVIATION:	0.21		MONTHLY AVERAGE:	2.05
				%

01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

TOTAL HYDROCARBONS MAX instantaneous maximum in ppr

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																												
1	2	2	2	2.3	3.1	2.9	2.3	IZS	2.5	2.3	2.3	2.2	2	2.1	2	2.1	2.3	2.1	2.2	2	2	2	2	2.9	3.1	2.2	24	
2	2.1	2.1	2.1	2.1	2.2	2.2	IZS	2.2	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2	2.1	2	2	2.2	2.1	24	
3	2.1	2.1	2.1	2.3	2.4	IZS	2.4	2.4	2.4	2.4	2.4	2.2	2.1	2	2	2	2	2.1	2.1	2.6	2.5	3	2	2.2	3	2.3	24	
4	2.7	2.6	2.3	2.1	IZS	2.3	2.4	2.3	2.1	2.3	2.4	2.4	2.7	2.2	2	2.5	2.2	2.5	2.2	2.4	2	2	2	2	2.1	2.7	2.3	24
5	2.1	10.8	2.4	IZS	2.1	2.2	2.2	2.2	2.1	2.1	2	2	C	C	C	C	C	2.6	2.2	2.1	2.1	2	2.1	4	10.8	2.7	24	
6	2.1	3	IZS	3.5	3.4	4.4	2.5	3	2.6	2.7	2.1	2.5	2.6	2.8	M	2.1	2.7	2	2	2.6	3.2	7.8	3.5	3.1	7.8	3.0	23	
7	2.9	IZS	1.9	2.2	2.2	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.1	2.1	2.1	2.9	2.2	24	
8	IZS	2.1	2.1	2.1	2.3	2.2	2.2	2.2	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	2.3	2.0	24
9	2	2.2	2.2	2.1	2.3	2.2	3.4	3	2.1	2.4	2.6	2.5	2.5	2.2	2.1	2.3	3.1	2.7	2.5	2.1	1.9	1.9	IZS	2.6	3.4	2.4	24	
10	2.7	3	2.8	2.4	2.2	2.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2	2	2	2	2	2	2.2	2	IZS	2.1	2.1	3	2.1	24
11	2	2.1	2.2	2.2	2.3	2.5	2.6	2.3	2.2	2.1	2.1	2.2	2.1	2.1	2.1	2	2.1	2.2	2.1	2.4	IZS	2.1	2.1	2.2	2.6	2.2	24	
12	2.2	2.7	2.8	2.8	2.8	2.8	2.6	2.5	2.3	2.2	2.1	2.3	2.4	2.2	2.3	2.3	2.4	2.2	2.4	IZS	2.1	2.1	2.5	2.1	2.8	2.4	24	
13	2.1	2.2	2.3	2.3	2.4	2.4	2.6	2.4	2.4	2.2	2.2	2.1	2.1	2.3	6.7	4.1	2.2	2.2	IZS	2.4	2.1	2.7	2.7	2.3	6.7	2.6	24	
14	2.7	2.9	2.6	2.8	2.4	3.3	2.6	2.6	2.4	3.5	P	2.4	2.4	2.4	2.2	2	2	IZS	2	2	2	2	2.2	2.7	3.5	2.5	23	
15	2	2.5	2.3	2.6	2.1	4.5	2.8	2.5	2.7	2.2	2	1.9	1.9	2	1.9	1.9	IZS	1.9	1.9	1.9	1.9	1.9	2.3	2.7	2.6	4.5	2.3	24
16	2.5	2.4	2.5	2.8	2.6	2.1	2.1	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	IZS	1.9	2.2	2.2	2.3	3.4	3.4	2.6	2.7	3.4	2.3	24	
17	3	2.2	2.1	2	2.2	2.6	2.5	2.4	P	2.1	2.1	2.2	2.3	2.3	IZS	2.5	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.3	3	2.3	23	
18	2.3	2.3	2.3	2.7	2.9	2.9	2.9	P	2.1	2	2.1	2	2	IZS	1.9	1.9	2.1	3.3	3	2	2.3	2.6	1.9	3.1	3.3	2.4	23	
19	2.4	2.6	2.5	2.4	2	2	2	2.1	2.4	2.3	2.3	2.4	IZS	1.9	2.2	2.1	2.5	3.4	1.9	1.9	1.9	2	2.1	3.9	3.9	2.3	24	
20	6.3	3	2.8	2.5	2.3	2.5	2.1	2.6	2.2	2.2	IZS	2	2.2	2.4	2.2	2.2	2.2	2.2	2.2	2.3	2.5	2.2	2.2	2.3	6.3	2.5	24	
21	2.6	2	2	2.2	2.1	2	2.1	2.1	2.4	2.3	IZS	2.4	2.4	2.9	2.8	2.1	2.3	2	2.2	2.5	2.7	2.4	2.3	2.6	2.9	2.3	24	
22	2.4	2.2	2.3	2.3	2.2	2.2	2.1	2.2	2.2	IZS	2.1	2.1	2	2	2.1	2.1	2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.1	24	
23	2.1	2.1	2.1	2	2	2	2	2	IZS	1.9	2	2	2	2	2	1.9	1.9	1.9	2	2	2	2	2.3	2	2.3	2.0	24	
24	2	2.1	2.1	2.1	2	2	2	IZS	2.1	2.1	2.1	2.6	2.1	2.4	2.6	2.2	2	2.1	2	2	2	2	2	2	2.6	2.1	24	
25	2.1	2.1	2.1	2.1	2.2	2.2	IZS	2.2	2.1	P	2.2	2.7	2.1	1.9	2	1.9	1.9	1.9	2.3	2.4	2.3	2.3	2.2	2.7	2.7	2.2	23	
26	2.2	1.9	1.9	2.9	2.2	IZS	1.9	1.9	1.9	1.9	2.2	2	1.9	54.3	8.3	10.5	24	1.9	2	1.9	2	1.9	1.9	6.9	54.3	6.1	24	
27	P	4	7.6	7.2	IZS	2.8	3.6	3.5	5.6	7.4	7.9	5	5	5.1	5	5.4	4	5.2	3.7	2.5	2.8	4.2	6.5	8.2	8.2	5.1	23	
28	9.3	2	2.2	IZS	3.2	4.8	2.4	3.3	5.6	5.8	4.6	2.2	2	2	2	2	2	2	2	2	2.1	2	2.5	P	2.3	9.3	3.1	23
29	2	2.1	IZS	2.3	2.2	2.1	2	2	2	2	2	2	2	2	2	2	2	2	2	1.9	2	2	2	2	2.3	2.0	24	
30	2	IZS	2	2	2	2.1	2.1	2.1	2.1	2	2	2	2	2	2	2	2	2	2	2	2.7	2.7	P	2.5	2.6	2.7	2.1	23
31	IZS	2.9	2.4	2.4	2.4	2.4	2.5	2.3	2.4	2.5	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.2	2.2	1.9	1.9	2	IZS	2.9	2.3	24
HOURLY MAX	9	11	8	7	3	5	4	4	6	7	8	5	5	54	8	11	24	5	4	3	3	8	7	8				
HOURLY AVG	2.7	2.7	2.4	2.5	2.4	2.6	2.4	2.4	2.5	2.5	2.4	2.3	2.2	4.0	2.6	2.6	3.0	2.3	2.2	2.2	2.2	2.5	2.4	2.9				

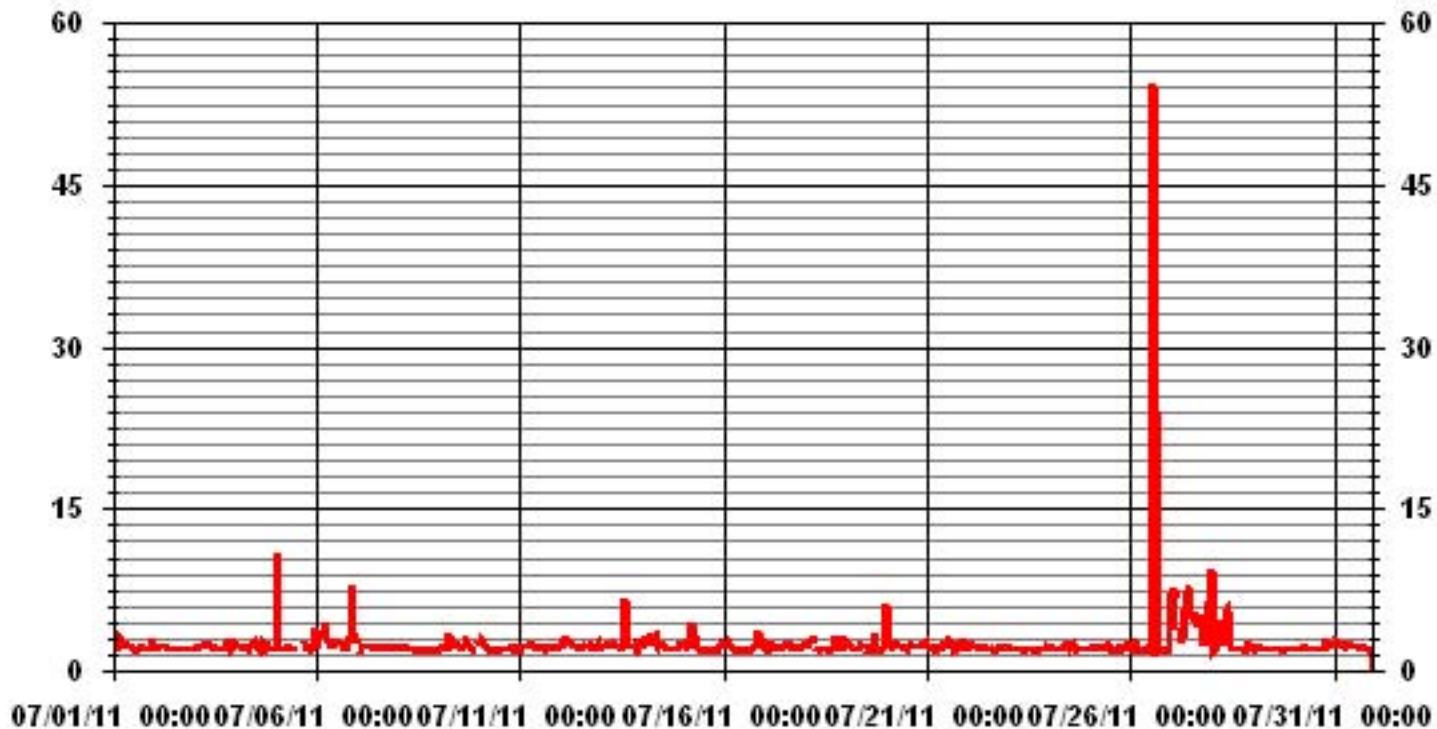
STATUS FLAG CODES

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
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	698					
MAXIMUM INSTANTANEOUS VALUE:	54.3	PPM	@ HOUR(S)	13	ON DAY(S)	26
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	736 HRS		
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION:	2.33					

01 Hour Averages



— LICA31 THCMAX PPM

LICA31
 THC / WDR Joint Frequency Distribution (Percent)

July 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	2.54	2.83	3.39	4.95	13.59	12.32	6.65	7.36	4.95	5.80	8.64	7.93	7.79	5.94	2.97	1.69	99.43
< 10.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14	.28	.14	.00	.56
< 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 50.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.54	2.83	3.39	4.95	13.59	12.32	6.65	7.36	4.95	5.80	8.64	7.93	7.93	6.23	3.11	1.69	

Calm : .00 %

Total # Operational Hours : 706

Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 3.0	18	20	24	35	96	87	47	52	35	41	61	56	55	42	21	12	702
< 10.0													1	2	1		4
< 50.0																	
>= 50.0																	
Totals	18	20	24	35	96	87	47	52	35	41	61	56	56	44	22	12	

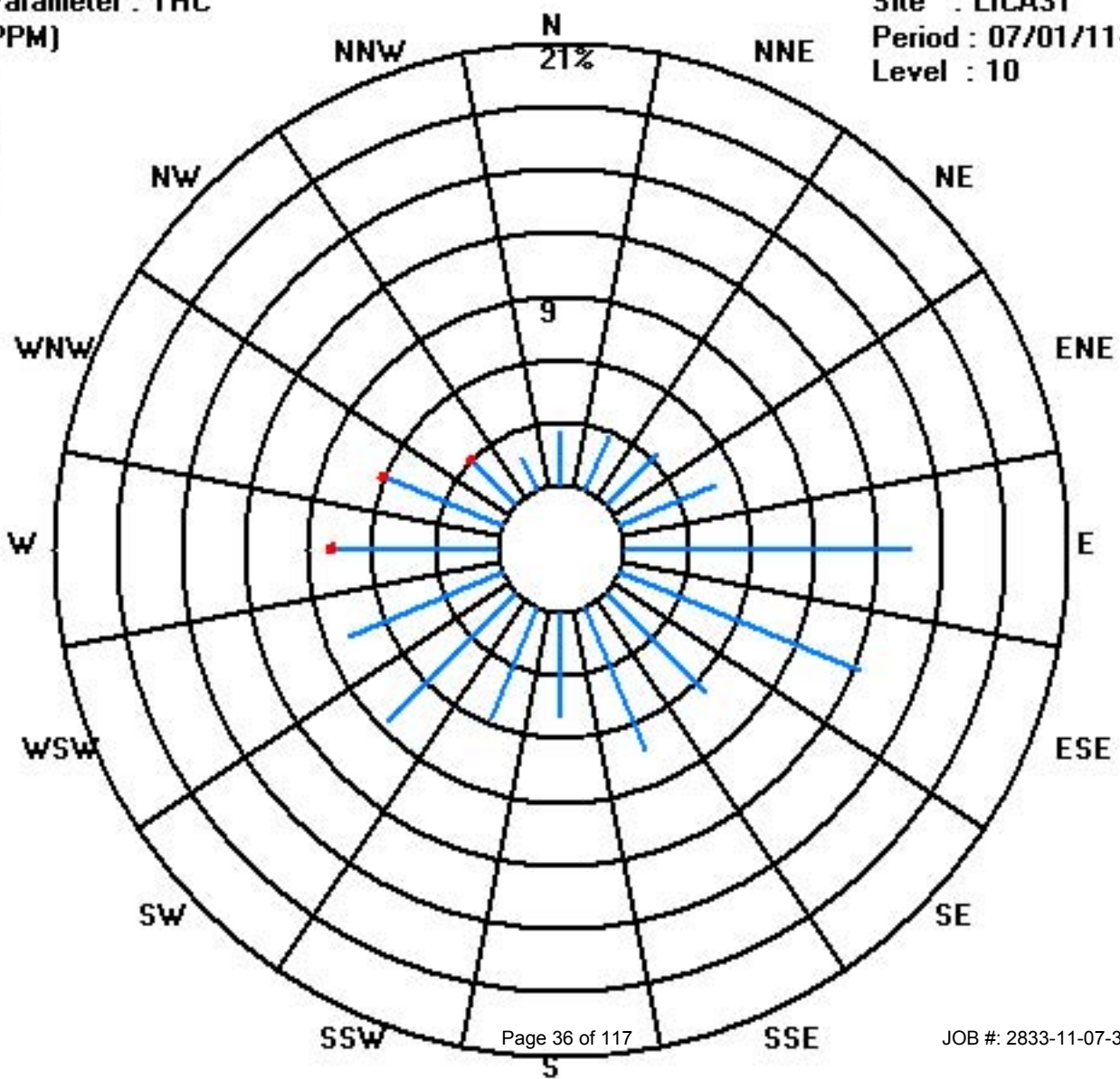
Calm : .00 %

Total # Operational Hours : 706

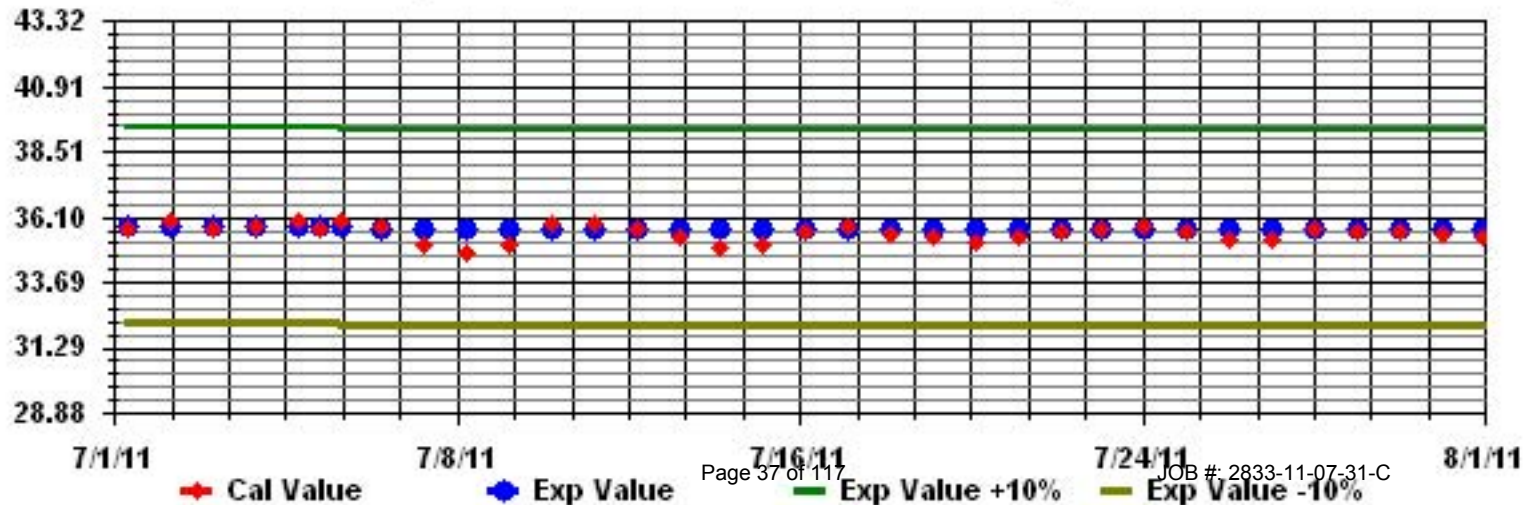
Class Limits (PPM)

Period : 07/01/11-07/31/11

Level : 10



Calibration Graph for Site: LICA31 Parameter: THC Sequence: THC Phase: SPAll



Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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	27	24	20	21	21	23	22	IZS	20	20	21	22	24	24	24	24	24	25	25	24	21	21	21	21	27	22.6	24
2	2	19	18	15	15	12	12	IZS	14	17	22	29	32	34	35	37	37	40	41	42	41	42	38	38	36	42	29.0	24
3	3	35	36	36	33	33	IZS	32	33	35	36	39	42	43	44	43	42	38	33	29	26	27	31	30	30	44	35.0	24
4	4	26	25	23	21	IZS	20	19	20	20	20	21	23	25	27	29	29	29	30	27	24	24	23	24	30	24.3	24	
5	5	24	24	23	IZS	15	12	15	19	26	29	36	38	37	35	35	37	38	34	32	28	28	27	24	24	38	27.8	24
6	6	25	24	IZS	20	19	19	19	20	21	23	C	C	C	C	C	23	25	28	29	28	23	20	19	17	29	22.3	24
7	7	22	IZS	35	30	30	28	23	22	23	26	31	34	37	37	35	34	35	33	31	29	25	23	23	22	37	29.0	24
8	8	IZS	20	18	17	15	13	15	23	23	26	32	33	36	36	33	29	32	23	20	21	21	19	IZS	36	23.9	24	
9	9	17	14	13	11	10	12	12	14	26	31	26	24	30	26	28	29	30	29	26	26	28	25	IZS	15	31	21.8	24
10	10	13	12	12	14	16	19	23	21	20	25	25	22	22	24	21	20	21	21	21	21	23	IZS	18	21	25	19.8	24
11	11	22	19	19	17	16	12	18	22	25	27	27	29	30	32	33	32	34	31	33	30	IZS	27	28	27	34	25.7	24
12	12	25	21	18	16	17	15	18	20	23	23	24	25	23	23	21	20	21	23	20	IZS	22	24	20	20	25	21.0	24
13	13	18	16	14	13	13	12	14	15	19	22	25	25	23	26	27	26	24	26	IZS	25	23	21	21	17	27	20.2	24
14	14	17	18	17	16	16	13	11	12	12	14	18	20	20	23	27	28	28	IZS	30	32	37	35	28	24	37	21.6	24
15	15	22	21	20	28	28	19	14	15	20	21	25	27	26	26	22	20	IZS	17	18	16	15	14	14	12	28	20.0	24
16	16	14	13	14	11	12	10	12	18	18	17	19	17	19	19	19	IZS	19	16	17	17	18	19	18	16	19	16.2	24
17	17	18	11	15	16	17	15	13	14	17	19	22	28	34	34	IZS	38	36	35	33	29	28	25	24	22	38	23.6	24
18	18	19	19	18	18	15	14	11	31	38	35	35	38	41	IZS	42	42	43	36	30	32	31	31	27	31	43	29.4	24
19	19	28	24	21	21	23	19	19	20	21	20	19	20	IZS	23	25	26	25	20	20	22	18	20	17	18	28	21.3	24
20	20	27	25	24	20	21	20	19	14	14	17	19	IZS	22	23	24	24	24	24	23	22	20	20	19	18	27	21.0	24
21	21	17	17	16	17	17	15	14	17	20	21	IZS	23	24	25	24	23	24	24	26	23	20	18	18	15	26	19.9	24
22	22	15	14	10	13	15	14	15	15	15	IZS	14	15	15	15	13	13	13	12	11	11	11	10	10	10	15	13.0	24
23	23	11	11	14	16	16	16	18	20	IZS	19	20	22	27	29	27	23	22	23	22	19	16	13	11	10	29	18.5	24
24	24	9	7	4	6	6	8	9	IZS	13	17	20	20	22	22	18	17	18	19	18	16	13	16	18	16	22	14.4	24
25	25	14	14	15	13	11	10	IZS	12	18	23	25	26	25	25	28	27	29	30	27	28	26	23	25	26	30	21.7	24
26	26	26	28	28	29	29	IZS	24	21	17	20	21	15	14	14	19	21	19	14	12	19	15	12	13	14	29	19.3	24
27	27	17	18	19	20	IZS	20	17	16	17	17	20	22	23	23	24	26	25	23	23	20	21	22	21	22	26	20.7	24
28	28	22	19	16	IZS	16	17	17	17	18	19	20	22	24	26	27	28	29	31	29	26	29	33	35	31	35	24.0	24
29	29	26	30	IZS	24	22	23	25	22	25	25	28	29	30	31	31	29	26	26	24	20	22	20	18	17	31	24.9	24
30	30	18	IZS	15	14	13	13	12	12	15	19	23	26	27	30	33	35	36	38	35	29	26	24	23	23	38	23.4	24
31	31	IZS	18	19	18	17	16	14	17	19	22	25	25	27	29	31	31	32	31	29	23	19	19	20	IZS	32	22.8	24
HOURLY MAX		35	36	36	33	33	28	32	33	38	36	39	42	43	44	43	42	43	41	42	41	42	38	38	36			
HOURLY AVG		20.4	19.3	18.3	18.2	17.6	15.8	17.0	18.5	20.5	22.5	24.4	25.7	27.0	27.1	27.6	27.8	28.0	26.5	25.5	24.3	23.1	22.5	21.4	20.7			

STATUS FLAG CODES

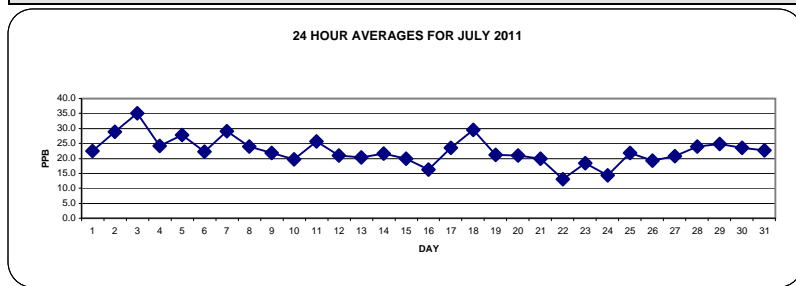
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

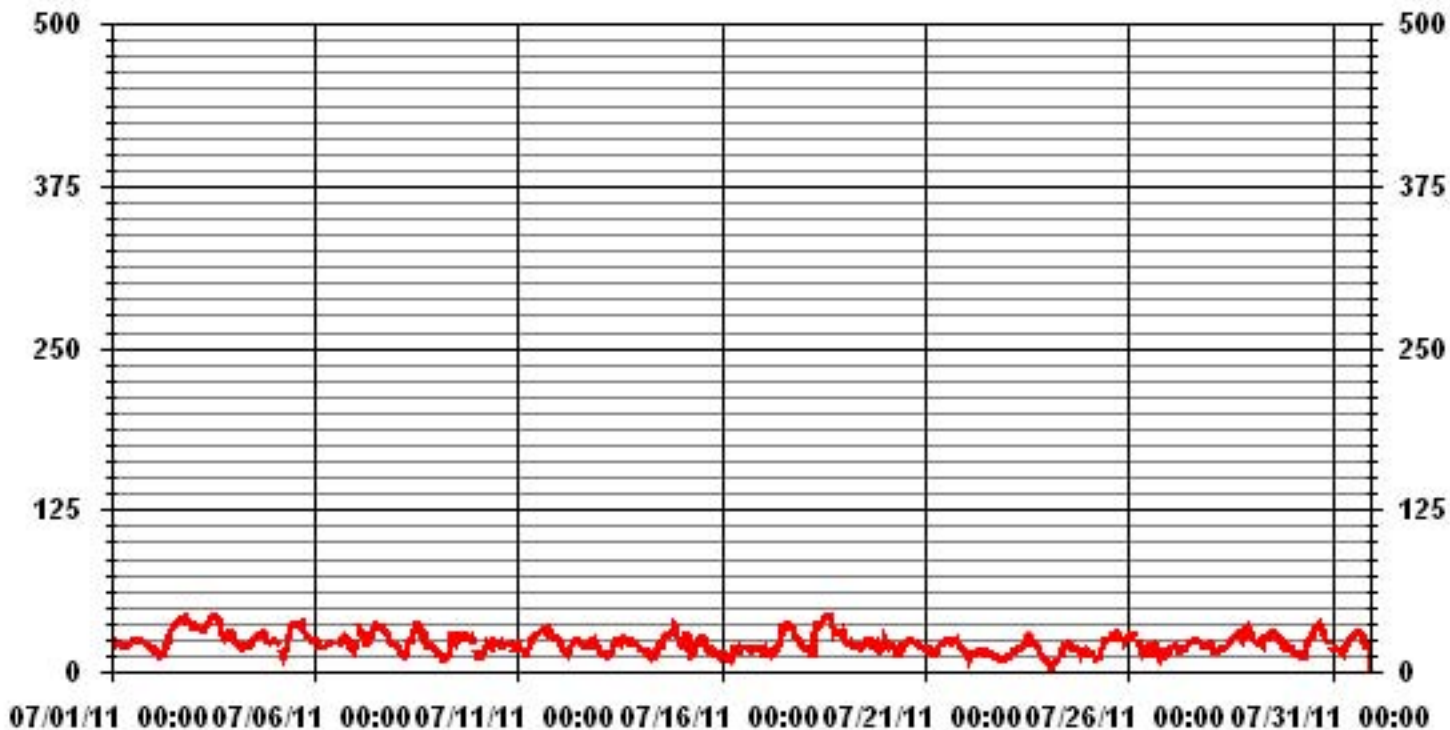
ALBERTA ENVIRONMENT: 1-HR 82 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0				
NUMBER OF NON-ZERO READINGS:	706				
MAXIMUM 1-HR AVERAGE:	44	PPB	@ HOUR(S)	13	ON DAY(S) 3
MAXIMUM 24-HR AVERAGE:	35.0	PPB			ON DAY(S) 3
					VAR-VARIOUS
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	744	HRS
MONTHLY CALIBRATION TIME:	5	HRS	AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION	7.26		MONTHLY AVERAGE	22.5	PPB



01 Hour Averages



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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	30	26	22	22	23	117	23	IZS	21	21	22	23	25	25	25	25	25	25	26	25	23	22	22	22	117	27.8	24	
2	20	19	17	16	14	13	IZS	16	20	26	32	35	35	37	38	39	42	42	44	43	43	42	39	37	44	30.8	24	
3	35	37	37	35	34	IZS	33	34	36	38	40	43	44	45	44	45	42	36	31	27	31	32	33	32	45	36.7	24	
4	28	25	24	22	IZS	20	21	20	21	21	23	25	26	29	30	30	30	30	31	30	26	26	25	25	31	25.6	24	
5	25	25	24	IZS	18	15	18	24	27	34	38	40	39	36	37	40	39	36	33	31	30	29	26	25	40	30.0	24	
6	26	26	IZS	22	21	20	20	21	23	25	C	C	C	C	C	25	26	30	31	30	26	21	21	19	31	24.1	24	
7	24	IZS	38	34	31	31	25	24	26	28	33	36	38	38	37	35	36	35	33	31	27	23	23	23	38	30.8	24	
8	IZS	21	20	18	16	14	21	25	25	29	34	37	40	37	36	30	36	31	22	23	22	22	20	IZS	40	26.3	24	
9	19	16	14	12	11	13	14	18	33	33	28	28	33	28	30	31	40	35	27	27	30	28	IZS	17	40	24.6	24	
10	14	13	13	16	18	21	24	24	23	27	28	25	24	26	24	22	23	22	22	23	25	IZS	20	23	28	21.7	24	
11	23	21	20	19	18	16	20	24	28	28	29	30	33	34	35	34	37	33	35	31	IZS	29	28	28	37	27.5	24	
12	25	23	19	17	17	17	19	21	24	25	26	26	25	24	23	22	24	24	22	IZS	23	24	23	22	26	22.4	24	
13	19	18	15	14	14	14	17	20	23	26	26	26	27	28	29	28	26	28	IZS	26	25	23	22	18	29	22.3	24	
14	19	19	18	18	18	14	12	13	15	15	P	23	378	30	32	32	31	IZS	34	37	39	38	31	26	378	40.5	23	
15	24	26	23	30	31	24	19	115	27	23	28	29	28	25	21	IZS	18	20	18	16	15	15	13	115	26.8	24		
16	15	15	15	13	13	11	16	19	19	18	20	19	20	20	20	IZS	20	18	19	19	19	20	20	19	20	17.7	24	
17	19	14	17	18	19	18	14	15	P	21	25	32	36	36	IZS	40	37	36	36	31	29	27	25	24	40	25.9	23	
18	21	20	19	20	17	15	14	P	42	39	38	41	45	IZS	44	44	45	45	36	38	38	33	31	33	45	32.6	23	
19	31	26	23	23	24	24	21	21	23	22	20	20	IZS	26	27	27	27	25	22	24	21	22	20	22	31	23.5	24	
20	31	29	27	21	23	22	21	16	16	20	21	IZS	23	24	24	25	26	25	24	23	21	20	20	19	31	22.7	24	
21	18	18	17	18	18	16	15	19	21	22	IZS	24	25	26	26	25	26	26	27	27	22	20	19	17	27	21.4	24	
22	17	17	12	15	16	16	16	16	16	IZS	16	16	17	16	15	14	13	13	12	12	12	10	10	11	17	14.3	24	
23	12	12	18	18	17	17	21	22	IZS	20	21	25	29	30	30	25	24	24	23	21	18	15	12	11	30	20.2	24	
24	10	10	6	7	8	9	10	IZS	16	20	22	22	23	23	20	18	19	20	19	17	15	19	19	18	23	16.1	24	
25	15	15	16	16	13	12	IZS	15	21	P	26	27	27	28	30	30	31	32	30	31	29	28	28	30	32	24.1	23	
26	30	30	31	32	31	IZS	27	24	19	22	25	17	16	16	23	23	18	17	22	17	13	14	16	32	22.0	24		
27	P	19	19	21	IZS	21	19	17	18	19	22	23	24	25	26	28	28	26	25	21	22	22	22	25	28	22.4	23	
28	23	21	17	IZS	17	18	18	18	19	20	22	24	25	27	29	30	31	32	31	30	36	37	P	34	37	25.4	23	
29	31	32	IZS	27	27	26	27	24	27	28	31	31	33	33	33	31	28	27	26	26	26	21	21	19	33	27.6	24	
30	20	IZS	17	16	14	14	14	14	18	22	25	28	30	33	35	36	37	42	41	32	27	P	25	24	42	25.6	23	
31	IZS	20	20	19	18	17	16	19	21	23	27	27	28	32	33	32	33	33	32	26	21	21	22	IZS	33	24.5	24	
HOURLY MAX	35	37	38	35	34	117	33	115	42	39	40	43	378	45	44	45	45	45	44	43	43	42	39	37				
HOURLY AVG	22.3	21.1	19.9	20.0	19.3	20.9	19.1	23.5	23.0	24.7	26.7	27.7	41.2	29.0	29.7	29.6	30.2	28.9	27.7	26.7	25.3	24.2	22.6	22.5				

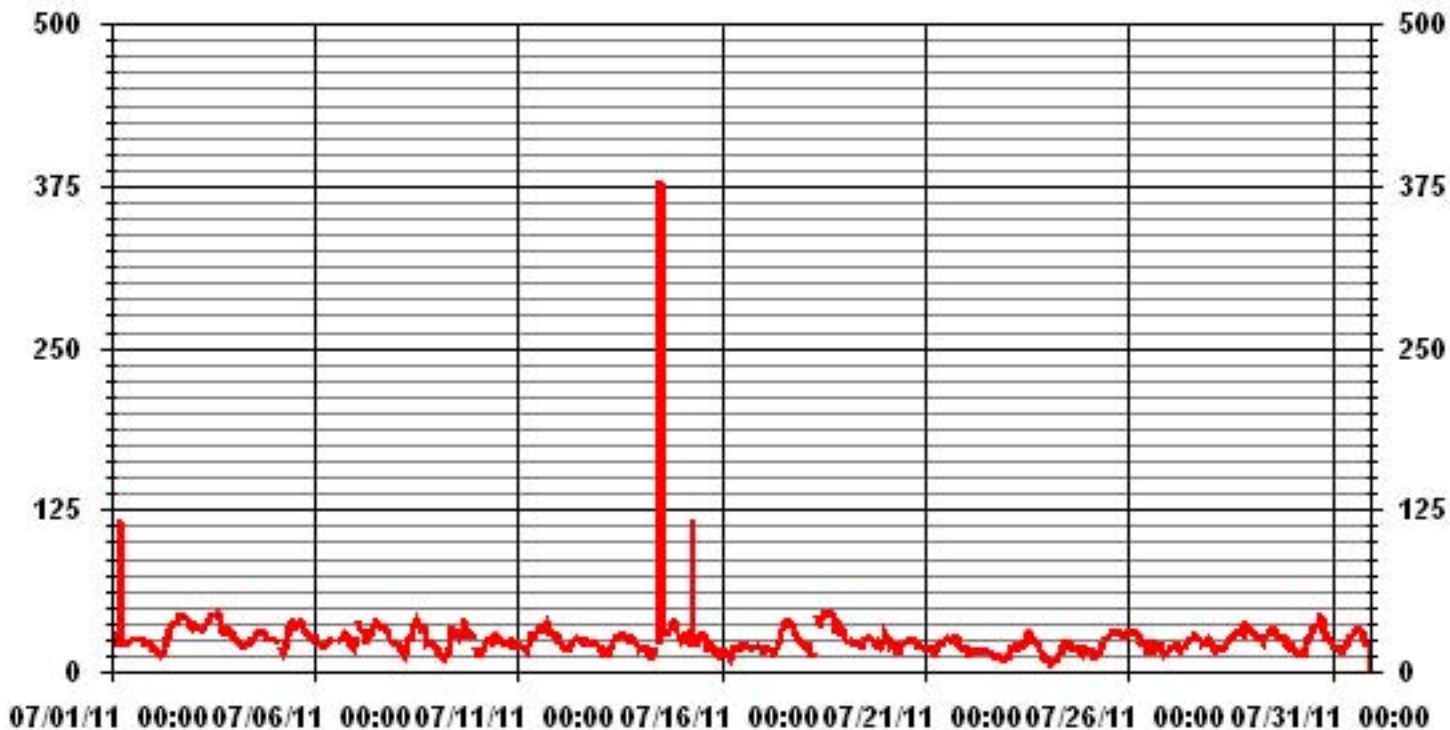
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	699					
MAXIMUM INSTANTANEOUS VALUE:	378	PPB	@ HOUR(S)	12	ON DAY(S)	14
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	737	HRS	
MONTHLY CALIBRATION TIME:	5	HRS				
STANDARD DEVIATION	16.10					

01 Hour Averages



LICA31
O3_ / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : O3
Units : PPB

Wind Parameter : WDR
Instrument Height : 10 Meters

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	2.40	2.83	3.39	4.67	13.45	12.32	7.08	7.50	4.95	5.80	8.64	7.93	7.93	6.23	3.11	1.69	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.40	2.83	3.39	4.67	13.45	12.32	7.08	7.50	4.95	5.80	8.64	7.93	7.93	6.23	3.11	1.69	

Calm : .00 %

Total # Operational Hours : 706

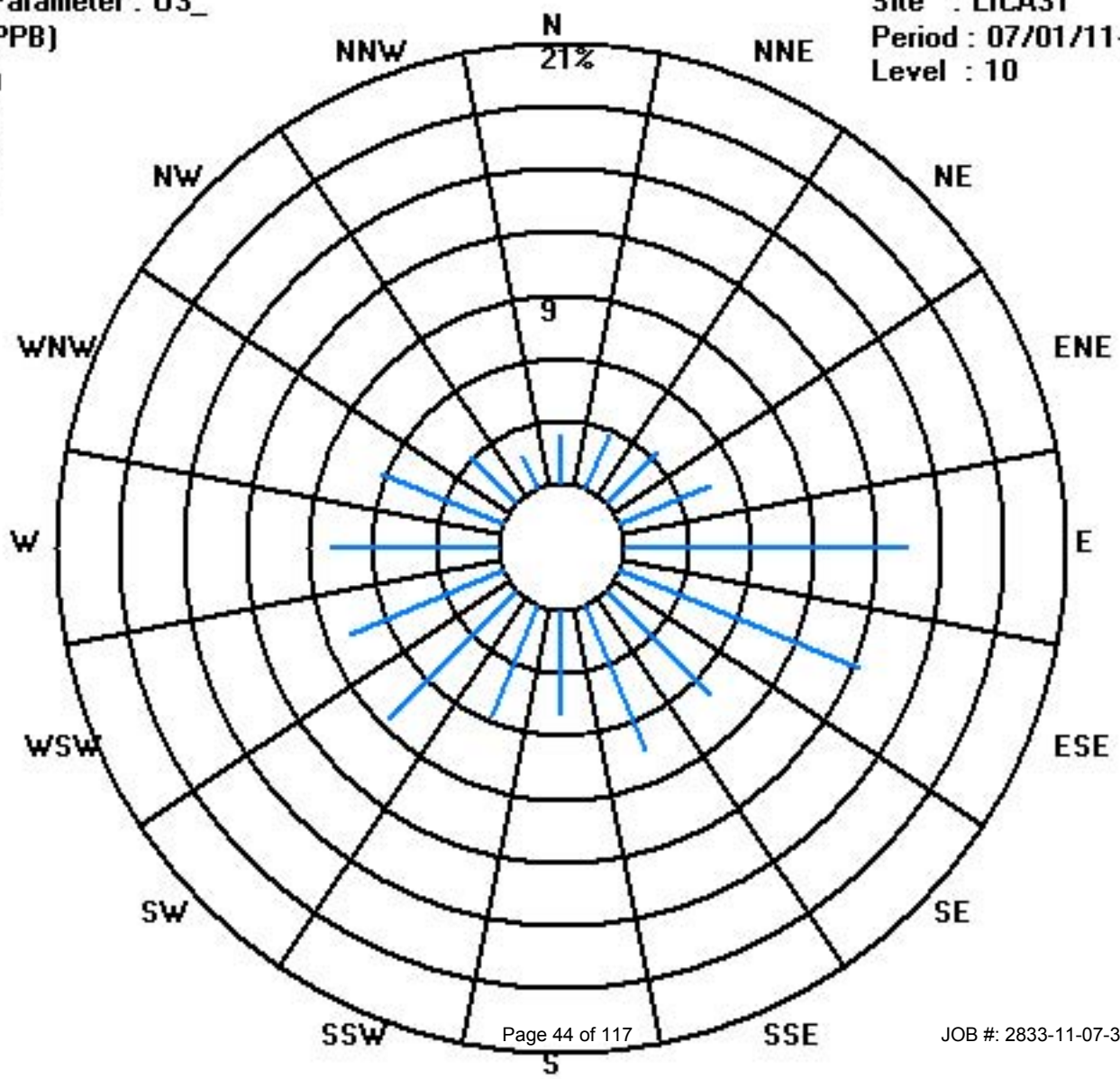
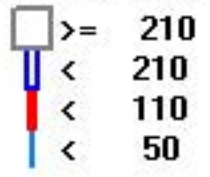
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	17	20	24	33	95	87	50	53	35	41	61	56	56	44	22	12	706
< 110																	
< 210																	
>= 210																	
Totals	17	20	24	33	95	87	50	53	35	41	61	56	56	44	22	12	

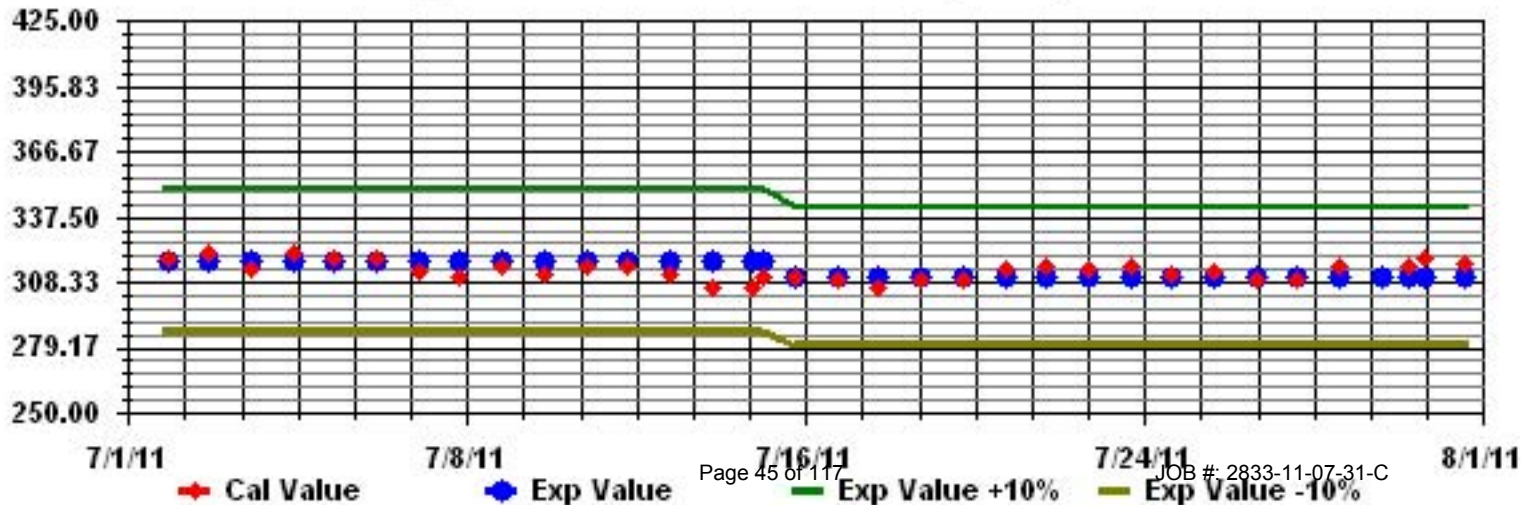
Calm : .00 %

Total # Operational Hours : 706

Class Limits (PPB)



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



Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

NITROGEN DIOXIDE hourly averages in ppb

MST

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

STATUS FLAG CODES

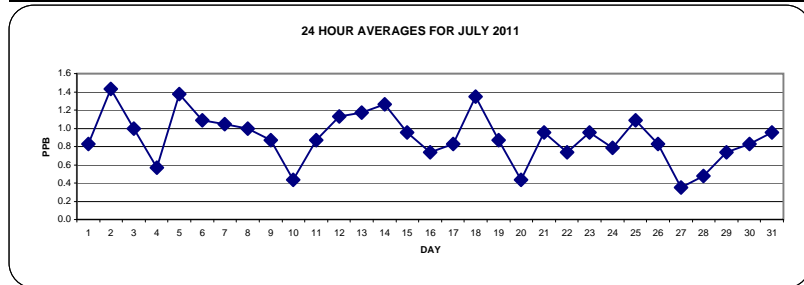
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MAINTENANCE
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

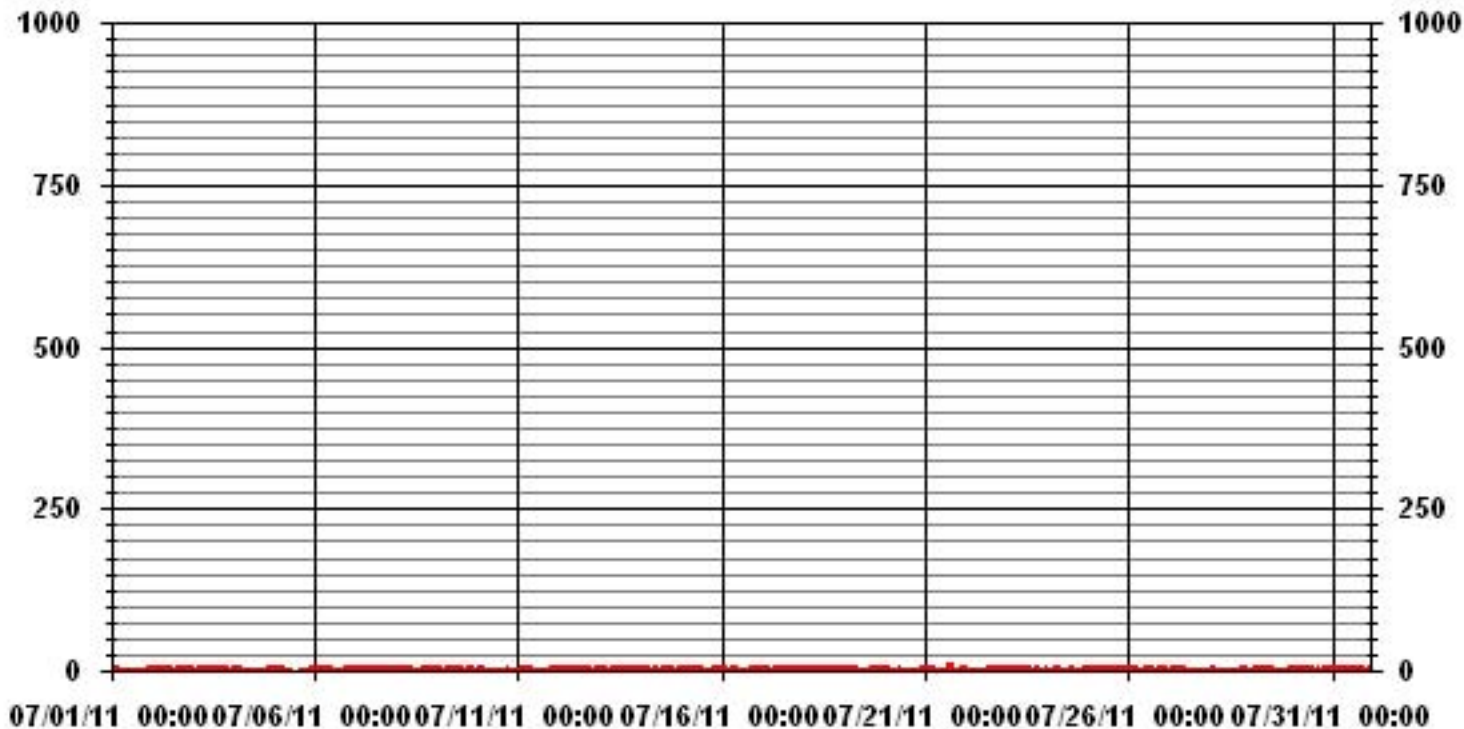
ALBERTA ENVIRONMENT: 1-HR 159 PPB

MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	525					
MAXIMUM 1-HR AVERAGE:	10	PPB	@ HOUR(S)	15	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	1.4	PPB			ON DAY(S)	5
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.73		MONTHLY AVERAGE:	0.90	PPB	



01 Hour Averages



— LICA31 NO2_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JULY 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	4	4	4	4	3	1	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	4	1.8	24	
2	3	3	3	3	3	3	IZS	3	3	3	3	2	1	1	2	1	2	2	2	2	2	2	2	2	3	2.3	24	
3	2	2	2	2	3	IZS	2	2	2	2	2	2	2	1	1	2	4	2	2	2	1	2	1	2	4	2.0	24	
4	1	1	2	2	IZS	2	1	1	1	9	1	1	1	7	1	1	1	1	1	1	2	3	5	3	9	2.1	24	
5	4	3	3	IZS	4	3	5	3	2	C	C	C	C	C	C	C	C	1	1	2	3	9	3	3	9	3.3	24	
6	2	2	IZS	1	2	2	2	1	2	1	1	1	1	1	M	1	1	2	2	2	4	4	6	6	6	2.1	23	
7	4	IZS	2	2	2	2	1	1	1	2	2	2	1	2	2	2	2	1	1	2	2	2	1	1	4	1.7	24	
8	IZS	2	2	1	2	2	2	2	3	3	3	2	1	1	2	1	1	1	1	2	1	1	1	IZS	3	1.7	24	
9	1	1	2	2	3	3	1	2	2	1	2	1	2	2	1	2	1	1	1	1	1	1	1	IZS	1	3	1.5	24
10	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	4	2	4	1.3	24
11	3	5	3	3	3	4	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	2	5	1.9	24
12	2	2	2	2	3	3	2	2	2	2	1	2	2	1	1	1	2	2	1	IZS	1	1	2	2	3	1.8	24	
13	2	3	3	3	3	3	2	2	1	2	2	1	2	1	5	2	1	2	IZS	1	2	2	2	2	5	2.1	24	
14	2	2	2	2	3	2	2	2	2	2	P	2	3	3	2	2	2	IZS	2	2	2	2	3	3	3	2.2	23	
15	2	2	3	5	3	2	2	2	2	2	2	1	1	1	1	1	IZS	1	1	1	1	2	1	2	3	5	1.9	24
16	2	2	1	2	2	3	2	1	1	10	1	1	1	1	1	IZS	1	2	1	3	2	1	2	2	10	2.0	24	
17	1	2	2	3	1	1	1	1	P	1	1	2	2	2	IZS	1	1	1	1	2	2	2	2	2	2	3	1.5	23
18	2	2	3	2	3	3	3	P	2	2	2	2	2	IZS	2	2	2	4	5	2	2	2	2	2	5	2.4	23	
19	2	2	3	2	2	2	2	2	2	2	1	1	IZS	1	2	1	2	1	3	2	2	2	2	2	3	1.9	24	
20	1	2	2	2	2	1	1	1	1	11	1	IZS	1	1	1	1	1	1	1	1	1	1	1	1	11	1.6	24	
21	1	2	1	1	1	1	2	1	1	1	IZS	1	1	1	3	374	1	1	1	1	1	1	2	2	2	374	17.5	24
22	2	1	3	3	1	1	1	1	1	IZS	1	1	1	1	1	1	1	2	1	1	1	1	1	2	3	1.3	24	
23	1	2	1	2	1	1	2	1	IZS	1	1	2	1	2	2	2	1	2	2	2	3	2	2	3	2	3	1.7	24
24	2	2	3	2	2	2	2	IZS	1	1	1	1	1	1	2	2	9	2	1	1	3	4	3	3	9	2.2	24	
25	2	2	2	2	3	3	IZS	2	2	P	2	2	1	1	1	1	1	1	3	2	2	2	2	2	3	1.9	23	
26	2	2	2	3	2	IZS	1	1	1	2	2	18	3	4	4	2	2	2	2	1	2	2	2	2	18	2.8	24	
27	P	2	1	1	IZS	1	2	2	2	2	2	1	1	1	2	1	2	1	1	1	1	1	1	1	2	1.4	23	
28	1	2	1	IZS	1	1	1	2	2	2	2	2	1	2	1	1	1	1	2	2	2	2	P	2	2	1.5	23	
29	2	2	IZS	2	2	2	2	2	3	3	2	2	1	2	2	2	2	1	1	1	1	1	1	1	3	1.7	24	
30	1	IZS	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	2	2	P	2	2	2	1.7	23	
31	IZS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	3	1	2	1	IZS	4	2.0	24	
HOURLY MAX	4	5	4	5	4	4	5	3	3	11	3	18	3	7	5	374	9	4	5	3	4	9	6	6				
HOURLY AVG	2.0	2.1	2.1	2.2	2.2	2.1	1.8	1.7	1.7	2.6	1.6	2.1	1.4	1.7	1.7	14.2	1.7	1.5	1.6	1.6	1.8	2.1	2.2	2.2				

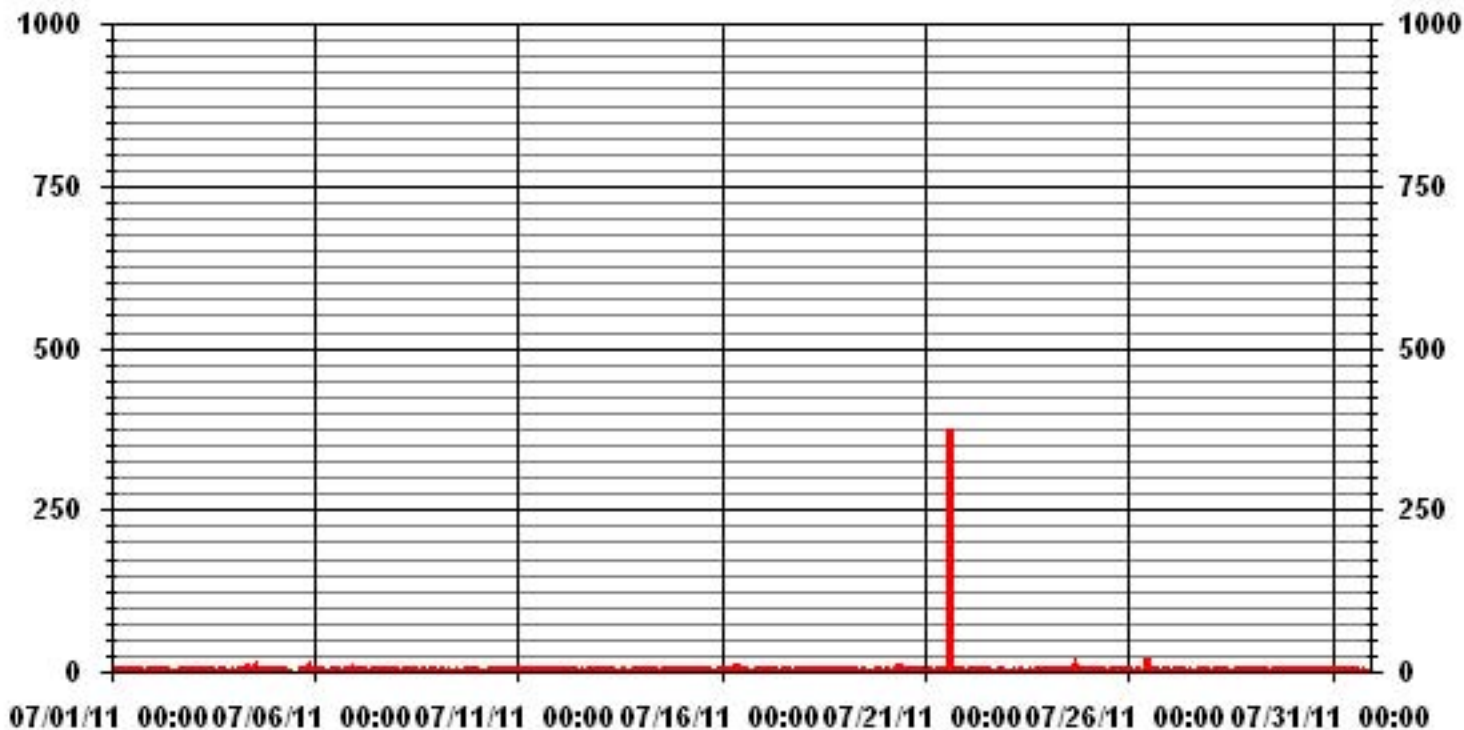
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	695					
MAXIMUM INSTANTANEOUS VALUE:	374	PPB	@ HOUR(S)	15	ON DAY(S)	21
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	736	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	14.16					

01 Hour Averages



— LICA31 IIO2MAX PPB

LICA31
 NO2_ / WDR Joint Frequency Distribution (Percent)

July 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	2.56	2.84	3.41	4.97	13.65	12.37	6.54	7.11	4.97	5.83	8.67	7.96	7.96	6.25	3.12	1.70	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.56	2.84	3.41	4.97	13.65	12.37	6.54	7.11	4.97	5.83	8.67	7.96	7.96	6.25	3.12	1.70	

Calm : .00 %

Total # Operational Hours : 703

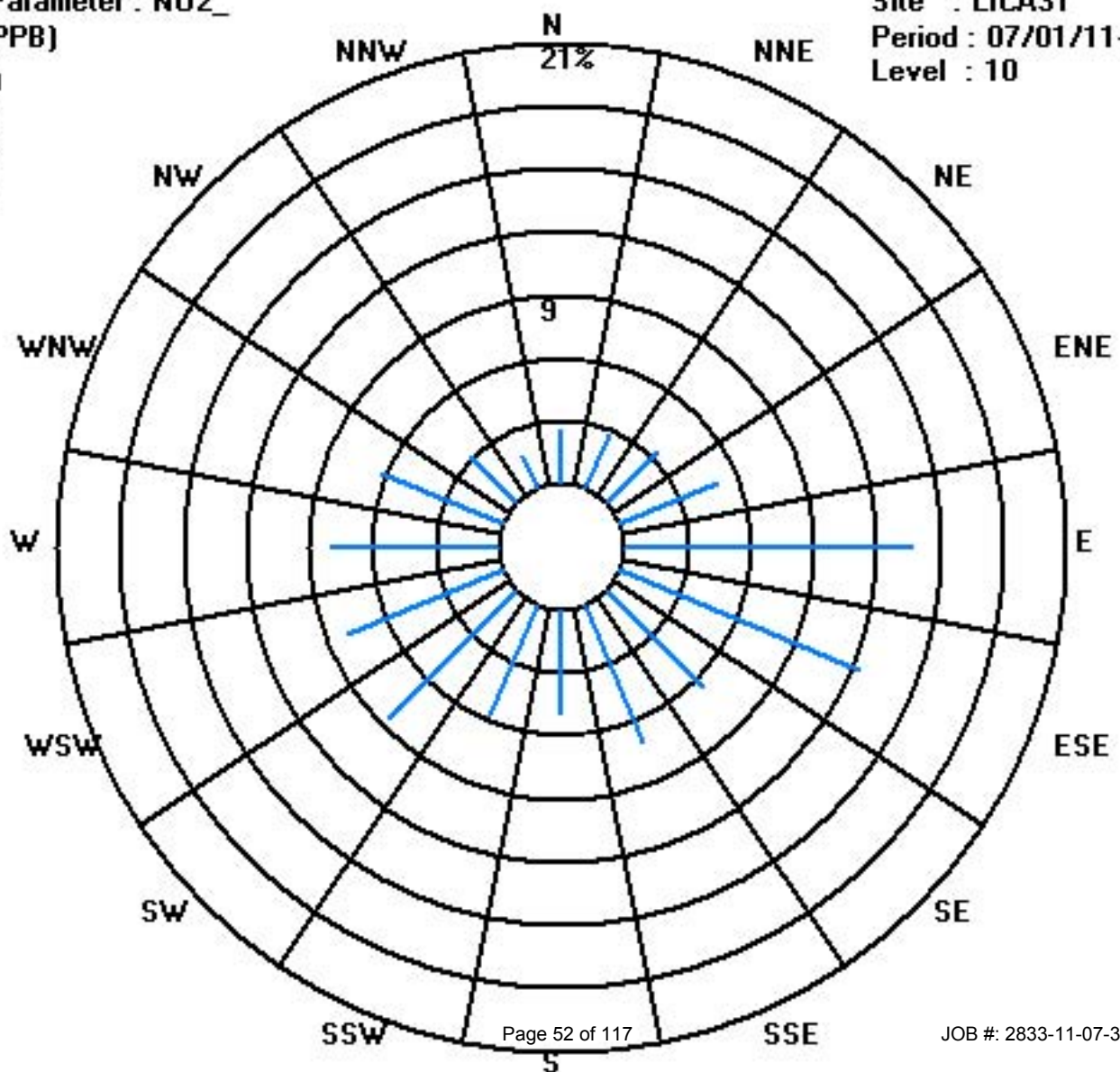
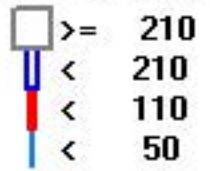
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	20	24	35	96	87	46	50	35	41	61	56	56	44	22	12	703
< 110																	
< 210																	
>= 210																	
Totals	18	20	24	35	96	87	46	50	35	41	61	56	56	44	22	12	

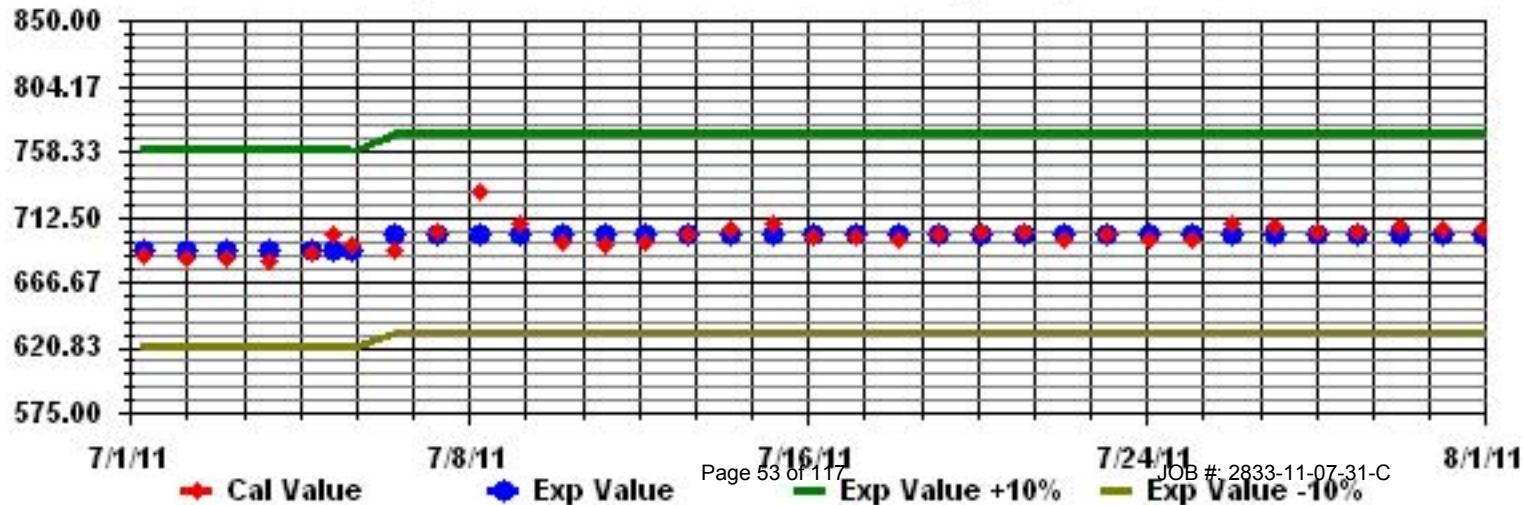
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: NO2_ Sequence: NO2 Phase: SPAN



Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

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

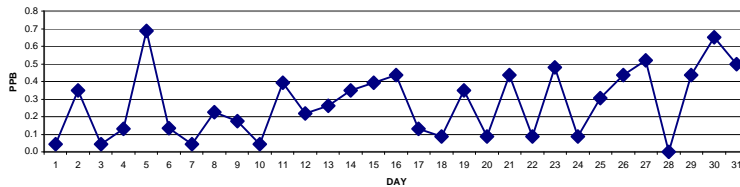
STATUS FLAG CODES

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

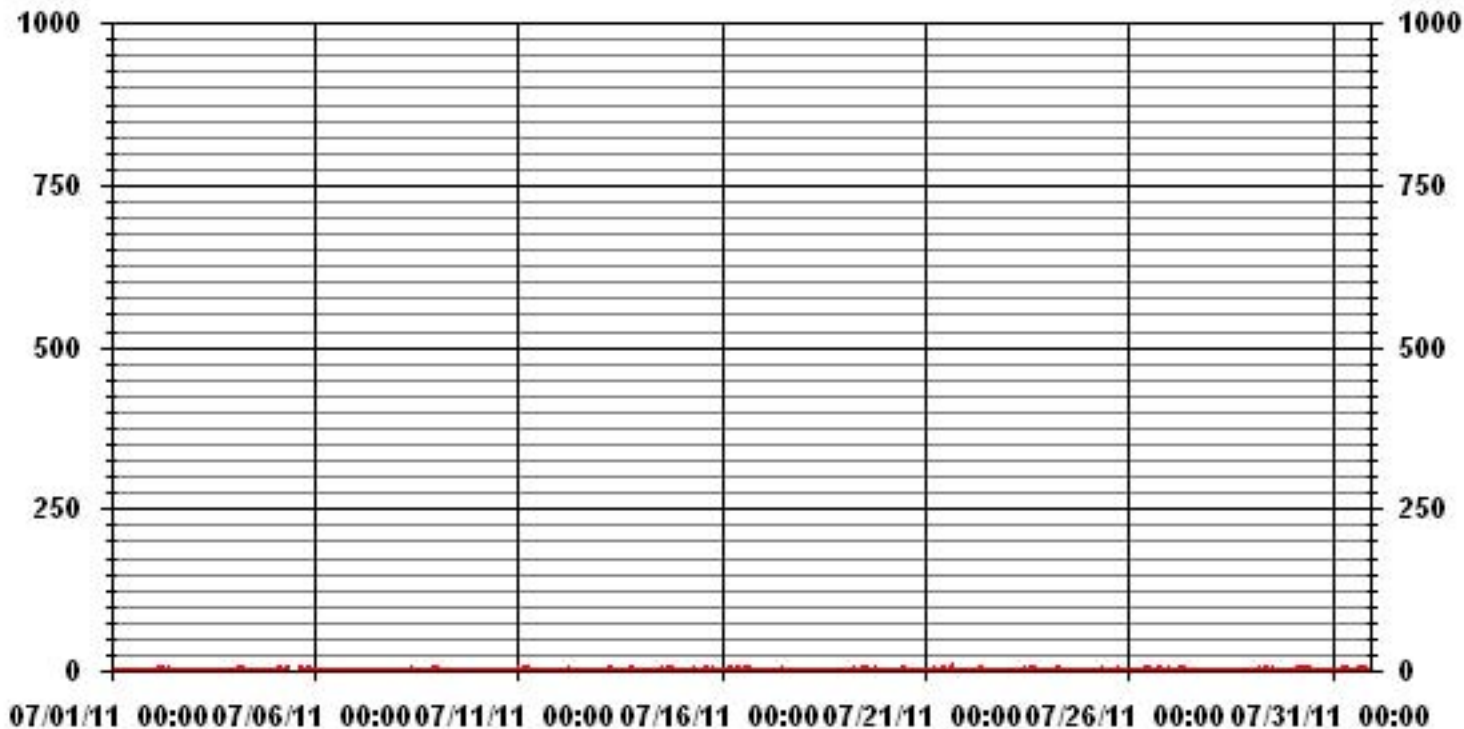
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	178
MAXIMUM 1-HR AVERAGE:	5 PPB @ HOUR(S) 15 ON DAY(S) 21
MAXIMUM 24-HR AVERAGE:	0.7 PPB ON DAY(S) 5, 30
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	7 HRS
OPERATIONAL TIME:	743 HRS
AMD OPERATION UPTIME:	99.9 %
STANDARD DEVIATION:	0.50
MONTHLY AVERAGE:	0.27 PPB

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



— LICA31 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

NITRIC OXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR				
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.			
DAY																														
1	1	1	1	1	1	1	1	IZS	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	3	1.1	24		
2	1	1	1	1	1	2	IZS	4	3	2	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	4	1.4	24		
3	1	1	1	1	1	IZS	3	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	3	1.1	24		
4	1	1	2	1	IZS	2	2	1	1	12	1	2	1	11	1	0	2	1	1	1	1	1	1	1	1	12	2.1	24		
5	1	1	1	IZS	3	2	6	2	1	C	C	C	C	C	C	C	C	2	1	1	2	2	1	1	6	1.8	24			
6	1	1	IZS	2	1	1	2	1	1	1	1	1	2	1	M	1	1	1	1	1	1	1	1	1	2	1.1	23			
7	1	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24		
8	IZS	2	1	1	1	1	1	1	1	3	2	1	1	1	1	1	2	1	1	2	1	1	1	1	IZS	3	1.3	24		
9	3	1	1	1	2	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	IZS	3	3	1.3	24	
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	1	3	1.1	24
11	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	1	3	1.2	24
12	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	1	1	3	1.1	24		
13	1	1	1	1	1	2	1	1	1	1	1	1	1	1	8	3	1	1	IZS	3	1	1	1	1	1	8	1.5	24		
14	1	1	1	1	1	1	1	1	1	1	P	1	2	2	1	1	1	IZS	3	2	1	1	2	1	3	1.3	23			
15	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	2	IZS	3	1	2	1	2	1	2	3	1.3	24			
16	1	1	1	1	1	2	1	1	1	10	1	1	1	1	1	IZS	4	3	1	3	1	1	1	1	10	1.7	24			
17	1	1	1	1	1	1	1	1	P	1	1	1	1	1	1	IZS	3	1	1	1	1	1	1	1	1	3	1.1	23		
18	1	1	1	1	1	1	1	P	1	1	1	1	1	1	IZS	3	1	1	3	3	1	1	1	1	1	3	1.3	23		
19	1	1	1	1	1	1	3	2	2	2	2	1	1	1	1	1	1	1	2	2	1	2	1	2	1	3	1.5	24		
20	1	1	1	1	1	1	1	1	1	12	1	1	IZS	3	2	1	2	1	1	1	1	1	2	1	1	12	1.7	24		
21	1	1	1	1	1	1	3	1	1	1	IZS	4	2	1	3	111	1	1	1	1	1	1	1	1	1	111	6.1	24		
22	1	1	1	1	1	1	1	1	1	IZS	4	2	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.2	24		
23	1	1	1	1	1	1	1	1	IZS	4	2	1	1	1	2	2	1	1	2	1	2	1	1	1	4	1.3	24			
24	1	1	1	1	1	2	2	IZS	2	0	0	1	0	0	2	1	4	2	0	0	1	1	1	1	4	1.1	24			
25	0	0	0	0	1	1	IZS	4	2	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.0	23			
26	1	1	1	2	1	IZS	2	1	1	1	2	28	2	5	5	1	1	1	1	1	2	1	1	1	28	2.7	24			
27	P	2	1	1	IZS	3	3	2	2	2	2	1	2	1	2	1	2	1	1	1	1	1	1	1	3	1.5	23			
28	1	1	1	IZS	3	0	1	2	2	1	2	1	1	1	1	1	0	0	1	0	0	0	P	0	3	0.9	23			
29	0	0	IZS	3	1	1	1	1	4	4	2	3	2	3	2	1	1	1	1	1	1	1	1	1	4	1.6	24			
30	1	IZS	4	1	1	1	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	P	1	1	4	1.3	23	
31	IZS	3	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	2	1	2	1	2	1	1	IZS	3	1.3	24		
HOURLY MAX	3	3	4	3	3	3	6	4	4	12	4	28	3	11	8	111	4	3	3	3	3	3	3	3	3					
HOURLY AVG	1.0	1.1	1.1	1.1	1.2	1.3	1.7	1.4	1.4	2.5	1.4	2.2	1.3	1.7	1.7	5.0	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.1	1.1					

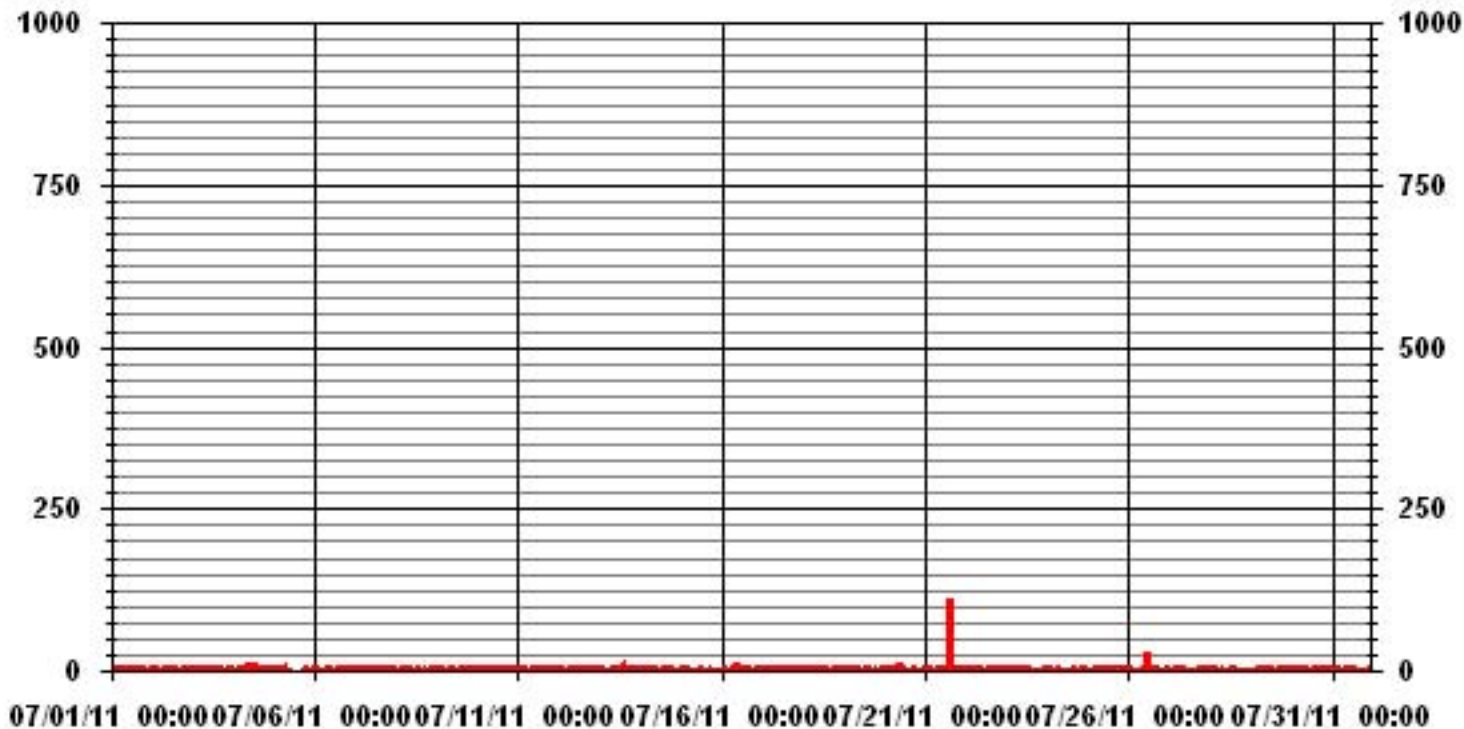
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	675					
MAXIMUM INSTANTANEOUS VALUE:	111	PPB	@ HOUR(S)	15	ON DAY(S)	21
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	736	HRS	
MONTHLY CALIBRATION TIME:	8	HRS				
STANDARD DEVIATION	4.41					

01 Hour Averages



LICA31
 NO_ / WDR Joint Frequency Distribution (Percent)

July 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	2.56	2.84	3.41	4.97	13.65	12.37	6.54	7.11	4.97	5.83	8.67	7.96	7.96	6.25	3.12	1.70	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.56	2.84	3.41	4.97	13.65	12.37	6.54	7.11	4.97	5.83	8.67	7.96	7.96	6.25	3.12	1.70	

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	18	20	24	35	96	87	46	50	35	41	61	56	56	44	22	12	703
< 110																	
< 210																	
>= 210																	
Totals	18	20	24	35	96	87	46	50	35	41	61	56	56	44	22	12	

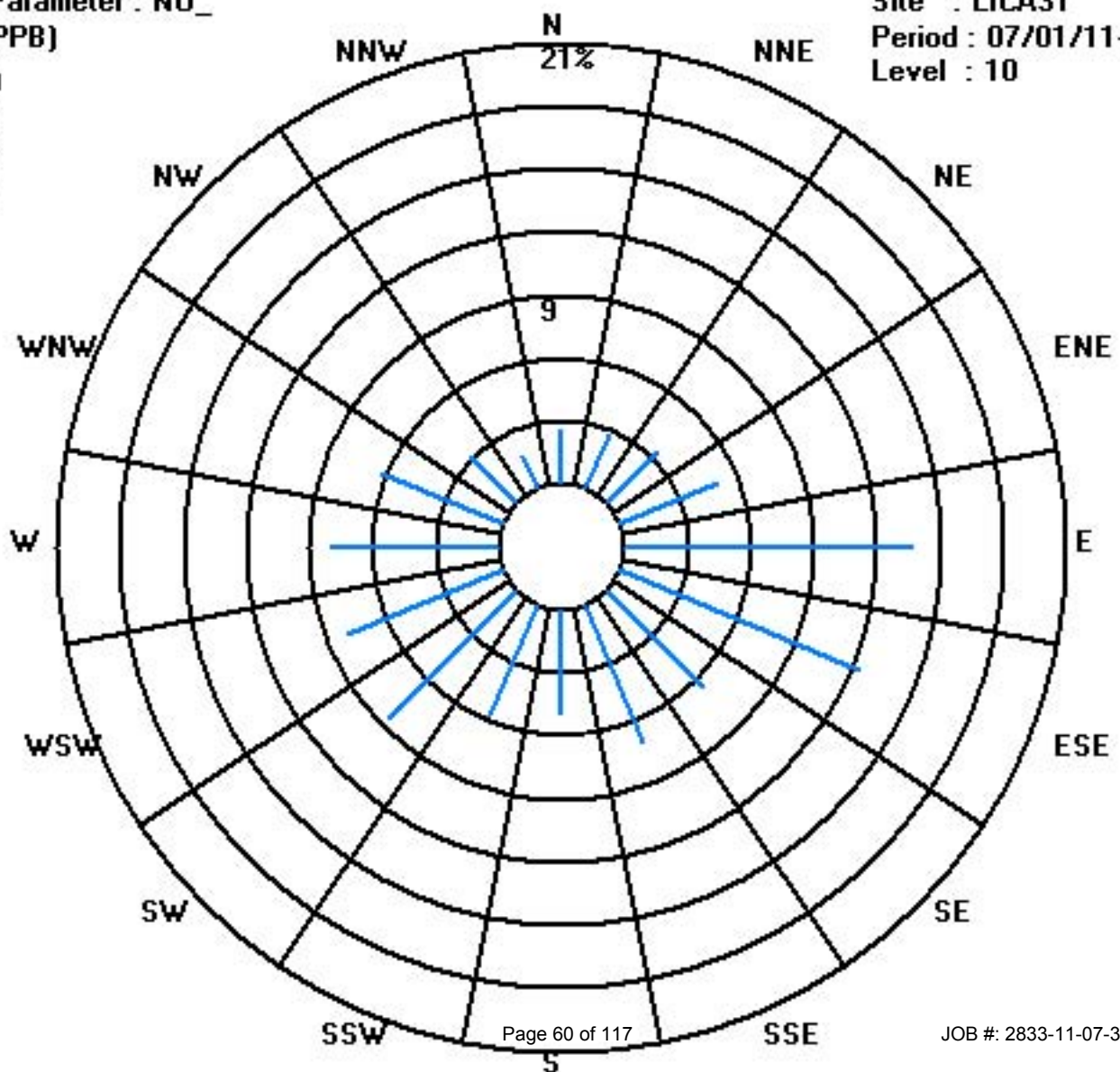
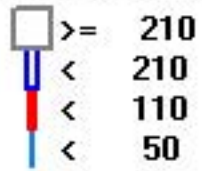
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)

Period : 07/01/11-07/31/11

Level : 10



Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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	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	3	3	3	3	2	1	0	IZS	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0.9	24	
2	2	2	3	2	2	3	IZS	4	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1.7	24	
3	1	1	1	2	2	IZS	2	1	2	1	1	1	1	1	1	2	1	1	1	1	1	0	0	2	1.1	24		
4	0	1	1	1	IZS	1	1	1	1	1	0	0	0	1	0	0	0	1	0	0	1	2	3	2	3	0.8	24	
5	3	2	2	IZS	4	3	4	3	2	C	C	C	C	C	C	C	1	1	1	1	1	2	2	2	4	2.1	24	
6	1	1	IZS	2	1	1	1	1	1	1	1	1	1	0	M	1	1	1	1	1	2	2	4	4	4	1.4	23	
7	2	IZS	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.1	24	
8	IZS	1	1	1	1	1	1	2	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	IZS	3	1.3	24	
9	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	1	2	1.1	24	
10	1	1	1	1	1	1	0	0	1	0	0	0	1	0	1	0	0	1	1	1	1	1	IZS	4	2	4	0.8	24
11	2	3	2	3	3	4	3	2	1	1	0	0	0	0	1	0	1	0	1	0	1	IZS	1	1	4	1.3	24	
12	1	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	2	1.3	24	
13	2	2	2	3	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1	1	1	3	1.5	24	
14	1	1	2	2	2	2	2	2	2	1	1	2	2	2	1	1	1	1	IZS	2	2	2	2	2	2	2	1.7	24
15	1	1	1	2	2	2	2	1	2	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	2	2	1.3	24	
16	1	1	1	1	2	2	2	1	1	2	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	2	1.2	24	
17	1	1	1	1	0	1	1	1	1	1	1	1	1	1	IZS	1	1	1	1	1	1	1	1	2	2	1.0	24	
18	2	2	2	2	2	2	2	2	1	1	1	1	1	1	IZS	1	1	1	1	2	1	1	1	1	2	1.4	24	
19	2	2	2	2	1	1	2	1	1	1	1	0	IZS	1	1	1	1	1	2	1	1	1	1	1	2	1.2	24	
20	1	1	1	1	1	1	1	1	1	1	1	IZS	1	1	0	0	0	0	0	0	1	1	1	1	1	0.7	24	
21	1	1	1	1	1	1	1	1	1	0	IZS	1	1	1	1	15	0	1	0	1	1	1	1	15	1.5	24		
22	1	1	2	1	1	1	1	0	0	IZS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.0	24	
23	1	1	1	1	0	1	1	1	IZS	3	1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	1.3	24	
24	1	2	2	1	1	1	1	IZS	1	1	1	1	1	0	1	1	2	1	0	1	2	2	2	2	2	1.2	24	
25	1	1	2	1	2	3	IZS	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.3	24		
26	2	1	1	1	1	IZS	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	2	1.2	24		
27	1	1	1	1	IZS	1	1	1	1	1	1	0	1	0	1	0	1	0	0	1	1	1	1	1	1	0.8	24	
28	1	1	1	IZS	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1.1	24	
29	2	1	IZS	2	1	2	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.2	24		
30	1	IZS	2	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	1.3	24	
31	IZS	2	2	2	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	IZS	2	1.2	24	
HOURLY MAX	3	3	3	3	4	4	4	4	4	4	3	3	2	2	2	15	2	1	2	2	2	2	4	4				
HOURLY AVG	1.4	1.4	1.6	1.6	1.5	1.6	1.4	1.4	1.4	1.3	1.0	0.9	1.0	0.9	0.9	1.3	0.9	0.9	0.9	1.0	1.1	1.2	1.4	1.4				

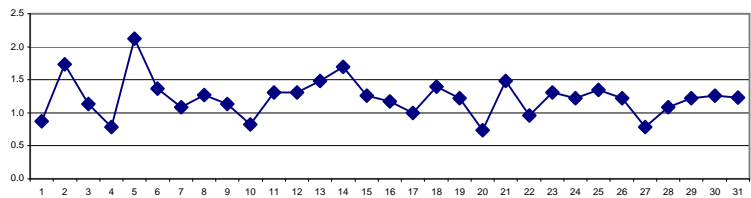
STATUS FLAG CODES

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

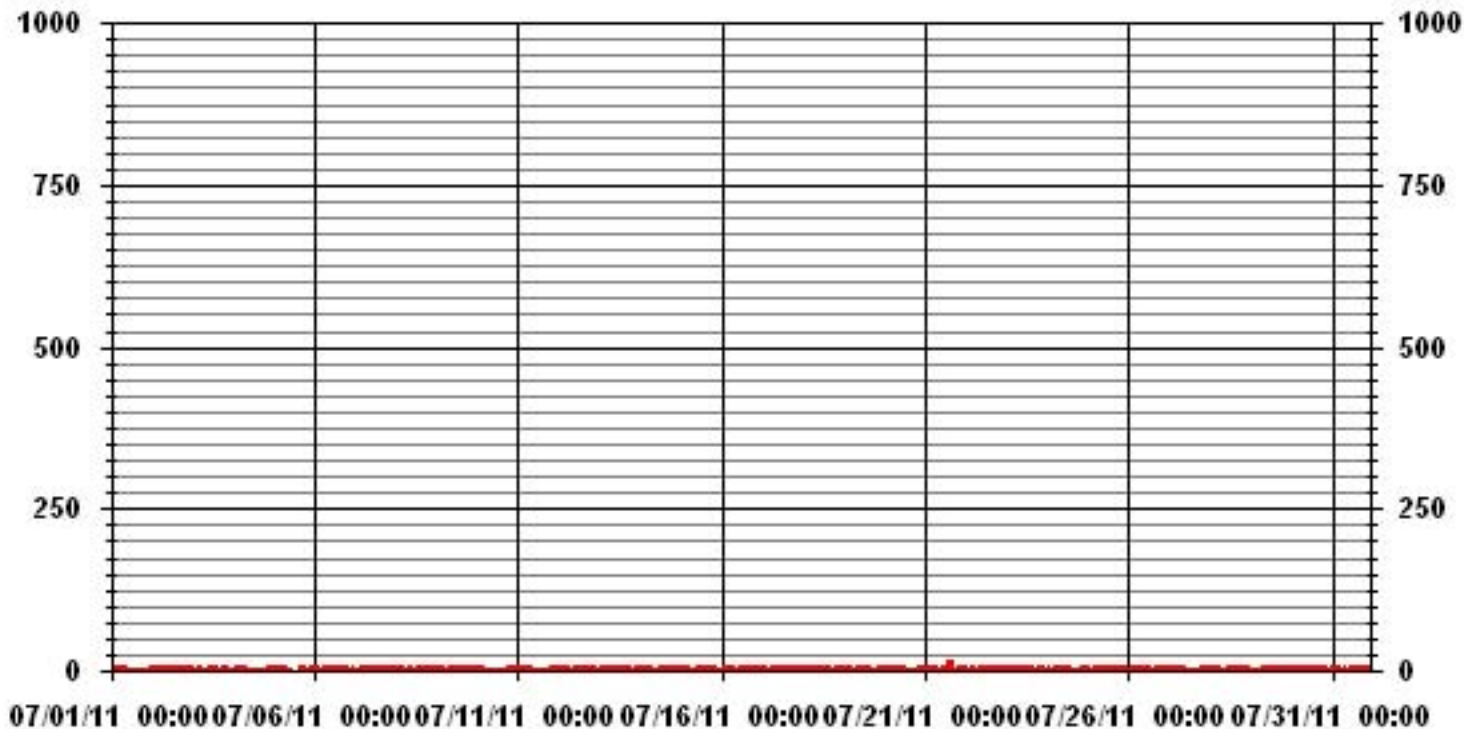
MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	642					
MAXIMUM 1-HR AVERAGE:	15	PPB	@ HOUR(S)	15	ON DAY(S)	21
MAXIMUM 24-HR AVERAGE:	2.1	PPB			ON DAY(S)	5
IZS CALIBRATION TIME:	33	HRS	OPERATIONAL TIME:	743	HRS	
MONTHLY CALIBRATION TIME:	7	HRS	AMD OPERATION UPTIME:	99.9	%	
STANDARD DEVIATION:	0.86		MONTHLY AVERAGE:	1.22	PPB	

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



— LICA31 NOX_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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	4	4	4	4	3	2	1	IZS	2	2	2	1	1	1	1	2	1	1	1	1	1	1	3	3	4	2.0	24	
2	3	3	4	4	3	4	IZS	5	5	4	4	2	2	2	3	1	3	1	2	2	2	2	2	2	5	2.8	24	
3	2	2	2	3	2	IZS	4	2	2	2	2	2	1	1	2	2	5	2	1	3	2	2	1	1	5	2.1	24	
4	1	1	2	2	IZS	3	3	1	1	20	2	2	1	16	1	1	2	2	1	1	3	3	5	3	20	3.3	24	
5	4	3	2	IZS	5	4	10	5	3	C	C	C	C	C	C	C	C	2	2	2	4	10	4	3	10	4.2	16	
6	2	2	IZS	3	2	2	3	2	2	2	2	1	2	1	M	2	1	3	3	2	4	4	7	7	7	2.7	23	
7	4	IZS	3	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	4	2.0	24	
8	IZS	2	2	2	2	2	2	2	3	5	5	2	2	2	3	1	2	2	2	2	1	2	2	IZS	5	2.3	23	
9	3	2	2	3	4	3	2	2	2	1	2	2	3	2	1	2	1	1	2	2	2	1	IZS	2	4	2.0	24	
10	2	1	1	2	2	1	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	IZS	5	3	1.5	24	
11	3	5	3	4	4	6	4	3	2	2	1	1	1	1	1	1	1	1	1	1	1	IZS	3	2	6	2.3	24	
12	2	3	2	3	3	3	3	3	2	2	1	2	2	1	2	1	2	2	2	IZS	3	2	2	2	3	2.2	24	
13	2	3	3	4	3	4	3	3	2	2	2	1	2	2	13	5	2	2	IZS	3	2	2	2	2	13	3.0	24	
14	2	2	2	2	3	3	2	2	2	2	P	3	4	4	2	2	2	IZS	3	3	3	2	4	4	4	2.6	23	
15	2	2	3	5	3	3	3	2	2	3	2	2	2	2	1	2	IZS	3	2	3	2	3	2	3	5	2.4	24	
16	2	2	2	2	3	4	3	2	2	17	2	2	2	2	1	IZS	3	5	2	5	1	1	2	2	17	3.0	24	
17	1	2	2	3	1	1	2	2	P	1	2	2	2	2	IZS	3	1	2	2	2	2	2	2	2	3	1.9	23	
18	3	3	3	3	3	3	3	P	2	2	2	2	2	IZS	3	2	2	7	7	2	2	2	2	2	7	2.8	23	
19	2	2	3	2	2	2	4	2	3	3	3	1	IZS	3	4	2	2	5	3	2	4	2	2	2	5	2.6	24	
20	2	2	1	2	1	1	1	2	2	22	2	IZS	3	2	1	1	1	2	1	1	2	2	1	2	22	2.5	24	
21	2	2	1	1	2	2	4	1	2	1	IZS	3	2	2	5	421	1	1	1	1	1	2	2	2	421	20.1	24	
22	2	2	3	3	1	1	1	1	1	IZS	3	1	1	1	2	2	2	2	2	2	1	1	1	1	2	3	1.6	24
23	1	2	2	2	2	2	2	IZS	4	2	2	2	2	3	3	2	2	3	3	4	3	2	2	4	4	2.3	24	
24	2	2	3	2	2	2	2	IZS	3	2	1	2	2	2	4	3	11	4	1	2	4	5	4	4	11	3.0	24	
25	2	2	3	2	4	4	IZS	5	3	P	2	2	2	1	2	2	2	1	4	2	1	2	2	2	5	2.4	23	
26	2	2	2	5	2	IZS	3	1	1	2	4	41	5	9	9	2	2	2	2	2	3	2	2	1	41	4.6	24	
27	P	2	1	1	IZS	3	4	3	3	3	3	1	2	1	3	2	3	1	1	1	2	1	2	1	4	2.0	23	
28	2	1	2	IZS	3	2	2	4	5	3	4	2	2	3	2	2	2	1	3	2	3	2	P	3	5	2.5	23	
29	2	2	IZS	4	2	2	2	2	6	6	3	5	2	3	4	2	2	2	2	2	1	2	2	2	6	2.7	24	
30	2	IZS	3	2	2	3	4	3	3	2	2	3	3	2	1	1	2	1	2	2	2	P	2	2	4	2.2	23	
31	IZS	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	2	5	3	2	2	1	IZS	5	2.3	23	
HOURLY MAX	4	5	4	5	5	6	10	5	6	22	5	41	5	16	13	421	11	7	7	5	4	10	7	7				
HOURLY AVG	2.3	2.3	2.3	2.7	2.5	2.6	2.8	2.4	2.4	4.3	2.3	3.3	2.1	2.6	2.8	16.4	2.3	2.0	2.3	2.1	2.2	2.5	2.5	2.4				

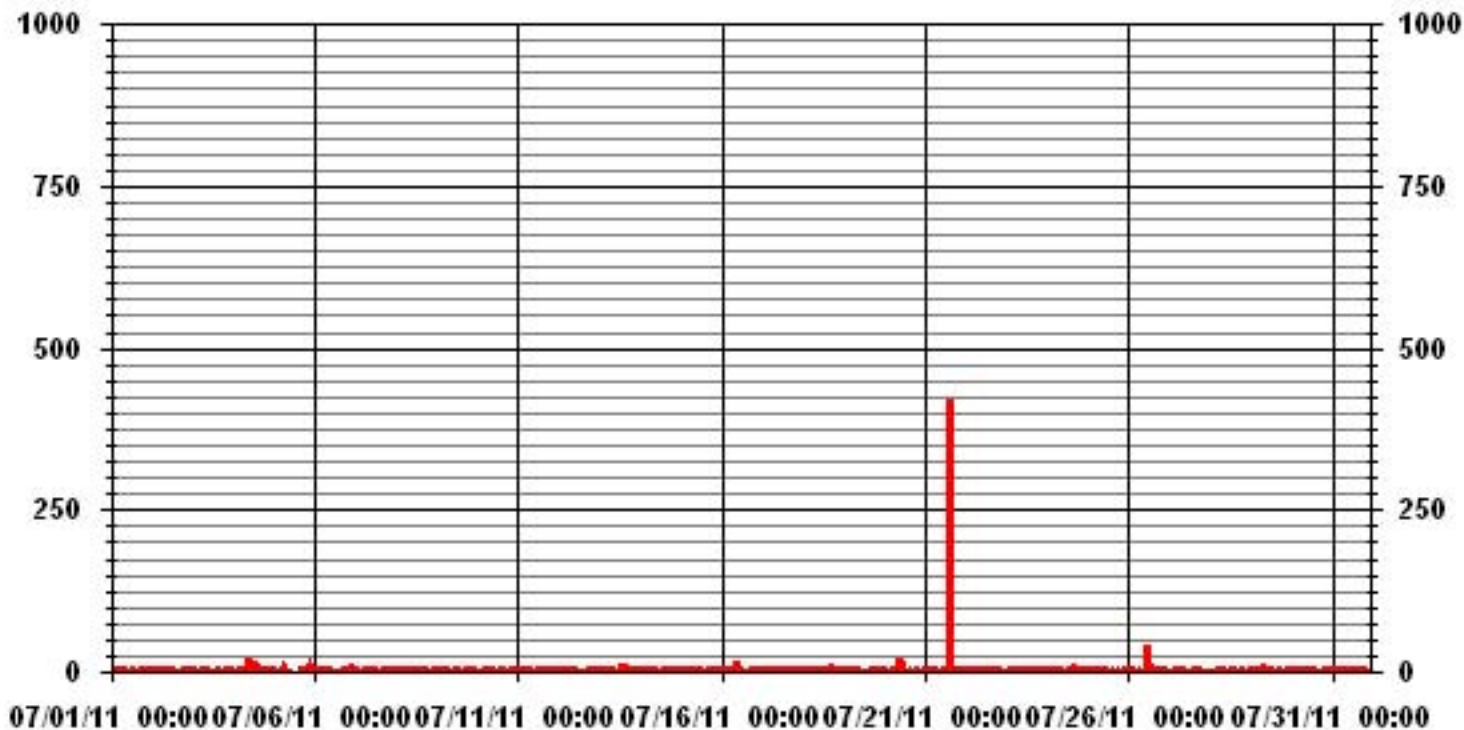
STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	695
MAXIMUM INSTANTANEOUS VALUE:	421 PPB @ HOUR(S) 15 ON DAY(S) 21
IZS CALIBRATION TIME:	33 HRS
MONTHLY CALIBRATION TIME:	8 HRS
OPERATIONAL TIME:	726 HRS
STANDARD DEVIATION:	16.03

01 Hour Averages



— LICA31 NOXMAX PPB

LICA31
 NOX_ / WDR Joint Frequency Distribution (Percent)

July 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	2.56	2.84	3.41	4.97	13.65	12.37	6.54	7.11	4.97	5.83	8.67	7.96	7.96	6.25	3.12	1.70	100.00
< 110	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 210	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.56	2.84	3.41	4.97	13.65	12.37	6.54	7.11	4.97	5.83	8.67	7.96	7.96	6.25	3.12	1.70	

Calm : .00 %

Total # Operational Hours : 703

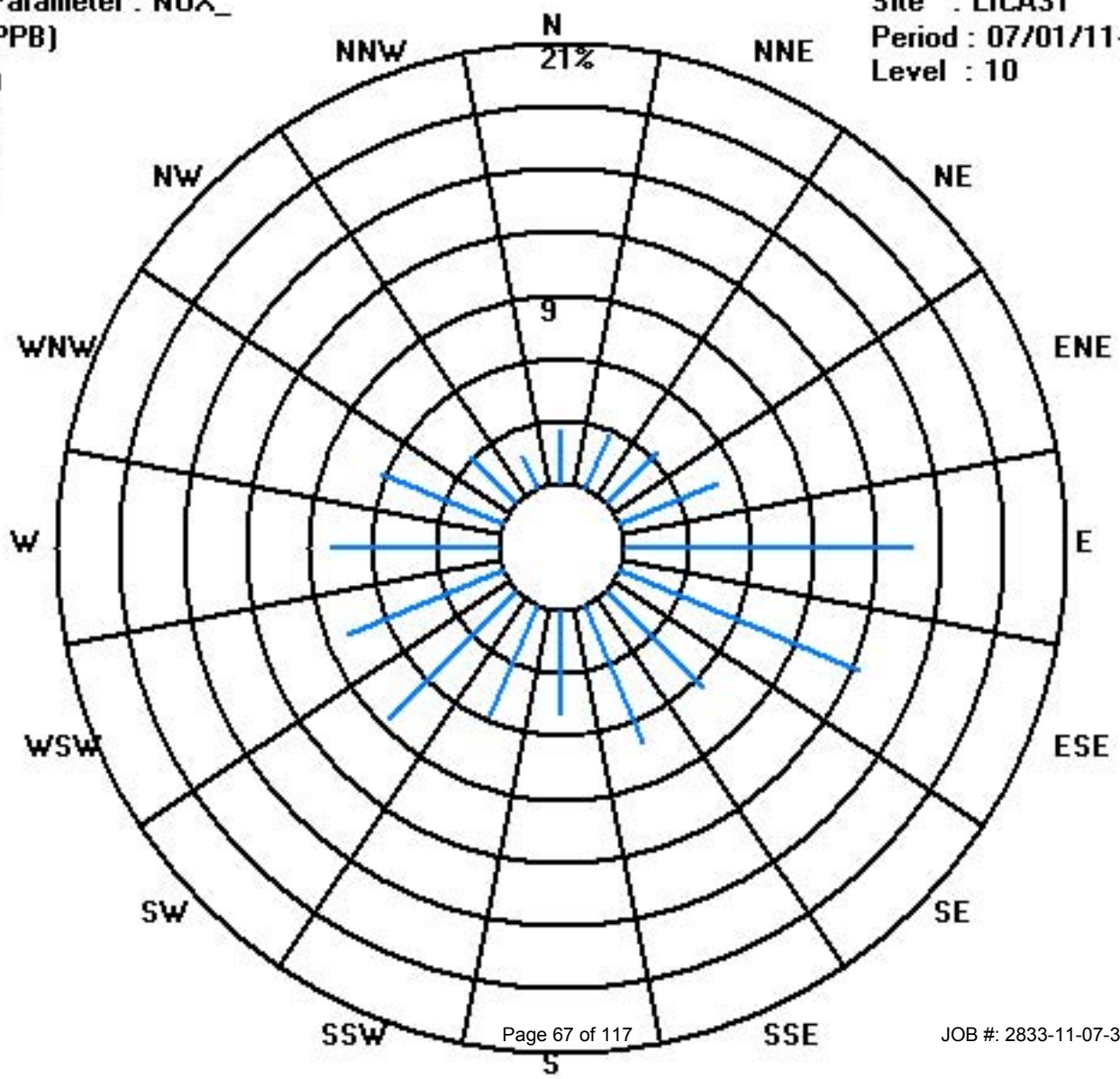
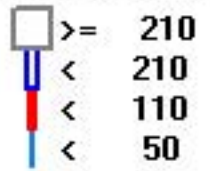
Distribution By Samples

	Direction																
Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
< 50	18	20	24	35	96	87	46	50	35	41	61	56	56	44	22	12	703
< 110																	
< 210																	
>= 210																	
Totals	18	20	24	35	96	87	46	50	35	41	61	56	56	44	22	12	

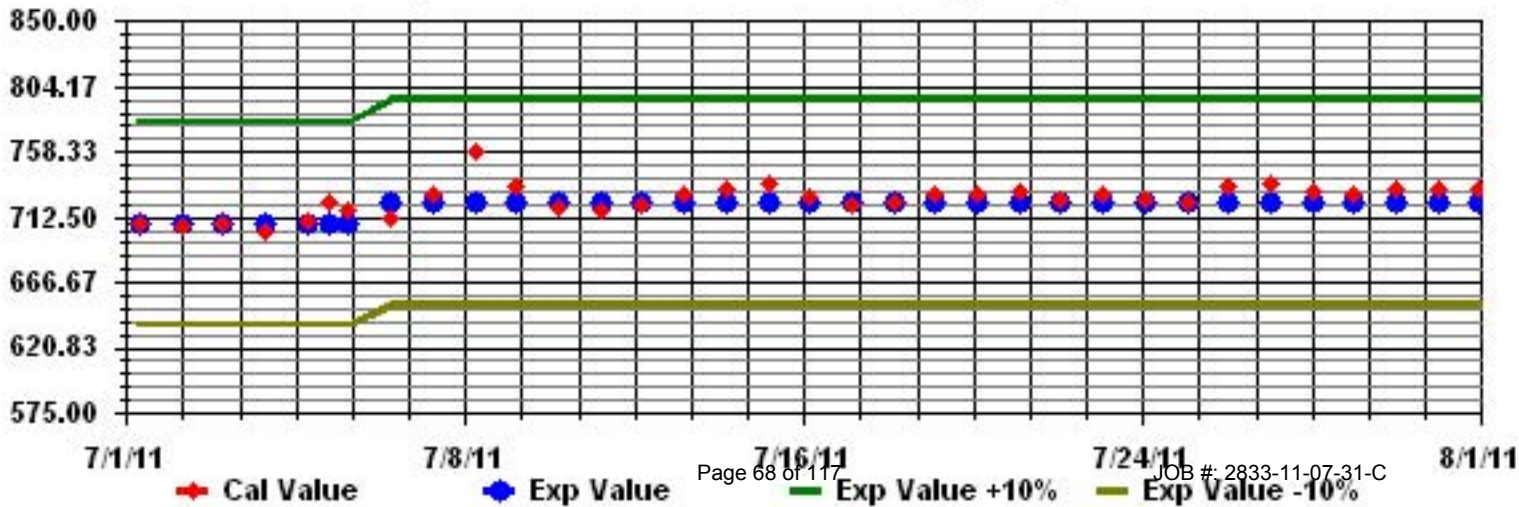
Calm : .00 %

Total # Operational Hours : 703

Class Limits (PPB)



Calibration Graph for Site: LICA31 Parameter: NOX_ Sequence: NO2 Phase: SPAN



Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

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

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24:00	DAILY	24-HOUR	
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	4.5	7.2	5.9	4.7	2.9	2.3	3.3	4.1	4.2	2.8	2.1	2.6	1.4	2.2	3.2	4.3	3.1	2.7	3.7	4.1	3.4	4.5	6.7	8.3	8.3	3.9	24	
2	2	11.6	11.5	8.4	9.2	7.1	5.5	6	5.6	6.8	7	8	4.3	4.1	3.8	5.6	5.4	5.9	4.2	2.6	1.9	5.7	5.7	5.4	6.4	11.6	6.2	24	
3	3	5.1	4.2	5.2	5.1	7.4	6.7	4	5.1	3	3.9	7.1	5.8	6.5	7.8	6.3	4.9	6.5	8.9	8.6	10.4	8.4	7.5	6.8	2.5	10.4	6.2	24	
4	4	3.1	1.7	3.8	2.2	0.1	0	3.7	3.1	4.4	3.4	4.7	0.3	0	2.3	1.9	4.8	4	4.4	4.6	5.3	3.6	3.5	4.1	7.6	7.6	3.2	24	
5	5	4.1	5.9	6.7	5.1	6.4	6.4	4.3	4.2	5.1	5.7	5.8	6.8	9.4	7.7	5.4	11.7	8.4	7.1	5.8	7	7.4	7.4	12.6	9.1	12.6	6.9	24	
6	6	7.4	7.3	8.2	6.7	7.6	6.3	6.1	2.5	0.2	5.7	C	C	3.8	1.7	7.1	4.6	4.1	5.2	5.6	7.4	9	14.6	9	3.7	14.6	6.1	24	
7	7	3.6	5.5	6.4	8.3	9.5	7.8	3.7	4.6	5.6	0	0	10.3	18.2	15.8	2.2	5.1	5.2	5.5	6.4	3.9	5	11.4	6.5	7.2	18.2	6.6	24	
8	8	5.8	2.6	7.4	8.5	8.8	6.7	10.3	4.8	8.3	4.7	0.5	2.6	1.8	4.6	0	0.4	0.7	0	0.4	0.5	3	2.3	0.7	0.4	10.3	3.6	24	
9	9	0.5	3.4	2.4	5.8	1.8	3.2	3.6	1.8	0	2.4	2.1	5.1	5.7	3.7	0	4.3	4.5	0	3.3	4.5	3.1	1.9	2.8	6	6.0	3.0	24	
10	10	4	2.8	2.2	2.8	2.9	3.9	5.8	4.7	2.3	1.6	4.9	0.4	0	0	6.5	0	4.4	0	0.9	4.9	3	4.7	2.4	2.5	6.5	2.8	24	
11	11	1.5	3.3	4.2	4.2	6	5.3	3	0.4	0.8	3.7	3.1	2.8	3.5	6.8	1.1	0	4.1	5.3	4.5	4	5.8	3.8	3.3	4.4	6.8	3.5	24	
12	12	3.4	2.7	4.9	6.7	5.3	3.4	4.3	4	6.7	6.6	4.4	6.9	4.7	5.2	4.5	6	7.3	6.2	3.6	5.1	6	7	6.1	3.8	7.3	5.2	24	
13	13	4.5	4	4.9	4.5	4	5.2	6.3	6.6	7.8	7.7	9	4.3	7.8	8.6	8.5	6.9	10.7	2	8.4	N	0	7.4	4.8	6.5	10.7	6.1	23	
14	14	4.2	2.3	3.5	9.1	7.7	4.4	6.8	6	9.9	7	1.2	2.5	12	14.7	8.2	5.5	4.8	13.6	11.7	10.1	9.9	8.9	9.5	10.6	14.7	7.7	24	
15	15	9	7	5.1	3.6	1.2	2	3.5	1.5	2.3	2.3	2.4	1.6	0	3.8	3.2	3.1	0	3.4	1.9	4.2	4.7	3.6	2.1	1.4	9.0	3.0	24	
16	16	0.9	2.3	1.2	1.6	2.8	3.7	3.1	3.1	2.3	5.1	1.3	0.7	3.9	6.1	0	0	8.5	3.5	0	0	0.2	2.3	2.9	3.5	8.5	2.5	24	
17	17	1	5.4	7.2	6.9	5.7	3.3	4.2	4.8	0	1.5	3.6	0	10.8	9.5	6	7	5.6	3.7	4	5.2	2.8	0	0	3.3	10.8	4.2	24	
18	18	4.7	4.6	5.1	6.5	5.6	10.3	7.3	N	0	6.7	12	13.1	9.8	N	2.7	6	8.7	7.4	12.5	0.4	0	8	4.2	3.2	13.1	6.3	22	
19	19	5.9	5.9	5.1	6.2	6.3	4.4	5.8	5.2	3.3	6.9	3.6	2.6	1.7	2.6	4.6	2.2	2.3	6	4.6	0.9	0.3	3.3	3	5.8	6.9	4.1	24	
20	20	2.1	0.5	1.7	4.2	4.9	3.1	3.1	1.8	1.2	1.8	2.9	2	3.6	2.8	3	1.7	1	1.7	1.6	0.9	0	2	2.4	2	4.9	2.2	24	
21	21	3.3	2.3	0.4	1.6	0.6	3.4	3.3	1.9	2.3	1.7	2.6	3.6	3.5	0.7	2.7	2.1	0.5	1.3	3	4.2	2.1	2.5	4.8	7.4	7.4	2.6	24	
22	22	5.6	5.8	5.8	4.2	4.1	2.4	2.8	3.4	3.7	2.3	3.2	5.2	4.2	4.1	5.2	4.1	3	1.7	1.1	1.3	0.6	1	3.8	3.9	5.8	3.4	24	
23	23	0	0.7	0.9	0	1.9	0	2.9	2.7	2.5	0.9	2.6	3.1	6.9	4.2	0	2.8	4.8	3.8	7	3.6	3.7	3.7	3.9	2.7	7.0	2.7	24	
24	24	2.7	5.3	1.1	0.9	2	1.9	1.2	4.2	5.7	6.3	3	2.8	3.5	1.5	0	6.4	4.3	2.7	2.2	6.2	5.4	4.4	4.5	6.4	3.3	24		
25	25	2.8	3.5	3.4	4.7	3.3	1.9	4.1	3.6	0.1	0	0	3.3	7.9	2.5	4.4	3.8	3.8	3.4	4	3.5	5.4	6.6	9.2	3.7	9.2	3.7	24	
26	26	4.3	7.7	3.8	4.6	2.4	3.6	3.9	4.6	0	5.6	0.4	2.8	6.6	5.5	7.3	4.5	5.1	3.6	4.4	2.9	2.4	2	5.5	5.1	7.7	4.1	24	
27	27	0	1.7	2.5	3.9	3.5	2.9	2.2	5.5	6.1	7.5	4.4	1.7	1.5	4.3	5.3	1	0	3	3.1	0	0.1	3	3.4	2.2	7.5	2.9	24	
28	28	3.1	3.3	3.6	2.7	1.9	2.7	4	3.1	4.3	7.1	2.7	4.3	4.3	4.3	6.8	7.9	5.9	5.7	3.9	4.9	3.4	0.5	0.5	0.6	7.9	3.8	24	
29	29	3.6	6.1	6.1	4.9	6.1	2	5.3	7.4	4.7	6.3	4.8	5.8	8	4.5	4.3	4.3	9	6.1	2.2	4.4	4.4	2.2	3.4	1.2	9.0	4.9	24	
30	30	3.2	0	1.2	0.8	4	4	2	2.7	1.7	2.6	4.5	4.6	2.8	2.3	4.3	3.3	5	5.2	5.8	3.4	5.1	0	0.2	4.4	5.8	3.0	24	
31	31	5.2	4.3	5.5	4	1.3	4.5	5.5	5	8.8	8	3.5	6.6	6.1	6.6	8.3	9.3	8.5	7.3	7.8	6.6	1.2	N	N	2.2	9.3	5.7	22	
HOURLY MAX		12	12	8	9	10	10	10	7	10	8	12	13	18	16	9	12	11	14	13	10	10	15	13	11				
HOURLY AVG		3.9	4.2	4.3	4.7	4.4	4.0	4.4	3.9	3.7	4.3	3.7	4.0	5.3	5.0	4.1	4.1	4.9	4.4	4.5	3.9	3.7	4.6	4.5	4.4				

STATUS FLAG CODES

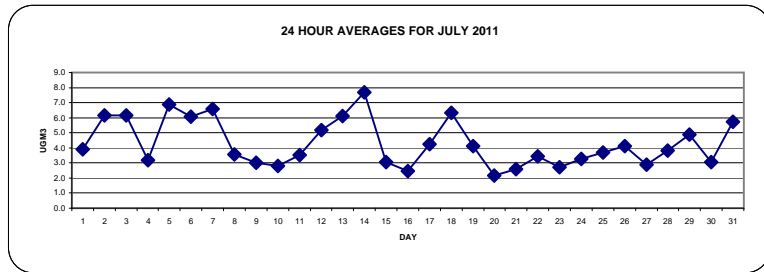
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

OBJECTIVE LIMIT:

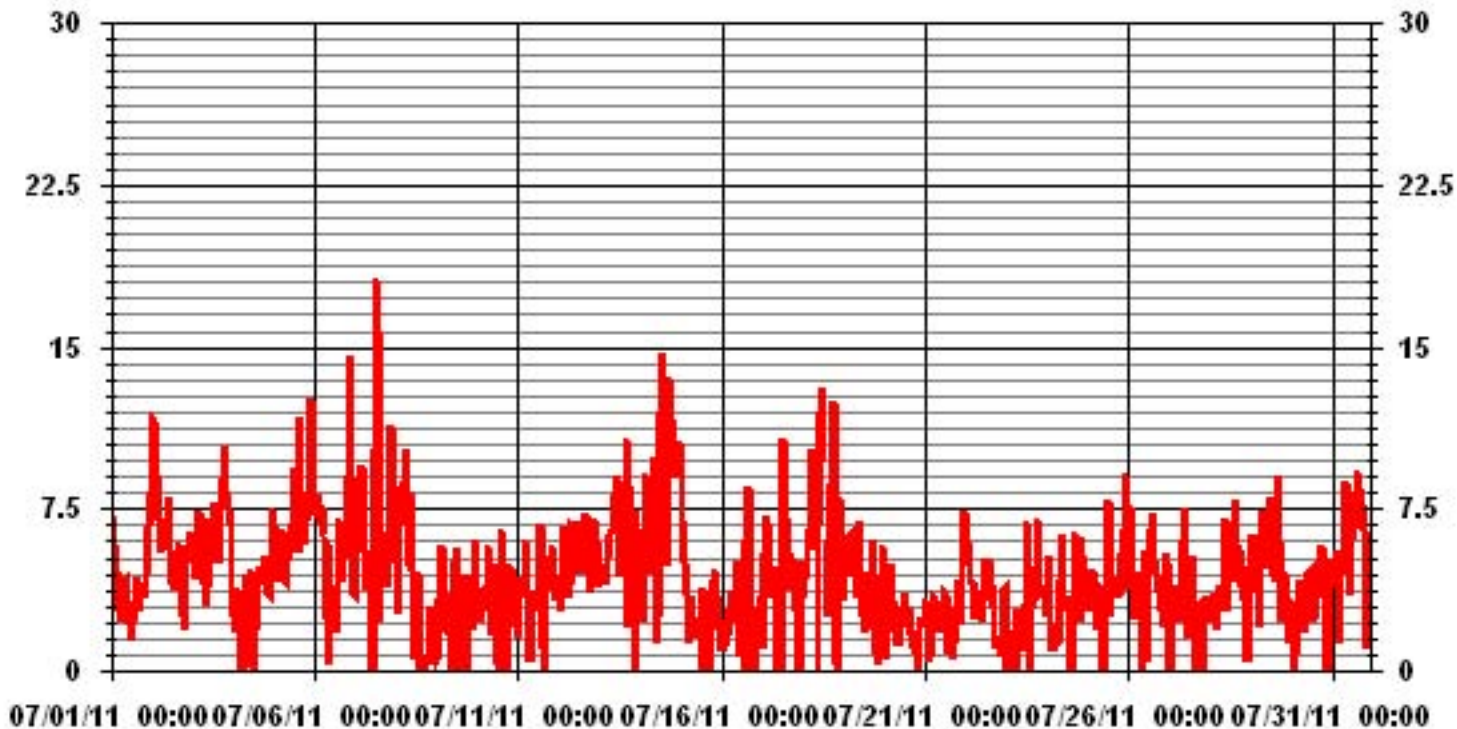
ALBERTA ENVIRONMENT:	1-HR	-	ug/m ³	24-HR	30	ug/m ³
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MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-		
NUMBER OF 24-HR EXCEEDENCES:	0 PROPOSED CANADA WIDE GUIDELINE		
NUMBER OF NON-ZERO READINGS:	695		
MAXIMUM 1-HR AVERAGE:	18.2 UG/M ³ @ HOUR(S) 12 ON DAY(S) 7		
MAXIMUM 24-HR AVERAGE:	7.7 UG/M ³ ON DAY(S) 14		
IZS CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	739 HRS
MONTHLY CALIBRATION TIME:	2 HRS	AMD OPERATION UPTIME:	99.3 %
STANDARD DEVIATION:	2.72	MONTHLY AVERAGE:	4.28 UG/M ³



01 Hour Averages



— LICA31 PM2 UG/M3

LICA31
PM2 / WDR Joint Frequency Distribution (Percent)

July 2011

Distribution By % Of Samples

Logger Id : 31
Site Name : LICA31
Parameter : PM2
Units : UG/M3

Wind Parameter : WDR
Instrument Height : 10 Meters

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	2.57	2.71	3.39	5.15	13.56	12.21	7.05	7.46	4.88	6.10	8.27	7.59	8.00	5.97	3.25	1.76	100.00
< 60.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 80.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 120.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
< 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 240.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.57	2.71	3.39	5.15	13.56	12.21	7.05	7.46	4.88	6.10	8.27	7.59	8.00	5.97	3.25	1.76	

Calm : .00 %

Total # Operational Hours : 737

Distribution By Samples

Limit	Direction																Freq
	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	
< 30.0	19	20	25	38	100	90	52	55	36	45	61	56	59	44	24	13	737
< 60.0																	
< 80.0																	
< 120.0																	
< 240.0																	
>= 240.0																	
Totals	19	20	25	38	100	90	52	55	36	45	61	56	59	44	24	13	

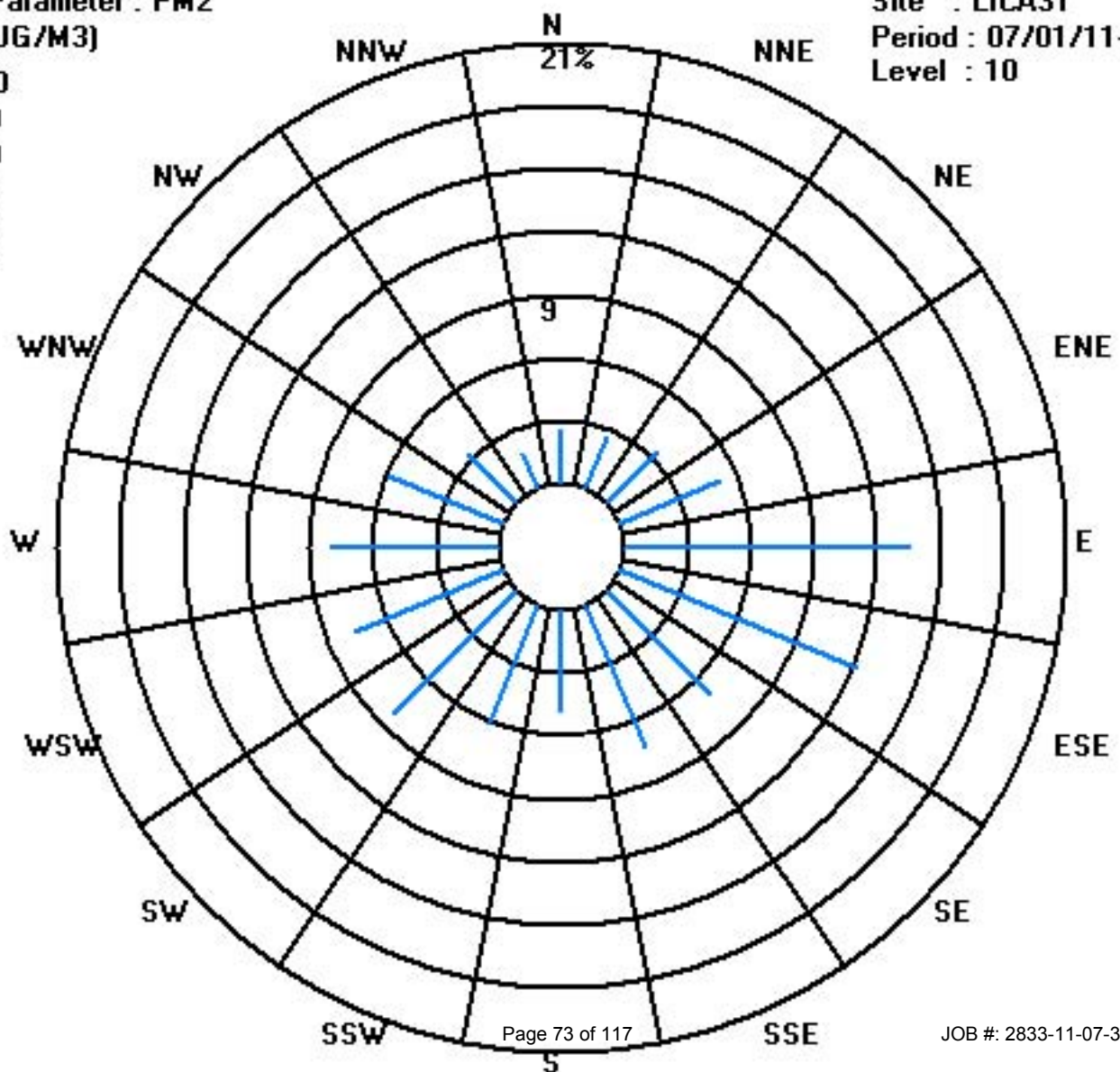
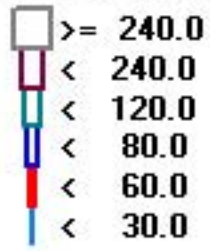
Calm : .00 %

Total # Operational Hours : 737

Class Limits (UG/M3)

Period : 07/01/11-07/31/11

Level : 10



Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA
JULY 2011

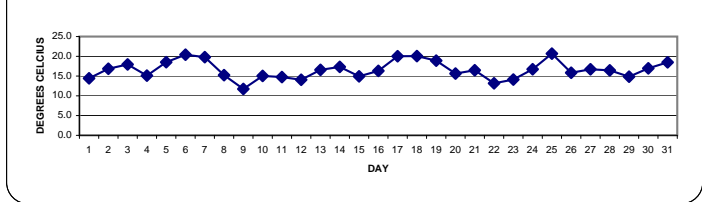
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	DAILY MAX.	24-HOUR AVG.	RDGS.
DAY	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	11.7	11.3	10.4	10.4	10.4	10.5	11.5	13	14.1	15.3	16.5	17.3	17.7	18.3	18.5	18.3	18.4	18.3	17.9	16.8	14.3	12.2	11.8	11.6	18.5	14.4	24		
2	10.3	9.3	8.5	8.3	7.4	10	12.7	14.5	16.1	19.4	20.4	21.6	22.3	22.7	22.6	22.8	22.7	22.6	21.9	20.5	18.6	16.9	16.4	15.8	22.8	16.8	24		
3	15.5	15.6	15.2	14.5	14.6	15.9	17.2	19	20.3	21.3	23	23.7	24.9	24.8	24.6	20.5	17.2	17	16.5	15.6	14.9	13.8	12.9	12.1	24.9	17.9	24		
4	11.1	10.8	10.3	9.7	9.7	11	12.5	13.6	14.6	15.9	17.2	18.1	19	19.7	19.9	20.2	20	19.8	19.1	18	15.1	13.2	12.4	11.8	20.2	15.1	24		
5	11.2	10.7	10.4	9.7	9.8	11.1	13.1	16.1	19.1	20.6	22.5	22.9	23.8	24.6	24.7	24.8	24.5	24.5	23.7	22.6	20.1	19.1	17.7	16.9	24.8	18.5	24		
6	17.3	17	16.3	15.5	14.8	15.1	16.5	19.8	20.5	22.2	23.3	23.8	24.3	25.4	25.6	25.8	24.8	24.7	22.7	21.1	19.4	18.2	18.1	17.5	25.8	20.4	24		
7	17.9	16	15	14.5	14.2	14.8	15	16.1	18.5	21	21.8	22.8	23.5	24.1	24.6	24.8	24.2	23.9	23.3	21.5	20.5	19.7	19.2	18.1	24.8	19.8	24		
8	17.1	16.3	15.7	15.5	15.6	15.7	16.9	18.2	15.8	17.1	19	20.1	19	19.3	17	16.1	13.3	13	12.8	11.2	10.7	10.3	9.9	9.9	20.1	15.2	24		
9	9.9	9.6	9.3	9.1	7.9	8.5	10	10	11.1	11.4	12.3	14.4	13.4	12.4	13.8	15.5	12.8	12.5	13.3	12.9	12.3	12.5	13.2	13.5	15.5	11.7	24		
10	13.4	13.4	13.5	13.5	13.6	13.9	14.3	14.5	15.3	17.3	17.7	16.7	18.3	18.5	17.9	17.3	17.6	16.7	15.5	14.2	13	11.9	11.4	11.5	18.5	15.0	24		
11	10.7	10.4	9.9	9.8	9.8	11.2	13.5	14.8	15.5	16.3	17.2	17.6	18.4	19	18.2	17.2	18.2	18.3	17.3	16.1	14.5	13.7	13.2	13.1	19.0	14.7	24		
12	12.7	11.5	10.3	10	10.1	10.7	13.3	14.6	15.2	15.5	15.9	16.4	15.2	15.4	15.4	15.5	16.5	15.9	15.4	15.3	15	14.3	13.8	13.6	16.5	14.1	24		
13	13.5	13.5	13.5	13.4	13.4	13.9	14.5	15.1	16.4	17.2	17.7	17.8	18.7	19.4	19.3	19.5	19.6	19.8	19.8	18.3	17.2	16.1	15.4	14.8	19.8	16.6	24		
14	15.2	15	14.9	15.1	15.2	15.1	15.6	16.6	17.8	18.7	18.8	19	19.5	19.7	20.2	18.3	20.1	20.4	19.2	17.6	16.8	16.5	15.7	14.6	20.4	17.3	24		
15	13.6	13.2	12.5	13.1	13.4	12.7	12	12.3	12	14.1	17.6	19.2	19.5	17.9	18.4	18.8	17.5	17.3	16.9	15.6	14.4	13.2	12.1	11.1	19.5	14.9	24		
16	11.7	11.5	12.3	12	12.2	12.4	13	15.1	16.2	16.6	18.7	18.2	19.8	19.7	19.8	21	19	18.5	19.8	19.1	17.4	16.5	15.8	15.3	21.0	16.3	24		
17	15.3	13	13.7	13.9	13.8	15.5	17	17.7	20	21.4	22.4	22.5	23.9	24.5	25	25.3	25.3	25	24	22.5	21.1	19.7	19.5	18.6	25.3	20.0	24		
18	17.8	17.3	17	16.6	16.1	16.8	16.4	15.6	15.5	18.7	21	22.7	24.1	25.6	27	27.4	27	25.7	23.1	20.6	18.7	17.8	16.5	16.4	27.4	20.1	24		
19	16	16	15.5	14.6	14	15.6	17.8	17.8	19.6	20.8	22.2	23	23.6	24.1	24.4	24.4	23.3	21.6	19.8	17.8	16.2	15.6	15.2	14.6	24.4	18.9	24		
20	14.2	13.9	13.7	13.6	13	12.9	13.2	13.1	13.4	14.8	16	17.3	18.2	18.7	19.4	20.3	19.9	19.3	18.8	17.6	15.4	13.7	12.8	11.9	20.3	15.6	24		
21	10.9	10.3	9.5	9.8	9.9	9.4	12.3	15.6	17.6	19	19.9	20.9	21.4	22.1	22.2	21.6	22.1	21.4	20.3	19.3	17.1	14.9	14.3	13.5	22.2	16.5	24		
22	13.1	12.8	12.1	12.7	13	13.4	13.9	14	14.2	14.7	15.7	15.9	15.2	13.9	13	12.8	12.3	12	12	11.9	11.7	11.7	11.9	12	15.9	13.2	24		
23	12.2	12.1	11.4	10.6	10.4	10.3	10.6	11.3	13.7	15.9	16.6	16.5	18.6	18.8	16.8	18.6	18.3	16.8	15.9	15.1	13.6	12.3	11.6	10.7	18.8	14.1	24		
24	10.4	10	10.4	10.9	11.4	11.6	12	13.8	16	17.7	19.3	20	21.1	21.4	20.6	21.9	22.9	22.3	21.7	20.4	17.5	16.6	16.4	15.3	22.9	16.7	24		
25	14.5	13.9	13.6	13.7	13.3	13.8	15.3	19.8	22.8	24.1	24.8	25.5	26.1	26.7	26.3	26.4	25.4	25	23.7	22.2	21.3	20.1	19.1	18.9	26.7	20.7	24		
26	17	15.2	14.9	15.2	14.4	15	16	17.5	18.2	18.5	17.5	15.7	15.3	15.1	14.7	14.9	15.7	16.3	16.7	15.6	15.2	15.4	15.2	14.9	18.5	15.8	24		
27	14.8	14.3	13.9	13.7	13.2	12.9	13.3	14.2	15.8	17.8	19.2	20.4	20.7	21	21.6	20.7	19.3	19.2	18.1	16.6	16.1	15.6	15.2	13.7	21.6	16.7	24		
28	12.9	13.1	13	12.5	11.8	12.3	14	15.2	16.9	18.6	19.3	19.6	19.6	19.2	20.5	21.2	21	20.7	20	18.1	16.5	13.1	13	12.7	21.2	16.5	24		
29	13	12.8	12.8	12.6	12.6	11.9	12.4	13.1	16.3	15.6	17.6	18.6	19.7	20.5	20.4	15.9	15.4	16.4	16.7	14.8	13	12	11.6	10.5	20.5	14.8	24		
30	10.1	9.6	9	8.4	7.7	9.8	13.3	15.7	18	20.1	20.7	21.6	22.4	23	23.1	23.1	23.1	22.2	21.5	20	17.6	16.4	15.6	15	23.1	17.0	24		
31	14.4	13.1	13.2	13.2	12.6	13.2	15.4	16.9	18.3	20.5	22.1	23.6	24.2	24.7	24.7	24.1	23.8	22.8	21.8	19.7	18.4	15.4	14	13.2	24.7	18.5	24		
HOURLY MAX	17.9	17.3	17.0	16.6	16.1	16.8	17.8	19.8	22.8	24.1	24.8	25.5	26.1	26.7	27.0	27.4	27.0	25.7	24.0	22.6	21.3	20.1	19.5	18.9					
HOURLY AVG	13.5	13.0	12.6	12.5	12.2	12.8	14.0	15.3	16.6	18.0	19.2	19.8	20.4	20.7	20.7	20.5	20.0	19.7	19.0	17.7	16.2	15.1	14.5	14.0					

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

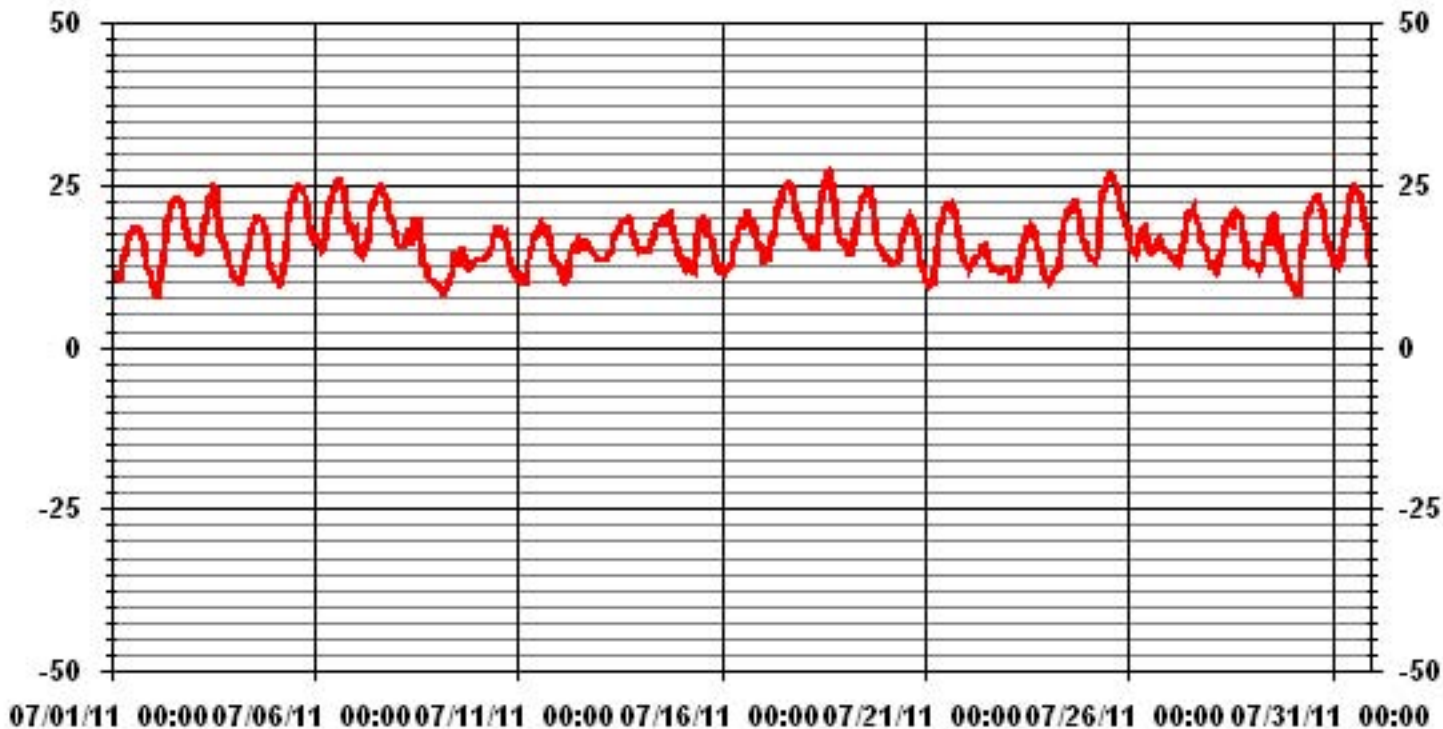
24 HOUR AVERAGES FOR JULY 2011



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	7.4 °C	@ HOUR(S)	4	ON DAY(S)	2	
MAXIMUM 1-HR AVERAGE:	27.4 °C	@ HOUR(S)	15	ON DAY(S)	18	
MAXIMUM 24-HR AVERAGE:	20.7 °C			ON DAY(S)	25	
CALIBRATION TIME:	0	HRS		OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	4.16			AMD OPERATION UPTIME:	100.0	%
				MONTHLY AVERAGE:	16.58	°C

01 Hour Averages



Barometric Pressure

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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	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	925	926	925	926	926	927	928	929	929	930	930	931	931	931	932	932	932	932	932	932	932	931	931	931	931	932	929.6	24
2	2	931	931	931	931	931	931	932	932	933	934	934	934	934	934	933	934	933	934	933	933	932	930	930	929	934	932.3	24	
3	3	929	929	928	928	928	927	927	928	928	928	927	927	927	926	925	924	924	924	925	926	927	927	927	928	929	926.8	24	
4	4	928	929	930	930	931	931	932	933	934	934	935	935	935	936	936	936	936	936	937	937	937	937	935	935	935	937	933.9	24
5	5	935	935	935	935	935	936	936	937	938	938	939	939	939	939	939	939	939	939	939	939	938	937	937	937	939	937.5	24	
6	6	937	937	937	937	937	938	938	939	939	939	940	940	940	940	940	939	939	938	937	936	935	935	935	940	938.0	24		
7	7	935	935	933	933	933	933	933	933	934	934	934	934	934	933	933	932	931	930	928	927	926	924	923	935	931.6	24		
8	8	921	920	918	917	916	916	915	915	915	915	916	917	917	918	917	917	916	915	914	914	913	913	912	912	921	915.8	24	
9	9	911	911	911	911	911	912	913	913	914	914	915	916	916	917	918	919	919	919	920	920	920	920	920	920	920	915.8	24	
10	10	920	921	921	922	923	924	925	926	927	928	929	930	931	932	933	933	934	935	934	934	935	935	935	935	935	929.3	24	
11	11	935	936	936	936	937	937	938	939	939	940	940	940	940	940	940	940	940	940	940	940	939	938	938	938	940	938.6	24	
12	12	938	937	937	937	936	936	937	937	938	938	937	937	936	936	936	935	935	935	935	934	933	933	932	931	938	935.6	24	
13	13	931	931	931	930	930	930	930	930	931	931	931	931	931	931	930	930	929	930	929	929	928	927	926	931	931	929.9	24	
14	14	926	925	925	924	924	923	923	923	924	924	924	923	923	922	923	922	922	922	921	920	920	919	919	926	922.5	24		
15	15	918	918	918	917	917	917	917	918	917	918	920	921	921	921	921	921	921	921	922	922	922	922	922	922	922	919.8	24	
16	16	922	922	923	923	923	924	924	925	925	926	927	927	928	929	929	930	930	930	931	932	931	931	931	931	932	927.3	24	
17	17	931	931	931	931	932	932	933	934	934	935	935	936	936	936	936	936	936	935	935	934	934	933	933	936	933.8	24		
18	18	932	932	932	931	930	930	930	933	931	929	930	931	930	931	931	931	930	929	928	926	926	925	925	924	933	929.5	24	
19	19	924	925	925	925	926	926	926	927	927	928	928	928	928	928	927	927	926	926	924	923	923	923	924	924	928	926.0	24	
20	20	922	922	922	922	922	922	923	923	923	923	924	924	925	925	925	925	925	925	925	925	925	924	924	924	925	923.7	24	
21	21	923	923	923	923	923	923	924	925	926	926	927	928	928	928	929	929	930	930	931	930	928	928	931	926.8	24			
22	22	929	929	929	929	929	929	929	930	929	929	929	929	929	929	929	929	929	928	929	929	929	928	928	928	930	928.9	24	
23	23	928	928	928	928	928	928	929	929	930	930	931	931	932	933	932	933	933	933	933	932	932	931	931	931	933	930.6	24	
24	24	931	931	931	932	932	933	933	933	934	935	935	935	935	935	935	935	935	935	935	934	933	932	932	935	933.6	24		
25	25	932	931	931	931	931	931	931	932	933	933	933	933	933	933	933	932	931	931	929	928	928	927	928	933	931.2	24		
26	26	928	926	926	925	924	924	924	924	925	924	925	924	924	924	923	923	923	923	923	923	923	923	923	928	924.0	24		
27	27	923	923	924	924	924	924	925	925	926	926	927	927	928	928	928	929	929	929	929	929	929	929	929	930	930	926.9	24	
28	28	930	930	930	931	931	931	932	932	933	933	934	934	934	935	935	935	935	935	935	934	933	932	931	931	935	932.8	24	
29	29	930	930	929	929	930	929	929	929	929	930	930	931	931	931	931	931	930	931	931	931	930	930	931	930	931	930.1	24	
30	30	930	931	931	931	931	932	933	934	934	935	935	935	935	935	935	935	934	934	933	933	931	930	930	929	935	932.8	24	
31	31	928	928	927	927	926	926	926	927	927	928	928	929	930	930	930	930	930	930	930	929	929	928	928	927	930	928.3	24	
HOURLY MAX		938	937	937	937	937	938	938	939	939	940	940	940	940	940	940	940	940	940	940	939	938	938	938	938	938	938		
HOURLY AVG		928	928	928	928	928	928	928	929	929	930	930	930	930	931	931	930	930	930	930	930	929	929	928	928	928	928	928.3	24

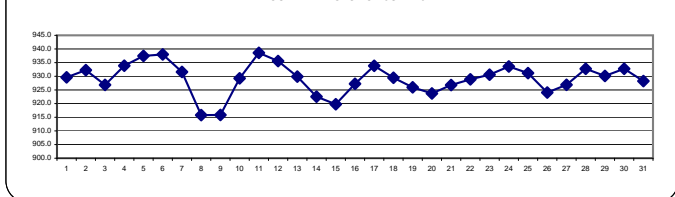
STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	940	MB	@ HOUR(S)	VAR	ON DAY(S)	6, 11
MAXIMUM 24-HR AVERAGE:	938.6	MB			ON DAY(S)	11
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	6.00		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	929	MB	

24 HOUR AVERAGES FOR JULY 2011



01 Hour Averages



Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

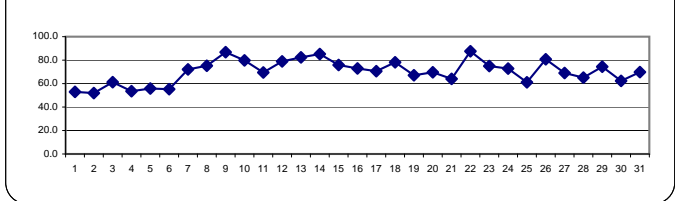
RELATIVE HUMIDITY hourly averages (%)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR		
HOUR START	HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.	
DAY																													
1		74	77	82	80	73	65	62	57	54	50	44	41	40	39	36	36	34	34	34	39	52	55	56	57	82	53.0	24	
2		65	69	76	74	79	70	64	61	57	49	39	37	37	36	38	37	36	36	39	42	48	52	52	53	79	51.9	24	
3		55	56	58	60	59	57	56	54	52	52	49	46	44	43	46	59	79	79	77	81	81	75	75	76	81	61.2	24	
4		80	79	78	77	75	68	62	58	55	52	43	38	36	32	34	34	35	34	33	43	55	58	60	65	80	53.5	24	
5		68	71	74	78	82	80	75	67	58	54	44	43	44	39	38	36	36	36	38	46	51	54	63	64	82	55.8	24	
6		58	60	65	68	70	69	66	55	51	47	45	41	41	40	40	44	45	52	59	68	67	66	69	70	55.3	24		
7		63	82	80	82	84	83	84	82	75	69	67	65	62	59	60	60	61	62	64	71	76	79	78	82	84	72.1	24	
8		86	88	90	91	91	91	86	76	79	69	62	57	52	52	63	64	77	78	72	71	73	76	80	81	91	75.2	24	
9		82	86	89	90	89	88	83	87	87	87	86	84	83	88	83	77	84	88	89	90	90	91	91	91	91	86.8	24	
10		91	92	92	92	91	90	86	84	81	72	69	73	68	65	69	71	71	71	74	77	79	84	87	86	92	79.8	24	
11		88	90	91	91	91	86	79	73	69	64	59	57	51	48	53	56	53	56	58	65	72	72	73	72	91	69.5	24	
12		74	79	84	85	84	82	75	74	72	71	68	68	76	79	82	82	78	79	83	82	80	83	87	87	87	78.9	24	
13		87	87	88	90	91	90	89	88	84	81	79	78	77	73	73	74	74	73	73	78	83	87	89	91	91	82.4	24	
14		89	89	90	90	90	90	90	89	87	86	85	86	84	82	84	81	79	81	79	75	80	86	87	90	90	85.2	24	
15		90	91	91	85	83	85	87	85	86	83	72	63	58	61	58	56	62	63	70	77	80	84	88	91	91	75.9	24	
16		84	84	81	84	82	81	79	72	69	69	64	68	63	63	63	62	68	71	66	69	73	74	78	83	84	72.9	24	
17		79	90	87	87	86	80	80	79	71	66	65	62	57	56	56	54	53	55	61	68	70	75	76	81	90	70.6	24	
18		85	88	89	90	91	89	90	90	88	81	75	68	64	60	59	57	60	67	77	80	79	80	86	83	91	78.2	24	
19		85	86	85	83	83	76	69	70	62	56	51	49	45	43	43	44	49	60	63	71	82	81	85	89	89	67.1	24	
20		88	89	90	89	89	90	89	87	82	74	67	61	57	54	50	46	45	47	48	53	62	68	72	74	90	69.6	24	
21		77	79	82	81	80	83	73	65	59	55	52	50	48	45	46	50	46	47	45	55	66	81	85	87	87	64.0	24	
22		88	88	91	92	91	89	87	87	86	84	80	78	79	82	88	89	89	90	90	90	90	91	91	91	92	87.5	24	
23		89	89	90	91	91	91	89	84	76	68	64	63	55	54	65	56	57	61	65	70	75	81	86	89	91	75.0	24	
24		91	91	91	92	92	92	92	87	76	68	62	60	58	58	62	57	50	51	55	62	72	74	75	79	92	72.8	24	
25		80	81	80	81	84	83	80	67	59	52	49	48	44	40	41	42	46	48	52	54	56	63	68	84	61.1	24		
26		67	75	75	72	76	77	75	72	74	69	74	87	90	91	90	87	86	88	88	83	87	86	85	83	91	80.7	24	
27		78	78	79	80	81	81	78	76	71	67	62	58	57	56	54	53	59	60	63	71	71	70	72	82	82	69.0	24	
28		85	84	83	82	80	73	67	64	60	56	53	51	50	51	50	48	46	48	53	60	66	84	83	85	85	65.1	24	
29		89	85	83	84	85	90	90	88	77	77	69	65	58	54	54	65	69	65	67	72	71	75	75	78	90	74.4	24	
30		78	79	82	83	86	77	68	64	60	52	47	45	45	43	43	42	44	48	53	61	71	74	76	75	86	62.3	24	
31		76	80	78	77	79	78	73	69	66	62	59	58	59	57	58	60	60	62	67	72	71	84	85	85	85	69.8	24	
HOURLY MAX		91	92	92	92	92	92	92	90	88	87	86	87	90	91	90	89	90	90	90	90	90	91	91	91	91			
HOURLY AVG		79.6	82.0	83.0	83.3	83.5	81.4	78.2	74.5	70.4	65.9	61.4	59.6	57.5	56.3	57.3	57.4	59.1	60.7	62.7	67.2	71.7	75.3	77.6	79.4				

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

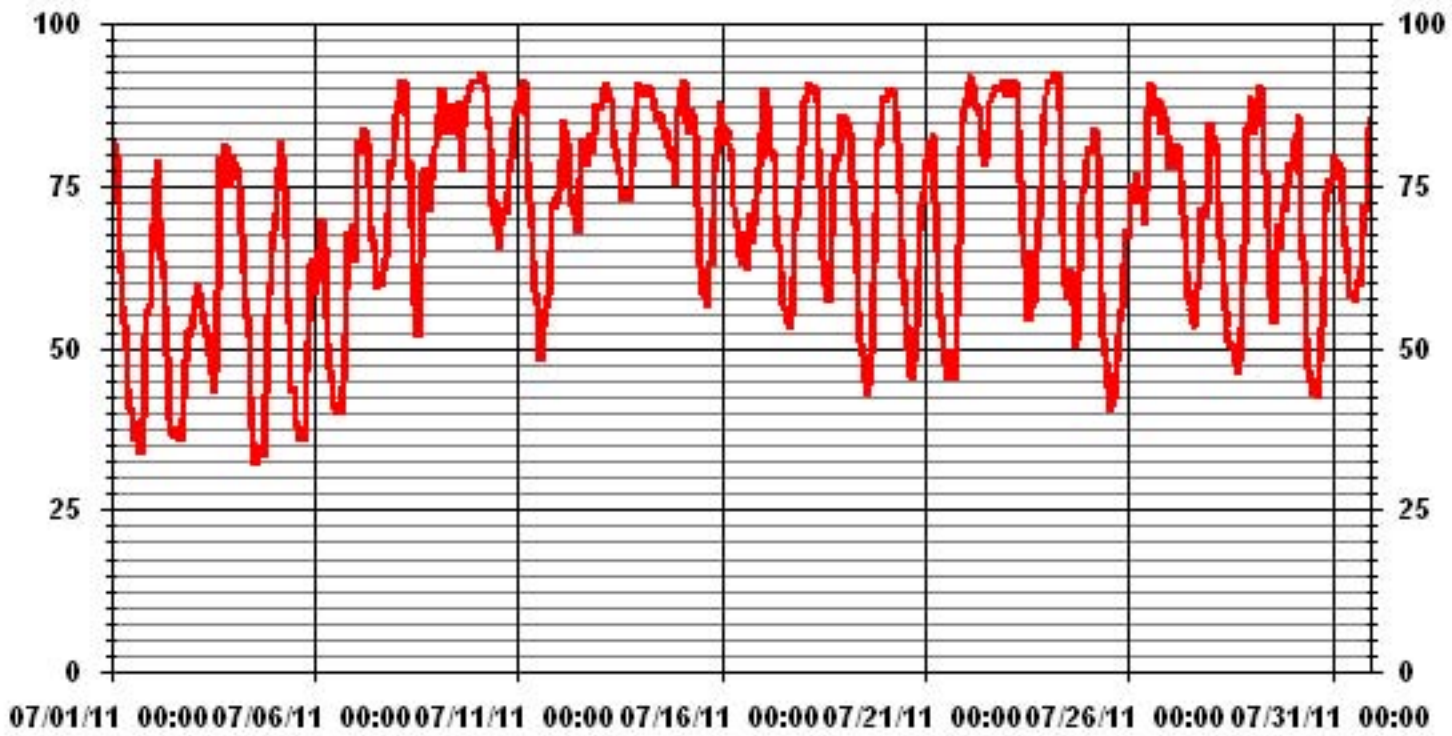
24 HOUR AVERAGES FOR JULY 2011



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	92	%	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	87.5	%			ON DAY(S)	22
					VAR-VARIOUS	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	15.60		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	70.21	%	

01 Hour Averages



— LICA31 RH %FS

Precipitation

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 2011

PRECIPITATION hourly averages (mm)

MST		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	DAILY		
HOURLY MAX	HOURLY END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	TOTAL	RDGS.	
DAY																													
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
2		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
3		0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.2	0.7	0	0	1	0	0	0	0	0	4.2	5.9	24	
4		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
5		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
6		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
7		0	2.2	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.2	2.8	24	
8		0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0	0.1	0.6	1	0.3	0	0	0	0	0	0	1.0	2.2	24	
9		0	0.1	0.1	0	0	0	0	0	0.3	0	0.5	0.2	0.7	1.1	0	0.3	9.4	0.9	0.1	0.3	0	0	1	0.4	9.4	15.4	24	
10		0	0.2	0.1	0.2	0.1	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0.9	24	
11		0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
12		0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.5	0.4	0	0	0.1	0	0	0	0	0	0	0.5	1.1	24	
13		0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
14		0	0	0	1.5	0	0	0	0	0	0	0	0.1	0.2	7.2	0.1	0	0	0	0	0.2	0	0	0	0	7.2	9.3	24	
15		0	0	0.1	0	0	0	0	0.7	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	1.5	24	
16		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
17		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
18		0	0	0	0	0	0	0.3	8.9	1	0	0	0	0	0	0	0	0	0	0.6	1.1	0	0.1	0	0	8.9	12.0	24	
19		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2.7	2.7	3.7	24		
20		0.9	1.5	2.5	1.4	1.9	1	0.6	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5	10.2	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	0.4	0	0	0	0.3	1.5	1.5	2.1	1.1	0.1	0.1	0	0	0.1	0	2.1	7.2	24	
23		0	0	2.2	1.9	0.3	0.1	0	0	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0	0	2.2	4.7	24	
24		0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	24	
25		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	24	
26		0	0	0	0	0	0	0	0	0	0	0	0.7	2.6	5.8	4.6	3.9	2.1	0.8	0	0	0	0	0.1	0	5.8	20.6	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	0.6	0.6	24	
28		0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0.1	0	0.4	0.6	24		
29		0	0	0	0	1.4	0.9	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.4	2.4	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	1.6	4.1	0.3	4.1	6.0	24	
HOURLY MAX		0.9	2.2	2.5	1.9	1.9	1.0	0.6	8.9	1.0	0.4	0.7	2.6	5.8	7.2	3.9	4.2	9.4	1.1	0.6	1.1	0.4	1.6	4.1	2.7				

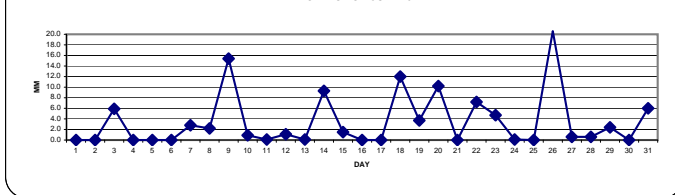
STATUS FLAG CODES

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

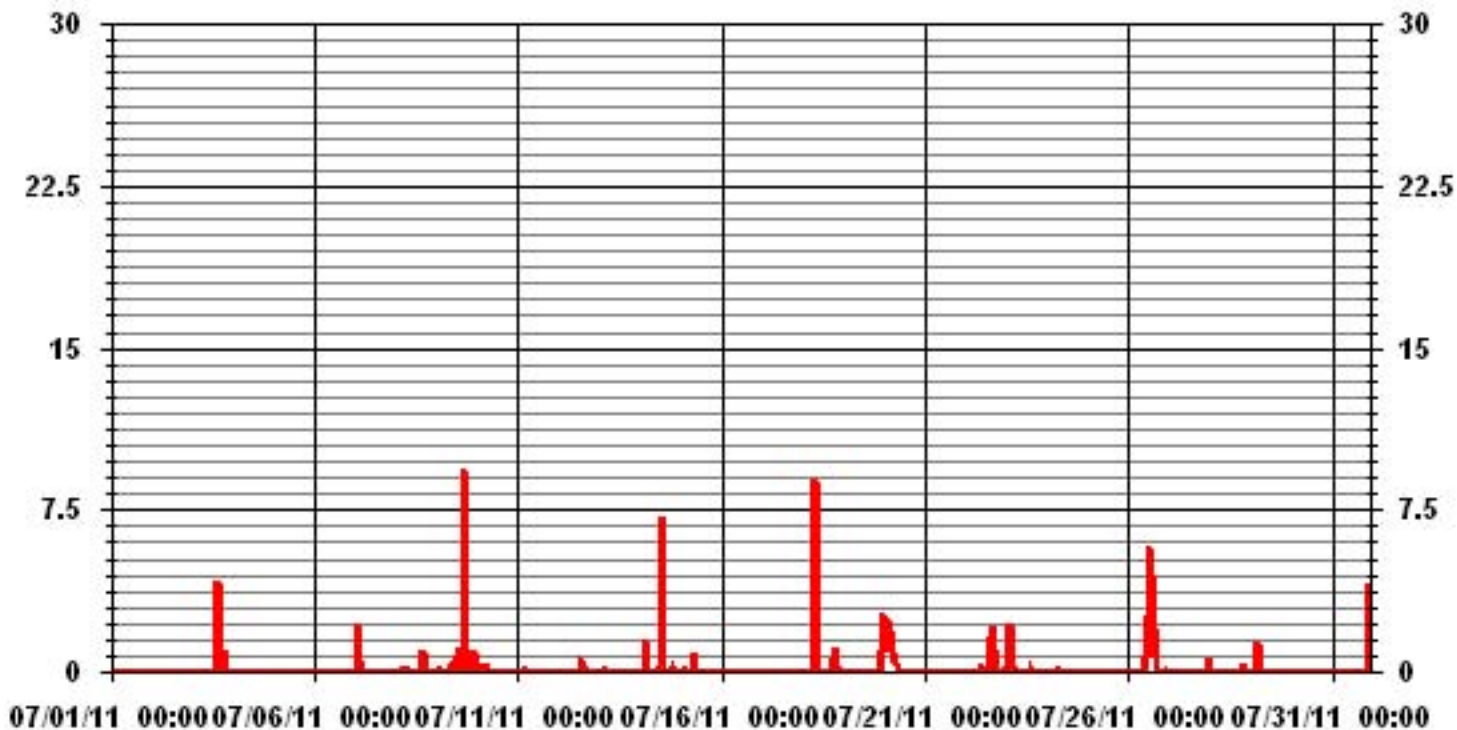
MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	9.4	MM	HOUR(S)	16	ON DAY(S)	9
MAXIMUM DAILY TOTAL	20.6	MM			ON DAY(S)	26
MONTHLY TOTAL	107.4	MM				
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	744	HRS	
STANDARD DEVIATION:	0.72		AMD OPERATION UPTIME:	100.0	%	
			MONTHLY AVERAGE:	0.14	MM	

DAILY TOTALS FOR JULY 2011



01 Hour Averages



— LICA31 PRECIP MM

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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		8.4	9.8	9.8	9.2	9.8	9.2	6	4.1	3.1	1.9	1.7	7.3	12.5	6.5	9.6	1.7	2.6	2.7	2.5	7.5	10.1	9.8	9.5	10.9	12.5	3.8	24	
2		11.4	14.2	15.4	8.8	6.4	6	5.5	6.5	6.9	10.2	13.4	12.4	12.4	8.4	11.2	9.5	6.9	8.8	11.3	9.7	15.3	14.5	15.2	15	15.4	7.1	24	
3		15.5	15.8	15.7	15.5	14.7	14.9	15.2	14.4	15.3	12.5	11.4	11.6	13	18.3	15	4.8	7.8	13.2	14.2	12.6	10	9.1	5.5	6.3	18.3	6.3	24	
4		7.9	6.2	6	3.9	2.4	13.4	13.5	15.8	6.7	2.9	2.4	4.2	1.8	5.4	9.9	4.7	2.9	1.7	4.6	10.4	12.5	14.4	14.5	14	15.8	1.5	24	
5		13.3	14.2	15.3	13.1	13.9	12	5.9	12.6	12.1	12.6	11.9	13	10.3	10.1	8.1	6.5	6.6	7.2	10.9	14.1	12.2	15	14.6	11.8	15.3	10.4	24	
6		14.4	12.4	11.5	13.1	13.6	12.2	13.3	13.4	11.7	13.2	0.6	3.9	10.1	10.8	7.7	8.7	2.4	2.9	4.4	5.1	5.5	6.2	6.2	7.2	14.4	8	24	
7		4.1	9.7	13.3	5.7	6.4	6.2	9	10.5	13.4	11.5	9.2	10.5	11.7	10.4	8.7	8.4	6.1	6.8	6.3	7.2	6.9	4.7	4.5	5.7	13.4	6.9	24	
8		5.5	4.2	4.4	3.6	3.2	5	4.6	13.2	19.7	14.7	18.3	16.6	22.1	12.9	14.8	13.2	8.8	14.2	12.4	8.2	5.3	4	9.5	12.6	22.1	7.7	24	
9		13.7	8.7	12.2	11.8	9.6	9.9	7.2	7.3	10.5	13.3	14.5	13.5	15.2	4.5	2.8	2.6	4.3	8.9	7.8	7.6	5.8	5.8	4.4	6.1	15.2	0.5	24	
10		8.1	9.6	9.4	10.6	9.2	7.8	6.5	9	6.8	6.3	6.7	8	8.5	4.1	5.3	7.6	10.8	11.6	12.3	13.2	14.3	14.5	15.9	16.3	16.3	7.8	24	
11		15.4	13.8	15	16.8	16.6	14.8	6.9	7.9	11	2.7	3.9	4.2	6.5	6.6	11.3	11.2	6.7	7.3	8.6	10	10.2	9.7	9.4	8.8	16.8	6.4	24	
12		9.4	8	7.7	7.7	7.4	7.4	7.8	7	8.6	9.9	10.1	9.1	6.9	9.7	9	9.4	8.4	9.3	9.8	10.5	9.9	11.9	12.7	12.5	12.7	8.6	24	
13		13.8	13.2	13.3	12.9	12.7	14.4	13.6	13.1	8.4	5.7	5.1	4.8	4.8	14.1	14	13.3	13.5	11.2	6	4.6	4.5	4.5	5.8	6.4	14.4	5	24	
14		7.5	8	8.2	10.3	12.1	6.7	6.5	5.1	3.8	3.6	7.9	7.9	6.4	6.6	9	9.3	8.2	7.4	11.4	12.7	12.9	11.8	6.1	10.2	12.9	2.9	24	
15		5.1	5.5	4	6.1	7.2	2.5	6.7	3.8	5.4	9.2	11.9	10.2	7.2	1.9	11.3	14.1	11	8.9	10.8	8.1	10.4	10	12.4	13.1	14.1	4.4	24	
16		10.7	11.7	11.4	12.5	12.7	13.1	9.9	7	8.1	7.8	9.4	11	13.5	10.3	7.6	8.4	8.9	13.8	12.6	12.9	14.3	14.7	15.1	15.1	15.1	9.4	24	
17		13.5	5.1	6.4	6.5	5.2	6.7	5.2	6.6	7.9	8.9	8.9	10.1	8.4	9.7	9.4	11.3	11	9.1	8.8	9.3	8.1	9.3	13.9	11.8	13.9	5.5	24	
18		9.5	10.1	5.9	7.1	8.2	8.3	8.1	8.8	12	10.2	4.4	9.3	14	5.1	12.1	12.6	8.2	2.5	5.7	10.8	10	7.1	15.8	11.3	15.8	2.8	24	
19		9	10.3	8.9	8.3	9.9	7.7	8	9.3	10.3	11.1	9	9.7	10	4.3	8.6	3.3	2	3.6	9	8	7.4	7.2	9.2	6.3	11.1	6.2	24	
20		6.8	7.2	8.7	10	11.9	9.4	9.2	9.5	11.6	13.4	13.9	8.3	6.5	10.3	8.7	2	5.1	5.2	5.9	8	9.6	9.6	7.2	8.8	13.9	5	24	
21		8.8	8.4	7.1	8.6	9.1	10.2	9.7	12.8	10.3	7.8	10.6	10.3	9.9	8.6	9.8	8.8	4.9	3.5	6.7	4.8	5.9	9.3	9.9	8.7	12.8	5.6	24	
22		0.7	4.7	7	10.7	11.3	11.1	11.9	11.5	12.8	14.7	14.3	3.3	8.3	11.5	4.1	4.4	6.3	5.1	6.1	8.7	8.8	9	10.2	7.8	14.7	4.5	24	
23		10.9	9.2	4.3	10.7	12.4	11.1	8.9	7	9.1	10.8	11	11	12.4	12.4	8.7	11.1	7.6	8.6	9.1	9.7	11.2	10.5	8.1	7.1	12.4	7.5	24	
24		7.9	5.9	8.4	3.5	8.7	8.6	7.3	8.6	6.6	5.1	4.4	6.3	6.9	8.4	8.3	5	7.7	5.5	7.5	11.2	13.9	14.9	14.7	14.2	14.9	6.2	24	
25		14.1	12.8	14.1	13	13.1	8.6	7.6	7.6	7.5	5.7	6.2	8	10.7	9.8	2.9	11.2	11.2	12	14.7	5	3.8	6.4	8.3	0.5	14.7	3.9	24	
26		10.6	9.5	10.1	8.5	6.8	7.6	8	10.1	7.8	10.4	4.1	5.5	5.9	4.1	9.8	5.5	3.8	5.8	9.3	8.6	8.4	10.2	11	10.1	11	4.7	24	
27		10.4	11.7	11.8	11.8	11.5	12.2	12.5	13.3	13.4	11.8	13.7	14.9	10.1	7.7	5.8	3.8	3	3.7	6.5	10.3	9.9	9.4	9.3	13.5	14.9	4.5	24	
28		8.6	7.9	8.9	7.6	7.1	7.3	6.5	4.9	5.6	6	2.4	2	1.3	1.8	3.2	4.5	3.4	6	9.8	3.4	5.2	3.4	4.9	5.1	9.8	3.8	24	
29		4.9	6.3	3.4	4.9	9.1	10.4	19.5	11.2	11.9	12.6	11.2	11.5	12.5	7.9	8.2	9.3	7.9	10.9	10.3	9.5	10.3	10.1	9.8	9.3	19.5	4.9	24	
30		8.5	10.4	8.9	8.5	8.7	8.6	9.5	11.5	11.9	9.8	10	11.3	10.9	12.2	9.6	7.9	9.7	8.2	12.4	10.7	9.5	10.4	12.3	10.3	12.4	7.3	24	
31		9.3	9.1	10.1	11.2	11.4	8.2	6.3	8.3	7.4	3.5	8.9	4.3	5	8.5	10.5	11.8	5.9	1.8	12.5	12.4	11.4	5.3	10.3	9.7	12.5	4.9	24	
HOURLY MAX		15.5	15.8	15.7	16.8	16.6	14.9	19.5	15.8	19.7	14.7	18.3	16.6	22.1	18.3	15.0	14.1	13.5	14.2	14.7	14.1	15.3	15.0	15.9	16.3				
HOURLY AVG		9.6	9.5	9.6	9.4	9.8	9.4	8.9	9.4	9.6	9.0	8.8	8.8	9.5	8.5	8.9	7.9	6.9	7.3	9.0	9.2	9.5	9.4	10.2	9.9				

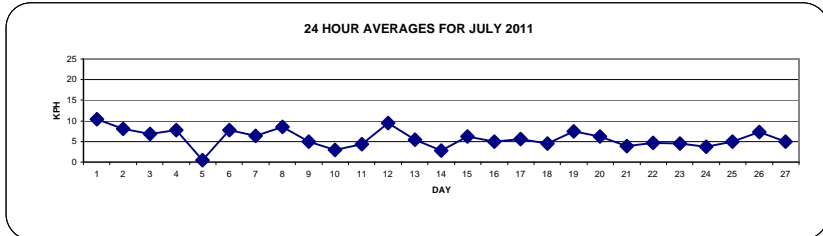
STATUS FLAG CODES

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

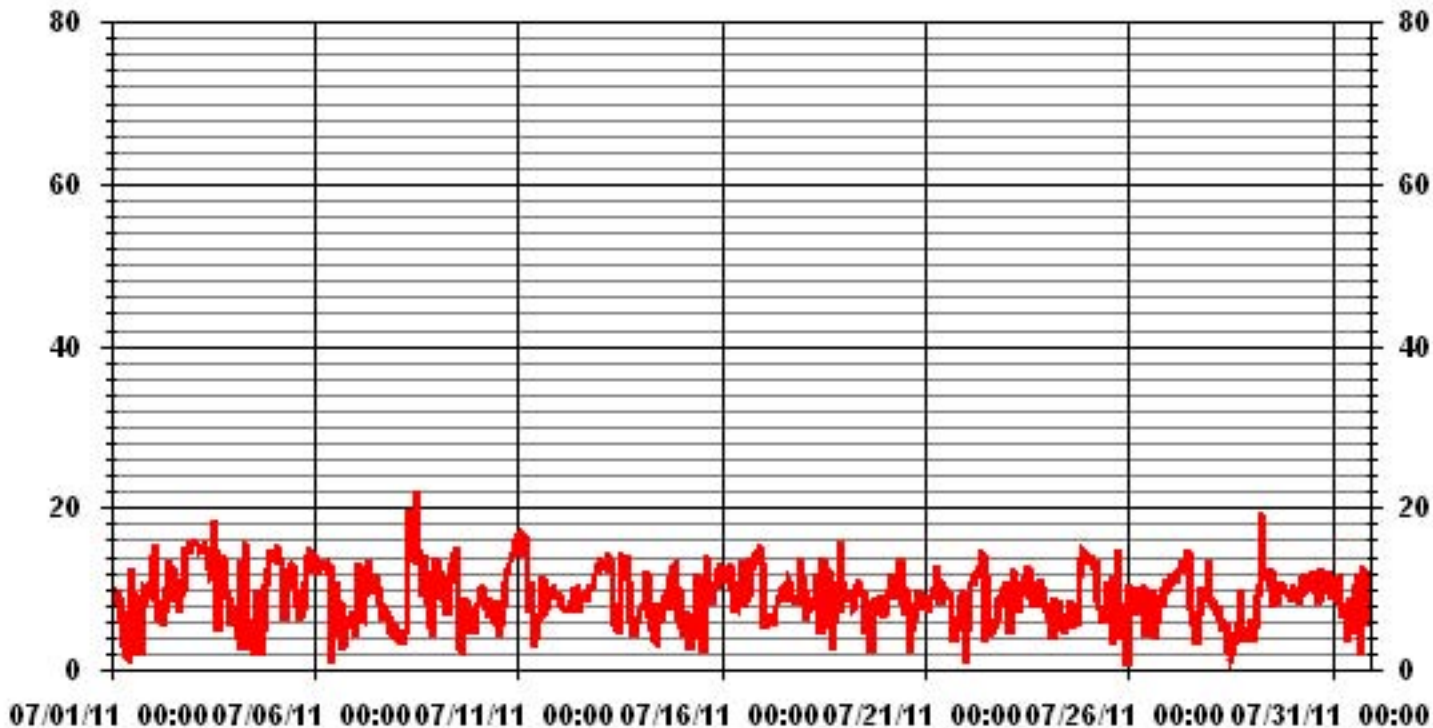
LAST CALIBRATION: June 17, 2010

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	22.1	KPH	@ HOUR(S)	12	ON DAY(S)	8
MAXIMUM 24-HR AVERAGE:	10.4	KPH			ON DAY(S)	5
CALMS (≤ 0 KPH)	0.40	%	OPERATIONAL TIME:	744	HRS	
MONTHLY CALIBRATION TIME:	0	HRS	AMD OPERATION UPTIME	100.0	%	
STANDARD DEVIATION	3.48		MONTHLY AVERAGE	9.09	KPH	



01 Hour Averages



— LICA31 WSP KPH

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST. LINA

JULY 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	17.1	15.1	14.2	17.1	22.8	30.2	20	19.9	26.5	20.6	24.3	30.4	33.7	31.8	37.5	29.1	38.1	34.6	21.2	16.4	14.4	13.4	16.2	16.6	38.1
2	15.8	19.3	19.3	19.9	11.8	12	14.2	19.5	22.5	28.9	33.5	30.9	33.3	29.1	28	23	21.7	19.9	20.6	20.8	19.5	18.8	20.1	21.7	33.5
3	22.5	24.7	23.2	24.5	25.8	30.6	28.7	30.9	30.4	28.2	35.3	36.3	35.7	41.8	36.5	42.5	25.8	38.1	37.5	29.6	18.2	18	15.3	17.1	42.5
4	18	17.1	16.2	18.8	30.7	28.2	36.1	33.1	44.9	35.9	32	26.7	27.8	35.7	38.3	35.2	37.6	28.7	21.5	17.7	18.4	20.1	19.5	19.9	44.9
5	19.3	18.2	19.1	19.3	19.5	19.9	19.5	20.6	22.4	29.1	28.7	32.2	30.9	26	22.5	24.5	19.2	18.2	18.2	19.3	16.6	19.3	19.5	19.1	32.2
6	20.4	19.9	19.1	19.9	19.1	18.4	18.4	20.9	25.9	21.7	25.6	24.5	24.5	26.2	21.7	21.9	23.8	23.2	20.6	9.6	9.9	14.9	10.3	10.5	26.2
7	33.7	35.4	37.6	18	17.1	19.3	19.9	19.5	21.9	21.4	20.6	20.6	30.2	20.6	20.2	21.4	19.5	19.3	19.5	18.4	19.7	25	26.3	23	37.6
8	21.9	25.6	24.3	25.4	22.8	19.5	20.8	44.9	49.2	36.5	49.4	50.3	54.7	39.4	39.4	39.4	33.1	30	28.7	30.9	33.9	39.4	26.7	21.9	54.7
9	23.2	21.4	21.2	28.5	27.8	26.5	20.1	16.9	25.2	32.9	33.7	31.5	51.9	45.7	N	19.5	30.9	19.3	18.8	19.7	14.5	14.9	16.6	25.7	51.9
10	27.8	27.1	23.4	23.2	27.4	31.1	32.9	31.3	40.5	46.4	39	32.8	32.2	38.3	37.9	35.3	26.5	25.4	30.9	26.3	21.4	20.8	19.1	18.4	46.4
11	18.4	17.1	17.7	18.8	19.5	18.8	20.8	18.6	26.9	21	22.8	18.6	26.5	34.2	24.5	27.8	24.3	19.7	20.4	19.1	18.2	18.6	16.6	17.7	34.2
12	18.6	15.8	17.8	18.2	18.8	17.3	19.3	20.1	22.5	24.7	25.8	25.2	19.1	19.7	19.7	19.5	18.6	19.8	19.7	18.6	18	18.8	18.8	18.4	25.8
13	19.7	18.4	18.4	18.6	19.1	20.4	20.4	19.7	21	15.8	12.7	12.5	20.1	21.4	20.3	20.4	20.6	21.6	20.4	11	7.2	7.9	8.1	12.9	21.6
14	14.9	14.2	15.8	24.1	23.8	16.4	13	13.4	11.6	8.8	P	24.5	62.1	21.6	32.8	24.9	24.1	28.9	30.4	22.3	18.2	19.7	25.2	21	62.1
15	7.5	12	7.7	11.2	21.6	13.4	23.4	21.1	20.6	24.9	29.8	35.2	29.1	23.2	32.7	35.3	35.9	26.9	33.5	18.8	18.8	19.3	18.4	18.2	35.9
16	19.5	17.9	18.4	19.3	19.3	20.6	24.5	23.2	28.7	22.5	24.1	32	37.9	29.4	24.5	23.4	19.1	19.7	22.8	19.1	17.7	19.1	18	18.8	37.9
17	20.8	12	11	7.7	9	10.3	11.2	15.1	P	21	20.8	23	22.5	26.9	24.3	31.5	25.4	21	18.4	18.2	18.4	17.5	24.3	26.5	31.5
18	26.9	21	13	13.8	17.1	21	22.5	P	35.7	27.7	20.6	25.6	33.7	37.2	27.1	22.7	22.3	16.2	15.1	28	20.8	30	21	21.9	37.2
19	15.4	21	21.7	16.8	15.5	13.8	14.2	16.5	23.2	22.5	22.5	23.6	24.5	37.6	21.6	22.1	13.6	10.3	29.3	24.5	20.4	14.9	19.5	17.2	37.6
20	15.3	14.7	18.6	24.9	27.8	24.1	19.3	33.1	28.2	34.2	38.5	36.5	34.1	35.7	39.4	26.2	31.3	26.2	24	21.7	17.5	19.3	16.2	19	39.4
21	17.1	17.1	12.7	16.9	16.7	16.6	51.6	19.9	21	23.6	26.5	27.3	27.1	26.5	27.8	23.4	97.3	22.3	23.2	7.9	14.2	17.5	20.1	14.9	97.3
22	12.7	9.6	19.8	29.1	25.6	24.3	27.4	26	29.3	35.7	41.8	20.6	23.8	35.2	28	38.3	30.4	29.6	27.6	27.8	32	28.5	28.2	24.3	41.8
23	30.2	23	19.9	19.1	19.5	20.1	23	18.4	23.6	25.4	26.7	30.2	30.9	33.5	28.7	28.9	26	27.4	22.3	20.4	19.3	19.6	14.4	12.5	33.5
24	14	9.4	17.5	44.6	26.9	25.4	20.1	18.8	18.8	19.5	19.7	30.6	23.7	22.3	24.5	22.8	27.8	20.8	18.8	16.9	19.3	21.7	21.2	20.8	44.6
25	21	19.5	19.7	18.7	19.5	18.8	21.2	15.3	17.1	P	19.5	24.7	22.5	26	27.1	23.8	21.7	21.4	21.9	19.3	8.3	9.9	12.7	45.6	45.6
26	28.7	27.4	28.4	25.4	14.4	21.2	28.3	29.6	26	35	34.6	11.6	14.2	11.8	25.4	13.6	7.9	14	16.4	15.5	15.3	17.7	20.8	21.2	35
27	P	22.7	23.6	27.4	27.4	24.5	25	27.1	28.2	26.7	32.8	37.2	36.5	29.6	24.7	33.7	27.4	21	17.1	19.1	17.7	17.3	28.9	30.6	37.2
28	19.1	15.3	18.2	19.9	16.6	18	16	16.2	17.9	19.3	25.2	24.6	25	22.3	25.8	23.8	21.9	18.2	18.6	20.4	41.1	19.3	P	7.9	41.1
29	8.5	13.6	7.9	10.1	48.8	21.4	N	23.8	22.3	21	N	21.9	24.1	21.9	23.4	36.6	22.7	22.3	19.5	20.6	18.2	16.9	18.2	16.2	48.8
30	19.3	16.7	16.2	13.8	14	13.1	16	20.4	21.7	21.7	27.3	29.8	29.1	31.3	30.6	34.8	25.8	28.4	21	19.1	15.8	P	22.5	22.3	34.8
31	19.3	16.4	20.1	21.6	22.5	18.4	12.9	18.8	20.6	17.7	22.1	24.3	25.8	26	24.5	24.7	25.2	23.6	21.9	22.1	37.4	43.8	32	20.4	43.8
PEAK	33.7	35.4	37.6	44.6	48.8	31.1	51.6	44.9	49.2	46.4	49.4	50.3	62.1	45.7	39.4	42.5	97.3	38.1	37.5	30.9	41.1	43.8	32.0	45.6	

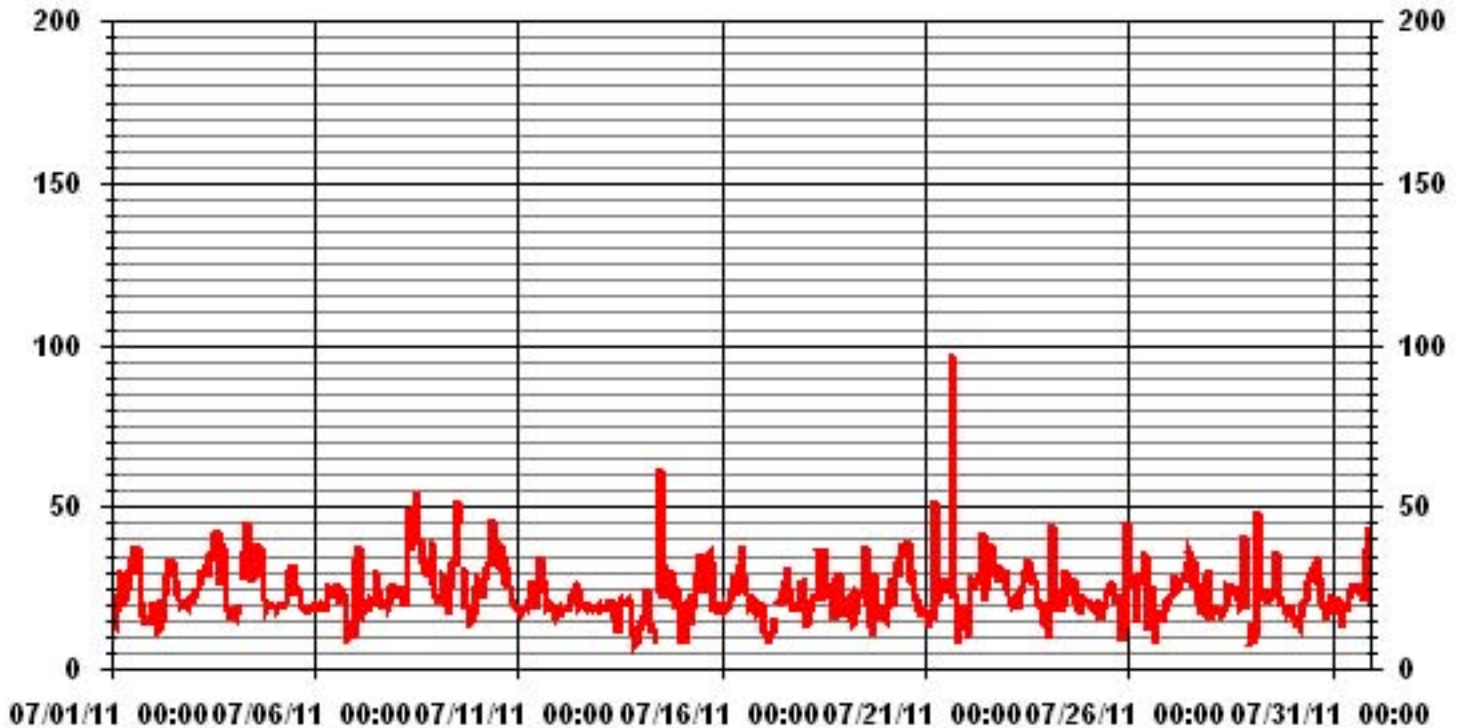
STATUS FLAG CODES

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	97.3	KPH	@ HOUR(S)	16
			ON DAY(S)	21

01 Hour Averages



LICA31
WSP / WDR Joint Frequency Distribution (Percent)

July 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	1.20	.94	1.20	2.95	1.61	1.07	.80	1.61	1.07	1.34	1.74	.67	.67	.94	1.07	19.22
< 12.0	1.88	1.34	1.61	3.09	8.33	6.58	5.10	4.16	2.95	3.62	5.24	5.37	5.37	2.28	1.61	.26	58.87
< 20.0	.40	.13	.80	.80	2.28	4.03	.80	2.28	.26	1.34	1.88	.40	1.88	3.09	.53	.40	21.37
< 29.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.13
< 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>= 39.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Totals	2.55	2.68	3.36	5.10	13.57	12.23	6.98	7.25	4.83	6.04	8.46	7.52	8.06	6.04	3.09	1.74	

Calm : .40 %

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	2	9	7	9	22	12	8	6	12	8	10	13	5	5	7	8	143
< 12.0	14	10	12	23	62	49	38	31	22	27	39	40	40	17	12	2	438
< 20.0	3	1	6	6	17	30	6	17	2	10	14	3	14	23	4	3	159
< 29.0													1				1
< 39.0																	
>= 39.0																	
Totals	19	20	25	38	101	91	52	54	36	45	63	56	60	45	23	13	

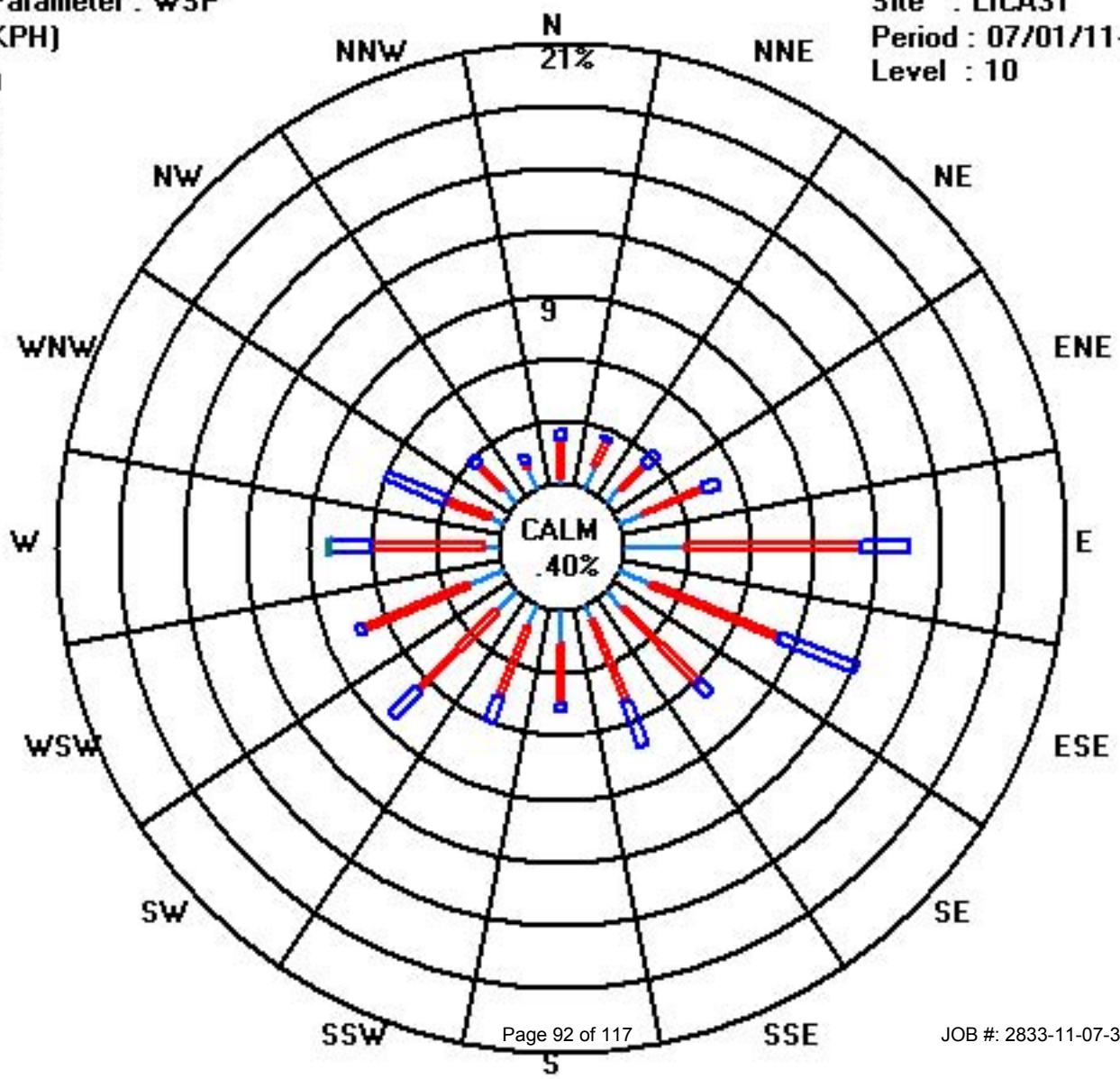
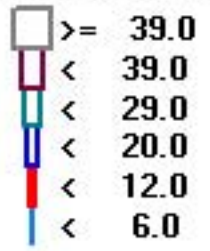
Calm : .40 %

Total # Operational Hours : 744

Class Limits (KPH)

Period : 07/01/11-07/31/11

Level : 10



Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -ST. LINA

JULY 2011

WIND DIRECTION hourly averages in degrees

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	24-HOUR	24-HOUR AVG	RDGS.
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	AVG.	QUADRANT	
DAY 1	104	106	102	82	53	40	91	71	43	87	32	204	217	237	232	217	240	210	88	105	113	114	104	89	110	ESE	24
2	103	110	111	144	203	197	204	200	185	138	144	147	149	157	141	139	141	117	124	117	251	241	237	236	160	SSE	24
3	231	229	230	228	226	224	224	224	216	216	202	185	203	204	208	186	49	39	39	49	78	77	101	85	207	SSW	24
4	82	89	77	74	311	276	276	275	268	221	314	16	47	237	226	222	192	113	78	104	115	113	116	141	141	SE	24
5	115	109	107	103	106	108	217	119	135	131	152	152	155	145	143	134	88	92	86	95	97	102	107	70	116	ESE	24
6	61	61	66	71	80	84	89	75	64	76	6	99	75	72	103	103	206	169	181	116	57	51	73	76	78	ENE	24
7	101	197	208	249	262	268	273	276	269	272	259	253	246	249	258	261	258	269	269	280	292	323	347	330	262	W	24
8	331	327	339	333	306	294	248	191	273	297	270	274	271	287	297	303	359	310	308	322	353	3	34	40	299	WNW	24
9	42	124	147	165	171	186	221	280	274	285	296	294	284	18	68	99	29	83	89	100	118	118	87	33	166	SSE	24
10	38	267	228	211	204	188	163	164	159	134	161	156	150	171	151	127	134	140	126	141	154	150	157	161	159	SSE	24
11	155	159	159	157	156	158	117	94	94	239	249	259	240	230	225	230	226	239	239	258	261	241	237	233	194	SSW	24
12	232	255	270	266	266	262	251	243	225	227	219	214	226	229	255	269	248	241	273	260	249	254	282	287	251	WSW	24
13	291	286	284	287	284	284	276	279	283	99	88	87	307	271	266	272	282	151	91	112	130	95	90	103	278	W	24
14	92	82	88	92	101	95	64	94	64	61	112	159	203	228	171	141	139	7	359	346	357	355	277	209	83	E	24
15	226	255	221	312	324	347	304	278	81	196	230	214	179	134	193	205	198	184	206	146	127	122	109	112	187	S	24
16	107	110	111	117	117	118	141	180	185	155	158	165	167	169	179	141	113	82	86	89	79	82	97	85	119	ESE	24
17	76	170	173	161	110	97	92	82	255	262	247	239	232	224	226	219	222	230	242	252	245	248	234	216	220	SW	24
18	201	218	177	105	109	109	74	302	347	306	249	224	220	273	322	339	354	325	309	142	358	351	325	300	306	NW	24
19	276	297	283	277	269	244	256	253	267	268	276	287	267	140	99	240	250	201	209	191	233	247	233	254	255	WSW	24
20	292	282	285	315	312	318	303	317	303	300	297	321	19	14	16	19	34	46	50	68	73	80	87	78	343	NNW	24
21	86	95	118	87	77	93	98	204	222	45	62	62	55	60	61	296	63	149	167	104	88	82	81	86	87	E	24
22	160	56	55	82	88	95	84	91	79	89	91	283	219	191	199	179	163	189	186	188	191	205	215	209	132	SE	24
23	206	225	175	107	109	127	149	147	153	143	147	150	159	155	152	175	174	154	144	134	229	239	255	245	164	SSE	24
24	258	233	237	276	117	133	130	118	123	111	133	97	125	112	88	124	199	167	135	115	112	114	120	115	129	SE	24
25	116	117	111	113	112	127	201	222	223	299	268	99	107	110	139	345	7	7	359	29	110	90	111	323	96	E	24
26	347	23	10	351	14	7	9	20	27	2	30	240	205	295	317	330	259	227	249	272	271	269	269	277	321	NW	24
27	281	281	289	296	292	277	282	278	285	287	288	285	308	35	41	12	96	102	93	88	87	83	81	47	311	NW	24
28	83	100	84	86	87	72	93	92	93	102	116	119	80	99	178	180	155	149	108	161	201	149	246	214	113	ESE	24
29	186	167	142	81	230	195	194	162	173	206	201	205	199	242	261	25	42	78	111	92	79	91	96	111	159	SSE	24
30	103	87	96	113	124	117	117	114	117	137	148	145	142	142	154	203	350	18	16	40	97	90	97	108	109	ESE	24
31	109	100	124	132	133	122	113	142	149	130	106	57	32	58	213	212	239	294	187	206	243	233	214	181	158	SSE	24
HOURLY AVG	347	327	339	351	324	347	304	317	347	306	314	321	308	295	322	345	359	325	359	346	358	355	347	330			

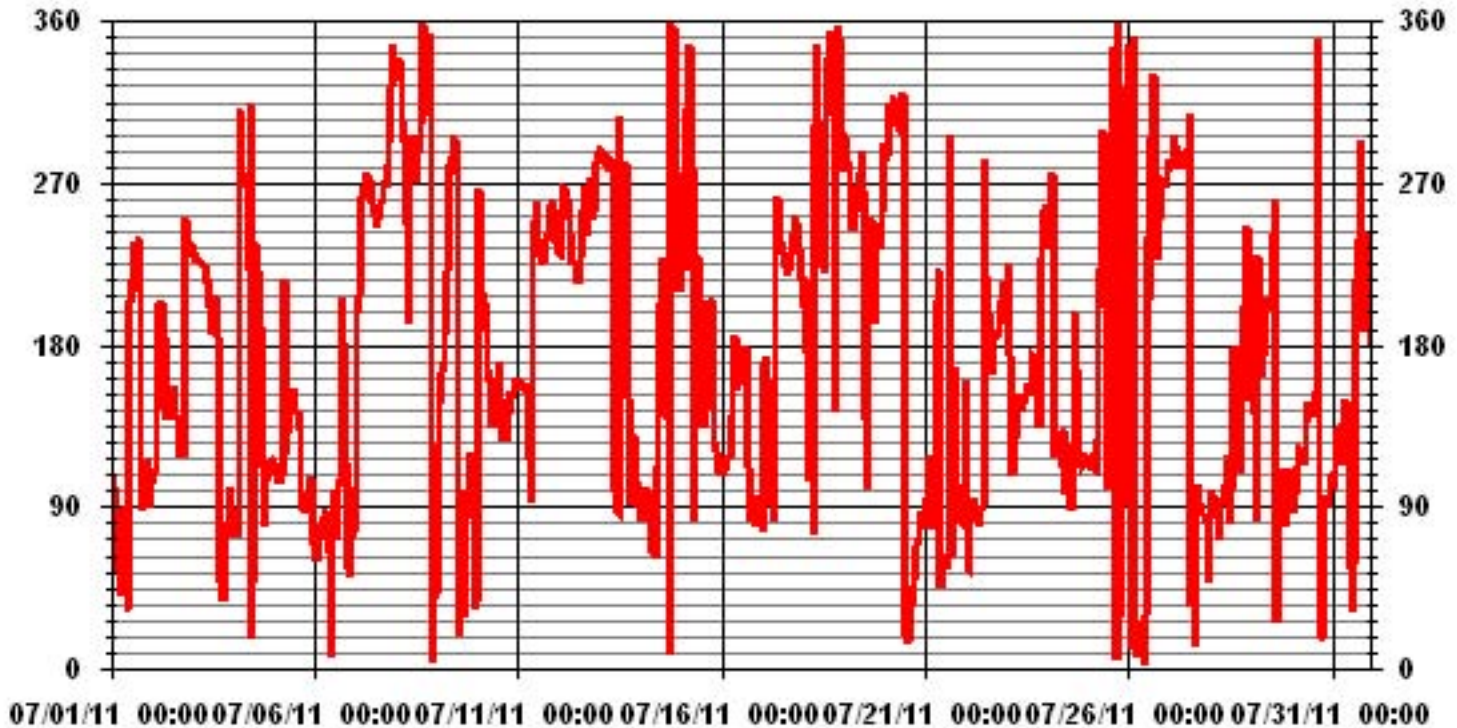
STATUS FLAG CODES

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

LAST CALIBRATION: June 17, 2010
DECLINATION : 19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744 HRS
STANDARD DEVIATION	86.82	AMD OPERATION UPTIME	100.0 %
		MONTHLY AVERAGE	161 DEG

01 Hour Averages



— LICA31 WDR DEG

Standard Deviation Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ST.LINA

JULY 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	16	9	5	15	20	27	38	59	75	78	92	56	33	62	52	76	84	72	76	30	7	7	9	8	
2	4	4	5	28	10	15	19	19	34	45	34	35	29	38	28	29	38	27	21	48	8	5	8	13	
3	17	22	21	23	29	30	25	22	22	23	30	34	27	23	24	39	35	27	27	23	15	19	35	34	
4	21	36	38	59	52	15	17	17	70	77	86	74	79	69	46	74	75	76	56	11	5	7	12	10	
5	6	5	3	7	11	40	22	24	22	33	32	31	37	28	31	38	41	33	18	4	3	5	7	11	
6	22	13	13	10	8	8	7	20	34	20	65	47	33	34	50	52	49	77	48	9	12	12	9	8	
7	43	38	23	36	36	39	20	15	20	18	24	25	24	24	28	30	45	43	45	33	33	58	61	49	
8	51	62	56	67	69	52	49	41	32	24	28	31	20	34	23	25	44	24	25	36	50	59	23	17	
9	32	52	42	19	24	21	17	16	18	17	17	18	19	62	72	72	60	21	23	20	25	30	52	58	
10	36	28	26	22	29	36	44	31	44	52	48	39	38	62	59	43	32	26	27	23	14	26	9	5	
11	3	3	2	4	5	17	32	20	20	69	66	60	50	46	28	21	39	36	29	16	11	13	15	18	
12	19	17	17	18	21	24	27	34	26	23	26	31	34	22	22	19	25	21	17	13	15	10	7	8	
13	9	7	6	8	9	10	10	9	38	27	24	24	23	19	11	11	21	46	38	19	9	15	7	14	
14	12	12	13	14	13	13	17	19	25	21	17	20	23	43	24	18	41	35	14	16	6	7	37	42	
15	10	18	20	10	11	31	19	43	54	30	21	40	42	57	26	25	27	28	31	20	10	12	5	4	
16	9	6	7	8	9	19	21	37	32	29	29	30	26	31	35	30	18	13	16	9	4	3	2	4	
17	28	9	6	3	10	10	17	18	37	26	27	27	34	30	32	28	23	27	24	17	20	14	20	52	
18	60	43	13	11	14	12	20	39	34	30	53	28	28	48	25	21	49	35	33	18	43	36	11	27	
19	11	13	13	11	9	8	8	13	19	19	24	35	27	33	38	41	33	19	19	19	18	11	10	13	
20	12	14	14	17	16	17	17	21	17	18	19	36	57	40	48	83	63	56	50	28	19	16	29	20	
21	16	14	14	15	17	8	33	15	35	43	40	44	47	51	45	59	75	54	47	11	9	12	13	11	
22	56	14	12	17	17	18	17	19	18	18	22	74	41	33	66	65	55	57	53	38	38	33	26	35	
23	27	24	32	9	11	22	21	22	24	27	28	26	30	28	26	29	36	24	18	27	13	12	10	8	
24	6	10	11	57	34	14	18	16	37	44	52	47	33	29	45	57	45	42	24	8	6	22	28	25	
25	21	10	8	4	10	24	15	18	18	27	40	42	37	48	54	30	33	27	13	26	13	6	5	27	
26	19	17	16	15	14	14	15	21	18	19	24	21	18	24	14	15	15	16	9	10	9	11	11	13	
27	14	13	15	15	14	13	14	15	17	21	20	20	42	47	63	79	56	63	34	13	17	16	18	25	
28	18	14	17	21	24	24	30	45	41	42	67	79	88	82	66	61	64	36	14	31	53	17	10	7	
29	7	9	24	16	29	15	28	21	28	20	38	34	27	43	42	57	57	17	14	17	15	12	16	10	
30	18	12	13	8	6	7	8	22	36	26	26	28	31	34	46	47	31	28	12	21	8	10	11	13	
31	13	11	12	11	10	12	18	20	23	52	43	79	64	54	45	28	33	44	20	18	31	63	38	29	

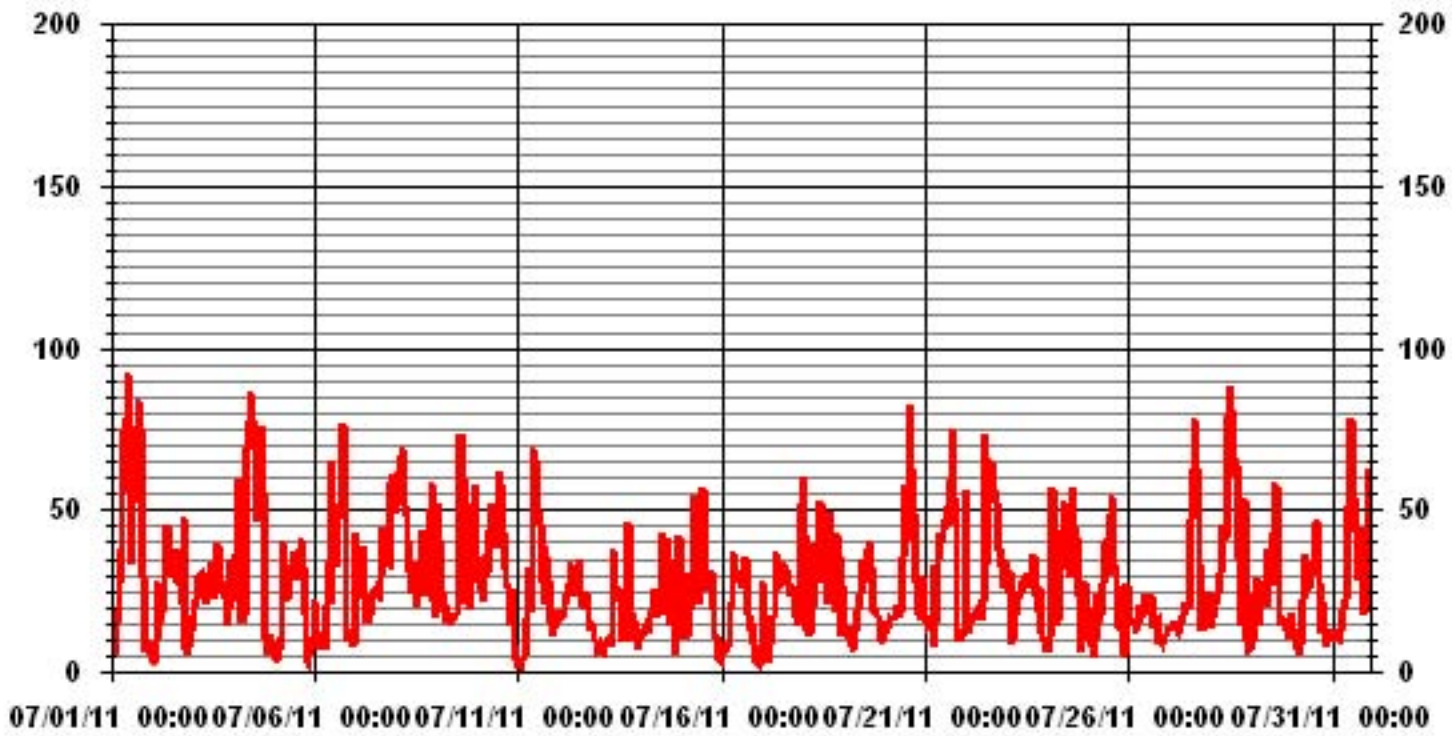
STATUS FLAG CODES

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: 744 HRS

01 Hour Averages



— LICA31 STDWDIR DEG

Calibration Reports

Sulphur Dioxide

SO2 Calibration Report
Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 7, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	10:29	End Time (MST)	14:26
Reason:	Monthly Calibration		
Barometric Pressure	940 mBar	Station Temperature	26 Deg C
Cal Gas	49 ppm	Gas Cyl. #	LL103822 Cal Gas Expiry date
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 100E	S/N :	468	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	AO717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration			After Calibration		
Concentration Range	0 - 1000 ppb				
Sample Flow / Box Temp	527 ccm	33.3 Deg C	531 ccm	32.7 Deg C	
HVPS / Lamp Setting	529	2413	529	2411	
PMT / RxCell Temp	7.8 Deg C	50 Deg C	7.8 Deg C	50 Deg C	
Converter / IZS Temp	NA Deg C	40 Deg C	NA Deg C	40.0 Deg C	
Offset / Slope	65.7	1.131	67.6	1.121	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4996	0	0	1	N/A
4996	0	0	0	N/A
4922	76.5	750	756	0.9920
4922	76.5	750	750	1.0000
4959	40.8	400	397	1.0072
4979	17.3	170	170	1.0000
4998	0	0	0	N/A
Sum of Least Squares				0.9954
New Correction Factor				1.0000

	Before Calibration	After Calibration
Auto Zero	1.8	0.6
Auto Span	376.0	370.0
Sample Lines Connected		YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9920
Percent Change:	0.8%

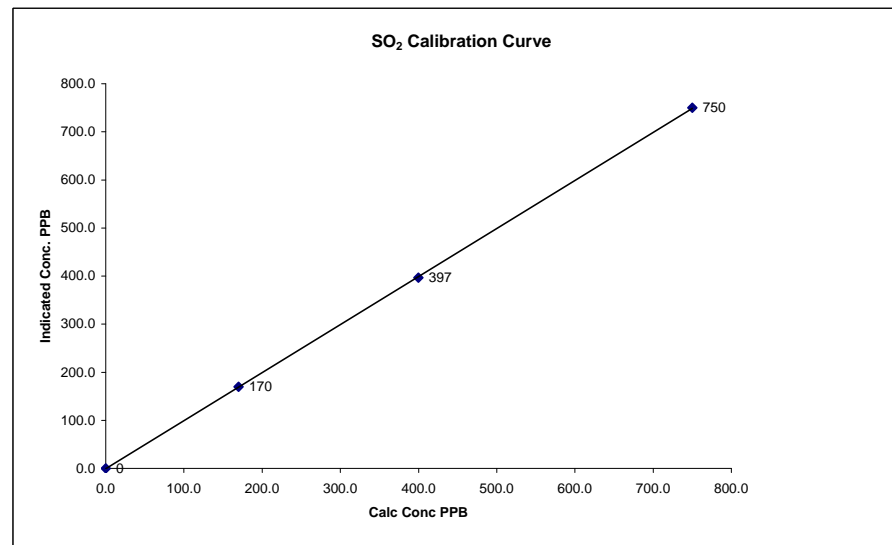
Notes: **N/A : Not applicable**

Calibration Performed by: Ting Xu

SO2 Calibration Curve

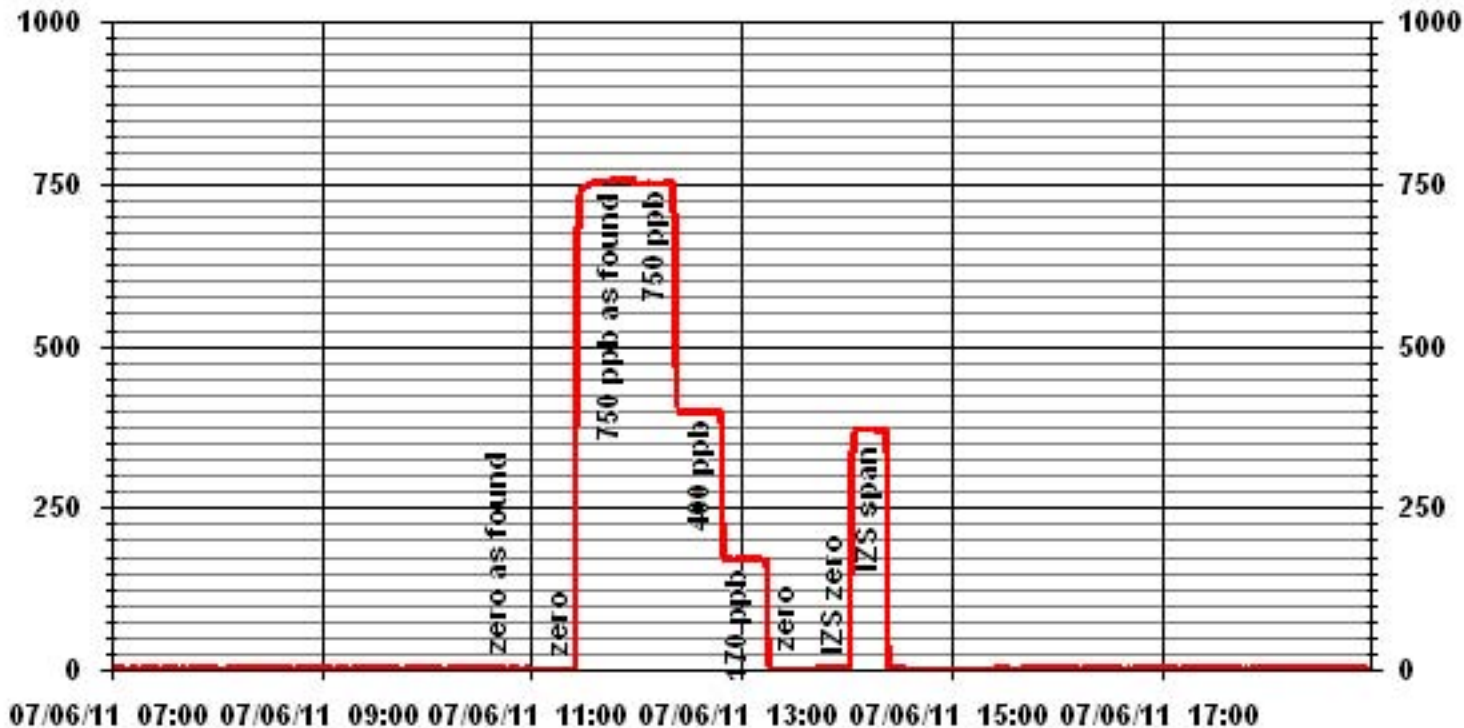
Calibration Date	July 6, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST. LINA
Start Time (MST)	10:29
End Time (MST)	14:26

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope Intercept (± 3% F.S.)	(≥ 0.995)
0	0	n/a		0.999979
170	170	0.9980		0.999297
400	397	1.0072		
750	750	1.0000		-0.379799



Notes:

01 Minute Averages



Hydrogen Sulphide

H2S Calibration Report

Station Information

Calibration Date	July 5, 2011	Previous Calibration	June 7, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST.LINA		
Start Time (MST)	9:17	End Time (MST)	13:18
Reason:	Monthly Calibration		
Barometric Pressure	927 mmHg	Station Temperature	26 Deg C
Cal Gas	10.2 ppm	Gas Cyl. #	bim000804
DAS Output Voltage	0 - 1 Volts	Cal Gas Expiry date	February 2, 2012
		Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	API 101E	S/N :	510	Method:	Fluorescent
Converter Make / Model:	NA	S/N :	NA		
Calibrator Make / Model:	API 700	S/N :	831	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	A0717		
Chart Recorder Make / Model:	NA	S/N:	NA		
Flow Meter:	API 700	S/N :	831		

Analyzer Settings

Before Calibration		After Calibration	
Concentration Range	0 - 100 ppb	0 - 100 ppb	
Sample Flow / Box Temp	551 ccm 34.9 Deg C	551 ccm 34.1 Deg C	
HV/PS / Lamp Setting	518 2483	518 2485	
PMT / RxCell Temp	8.4 Deg C 50 Deg C	8.4 Deg C 50 Deg C	
Converter / IZS Temp	315.3 Deg C 45 Deg C	315.5 Deg C 45.0 Deg C	
Offset / Slope	61.5 1.051	63.6 1.051	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	1	NA
4995	0	0	0	1.0000
4959	39.2	80	81	0.9876
4959	39.2	80	80	1.0000
4979	19.6	40	41	0.9755
4985	11.2	23	23	1.0000
4995	0	0	0	NA
Sum of Least Squares				0.9949
New Correction Factor				1.0000

Before Calibration		After Calibration	
Auto Zero	1.4	Auto Zero	0.5
Auto Span	46.0	Auto Span	45.0
Sample Lines Connected		Sample Lines Connected	YES

Percent Change

Previous Month's Calibration Correction Factor:	1.0000
Current Correction Factor Before Span Adjust:	0.9876
Percent Change:	1.3%

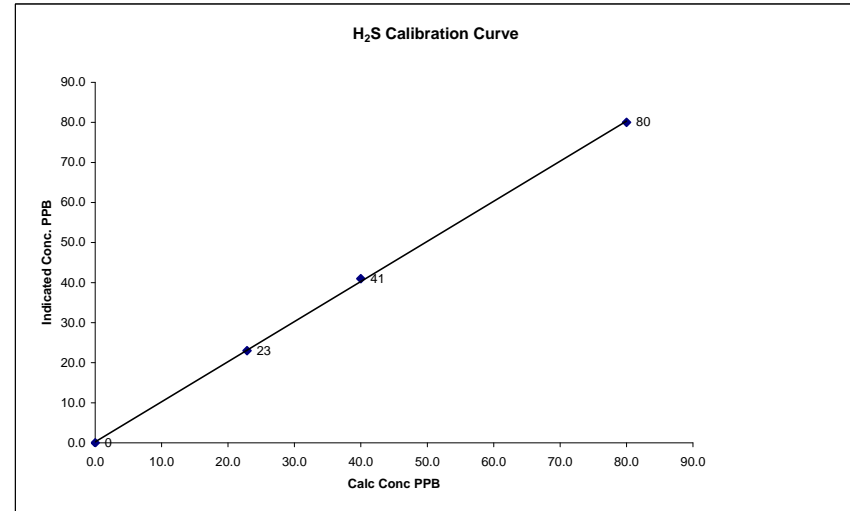
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

H₂S Calibration Curve

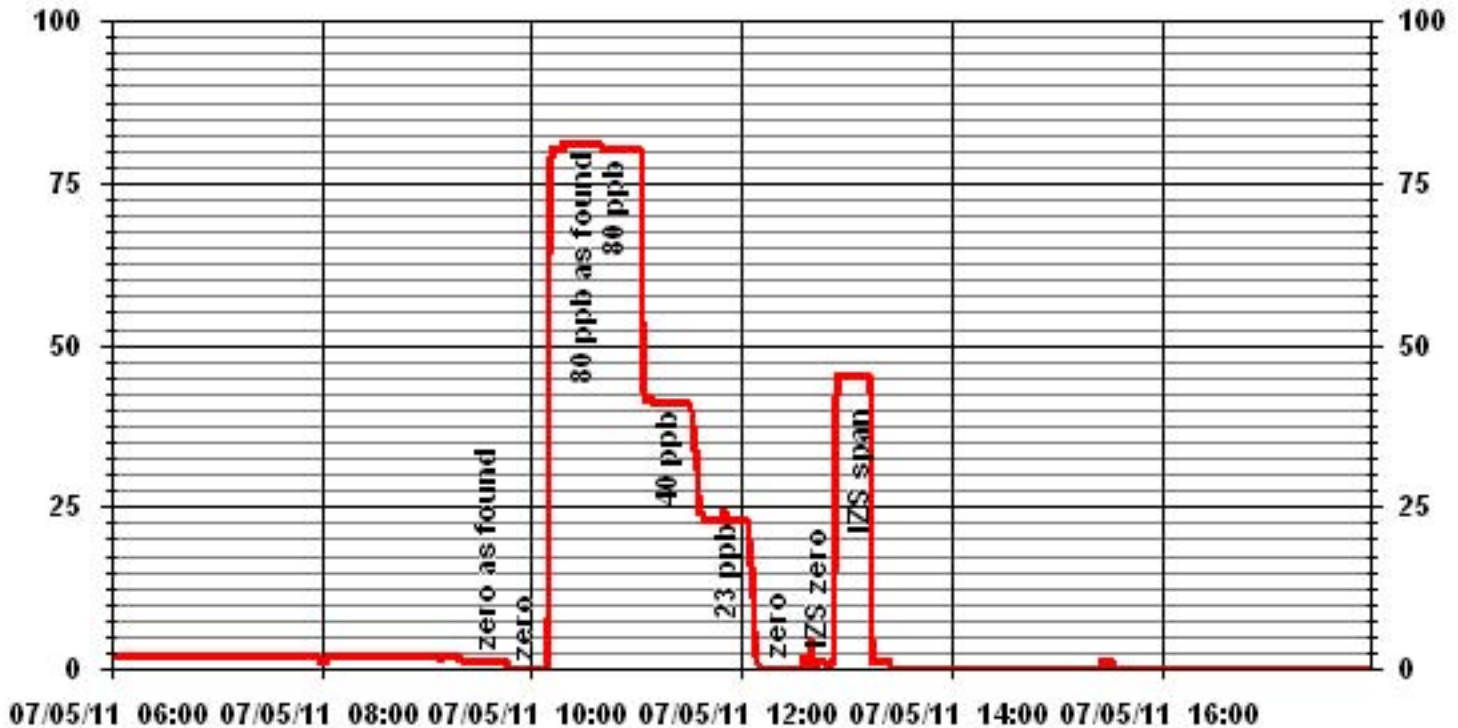
Calibration Date	July 5, 2011
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Plant / Location	ST.LINA
Start Time (MST)	9:17
End Time (MST)	13:18

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15) (± 3% F.S.)	
0	0				0.999796
23	23	0.9941			1.000793
40	41	0.9755			
80	80	1.0000			0.257320



Notes:

01 Minute Averages



Total Hydrocarbons

THC Calibration Report

Station Information			
Calibration Date:	July 5, 2011	Previous Calibration	June 7, 2011
Company:	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location:	ST. LINA		
Start Time (MST)	12:35	End Time (MST)	16:02
Reason:	Monthly Calibration		
Barometric Pressure:	928 mmHg	Station Temperature:	26 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	CH4 602 PPM	C3H8 207 PPM	
	TOTAL CH4 1171.3 PPM	Gas Cyl. # LL84150	Cal Gas Expiry Date: June 11, 2012
DAS make & Model:	ESC 8832	S/N :	AO 717
Chart Recorder:	NA	S/N:	NA
Output Voltage Range:	0 - 10 VDC	Chart Speed:	NA mm/hr

Analyzer Information			
Make / Model	TECO 51C	S/N :	77021-384
Method	Flame Ionization		

Analyzer Settings				
	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.9	psi	6.9	psi
Hydrogen Pressure	8	psi	8	psi
Air Pressure	21	psi	21	psi

Calibration Data				
Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
1998	0.0	0.0	0.0	NA
	No Adj Needed			
1998	70.0	39.6	40.4	0.9813
1998	70.0	39.6	40.0	0.9911
1998	34.9	20.1	19.9	1.0104
1998	20.0	11.6	11.5	1.0094
1999	0.0	0.0	0.0	NA
New Correction Factor:				0.9911

Percent Change	
Previous Calibration Correction Factor:	0.9911
Current Correction Factor Before Span Adjust:	0.9813
Percent Change:	1.0%

IZS Calibration Data		
	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	36.0	35.7
Sample Lines Connected	YES	

Cylinder Pressures			
Span	950 psi	Hydrogen	1550 psi
		Zero Air	34 psi

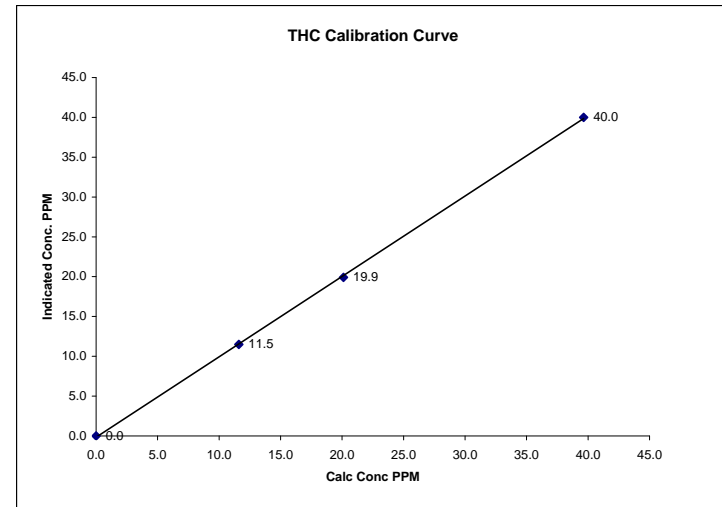
Notes: **NA : Not Applicable**

Calibration Performed by: Ting Xu

THC Calibration Curve

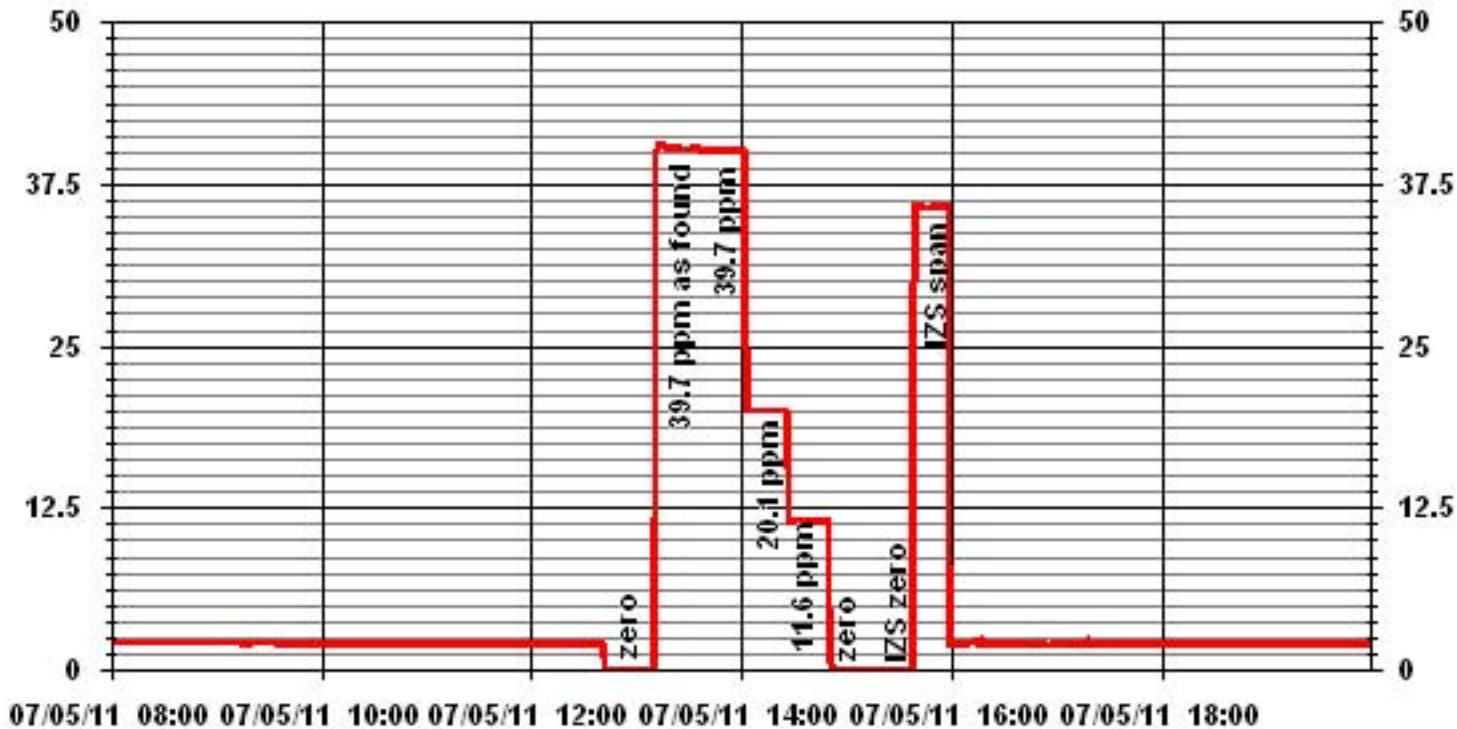
Calibration Date	July 5, 2011		
Company	LAKELAND INDUSTRY & COMMUNITY ASSOCIATION		
Plant / Location	ST. LINA		
Start Time (MST)	12:35	End Time (MST)	16:02

Calculated Conc. ppm	Indicated Response ppm	Correction Factor	Correlation Coefficient Slope (0.85 to 1.15)	(≥ 0.995)	0.999877
0.0	0.0	NA	Intercept	(±3% F.S.)	-0.15914
11.6	11.5	1.0094			
20.1	19.9	1.0104			
39.6	40.0	0.9911			



Notes:

01 Minute Averages



Nitrogen Dioxide

NOx - NO- NO2 Calibration Report
Station Information

Calibration Date	July 5, 2011	Previous Calibration	June 7, 2011
Company	LICA	Plant/Location	St. Lina
Start Time (MST)	9:17	End Time (MST)	16:02
Reason:	Monthly Calibration		
Barometric Pressure	927 mmHg	Station Temperature	26 Deg C
Cal Gas Concentration	NOx 51.7 ppm	NO 50.4 ppm	Cal Gas Expiry date February 4, 2013
Cal Gas Cylinder #	LL103822	MFCF	1
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	NA Volts

Equipment Information

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

Analyzer Settings

Before Calibration		0 - 1000		After Calibration	
Concentration Range					
Sample Flow/Conv. Temp	389 ccm	315.7 Deg C	385 ccm	314 Deg C	
Ozone Flow / Vacuum	73 ccm	4.6 "Hg-A	73 ccm	4.8 "Hg-A	
HVPS / A ZERO	662 Volts	21.6 MV	662 Volts	21.2 MV	
Rx/ Temp / PMT Temp	50.0 Deg C	6.9 Deg C	50.0 Deg C	6.8 Deg C	
Box Temp / IZS Temp	32.5 Deg C	45.2 Deg C	31.6 Deg C	45.3 Deg C	
Offset	3 NOx	0.4 NO	0.9 NOx	0.0 NO	
Slope	1.100 NOx	1.071 NO	1.132 NOx	1.097 NO	
NO2 COEF / Conv Efficiency	NA NO2	0.993	NA NO2	0.993	

Dilution Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			Correction Factor	
			NOx	NO	NO2	NOx	NO	NO2	NOx	NO
4994	0.0	NA	0	0	NA	-1	0	-1	NA	NA
4994	0.0	NA	0	0	NA	0	0	0	NA	NA
4921	74.2	NA	768	749	NA	745	731	14	1.0294	1.0242
4921	74.2	NA	768	749	NA	768	749	19	1.0000	1.0000
4960	34.6	NA	358	349	NA	358	349	9	1.0000	1.0000
4978	16.8	NA	174	170	NA	175	170	5	0.9880	1.0000
4996	0.0	NA	0	0	NA	0	1	-1	NA	NA

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration			Indicated Concentration			NO2 Correction Factor	NO2 Conv Efficiency
			NOx	NO	NO2	NOx	NO	NO2		
4921	61.4	NA	637	621	NA	766	747	19	NA	NA
No Adj Required										
4921	61.4	550	637	NA	471	768	295	472	0.9958	100.22%
4921	61.4	300	637	NA	265	768	501	266	0.9925	100.41%
4921	61.4	120	637	NA	115	768	651	117	0.9746	102.08%

Linearity	Sum of Least Squares	NOx= 1.000	NO= 1.000	NO2= 0.997	
OK?	Yes	Correction Factors:	NOx= 1.0000	NO= 1.0000	NO2= 0.9958
Average Converter Efficiency= 100.90%					

Before Calibration		After Calibration	
Auto Zero	-1.0 NOx	-1.1 NO2	-0.1 NOx
Auto Span	710 NOx	687 NO2	723 NOx
			701 NO2
Sample Lines Connected YES			
Percent Change from Previous Calibration		NOx -2.7%	NO -2.4%
		NO2 0.2%	

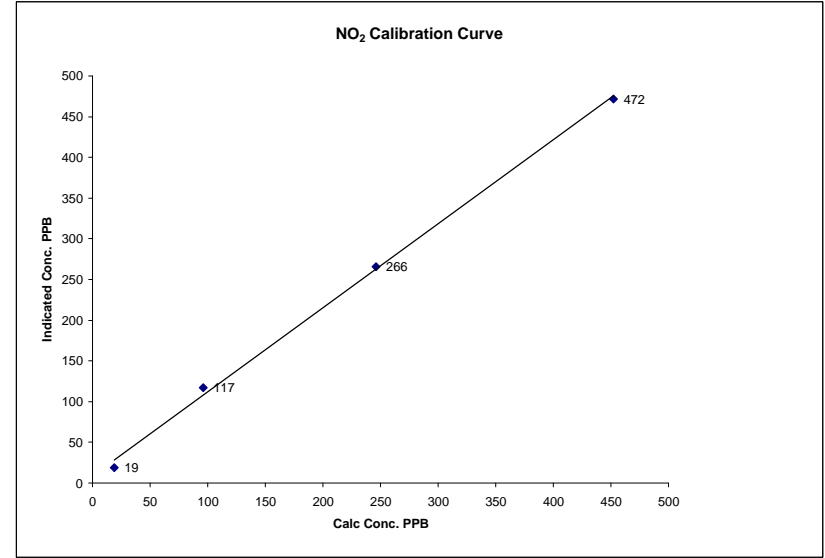
Notes: **NA : Not Applicable**
Additional GPT was done for O3 clibration. O3 set point 450, NO=351, NO2=421

Calibration Performed by: Ting Xu

NO2 Calibration Curve

Calibration Date	July 5, 2011	Company	LICA
Plant / Location	St. Lina	Start Time (MST)	9:17
End Time (MST)	16:02		

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.998341
19	19	N/A	Intercept	(± 3% F.S.)	1.032777
96	117	0.8205			8.58810
246	266	0.9248			
452	472	0.9576			

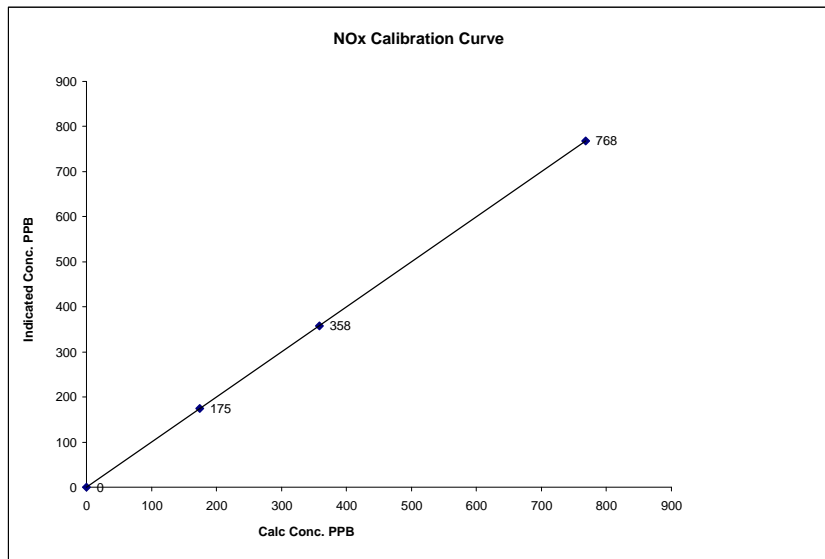


Notes:

NOx Calibration Curve

Calibration Date July 5, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:17 End Time (MST) 16:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999997
0	0	N/A	Intercept	(± 3% F.S.)	0.40431
174	175	0.9937			
358	358	1.0004			
768	768	1.0000			

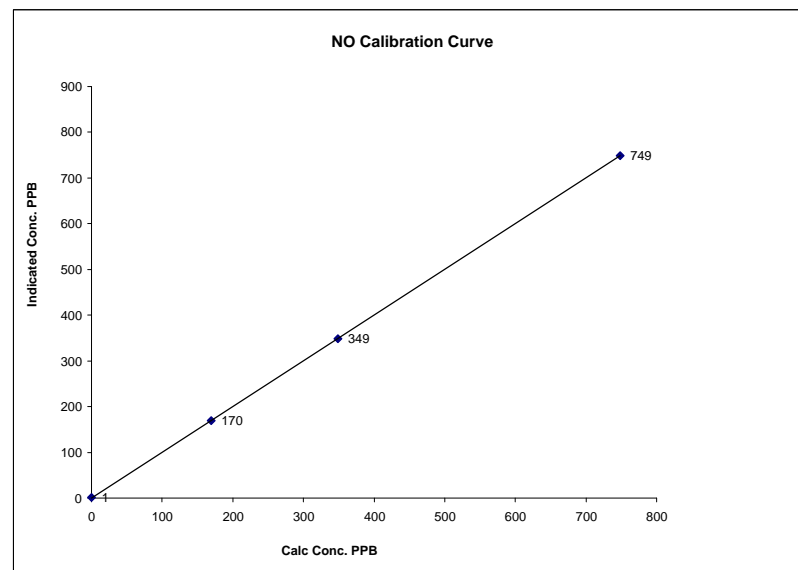


Notes:

NO Calibration Curve

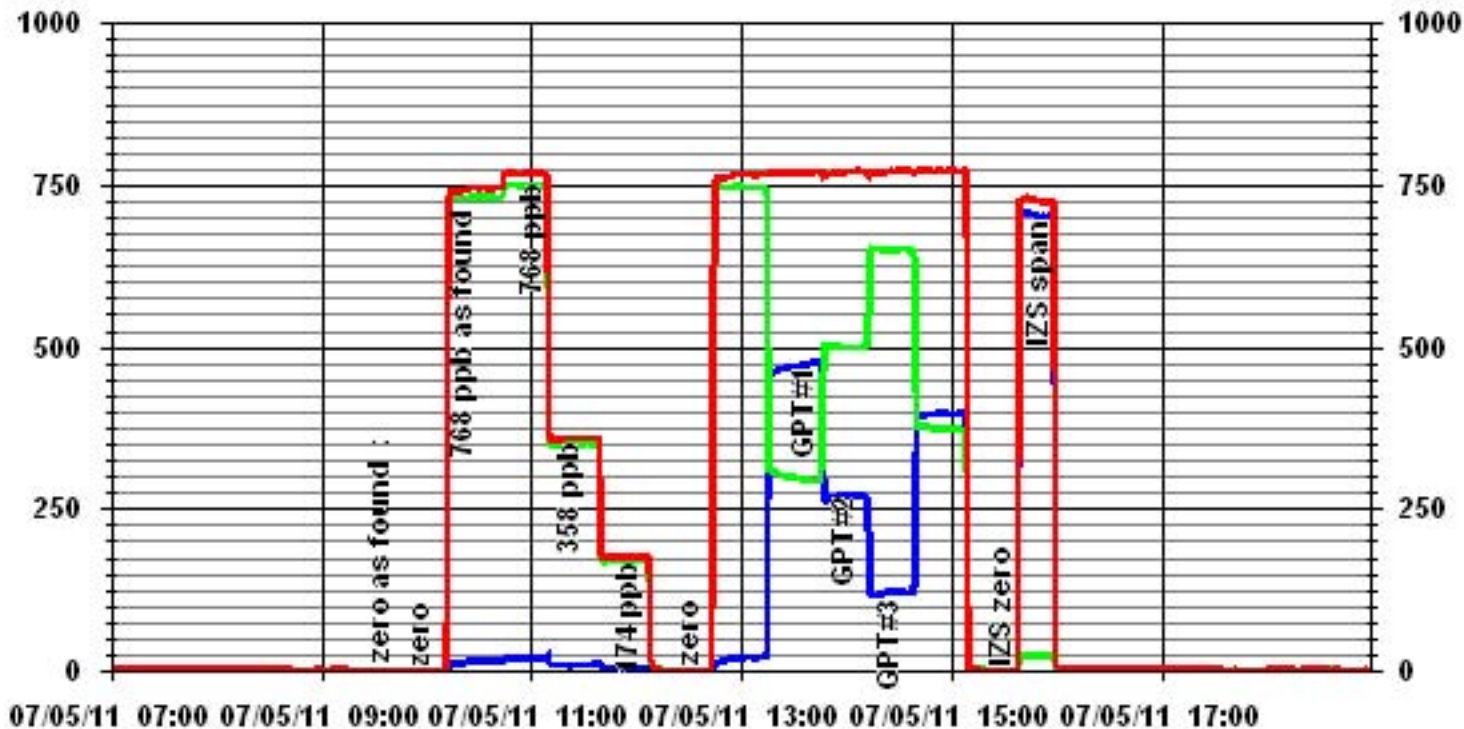
Calibration Date July 5, 2011
 Company LICA
 Plant / Location St. Lina
 Start Time (MST) 9:17 End Time (MST) 16:02

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995)	0.999998
0	1	N/A	Intercept	(± 3% F.S.)	-0.5736
170	170	0.9972			
349	349	1.0004			
749	749	0.9995			



Notes:

01 Minute Averages



— LICA31 NOX_ PPB

— LICA31 NO_ PPB

— LICA31 NO2_ PPB

Ozone

O₃ Calibration Report

Station Information

Calibration Date	July 6, 2011	Previous Calibration	June 7, 2011
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	10:29	End Time (MST)	14:27
Reason:	Monthly Calibration		
Barometric Pressure	940 mm Hg	Station Temperature	26 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:	Enviroics 6100	S/N :	4760	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	AO 717		

Analyzer Settings

	Before Calibration		After Calibration	
	0 - 500			
Concentration Range	ppb			
Cell A Flow / Cell B Flow	723 ccm	741 ccm	724 ccm	742 ccm
Pressure	703 mmHg		705 mmHg	
Bench Temp	55.5 Deg C		55.5 Deg C	
O3 Lamp / Box Temp	80 Deg C	33.4 Deg C	80 Deg C	33.4 Deg C
Offset / Slope	0.1	0.964	0.1	0.953

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
4995	0	0	0	NA
	No Adj Needed			
4995	450	373	377	0.9894
4995	450	373	374	0.9973
4995	300	246	251	0.9801
4995	120	96	101	0.9505
4995	0	0	0	N/A
Sum of Least Squares				N/A
New Correction Factor				0.9973

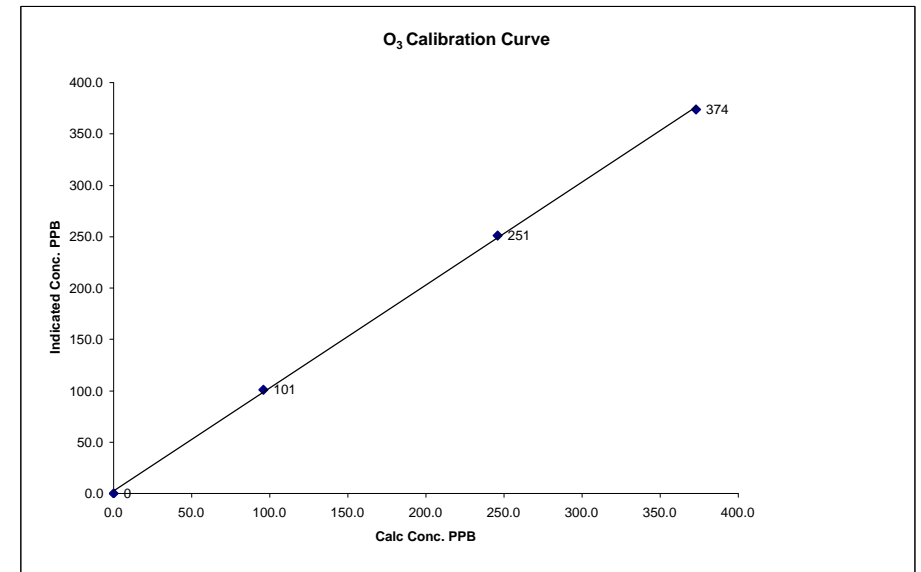
	Before Calibration	After Calibration
Auto Zero	0.7	1.0
Auto Span	337	329
Sample Lines Connected		YES
Percent Change from Previous Calibration		1.1%

Calibration Performed by: Ting Xu

O₃ Calibration Curve

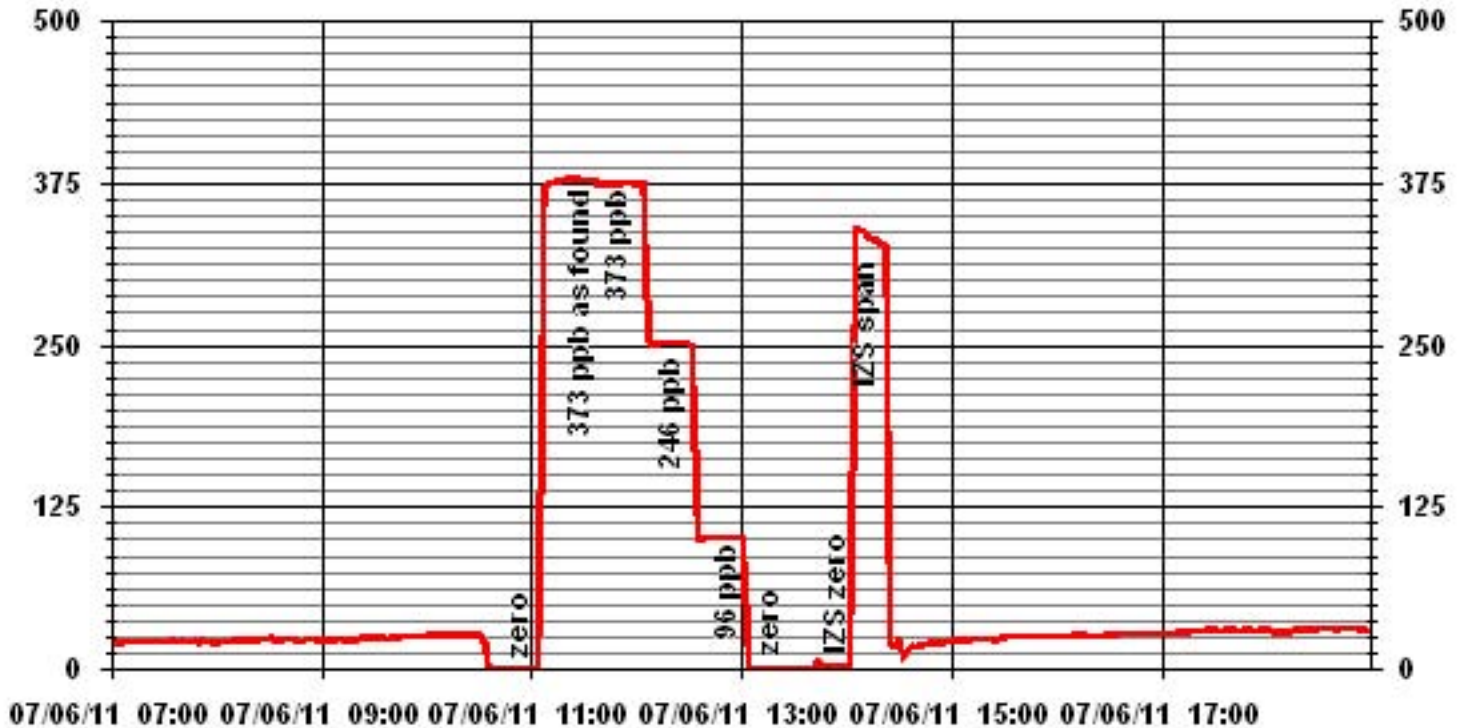
Calibration Date	July 6, 2011		
Company	Lakeland Industry & Community Association		
Plant / Location	St. Lina		
Start Time (MST)	10:29	End Time (MST)	14:27

Calculated Conc. ppb	Indicated Response ppb	Correction Factor	Correlation Coefficient Slope	(≥ 0.995) (0.85 to 1.15)	0.999747
0	0	n/a	Intercept	(± 3% F.S.)	2.492531
96	101	0.9505			
246	251	0.9801			
373	374	0.9973			



Notes:

01 Minute Averages



Particulate Matter 2.5

TEOMÒ 1405F Audit

	<u>Station</u>		<u>Audit Transfer Standard</u>
Date:	<u>July 6, 2011</u>	Make/Model:	<u>Streamline FTS</u>
Station Name:	<u>Lica St. Lina (CASA # 31)</u>	Serial Number:	<u>LO 091099, Hi 091001</u>
Location:	<u>St. Lina Station</u>	Cell s/n:	<u>NA</u>
Operator:	<u>LICA</u>	Thermometer s:	<u>Station Temp. Sensor</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>1405A208301003</u>	Filter Load (%)	<u>30.0%</u>
Firmware Ver.	<u>1.52</u>	K _o Factor	<u>13125.0</u>
Parameter	<u>PM 2.5 (with FDMS)</u>	Temp (°C)	<u>20.7</u>
		Press (ATM)	<u>0.927</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 <0.4atm	<u>0.30</u>	Pump Gauge (inHg)	<u>-20</u>
Temperature/Pressure		D °C	
Measured Temp (± 2 °C)	<u>21.9</u>		<u>-1.2</u>
Measured Press (± 0.01atm)	<u>0.927</u>	DATM	<u>0.000</u>
Flow Audit			
Indicated Main Flow (l/min)	<u>3.00</u>	Main Flow Drift (±10.0%)	<u>2.01%</u>
Measured Main Flow (l/min)	<u>3.02</u>	Flow Adjusted to Measured?	<u>Yes</u>
Indicated Bypass Flow (l/min)	<u>13.67</u>	Bypass Flow Drift (±10.0%)	<u>94.00%</u>
Measured Bypass Flow (l/min)	<u>13.57</u>	Flow Adjusted to Measured?	<u>No</u>
Leak Check		Instrument Setup	
Main (< 0.15 l/min)	<u>NA</u>	Flow Control = Active	
Aux (< 0.6 l/min)	<u>NA</u>	Report Conditions = Actual	
K_o Factor			
Measured	<u>NA</u>		
K _o Difference (± 2.5%)	<u>NA</u>		

Start Time: 10:04 **Finish Time:** 11:30

Sample Inlet Cleaned: Yes **New Filters Installed:** Yes
New Filter Loading %: 18.0%

Comments: _____

Auditor/s: Ting Xu