Lakeland Industry & Community Association

Cold Lake Monitoring Site
Ambient Air Monitoring
Data Report
For
November 2008

Prepared By:

Maxxam Analytics Inc

Driven by Service and Science

December 17, 2008

Lakeland Industry & Community Association
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
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Monitoring Location: Cold Lake
Data Period: November 2008

The monthly ambient data report:

- Prepared by Lily Lin
- Reviewed by Craig Snider

The monthly analytical report for passive monitoring:
Authorized by Levi Manchak

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 – November 2008

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SITE						MAXIMUM VALUES							OPERATIONAL TIME (PERCENT)
						1-HOUR					24-HOUR		
PARAMETER	OBJECTIVES		EXCEEDENCES		MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	
	1-HR	24-HR	1-HR	24-HR									
SO_2 (PPB)	172	57	0	0	0.07	2	3, 19	VAR	VAR	VAR	0.6	1	100.0
TRS (PPB)	-	-	-	-	0.00	0	ALL	ALL	VAR	VAR	0.0	ALL	100.0
NO_2 (PPB)	212	106	0	0	4.40	34	27	16	2.4	103(ESE)	15.3	27	99.7
NO (PPB)	-	-	-	-	1.44	49	27	19	0	356(N)	15.9	27	99.7
NOx (PPB)	-	-	-	-	6.10	74	27	18	0.1	132(SE)	31.7	27	99.7
O_3 (PPB)	82	-	0	-	17.66	34	VAR	VAR	VAR	VAR	27.9	23	100.0
THC (PPM)	-	-	-	-	1.82	2.8	28	10	1.1	185(S)	2.4	28	99.7
PM 2.5 (UG/M^3)	-	30	-	0	2.86	11.4	27	23	1.1	62(ENE)	6.4	2	100.0
TEMPERATURE (DEG C)	-	-	-	-	-2.03	8.4	2	15	8.1	123(ESE)	5.2	3	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	79.80	98	3	10	4.9	278(W)	93.5	3	100.0
VECTOR WS (KPH)	-	-	-	-	6.05	18.4	13	14	-	307(NW)	12.3	13	100.0
VECTOR WD (DEGREES)	-	-	-	-	210(SSW)	-	-	-	-	-	-	-	100.0

VAR-VARIOUS

Monthly Non-Continuous Data Summary
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - COLD LAKE

Passive Ambient Monitoring Network – November 2008

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION PASSIVE NETWORK			
NETWORK MAXIMUM			NETWORK AVERAGE
PARAMETER	STATION	READING (PPB)	READING (PPB)
NO_2	#28	5.7	2.3
SO_2	#14	1.6	0.3
H_2S	#14	0.17	0.10
O_3	#4	21.7	18.01

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 - TECO 43A

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

Total Reduced Sulphur (PPB)

- Analyzer make / model -TECO 43A
- Converter - CD NOVA CDN 101

No operational issues observed during the month. The inlet filter was changed before the monthly calibration was started.

Total HydroCarbon (PPM)

- Analyzer make / model -TECO 51C-LT

No operational issues observed during the month. The Hydrogen gas cylinder was replaced on November 4th following the as-found points. The inlet filter was changed and gas flows were optimized before the monthly calibration was started. The result of the full calibration showed poor linearity. The technician performed crosschecks with other calibrator, but still got same poor results. Thus, flows were measured and adjusted, and allow the analyzer time to stabilize overnight. On November 5th, the as-found points calibration was performed, but the linearity was still poor. Thus, sample and H2 pressures were changed back to values prior to optimization on November 4th. The calibration linearity is better but still passible. Have ordered a FID rebuild kit and will consult manufacturer regarding this issue. Data was corrected using daily zero information.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Nitrogen Dioxide (PPB)

- Analyzer make / model - TECO 42C

No operational issues observed during the month. The monthly calibration was performed on November 4th. It was noted that the NOx pump was much nosier than usual. It was also noticed some discoloration of the diaphragms which possible damage due to ozone contamination. Thus, the pump was rebuilt and the charcoal in the exhaust scrubber was replaced on November 13th.It is recommended replacing 2-cycle diaphragm pump with a Thomas 617CA22 wobble pump. The post-repair calibration was performed on November 14th, and the span was adjusted on the same day. The inlet filter was changed before the monthly calibration was started. Data was corrected using daily zero information.

Ozone (PPB)

- Analyzer make / model - TECO 49I

No operational issues observed during the month. The inlet filter was changed before the monthly calibration was started.

Particulate Matter 2.5 (ug/m^3)

- Analyzer make / model - TEOM 1400A

No operational issues observed during the month. A Teom audit including leak check and Ko verification were peformed on November 5th. Following the audit, the flow adjust factors were changed to bring actual flows cloaser to the expected values. The large inline bypass filter was replaced as well. Hardware calibration will be performed next month. No data was invalidated as it was below –3.0 ug/m^3.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

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

- System make / model – Met One 50.5

No operational issues observed during the month. The wind system is reported as vector wind speed and vector wind direction. The temporary replacement Maxxam-Owned RM Young 5103VK (S/N# 2068) wind system was removed and the AENV-Owned Met One 50.5 wind system was installed on November 5th. The Met One 50.5 wind system had been shipped to the manufacturer for a routine calibration, and the results were within tolerance according to the manufacturer. The heater control board was found by Met One to be faulty and had to be replaced. The zero/span test outlined in the manual was performed. The results are as follows:

- Zero test (bag over sensor): expected reading=0.0 kph, Actual=0.0 kph;
- N/S pathway blocked: expected WD=10 deg, WS=180 kph; Actual WD=9.6 deg, WS=176.8kph;
- E/W pathway blocked: expected WD=160 deg, WS=180 kph; Actual=157.3 deg, WS=176.8 kph;
- N/S and E/W pathways blocked: expected WD=170 deg, WS=180 kph; Actual WD=166.8 deg, WS=176.8 kph.

Relative Humidity (PERCENT)

- System make / model - Rotronic Hygroclip-S3

No operational issues observed during the month.

Ambient Temperature (DEGC)

- System make / model - Rotronic Hygroclip-S3

No operational issues observed during the month.

Trailer Temperature (DEGC)

- System make / model - R&R 61

No operational issues observed during the month.

General Monthly Summary - Cold Lake

AQM STATION – LICA – COLD LAKE

Datalogger

- System make / model - ESC 8832
- 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 operational issues observed during the month.

Air Quality Index (AQI)

The AQI data was adjusted to reflect regular monthly and daily calibrations, maintenance, and downtime. All AQI values recorded in November were within the good range.

Passive Network

NO2 sample duplicate at station#10 and NO2 sample at station #23 were missing.

Continuous Monitoring

Cold Lake

Monthly Summaries, Graphs & Wind Roses

Air Quality Index

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - ***COLD LAKE***

NOVEMBER 2008

AIR QUALITY INDEX (AQI)

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	12	-	11	11	10	10	9	9	9	10	10	10	10	10	10	10	8	5	4	4	5	5	5	6	12
	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	PM2	PM2	O3_
2	-	7	8	8	9	9	9	6	7	7	7	7	8	9	9	10	9	8	9	9	11	11	8	-	11
	NA	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_
3	7	7	7	6	6	5	6	6	6	6	5	5	6	5	5	5	5	5	5	6	7	6	-	10	10
	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_
4	10	11	11	11	11	10	8	6	-	-	-	-	-	-	9	8	7	8	7	8	8	-	8	8	11
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_
5	7	6	6	7	5	3	2	2	2	2	3	3	-	-	-	-	-	-	4	3	-	5	7	8	8
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_	O3_	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	PM2	PM2	**NA**	O3_	O3_	O3_	O3_
6	8	8	7	7	7	6	5	4	5	4	4	5	7	8	9	8	8	7	8	-	10	10	10	10	10
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_
7	11	10	9	9	9	8	7	7	6	7	8	8	8	8	9	9	9	9	-	9	9	9	9	8	11
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8	8	8	8	8	8	8	8	8	8	8	8	8	8	9	9	10	8	-	11	11	12	11	10	10	12
	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_
9	9	9	9	9	9	9	9	9	8	8	9	9	9	9	9	9	-	9	9	11	12	13	13	13	13
	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_
10	13	12	12	12	12	12	11	9	8	8	8	7	9	10	9	-	9	8	8	8	8	9	11	11	13
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
11	11	11	11	11	11	10	10	8	8	7	7	9	9	8	-	8	8	7	8	8	11	13	12	12	13
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
12	12	11	13	13	12	10	10	9	9	10	10	10	9	-	9	8	6	5	5	5	4	5	6	7	13
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_	O3_	O3_
13	8	7	6	8	10	12	9	8	7	6	7	6	-	-	-	-	-	6	6	6	6	6	6	7	12
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
14	8	10	13	13	13	14	15	15	-	-	-	-	-	-	-	15	12	7	6	7	6	3	6	5	16
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
15	5	8	10	11	11	10	10	10	9	8	-	11	12	13	14	13	13	13	14	15	15	14	12	11	15
	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_
16	10	13	15	16	16	16	15	14	14	-	15	15	15	15	15	14	13	12	12	13	10	6	5	5	16
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
17	4	5	4	3	3	4	8	7	-	9	10	11	13	14	15	15	15	15	15	15	14	13	12	12	15
	O3_	PM2	O3_	O3_	PM2	PM2	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
18	11	11	10	10	10	9	9	-	9	8	9	8	8	7	7	5	5	4	5	4	6	9	9	10	11
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_
19	7	7	9	11	13	13	-	13	13	14	14	14	13	13	13	13	12	13	8	6	4	4	7	4	14
	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
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21	10	10	10	10	-	9	8	7	7	8	8	6	7	8	8	5	5	5	5	5	5	5	8	7	10
	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	PM2	PM2	O3_	PM2	O3_
22	9	11	11	-	11	11	10	9	8	9	7	7	9	12	16	16	17	16	16	17	17	17	16	16	17
	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
23	16	16	-	15	15	15	15	15	14	15	16	17	17	17	17	16	15	14	13	13	11	6	6	11	17
	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_
24	13	-	13	13	13	13	12	8	8	10	11	11	11	11	9	4	5	6	4	5	5	7	11	12	13
	O3_	**NA**	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	O3_	O3_	O3_
25	-	12	11	11	10	3	1	2	2	3	8	13	15	17	14	11	9	9	10	11	8	6	4	-	17
	NA	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	**NA**	O3_
26	7	7	7	10	14	17	17	17	16	16	16	17	17	17	17	17	16	15	13	14	13	10	-	9	17
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_
27	12	13	10	11	11	12	6	1	2	4	6	9	9	11	11	7	5	6	5	6	7	-	6	9	13
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	O3_	O3_	O3_	O3_	O3_	O3_	PM2	PM2	PM2	PM2	PM2	**NA**	PM2	PM2	O3_
28	5	4	4	3	3	3	3	5	6	8	7	7	8	8	8	5	4	4	5	4	-	4	5	5	8
	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	PM2	O3_	PM2	O3_	O3_	O3_	PM2	PM2	PM2	PM2	**NA**	PM2	O3_	O3_	PM2
29	5	5	7	8	10	11	12	10	10	12	14	14	15	15	16	16	15	14	11	-	13	13	14	14	16
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	**NA**	O3_	O3_	O3_	O3_	O3_
30	13	14	13	13	12	11	11	10	10	11	12	13	15	15	15	12	10	6	-	10	11	12	12	12	15
	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_
PEAK	16	16	15	16	16	17	17	17	16	16	16	17	17	17	17	17	17	16	16	17	17	17	16	16	
	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	O3_	

STATUS FLAG CODES	NA - NOT APPLICABLE

V - VARIOUS

AQI CLASS	OZONE (O_3)					PARTICULATE MATTER 2.5 (PM2)					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)	589	81.8%	17	VAR	VAR	77	10.7%	9	4,5,6	2	0	0.0%	-	-	-	0	0.0%	-	-	-	666	92.5%
OVERALL	589	81.8%	-	-	-	77	10.7%	-	-	-	0	0.0%	-	-	-	0	0.0%	-	-	-	666	92.5%
UNAVAILABLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	7.5%

VAR: VARIOUS

Sulphur Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

SULPHUR DIOXIDE (SO_2) hourly averages in ppb

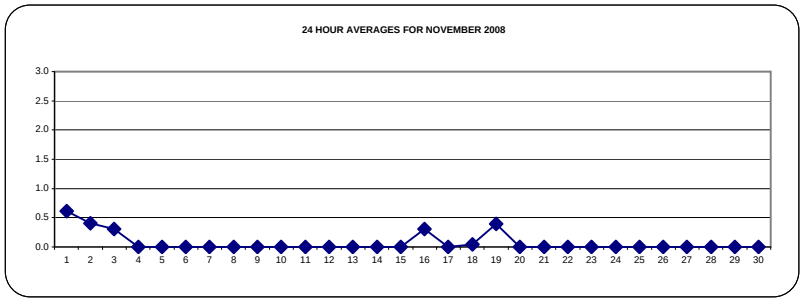
MST

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

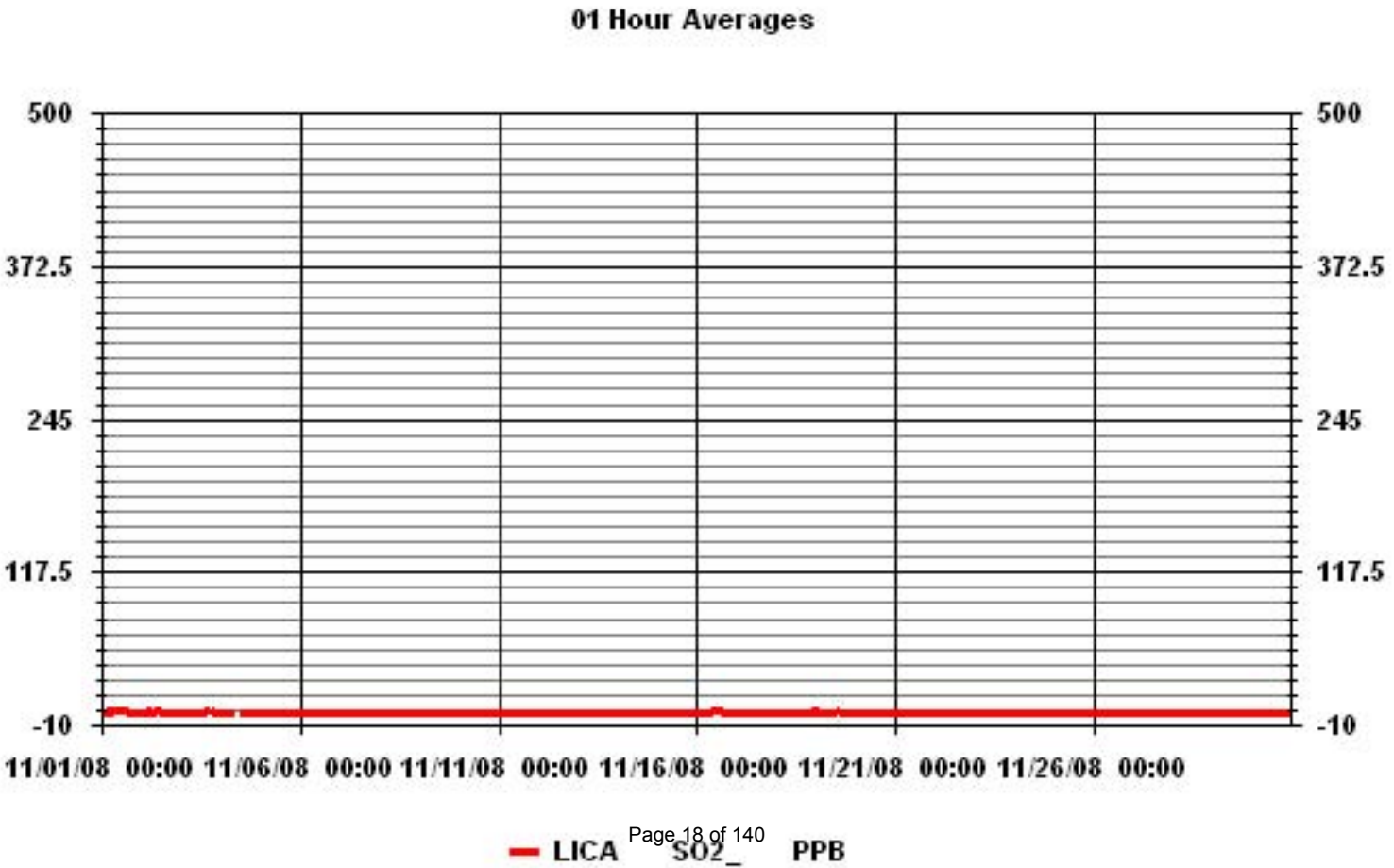
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 57 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	44					
MAXIMUM 1-HR AVERAGE:	2	PPB	@ HOUR(S)	VAR	ON DAY(S)	3,19
MAXIMUM 24-HR AVERAGE:	0.6	PPB			ON DAY(S)	1

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	6	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	0.27		MONTHLY AVERAGE:	0.07	PPB


01 Hour Averages
500
372.5
245
117.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA SO2_ PPB

LICA
SO2_ / WDR Joint Frequency Distribution (Percent)

November 2008

Distribution By % Of Samples

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

Wind Parameter : WDR
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	1.03	.44	1.03	2.50	8.10	13.99	19.88	2.50	2.20	2.65	11.04	12.37	8.68	7.36	5.30	.88	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	1.03	.44	1.03	2.50	8.10	13.99	19.88	2.50	2.20	2.65	11.04	12.37	8.68	7.36	5.30	.88	

Calm : .00 %

Total # Operational Hours : 679

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	20	7	3	7	17	55	95	135	17	15	18	75	84	59	50	36	6	679
<	60																	
<	110																	
<	170																	
<	340																	
>=	340																	
	Totals	7	3	7	17	55	95	135	17	15	18	75	84	59	50	36	6	

Calm : .00 %

Total # Operational Hours : 679

Logger : 01 Parameter : SO2_

Class Limits (PPB)

>= 340

< 340

< 170

< 110

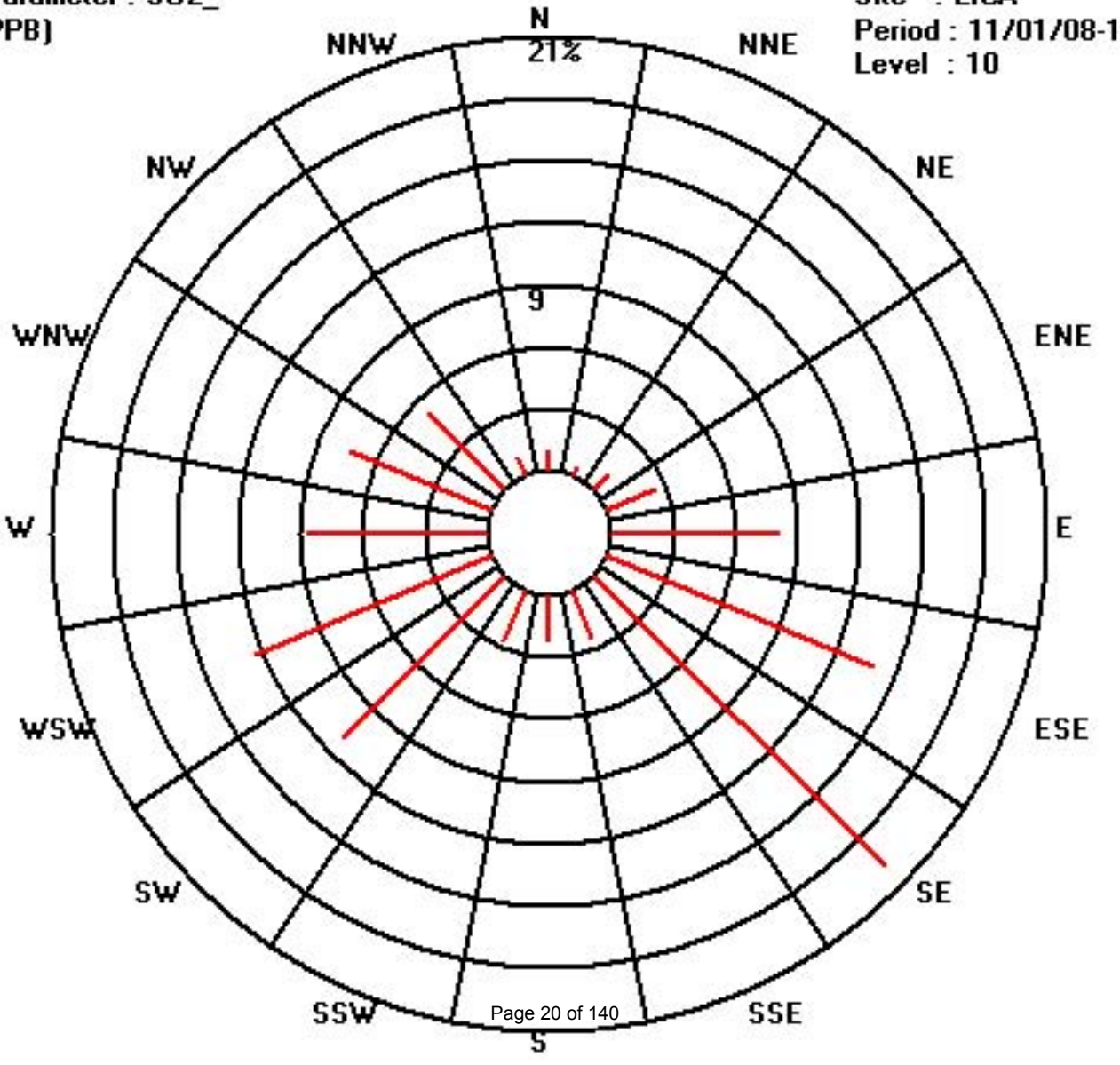
< 60

< 20

Site : LICA

Period : 11/01/08-11/30/08

Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION -*COLD LAKE*

NOVEMBER 2008

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	**IZS**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1.0	24
2	**IZS**	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	**IZS**	2	1.0	24
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	2	1	1	**IZS**	1	3	1.2	24
4	1	1	1	1	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	0	0	0	0	**IZS**	0	0	1	0.5	24
5	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
6	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
7	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
8	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
9	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
10	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
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0.0	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	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	**IZS**	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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
15	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0.1	24
16	0	0	0	0	0	0	0	1	1	**IZS**	2	2	2	2	2	2	1	1	1	1	0	0	0	0	2	0.8	24
17	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
18	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3	0.2	24
19	2	1	1	0	0	0	**IZS**	0	0	1	2	1	1	3	2	2	1	1	1	0	0	1	1	0	3	0.9	24
20	0	0	0	0	0	**IZS**	0	0	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24
21	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0.1	24
22	0	0	1	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
23	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
24	0	**IZS**	0	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	0	0	0	0	0	0	1	0.5	24
25	**IZS**	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	**IZS**	2	0.2	24
26	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
27	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	2	1	1	0	**IZS**	0	0	2	0.5	24
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**IZS**	0	0	0	1	0.0	24
29	0	0	1	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
30	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	**IZS**	0	0	0	0	0	1	0.1	24
HOURLY MAX	2	1	1	1	1	1	1	1	1	2	2	2	2	3	2	2	2	2	3	2	1	1	1	3			
HOURLY AVG	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.1	0.1	0.2	0.3			

STATUS FLAG CODES

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

MONTHLY SUMMARY

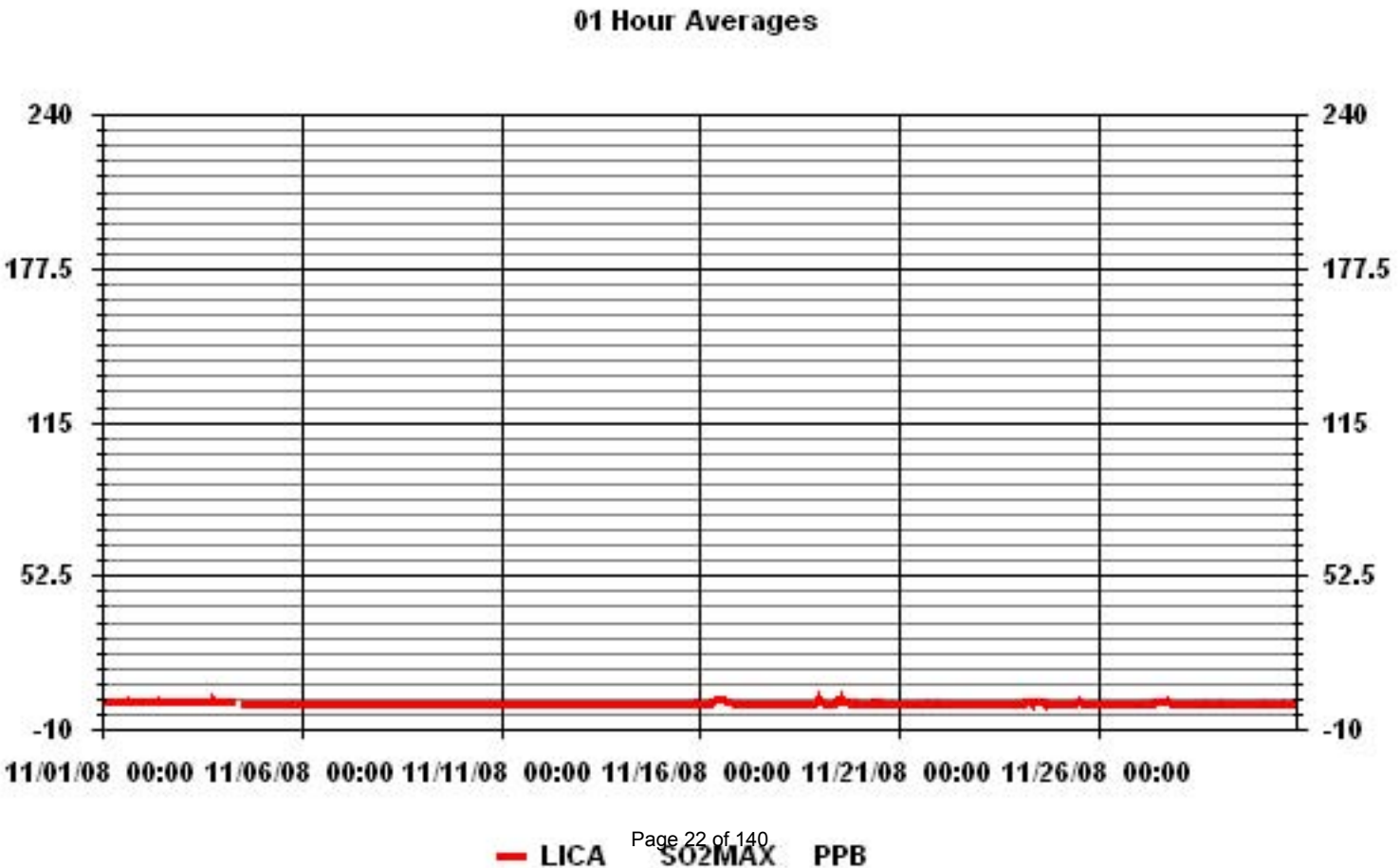
NUMBER OF NON-ZERO READINGS: 145

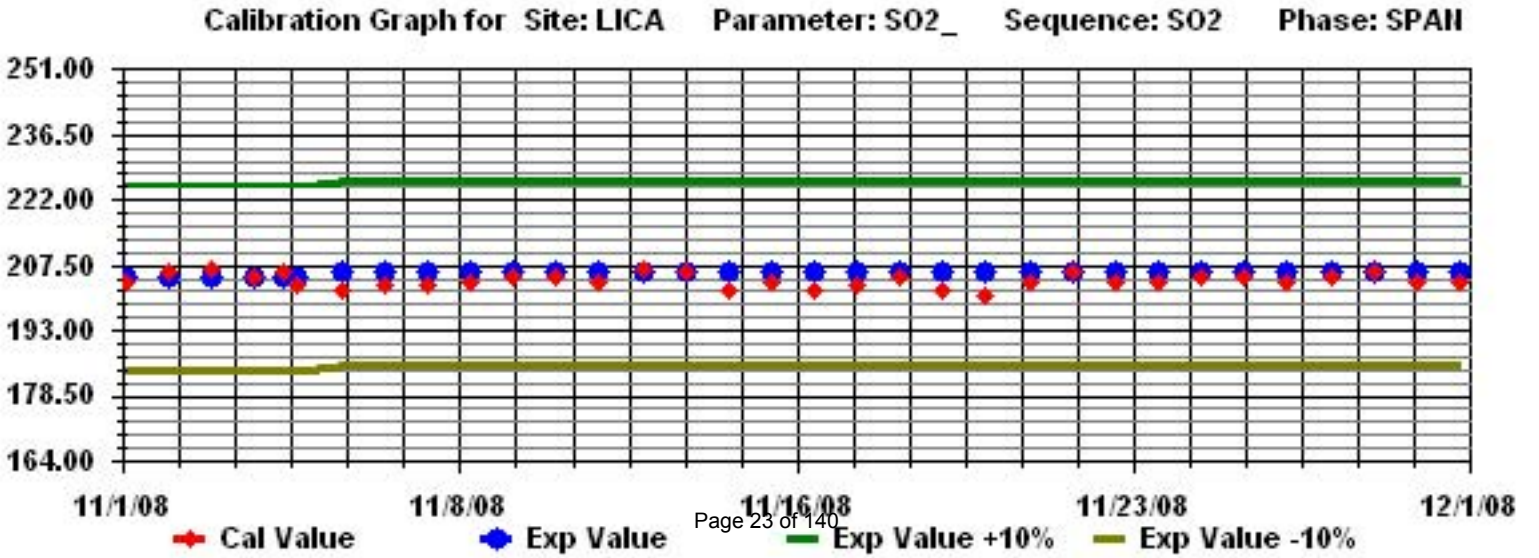
MAXIMUM INSTANTANEOUS VALUE: 3 PPB @ HOUR(S) VAR ON DAY(S) VAR

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 720 HRS

MONTHLY CALIBRATION TIME: 6 HRS

STANDARD DEVIATION: 0.51


01 Hour Averages
240
177.5
115
52.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA SO2MAX PPB


Calibration Graph for Site: LICA Parameter: SO2_ Sequence: SO2 Phase: SPAN
251.00
236.50
222.00
207.50
193.00
178.50
164.00
11/1/08
11/8/08
11/16/08
11/23/08
12/1/08
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Reduced Sulphur

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

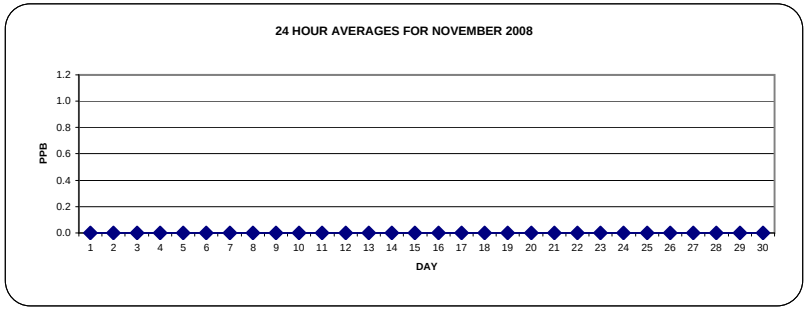
MST

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

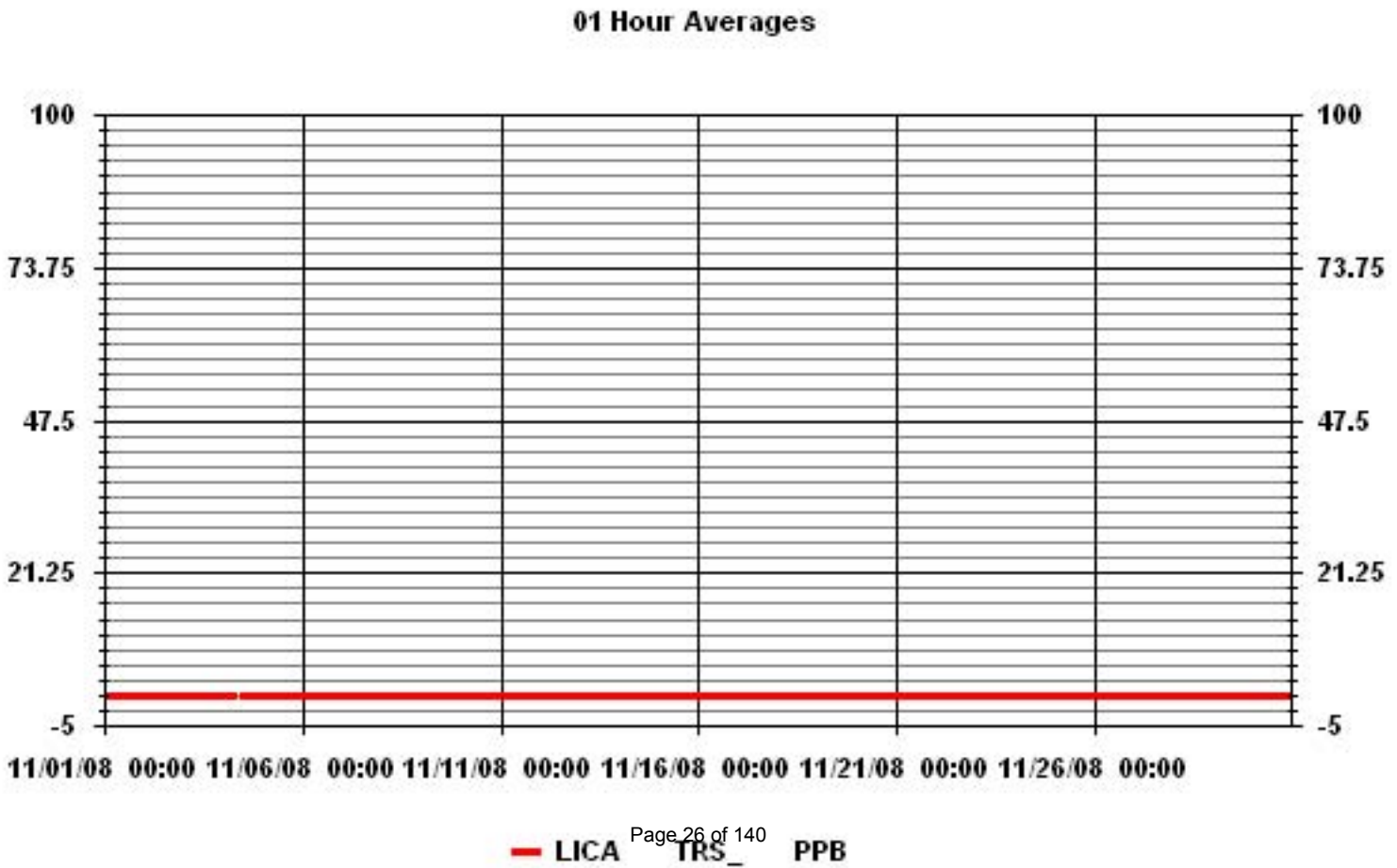
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 172 PPB | 24-HR 57 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	0					
MAXIMUM 1-HR AVERAGE:	0	PPB	@ HOUR(S)	ALL	ON DAY(S)	ALL
MAXIMUM 24-HR AVERAGE:	0.0	PPB			ON DAY(S)	ALL
				VAR-VARIOUS		

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION	0.00		MONTHLY AVERAGE	0.00	PPB


01 Hour Averages
100
73.75
47.5
21.25
-5
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA TRS_ PPB

LICA
TRS_ / WD Joint Frequency Distribution (Percent)

November 2008

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	1.02	.44	1.02	2.49	8.07	13.95	19.82	2.49	2.20	2.64	11.01	12.33	8.81	7.48	5.28	.88	100.00
<	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
<	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
>=	50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	Totals	1.02	.44	1.02	2.49	8.07	13.95	19.82	2.49	2.20	2.64	11.01	12.33	8.81	7.48	5.28	.88	

Calm : .00 %

Total # Operational Hours : 681

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3	7	3	7	17	55	95	135	17	15	18	75	84	60	51	36	6	681
<	10																	
<	50																	
>=	50																	
	Totals	7	3	7	17	55	95	135	17	15	18	75	84	60	51	36	6	

Calm : .00 %

Total # Operational Hours : 681

Logger : 01 Parameter : TRS_

Class Limits (PPB)

>= 50

< 50

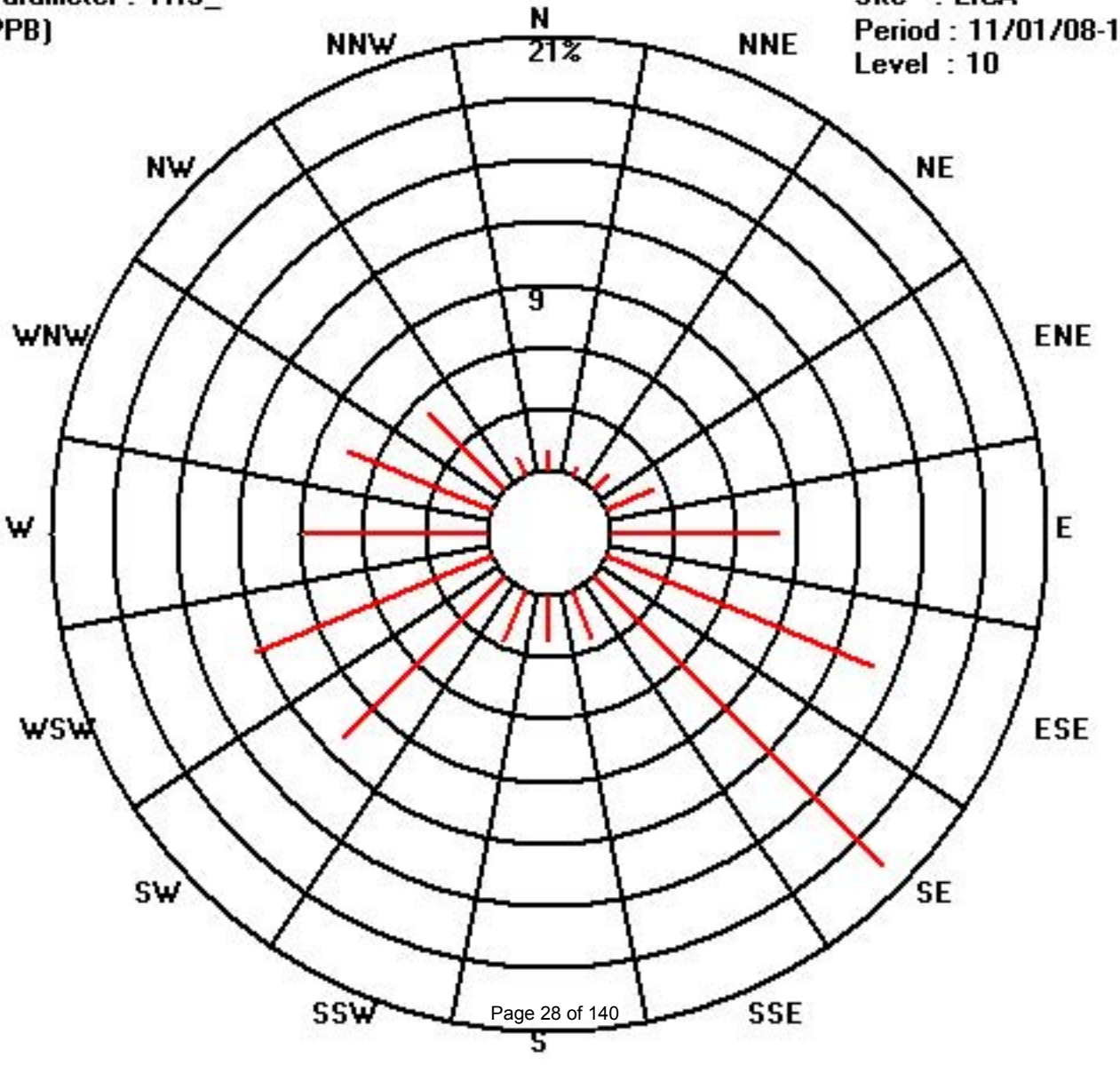
< 10

< 3

Site : LICA

Period : 11/01/08-11/30/08

Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

TOTAL REDUCED SULPHUR MAX instantaneous maximum in ppb

MST

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

STATUS FLAG CODES

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

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS: 222

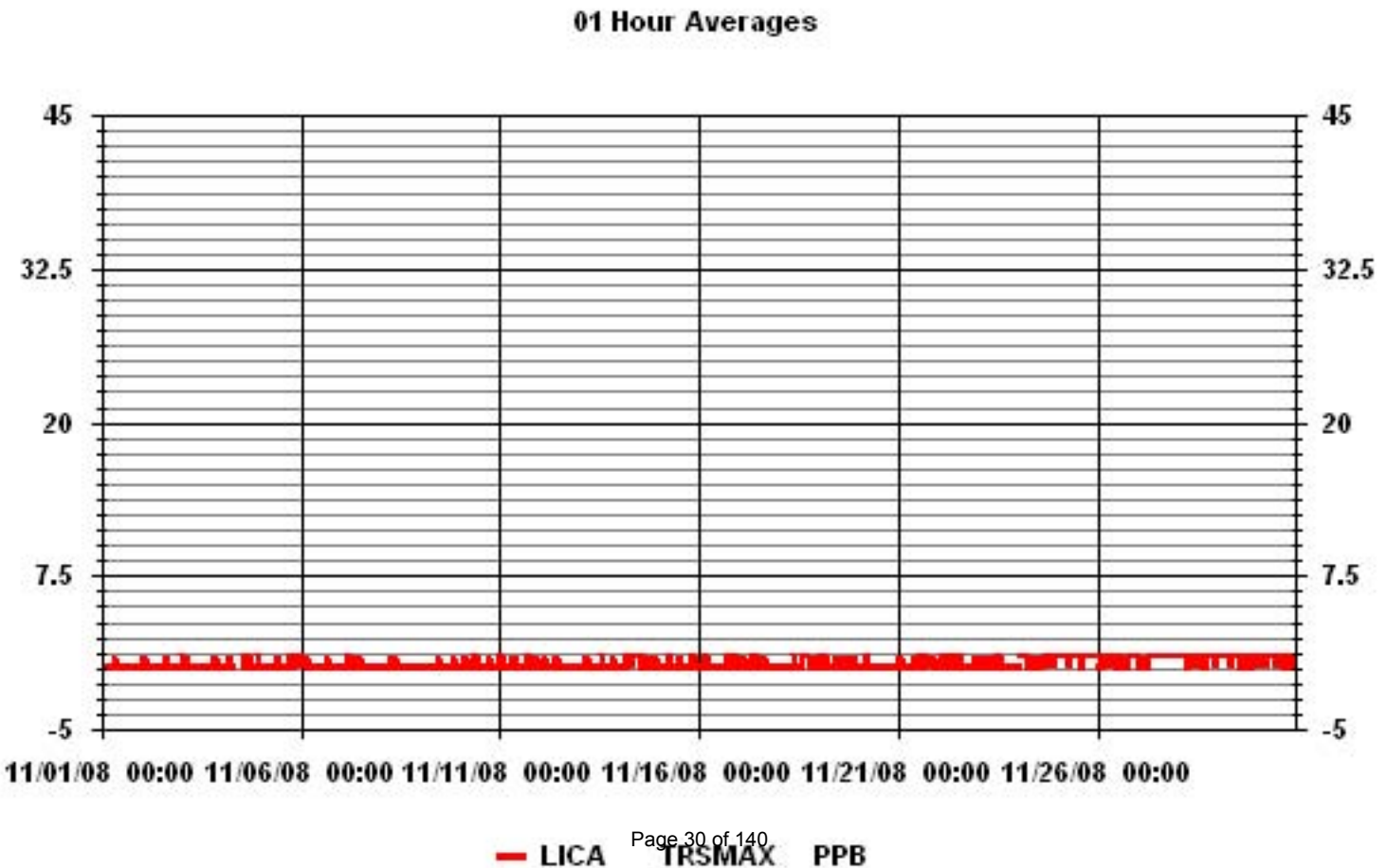
MAXIMUM INSTANTANEOUS VALUE: 1 PPB @ HOUR(S) VAR ON DAY(S) VAR

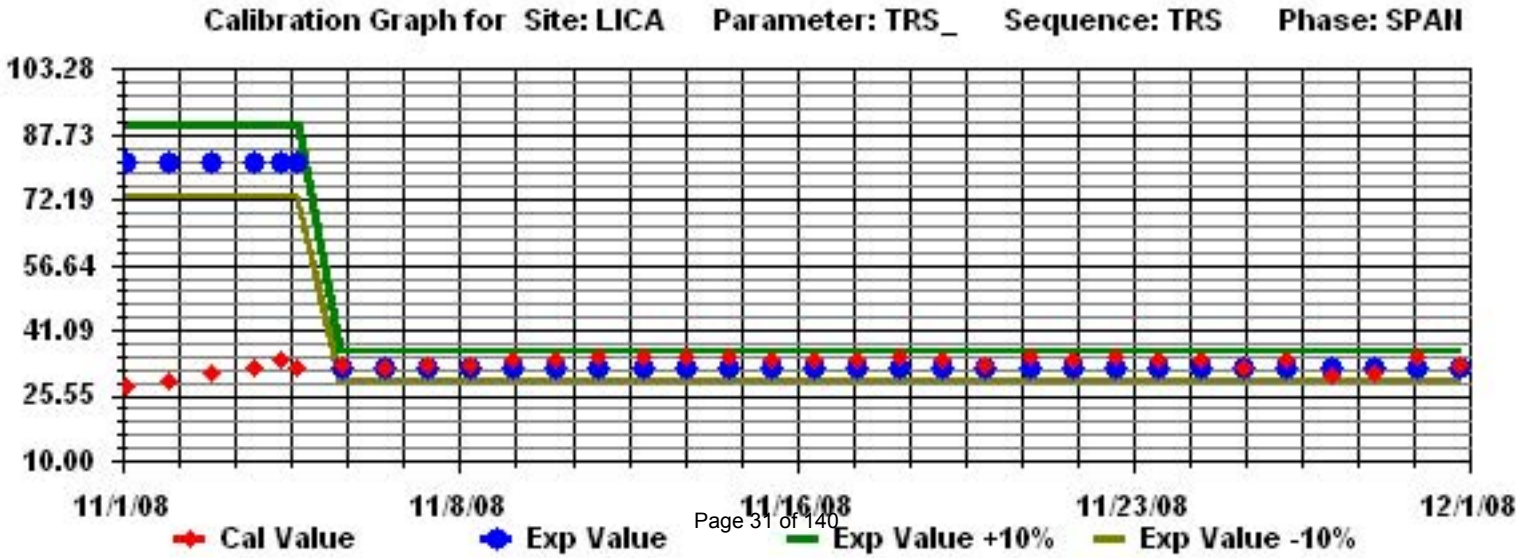
VAR - VARIOUS

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 706 HRS

MONTHLY CALIBRATION TIME: 5 HRS

STANDARD DEVIATION: 0.47


01 Hour Averages
45
32.5
20
7.5
-5
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA TRSMAX PPB


Calibration Graph for Site: LICA Parameter: TRS_ Sequence: TRS Phase: SPAN
103.28
87.73
72.19
56.64
41.09
25.55
10.00
11/1/08
11/8/08
11/16/08
11/23/08
12/1/08
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Total Hydrocarbons

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

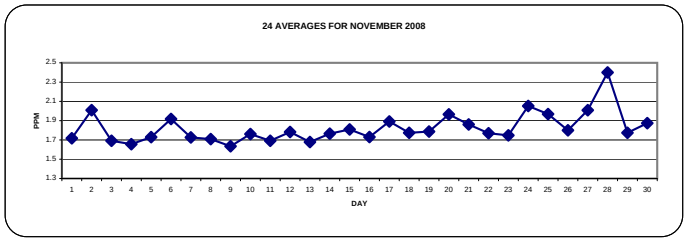
TOTAL HYDROCARBONS (THC) hourly averages in ppm

MST

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

STATUS FLAG CODES

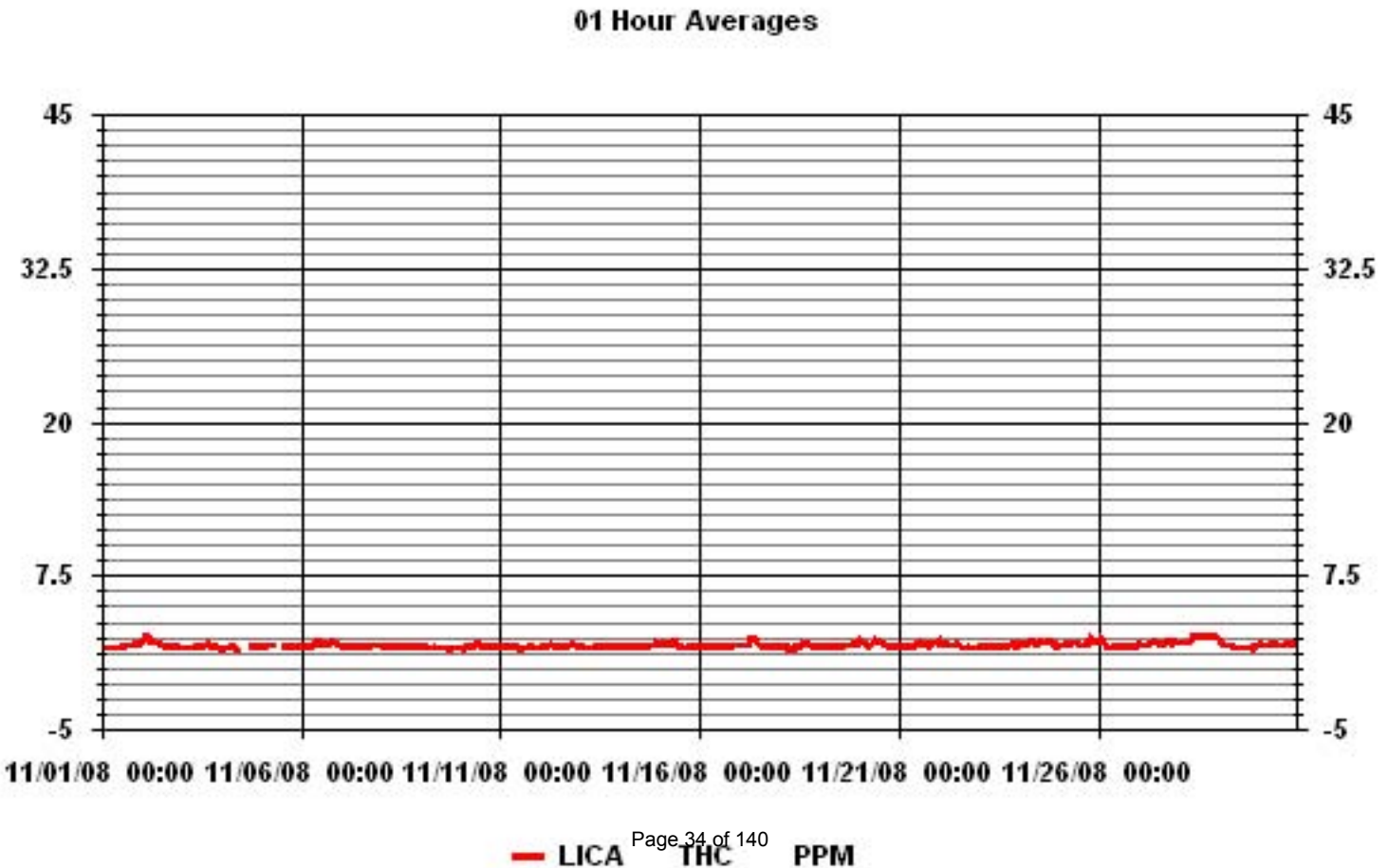
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE
BB	- BELOW BACKGROUND OF 1.5 PPM		



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	675					
MAXIMUM 1-HR AVERAGE:	2.8	PPM	@ HOUR(S)	10	ON DAY(S)	28
MAXIMUM 24-HR AVERAGE:	2.4	PPM			ON DAY(S)	28

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	11	HRS	AMD OPERATION UPTIME:	99.7	%
STANDARD DEVIATION:	0.21		MONTHLY AVERAGE:	1.82	PPM


01 Hour Averages
45
32.5
20
7.5
-5
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA THC PPM

LICA
THC / WD Joint Frequency Distribution (Percent)

November 2008

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	.74	.29	1.03	2.37	8.14	13.92	20.00	2.51	2.22	2.51	11.11	12.59	8.88	7.40	5.33	.88	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	.74	.29	1.03	2.37	8.14	13.92	20.00	2.51	2.22	2.51	11.11	12.59	8.88	7.40	5.33	.88	

Calm : .00 %

Total # Operational Hours : 675

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	3.0	5	2	7	16	55	94	135	17	15	17	75	85	60	50	36	6	675
<	10.0																	
<	50.0																	
>=	50.0																	
	Totals	5	2	7	16	55	94	135	17	15	17	75	85	60	50	36	6	

Calm : .00 %

Total # Operational Hours : 675

Logger : 01 Parameter : THC

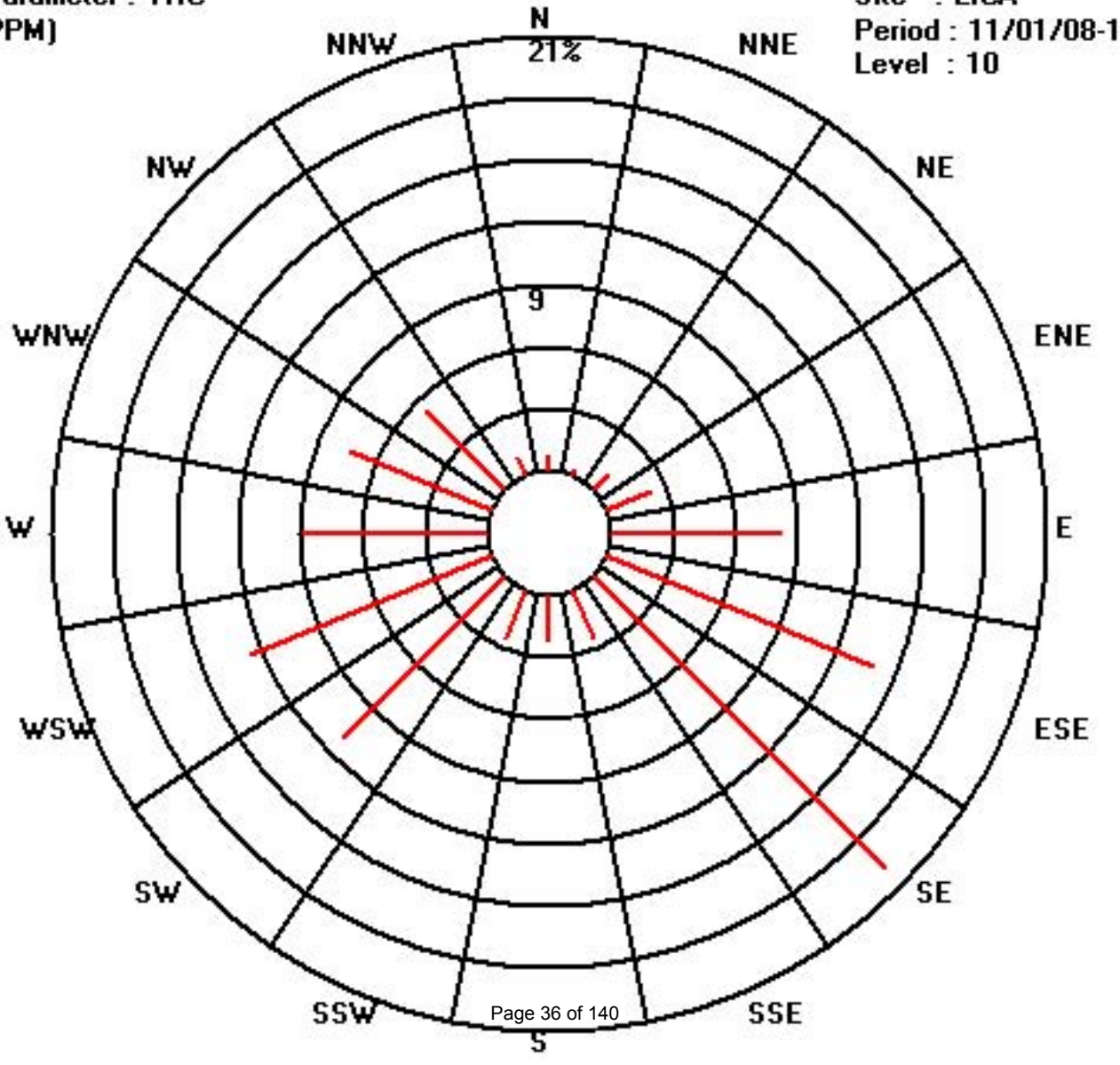
Class Limits (PPM)

- >= 50.0
- < 50.0
- < 10.0
- < 3.0

Site : LICA

Period : 11/01/08-11/30/08

Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MST

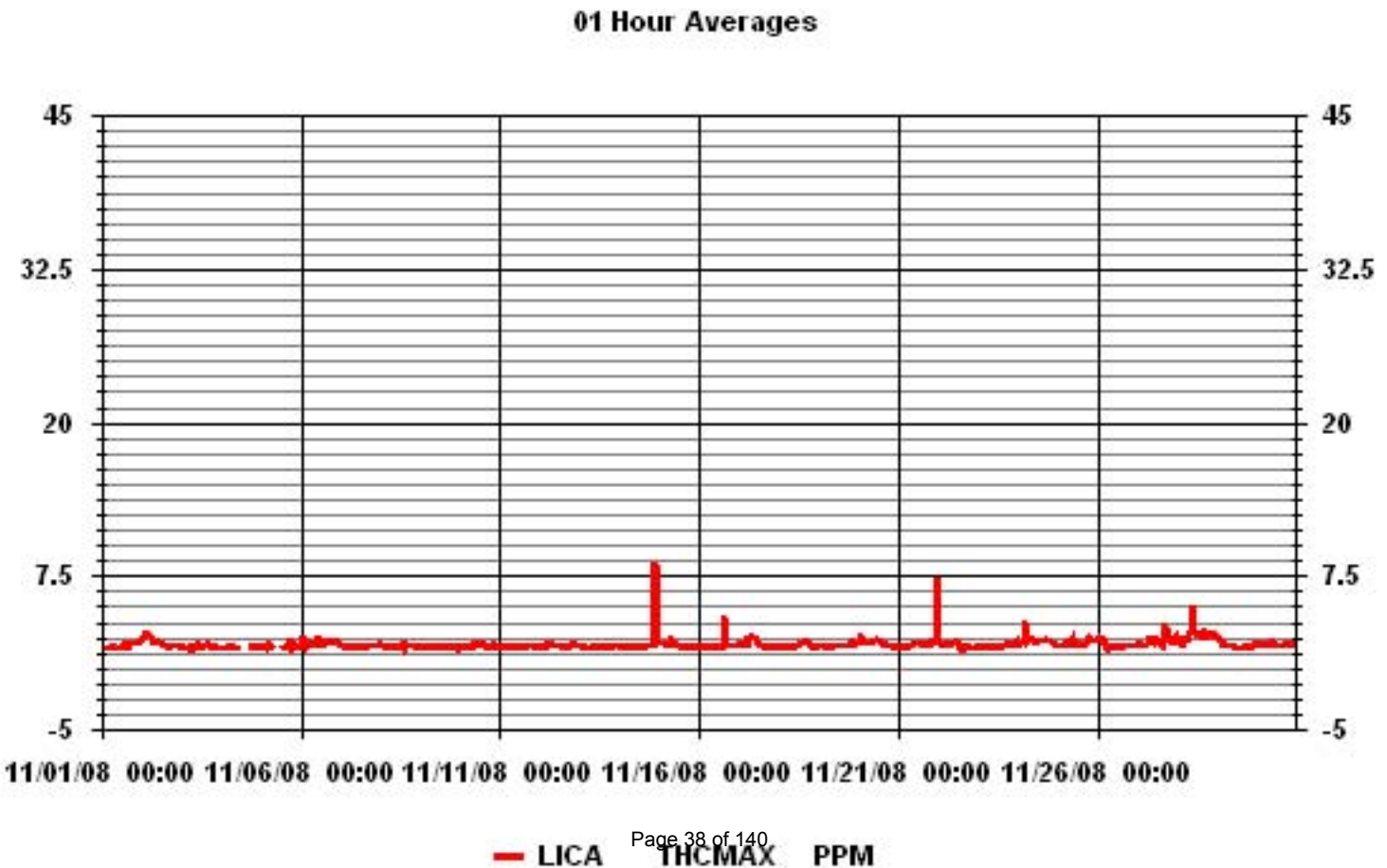
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1.6	**IZS**	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.7	1.8	1.9	1.9	1.8	1.9	2	2	2	2	2.1	2.3	2.3	1.8	24
2	**IZS**	2.5	2.8	2.8	2.8	2.6	2.6	2	2	2.1	2.1	2.1	2	1.9	1.9	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.9	**IZS**	2.8	2.1	24
3	1.7	1.7	1.7	1.6	1.6	1.7	1.7	1.6	1.7	1.9	2	1.8	1.7	1.7	1.8	1.9	1.9	1.9	1.8	1.7	1.7	1.7	**IZS**	1.6	2	1.7	24
4	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.7	**C**	**C**	**C**	**C**	**C**	**M**	**M**	1.7	1.7	1.7	**IZS**	1.7	1.7	1.8	1.7	22
5	1.7	1.8	1.9	1.7	1.9	1.9	1.8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	1.7	1.8	1.8	1.7	2.4	1.8	**IZS**	1.8	1.7	1.7	2.4	1.8	24
6	2.1	1.8	2.5	1.7	1.8	1.8	1.8	1.9	2	2.1	2.3	2.3	2.1	2	2.1	2.1	2.1	2.2	2.3	**IZS**	2.1	2.1	2.1	1.9	2.5	2.1	24
7	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	**IZS**	1.8	1.8	1.8	1.8	1.9	1.9	1.7	24
8	1.9	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.2	1.7	1.9	**IZS**	1.8	1.8	1.8	1.8	1.7	1.7	2.2	1.8	24
9	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.7	**IZS**	1.8	1.7	1.7	1.7	1.8	1.7	1.6	1.8	1.7	24
10	1.7	1.8	1.8	1.7	1.8	1.7	1.7	1.7	2	2	2	2	1.9	1.9	1.9	**IZS**	1.8	1.7	1.7	1.7	1.9	1.9	1.8	1.8	2	1.8	24
11	1.7	1.8	1.7	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	**IZS**	1.7	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.9	1.7	24
12	1.7	1.8	1.9	1.8	1.9	1.9	2	2	2	1.8	1.8	1.8	1.8	**IZS**	1.7	1.7	1.9	1.8	1.9	1.9	2	2.1	1.9	1.8	2.1	1.9	24
13	1.8	1.9	1.8	1.7	1.7	1.6	1.6	1.7	1.7	1.7	1.7	1.7	**IZS**	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.8	1.8	1.8	1.8	1.9	1.7	24
14	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	**IZS**	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	**8.6**	2.5	2.1	**8.6**	2.1	24
15	2.1	2	2	2	1.9	1.9	1.9	2.3	2.3	2.1	**IZS**	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.3	1.9	24
16	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.7	**IZS**	1.7	1.7	1.7	1.7	1.7	4.3	2	1.8	1.8	1.8	1.8	1.8	1.8	1.9	4.3	1.9	24
17	1.9	2	1.9	1.9	1.9	2.4	2.5	2.5	**IZS**	2.5	2.4	2.2	2	1.8	1.8	1.8	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.7	2.5	2.0	24
18	1.7	1.7	1.7	1.7	1.7	1.7	1.7	**IZS**	1.7	1.8	1.9	1.8	1.8	2	2.1	2.1	2.1	2.1	1.9	1.8	1.8	1.7	1.7	1.7	2.1	1.8	24
19	1.8	1.8	1.8	1.8	1.7	1.8	**IZS**	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2	2.1	2.1	2	2.2	2.2	1.9	24
20	2.5	2.5	2.2	2.1	2.1	**IZS**	2	2	2.2	2.3	2.4	2.3	2.1	2.1	2.1	2	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	2.5	2.0	24
21	1.7	1.7	1.7	1.7	**IZS**	1.8	1.9	1.8	1.8	2	2	2	2.1	2	1.9	2	2	1.9	1.9	2.1	2.1	2	2	7.4	7.4	2.2	24
22	2.1	1.9	1.9	**IZS**	2	2	1.9	1.9	2	2	2	2.2	2.1	1.8	1.7	1.6	1.7	1.7	1.7	1.7	1.6	1.6	1.7	1.7	2.2	1.8	24
23	1.7	1.7	**IZS**	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.7	1.7	1.8	1.8	1.9	1.9	2	2	2.1	2	2.2	2.2	1.8	24
24	1.9	**IZS**	2	2	3.8	2.1	2.2	2.3	2.3	2.3	2.2	2.1	2.2	2.2	2.2	2.2	2.3	2.3	2.2	2.2	2.2	2.1	2	1.9	3.8	2.2	24
25	**IZS**	1.8	1.8	1.9	1.9	2.2	2.2	2.1	2.4	2	2.1	2.1	1.9	1.9	2	1.9	1.9	2.1	2.5	2.3	2.2	2.2	2.2	**IZS**	2.5	2.1	24
26	2.3	2.6	2.5	2.4	2	1.6	1.7	1.7	1.7	1.8	1.7	1.8	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	**IZS**	1.9	2.6	1.9	24
27	2.1	2	1.9	1.8	1.8	1.9	2.3	2.3	2.3	2.1	2.3	2.3	2.1	2	1.9	2.2	3.3	3.2	2.4	2.5	2.2	**IZS**	2.3	2.6	3.3	2.3	24
28	2.2	2.2	2.1	2	2.3	2.3	2.5	2.7	3	5.1	3	2.9	2.8	2.9	2.7	2.6	3.2	2.6	2.7	2.9	**IZS**	2.9	2.6	2.5	5.1	2.7	24
29	2.5	2.4	2.3	1.9	1.9	1.9	1.8	1.8	1.8	1.9	1.7	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	**IZS**	1.7	1.8	1.9	1.9	2.5	1.8	24
30	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2	2.1	2.1	2.1	2	1.8	1.8	1.8	1.9	1.9	2	**IZS**	1.9	1.9	2	2	2.1	2.1	1.9	24
HOURLY MAX	3	3	3	3	4	3	3	3	3	5	3	3	3	3	3	4	3	3	3	3	2	9	3	7			
HOURLY AVG	1.9	1.9	1.9	1.8	1.9	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	2.1	1.9	2.1			

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
BB	- BELOW BACKGROUND OF 1.5 PPM		

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	674					
MAXIMUM INSTANTANEOUS VALUE:	8.6	PPM	@ HOUR(S)	21	ON DAY(S)	14
IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:		718	HRS
MONTHLY CALIBRATION TIME:	12	HRS				
STANDARD DEVIATION:	0.46					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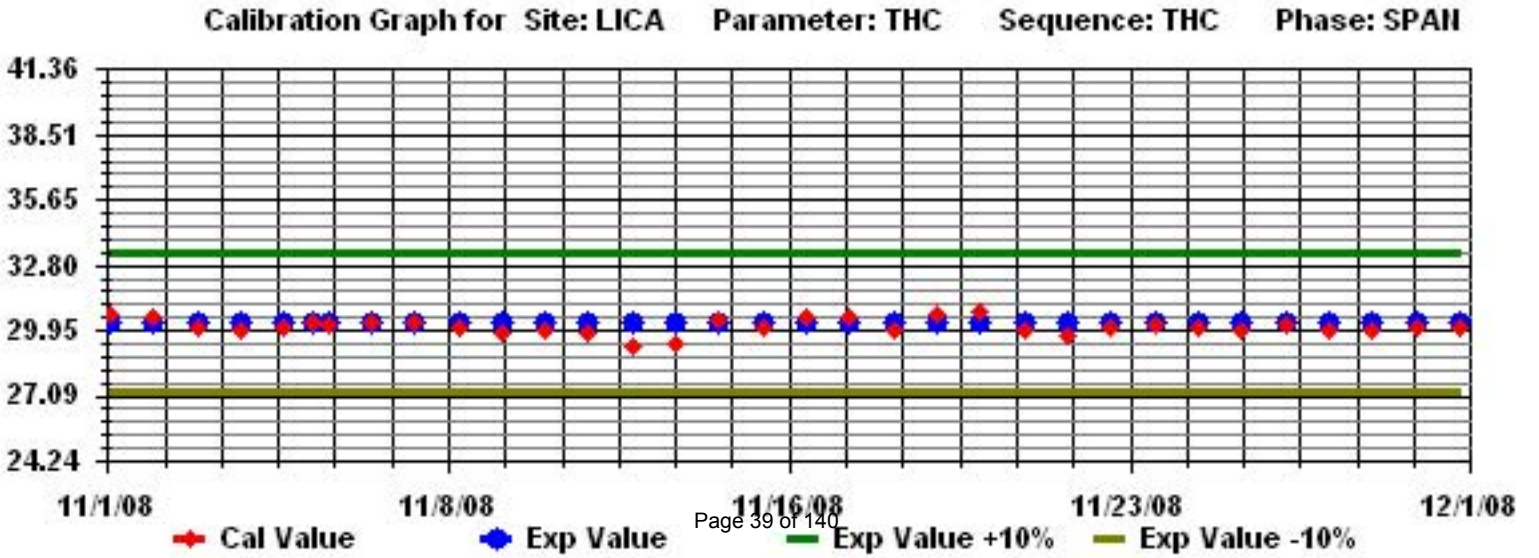
45
32.5
20
7.5
-5
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA THCMAX PPM


Calibration Graph for Site: LICA Parameter: THC Sequence: THC Phase: SPAN
41.36
38.51
35.65
32.80
29.95
27.09
24.24
11/1/08
11/8/08
11/16/08
11/23/08
12/1/08
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Particulate Matter 2.5

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

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

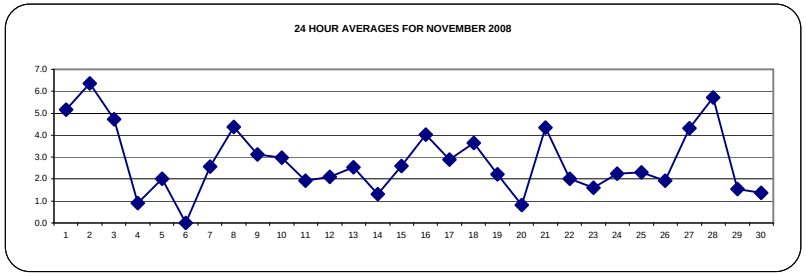
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	0.2	0.4	1.6	1.9	3.1	4.4	2.8	4.8	4.8	4.4	6.1	6	7.7	10.2	10.4	9.4	7.6	5	4.2	4.2	5.7	6.5	5.6	6.6	10.4	5.2	24
2	6.3	8.4	9.6	9.5	10.2	10.5	10.5	7.4	8.4	6.3	7.4	6.6	5.8	5.2	4.3	4	3.4	4.1	3.9	2.9	3.7	4	5.2	5.2	10.5	**6.4**	24
3	5.2	5.6	6.2	4.9	6	5.4	6.8	7.1	6.9	6.7	6.4	6	6.6	6.4	4	3.4	2.5	1.5	1.8	2.7	3.7	3.8	2.6	1.4	7.1	4.7	24
4	0.7	0	0	0	0	0	0.5	1.7	2	0.8	0.9	0	1.3	2.2	0.9	0.6	1.8	1.2	3.2	0.9	0.2	1	0.9	1.1	3.2	0.9	24
5	1.6	1.1	1.9	1.5	1.1	1.6	1.7	2.6	2.3	1.2	2	1.6	1	1.1	**C**	**C**	**C**	**C**	4.4	3.7	2.9	2.7	2	2	4.4	2.0	24
6	1.9	1.8	1.7	1.2	2	1.9	2.4	2.5	1.1	2.5	2.8	5	5.3	4	2.3	1.1	1.1	1	1.5	0.7	0.8	1.3	1.5	1.3	5.3	0.0	24
7	0.4	1.7	1.6	2	3	2.1	2.4	2.3	3.5	3.3	4.2	4.2	3.3	2.8	3.2	2.5	2.3	0.5	1.4	1.3	1.4	2.4	3.9	5.6	5.6	2.6	24
8	6	5.9	7.4	6.4	5.9	5.9	4.4	4.5	5.3	2.9	3	2.8	3.5	3	3.1	4	2.2	1.6	5.8	3.7	5.8	10.3	0.2	1.4	10.3	4.4	24
9	1.3	1.8	4	2.9	4.2	3.4	3.4	3.4	2.6	3.1	2.8	3.1	3.4	2.7	2.3	2.3	3.4	2.6	2	4.6	5.9	4.7	2.8	2.3	5.9	3.1	24
10	3.1	2.1	1.5	1.6	2	2.5	2.8	2.8	2.5	2.1	3.8	3.5	4.4	3.3	3.9	4.3	3.5	3.4	3.6	3.3	3.8	3.6	1.5	2.4	4.4	3.0	24
11	2.6	2.6	2.1	1.5	2.4	2.7	2.4	2.8	1.9	2.3	2.3	2.4	1.2	1.3	1.4	2.1	2.5	2.2	2.5	2.1	0.6	1.2	0.7	0.6	2.8	1.9	24
12	1.3	0.9	0	0.7	0.6	2	0.7	3.7	0	0	0.6	1.7	1.4	1	0.8	1.2	1.7	4	5	4.9	5.2	6	4.8	2.5	6.0	2.1	24
13	1.5	3.2	2.6	2.4	2.1	2	1.2	2.2	2	2.7	1.4	2	0.8	2.3	3	3.2	4	3.6	3.8	3.4	3	2.5	2.8	3.2	4.0	2.5	24
14	3.3	2.8	1.9	2.3	1.9	2.1	1	2.4	2.1	2	1.9	0.7	0.3	0.3	0.2	0.9	0.6	1.4	0.2	0	0	0.6	1.1	1.6	3.3	1.3	24
15	1.6	0.7	0	0	0.2	2.8	0.4	0.9	1.7	2.7	3.3	2.9	2.6	3	3.8	4.5	4.8	3.9	4.2	2.7	3.2	4.1	4.6	3.8	4.8	2.6	24
16	3.9	3.5	1.7	2.3	2.2	1.6	2.2	3.4	2.9	4.2	4	4	5.3	4.8	4.3	5.5	5.7	5.6	5.4	5.2	4.9	4.7	4.4	4.6	5.7	4.0	24
17	3.9	6	4.3	3.5	3.2	4.7	6.3	4.3	4.2	3.4	2.8	2	1.5	0.8	0	0.2	1.6	2.2	2.3	2	2.6	2.8	2.1	2.7	6.3	2.9	24
18	1.9	1.5	1.9	1.5	2.6	3.6	4.4	**3.3**	4.2	3.9	4.7	3.4	6.2	3.3	4.7	5.3	6.3	5.3	4.9	4.5	3.9	2.6	1.7	2.2	6.3	3.7	24
19	3.6	2.7	3.4	0.9	1.1	2.3	1.6	2.6	2	1.5	1.6	2.2	1.3	2.4	3.3	2.8	2.7	1.3	1.4	3.2	3.3	2.9	1.9	1	3.6	2.2	24
20	0.9	1.5	0	0.4	0.8	1.7	0.8	0.6	1.5	2.1	0	0.3	0	0	0	0	0	0	0.2	0.8	2.2	2.3	2.2	1	2.3	0.8	24
21	0.4	1.1	1.6	0.6	1.2	2	2.7	4.8	5.4	5.4	5.7	4.5	4.2	3.8	3.8	5.7	6.2	5.8	5.9	5.4	5.7	5.5	8.5	8.5	8.5	4.4	24
22	2.2	0.5	1.6	1	0	1.6	2.8	0	1.7	2.4	3.7	5.1	5	4.6	2.3	1.6	1.1	0.8	0.3	1.8	2.4	2.7	1.6	1.2	5.1	2.0	24
23	0.9	0.5	0.5	0.5	1.1	0.9	1	2.3	0.9	2.1	3.3	3	3.3	0.4	1	1.6	4.5	0.4	1.4	2.2	1.6	2.7	2	0.7	4.5	1.6	24
24	0	0	0	0	0	0	0	1.2	0.9	0.4	0.3	0.7	1.4	2	3.4	4	3.2	3.5	5	6.5	6.1	7.9	4	3.1	7.9	2.2	24
25	3.3	1.8	1.4	2	0.9	2	1.3	2	2.6	4.1	2.6	0.7	2.3	0.8	2.1	1.7	1.6	4.3	2	0.9	2	5.8	4.4	2.6	5.8	2.3	24
26	3.3	4.7	4.4	3.9	2.1	1.9	2.4	1.4	0.6	1.2	1.3	0.3	1.2	0.8	1.3	1.7	2.5	1.1	2.2	2.5	2	1.5	1.3	0.9	4.7	1.9	24
27	2.8	2.4	0.7	1.9	1.1	1.4	0.2	1.7	2.9	5.1	6.6	5.5	3.6	4	3.4	4	6	7.4	5.4	6.8	7.9	4.5	7.2	**11.4**	**11.4**	4.3	24
28	5.4	5.2	4.9	3.9	4	3.9	3.3	5.4	6.8	10	8.5	6.6	10.1	8.2	6	5.6	4.5	5.1	5.5	4.2	4.8	5	5.3	5.3	10.1	5.7	24
29	3.7	4	3.4	3.1	2.5	1.7	2.3	1.3	2.5	1.5	0.9	0.2	0	0	0	0.6	1.3	0.4	0.2	0.8	0	1.8	2.5	2.3	4.0	1.5	24
30	1.5	0.1	1.4	1.1	1.8	1.3	2.4	2.3	3	3.1	3.1	2.4	2.7	2.3	0.8	2	0	1	0.6	0	0	0	0	0	3.1	1.4	24
HOURLY MAX	6	8	10	10	10	11	11	7	8	10	9	7	10	10	10	9	8	7	6	7	8	10	9	11			
HOURLY AVG	2.5	2.5	2.4	2.2	2.3	2.7	2.6	2.9	3.0	3.1	3.3	3.0	3.2	2.9	2.8	3.0	3.1	2.8	3.0	2.9	3.2	3.6	3.0	3.0			

STATUS FLAG CODES

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

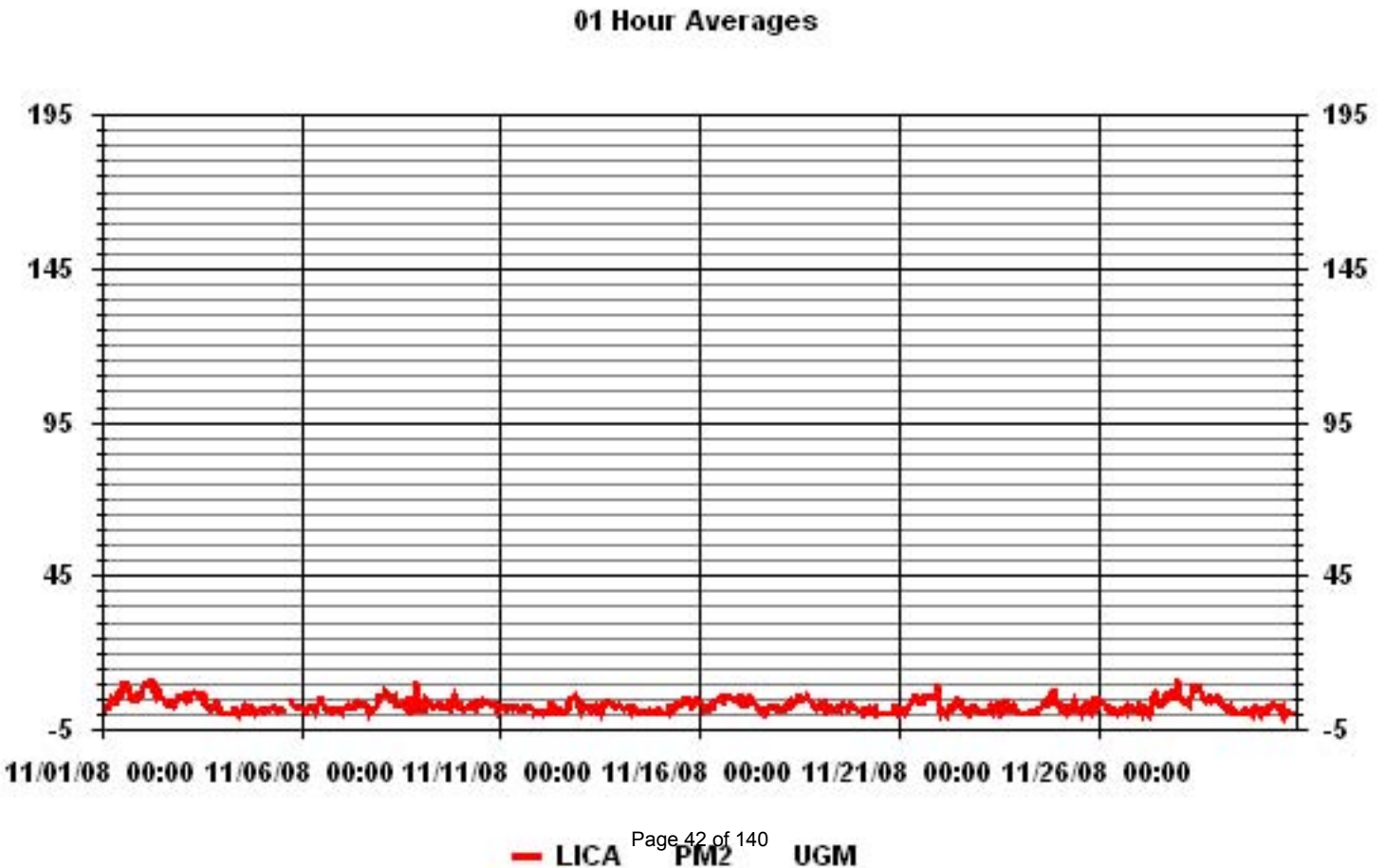
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR - PPB 24-HR 30 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	-					
NUMBER OF 24-HR EXCEEDENCES:	0	PROPOSED CANADA WIDE GUIDELINE				
NUMBER OF NON-ZERO READINGS:	675					
MAXIMUM 1-HR AVERAGE:	11.4	UG/M^3	@ HOUR(S)	23	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	6.4	UG/M^3			ON DAY(S)	2

IZS CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	2.10		MONTHLY AVERAGE:	2.86	UG/M^3


01 Hour Averages
195
145
95
45
-5
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA PM2 UGM

LICA
PM2 / WD Joint Frequency Distribution (Percent)

November 2008

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30.0	.98	.42	1.26	2.66	7.99	13.60	20.33	2.52	2.10	2.52	10.93	12.34	8.55	8.13	4.90	.70	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	.98	.42	1.26	2.66	7.99	13.60	20.33	2.52	2.10	2.52	10.93	12.34	8.55	8.13	4.90	.70	

Calm : .00 %

Total # Operational Hours : 713

Distribution By Samples

Direction

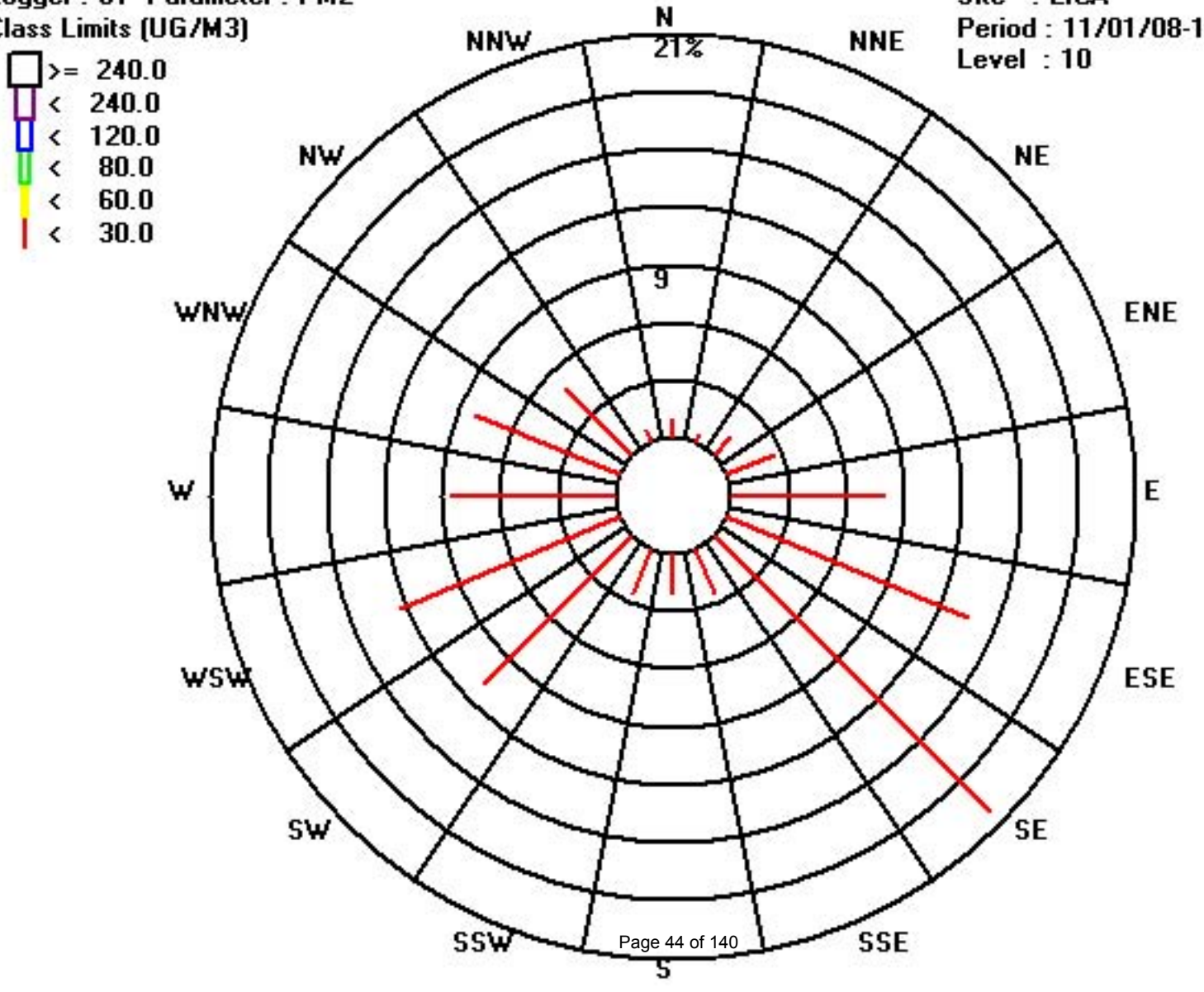
	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	30.0	7	3	9	19	57	97	145	18	15	18	78	88	61	58	35	5	713
<	60.0																	
<	80.0																	
<	120.0																	
<	240.0																	
>=	240.0																	
	Totals	7	3	9	19	57	97	145	18	15	18	78	88	61	58	35	5	

Calm : .00 %

Total # Operational Hours : 713

Logger : 01 Parameter : PM2
Class Limits (UG/M3)

Site : LICA
Period : 11/01/08-11/30/08
Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

PARTICULATE MATTER 2.5 MAX instantaneous maximum in ug/m ^{3}

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	3.7	3.4	5.3	5.3	6.8	12.9	5.5	9.2	6.8	6.2	9.4	8.1	10.7	13	12.5	13.6	9.7	7.1	8	6.9	8.2	8.1	7	9.1	13.6	8.2	24
2	8.8	12	11.9	11.8	12.8	12.7	13.7	10.1	11	7.6	9.6	8.2	7.6	8.4	6.3	6.3	5.3	6.3	5.3	4.9	5.2	6.2	9.3	10.3	13.7	8.8	24
3	7.3	7.1	7.9	6.4	8.4	7.2	8.4	8.7	8.6	8.5	9.3	7.9	7.9	8.2	5.7	6.4	4.7	3.5	3.3	3.9	5.7	6.5	4.9	3.3	9.3	6.7	24
4	2.9	2	0.9	1.3	2.1	2.4	2.6	4.2	3.9	2.4	2.8	2.7	5.3	6.4	2.6	2.7	4.4	3.4	5.3	3.9	1.9	3.6	3.4	4.1	6.4	3.2	24
5	3.2	3.2	2.8	3.5	2.6	3	2.9	4.4	2.9	4.1	3.9	4.3	3.6	4.2	C	C	C	C	6.6	5.7	5.2	5.1	3.8	4.1	6.6	4.0	24
6	4.2	4.3	3.9	3.7	4.9	5	4.7	5.9	4.2	5.7	5.7	7.6	8.1	7.3	4.3	4.9	4.3	4.2	3.8	3.9	4.4	4.2	6	4.4	8.1	0.0	24
7	4.8	5.8	4.6	5.5	7.1	4.4	5.5	5.6	6	6.8	6.9	6.8	5.8	5.6	6.4	5.1	5.7	3.3	4.3	4.3	4.7	6.4	6.4	9.4	9.4	5.7	24
8	9	8.7	10.8	10.9	9.4	9.1	7.9	7.8	9.1	7.3	6.5	6.4	6.4	6.6	5.7	6.3	4.7	4.2	15.1	12.8	13.2	18.9	2.5	3.7	18.9	8.5	24
9	4.1	4.8	7.2	6.6	7.6	6.5	6.3	7.1	5.8	6.9	5	5.8	5.6	5.8	5.2	5.2	6.3	5.8	4.3	8.8	8.6	7.6	5.9	4.6	8.8	6.1	24
10	8.7	5.5	4.3	4.6	6	7.4	5.3	5.2	6.1	5.3	6.2	6	7.3	5.8	6.4	7.6	5.7	5.6	6.2	6.5	7.5	6	4.9	5.2	8.7	6.1	24
11	5.9	6.5	4.9	4.4	6.3	7.1	4.9	6.3	4.2	5.9	6.8	6.4	4.3	4.4	4.5	6.2	4.7	4.4	4.7	3.9	4.4	4.9	4.6	4.3	7.1	5.2	24
12	5.3	4.9	1.6	4.1	4.2	8.5	4.8	6.7	2.2	3.7	3.8	6.2	4.2	4.7	2.6	4.8	5.3	8	8.6	8	9.8	9.1	8.3	5.6	9.8	5.6	24
13	4.1	7.7	6	5.4	5.6	5.3	4.3	4.3	5.2	5.4	4.3	5.3	4.6	6.4	5	5.6	6.8	5.9	6.3	6.6	5.5	4.4	4.8	5.9	7.7	5.4	24
14	4.7	5.1	4.8	4.3	5	4.4	4.2	4.9	4.7	5.3	5.3	4.2	2.6	3	2.9	3.5	2.9	4.2	4.1	4.7	2.8	4.3	5.3	4.6	5.3	4.2	24
15	5.4	6.8	3.5	2.2	3.7	12.5	6.6	6.8	4.6	7	6.3	6.9	4.6	6.5	6.3	6.5	7.6	7	7.2	6.5	7.2	6.8	7.3	6.2	12.5	6.3	24
16	6.6	5.9	4.8	5.2	5.2	5	5	5.9	5.6	7.1	6	6.3	7.7	7	6.4	8.4	8.7	8.9	7.4	7.6	7	7	8.8	6.5	8.9	6.7	24
17	6.2	8.2	7.1	6.8	6	8.4	9.9	7	6.7	7.6	6.6	6.3	5.9	4.2	3.1	4.2	4.8	4.7	5.8	6	5.8	6.6	4.3	5.7	9.9	6.2	24
18	4.8	4.1	6.5	4.7	7.1	7.4	8.2	6.5	7.4	10.8	11	10	10.6	7	7.8	8.4	8.8	8.3	6.8	6.5	7.5	5.9	6.9	4.7	11	7.4	24
19	8.3	4.9	6.5	3.8	4.3	6.1	4.9	5	3.7	4.1	4.3	5	4.4	5.9	6.3	5.9	5.7	4.3	4.9	6.6	6.6	5.8	5.8	4.4	8.3	5.3	24
20	4.1	4.4	3	4.1	4.1	5.5	3.3	2.9	4.4	5.5	2.6	3.2	2.9	2.7	2.3	3.1	2.5	3.8	2.8	3.2	5.8	5.1	5.4	3.8	5.8	3.8	24
21	2.9	4.6	4.6	4.3	4.6	5.2	5.2	7.9	9.1	8.6	11	10.4	9.6	6.5	7.6	8.3	8.8	8.5	9	8.6	9.3	10.1	11.4	**20**	**20**	8.2	24
22	5	4.3	4.3	5.7	2.3	5	14.9	5.2	4.9	5.7	6.6	8.6	8.8	9.1	5.1	4.6	3.8	3.6	4.3	3.9	5.5	5	5	5.2	14.9	5.7	24
23	3.6	2.6	2.9	3	4.2	3.7	3.3	5.3	3.6	4.7	7.6	8.1	8.7	3.6	4.3	7.3	9.8	4.4	4.3	5.8	5.6	5.8	4.9	3.2	9.8	5.0	24
24	4	1.3	2.1	2.3	2.2	2.5	3.4	5.2	5.2	4.1	3.8	5.1	3.9	5.2	5.9	7.1	6.3	6.5	8.5	8.6	8.6	10.1	9.3	7.4	10.1	5.4	24
25	6.3	4.3	4.6	4.6	4.8	5.3	4.1	4.7	5.9	8.6	7.8	3.8	6.9	2.8	13.1	5.2	3.1	11.5	5.2	2.9	6.4	9.5	7.7	6.3	13.1	6.1	24
26	6.3	7.5	7.6	7.9	4.3	4.9	4.4	3.8	2.6	3.8	4.3	3.6	4.4	3.7	4.3	4.9	5.5	3.8	5.4	4.4	4.2	3.5	4.2	4.6	7.9	4.7	24
27	5.8	4.8	4.4	4.8	4.3	3.6	5	5	6.4	8.2	9.8	8.5	6.9	10.3	8.6	5.8	8.7	12.8	8.5	11.7	17.2	8.6	10.8	16.3	17.2	8.2	24
28	10.4	8.1	8.2	6.8	6.2	7.5	6.4	9.5	10.1	13.3	13.3	10.1	14.2	14.5	9.8	9	7.3	8.6	8.6	7.2	8	7.6	7.8	8.4	14.5	9.2	24
29	6.9	7.5	5.5	5.6	4.6	4.3	4.4	5	6	3.8	3.7	2.9	3.8	4.9	1.6	2.4	2.9	3.3	2.8	4.8	2.1	5.4	4.1	4.6	7.5	4.3	24
HOURLY MAX	10	12	12	12	13	13	15	10	11	13	13	10	14	15	13	14	10	13	15	13	17	19	11	20			
HOURLY AVG	5.6	5.5	5.3	5.2	5.4	6.3	5.9	6.1	5.8	6.3	6.6	6.4	6.5	6.3	5.8	6.0	5.9	5.9	6.1	6.2	6.7	6.8	6.2	6.4			

STATUS FLAG CODES

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

MONTHLY SUMMARY

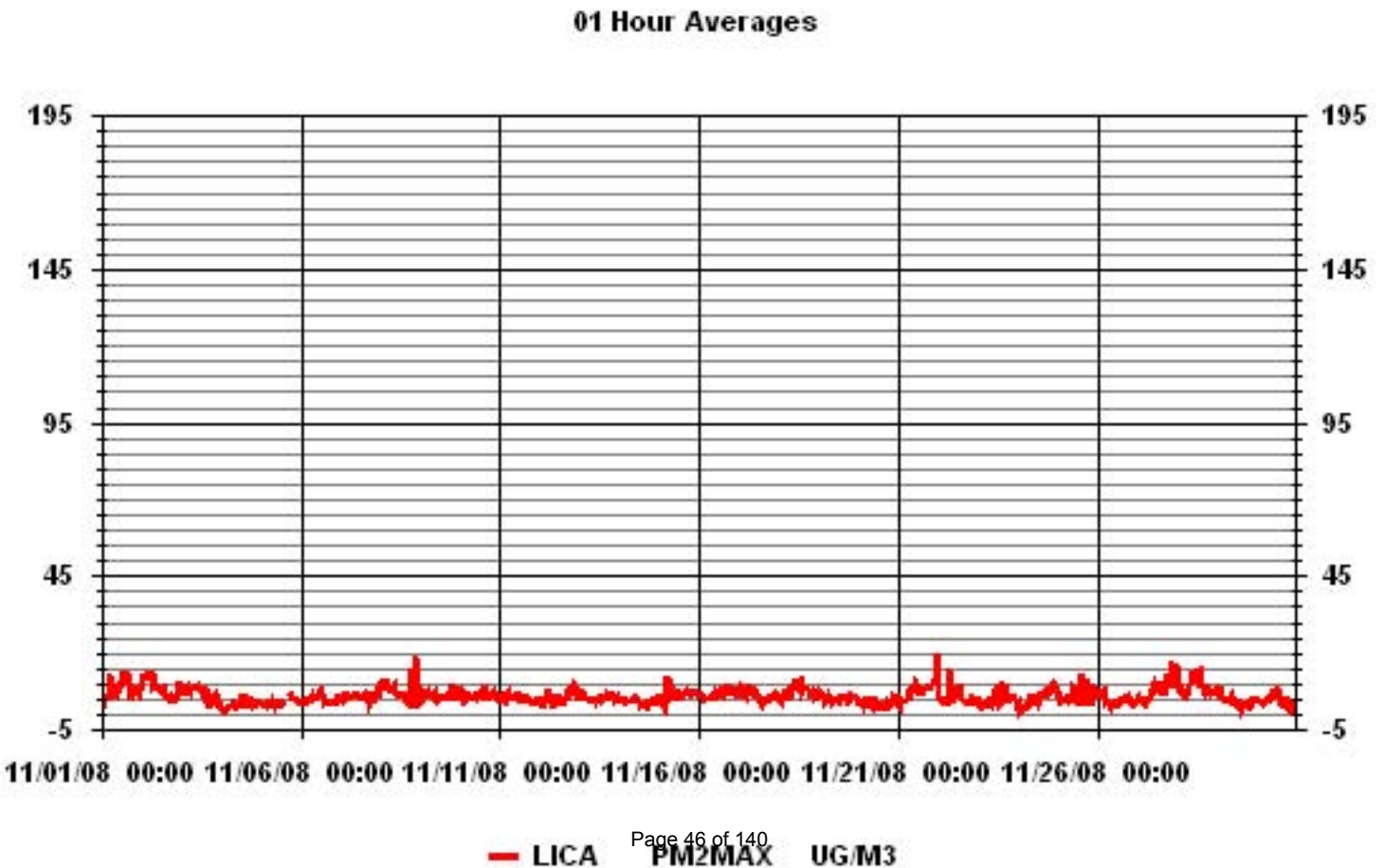
NUMBER OF NON-ZERO READINGS: 692

MAXIMUM INSTANTANEOUS VALUE: 20.0 UG/M^3 @ HOUR(S) 23 ON DAY(S) 21

IZS CALIBRATION TIME: 0 HRS OPERATIONAL TIME: 696 HRS

MONTHLY CALIBRATION TIME: 4 HRS

STANDARD DEVIATION: 2.54


01 Hour Averages
195
145
95
45
-5
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA PM2MAX UG/M3

Nitrogen Dioxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

NITROGEN DIOXIDE hourly averages in ppb

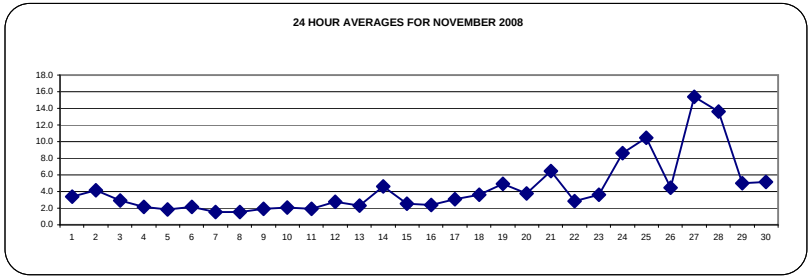
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	**IZS**	1	1	1	1	2	2	3	1	1	1	2	3	2	4	5	8	8	7	7	7	5	4	8	3.3	24
2	**IZS**	5	7	6	9	9	7	4	4	3	3	3	2	2	2	2	4	3	3	3	2	2	6	**IZS**	9	4.1	24
3	2	2	2	2	2	5	6	5	4	4	5	3	3	2	3	3	2	3	3	2	2	2	**IZS**	1	6	3.0	24
4	1	1	2	2	1	3	4	4	**C**	**C**	**C**	**C**	**C**	**C**	**C**	3	4	2	2	1	1	**IZS**	2	1	4	2.1	24
5	0	1	1	0	1	2	2	4	4	3	2	3	1	1	1	1	3	2	4	4	**IZS**	2	1	0	4	1.9	24
6	0	0	0	0	0	0	1	2	3	2	3	3	3	2	2	3	4	5	5	**IZS**	3	3	3	3	5	2.2	24
7	1	2	2	2	2	2	2	3	3	2	1	1	1	1	1	1	2	2	**IZS**	1	1	1	1	1	3	1.6	24
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	5	**IZS**	3	2	2	4	2	1	5	1.6	24
9	1	2	2	2	2	2	2	2	3	3	2	2	2	2	2	2	**IZS**	3	3	2	1	1	1	1	3	2.0	24
10	1	1	1	1	1	1	1	2	2	3	3	3	2	3	3	**IZS**	2	2	3	3	2	3	2	2	3	2.0	24
11	2	1	1	2	1	1	2	3	4	5	4	2	2	2	**IZS**	1	2	2	2	2	1	1	1	1	5	2.0	24
12	1	1	1	1	1	2	2	2	3	3	2	1	2	**IZS**	2	3	4	5	5	5	4	4	5	5	5	2.8	24
13	4	6	7	6	**3**	1	1	1	1	1	1	1	**IZS**	**C**	**C**	**M**	**M**	2	2	2	2	1	1	1	7	2.3	22
14	1	1	0	**1**	0	0	0	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	5	13	10	8	7	12	8	9	13	4.6	24
15	10	5	**3**	2	3	4	3	2	3	7	**IZS**	2	2	1	1	1	1	2	2	1	1	1	1	1	10	2.6	24
16	2	**1**	1	1	0	1	2	3	2	**IZS**	2	1	1	1	2	2	3	4	4	3	5	5	4	4	5	2.3	24
17	**3**	8	3	3	3	7	4	5	**IZS**	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	8	3.0	24
18	3	3	3	3	3	4	3	**IZS**	3	4	3	4	3	5	5	6	8	8	4	3	2	1	1	2	8	3.7	24
19	5	5	3	1	0	0	**IZS**	1	1	1	1	1	1	2	3	3	4	3	8	9	16	19	12	14	19	4.9	24
20	10	7	4	3	3	**IZS**	5	8	6	4	2	2	2	2	3	3	4	4	3	2	2	2	4	2	10	3.8	24
21	2	1	1	2	**IZS**	2	4	5	5	4	3	5	5	3	4	10	13	15	13	15	15	9	6	7	15	6.5	24
22	4	4	3	**IZS**	3	2	2	5	8	3	5	5	4	3	1	1	1	2	2	1	1	1	2	2	8	2.8	24
23	2	2	**IZS**	2	2	1	1	2	3	3	2	2	2	1	2	4	6	5	5	5	6	11	9	5	11	3.6	24
24	3	**IZS**	3	3	3	3	5	12	10	7	5	4	5	5	7	19	15	13	16	15	15	16	8	6	19	8.6	24
25	**IZS**	5	5	7	6	13	14	13	13	11	8	5	5	4	11	16	17	16	10	8	11	17	16	**IZS**	17	10.5	24
26	7	9	9	6	3	1	1	2	5	5	3	3	2	2	3	3	3	4	7	5	7	7	**IZS**	6	9	4.5	24
27	5	4	5	5	4	4	11	19	18	18	17	13	12	12	11	20	**34**	30	26	23	18	**IZS**	22	22	**34**	**15.3**	24
28	20	18	13	13	11	10	12	13	13	13	11	10	11	11	12	14	22	20	18	16	**IZS**	12	11	10	22	13.7	24
29	11	10	10	10	8	6	5	8	7	5	2	2	1	1	1	1	2	4	7	**IZS**	4	4	3	3	11	5.0	24
30	4	3	**3**	3	5	5	6	7	6	5	5	3	2	3	3	8	11	14	**IZS**	6	6	4	3	3	14	5.1	24
HOURLY MAX	20	18	13	13	11	13	14	19	18	18	17	13	12	12	12	20	34	30	26	23	18	19	22	22			
HOURLY AVG	3.8	3.9	3.3	3.1	2.8	3.2	3.8	4.9	5.1	4.6	3.7	3.2	3.0	3.0	3.5	5.0	6.7	6.8	6.4	5.6	5.2	5.5	5.1	4.3			

STATUS FLAG CODES

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

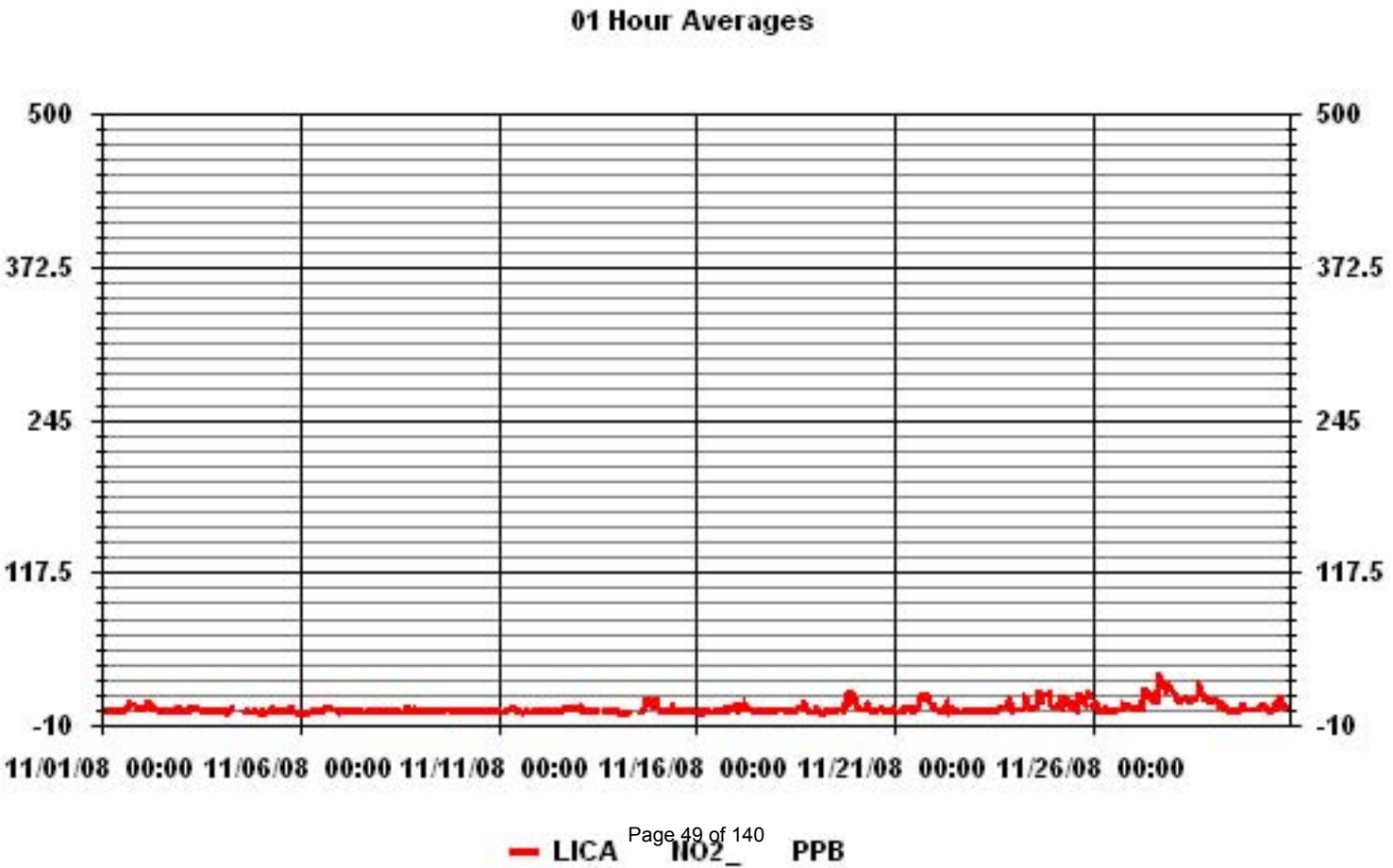
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 212 PPB | 24-HR 106 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF 24-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	655					
MAXIMUM 1-HR AVERAGE:	34	PPB	@ HOUR(S)	16	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	15.3	PPB			ON DAY(S)	27

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	16	HRS	AMD OPERATION UPTIME	99.7	%
STANDARD DEVIATION	4.56		MONTHLY AVERAGE	4.40	PPB


01 Hour Averages
500
372.5
245
117.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA NO2_ PPB

LICA
NO2_ / WD Joint Frequency Distribution (Percent)

November 2008

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	1.04	.44	1.04	2.54	8.23	14.22	20.20	2.54	2.24	2.69	11.22	12.57	8.53	6.58	4.94	.89	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	1.04	.44	1.04	2.54	8.23	14.22	20.20	2.54	2.24	2.69	11.22	12.57	8.53	6.58	4.94	.89	

Calm : .00 %

Total # Operational Hours : 668

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	7	3	7	17	55	95	135	17	15	18	75	84	57	44	33	6	668
<	110																	
<	210																	
>=	210																	
	Totals	7	3	7	17	55	95	135	17	15	18	75	84	57	44	33	6	

Calm : .00 %

Total # Operational Hours : 668

Logger : 01 Parameter : NO2_

Class Limits (PPB)

>= 210

< 210

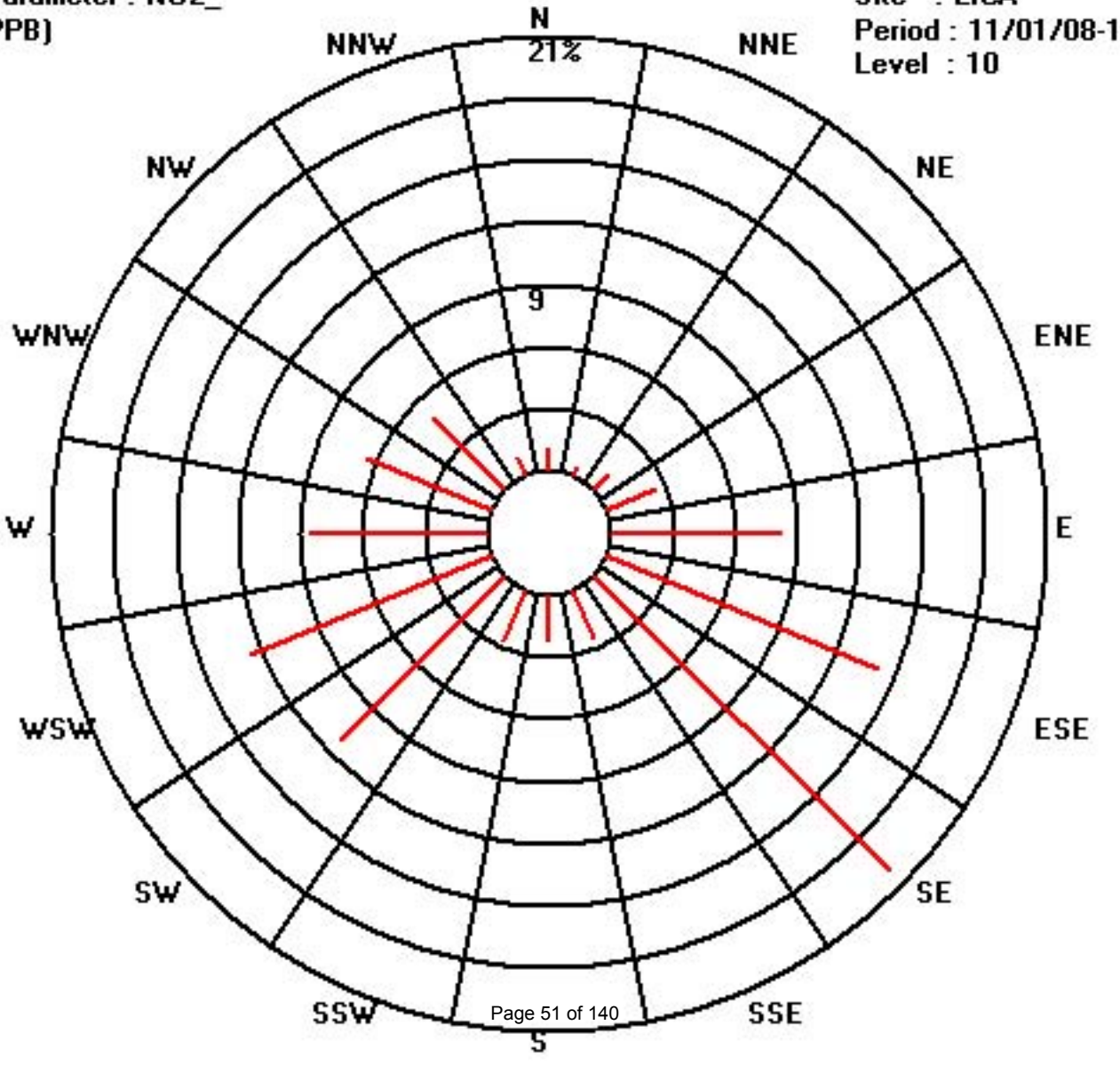
< 110

< 50

Site : LICA

Period : 11/01/08-11/30/08

Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	**IZS**	2	2	4	3	6	6	6	3	1	2	3	4	3	5	8	13	13	20	14	8	6	7	20	6.1	24
2	**IZS**	8	11	11	12	13	12	6	6	5	4	3	3	7	3	3	5	5	7	11	4	3	11	**IZS**	13	7.0	24
3	5	3	4	5	3	12	14	7	5	6	7	4	4	3	3	4	3	4	3	2	2	3	**IZS**	1	14	4.7	24
4	2	2	3	3	2	5	6	8	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	8	5	2	1	3	**IZS**	3	3	8	3.7	24
5	2	3	2	1	3	4	4	6	6	5	6	14	3	5	3	2	7	5	11	7	**IZS**	3	2	2	14	4.6	24
6	1	1	6	0	0	2	3	4	8	4	4	5	4	3	3	4	7	6	5	**IZS**	12	6	4	5	12	4.2	24
7	2	4	4	4	3	5	4	4	6	6	12	9	3	3	3	3	3	3	**IZS**	3	3	3	3	2	12	4.1	24
8	2	5	1	1	2	2	2	2	2	6	7	2	2	5	6	9	12	**IZS**	6	7	3	7	3	2	12	4.2	24
9	2	3	3	3	3	2	3	4	5	22	3	4	7	5	4	4	**IZS**	5	4	3	2	3	1	1	22	4.2	24
10	1	1	1	1	2	2	3	5	5	4	4	4	8	4	4	**IZS**	3	3	7	4	4	4	2	3	8	3.4	24
11	3	2	2	5	3	8	6	5	9	8	9	4	4	3	**IZS**	3	5	3	3	5	2	2	1	1	9	4.2	24
12	1	2	2	1	3	3	3	3	6	5	4	4	3	**IZS**	6	4	10	6	9	24	5	5	6	6	24	5.3	24
13	6	7	8	9	6	4	2	2	2	1	1	1	**IZS**	**C**	**C**	**M**	**M**	3	3	3	3	2	2	1	9	3.5	22
14	1	1	1	2	1	1	1	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	5	9	20	21	22	15	21	15	15	22	8.9	24
15	14	9	4	3	3	8	5	4	5	11	**IZS**	3	3	2	1	2	2	3	3	2	2	2	2	2	14	4.1	24
16	3	2	1	2	1	9	5	4	4	**IZS**	4	2	2	3	7	10	5	7	24	6	10	10	8	9	24	6.0	24
17	4	15	6	5	5	**45**	10	9	**IZS**	6	4	12	3	3	3	4	4	5	3	4	5	3	2	4	**45**	7.1	24
18	4	4	4	10	5	6	5	**IZS**	8	7	4	7	4	7	6	7	11	11	5	4	3	2	2	2	11	5.6	24
19	8	6	5	1	1	1	**IZS**	1	2	2	2	2	6	3	4	4	4	4	19	15	20	23	15	16	23	7.1	24
20	13	9	6	4	4	**IZS**	9	15	8	7	5	5	4	4	20	5	6	6	9	7	4	4	12	4	20	7.4	24
21	5	3	2	2	**IZS**	3	6	8	8	6	4	17	8	7	10	18	17	28	17	20	43	15	8	10	43	11.5	24
22	6	5	4	**IZS**	3	3	4	9	36	6	8	6	5	4	2	2	2	3	5	2	1	1	3	3	36	5.3	24
23	3	2	**IZS**	3	2	2	2	3	4	4	3	3	3	2	6	7	10	7	6	6	11	18	18	6	18	5.7	24
24	5	**IZS**	4	4	4	5	7	17	14	10	9	4	10	7	10	28	25	16	24	23	22	22	10	7	28	12.5	24
25	**IZS**	6	9	9	8	19	19	17	19	15	14	6	7	11	13	24	23	26	15	11	15	22	19	**IZS**	26	14.9	24
26	10	11	10	8	6	2	2	3	15	18	5	7	6	3	5	0	6	8	14	8	12	11	**IZS**	9	18	7.8	24
27	5	5	8	6	5	8	28	28	25	30	20	15	14	16	16	34	39	39	37	27	31	**IZS**	27	28	39	21.3	24
28	23	23	15	16	16	13	16	19	18	18	18	13	14	15	14	19	35	26	23	22	**IZS**	15	13	11	35	18.0	24
29	16	11	11	12	9	7	6	11	10	8	3	3	2	2	2	3	3	6	13	**IZS**	9	9	4	4	16	7.1	24
30	5	4	4	4	5	6	7	10	7	6	6	4	3	3	4	12	19	18	**IZS**	8	12	6	6	9	19	7.3	24
HOURLY MAX	23	23	15	16	16	45	28	28	36	30	20	17	14	16	20	34	39	39	37	27	43	23	27	28			
HOURLY AVG	5.5	5.6	4.9	4.7	4.3	7.0	6.9	7.6	9.2	8.5	6.3	5.9	5.1	5.2	6.2	8.3	10.4	10.1	11.1	9.9	9.7	8.3	7.4	6.2			

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

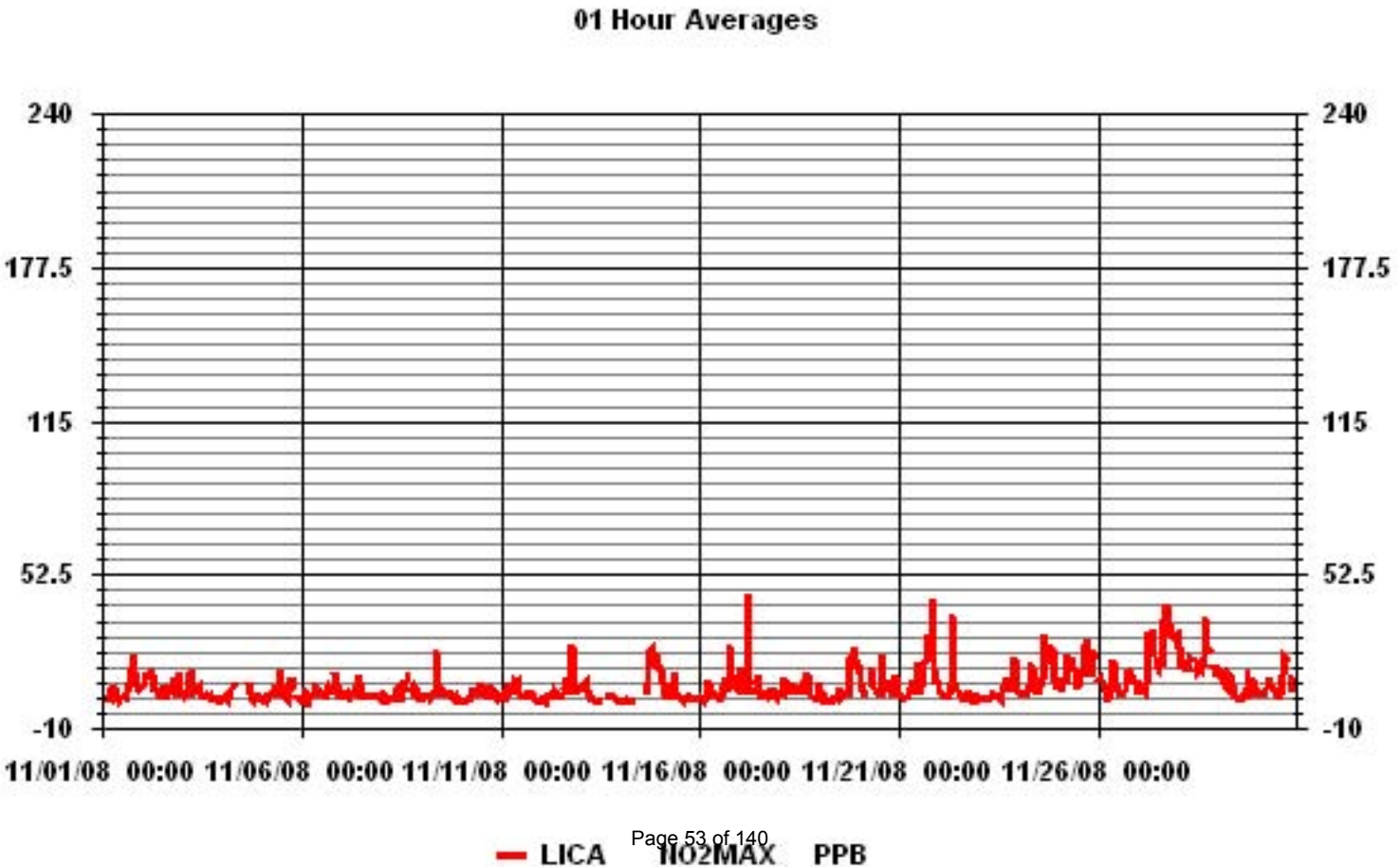
NUMBER OF NON-ZERO READINGS: 667

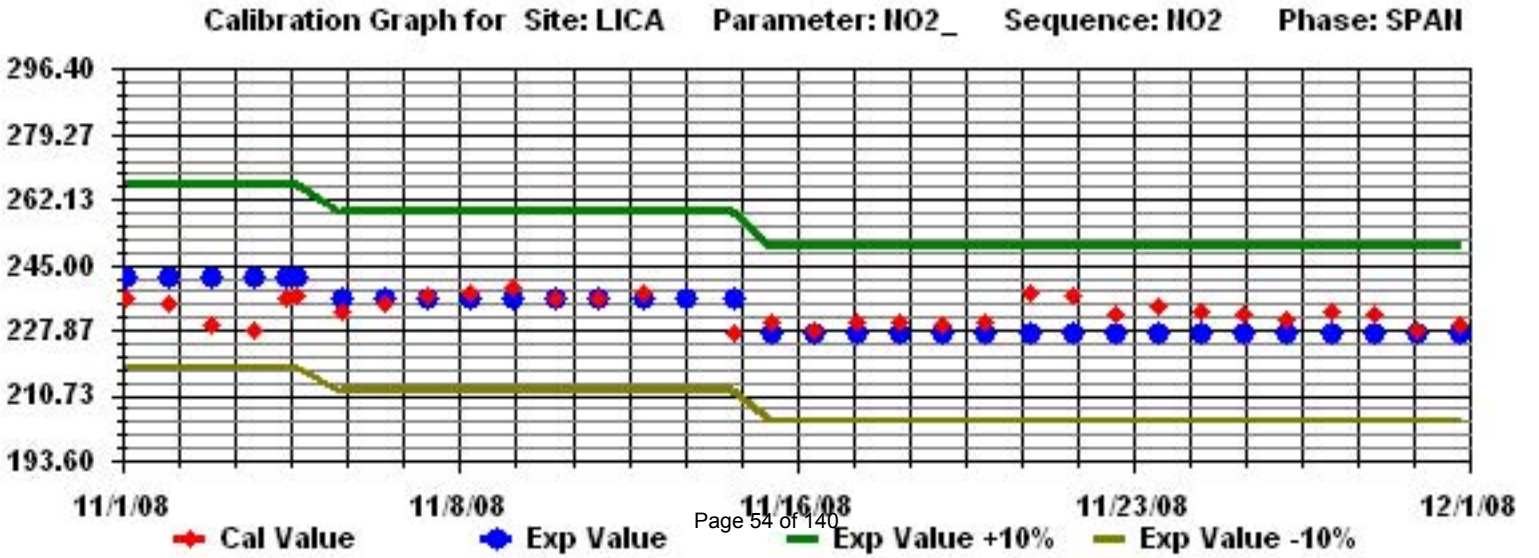
MAXIMUM INSTANTANEOUS VALUE: 45 PPB @ HOUR(S) 5 ON DAY(S) 17

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 718 HRS

MONTHLY CALIBRATION TIME: 17 HRS

STANDARD DEVIATION: 6.82


01 Hour Averages
240
177.5
115
52.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA NO2MAX PPB


Calibration Graph for Site: LICA Parameter: NO2_ Sequence: NO2 Phase: SPAN
296.40
279.27
262.13
245.00
227.87
210.73
193.60
11/1/08
11/8/08
11/16/08
11/23/08
12/1/08
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Nitric Oxide

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

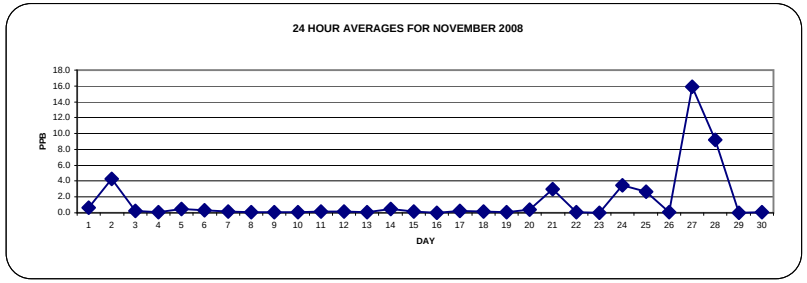
NITRIC OXIDE hourly averages in ppb

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	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	2	3	3	3	0.6	24
2	**IZS**	11	19	18	24	15	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**IZS**	24	4.3	24
3	0	0	0	0	0	1	2	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	**IZS**	0	2	0.3	24
4	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	1	0	0	0	0	**IZS**	0	0	1	0.1	24
5	0	0	0	0	0	0	0	1	3	2	1	2	1	0	0	0	0	0	0	1	**IZS**	0	0	0	3	0.5	24
6	0	0	0	0	0	0	0	1	1	0	1	2	1	0	0	0	1	0	0	**IZS**	0	0	0	0	2	0.3	24
7	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	1	0.1	24
8	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	1	0.0	24
9	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	**IZS**	0	0	0	0	0	0	0	1	0.1	24
10	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**IZS**	0	0	0	0	0	0	0	0	1	0.0	24
11	0	0	0	0	0	0	0	0	0	1	2	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	2	0.1	24
12	0	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	1	0	1	0	0	2	0	0	0	0	2	0.2	24
13	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	**C**	**C**	**M**	**M**	1	0	0	0	0	0	0	1	0.1	22
14	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	0	1	0	1	5	1	0	5	0.5	24
15	0	0	0	0	0	0	0	0	0	1	**IZS**	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	24
16	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	24
17	0	2	0	0	0	2	0	0	**IZS**	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.3	24
18	0	0	0	0	0	0	0	**IZS**	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.2	24
19	0	0	0	0	0	0	**IZS**	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0	24
20	0	0	0	0	0	**IZS**	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	0.4	24
21	0	0	0	0	**IZS**	0	0	0	1	1	0	4	4	2	1	3	5	8	7	11	19	2	0	0	19	3.0	24
22	0	0	0	**IZS**	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0	24
23	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
24	0	**IZS**	0	0	0	0	0	0	0	2	2	2	6	6	6	11	8	6	7	7	6	6	5	0	11	3.5	24
25	**IZS**	0	0	0	0	1	6	5	13	15	7	2	1	1	2	2	1	1	0	0	0	1	0	**IZS**	15	2.6	24
26	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	**IZS**	0	1	0.1	24
27	0	0	0	0	0	0	5	15	16	30	16	9	8	6	3	5	29	40	47	**49**	18	**IZS**	33	36	**49**	**15.9**	24
28	17	7	6	1	1	2	9	25	24	23	18	9	9	7	4	2	15	11	15	6	**IZS**	0	0	0	25	9.2	24
29	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
30	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	**IZS**	0	0	0	0	0	1	0.1	24
HOURLY MAX	17	11	19	18	24	15	9	25	24	30	18	9	9	7	6	11	29	40	47	49	19	6	33	36			
HOURLY AVG	0.6	0.7	0.9	0.7	0.9	0.7	1.0	1.7	2.3	2.9	2.0	1.3	1.3	1.0	0.8	0.8	2.2	2.3	2.8	2.9	1.6	0.6	1.5	1.4			

STATUS FLAG CODES

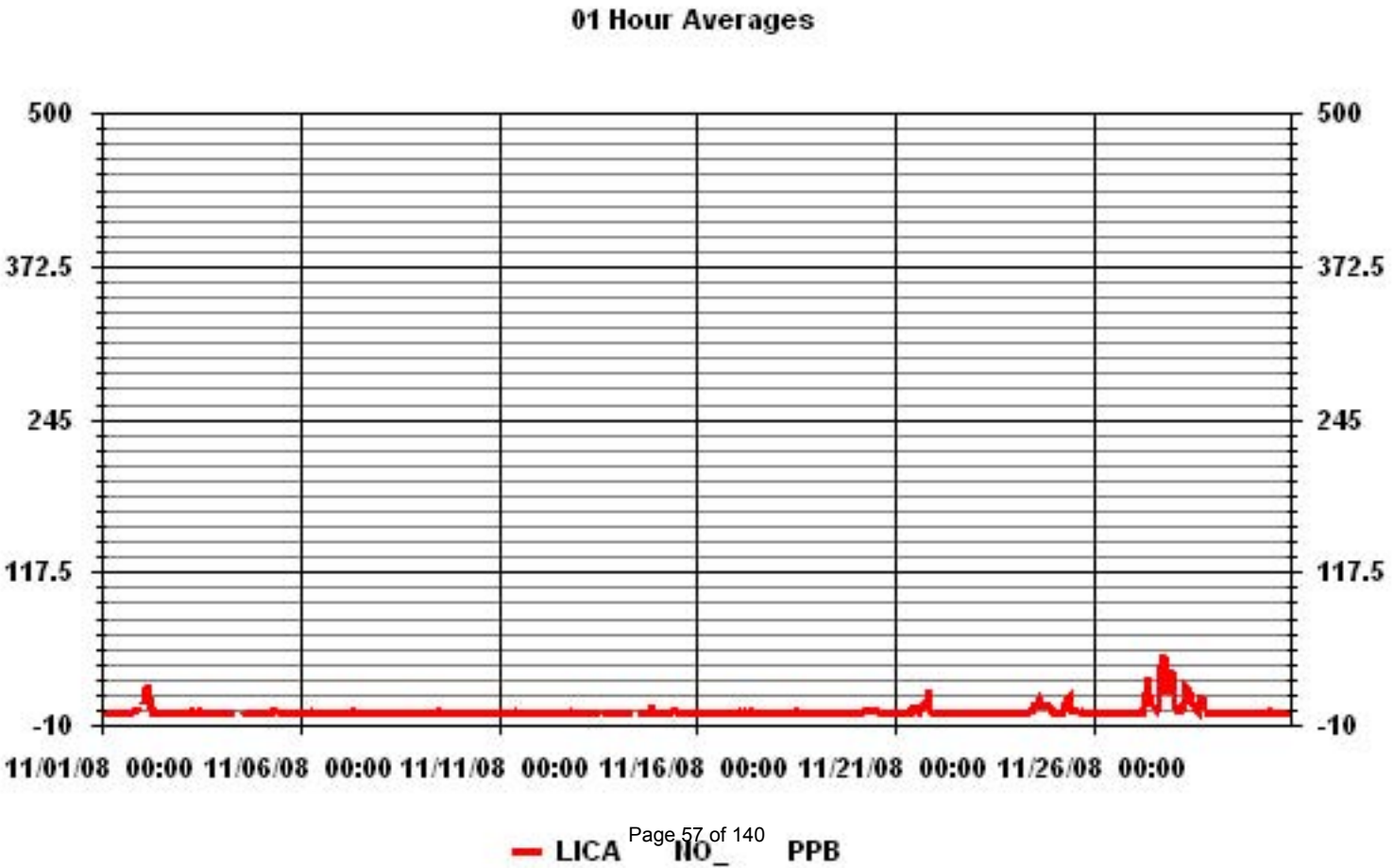
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	153					
MAXIMUM 1-HR AVERAGE:	49	PPB	@ HOUR(S)	19	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	15.9	PPB			ON DAY(S)	27

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	16	HRS	AMD OPERATION UPTIME	99.7	%
STANDARD DEVIATION	5.05		MONTHLY AVERAGE	1.44	PPB


01 Hour Averages
500
372.5
245
117.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA NO_ PPB

LICA
NO_ / WD Joint Frequency Distribution (Percent)

November 2008

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	1.04	.44	1.04	2.54	8.23	14.22	20.20	2.54	2.24	2.69	11.22	12.57	8.53	6.58	4.94	.89	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	1.04	.44	1.04	2.54	8.23	14.22	20.20	2.54	2.24	2.69	11.22	12.57	8.53	6.58	4.94	.89	

Calm : .00 %

Total # Operational Hours : 668

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	7	3	7	17	55	95	135	17	15	18	75	84	57	44	33	6	668
<	110																	
<	210																	
>=	210																	
	Totals	7	3	7	17	55	95	135	17	15	18	75	84	57	44	33	6	

Calm : .00 %

Total # Operational Hours : 668

Logger : 01 Parameter : NO_

Class Limits (PPB)

>= 210

< 210

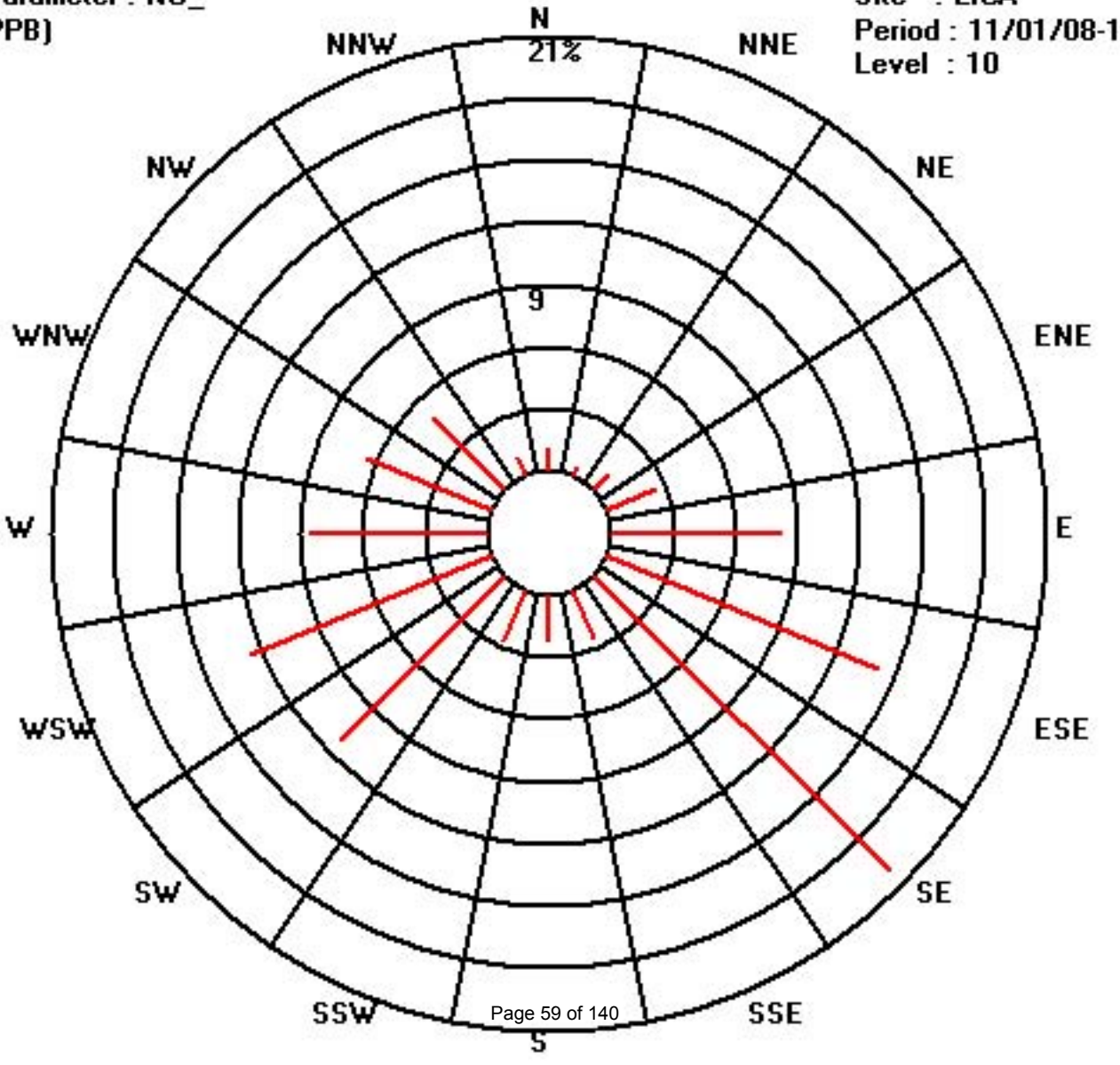
< 110

< 50

Site : LICA

Period : 11/01/08-11/30/08

Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

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	**IZS**	0	1	2	1	9	1	2	5	0	0	0	1	1	1	3	2	22	35	9	5	7	9	35	5.0	24
2	**IZS**	16	24	28	31	24	16	6	4	6	4	1	1	6	0	1	1	1	3	27	0	0	1	**IZS**	31	9.1	24
3	1	0	1	5	2	7	14	0	1	1	3	1	1	0	0	0	0	0	0	0	0	0	**IZS**	0	14	1.6	24
4	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	9	2	0	0	1	**IZS**	2	1	9	1.0	24
5	1	0	0	0	0	1	2	1	4	6	4	18	5	3	0	0	5	5	5	10	**IZS**	1	2	6	18	3.4	24
6	4	0	2	0	0	3	0	11	12	1	4	3	1	1	1	6	5	14	2	**IZS**	7	1	0	0	14	3.4	24
7	0	1	1	1	1	1	2	2	2	3	20	5	3	1	3	0	1	4	**IZS**	13	20	1	9	1	20	4.1	24
8	0	15	0	0	0	0	0	1	1	1	4	1	2	2	5	2	5	**IZS**	0	4	0	15	7	0	15	2.8	24
9	0	1	1	1	1	1	0	1	1	2	1	0	5	2	0	4	**IZS**	2	2	1	0	7	0	0	7	1.4	24
10	0	0	2	0	0	0	0	0	1	1	1	1	8	1	0	**IZS**	0	0	7	0	0	1	0	2	8	1.1	24
11	0	0	0	1	0	3	0	0	5	4	5	1	3	0	**IZS**	0	0	0	0	0	0	0	0	0	5	1.0	24
12	0	0	0	0	0	1	0	3	1	3	2	3	2	**IZS**	41	4	8	2	2	27	4	0	0	0	41	4.5	24
13	0	0	0	0	0	0	0	0	0	0	0	0	**IZS**	**C**	**C**	**M**	**M**	5	2	0	0	0	0	0	5	0.4	22
14	0	0	0	0	0	0	0	0	**C**	**C**	**C**	**C**	**C**	**C**	**C**	0	0	3	13	11	57	54	15	6	57	9.4	24
15	3	2	1	0	0	1	0	0	0	2	**IZS**	1	1	0	0	0	0	0	0	0	0	0	0	0	3	0.5	24
16	0	0	0	0	0	0	0	0	1	**IZS**	2	0	1	0	4	5	1	1	3	3	1	2	0	4	5	1.2	24
17	0	13	0	0	0	24	2	10	**IZS**	1	1	1	4	1	7	0	4	5	1	1	1	0	0	0	24	3.3	24
18	0	1	1	2	1	1	0	**IZS**	1	1	1	3	1	3	1	1	1	1	0	1	0	0	0	0	3	0.9	24
19	0	0	0	0	0	0	**IZS**	0	0	0	0	0	3	1	1	0	0	0	2	2	0	1	1	1	3	0.5	24
20	3	0	0	0	0	**IZS**	5	21	2	4	11	2	3	2	5	12	1	1	4	2	6	0	3	0	21	3.8	24
21	1	1	0	0	**IZS**	1	1	6	3	2	2	46	6	5	3	9	14	43	23	24	**104**	10	2	2	**104**	13.4	24
22	4	1	0	**IZS**	0	0	0	1	10	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	10	0.8	24
23	0	0	**IZS**	0	0	0	0	0	0	0	1	1	1	0	2	2	0	0	0	0	0	11	2	4	11	1.0	24
24	2	**IZS**	0	0	15	0	1	1	14	16	4	7	9	10	10	19	25	12	18	16	12	13	9	10	25	9.7	24
25	**IZS**	0	1	0	2	8	20	14	35	23	18	2	4	3	4	3	9	4	3	5	2	10	1	**IZS**	35	7.8	24
26	1	0	0	0	0	0	0	0	0	10	1	6	8	1	0	0	0	1	0	0	0	0	**IZS**	0	10	1.2	24
27	0	0	0	0	0	1	34	53	63	69	21	11	10	10	6	30	58	70	76	64	55	**IZS**	44	101	101	33.7	24
28	45	13	16	4	7	14	19	46	49	53	58	13	15	11	8	3	56	30	40	19	**IZS**	3	0	0	58	22.7	24
29	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	**IZS**	0	0	0	0	3	0.3	24
30	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	2	**IZS**	1	2	1	0	10	10	0.9	24
HOURLY MAX	45	16	24	28	31	24	34	53	63	69	58	46	15	11	41	30	58	70	76	64	104	54	44	101			
HOURLY AVG	2.4	2.3	1.7	1.5	2.1	3.2	4.3	6.1	8.0	8.0	6.3	4.6	3.6	2.5	3.9	3.8	7.4	7.2	8.1	9.5	10.0	4.9	3.8	5.6			

STATUS FLAG CODES

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

MONTHLY SUMMARY

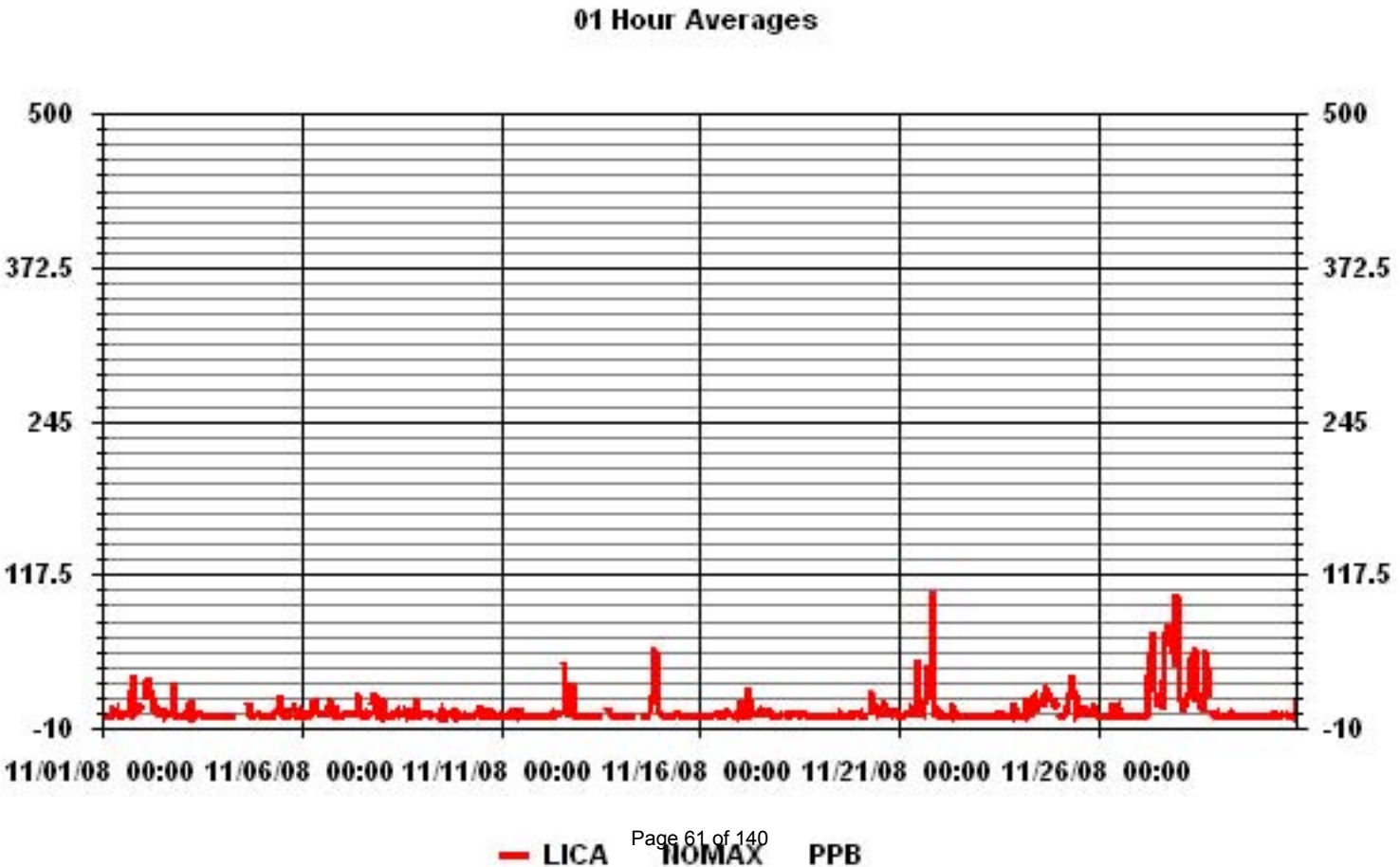
NUMBER OF NON-ZERO READINGS: 387

MAXIMUM INSTANTANEOUS VALUE: 104 PPB @ HOUR(S) 20 ON DAY(S) 21

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 718 HRS

MONTHLY CALIBRATION TIME: 17 HRS

STANDARD DEVIATION: 11.96


01 Hour Averages
500
372.5
245
117.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA
NOMAX
PPB

Oxides of Nitrogen

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

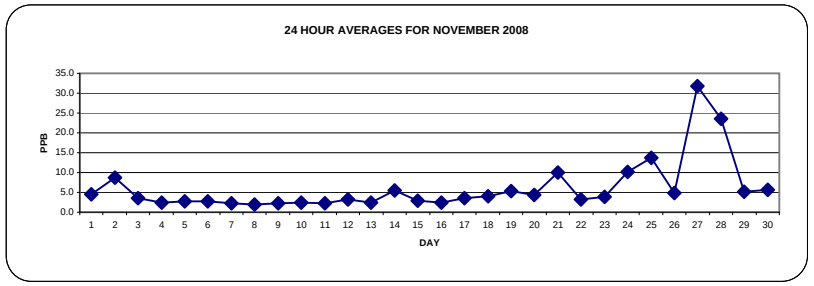
OXIDES OF NITROGEN hourly averages in ppb

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1	**IZS**	1	1	2	1	3	3	4	2	1	2	2	3	3	5	6	9	9	11	10	9	9	8	11	4.6	24
2	**IZS**	16	26	24	33	24	13	5	5	4	4	3	3	2	2	2	4	4	4	4	2	2	7	**IZS**	33	8.8	24
3	3	2	3	3	3	6	9	5	4	5	6	4	4	3	3	3	2	3	3	2	2	2	**IZS**	1	9	3.5	24
4	1	1	2	2	1	3	4	5	**C**	**C**	**C**	**C**	**C**	**C**	**C**	4	6	2	2	1	2	**IZS**	2	1	6	2.4	24
5	0	1	1	0	1	2	3	6	7	6	4	5	3	2	2	1	3	2	5	6	**IZS**	2	1	0	7	2.7	24
6	0	0	0	0	0	1	2	3	4	3	5	5	4	3	3	3	5	5	5	**IZS**	3	4	3	3	5	2.8	24
7	1	2	2	2	2	2	3	3	5	4	3	2	2	2	2	2	2	2	**IZS**	2	2	1	2	1	5	2.2	24
8	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	5	**IZS**	4	3	2	4	2	1	5	2.0	24
9	1	2	2	2	2	2	2	2	3	4	3	2	3	3	3	3	**IZS**	4	3	2	1	1	1	1	4	2.3	24
10	1	1	1	1	1	1	1	3	3	4	4	4	3	3	4	**IZS**	2	2	4	3	2	3	2	2	4	2.4	24
11	2	1	1	2	1	1	2	3	4	7	6	3	2	2	**IZS**	2	2	2	2	2	1	1	1	1	7	2.2	24
12	1	1	1	1	1	2	2	2	4	3	3	2	2	**IZS**	3	3	5	5	5	7	5	5	5	5	7	3.2	24
13	4	6	7	6	3	1	1	1	1	1	1	1	**IZS**	**C**	**C**	**M**	**M**	2	3	2	2	1	1	1	7	2.4	22
14	1	1	0	1	1	0	0	1	**C**	**C**	**C**	**C**	**C**	**C**	**C**	2	6	14	12	9	9	18	9	10	18	5.5	24
15	11	6	3	2	3	4	3	3	4	9	**IZS**	3	3	2	1	1	1	2	2	1	1	1	1	1	11	3.0	24
16	2	1	1	1	0	1	2	3	3	**IZS**	2	1	1	1	2	3	3	4	5	3	5	5	4	4	5	2.5	24
17	3	10	3	3	3	10	4	6	**IZS**	5	4	4	3	2	2	2	3	3	2	2	2	2	2	2	10	3.6	24
18	3	3	3	3	4	4	3	**IZS**	3	5	4	6	4	6	6	7	9	8	4	3	2	1	1	2	9	4.1	24
19	5	5	3	1	0	0	**IZS**	1	1	1	2	2	2	3	4	4	4	3	9	9	17	20	12	14	20	5.3	24
20	10	7	4	3	3	**IZS**	6	9	7	6	4	4	3	3	4	3	4	4	3	3	3	2	5	2	10	4.4	24
21	2	2	2	2	**IZS**	2	4	6	6	5	4	10	10	6	6	14	18	24	21	26	34	12	6	8	34	10.0	24
22	5	4	4	**IZS**	3	2	3	5	9	4	6	6	5	3	2	1	1	2	2	1	1	1	2	2	9	3.2	24
23	2	2	**IZS**	2	2	1	1	2	3	4	3	3	2	1	2	4	7	5	5	5	6	12	10	5	12	3.9	24
24	4	**IZS**	3	3	3	3	5	13	12	9	7	6	7	8	10	25	20	13	18	17	16	18	8	6	25	10.2	24
25	**IZS**	5	5	7	7	15	21	18	26	26	16	8	7	5	13	18	19	18	11	9	12	18	16	**IZS**	26	13.6	24
26	8	9	9	6	3	1	1	2	5	7	4	4	3	3	3	3	3	4	7	5	7	7	**IZS**	6	9	4.8	24
27	5	4	5	5	4	5	16	34	35	49	34	23	21	18	15	26	64	70	**74**	72	37	**IZS**	55	59	**74**	**31.7**	24
28	37	25	20	15	13	13	22	39	37	36	30	19	21	19	17	17	38	31	34	23	**IZS**	13	11	10	39	23.5	24
29	12	10	10	10	8	6	5	8	7	6	2	2	1	2	2	2	2	4	7	**IZS**	4	4	3	3	12	5.2	24
30	4	3	3	3	5	5	6	7	6	6	7	4	3	4	4	8	11	15	**IZS**	6	7	4	4	4	15	5.6	24
HOURLY MAX	37	25	26	24	33	24	22	39	37	49	34	23	21	19	17	26	64	70	74	72	37	20	55	59			
HOURLY AVG	4.6	4.7	4.3	3.9	3.9	4.1	5.1	6.9	7.8	8.3	6.3	5.0	4.7	4.3	4.6	6.1	9.1	9.2	9.5	8.5	7.0	6.2	6.6	5.8			

STATUS FLAG CODES

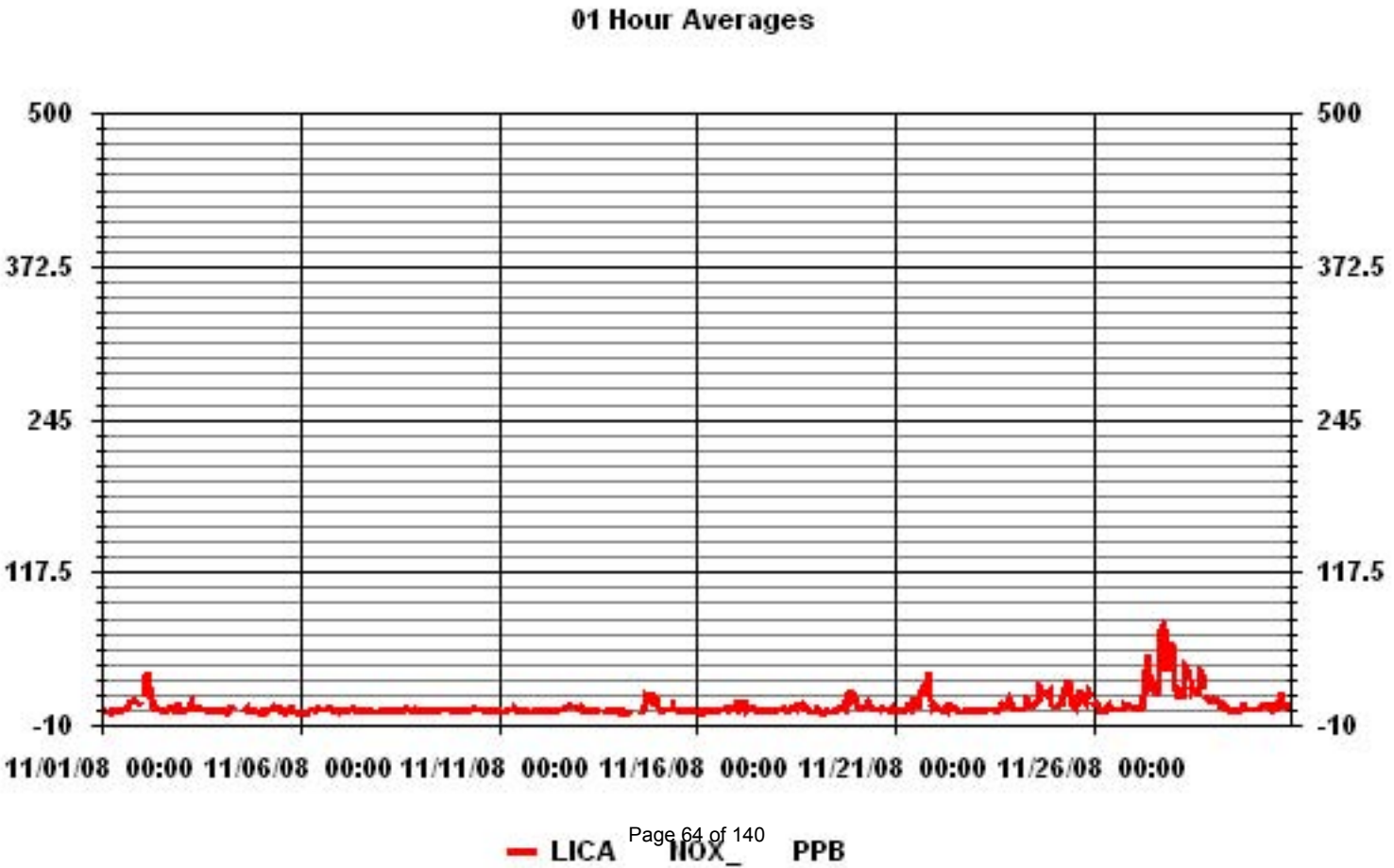
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	657					
MAXIMUM 1-HR AVERAGE:	74	PPB	@ HOUR(S)	18	ON DAY(S)	27
MAXIMUM 24-HR AVERAGE:	31.7	PPB			ON DAY(S)	27

IZS CALIBRATION TIME:	31	HRS	OPERATIONAL TIME:	718	HRS
MONTHLY CALIBRATION TIME:	16	HRS	AMD OPERATION UPTIME	99.7	%
STANDARD DEVIATION	8.82		MONTHLY AVERAGE	6.10	PPB


01 Hour Averages
500
372.5
245
117.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA NOX_ PPB

LICA
NOX_ / WD Joint Frequency Distribution (Percent)

November 2008

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	.89	.44	1.04	2.09	8.23	14.07	20.05	2.54	2.24	2.69	11.22	12.57	8.53	6.58	4.94	.89	99.10
<	110	.14	.00	.00	.44	.00	.14	.14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.89
<	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	1.04	.44	1.04	2.54	8.23	14.22	20.20	2.54	2.24	2.69	11.22	12.57	8.53	6.58	4.94	.89	

Calm : .00 %

Total # Operational Hours : 668

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	6	3	7	14	55	94	134	17	15	18	75	84	57	44	33	6	662
<	110	1			3		1	1										6
<	210																	
>=	210																	
	Totals	7	3	7	17	55	95	135	17	15	18	75	84	57	44	33	6	

Calm : .00 %

Total # Operational Hours : 668

Logger : 01 Parameter : NOX_

Class Limits (PPB)

>= 210

< 210

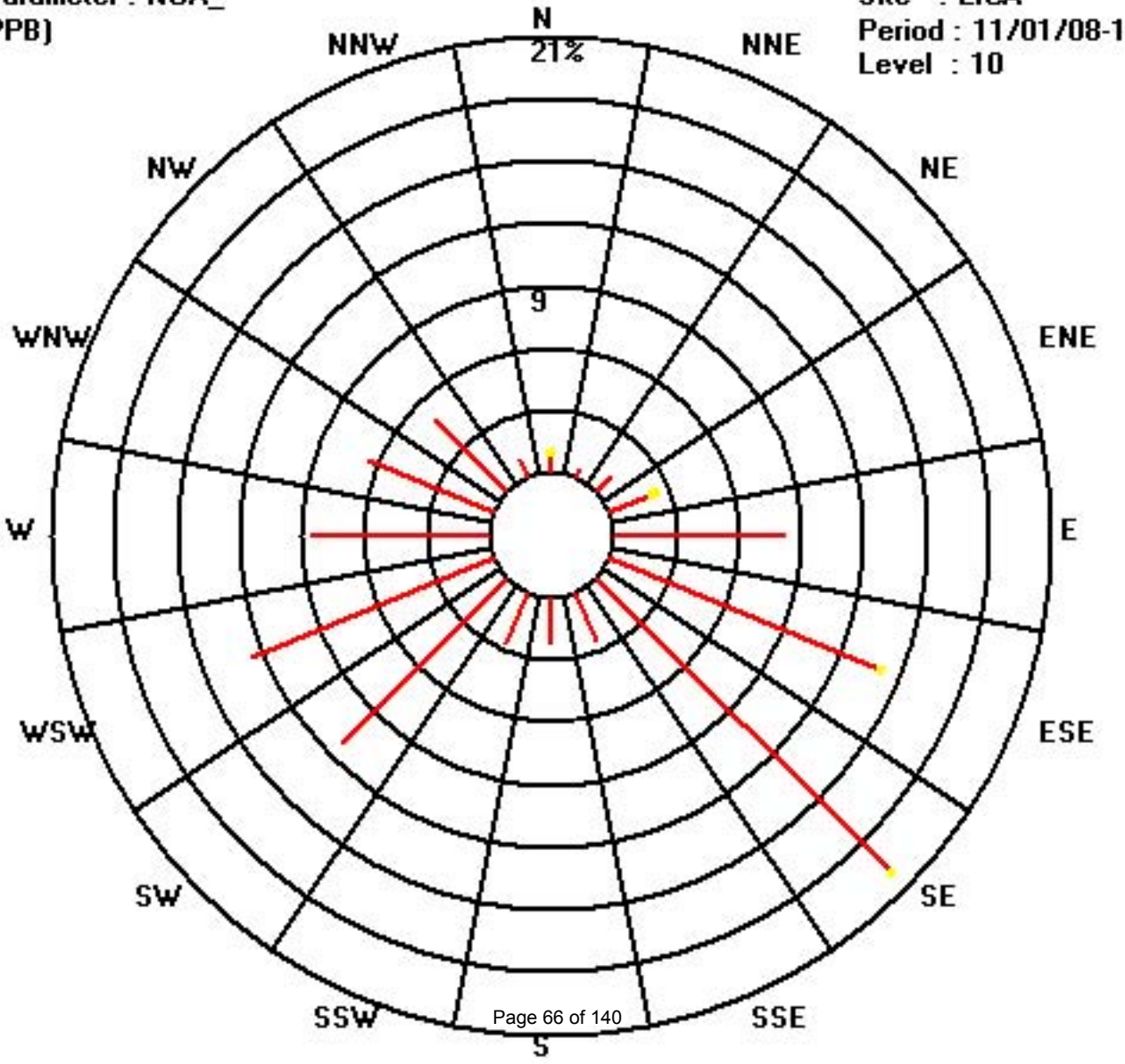
< 110

< 50

Site : LICA

Period : 11/01/08-11/30/08

Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

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	**IZS**	3	3	6	5	7	8	7	6	2	3	3	5	4	6	11	16	36	55	24	13	14	15	55	11.0	24
2	**IZS**	24	35	39	42	36	27	12	7	6	6	5	6	12	3	4	7	7	10	29	4	4	12	**IZS**	42	15.3	24
3	5	4	6	10	6	19	29	7	6	7	10	5	5	4	4	5	3	4	4	2	2	3	**IZS**	2	29	6.6	24
4	2	3	3	3	2	5	6	9	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	16	7	2	2	4	**IZS**	6	4	16	4.9	24
5	3	3	3	1	3	5	6	8	10	10	10	26	6	8	4	2	13	9	17	11	**IZS**	4	2	6	26	7.4	24
6	5	1	8	0	0	5	4	12	19	5	8	8	6	4	5	8	10	8	6	**IZS**	19	7	5	5	19	6.9	24
7	3	6	4	5	5	7	5	6	8	10	32	10	4	5	6	4	4	7	**IZS**	9	11	3	10	3	32	7.3	24
8	2	18	2	2	2	2	2	3	4	8	12	3	5	7	8	11	17	**IZS**	7	10	4	22	10	3	22	7.1	24
9	2	4	3	5	3	3	4	4	6	25	4	4	10	7	5	8	**IZS**	7	5	4	3	9	2	1	25	5.6	24
10	2	1	2	2	2	2	3	6	6	5	5	5	15	5	5	**IZS**	3	4	13	4	5	5	2	3	15	4.6	24
11	3	2	3	7	3	12	5	6	15	12	14	5	6	4	**IZS**	4	5	3	3	6	2	2	1	1	15	5.4	24
12	1	2	2	1	3	5	3	3	7	6	7	6	5	**IZS**	16	6	14	9	12	49	9	6	6	7	49	8.0	24
13	6	7	9	9	6	4	2	2	2	2	1	2	**IZS**	**C**	**C**	**M**	**M**	3	3	3	3	2	2	2	9	3.7	22
14	1	1	1	2	1	1	1	2	**C**	**C**	**C**	**C**	**C**	**C**	**C**	5	9	22	34	33	63	61	24	20	63	16.5	24
15	17	11	5	3	4	8	5	4	5	13	**IZS**	5	5	3	2	2	2	3	3	2	2	2	2	2	17	4.8	24
16	4	3	2	2	1	10	5	5	5	**IZS**	5	3	4	3	11	13	7	8	28	8	11	12	9	10	28	7.3	24
17	4	28	6	5	5	69	13	19	**IZS**	7	6	14	4	4	9	4	7	10	5	5	5	4	3	5	69	10.5	24
18	4	4	5	13	5	7	5	**IZS**	10	9	5	11	5	9	9	9	13	13	5	4	3	2	2	3	13	6.7	24
19	8	6	5	1	1	1	**IZS**	1	2	2	2	2	10	5	5	5	5	4	22	17	21	24	16	17	24	7.9	24
20	17	10	7	4	4	**IZS**	13	29	10	12	7	7	8	6	22	7	7	7	14	9	7	5	13	5	29	10.0	24
21	7	4	3	3	**IZS**	4	7	15	10	8	7	54	14	13	13	27	29	66	41	41	**140**	23	10	11	**140**	23.9	24
22	11	6	4	**IZS**	4	3	4	10	46	6	10	8	7	5	3	2	2	3	5	2	1	1	3	3	46	6.5	24
23	3	2	**IZS**	3	2	2	2	3	4	5	5	5	4	3	9	8	10	7	6	7	11	28	20	8	28	6.8	24
24	8	**IZS**	4	4	15	6	8	19	17	16	14	7	14	11	13	42	41	18	35	33	31	29	10	7	42	17.5	24
25	**IZS**	6	11	9	10	27	38	31	49	37	33	9	10	15	17	27	29	30	19	14	16	23	21	**IZS**	49	21.9	24
26	10	11	10	8	6	2	2	3	16	28	7	11	15	4	6	0	7	9	14	8	12	11	**IZS**	10	28	9.1	24
27	5	5	9	6	5	9	62	75	82	87	40	26	25	26	20	63	97	101	105	86	77	**IZS**	72	113	113	52.0	24
28	63	35	29	20	21	26	36	63	65	71	73	27	29	26	22	23	87	56	61	39	**IZS**	19	14	11	87	39.8	24
29	18	12	11	12	10	7	6	11	12	9	4	3	2	3	3	3	3	7	14	**IZS**	9	9	4	4	18	7.7	24
30	5	4	4	4	5	6	8	11	7	7	8	6	4	5	5	13	21	18	**IZS**	9	15	8	7	12	21	8.3	24
HOURLY MAX	63	35	35	39	42	69	62	75	82	87	73	54	29	26	22	63	97	101	105	86	140	61	72	113			
HOURLY AVG	7.9	8.0	6.9	6.4	6.3	10.3	11.0	13.3	16.2	15.5	12.5	10.0	8.6	7.8	8.8	11.5	17.1	16.1	18.9	17.9	18.4	12.2	10.8	10.5			

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

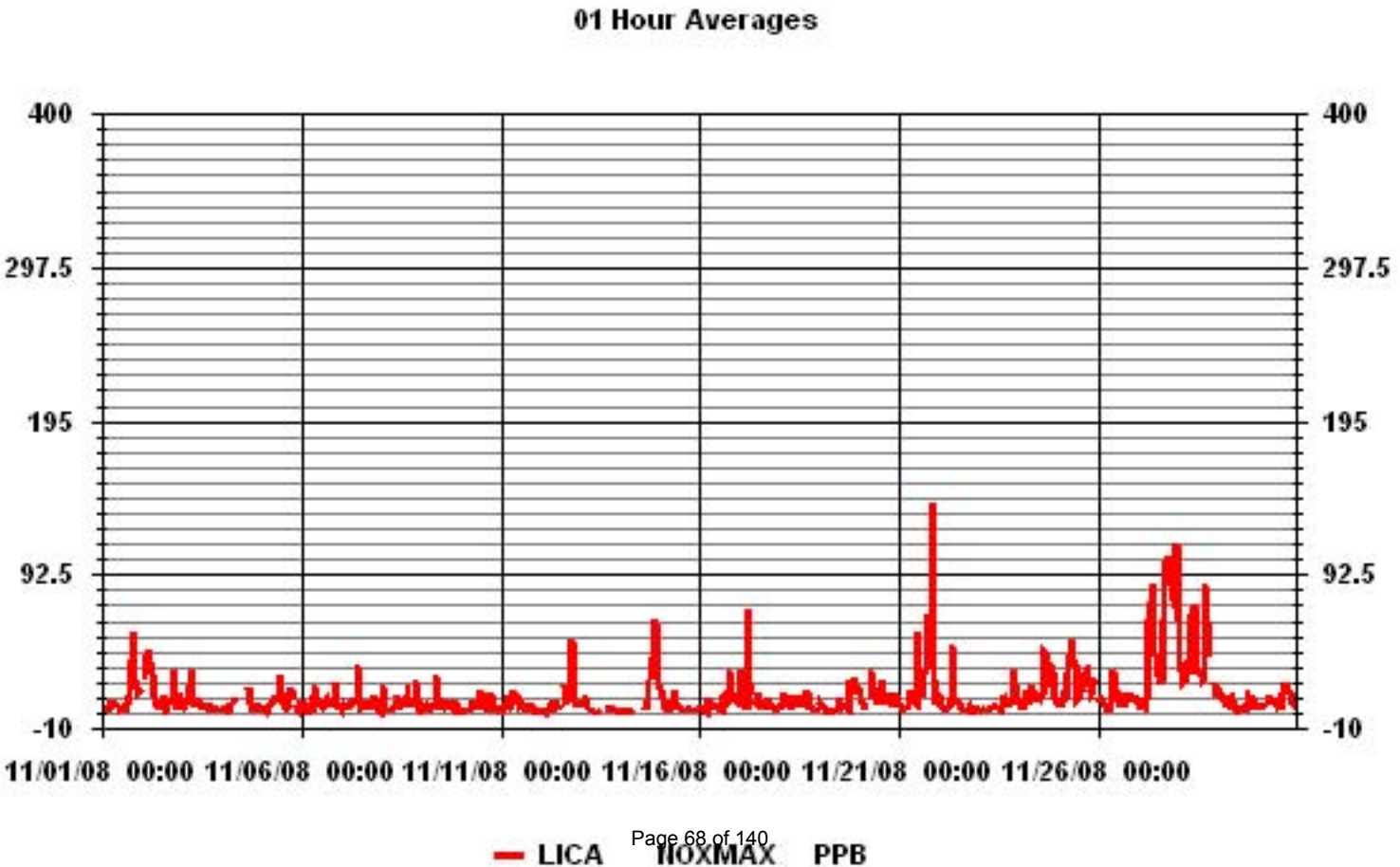
NUMBER OF NON-ZERO READINGS: 667

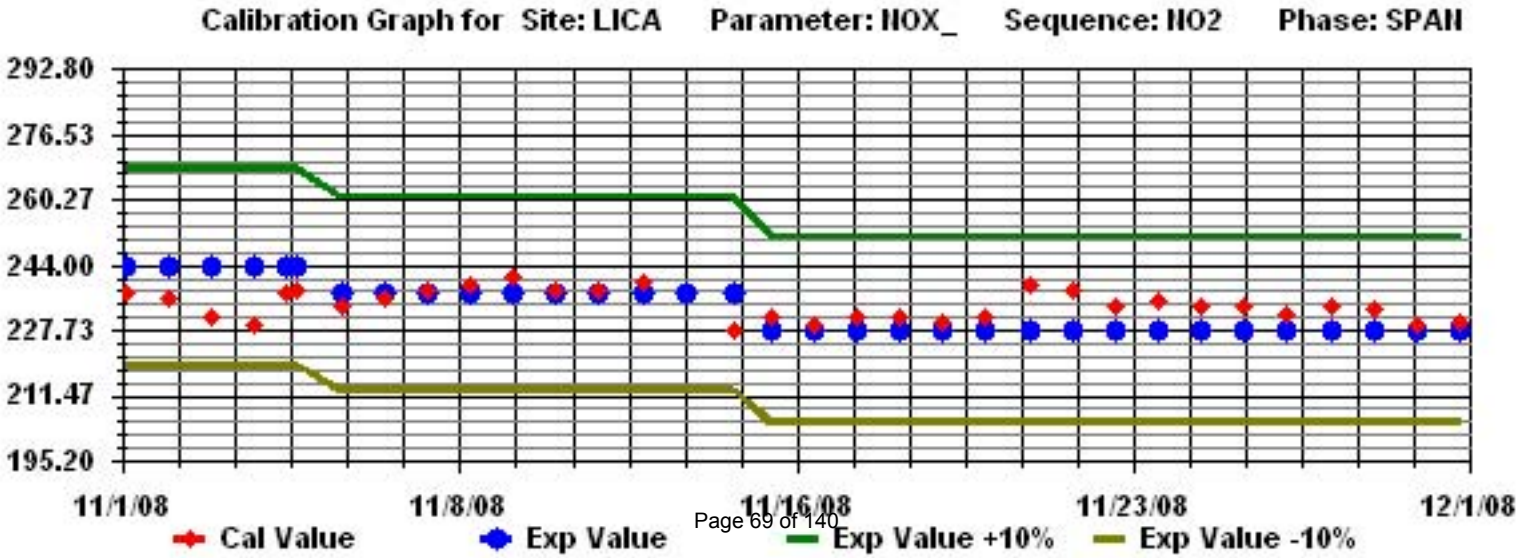
MAXIMUM INSTANTANEOUS VALUE: 140 PPB @ HOUR(S) 20 ON DAY(S) 21

IZS CALIBRATION TIME: 31 HRS OPERATIONAL TIME: 718 HRS

MONTHLY CALIBRATION TIME: 17 HRS

STANDARD DEVIATION: 16.24


01 Hour Averages
400
297.5
195
92.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA NOXMAX PPB


Calibration Graph for Site: LICA Parameter: NOX_ Sequence: NO2 Phase: SPAN
292.80
276.53
260.27
244.00
227.73
211.47
195.20
11/1/08
11/8/08
11/16/08
11/23/08
12/1/08
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ozone

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

OZONE (O_3) hourly averages in ppb

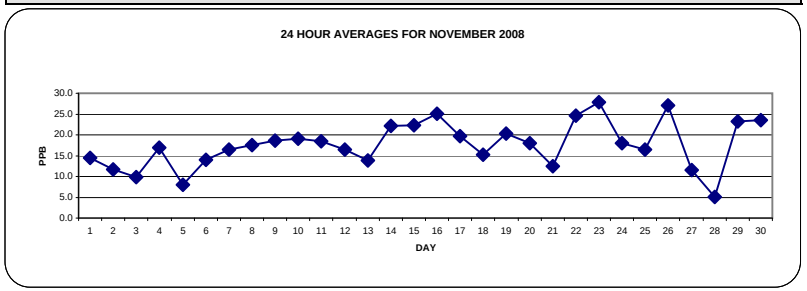
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	23	**IZS**	22	21	20	20	18	18	17	19	20	20	20	19	20	19	16	9	6	3	1	0	0	0	23	14.4	24
2	**IZS**	0	0	0	0	0	3	8	12	13	13	13	16	17	18	20	17	16	17	17	21	21	15	**IZS**	21	11.7	24
3	14	14	13	11	11	6	6	7	5	5	6	8	8	9	9	9	10	9	9	12	13	12	**IZS**	19	19	9.8	24
4	20	21	21	21	22	19	15	12	11	13	17	20	20	18	18	16	14	15	13	16	15	**IZS**	16	16	22	16.9	24
5	13	11	12	13	10	6	4	2	1	3	6	6	**C**	**C**	**C**	**C**	8	10	6	4	**IZS**	9	13	16	16	8.1	24
6	16	15	14	14	13	12	10	8	9	8	8	10	14	16	17	16	15	14	15	**IZS**	19	20	19	19	20	14.0	24
7	21	20	18	18	17	16	14	13	12	13	15	16	16	16	17	18	17	17	**IZS**	17	17	17	17	16	21	16.4	24
8	16	16	16	16	16	16	15	15	15	15	15	16	16	17	18	20	16	**IZS**	22	22	23	22	20	20	23	17.5	24
9	18	17	17	17	17	17	17	17	16	16	17	17	18	17	17	18	**IZS**	17	18	21	24	25	26	25	26	18.7	24
10	25	24	24	24	23	23	21	17	16	15	15	14	17	19	18	**IZS**	18	16	15	16	16	18	22	22	25	19.0	24
11	22	22	21	21	21	20	19	16	15	14	14	17	17	16	**IZS**	16	15	14	15	16	22	25	23	24	25	18.5	24
12	23	22	25	25	23	20	19	17	17	19	19	19	18	**IZS**	17	15	12	10	9	9	8	7	11	13	25	16.4	24
13	15	14	12	16	20	24	18	15	13	11	13	12	**IZS**	15	14	13	12	12	11	11	11	11	12	14	24	13.9	24
14	16	19	25	25	26	28	29	29	29	29	30	**IZS**	32	31	32	30	24	13	11	14	12	6	11	10	32	22.2	24
15	10	16	20	22	21	20	20	19	17	15	**IZS**	22	23	26	27	25	26	26	28	29	29	27	24	21	29	22.3	24
16	20	25	29	31	31	32	29	28	28	**IZS**	29	29	30	29	29	28	26	24	24	25	19	12	10	9	32	25.0	24
17	7	3	8	6	5	7	16	14	**IZS**	17	19	22	25	27	29	30	30	30	30	29	27	25	24	23	30	19.7	24
18	22	21	20	20	19	18	18	**IZS**	17	16	17	15	16	14	13	10	6	5	9	8	11	17	18	19	22	15.2	24
19	13	14	17	22	25	25	**IZS**	26	26	28	27	27	26	26	25	25	24	25	16	12	8	7	14	8	28	20.3	24
20	7	9	12	10	10	**IZS**	19	17	17	18	20	22	24	24	23	22	20	20	21	21	20	20	18	20	24	18.0	24
21	20	20	20	19	**IZS**	18	15	14	14	15	15	12	13	16	16	10	6	3	2	1	1	7	15	14	20	12.4	24
22	18	21	21	**IZS**	22	22	20	17	15	17	14	14	18	24	31	32	33	32	32	34	34	33	32	31	34	24.7	24
23	31	31	**IZS**	29	30	30	29	29	28	29	32	33	34	34	34	32	29	28	26	26	22	12	12	21	34	**27.9**	24
24	25	**IZS**	26	25	26	25	23	15	16	20	22	22	22	21	18	8	9	12	7	10	10	9	21	23	26	18.0	24
25	**IZS**	24	22	21	19	5	1	3	1	4	16	25	29	33	28	21	18	17	20	21	16	11	6	**IZS**	33	16.4	24
26	13	13	14	20	27	33	34	34	32	31	32	33	33	33	33	33	32	29	26	27	25	20	**IZS**	17	34	27.1	24
27	23	25	20	21	22	23	12	2	2	4	11	17	18	21	21	14	2	1	1	1	1	**IZS**	1	1	25	11.5	24
28	1	1	1	1	1	1	0	0	1	3	9	13	15	15	15	10	2	0	1	1	**IZS**	8	9	10	15	5.1	24
29	9	10	13	15	20	22	24	20	20	24	27	28	29	30	31	31	29	27	21	**IZS**	25	25	27	27	31	23.2	24
30	26	27	26	26	24	22	22	20	20	22	24	26	29	30	30	24	19	12	**IZS**	19	21	24	24	24	30	23.5	24
HOURLY MAX	31	31	29	31	31	33	34	34	32	31	32	33	34	34	34	33	33	32	32	34	34	33	32	31			
HOURLY AVG	17.4	17.0	17.6	18.3	18.7	18.3	16.9	15.6	15.2	15.7	18.0	18.9	21.3	21.9	22.1	20.2	17.4	16.0	15.4	15.8	16.8	16.1	16.4	17.2			

STATUS FLAG CODES

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

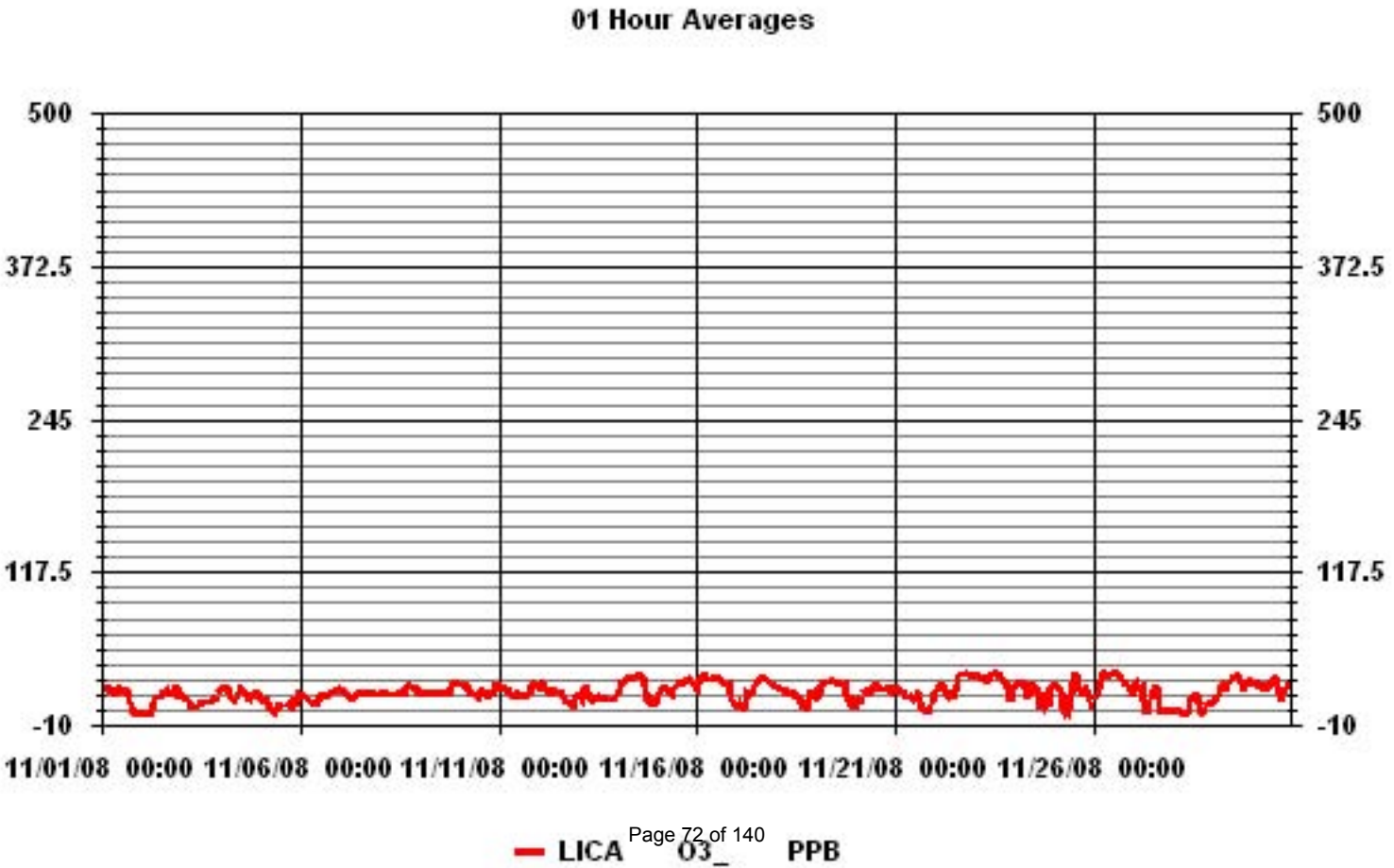
OBJECTIVE LIMIT: **ALBERTA ENVIRONMENT:** 1-HR 82 PPB



MONTHLY SUMMARY

NUMBER OF 1-HR EXCEEDENCES:	0					
NUMBER OF NON-ZERO READINGS:	673					
MAXIMUM 1-HR AVERAGE:	34	PPB	@ HOUR(S)	VAR	ON DAY(S)	VAR
MAXIMUM 24-HR AVERAGE:	27.9	PPB			ON DAY(S)	23
					VAR-VARIOUS	

IZS CALIBRATION TIME:	32	HRS	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	4	HRS	AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION	8.00		MONTHLY AVERAGE	17.66	PPB


01 Hour Averages
500
372.5
245
117.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA O3_ PPB

LICA
O3_ / WD Joint Frequency Distribution (Percent)

November 2008

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	1.02	.43	1.02	2.48	8.05	13.90	19.76	2.48	2.19	2.63	10.98	12.44	8.93	7.75	5.12	.73	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	1.02	.43	1.02	2.48	8.05	13.90	19.76	2.48	2.19	2.63	10.98	12.44	8.93	7.75	5.12	.73	

Calm : .00 %

Total # Operational Hours : 683

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	50	7	3	7	17	55	95	135	17	15	18	75	85	61	53	35	5	683
<	110																	
<	210																	
>=	210																	
	Totals	7	3	7	17	55	95	135	17	15	18	75	85	61	53	35	5	

Calm : .00 %

Total # Operational Hours : 683

Logger : 01 Parameter : 03_

Class Limits (PPB)

>= 210

< 210

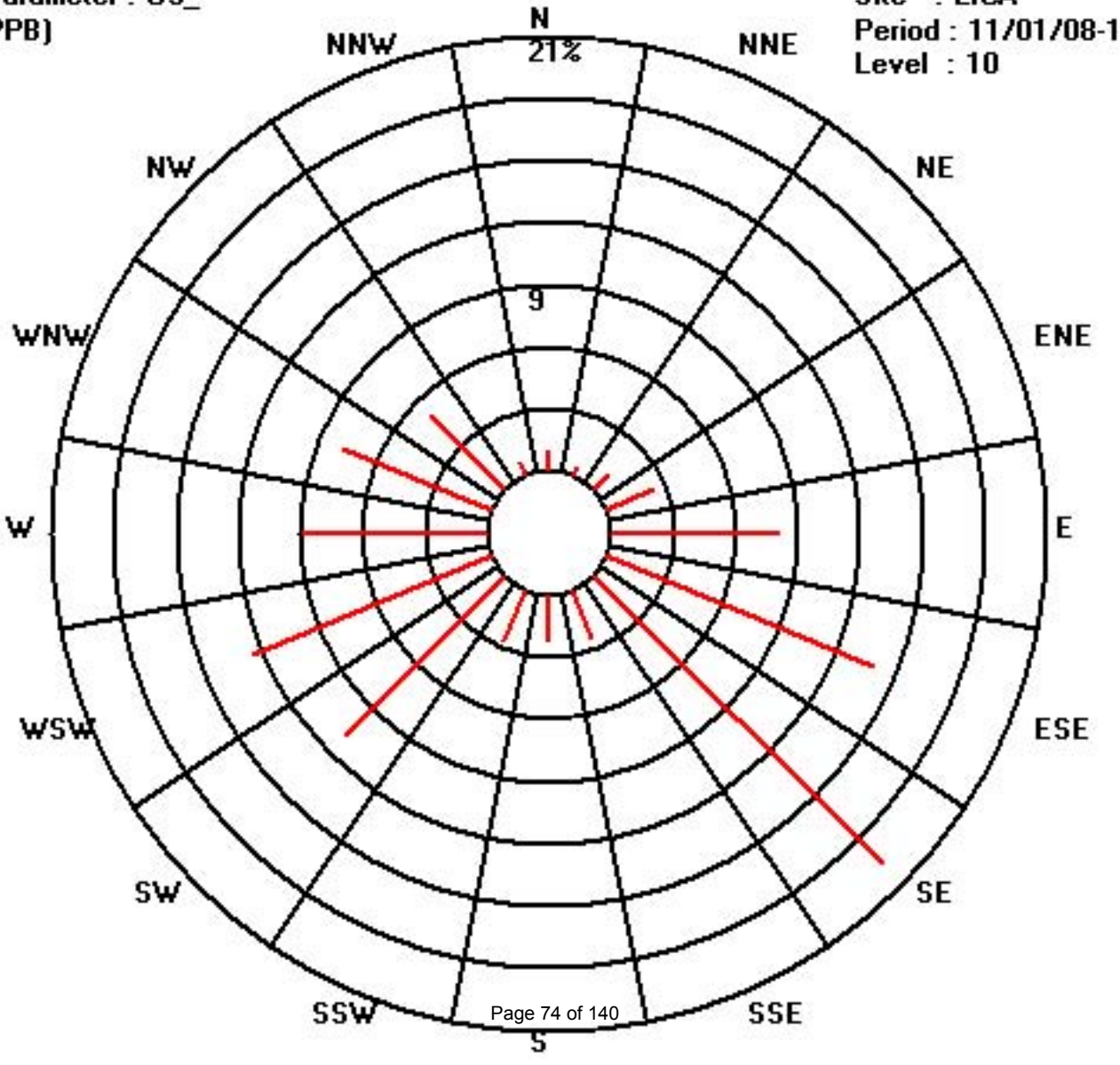
< 110

< 50

Site : LICA

Period : 11/01/08-11/30/08

Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

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	23	**IZS**	22	21	21	20	19	19	20	20	20	21	21	21	21	20	17	13	10	5	3	1	1	1	23	15.7	24
2	**IZS**	1	1	1	1	0	6	9	13	14	13	14	19	19	21	21	20	18	19	20	22	22	21	**IZS**	22	13.4	24
3	14	15	14	12	12	11	9	9	6	6	8	9	9	10	10	10	11	10	11	14	15	13	**IZS**	20	20	11.2	24
4	21	23	22	22	23	21	18	15	12	16	19	21	20	21	19	18	17	16	15	17	17	**IZS**	17	18	23	18.6	24
5	15	12	14	14	12	8	5	3	2	5	7	8	**C**	**C**	**C**	**C**	13	12	11	8	**IZS**	11	16	16	16	10.1	24
6	17	16	15	14	14	13	12	10	10	10	10	12	17	19	18	16	17	15	16	**IZS**	21	20	21	20	21	15.3	24
7	22	22	19	19	18	18	16	14	13	14	16	17	17	18	18	19	18	18	**IZS**	18	18	18	17	17	22	17.6	24
8	16	16	16	17	17	16	16	15	15	15	16	16	17	19	19	22	21	**IZS**	24	25	24	24	21	21	25	18.6	24
9	19	18	17	17	18	18	18	18	17	17	17	19	19	18	19	19	**IZS**	19	19	23	25	26	26	26	26	19.7	24
10	26	26	26	25	24	24	23	19	18	16	16	15	20	21	19	**IZS**	20	19	18	17	18	21	24	24	26	20.8	24
11	23	23	23	22	22	21	21	18	17	16	19	21	19	18	**IZS**	17	16	15	16	17	28	28	24	25	28	20.4	24
12	24	23	27	26	26	21	20	18	19	20	19	19	19	**IZS**	18	16	14	12	10	10	9	8	15	15	27	17.7	24
13	19	17	13	19	22	26	22	16	14	12	13	12	**IZS**	15	15	13	13	12	11	12	11	12	13	16	26	15.1	24
14	18	22	26	26	27	29	30	30	30	30	30	**IZS**	33	32	32	32	27	21	21	22	17	14	18	17	33	25.4	24
15	15	19	21	23	22	22	21	19	18	17	**IZS**	23	24	28	28	26	27	27	29	30	30	28	26	23	30	23.7	24
16	21	29	31	32	32	34	33	29	29	**IZS**	30	30	31	30	30	30	28	27	26	27	26	17	13	15	34	27.4	24
17	10	8	14	9	7	13	17	16	**IZS**	18	21	23	27	28	31	31	31	31	31	30	28	26	25	24	31	21.7	24
18	23	22	21	21	21	19	20	**IZS**	19	17	17	17	17	15	14	12	9	8	10	9	15	19	20	20	23	16.7	24
19	20	15	20	25	26	25	**IZS**	26	27	29	28	27	27	27	26	26	25	26	25	16	11	12	16	14	29	22.6	24
20	9	15	15	12	15	**IZS**	21	19	19	20	21	24	25	24	24	23	22	22	22	21	21	21	19	21	25	19.8	24
21	21	21	20	20	**IZS**	19	18	16	16	15	15	13	16	17	17	15	13	9	10	3	2	14	18	22	22	15.2	24
22	20	22	21	**IZS**	23	23	21	20	19	19	17	15	22	26	33	33	34	33	33	**35**	**35**	34	33	32	**35**	26.2	24
23	33	33	**IZS**	30	30	30	30	29	29	30	32	34	34	34	34	34	32	30	28	28	26	18	23	25	34	29.8	24
24	26	**IZS**	27	26	29	26	25	21	20	22	23	23	23	23	20	16	15	14	12	17	14	17	23	24	29	21.1	24
25	**IZS**	26	25	23	22	16	4	6	3	9	24	28	33	34	33	26	22	23	22	22	21	16	10	**IZS**	34	20.4	24
26	17	16	17	22	32	33	35	35	35	33	33	34	34	34	34	33	33	31	27	28	28	25	**IZS**	23	35	29.2	24
27	25	25	23	23	24	24	21	9	7	9	16	18	20	24	24	22	4	2	1	2	4	**IZS**	2	2	25	14.4	24
28	3	5	5	3	4	4	1	2	4	6	13	16	34	17	19	15	6	2	3	4	**IZS**	10	10	11	34	8.6	24
29	10	11	15	17	21	24	26	24	22	26	28	29	30	31	32	32	30	29	29	**IZS**	31	29	29	28	32	25.3	24
30	28	28	27	28	24	24	24	21	22	23	25	28	30	30	31	31	26	18	**IZS**	24	25	25	25	25	31	25.7	24
HOURLY MAX	33	33	31	32	32	34	35	35	35	33	33	34	34	34	34	34	34	33	33	35	35	34	33	32			
HOURLY AVG	19.2	18.9	19.2	19.6	20.3	20.1	19.0	17.4	17.1	17.4	19.5	20.2	23.5	23.3	23.5	22.4	20.0	18.3	18.2	18.0	19.5	18.9	18.8	19.5			

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

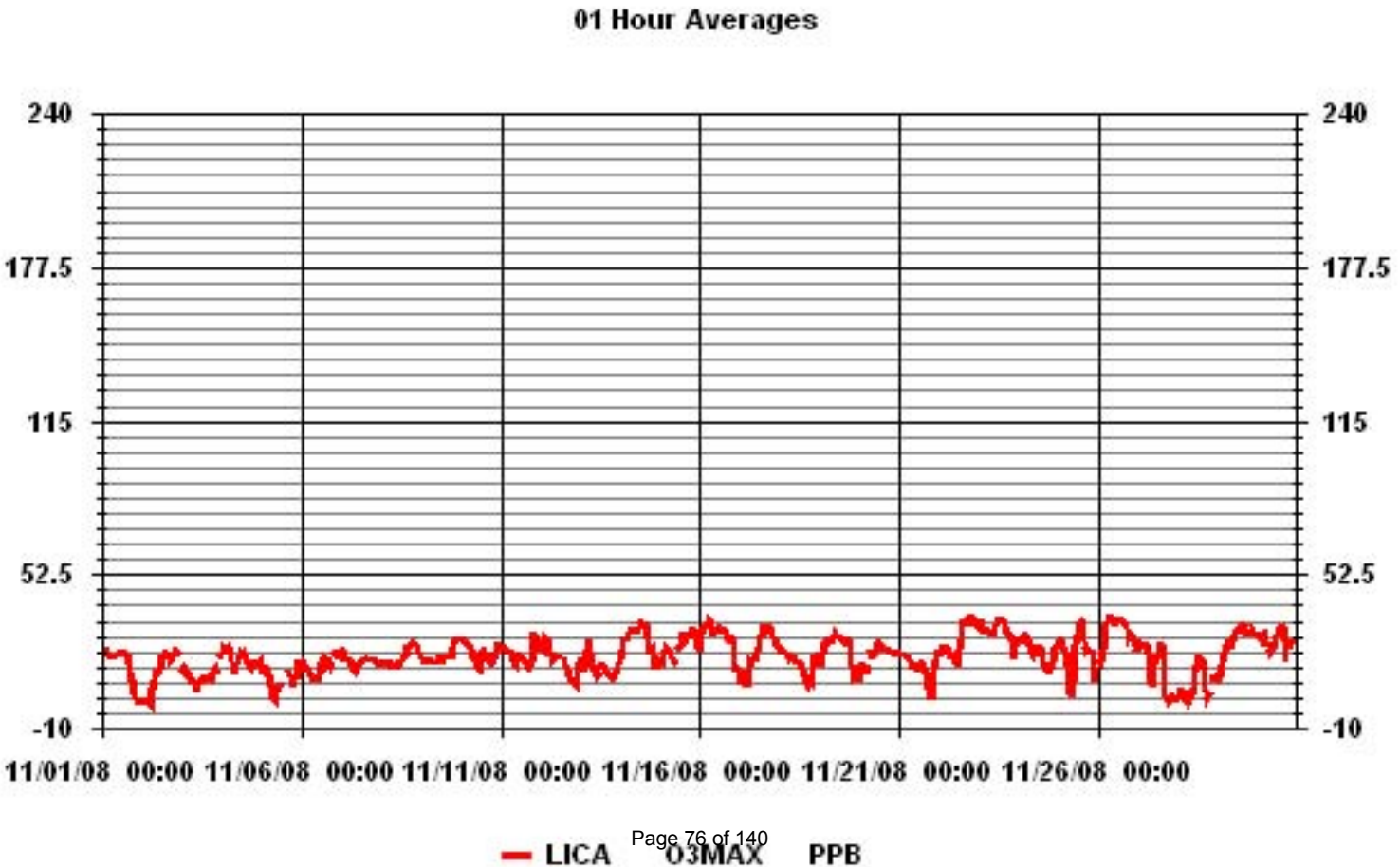
NUMBER OF NON-ZERO READINGS: 683

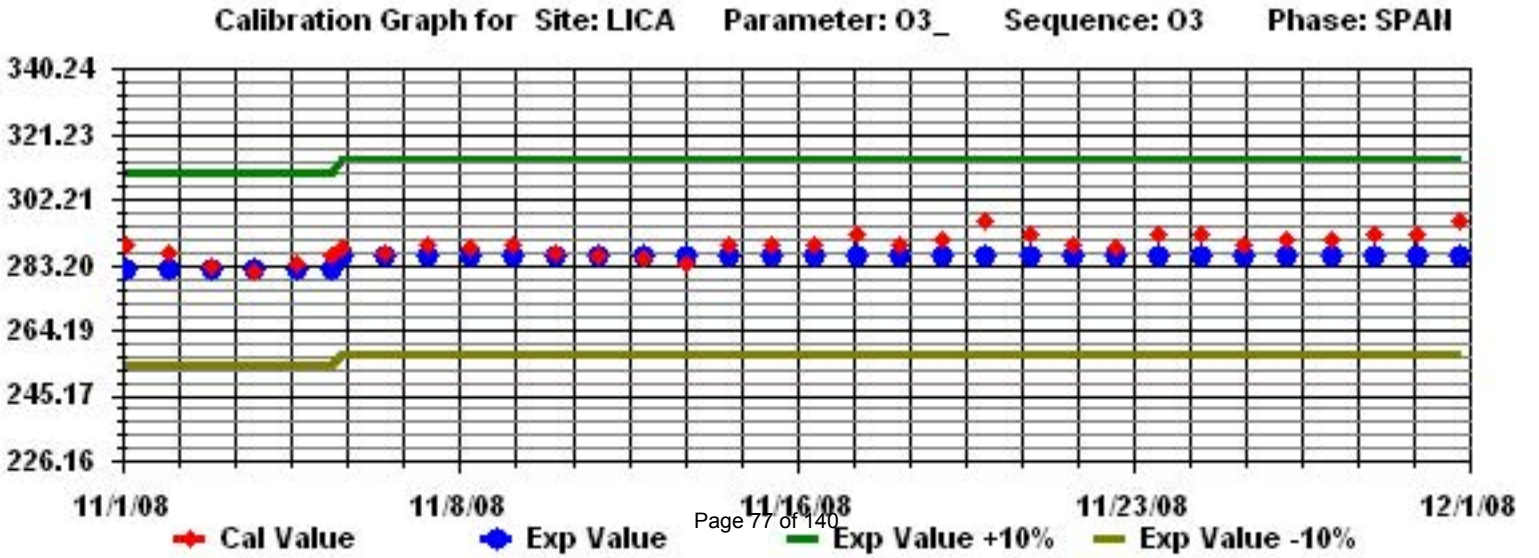
MAXIMUM INSTANTANEOUS VALUE: 35 PPB @ HOUR(S) 19,20 ON DAY(S) 22

IZS CALIBRATION TIME: 32 HRS OPERATIONAL TIME: 720 HRS

MONTHLY CALIBRATION TIME: 4 HRS

STANDARD DEVIATION: 7.67


01 Hour Averages
240
177.5
115
52.5
-10
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA O3MAX PPB


Calibration Graph for Site: LICA Parameter: O3_ Sequence: O3 Phase: SPAN
340.24
321.23
302.21
283.20
264.19
245.17
226.16
11/1/08
11/8/08
11/16/08
11/23/08
12/1/08
Cal Value
Exp Value
Exp Value +10%
Exp Value -10%

Ambient Temperature

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

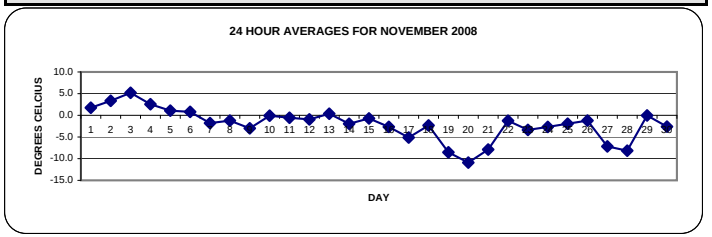
AMBIENT TEMPERATURE hourly averages (Degrees C)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	1.9	1.5	1.3	1.2	1.1	1	1.1	0.9	1.1	2	3.6	4.6	5.1	5.4	6.8	7.1	5.8	2.5	0.2	-1.1	-1.9	-2.6	-3	-3.6	7.1	1.8	24
2	-3.8	-3.8	-3.8	-4.3	-4.1	-3.3	-0.9	0.9	3.1	3.7	4.1	4.9	6	6.9	7.5	**8.4**	8	7.8	8	7.8	8.3	7.8	6.3	4.8	**8.4**	3.3	24
3	5.2	5.6	5.5	5	4.9	4.7	4.8	4.7	4.8	5.1	5.3	5.8	6.3	6.8	6.5	5.8	5.3	4.5	4.2	4.3	4.5	4.8	5.1	5.1	6.8	**5.2**	24
4	4.9	4.4	4.1	4	3.2	2.1	1.9	1.9	1.8	2.3	2.9	3.1	4.2	4.6	4.3	3.4	1.9	0.6	0.2	0.9	1	1.2	1.3	1.3	4.9	2.6	24
5	0.9	0.8	0.5	-0.1	0.1	0.2	0.2	0.5	0.7	1.3	1.7	2	2.4	2.6	2.3	2.1	1.8	1.3	1.2	1.1	0.9	0.6	0.4	0.3	2.6	1.1	24
6	0.1	0	-0.1	-0.2	-0.3	-0.3	-0.2	-0.2	0.1	0.5	1.5	2.3	3.1	3.9	4.2	3.7	2.4	0.7	0.1	-0.1	0	-0.4	-0.7	-0.9	4.2	0.8	24
7	-0.9	-1	-1.5	-1.8	-1.9	-2	-2.3	-2.6	-2.7	-2.7	-2.5	-2.1	-1.7	-1.4	-1.2	-1.2	-1.2	-1.4	-1.5	-1.7	-1.8	-1.9	-2	-2.1	-0.9	-1.8	24
8	-2.2	-2.3	-2.4	-2.5	-2.5	-2.4	-2.5	-2.6	-2.5	-1.9	-1.3	-0.4	1	2.3	2.7	2.2	0.8	-0.6	-0.9	-1.4	-1.8	-2.3	-2.7	-3.3	2.7	-1.2	24
9	-3.9	-4.3	-4.3	-4.6	-4.8	-4.8	-4.8	-4.7	-4.7	-4.5	-4.1	-3.5	-3.1	-2.8	-2.2	-2.1	-2	-1.7	-1.7	-1	-0.6	-0.6	-0.6	-0.5	-0.5	-3.0	24
10	-0.4	-0.6	-0.9	-1.1	-1.2	-1.3	-1.2	-1.3	-1.1	-0.7	-0.4	0.1	1	1.5	1.5	1.3	0.9	0.7	0.4	0.3	0.3	0.2	0	-0.1	1.5	-0.1	24
11	-0.3	-0.4	-0.6	-0.8	-1	-1	-1.2	-1.2	-1.2	-0.9	-0.6	-0.2	0.1	-0.1	0.1	0	-0.1	-0.3	-0.4	-0.5	-0.6	-0.6	-0.7	-0.9	0.1	-0.6	24
12	-1.2	-1.4	-1.6	-1.8	-2.1	-2.1	-2.2	-2.1	-1.9	-1.9	-1.6	-1.4	-1.2	-1	-0.7	-0.6	-0.5	-0.4	-0.2	0	0.2	0.5	1.1	1.6	1.6	-0.9	24
13	1.9	2.4	2	2.2	2.5	2.8	2	1.6	1.4	0.7	0.3	0.2	-0.3	-0.4	-0.3	-0.3	-0.5	-0.7	-1.1	-1.3	-1.5	-1.5	-1.6	-1.6	2.8	0.4	24
14	-1.6	-1.4	-1.2	-1.2	-1.1	-1	-1	-1.7	-1.4	-1.3	-1	-0.6	-0.1	-0.2	0.3	-0.2	-1.3	-2.2	-3	-3.6	-4.4	-5.4	-6.4	-5.8	0.3	-2.0	24
15	-5.5	-4.9	-4.4	-3.8	-3.3	-2.6	-3	-3.2	-2.5	-1.6	0	1.6	2.6	2.7	2.6	2.7	2.4	1.8	1.4	0.8	0.4	0	-0.4	-0.9	2.7	-0.7	24
16	-1.6	-1.5	-1.6	-1.7	-1.7	-1.8	-1.8	-2.3	-2.4	-2.3	-2.1	-1.9	-2	-1.8	-1.7	-1.8	-1.9	-2	-2.2	-2.7	-3.9	-5.8	-7.3	-8.2	-1.5	-2.7	24
17	-9.1	-9.5	-9.8	-9.8	-9.9	-9.1	-6.9	-6.7	-6.4	-5.6	-4.5	-3.5	-2.5	-1.9	-1.9	-2	-2.3	-2.6	-2.9	-3	-3.2	-3.2	-3.3	-3.5	-1.9	-5.1	24
18	-4	-4.5	-4.3	-4.3	-4.3	-4.4	-4.2	-4	-4	-3.5	-3	-2.3	-1.5	-0.9	-0.6	-0.4	-0.1	0.2	0.7	0.6	-0.2	-1.7	-2.4	-2.8	0.7	-2.3	24
19	-3.3	-4.1	-4.4	-5.5	-6.4	-6.6	-6.9	-7.1	-7.5	-7.7	-7.9	-7.9	-8.2	-7.9	-8.1	-8.9	-10.3	-11.4	-12.8	-13.5	-12.3	-11.9	-11.8	-12.4	-3.3	-8.5	24
20	-14.7	-15.4	-15.2	-16.1	**-16.2**	-14.8	-13.8	-13.8	-13.7	-12.5	-11.3	-9	-6.6	-5.7	-5.7	-6.1	-7.3	-8	-8.7	-9.2	-9.2	-9.3	-9.8	-9.7	-5.7	-10.9	24
21	-9.6	-9.8	-9.8	-10.5	-10.9	-11.5	-12.1	-11.6	-11.6	-10.4	-9	-7.4	-5	-2.6	-1.7	-2.2	-4.1	-6.1	-7.7	-8.7	-9.2	-7.9	-4.8	-5.1	-1.7	-7.9	24
22	-4.9	-3.8	-3.7	-3.5	-3.1	-2.9	-3.3	-3.2	-3.7	-3	-3.2	-2.8	-1.5	0.9	3	3	2.2	1.4	0.9	1.3	0.9	0.3	-0.2	-1.1	3.0	-1.3	24
23	-1.2	-1.9	-2.9	-3.3	-3.6	-4.1	-4.8	-5.4	-5.6	-4.3	-2.2	-0.7	0	0.4	0.7	-0.6	-1.8	-3.1	-4.4	-4.2	-5.9	-7.7	-7.9	-6.3	0.7	-3.4	24
24	-5.1	-4.7	-5.5	-5.4	-5.2	-5.6	-5.8	-5.8	-5.3	-4.2	-2.2	-0.7	0.5	0.6	0.4	-0.4	-0.8	-0.5	-1.4	-0.6	-1.5	-1.9	-1.3	-1.8	0.6	-2.7	24
25	-2.3	-2.9	-4.3	-4.6	-6.2	-8.1	-9	-9.4	-9	-6.4	-1.1	2.2	4.4	5.7	6.1	4.4	2.2	0.6	0.5	0.2	-0.8	-1.7	-3.2	-3.8	6.1	-1.9	24
26	-3.4	-1.9	-0.8	0.3	0.9	1.2	0.8	0	-0.6	-0.9	0.5	1.6	2.1	2.1	1.9	1.1	-0.4	-1.9	-2.9	-3.1	-3.7	-6	-7.8	-8.2	2.1	-1.2	24
27	-6.6	-6.2	-8.4	-7.8	-7.9	-8.3	-11.1	-11.9	-12	-9.7	-5.5	-3.4	-1.6	-0.1	0.6	-1	-3.4	-5.9	-8.2	-9.8	-11.2	-11.4	-11.2	-10.1	0.6	-7.2	24
28	-9.8	-10.3	-11.2	-11.3	-12.5	-13.1	-13.7	-14.3	-14.6	-12	-7.8	-6.4	-5	-3.8	-3.7	-5.3	-6.6	-7.9	-7.4	-5.8	-4.5	-3.5	-2.7	-2.7	-2.7	-8.2	24
29	-2.6	-2.1	-1.4	-0.9	0.1	-0.7	-0.8	-1.8	-2.4	-0.6	1.3	2.6	3.4	4.3	4.1	3.3	2.1	1	-1	0.4	-1.6	-2.4	-2.2	-2.9	4.3	0.0	24
30	-3	-3.2	-3.7	-3.9	-4	-4.8	-4.9	-5.4	-5.9	-4.8	-2.7	-1.2	0.1	1	0.7	-0.3	-1.7	-3.5	-3.3	-3	-2.4	-1.6	-0.6	-0.5	1.0	-2.6	24
HOURLY MAX	5.2	5.6	5.5	5.0	4.9	4.7	4.8	4.7	4.8	5.1	5.3	5.8	6.3	6.9	7.5	8.4	8.0	7.8	8.0	7.8	8.3	7.8	6.3	5.1			
HOURLY AVG	-2.9	-2.9	-3.1	-3.3	-3.4	-3.5	-3.6	-3.7	-3.7	-2.9	-1.8	-0.8	0.1	0.7	1.0	0.5	-0.4	-1.2	-1.8	-1.9	-2.2	-2.5	-2.7	-2.9			

STATUS FLAG CODES

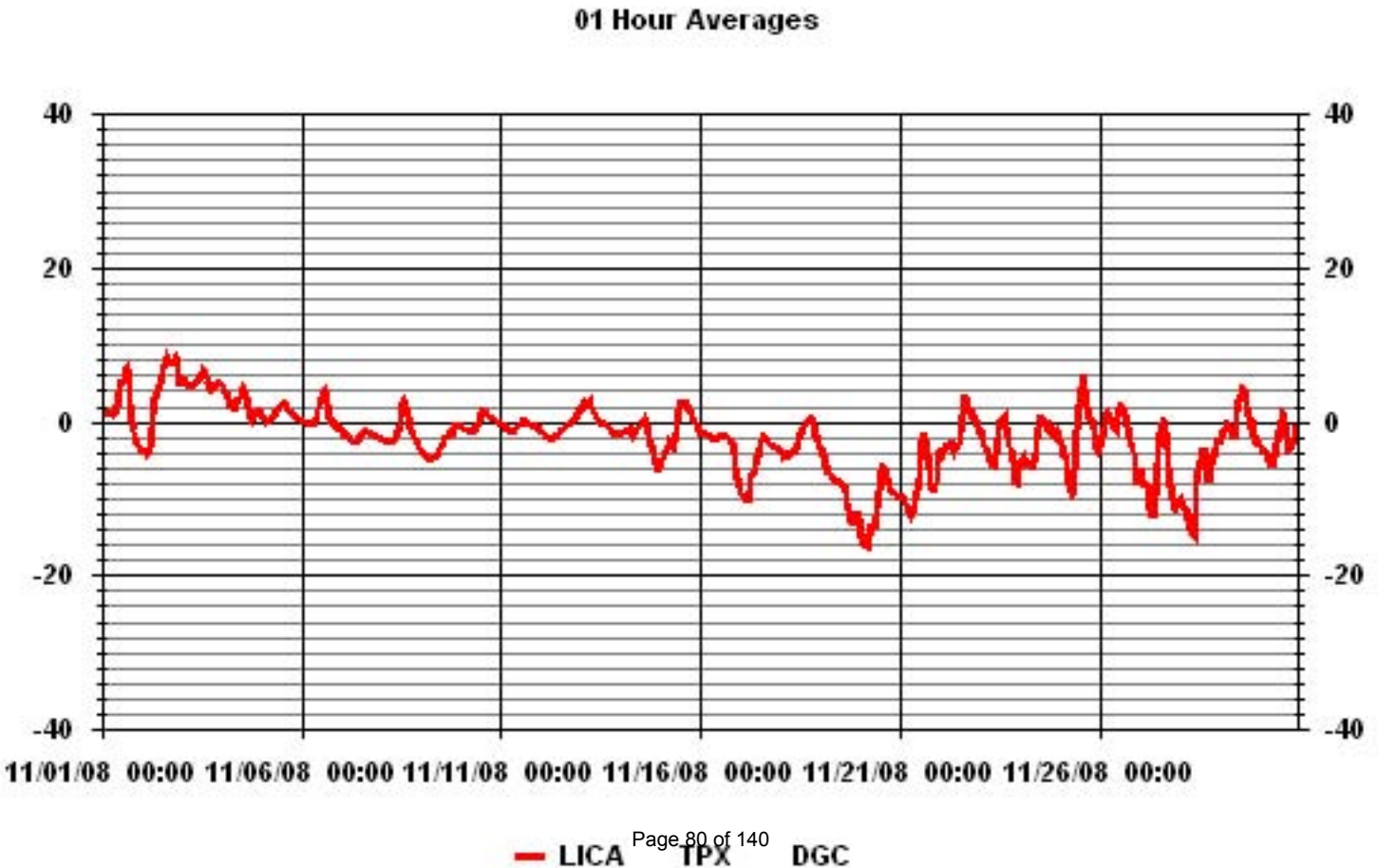
S	- OUT OF SERVICE	OD	- OUTSIDE DECTECTION LIMITS
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE



MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	-16.2	^{o}C	@ HOUR(S)	4	ON DAY(S)	20
MAXIMUM 1-HR AVERAGE:	8.4	^{o}C	@ HOUR(S)	15	ON DAY(S)	2
MAXIMUM 24-HR AVERAGE:	5.2	^{o}C			ON DAY(S)	3
					VAR-VARIOUS	

CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:	720	HRS
			AMD OPERATION UPTIME:	100.0	%
STANDARD DEVIATION:	4.37		MONTHLY AVERAGE:	-2.03	^{o}C


01 Hour Averages
40
20
0
-20
-40
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA TPX DGC

Relative Humidity

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

RELATIVE HUMIDITY hourly averages (%)

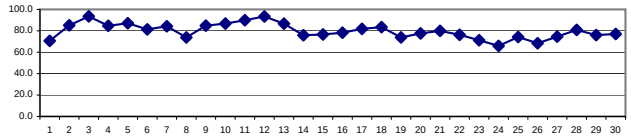
MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	63.0	64.0	64.9	65.6	66.1	67.4	67.7	68.6	67.6	64.4	58.3	56.0	56.0	59.8	59.3	66.0	72.5	81.8	85.3	86.3	87.9	89.3	88.0	89.3	89.3	70.6	24
2	88.9	87.5	88.9	90.1	90.8	91.8	92.9	93.9	89.0	87.0	86.0	87.6	86.0	82.8	81.4	78.6	81.1	80.6	78.8	78.3	74.5	75.9	82.4	88.7	93.9	85.1	24
3	88.9	87.5	88.8	92.6	93.9	95.3	96.2	96.7	97.4	97.6	**98.0**	97.3	96.2	95.2	94.6	94.6	93.7	93.3	92.8	92.0	90.3	90.3	89.5	91.7	**98.0**	**93.5**	24
4	93.0	93.7	92.2	90.2	91.8	94.0	93.7	92.7	92.9	89.3	83.6	79.2	73.6	73.6	74.4	76.4	80.3	84.1	86.9	84.1	81.0	78.1	77.5	76.9	94.0	84.7	24
5	80.6	83.0	86.5	94.7	94.4	93.6	93.8	93.2	92.4	87.0	82.5	80.5	77.7	76.3	81.3	83.0	85.1	87.9	88.9	88.3	89.9	91.3	89.6	88.2	94.7	87.1	24
6	88.3	89.0	90.0	90.4	90.7	90.9	91.0	90.9	89.2	87.4	83.3	80.3	75.1	69.8	65.3	66.1	70.0	75.6	77.9	78.2	76.4	78.2	79.2	79.6	91.0	81.4	24
7	79.1	79.9	82.7	84.3	85.2	86.4	87.3	88.2	87.8	87.7	88.4	88.5	86.0	84.5	82.5	81.6	82.9	81.5	82.3	81.4	81.7	82.7	84.2	85.5	88.5	84.3	24
8	86.5	86.8	86.6	85.3	84.2	83.9	82.1	82.3	81.6	78.5	75.7	72.9	68.5	65.4	65.0	66.0	69.0	67.3	64.7	63.5	62.4	62.4	63.5	66.9	86.8	73.8	24
9	70.1	72.1	73.2	75.1	76.4	77.2	78.1	78.4	80.4	86.9	86.8	85.4	87.3	88.2	89.8	90.8	91.9	91.8	92.0	92.8	94.3	95.1	92.5	89.1	95.1	84.8	24
10	87.5	86.5	86.2	85.7	85.9	85.0	85.7	87.8	89.5	89.3	89.6	89.4	87.1	84.8	85.0	84.9	86.6	87.3	87.5	87.8	87.7	86.7	84.4	84.9	89.6	86.8	24
11	85.9	86.1	87.0	87.4	88.3	88.8	92.2	94.3	94.8	93.0	92.0	88.8	87.7	89.6	87.6	88.9	90.5	92.0	92.4	92.5	90.8	89.0	88.6	89.3	94.8	89.9	24
12	91.2	91.9	92.6	93.1	93.9	94.6	94.1	93.8	93.4	93.5	93.0	91.1	93.5	93.7	92.1	91.6	92.6	92.9	93.7	95.2	95.6	95.5	95.0	94.5	95.6	93.4	24
13	95.5	91.6	91.3	90.7	90.1	86.9	85.9	85.2	84.8	90.8	89.2	89.8	90.1	85.4	80.7	79.4	80.0	82.5	86.7	87.3	87.5	83.5	83.8	81.4	95.5	86.7	24
14	81.5	82.4	80.3	77.9	77.6	76.6	73.6	73.7	73.8	72.8	70.4	66.9	63.9	65.1	63.5	65.6	71.1	75.9	80.1	80.4	84.0	86.4	89.4	88.6	89.4	75.9	24
15	87.7	85.3	82.6	78.4	77.0	75.6	78.2	81.4	80.1	79.2	76.9	77.3	75.1	73.5	72.1	73.4	73.7	73.4	71.7	69.9	71.2	72.5	75.7	76.8	87.7	76.6	24
16	79.6	78.0	77.6	77.3	77.1	75.8	76.2	81.8	80.4	78.6	76.2	74.4	74.0	73.6	73.0	73.7	74.7	75.2	75.7	76.0	81.6	87.9	90.0	89.3	90.0	78.2	24
17	89.2	88.6	88.2	87.6	87.3	89.1	90.8	90.2	89.1	87.2	83.8	80.7	77.6	72.6	70.2	70.4	70.8	72.6	74.8	76.9	79.7	81.6	82.1	82.9	90.8	81.8	24
18	84.7	86.4	86.6	86.9	86.9	87.1	86.6	86.6	86.3	85.8	84.1	81.9	80.7	80.2	80.8	82.8	84.4	86.5	85.0	81.4	81.5	78.2	77.1	74.4	87.1	83.5	24
19	75.6	73.1	74.4	73.9	71.9	73.7	71.3	74.8	79.0	68.4	65.8	66.0	66.0	62.4	64.0	65.8	71.6	76.5	81.6	84.2	83.2	82.6	83.2	84.0	84.2	73.9	24
20	83.7	84.2	83.6	82.8	82.9	85.5	84.7	83.0	81.6	79.3	78.2	74.5	65.5	61.8	62.1	64.0	70.0	75.5	77.2	79.5	79.6	79.9	81.7	81.2	85.5	77.6	24
21	80.4	80.4	80.3	81.8	82.5	83.1	84.4	83.6	83.3	80.7	80.2	78.5	72.1	65.1	63.4	66.9	76.0	82.3	86.1	87.5	87.3	88.4	82.8	82.2	88.4	80.0	24
22	80.2	74.8	74.0	74.4	73.1	73.2	75.6	76.9	78.5	76.6	89.6	94.5	94.5	88.3	71.1	65.3	63.6	63.9	63.7	63.4	69.8	79.7	83.4	82.4	94.5	76.3	24
23	78.5	76.4	72.1	71.1	71.6	72.8	74.2	75.7	76.0	71.7	65.1	60.5	59.0	57.2	55.3	59.4	63.6	68.0	74.3	74.8	80.3	85.5	85.9	80.2	85.9	71.2	24
24	75.3	72.9	73.5	70.6	67.5	67.5	68.9	71.3	70.8	65.1	58.5	54.7	50.6	51.3	53.9	57.9	60.9	61.4	67.7	67.3	71.7	74.3	72.9	75.7	75.7	65.9	24
25	79.1	82.3	85.2	86.1	87.7	89.2	89.0	89.1	87.9	81.2	69.1	59.9	53.0	48.4	49.0	55.3	62.4	67.4	68.8	70.6	74.9	78.2	83.2	83.8	89.2	74.2	24
26	83.1	80.1	78.3	80.7	72.9	65.8	66.0	68.3	70.1	71.2	62.3	56.3	53.4	51.2	51.6	54.3	59.0	64.3	68.8	68.7	70.7	78.0	82.5	83.4	83.4	68.4	24
27	78.5	75.6	81.1	79.0	78.3	78.4	84.3	86.6	84.1	76.8	67.3	59.5	54.7	50.7	49.2	56.1	66.6	75.5	81.3	84.4	85.5	85.6	85.4	85.4	86.6	74.6	24
28	85.6	85.1	86.5	86.4	87.5	85.7	86.1	84.8	83.5	80.9	76.9	77.1	72.8	69.1	69.2	75.1	81.0	84.5	84.3	81.4	78.6	77.3	76.5	84.2	87.5	80.8	24
29	89.4	86.1	80.4	79.2	77.0	81.0	84.2	88.8	90.4	85.0	77.8	71.1	64.9	59.2	58.6	61.5	66.6	69.9	76.6	67.7	74.8	78.3	77.5	78.3	90.4	76.0	24
30	78.7	80.3	82.3	83.3	84.0	86.6	86.6	87.5	88.5	84.2	77.5	72.9	67.6	62.4	62.0	66.8	71.7	77.7	78.1	77.1	74.5	74.0	72.4	72.4	88.5	77.0	24
HOURLY MAX	95.5	93.7	92.6	94.7	94.4	95.3	96.2	96.7	97.4	97.6	98.0	97.3	96.2	95.2	94.6	94.6	93.7	93.3	93.7	95.2	95.6	95.5	95.0	94.5			
HOURLY AVG	83.0	82.4	82.6	82.8	82.5	82.8	83.4	84.3	84.1	81.9	78.9	76.5	73.7	71.4	70.3	72.1	75.5	78.3	80.2	80.0	81.0	82.2	82.7	83.0			

STATUS FLAG CODES

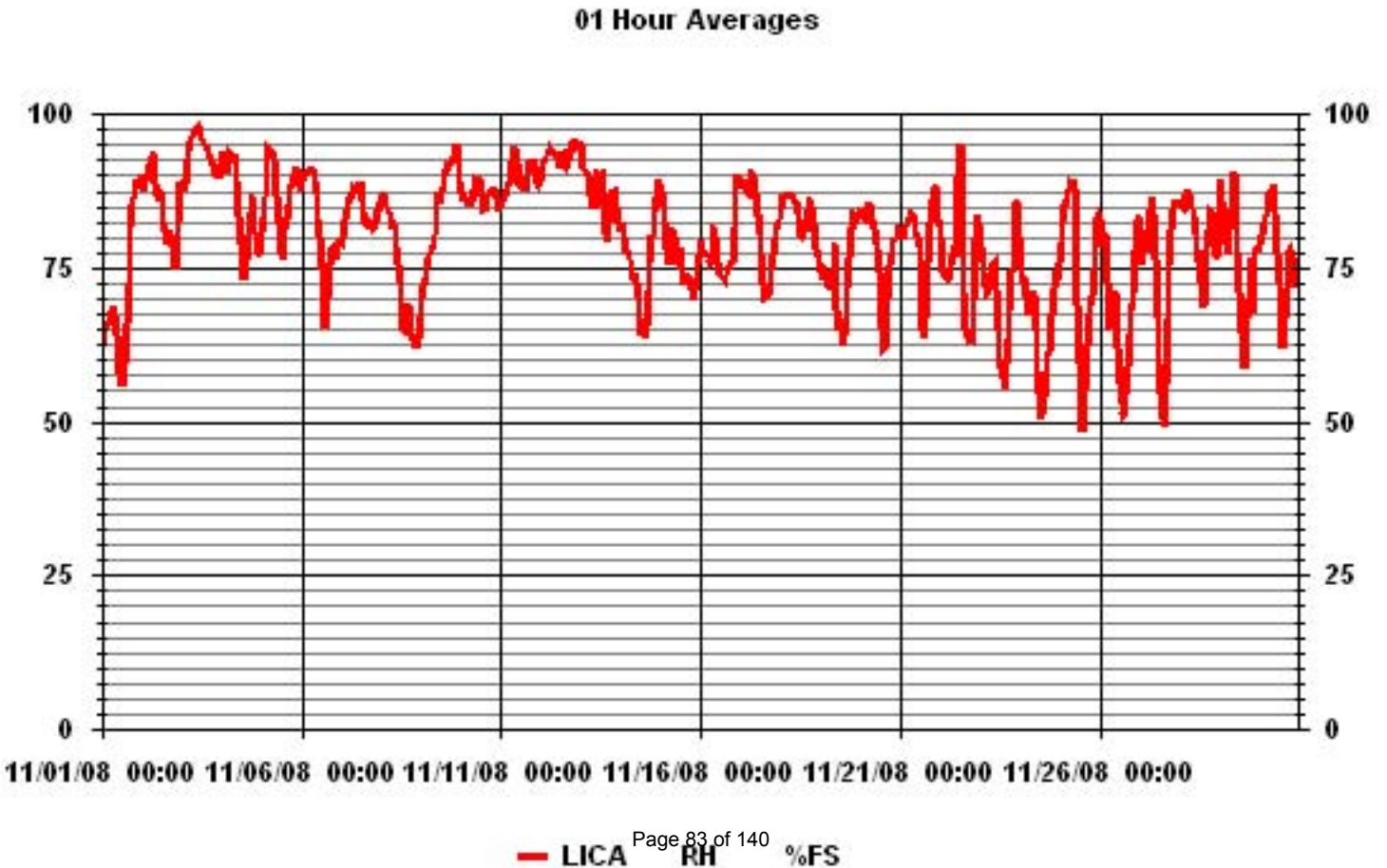
S	- OUT OF SERVICE	IZS	- IZS - DAILY ZERO/SPAN CHECK
N	- INVALID DATA	M	- MISSING DATA
D	- INSTRUMENT DRIFT	P	- POWER FAILURE
C	- CALIBRATION	NA	- NOT APPLICABLE

24 HOUR AVERAGES FOR NOVEMBER 2008



MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	98.0	%	@ HOUR(S)	10	ON DAY(S)	3	
MAXIMUM 24-HR AVERAGE:	93.5	%			ON DAY(S)	3	
CALIBRATION TIME:	0	HRS	OPERATIONAL TIME:		720	HRS	
			AMD OPERATION UPTIME:		100.0	%	
STANDARD DEVIATION:	10.01		MONTHLY AVERAGE:		79.80	%	


01 Hour Averages
100
75
50
25
0
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA RH %FS

Vector Wind Speed

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

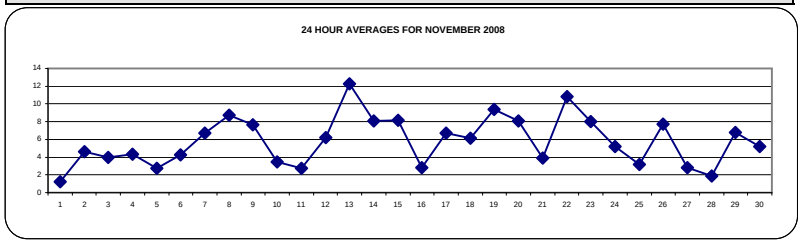
VECTOR WIND SPEED (WS) hourly averages (km/hr)

MST

HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
DAY																											
1	10	10.3	9.3	8.6	8.6	3.7	4.6	5.1	3.7	5.5	1	6.4	7.1	6.7	7.3	7.3	4.3	1.1	0.7	0.4	0.2	0.3	0.2	1.1	10.3	1.2	24
2	0.8	0.4	1.3	0.1	2.3	2.7	2.8	5	6.7	9.7	8.9	7.1	10.3	8.9	9.7	8.1	6.3	5.4	3.2	4.4	5.4	4.2	2	2.4	10.3	4.6	24
3	4.6	5	3.1	3.5	1.4	0.7	2.6	0.6	1.4	1.1	4.9	6.6	6.3	6.6	8.6	8.5	10.1	8.9	8.3	9.9	13.2	8.1	6.5	6.4	13.2	4	24
4	6	7.7	10	10.1	8	7.6	6.7	5.1	6.8	7.3	7.6	8.6	7	6.9	3.4	4.6	4	5.2	3.5	5.4	3.8	5	3.6	2.3	10.1	4.3	24
5	1.2	1.2	2.7	5.4	0.9	0.1	1.7	1	0.7	1.6	2.4	C	C	C	6.2	4.5	1.8	1	0.1	2	5.4	5.3	7	5	7.0	2.7	24
6	4.1	2.2	6.1	5.8	5.7	6	5.5	3.4	1.9	2.3	3.4	2.7	2.8	2.3	3.9	5.4	6.6	6.5	6.5	5.8	4.6	3.3	3.1	2.9	6.6	4.3	24
7	4.6	5.3	5.3	5.3	4.7	5.1	6.7	7.5	6.4	7.5	9.4	7.9	7.2	6	7.3	6	5.9	6.4	6.2	7.7	7.9	7.8	8.5	7.7	9.4	6.7	24
8	8.1	8.5	10.3	9.2	9.1	9.8	8.8	10.1	10.5	10.7	11.2	10	9.2	10.1	10	9.2	6.5	7.4	7.3	7.2	7.7	5.8	6.5	7.2	11.2	8.8	24
9	7.5	8.2	6.7	7.7	7.5	9.8	7.3	5.8	8.7	8.6	8.4	8.3	8.1	7.2	6.3	8.1	5.9	5.3	5.7	6.6	8.9	9.7	9.7	7.5	9.8	7.6	24
10	2.3	3.7	5.9	5.4	4	3.6	1.3	1.6	2.5	4.9	4.5	2.9	3.1	6	4.5	4.1	2.5	0.1	2.4	1.6	1.5	4.6	6	4	6.0	3.5	24
11	3.4	2.6	3.4	4	2.3	2.1	2	0.8	1	1.5	3	2.9	2	3.7	1.6	1.8	2.5	3	4.1	4.7	3.3	2.8	3.1	3.6	4.7	2.7	24
12	5	3.3	8.1	9.2	10.1	10.6	12.3	9.2	7.1	9.7	10.4	9.2	6.4	5.6	4.7	4.5	3.6	3.2	2.2	2.7	2	1.3	4.6	3.3	12.3	6.2	24
13	4.4	7.4	8.6	8.9	9.5	9.4	11.9	12.3	13.5	9.7	12.5	11	14.2	16.3	**18.4**	15.9	14.9	15.3	14.7	14.5	13.2	13.9	11.6	13	**18.4**	**12.3**	24
14	9.7	7.6	13.5	10.6	8.6	11.8	13.6	12.2	9	13.2	12.7	14.3	13.3	9.7	9.5	8.1	5.2	2.6	1.8	0.9	1.1	1.1	2	1.7	14.3	8.1	24
15	1	1.5	3.8	6.2	6.6	3.4	8.2	4.9	1.7	4.4	8.1	8.9	11.3	14.1	13.6	9.1	13.4	14.5	14.9	11.3	10.5	8.9	9.6	5.5	14.9	8.1	24
16	3.1	5.7	5.2	3.9	3.2	2.3	1.2	3.7	3.3	3.4	3.2	3.6	4.3	3.2	3	2.2	1.4	1.8	3.7	2.9	1.1	0.3	1	0.4	5.7	2.8	24
17	0	1	1	0.8	0.7	2	6.9	6.9	7.2	7	7.9	9.4	10.2	11.4	12.2	10.4	9.3	10.6	8.1	7.7	7.1	6.6	8.9	7	12.2	6.7	24
18	5	5.2	4.9	4.7	2.9	2.9	1	1.7	3.8	3.4	5.4	6.4	6.9	5.5	6.7	6.3	4.3	4	7.1	10.5	10.8	13.7	12.7	11.7	13.7	6.1	24
19	11.9	12.9	11.2	14.9	15.5	12.2	13.6	9.6	11.3	14.3	15.1	14.5	11.3	10.9	10.1	10	6.4	4.2	2	4.7	2.5	2.5	1.7	1.7	15.5	9.4	24
20	2.4	0.6	0.7	0.7	1.6	4	5.2	6.8	8.5	9.7	10.6	11.2	11.4	12.9	13.9	13.2	13	12.7	11.1	10.9	10.1	10.1	5	8.1	13.9	8.1	24
21	6.2	8.5	7	6.5	6.3	5.2	2.8	3	4.5	4.2	2.5	4.3	3.7	6.2	4.9	1.7	2.4	1.1	0.8	1.2	1.2	2.6	2.8	4.1	8.5	3.9	24
22	6.4	12.5	14.9	13.2	16.8	14.8	8.4	2.9	3.9	1.7	6.1	11.5	11.9	14	17.2	14.7	11.2	8.9	11.7	15.4	11.7	11.5	10	9.3	17.2	10.9	24
23	11.6	9.9	9.9	8.9	9.1	9.1	8.7	11.3	10.7	10.4	9.4	10.1	11	12.1	9.7	8.1	6.4	5.6	6.4	5.5	3.2	0.3	2	2.2	12.1	8.0	24
24	4	6.9	6.4	8.8	8.5	6.3	5.1	1.8	3.1	1.9	3.7	4.2	7.7	6.8	6.2	4.8	4.4	4	3	4.5	2.1	5.3	7.3	7.3	8.8	5.2	24
25	5.9	5.1	5	5.2	2.6	0.7	0.9	2.4	0.4	0.8	2.7	3.2	5	3.1	3	3.6	5.2	3.7	5.4	4.4	2.7	1.3	0.8	2.4	5.9	3.1	24
26	3.8	6.3	4.7	4.3	6.7	10.8	10.4	8.8	8.4	8.8	11.2	11.8	11.8	12.4	12.1	11.6	7	6.5	6.8	7	4.2	3.6	2.4	4.1	12.4	7.7	24
27	6.1	6.9	5.5	5.6	5.9	5.6	0.4	1.7	0.3	2.8	2.9	4.3	3.5	3.1	2.5	2.2	2.4	0.7	0.1	0	0.3	1.4	1.4	1.1	6.9	2.8	24
28	2.5	0.9	1.2	0.3	1.1	1.2	0.5	0.8	3.2	1.1	1.1	3.2	4.1	5.2	4.2	3.5	1.1	1.1	0.8	0.8	2.1	2.5	1.4	1.7	5.2	1.9	24
29	1.2	3.3	6.3	7.7	10.2	9.3	6.5	4.7	5.2	4.9	6.1	8.8	9.2	8.5	11.2	11.5	7	4.1	4.3	6.5	3.1	6.1	8	9.1	11.5	6.8	24
30	6.7	6	6.7	5.8	6	5.5	6.3	6.5	5.7	6	5.2	7	7	7.4	6.7	4.6	3.4	1	1.2	1.8	1.6	4.2	6.3	6.9	7.4	5.2	24
HOURLY MAX	11.9	12.9	14.9	14.9	16.8	14.8	13.6	12.3	13.5	14.3	15.1	14.5	14.2	16.3	18.4	15.9	14.9	15.3	14.9	15.4	13.2	13.9	12.7	13.0			
HOURLY AVG	5.0	5.6	6.3	6.4	6.2	5.9	5.8	5.2	5.4	5.9	6.7	7.6	7.8	8.0	8.0	7.1	5.9	5.2	5.1	5.6	5.1	5.1	5.2	5.0			

STATUS FLAG CODES

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

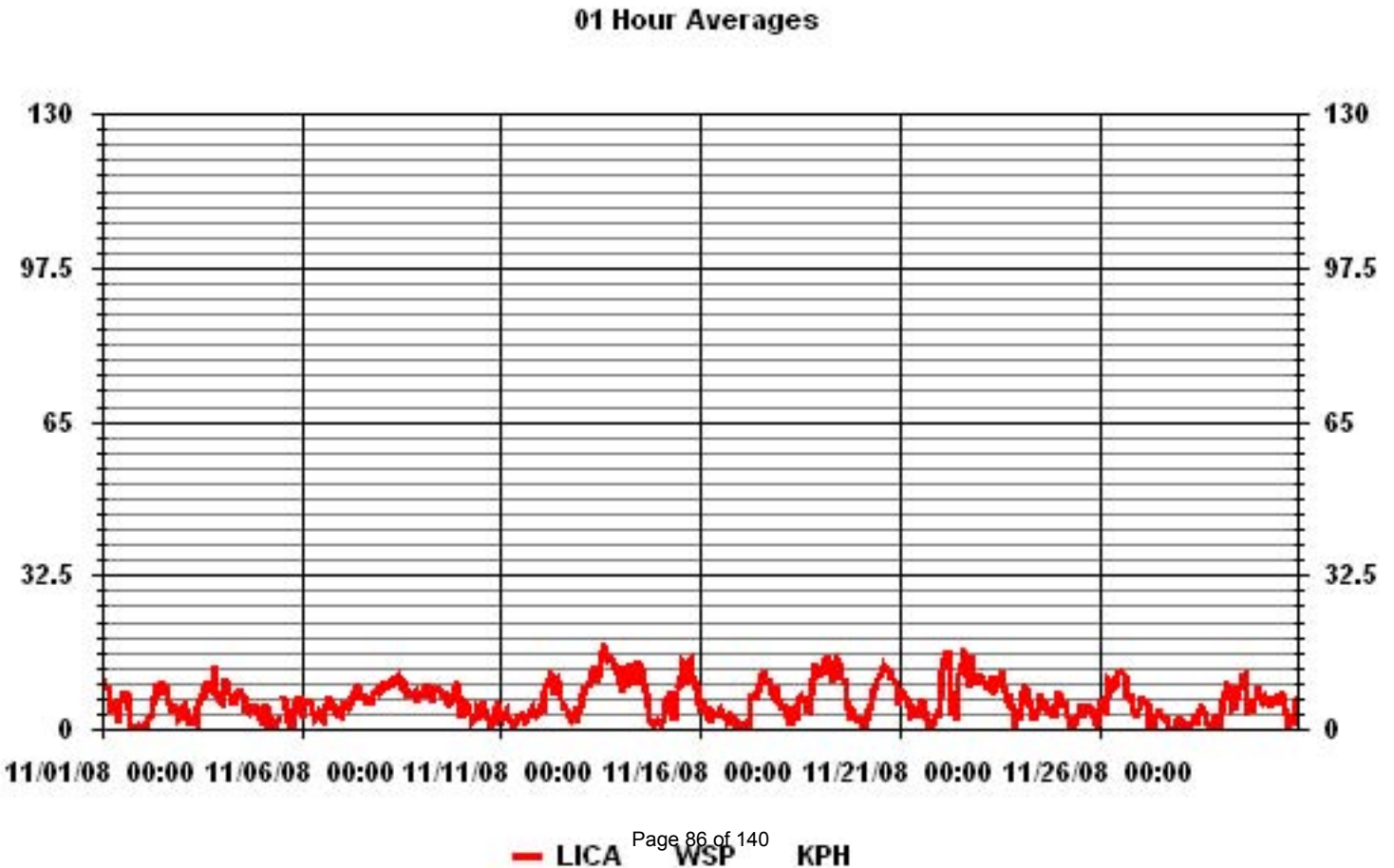


LAST CALIBRATION:	November 05, 2008

MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE:	18.4	KPH	@ HOUR(S)	14	ON DAY(S)	13
MAXIMUM 24-HR AVERAGE:	12.3	KPH			ON DAY(S)	13

CALMS (≤ 0 KPH)	2.02	%	OPERATIONAL TIME:	720	HRS
MONTHLY CALIBRATION TIME:	3	HRS	AMD OPERATION UPTIME	100.0	%
STANDARD DEVIATION:	3.82		MONTHLY AVERAGE:	6.05	KPH


01 Hour Averages
130
97.5
65
32.5
0
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA WSP KPH

LICA
WSP / WD Joint Frequency Distribution (Percent)

November 2008

Distribution By % Of Samples

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

Wind Parameter : WD
Instrument Height : 10 Meters

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	.83	.41	.97	2.37	4.46	6.27	10.04	2.64	2.09	2.37	7.67	5.16	2.37	.83	.97	.41	49.93
<	12.0	.00	.00	.00	.00	3.48	6.97	8.50	.00	.00	.00	2.78	6.69	5.29	4.04	2.09	.27	40.16
<	20.0	.00	.00	.00	.00	.00	.27	1.39	.00	.00	.00	.00	.27	.69	3.06	1.95	.13	7.81
<	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	.83	.41	.97	2.37	7.94	13.52	19.94	2.64	2.09	2.37	10.46	12.13	8.36	7.94	5.02	.83	

Calm : 2.09 %

Total # Operational Hours : 717

Distribution By Samples

Direction

	Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq
<	6.0	6	3	7	17	32	45	72	19	15	17	55	37	17	6	7	3	358
<	12.0					25	50	61				20	48	38	29	15	2	288
<	20.0						2	10					2	5	22	14	1	56
<	29.0																	
<	39.0																	
>=	39.0																	
	Totals	6	3	7	17	57	97	143	19	15	17	75	87	60	57	36	6	

Calm : 2.09 %

Total # Operational Hours : 717

Logger : 01 Parameter : WSP

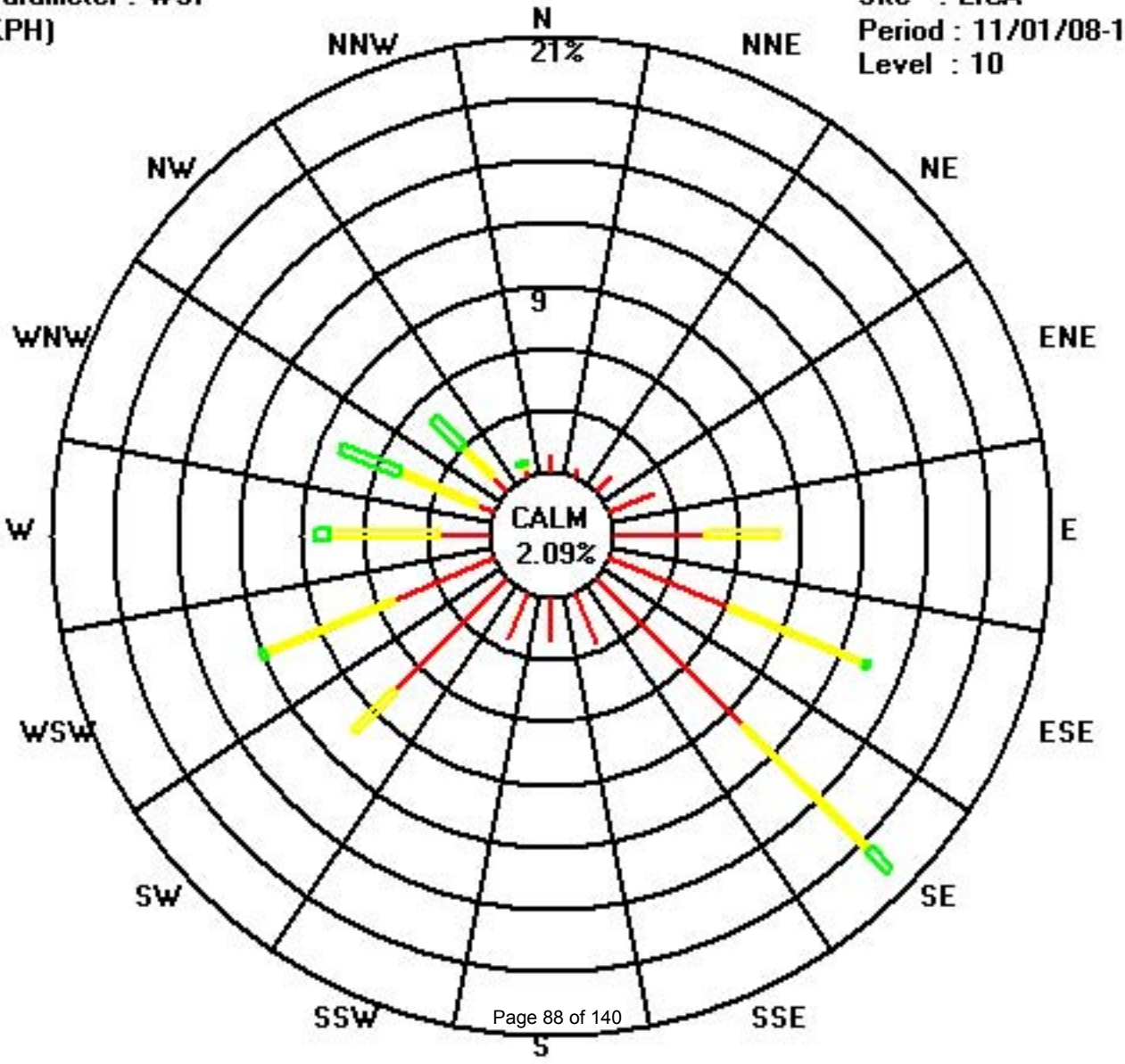
Class Limits (KPH)

>= 39.0
< 39.0
< 29.0
< 20.0
< 12.0
< 6.0

Site : LICA

Period : 11/01/08-11/30/08

Level : 10



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

MST

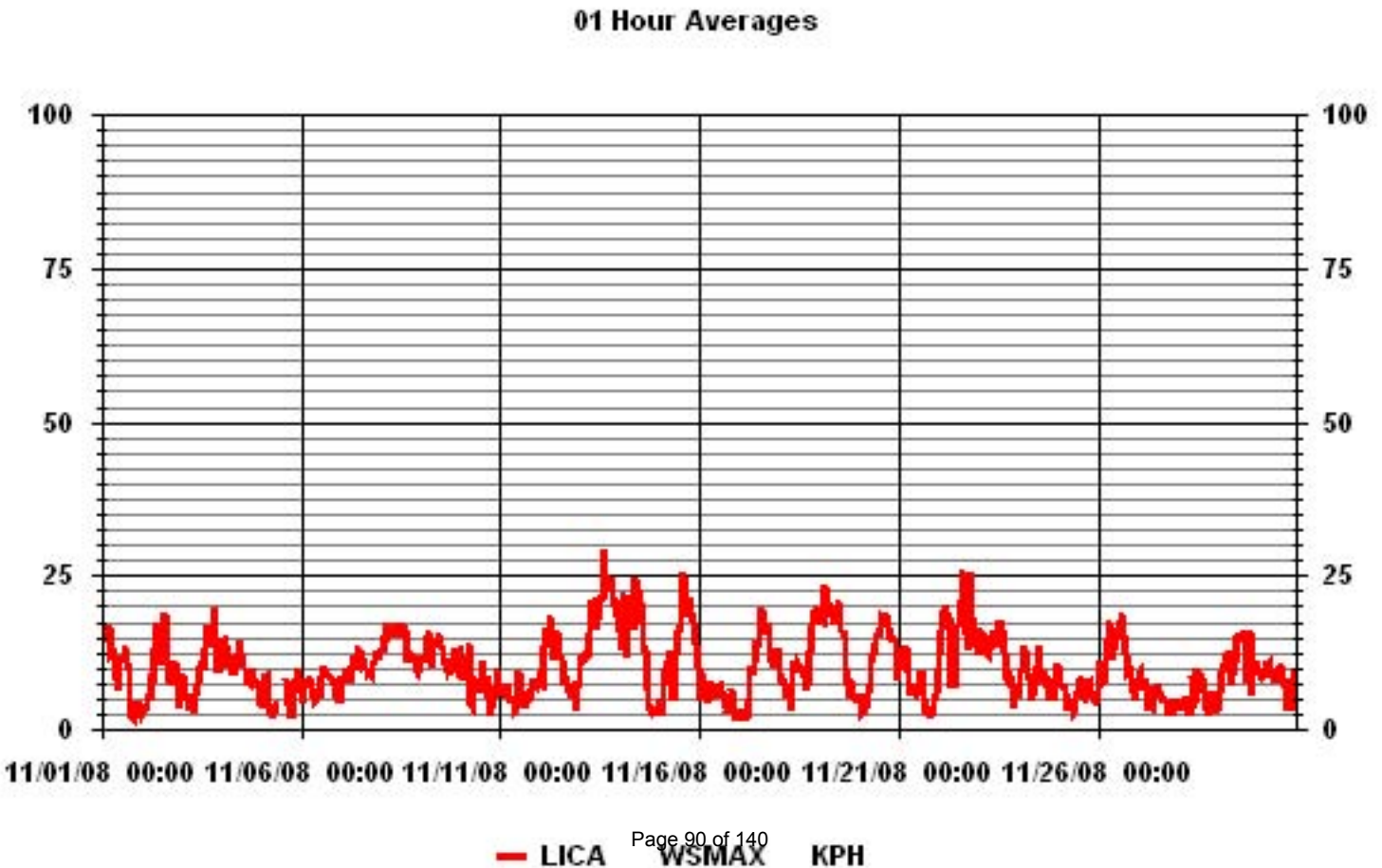
HOUR START	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	DAILY
HOUR END	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX.
DAY																									
1	15.8	17.2	15.3	14.7	15.2	16.7	11.9	12.2	7.9	9.3	6.1	12	11	11.7	13.7	11.1	10	4.4	2.4	1.9	3.3	2.8	1.6	4.3	17.2
2	2.5	2.9	3.9	3.2	5.7	4.8	7.9	7.5	13.1	17.2	14.8	10.3	16.2	15.5	18.8	15.9	9.6	8.2	7.9	7.4	11	8.5	3.5	4.5	18.8
3	7.1	9.2	4.9	5.6	5	2.8	5.7	3.7	2.5	5.3	7.3	10.1	11.2	9.5	13.1	15.2	16.8	16.3	13.3	15.1	19.7	14.4	9.1	12	19.7
4	10.1	14.6	14.8	14	12.5	10.3	10.9	8.7	10.5	11.7	11.7	14.5	12.6	10.6	10.2	8.2	7.2	8.2	6.5	9.8	7.4	7.7	7.8	7.6	14.8
5	4.2	3.3	8.8	9	4	2.1	2.8	2	2.8	4.3	**C**	**C**	**C**	**C**	**C**	7.6	4.2	2.5	1.9	5.1	7.5	7.2	9.8	7.5	9.8
6	8.1	4.1	8.4	7.4	7.5	8.6	7.7	5.6	4.5	4.9	6.1	5.9	8.5	8.8	10.4	8.6	9.4	8.4	8.2	8.2	7.5	5.5	5.1	4.3	10.4
7	8.3	8.3	8.7	9.6	9.5	7.5	10.3	11.7	9.5	11	13.5	13	12.1	10.5	10.9	10.1	8.9	9.1	8.8	10.5	11	12.2	11.9	11.4	13.5
8	13.2	12.5	14.9	14.8	17.1	16.1	15	17	15.5	17.2	16.7	15.4	15.4	17.4	15.9	16.3	10.7	11.6	12.8	11.1	11.8	9.7	9.3	10.5	17.4
9	11.2	12	10.9	14.3	15.2	15.9	13	9.9	13.9	14.8	13.9	15.4	13.9	13.2	10.3	11.4	9.3	9.7	9.1	11.3	13	12.5	12.8	13	15.9
10	8.7	8.1	11.9	8.8	8.8	14	4.2	3.8	6.8	8	7.8	5.9	7.6	11.3	8.2	8.3	5.6	2.1	5.8	3.4	5.2	7.1	9.7	7.1	14
11	6.5	7.3	5.9	7	7.1	5.5	4.3	5.2	2.8	3.1	6.4	9.4	5.9	6.5	4.3	4.2	5.1	4.6	6.5	8	6.3	7.8	7.3	8.4	9.4
12	7.9	7.6	13.4	16.3	15.1	15.4	18.4	15.7	11.3	14.6	15.8	14.4	12.2	11.4	7.4	7.8	6.4	6.2	6	5.2	7.6	3.1	7.7	6.9	18.4
13	10.6	11.8	12.1	11.4	11.7	15.5	17.5	20.7	20.9	16.1	18.7	17.9	21.3	21.4	**29.4**	25.5	23.6	23.1	23	24.5	20	21.4	18.7	16.4	**29.4**
14	16.1	12.7	22.4	15.4	11.4	17.7	21.9	18.9	16.1	24.9	18.6	22.9	21	17.5	14	13	6.7	4.2	3.5	2.9	3.5	2.2	3.4	4.9	24.9
15	3.3	3.1	6.9	9.8	10.9	7.6	12.7	10.6	4.5	8.1	12.1	15.8	16.9	25.6	24.9	18.3	19.3	21.5	20.7	19.4	17.7	14.1	13.9	10.3	25.6
16	4.5	9.2	8.1	7.7	4.9	5	6.1	7.9	6.2	6	5.3	6.8	7.1	6.4	5.4	3.7	2.7	4.7	5.6	6.5	3.8	1.3	3.1	1.5	9.2
17	2.1	2.7	2.7	2	1.6	4.9	10.1	8.8	9.5	10.9	14.3	13.4	15.8	19.6	18.4	17.6	15.4	17.2	13.7	11.4	10.6	10.1	13.3	12.3	19.6
18	7.5	9.2	8.6	7.6	5.7	5.6	3.8	3.9	11	9.1	11.1	10.7	10.5	10	9.9	8.8	6.3	7.3	12.6	16.8	19.3	19.6	19.1	17.1	19.6
19	18.3	17.9	17.7	23.3	21.8	19.4	20.6	18.5	16.8	20.3	19	21	18	16.1	14.8	15.9	10.1	7.6	5	8.3	6.1	5.3	5	5.3	23.3
20	5.9	2.4	2.7	2.9	3.6	5.7	7.2	11	12.1	13.8	15.8	14.8	16.6	18.5	18.1	16.9	19	16.9	14.8	14	15.1	14.3	7.8	13	19
21	9.6	12.6	12	11.3	13.4	9.6	6.3	6.4	7.2	6	5.6	6.4	7.2	9.6	8.7	3.9	4.2	2.8	1.8	2.9	2.1	4.7	5.9	10	13.4
22	12.1	16	19.2	18	20	19.3	18.4	7.1	7.5	6.6	12.7	16.7	18.2	20.9	25.8	20.9	15.8	12.7	17.9	25.6	18.5	15.7	13.6	11.9	25.8
23	15.8	16.1	15.9	12.6	12.5	12.1	13.1	15.1	15.9	14.7	13.2	13.9	17.3	17.4	16.3	12.7	8.5	7.9	8.5	7.6	5.1	3.6	5.3	5.4	17.4
24	7.2	9.6	9.8	13.7	13.2	8.6	8.7	4.6	7.3	5.4	6.9	10.2	13.5	9.4	9.3	7.9	6.9	8.7	4.5	7.5	4.6	7.5	10.5	10.4	13.7
25	8.7	7.4	7	7.1	6.1	3.4	3.4	4.8	2.4	2.7	5.8	6.2	8	8.5	5.6	5.3	8.1	7.1	7.6	6.5	5.5	4.9	4.6	5.3	8.7
26	8	11.2	7.5	7.7	11	15	17.8	13.8	11.4	12.7	14.6	16.5	17.7	18.8	18.7	15.7	12.4	9.2	9.5	10.1	6.5	5.8	4.6	8.1	18.8
27	9.2	9.6	7	6.9	8.3	7.4	3.1	3.6	3.4	7	5.4	7.5	6.6	5.6	4.9	5.1	4.7	2.9	2.3	5	3.5	3.2	4.2	4.6	9.6
28	4.5	3.9	4.2	3.8	5.3	3.9	2	5.3	8.5	3.6	4.2	9.8	8.5	9.5	8.4	6.3	2.8	4.7	2.1	3	6.3	5.5	2.7	4.3	9.8
29	3.1	6	9.3	10.8	12.4	11.7	12.9	7.2	9.1	9.4	10.9	15.1	15.7	14.2	15.2	16	12.5	7.6	8	16.1	5.4	10.2	10.4	11.1	16.1
30	9.2	9.2	8.2	8.4	10.5	10.3	10.8	9.5	8.3	8.9	7.6	9.6	10.1	10.3	9.9	7.5	7.7	2.9	4.8	4.1	3.9	7.6	9.7	9.2	10.8
PEAK	18.3	17.9	22.4	23.3	21.8	19.4	21.9	20.7	20.9	24.9	19.0	22.9	21.3	25.6	29.4	25.5	23.6	23.1	23.0	25.6	20.0	21.4	19.1	17.1	

STATUS FLAG CODES

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

MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS READING	29.4	KPH	@ HOUR(S)	14
			ON DAY(S)	13


01 Hour Averages
100
75
50
25
0
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA WSMAX KPH

Vector Wind Direction

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION - *COLD LAKE*

NOVEMBER 2008

VECTOR WIND DIRECTION (WD) hourly averages in degrees

MST

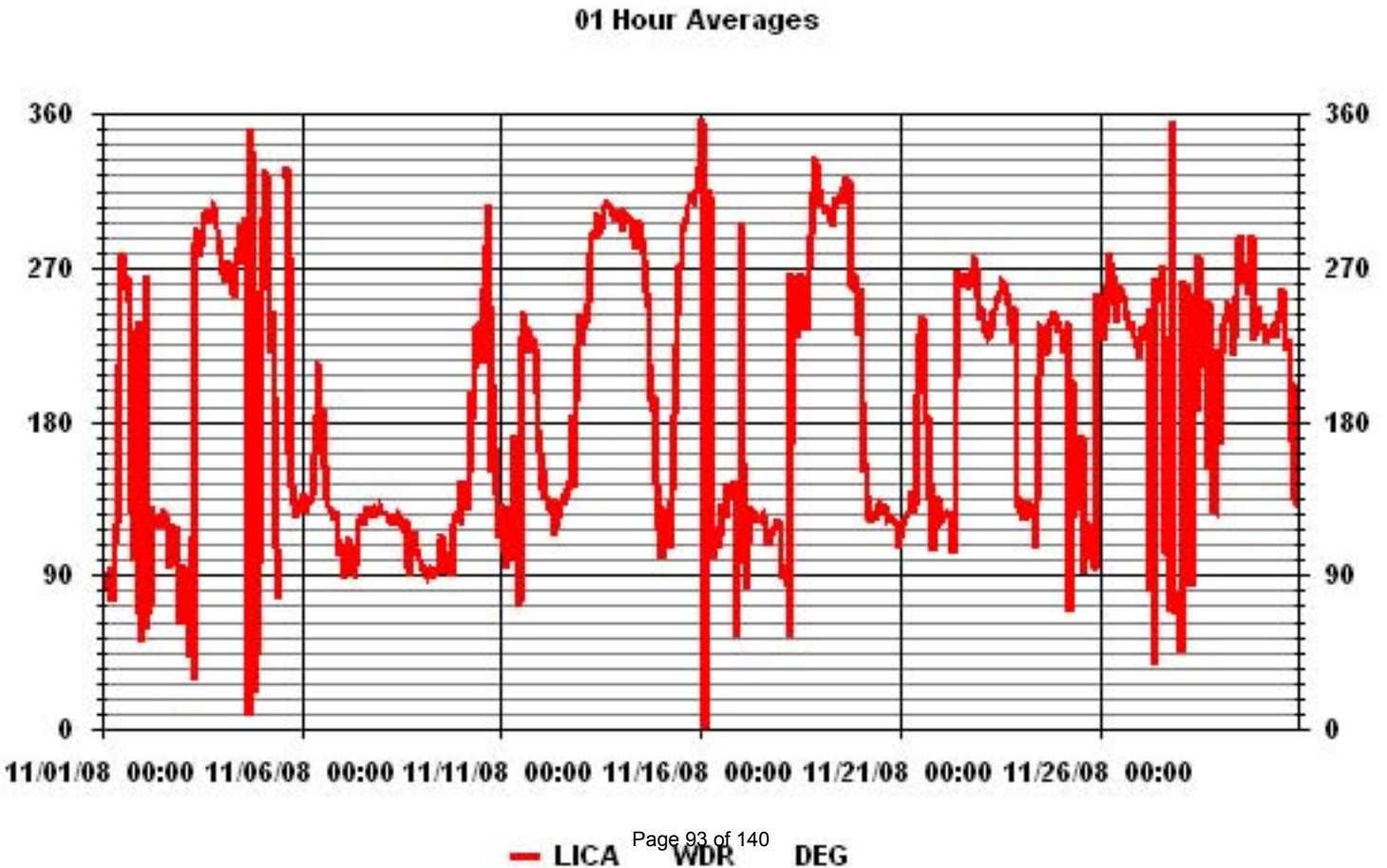
HOUR START HOUR END	0:00 1:00	1:00 2:00	2:00 3:00	3:00 4:00	4:00 5:00	5:00 6:00	6:00 7:00	7:00 8:00	8:00 9:00	9:00 10:00	10:00 11:00	11:00 12:00	12:00 13:00	13:00 14:00	14:00 15:00	15:00 16:00	16:00 17:00	17:00 18:00	18:00 19:00	19:00 20:00	20:00 21:00	21:00 22:00	22:00 23:00	23:00 0:00	24-HOUR AVG.	24-HOUR AVG QUANDRANT	RDGS.
DAY																											
1	89	89	90	86	87	95	75	81	109	120	214	265	279	269	256	266	250	234	127	98	202	230	67	238	102	E	24
2	50	68	58	266	68	72	130	125	117	124	122	117	126	129	124	123	94	96	120	111	112	119	71	61	114	ESE	24
3	83	97	73	72	55	42	112	29	284	294	278	278	282	300	300	295	304	302	301	305	303	294	282	283	302	WNW	24
4	270	267	262	270	274	263	260	255	253	282	276	293	293	272	300	25	7	352	320	338	21	43	46	97	289	WNW	24
5	256	300	327	324	292	220	231	244	195	107	78	C	C	C	324	329	160	278	143	132	124	128	128	131	115	ESE	24
6	130	137	130	129	132	134	135	137	160	184	215	166	187	187	155	135	131	128	128	125	126	126	112	101	136	SE	24
7	108	88	93	97	112	107	93	92	96	106	123	124	124	120	123	131	127	130	127	127	124	129	128	131	116	ESE	24
8	129	126	126	126	123	121	121	119	126	121	125	123	120	122	121	121	95	89	105	102	115	106	103	100	117	ESE	24
9	97	94	93	90	92	89	92	95	91	92	95	111	114	96	101	91	103	97	89	120	125	126	125	124	102	E	24
10	146	140	131	130	130	150	197	181	210	235	236	219	214	258	283	277	307	249	150	203	166	138	130	111	181	S	24
11	119	132	104	94	106	130	102	99	172	136	72	74	230	244	220	225	235	226	220	229	223	198	176	163	171	S	24
12	140	153	136	136	131	129	126	135	113	118	123	132	132	132	137	135	140	145	184	141	162	192	224	243	135	SE	24
13	224	235	239	239	249	278	288	288	292	303	290	291	293	300	307	310	307	307	305	302	299	299	297	303	291	WNW	24
14	299	291	303	302	295	300	297	288	280	294	296	296	282	283	275	256	247	215	193	186	196	144	117	110	287	WNW	24
15	99	108	127	126	120	106	134	139	184	225	242	271	273	291	295	299	307	311	311	310	314	316	329	324	296	WNW	24
16	358	356	0	2	316	313	244	100	107	119	105	113	132	128	128	127	144	137	138	137	145	54	136	101	91	E	24
17	297	96	156	82	109	117	128	128	127	121	123	124	123	125	121	113	107	117	115	115	117	118	123	118	119	ESE	24
18	93	89	89	97	85	54	267	166	231	231	255	236	267	257	241	233	250	270	289	314	335	332	319	317	295	WNW	24
19	307	307	302	307	303	303	298	294	305	311	309	312	315	314	307	323	318	321	260	259	265	264	230	242	304	WNW	24
20	258	193	150	155	138	124	121	124	124	127	131	129	131	130	130	126	123	124	124	123	121	121	105	117	126	SE	24
21	112	119	122	124	127	128	139	133	127	131	196	231	239	242	223	178	184	133	146	104	110	130	136	121	144	SE	24
22	122	124	125	125	127	126	126	103	122	205	269	265	265	259	267	265	264	260	261	269	277	271	253	239	230	SW	24
23	247	241	240	233	229	230	233	244	246	251	251	256	254	262	261	256	249	238	238	226	247	227	130	137	244	WSW	24
24	126	135	122	126	129	133	123	129	125	105	133	206	236	235	231	223	219	237	241	240	244	238	238	234	185	S	24
25	233	225	220	230	239	68	158	204	123	130	130	133	139	172	90	112	121	100	116	115	96	93	255	248	158	SSE	24
26	250	240	227	237	259	278	274	266	250	238	255	257	257	254	251	246	240	233	237	239	230	222	230	217	249	WSW	24
27	229	235	227	234	237	246	80	170	37	264	261	260	250	272	232	105	103	68	132	356	67	76	77	62	236	SW	24
28	44	262	235	261	210	256	83	230	247	254	185	277	260	231	211	228	152	250	170	158	129	128	222	206	220	SW	24
29	166	220	237	242	251	243	240	218	228	253	288	273	289	264	265	264	272	254	262	289	228	230	241	248	254	WSW	24
30	238	234	237	226	229	231	233	235	231	231	238	245	240	258	250	225	221	228	168	203	136	133	132	133	224	SW	24
HOURLY AVG	358	356	327	324	316	313	298	294	305	311	309	312	315	314	324	329	318	352	320	356	335	332	329	324			

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 05, 2008
DECLINATION :	19 DEGREES FROM MAGNETIC NORTH

MONTHLY CALIBRATION TIME:	3	HRS	OPERATIONAL TIME:	720	HRS
STANDARD DEVIATION	78.79		AMD OPERATION UPTIME	100.0	%
			MONTHLY AVERAGE	210	DEG


01 Hour Averages
360
270
180
90
0
11/01/08 00:00
11/06/08 00:00
11/11/08 00:00
11/16/08 00:00
11/21/08 00:00
11/26/08 00:00
LICA WDR DEG

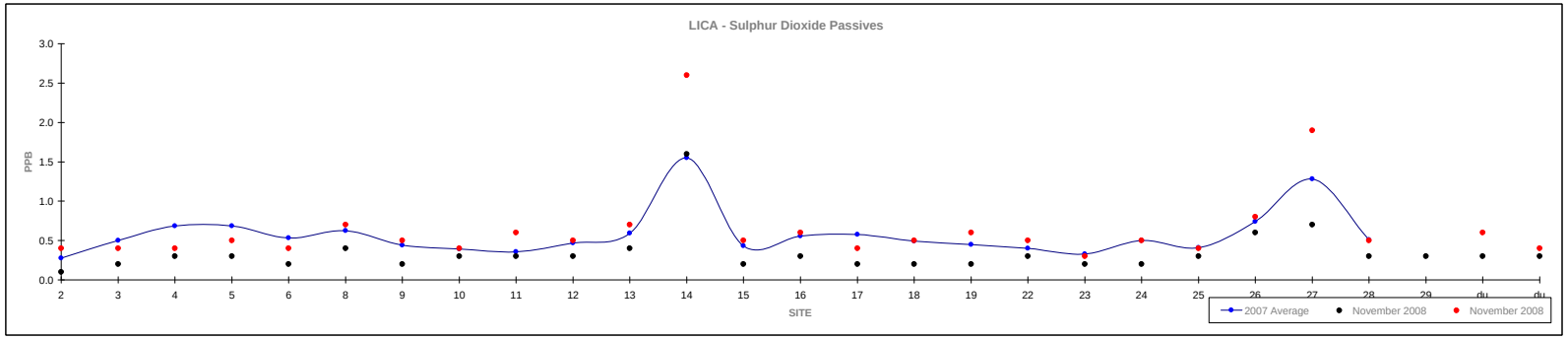
Non-Continuous Monitoring

Passive Summary Results for November 2008

Lakeland Industry & Community Association

Sulphur Dioxide
ppb

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Reading	Site
													2007													2008	
Mean	0.3	0.5	0.7	0.7	0.5	0.6	0.4	0.4	0.4	0.5	0.6	1.6	0.4	0.6	0.6	0.5	0.5	0.4	0.3	0.5	0.4	0.7	1.3	0.5	0.4	0.3	-
Minimum	0.1	0.3	0.4	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.5	0.2	0.0	0.1	#2
Maximum	0.4	1.0	1.3	1.1	1.0	1.1	0.8	0.7	0.7	0.8	1.6	2.6	0.8	1.1	1.1	1.0	0.8	0.6	0.5	0.8	0.8	1.2	2.1	0.8	0.0	1.6	#14

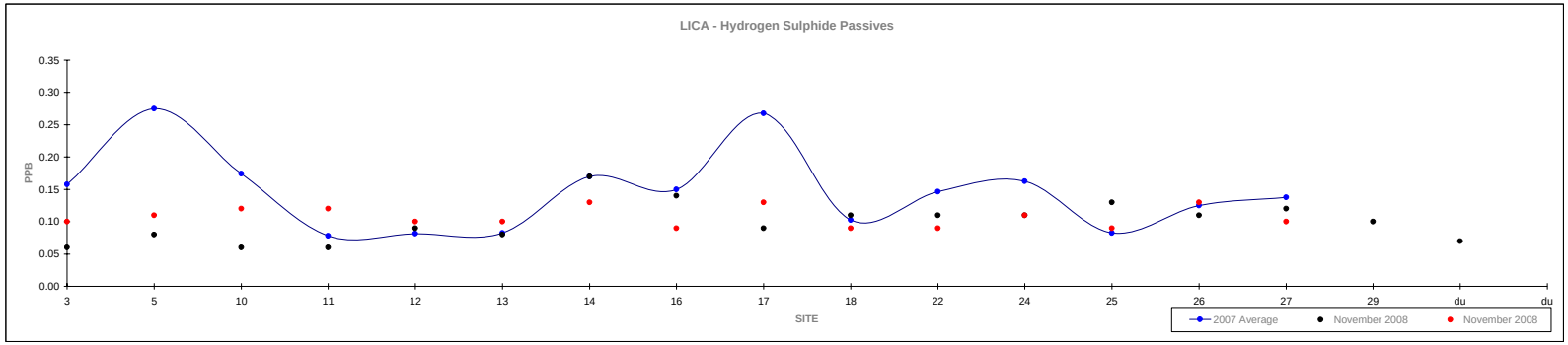


Passive Summary Results for November 2008

Lakeland Industry & Community Association

Hydrogen Sulphide
ppb

	2007															2008	
	3	**5**	**10**	**11**	**12**	**13**	**14**	**16**	**17**	**18**	**22**	**24**	**25**	**26**	**27**	**Reading**	**Site**
Mean	0.2	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.3	0.1	0.1	0.2	0.1	0.1	0.1	0.10	-
Minimum	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.06	VARIOUS
Maximum	0.5	0.7	0.5	0.1	0.1	0.2	0.4	0.4	0.9	0.2	0.4	0.4	0.2	0.2	0.4	0.17	#14

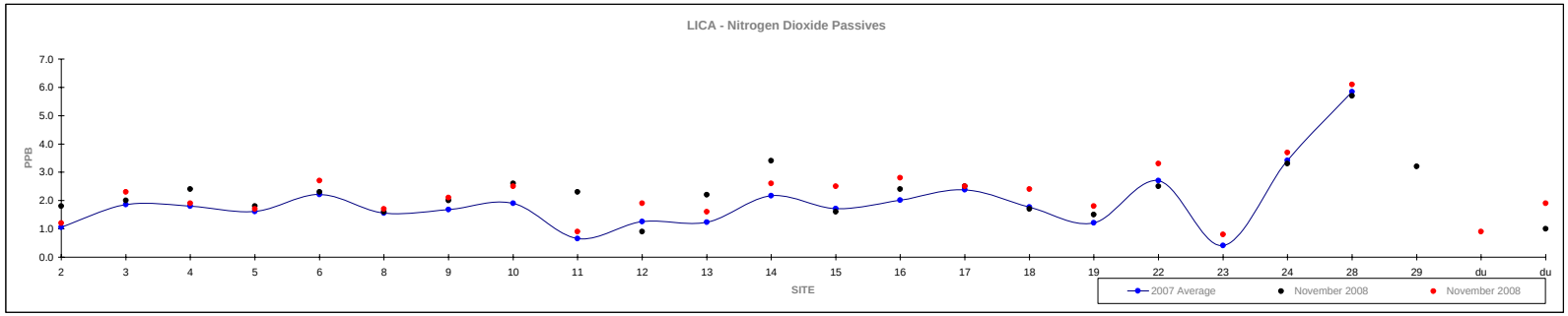


Passive Summary Results for November 2008

Lakeland Industry & Community Association

Nitrogen Dioxide
ppb

	2007																					2008	
	2	**3**	**4**	**5**	**6**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**22**	**23**	**24**	**28**	**Reading**	**Site**
Mean	1.1	1.9	1.8	1.6	2.2	1.6	1.7	1.9	0.7	1.3	1.2	2.2	1.7	2.0	2.4	1.8	1.2	2.7	0.4	3.4	5.8	2.3	-
Minimum	0.2	0.8	0.2	0.3	1.2	0.5	0.6	0.4	0.3	0.3	0.6	0.8	0.8	0.7	0.8	0.6	0.2	1.2	0.1	2.1	3.3	0.9	#12
Maximum	4.1	3.5	4.0	3.8	5.3	3.6	3.8	3.9	1.4	3.2	2.5	5.3	3.4	4.5	4.8	3.9	3.0	5.8	1.2	6.4	10.7	5.7	#28

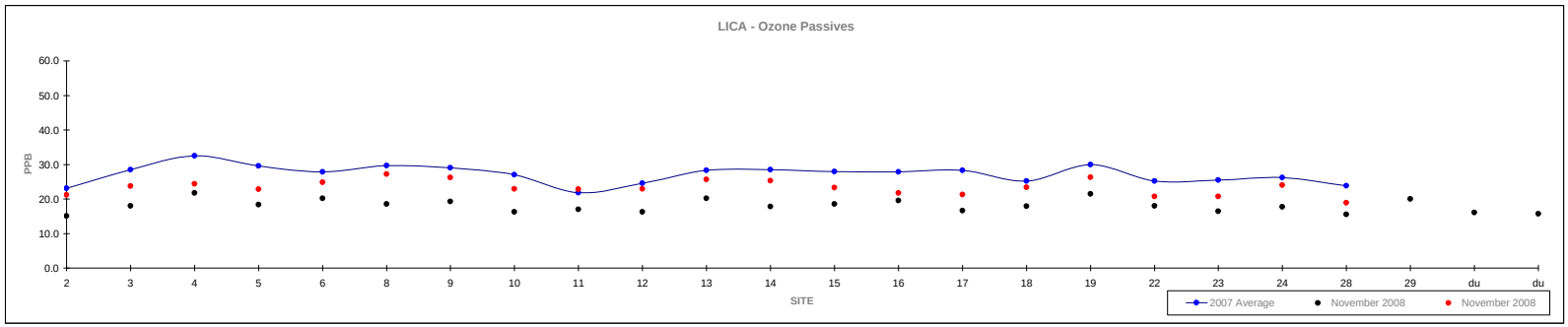


Passive Summary Results for November 2008

Lakeland Industry & Community Association

Ozone ppb

	2007																					2008	
	2	3	4	5	6	8	9	10	11	12	13	14	15	16	17	18	19	22	23	24	28	Reading	Site
Mean	23.1	28.5	32.5	29.6	27.8	29.7	29.0	27.0	21.9	24.6	28.3	28.5	28.0	27.8	28.3	25.2	30.0	25.2	25.5	26.2	23.8	18.0	-
Minimum	12.9	18.6	20.6	19.3	17.6	19.5	18.7	16.2	12.2	15.3	16.8	19.9	19.0	18.9	17.4	14.7	19.4	15.8	10.9	17.7	16.9	15.1	#2
Maximum	37.3	41.1	51.4	48.0	46.3	42.3	44.1	44.6	29.5	33.6	41.2	38.6	39.9	41.6	44.7	38.6	46.5	39.2	39.0	41.6	33.2	21.7	#4



Calibration Reports

Cold Lake

Sulphur Dioxide

SO_2 Calibration Report

Station Information

Calibration Date	November 4, 2008	Previous Calibration	October 1, 2008
Company	+		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:15	End Time (MST)	13:25
Reason:	Monthly Calibration		
Barometric Pressure	705 mmHg	Station Temperature	25 Deg C
Cal Gas	52.2 ppm	Cal Gas Expiry date	March 12, 2010
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	TECO 43A	S/N :	43A-4468-272	Method:	Fluorescent
Converter Make / Model:	-	S/N :	-		
Calibrator Make / Model:	Environics 2000	S/N :	1991	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	263		
Flow Meter:	Environics 2000	S/N :	1991		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0 - 500 ppb							
Sample Flow / Box Temp	700	ccm	OK	Deg C	700	ccm	OK	Deg C
HVPS / Lamp Setting	OK		832		OK		833	
PMT / RxCell Temp	OK	Deg C	OK	Deg C	OK	Deg C	OK	Deg C
Converter / IZS Temp	NA	Deg C	OK	Deg C	NA	Deg C	OK	Deg C
Offset / Slope	104		892		108		892	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5006.6	0	0	1	N/A
5006.6	0	0	0	N/A
4968.8	38.9	405	403	1.0062
4985	24.3	253	252	1.0048
4993.1	14.6	152	152	1.0012
5009.3	0	0	1	N/A
			Sum of Least Squares	0.3486
			New Correction Factor	1.0062

	Before Calibration	After Calibration
Auto Zero	0.7	-0.5
Auto Span	205.5	206.2
Sample Lines Connected		**YES**
Percent Change from Previous Calibration		-0.7%

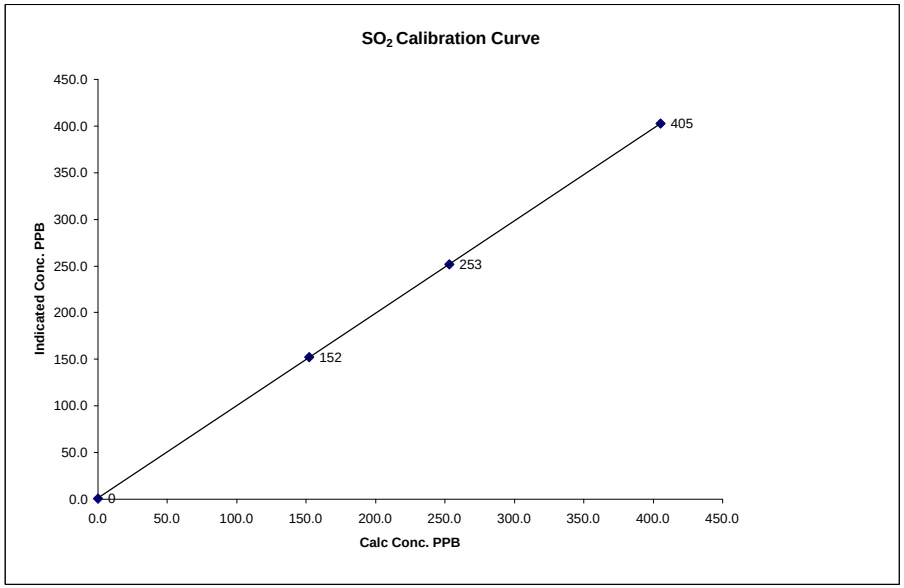
Calibration Performed by: Shea Beaton

SO_2 Calibration Curve

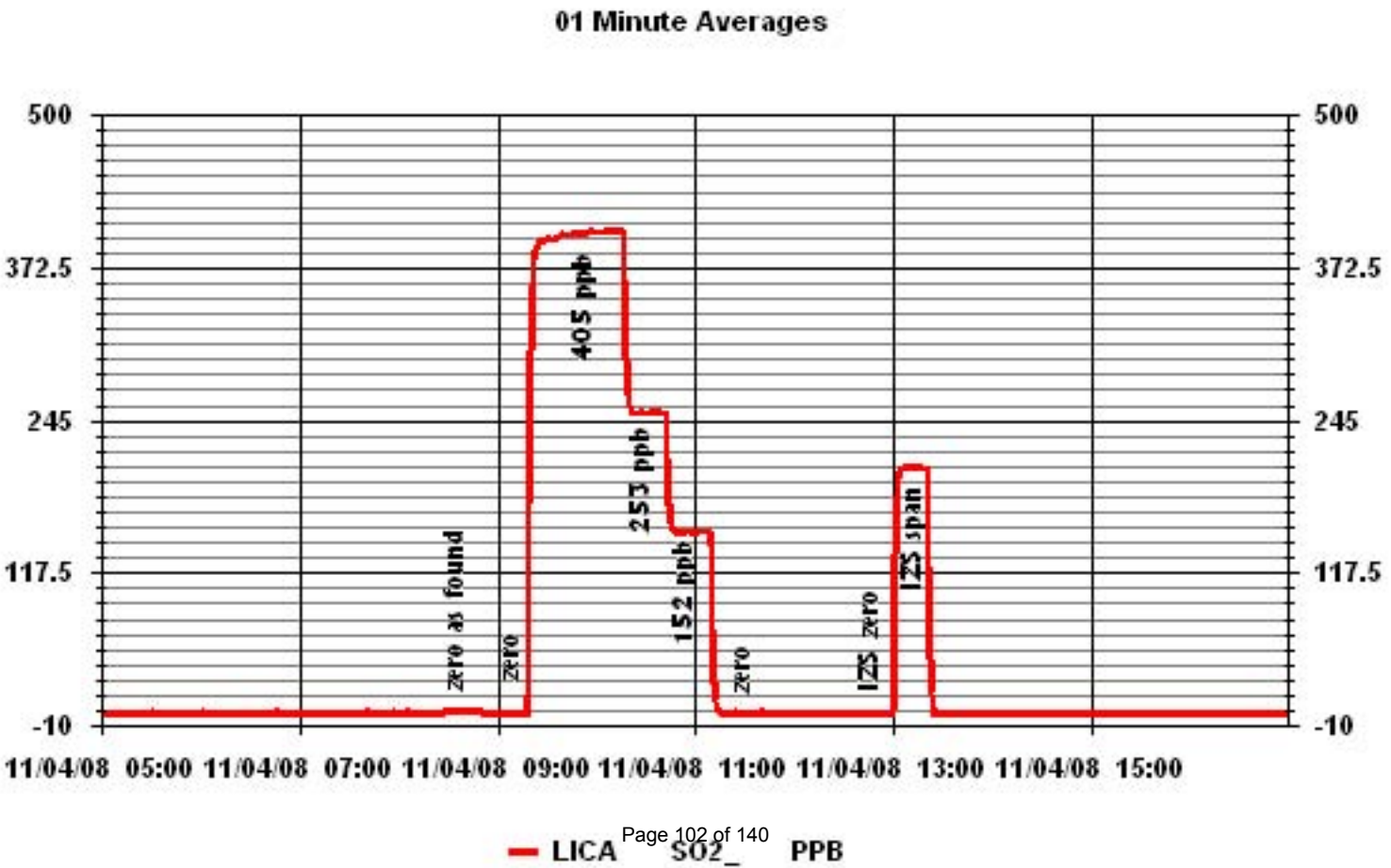
Calibration Date	November 4, 2008		
Company	+		
Plant / Location	LICA 1 - Cold Lake South		
Start Time (MST)	8:15	End Time (MST)	13:25

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	1	n/a
152	152	1.0012
253	252	1.0048
405	403	1.0062

Correlation Coefficient	(≥ 0.995)	1.000000
Slope	(0.85 to 1.15)	0.991296
Intercept	(± 3% F.S.)	1.038990



Notes:


01 Minute Averages
500
372.5
245
117.5
-10
zero as found
zero
405 ppb
253 ppb
152 ppb
zero
IZS zero
IZS span
11/04/08 05:00
11/04/08 07:00
11/04/08 09:00
11/04/08 11:00
11/04/08 13:00
11/04/08 15:00
LICA SO2_ PPB

Total Reduced Sulphur

TRS Calibration Report

Station Information

Calibration Date	November 4, 2008	Previous Calibration	October 2, 2008
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:15	End Time (MST)	12:15
Reason:		Post- Repair Calibration	
Barometric Pressure	710 mm Hg	Station Temperature	23 Deg C
Cal Gas	10.6 ppm	Cal Gas Expiry date	April 3, 2009
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	TECO 43A	S/N :	43A-35786-254	Method:	Fluorescent
Converter Make / Model:	CD Nova CDN 101	S/N :	250		
Calibrator Make / Model:	API 700	S/N :	690	Method:	Dilution
DAS Make / Model:	ESC 8832	S/N :	263		
Flow Meter:	API 700	S/N :	690		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range	0 -100 ppb							
Sample Flow / Box Temp	425	ccm	OK	Deg C	425	ccm	OK	Deg C
HVPS / Lamp Setting	OK		887		OK		889	
PMT / RxCell Temp	OK	Deg C	OK	Deg C	OK	Deg C	OK	Deg C
Converter / IZS Temp	850	Deg C	OK	Deg C	850	Deg C	OK	Deg C
Offset / Slope	951		785		951		844	

Calibration Data

Dilution Flow Rate	Source Gas Flow Rate	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	N/A
4960	37.7	80	78	1.0251
4960	37.7	80	80	0.9995
4977	21.2	45	45	0.9991
4987	11.7	25	25	0.9924
5000	0	0	0	N/A
			Sum of Least Squares	0.9989
			New Correction Factor	0.9995

	Before Calibration	After Calibration
Auto Zero	-0.2	0.0
Auto Span	32.1	34.3
Sample Lines Connected		YES
Percent Change from Previous Calibration		-0.1%

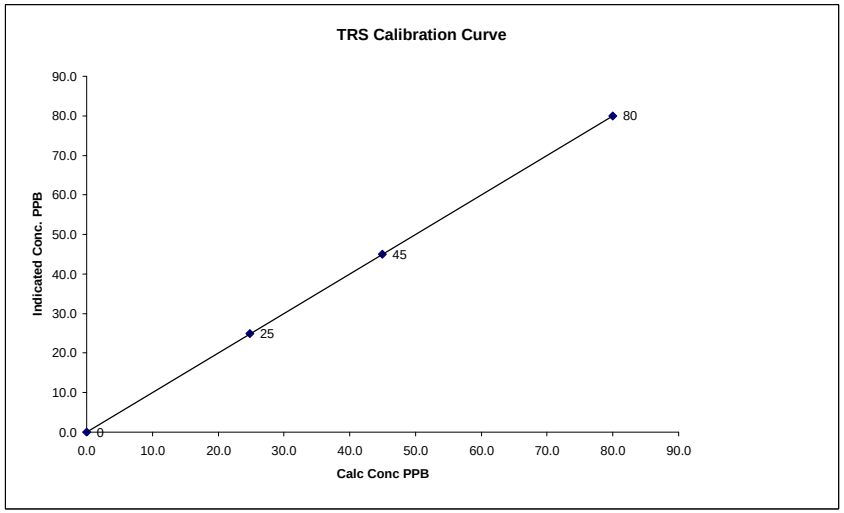
Calibration Performed by: Shea Beaton

TRS Calibration Curve

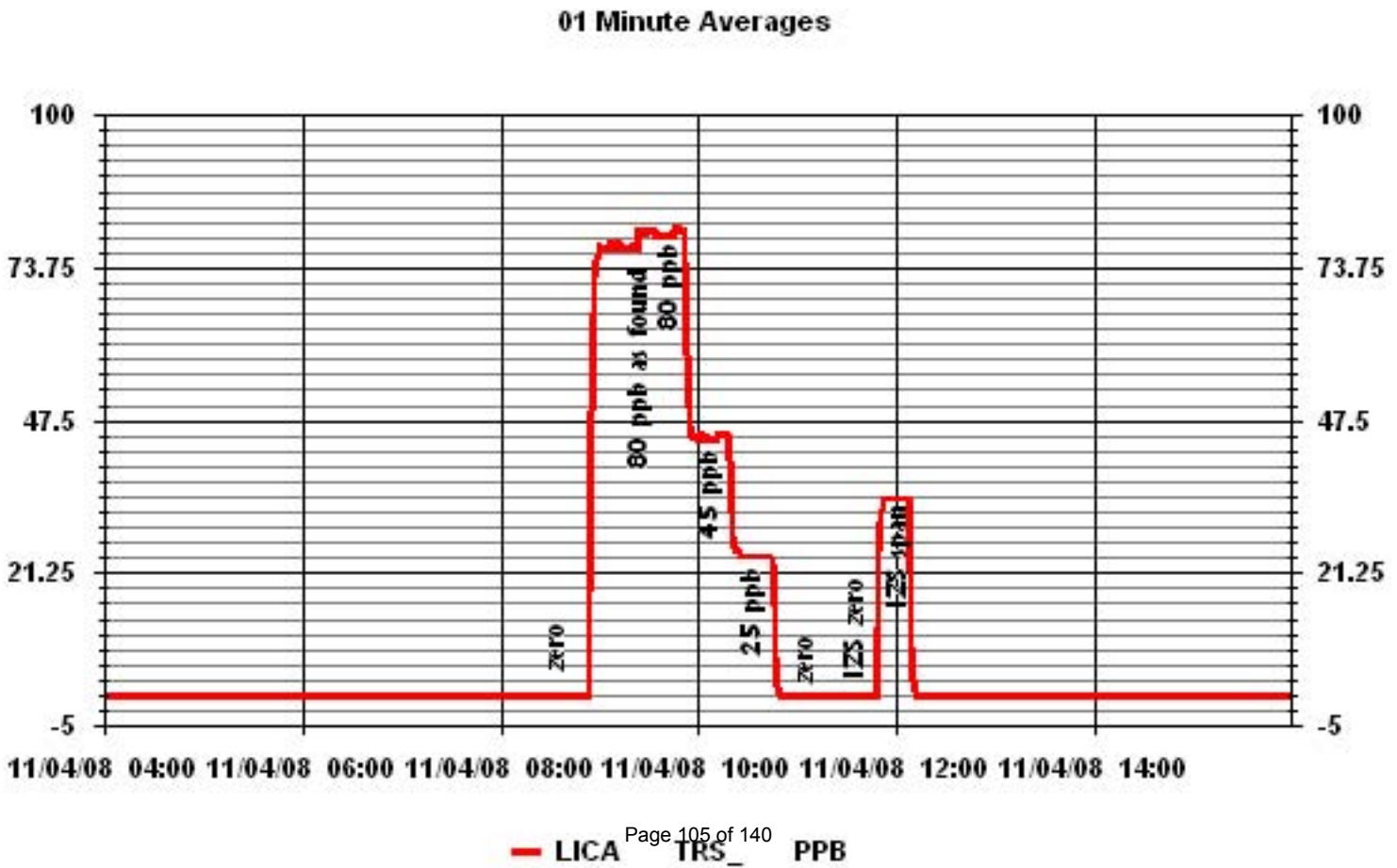
Calibration Date	November 4, 2008		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:15	End Time (MST)	12:15

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
25	25	0.9924
45	45	0.9991
80	80	0.9995

Correlation Coefficient	(≥ 0.995)	0.999994
Slope	(0.85 to 1.15)	0.999876
Intercept	(± 3% F.S.)	0.071789



Notes:


01 Minute Averages
100
73.75
47.5
21.25
-5
zero
80 ppb as found
80 ppb
45 ppb
25 ppb
zero
LZS
zero
LZS
11/04/08 04:00
11/04/08 06:00
11/04/08 08:00
11/04/08 10:00
11/04/08 12:00
11/04/08 14:00
LICA TRS_ PPB

Total Hydrocarbons

THC Calibration Report

Station Information

Calibration Date:	November 4, 2008	Previous Calibration	October 1, 2008
Company:	**Lakeland Industry and Community Association**		
Plant / Location:	**LICA1/Cold Lake**		
Start Time (MST)	11:30	End Time (MST)	15:01
Reason:	Monthly Calibration		
Barometric Pressure:	705 mmHg	Station Temperature:	24 Deg C
Calibrator:	API 700	S/N:	831
Cal Gas Concentration:	1000 ppm	Cal Gas Expiry Date:	2/22/2011
DAS make & Model:	ESC 8832	S/N :	263
Output Voltage Range:	0 - 10 VDC		

Analyzer Information

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

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6.5	psi	6.5	psi
Hydrogen Pressure	8	psi	7	psi
Air Pressure	16	psi	17.5	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2000	0	0.0	0.0	N/A
2000	80	38.5	38.4	1.0016
2000	0.0	0.0	0.0	N/A
2000	80.0	38.5	38.5	0.9990
2000	40.0	19.6	19.4	1.0107
2000	20.0	9.9	9.4	1.0533
2000	0	0.0	0.0	N/A
			Correction Factor:	0.9990

Percent Change

Previous Calibration Correction Factor:	0.9990
Current Correction Factor Before Span Adjust:	0.9990
Percent Change:	0.0%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	-
Auto Span	30.1	-
Sample Lines Connected		**YES**

Cylinder Pressures			
Span	1700	psi	
Hydrogen	2000	psi	
Zero Air	unlimited	psi	Maxxam-owned API 701 zero air supply with catalytic oxidizer

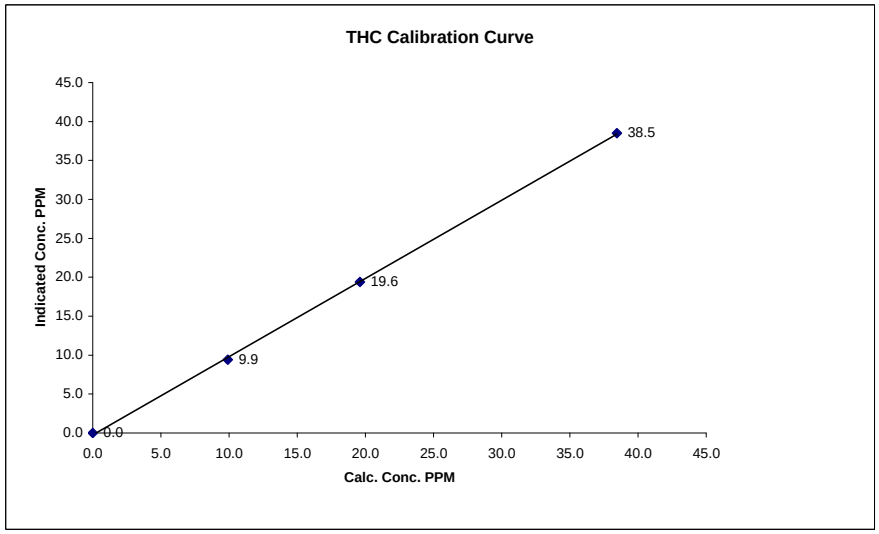
Calibration Performed by: Shea Beaton

THC Calibration Curve

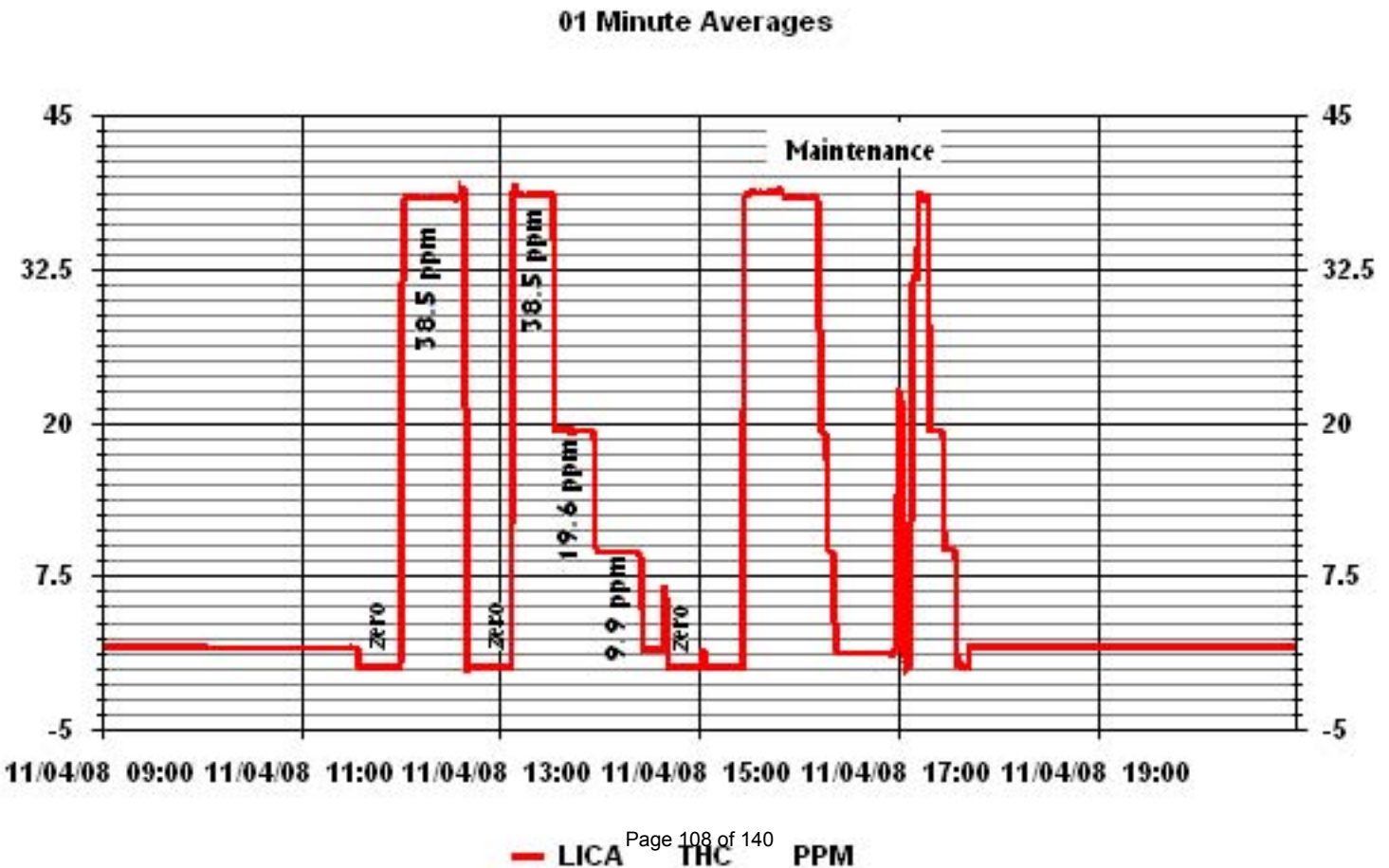
Calibration Date	November 4, 2008		
Company	**Lakeland Industry and Community Association**		
Plant / Location	**LICA1/Cold Lake**		
Start Time (MST)	11:30	End Time (MST)	15:01

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	
9.9	9.4	1.0533
19.6	19.4	1.0107
38.5	38.5	0.9990

Correlation Coefficient	(≥ 0.995)	0.999797
Slope	(0.85 to 1.15)	1.004753
Intercept	(± 3% F.S.)	-0.248365



Notes: This calibration has poor linearity. Cros checked with other calibrator; same result. Measured and adjusted flows, will allow to stablize overnight.


01 Minute Averages
45
32.5
20
7.5
-5
Maintenance
38.5 ppm
38.5 ppm
19.6 ppm
9.9 ppm
zero
zero
zero
11/04/08 09:00
11/04/08 11:00
11/04/08 13:00
11/04/08 15:00
11/04/08 17:00
11/04/08 19:00
LICA THC PPM

THC Calibration Report

Station Information

Calibration Date:	November 5, 2008	Previous Calibration	October 1, 2008
Company:	**Lakeland Industry and Community Association**		
Plant / Location:	**LICA1/Cold Lake**		
Start Time (MST)	8:00	End Time (MST)	13:00
Reason:	Monthly Calibration		
Barometric Pressure:	714 mmHg	Station Temperature:	24 Deg C
Calibrator:	Environics 2000	S/N:	1991
Cal Gas Concentration:	1000 ppm	Cal Gas Expiry Date:	2/22/2011
DAS make & Model:	ESC 8832	S/N :	263
Output Voltage Range:	0 - 10 VDC		

Analyzer Information

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

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 50	ppm	0 - 50	ppm
Sample Pressure	6	psi	6.5	psi
Hydrogen Pressure	7.5	psi	8	psi
Air Pressure	17.5	psi	17.5	psi

Calibration Data

Dilution Flow	Source Gas Flow	Calculated Concentration	Indicated Concentration	Correction Factor
2003.6	0	0.0	0.0	N/A
2000.9	80	38.4	39.0	0.9858
2004.1	0.0	0.0	0.0	N/A
2004.1	80.0	38.4	38.7	0.9919
2004.1	40.0	19.6	19.5	1.0035
2004.1	20.0	9.9	9.7	1.0187
2000.0	0	0.0	0.0	N/A
			Correction Factor:	0.9919

Percent Change

Previous Calibration Correction Factor:	0.9990
Current Correction Factor Before Span Adjust:	0.9919
Percent Change:	0.7%

IZS Calibration Data

	Before Calibration	After Calibration
Auto Zero	0.0	0.0
Auto Span	30.2	30.3
Sample Lines Connected		**YES**

Cylinder Pressures			
Span	1700	psi	
Hydrogen	2000	psi	
Zero Air	unlimited	psi	Maxxam-owned API 701 zero air supply with catalytic oxidizer

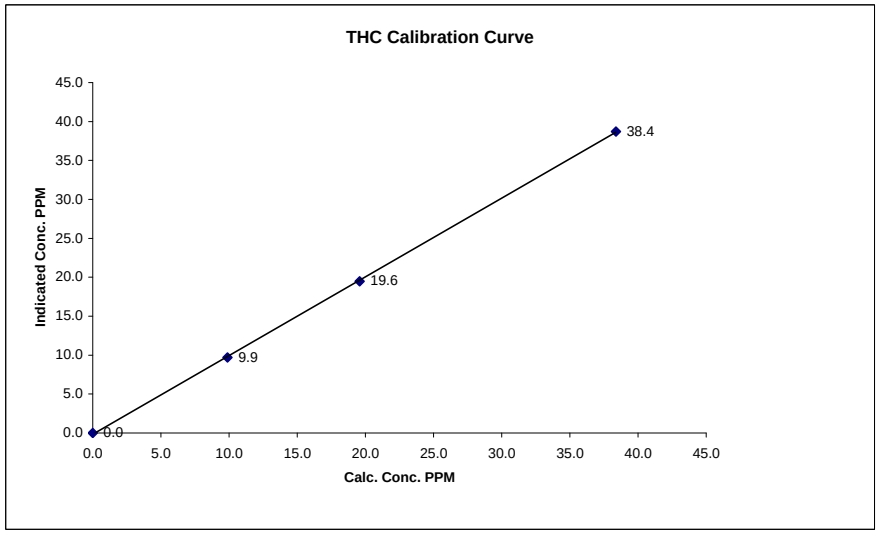
Calibration Performed by: Shea Beaton

THC Calibration Curve

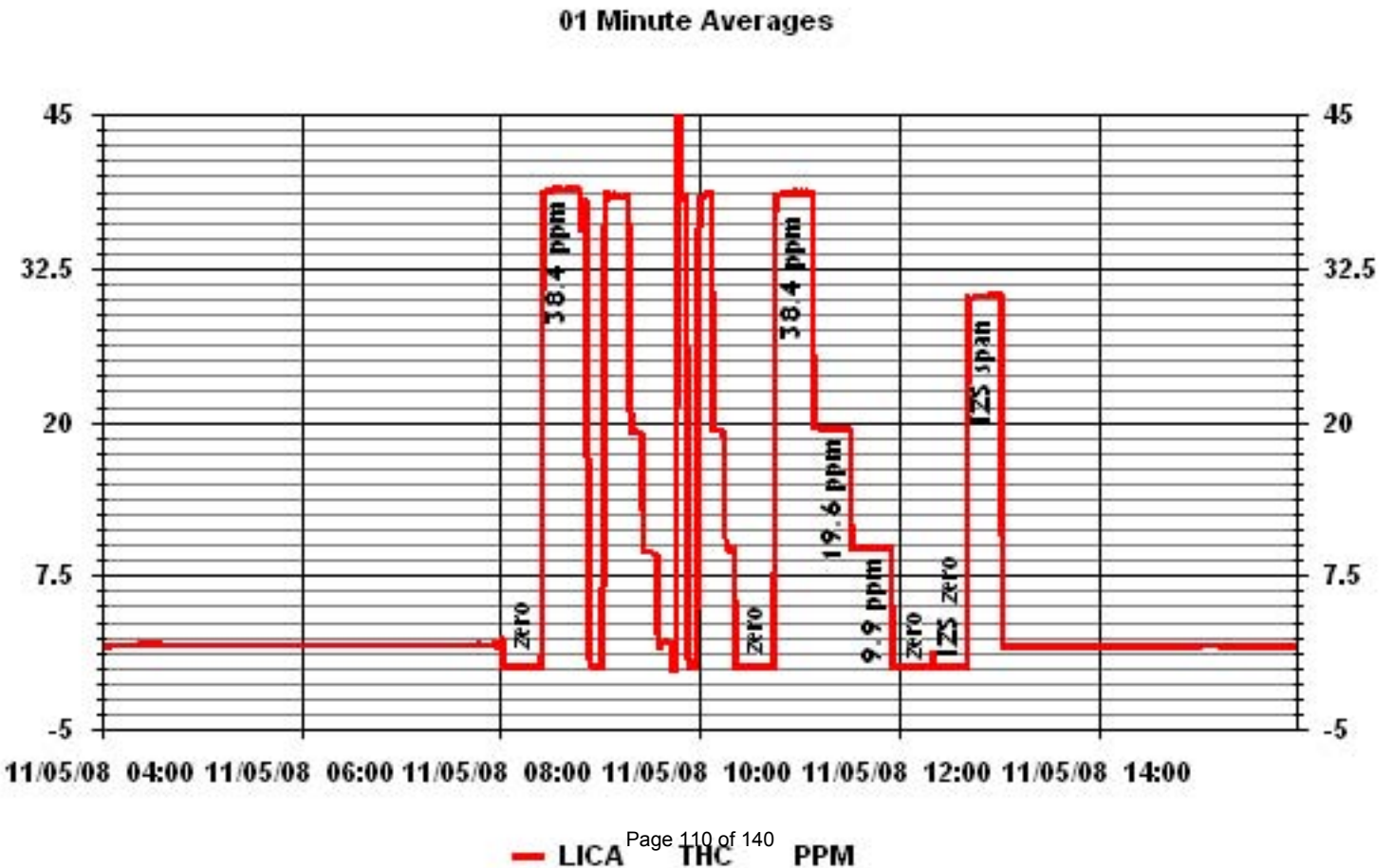
Calibration Date	November 5, 2008		
Company	**Lakeland Industry and Community Association**		
Plant / Location	**LICA1/Cold Lake**		
Start Time (MST)	8:00	End Time (MST)	13:00

Calculated Conc. ppm	Indicated Response ppm	Correction Factor
0.0	0.0	
9.9	9.7	1.0187
19.6	19.5	1.0035
38.4	38.7	0.9919

Correlation Coefficient	(≥ 0.995)	0.999928
Slope	(0.85 to 1.15)	1.009747
Intercept	(± 3% F.S.)	-0.149122



Notes: Sample and H2 pressures were returned to values prior to yesterdays optimization. Calibration linearity is better (passible). H2 flow at optimized pressure too low, resulted in poor linearity during calibration. Have ordered a FID rebuid kit and will consult manufacturer regarding this issue.


01 Minute Averages
45
32.5
20
7.5
-5
zero
38.4 ppm
zero
38.4 ppm
19.6 ppm
9.9 ppm
zero
IZS
zero
IZS span
11/05/08 04:00
11/05/08 06:00
11/05/08 08:00
11/05/08 10:00
11/05/08 12:00
11/05/08 14:00
LICA THC PPM

Particulate Matter 2.5

TEOM® Calibration

Station		Transfer Standard	
Date:	November 5, 2008	Make/Model:	Bios DC-2
Station Name:	LICA 1	Serial Number:	1193
Location:	Cold Lake - South	Cell s/n:	2272
Operator:	LICA	Thermometer s/n:	2178

Sampler		Set-up and current Sampler readings	
Make/Model	R & P Series 1400 a TEOM	F-Main Set Pt (l/min)	3.00
Unit #	AMU 1494	F-Aux Set Pt (l/min)	13.67
Control unit s/n	140AB229030002	Filter Load (%)	40%
Transducer s/n	140AB229030002	K_o Factor	13319
Parameter	PM 2.5	Temp (^oC)	1.6
		Press (ATM)	0.941

Note: Tolerances are noted as BOLD in Brackets

Calibration

Zero flow

	Pump Off		Pump On (Time to reach set points)	
F-Main (l/min)	0.12		**(45-60 Sec)**	34
F-Aux (l/min)	0.05		**(45-60 Sec)**	45

Temperature/Pressure

Measured Temp **(± 1 ^oC)**	2.1	**Δ ^oC**	0.5
Measured Press **(± 1.5% ATM)**	0.941	**Δ % ATM**	0.0%

Flow Audit

			Δ % from Set-pt
Indicated Main/Aux Flow (l/min)	2.99 / 13.63	**(± 2%)**	0.3% / 0.3%
Total Flow = Main + Aux (l/min)	16.62	**(± 2%)**	0.3%
Measured Total Flow (l/min)	17.43	**(± 1.0 l/min. (5.65%))**	-4.6%
Measured Main Flow (l/min)	3.13	**(± 0.2 l/min. (6.25%))**	-4.5%

Leak Check

		Actual leakage = Pump On - Pump Off
Main **(< 0.15 l/min)**	0.01	0.01=0.13-0.13
Aux **(< 0.15 l/min)**	0.03	0.03=0.08-0.05

K_o Factor

Measured	13319
K_o Difference **(± 2.5%)**	0.95%

Start Time: **14:05** **Finish Time:** **17:30**

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

Comments: Replaced the Large inline bypass filter. Following the audit, the audit the flow adjust factors were changed to bring actual flows closer to the expected values. The main Fadj is now 0.945, actual flow is 3.02 lpm; and the bypass Fadj is now 0.951, actual total flow is 16.73 lpm. Will perform hardware cal next month.

Calibrator/s: Shea Beaton

Nitrogen Dioxide

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	November 14, 2008	Previous Calibration	November 4, 2008
Company	**Lakeland Ind & Comm. Assoc.**	Plant/Location	**LICA 1 - Cold Lake South**
Start Time (MST)	8:15	End Time (MST)	15:12
Reason:		Monthly Calibration	
Barometric Pressure	705 mmHg	Station Temperature	23.0 Deg C
Cal Gas Concentration	NOx 52.0 ppm NO 51.5 ppm	Cal Gas Expiry date	03/12/2010
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	TECO 42C	S/N :	42-7408-716	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 2000	S/N:	1991		
DAS Make / Model:	ESC 8832	S/N :	263		
Flow Meter:	Environics 2000	S/N :	1991		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 500	ppb				
Sample Flow/Conv. Temp	735	ccm	317	Deg C	737	ccm	317	Deg C
Ozone Flow / Vacuum	OK	ccm	166.6	mmHg	OK	ccm	167.1	mmHg
HVPS	-821		Volts		-821		Volts	
Rx/ Temp / PMT Temp	49.9	Deg C	-2.5	Deg C	49.7	Deg C	-2.5	Deg C
Box Temp / IZS Temp	27.6	Deg C	OK	Deg C	28.1	Deg C	OK	Deg C
Offset	3.2	NOx	3	NO	3.3	NOx	3.1	NO
Slope	1.013	NOx	0.808	NO	1.013	NOx	0.828	NO

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration NOx	Calculated Concentration NO	Indicated Concentration NOx	Indicated Concentration NO	Indicated Concentration NO2	Correction Factor NOx	Correction Factor NO
5006.6	0.0	N/A	0	0	0	0	0	N/A	N/A
4968.8	38.9	N/A	404	400	395	390	5	1.0226	1.0258
4965.6	38.9	N/A	404	400	404	400	5	1.0005	1.0008
4984.5	24.3	N/A	252	250	252	250	3	1.0011	0.9994
4993.1	14.6	N/A	152	150	152	151	2	0.9974	0.9944
5006.0	0.0	N/A	0	0	1	0	0	N/A	N/A
								Converter Efficiency	
4971.5	38.9	N/A	404	400	405	400	5	N/A	
4971.5	38.9	300	404	400	401	125	276	99%	
4971.5	38.9	200	404	400	403	205	198	99%	
4971.5	38.9	100	404	400	404	302	102	99%	
4965.6	38.9	N/A	404	400	404	400	4	N/A	
5000.0	0	N/A	0	0	1	0	0	N/A	N/A

Linearity OK?	**Yes**	No	Sum of Least Squares	1.0004	0.9998
Flows Checked on-site?	**Yes**	No	New Correction Factor	1.0005	1.0008
			Average Converter Efficiency	99%	

	Before Calibration				After Calibration			
Auto Zero	0.6	NOx	0.3	NO2	0.6	NOx	0.6	NO2
Auto Span	229.9	NOx	228.6	NO2	237.5	NOx	236.1	NO2
Sample Lines Connected					YES			
Percent Change from Previous Calibration					*NOx*	-0.2%	*NO*	0.0%

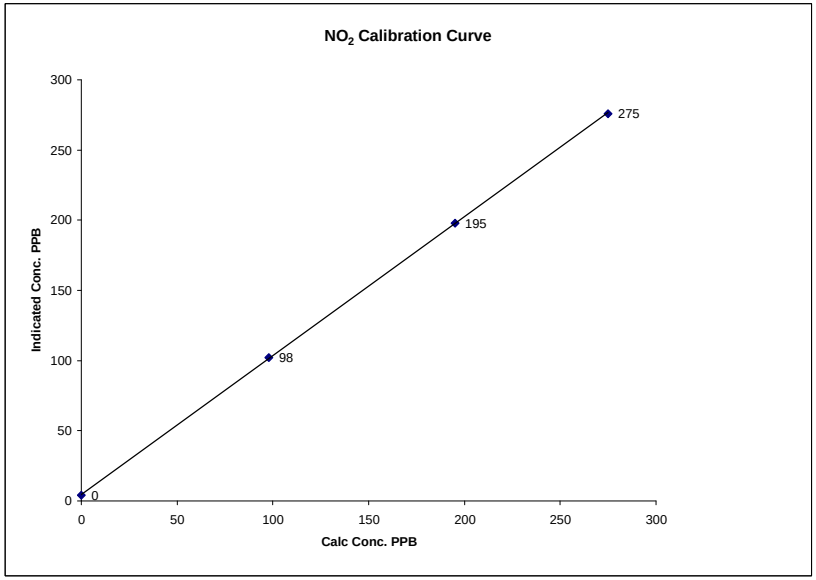
Calibration Performed by: Shea Beaton

NO_2 Calibration Curve

Calibration Date	November 14, 2008		
Company	**Lakeland Ind & Comm. Assoc.**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:15	End Time (MST)	15:12

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	4	N/A
98	102	0.9608
195	198	0.9848
275	276	0.9964

Correlation Coefficient	(≥ 0.995)	0.999971
Slope	(0.85 to 1.15)	0.989389
Intercept	(± 3% F.S.)	4.50674



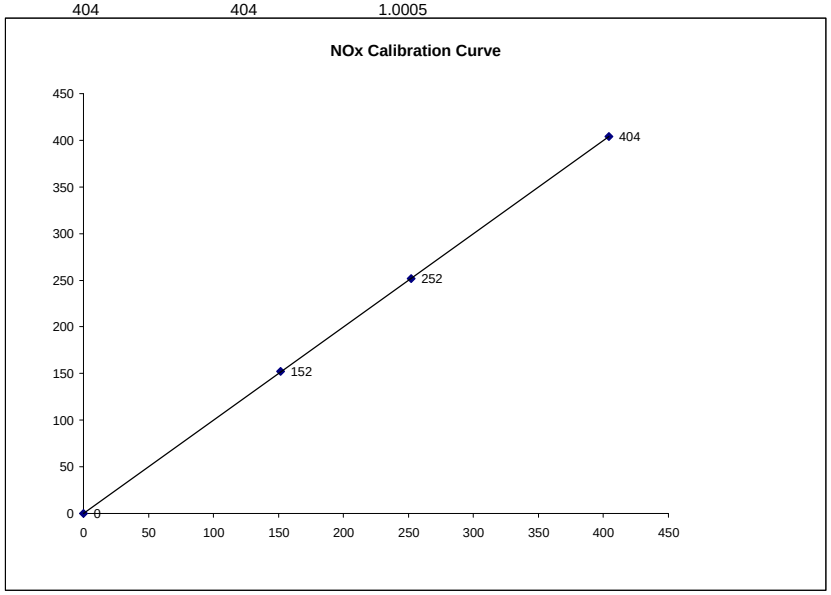
Notes:

NOx Calibration Curve

Calibration Date	November 14, 2008		
Company	**Lakeland Ind & Comm. Assoc.**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:15	End Time (MST)	15:12

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
152	152	0.9974
252	252	1.0011
404	404	1.0005

Correlation Coefficient	(≥ 0.995)	0.999998
Slope	(0.85 to 1.15)	0.999154
Intercept	(± 3% F.S.)	0.15119

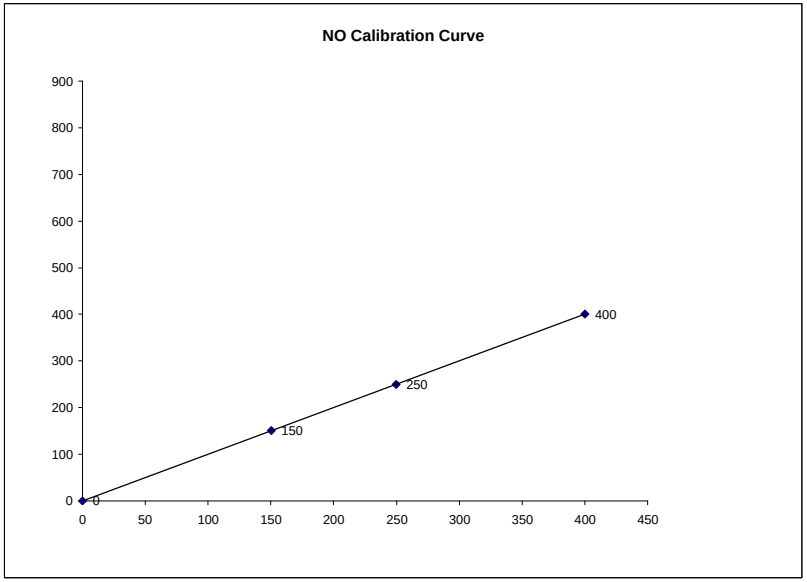


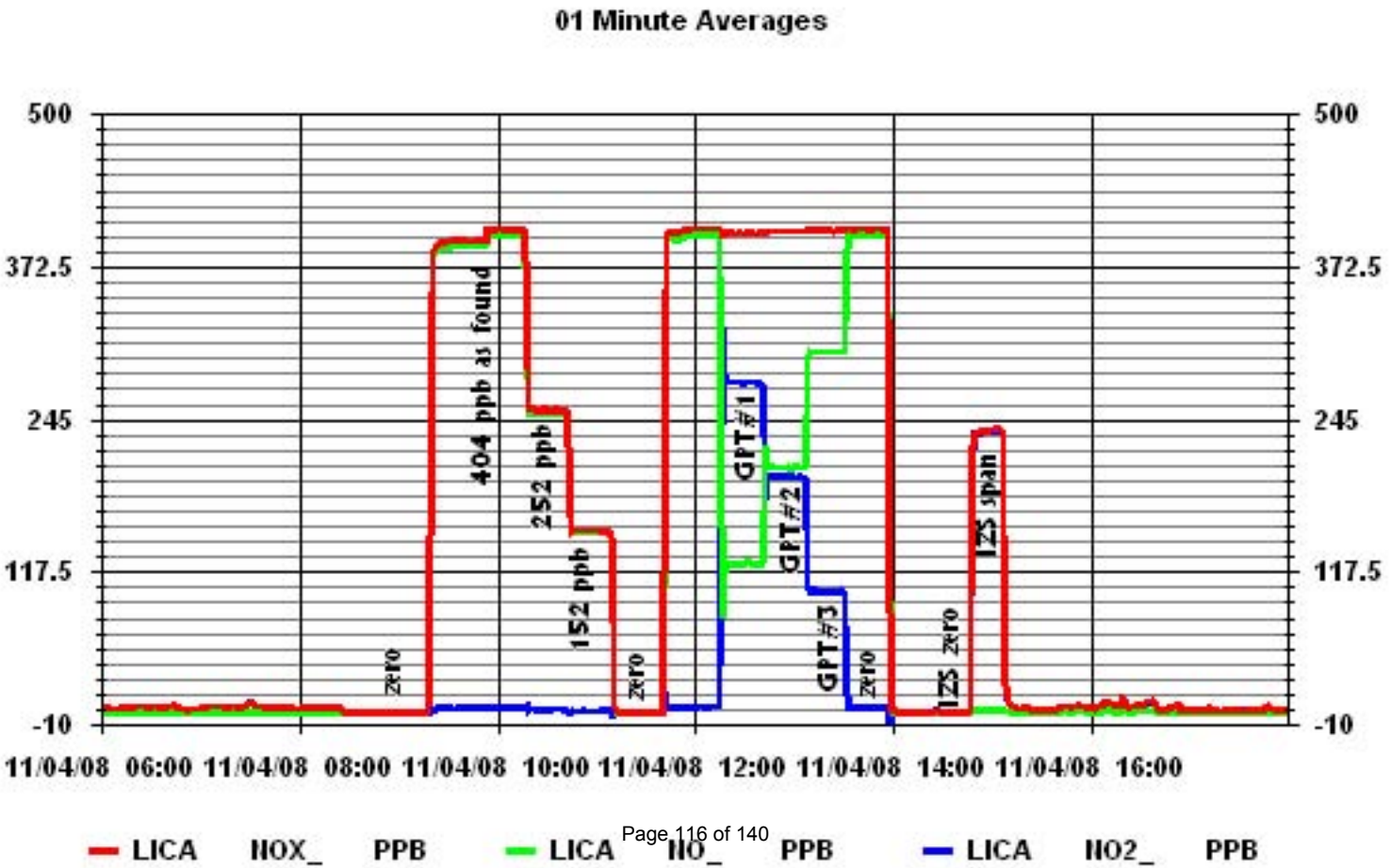
NO Calibration Curve

Calibration Date	November 14, 2008		
Company	**Lakeland Ind & Comm. Assoc.**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:15	End Time (MST)	15:12

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
150	151	0.9944
250	250	0.9994
400	400	1.0008

Correlation Coefficient	(≥ 0.995)	0.999993
Slope	(0.85 to 1.15)	0.995487
Intercept	(± 3% F.S.)	0.9127




01 Minute Averages
500
372.5
245
117.5
-10
zero
404 ppb as found
252 ppb
152 ppb
zero
GPT#1
GPT#2
GPT#3
zero
IZS zero
IZS span
11/04/08 06:00
11/04/08 08:00
11/04/08 10:00
11/04/08 12:00
11/04/08 14:00
11/04/08 16:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	November 13, 2008	Previous Calibration	November 4, 2008
Company	**Lakeland Ind & Comm. Assoc.**	Plant/Location	**LICA 1 - Cold Lake South**
Start Time (MST)	13:25	End Time (MST)	16:55
Reason:	As Found Calibration		
Barometric Pressure	705 mmHg	Station Temperature	23.0 Deg C
Cal Gas Concentration	NOx 52 ppm NO 51.5 ppm	Cal Gas Expiry date	March 12, 2010
DAS Output Voltage	0 - 5 Volts		

Equipment Information

Analyzer Make / Model:	TECO 42C	S/N :	42-7408-716	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 2000	S/N:	1991		
DAS Make / Model:	ESC 8832	S/N :	263		
Flow Meter:	Environics 2000	S/N :	1991		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range				0 - 500		ppb		
Sample Flow/Conv. Temp	627	ccm	317	Deg C	734	ccm	317	Deg C
Ozone Flow / Vacuum	OK	ccm	210.5	"Hg-A	OK	ccm	164.8	"Hg-A
HVPS	-821		Volts		-821		Volts	
Rx/ Temp / PMT Temp	49.6	Deg C	-2.5	Deg C	49.5	Deg C	-2.5	Deg C
Box Temp / IZS Temp	28.2	Deg C	OK	Deg C	27.8	Deg C	OK	Deg C
Offset	3.3	NOx	3.1	NO	3.3	NOx	3.1	NO
Slope	1.013	NOx	0.828	NO	1.013	NOx	0.828	NO

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration		Indicated Concentration			Correction Factor	
			NOx	NO	NOx	NO	NO2	NOx	NO
5003.0	0	N/A	0	0	0	0	0	N/A	N/A
4976.1	39	N/A	404	400	299	295	4	1.3524	1.3576
5013.9	0	N/A	0	0	0	0	0	N/A	N/A
4976.1	39	N/A	404	400	394	390	5	1.0263	1.0269
5013.9	0	N/A	0	0	0	0	0	N/A	N/A
								Converter Efficiency	
								Correction Factor	

Linearity OK?	**Yes**	No	Sum of Least Squares	N/A	N/A
Flows Checked on-site?	Yes	**No**	New Correction Factor	1.0263	1.0269
			Average Converter Efficiency	#DIV/0!	

	Before Calibration				After Calibration			
Auto Zero	0.3	NOx	0.1	NO2	N/A	NOx	N/A	NO2
Auto Span	174.9	NOx	173.9	NO2	N/A	NOx	N/A	NO2
Sample Lines Connected							**YES**	
Percent Change from Previous Calibration					*NOx*	N/A	*NO*	N/A

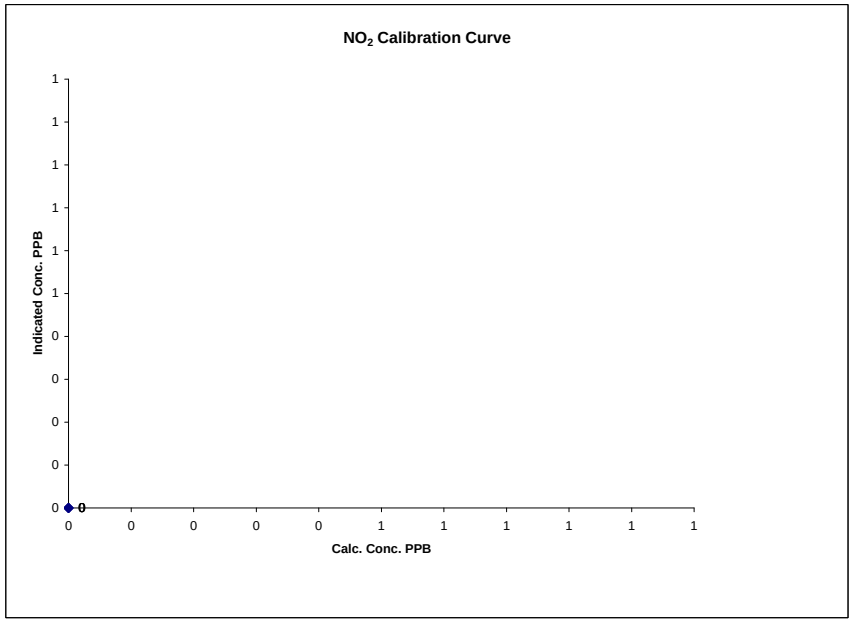
Calibration Performed by:	Shea Beaton

NO_2 Calibration Curve

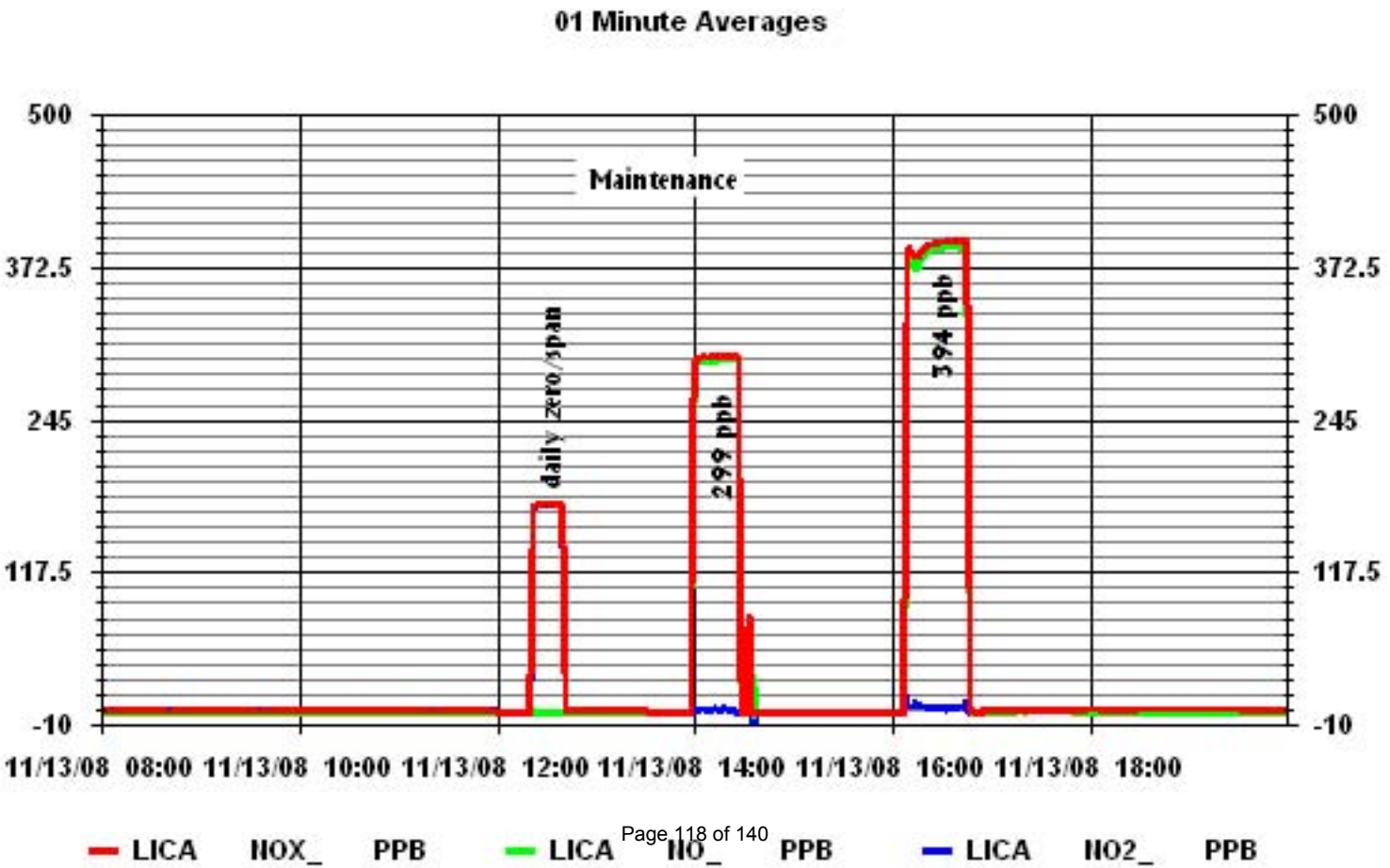
Calibration Date	November 13, 2008		
Company	**Lakeland Ind & Comm. Assoc.**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	13:25	End Time (MST)	16:55

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

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



Notes:


01 Minute Averages
500
372.5
245
117.5
-10
Maintenance
daily zero/span
299 ppb
394 ppb
11/13/08 08:00
11/13/08 10:00
11/13/08 12:00
11/13/08 14:00
11/13/08 16:00
11/13/08 18:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

NOx - NO- NO_2 Calibration Report

Station Information

Calibration Date	November 14, 2008	Previous Calibration	November 4, 2008
Company	**Lakeland Ind & Comm. Assoc.**	Plant/Location	**LICA 1 - Cold Lake South**
Start Time (MST)	8:00	End Time (MST)	14:55
Reason:		Post-Repair Calibration	
Barometric Pressure	720 mmHg	Station Temperature	23.0 Deg C
Cal Gas Concentration	NOx 52.0 ppm NO 51.5 ppm	Cal Gas Expiry date	03/12/2010
DAS Output Voltage	0 - 1 Volts	Chart Rec. Output	0 - 1 Volts

Equipment Information

Analyzer Make / Model:	TECO 42C	S/N :	42-7408-716	Method:	Chemiluminescent
Calibrator Make / Model:	Environics 2000	S/N:	1991		
DAS Make / Model:	ESC 8832	S/N :	263		
Flow Meter:	Environics 2000	S/N :	1991		

Analyzer Settings

	Before Calibration				After Calibration			
Concentration Range			0 - 500	ppb				
Sample Flow/Conv. Temp	748	ccm	317	Deg C	743	ccm	317	Deg C
Ozone Flow / Vacuum	OK	ccm	166.4	mmHg	OK	ccm	165.6	mmHg
HVPS	-821		Volts		-821		Volts	
Rx/ Temp / PMT Temp	49.6	Deg C	-2.4	Deg C	49.6	Deg C	-2.4	Deg C
Box Temp / IZS Temp	28.0	Deg C	OK	Deg C	27.8	Deg C	OK	Deg C
Offset	3.3	NOx	3.1	NO	3.3	NOx	3.2	NO
Slope	1.013	NOx	0.828	NO	1.008	NOx	0.839	NO

Gas Phase Titration Calibration Data

Dilution Air Flow Rate	Source Flow Rate	O3 Set Point	Calculated Concentration		Indicated Concentration			Correction Factor	
			NOx	NO	NOx	NO	NO2	NOx	NO
5001.0	0.0	N/A	0	0	0	0	0	N/A	N/A
4960.6	38.8	N/A	404	400	400	395	5	1.0089	1.0119
4966.3	38.9	N/A	404	400	403	400	3	1.0028	1.0006
4976.7	24.3	N/A	253	250	252	250	2	1.0027	1.0010
4984.8	14.6	N/A	152	150	152	151	1	0.9991	0.9960
5001.0	0.0	N/A	0	0	0	0	0	N/A	N/A
								Converter Efficiency	
4960.6	38.8	N/A	404	400	403	400	3	N/A	
4966.3	38.9	300	404	400	400	125	275	99%	
4966.0	38.9	200	404	400	401	206	195	99%	
4963.3	38.9	100	404	400	402	304	98	99%	
4963.3	38.9	N/A	404	400	402	399	3	N/A	
5001.0	0	N/A	0	0	1	0	0	N/A	N/A
Linearity OK?			**Yes**	No	Sum of Least Squares			1.0024	1.0003
Flows Checked on-site?			**Yes**	No	New Correction Factor			1.0028	1.0006
					Average Converter Efficiency			99%	

	Before Calibration				After Calibration			
Auto Zero	0.3	NOx	0.1	NO2	0.5	NOx	0.4	NO2
Auto Span	174.9	NOx	173.9	NO2	228.8	NOx	277.6	NO2
Sample Lines Connected					YES			
Percent Change from Previous Calibration					*NOx*	0.2%	*NO*	0.0%

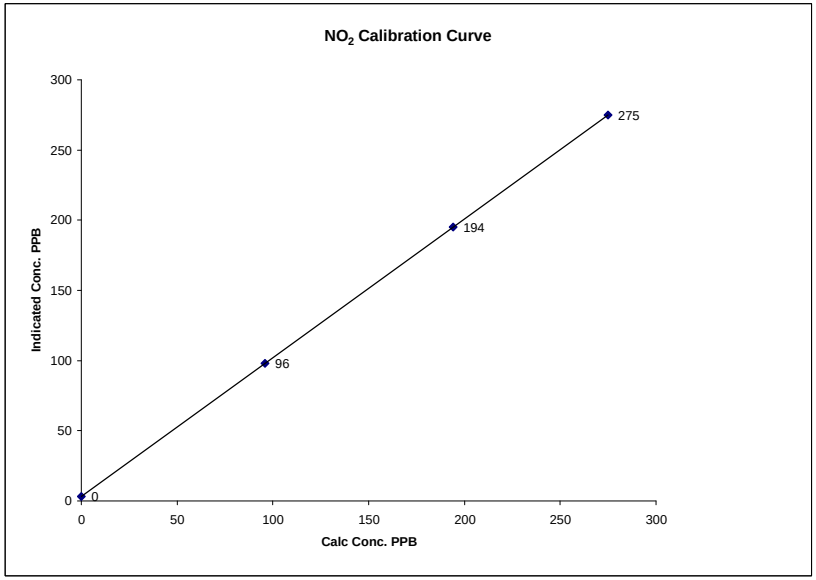
Calibration Performed by: Shea Beaton

NO_2 Calibration Curve

Calibration Date	November 14, 2008		
Company	**Lakeland Ind & Comm. Assoc.**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	8:00	End Time (MST)	14:55

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	3	N/A
96	98	0.9796
194	195	0.9949
275	275	1.0000

Correlation Coefficient	(≥ 0.995)	1.000000
Slope	(0.85 to 1.15)	0.989185
Intercept	(± 3% F.S.)	3.02767



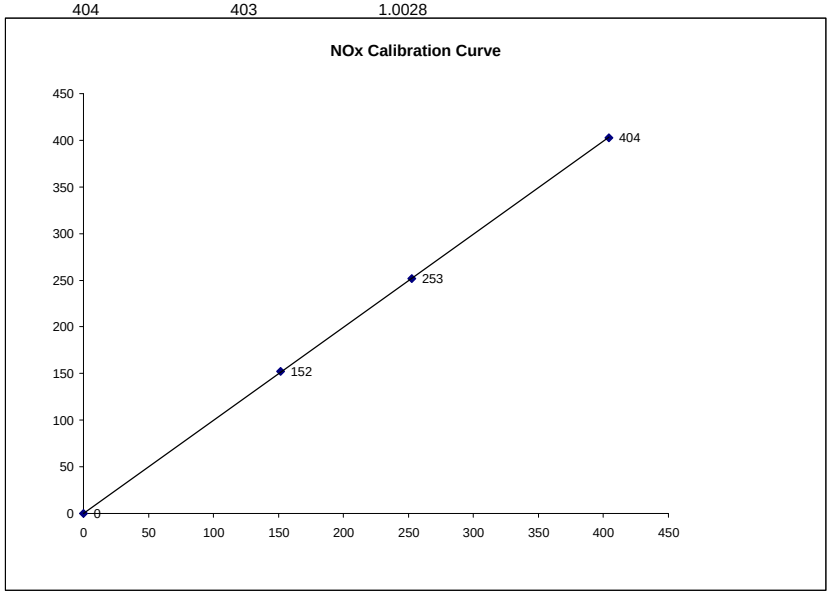
Notes:

NOx Calibration Curve

Calibration Date	November 14, 2008			
Company	**Lakeland Ind & Comm. Assoc.**			
Plant / Location	**LICA 1 - Cold Lake South**			
Start Time (MST)	8:00	End Time (MST)	14:55	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
152	152	0.9991
253	252	1.0027
404	403	1.0028

Correlation Coefficient	(≥ 0.995)	0.999997
Slope	(0.85 to 1.15)	0.996874
Intercept	(± 3% F.S.)	0.21504

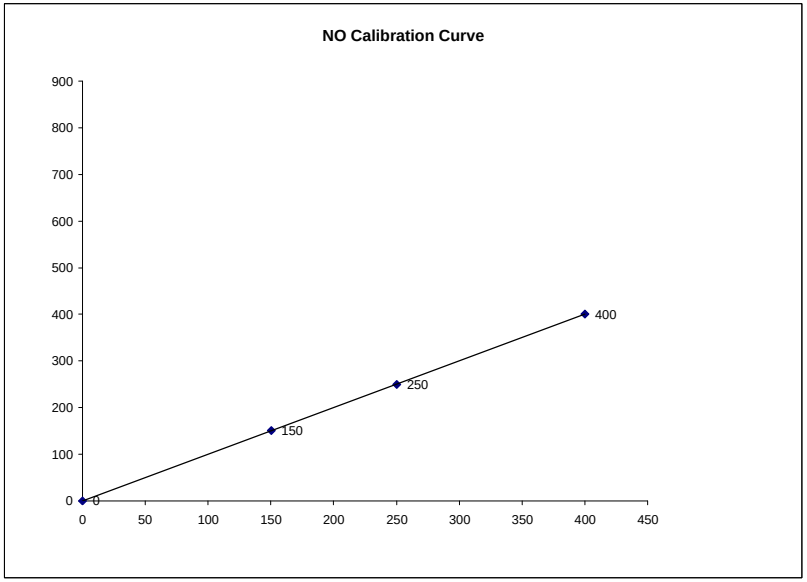


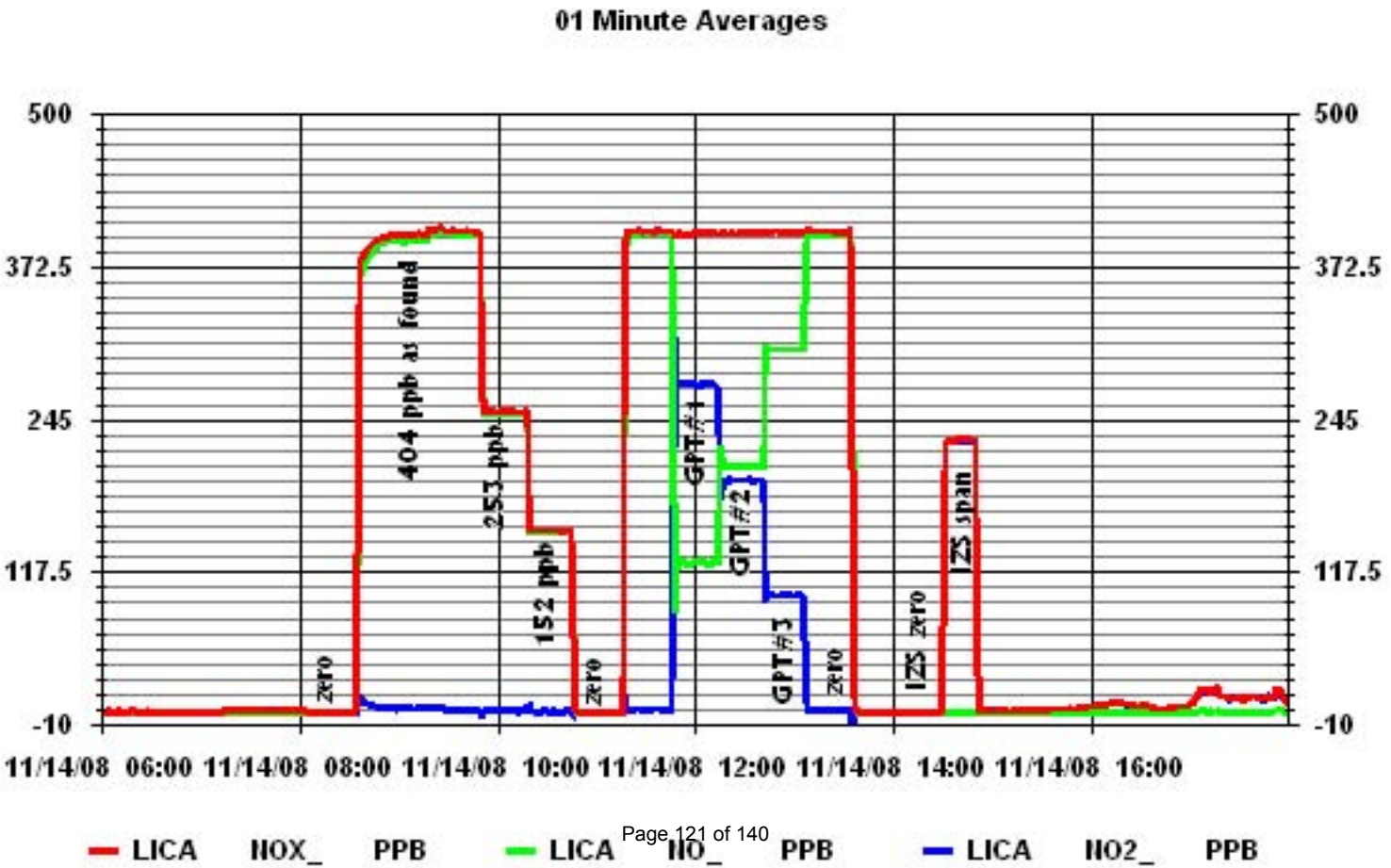
NO Calibration Curve

Calibration Date	November 14, 2008			
Company	**Lakeland Ind & Comm. Assoc.**			
Plant / Location	**LICA 1 - Cold Lake South**			
Start Time (MST)	8:00	End Time (MST)	14:55	

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	N/A
150	151	0.9960
250	250	1.0010
400	400	1.0006

Correlation Coefficient	(≥ 0.995)	0.999996
Slope	(0.85 to 1.15)	0.996840
Intercept	(± 3% F.S.)	-0.2170




01 Minute Averages
500
372.5
245
117.5
-10
zero
404 ppb as found
253 ppb
152 ppb
zero
GPT#1
GPT#2
GPT#3
zero
IZS zero
IZS span
11/14/08 06:00
11/14/08 08:00
11/14/08 10:00
11/14/08 12:00
11/14/08 14:00
11/14/08 16:00
LICA NOX_ PPB
LICA NO_ PPB
LICA NO2_ PPB

Ozone

O_3 Calibration Report

Station Information

Calibration Date	November 5, 2008	Previous Calibration	October 2, 2008
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	12:20	End Time (MST)	15:55
Reason:		Monthly Calibration	
Barometric Pressure	714 mm Hg	Station Temperature	23 Deg C
DAS Output Voltage	0 - 10 Volts		

Equipment Information

Analyzer Make / Model:	TEI 49i	S/N :	700419951	Method:	Fluorescent
Calibrator Make / Model:	Environics 2000	S/N :	1991	Method:	GPT
DAS Make / Model:	ESC 8832	S/N :	263		

Analyzer Settings

	Before Calibration		After Calibration	
Concentration Range	0 - 500 ppb			
Bench Temp/ Pressure	28.5	Deg C	28.9	Deg C
O_3 Set Level	29%		29%	
Bench Lamp/O3 Lamp				
Sample Flow A/B	0.743 LPM	0.756 LPM	0.742 LPM	0.756 LPM
Offset / Slope	0.7	1.046	0.7	1.046

Calibration Data

Dilution Flow Rate	Ozone Set Point	Calculated Concentration	Indicated Conc. (DAS)	Correction Factor
5000	0	0	0	N/A
5000	400	395	392	1.0077
5000	200	196	197	0.9949
5000	100	94	96	0.9792
5000	0	0	0	N/A
			Sum of Least Squares	N/A
			New Correction Factor	1.0077

	Before Calibration	After Calibration
Auto Zero	-0.1	-0.2
Auto Span	284.6	286.3
Sample Lines Connected		YES
Percent Change from Previous Calibration		-0.8%

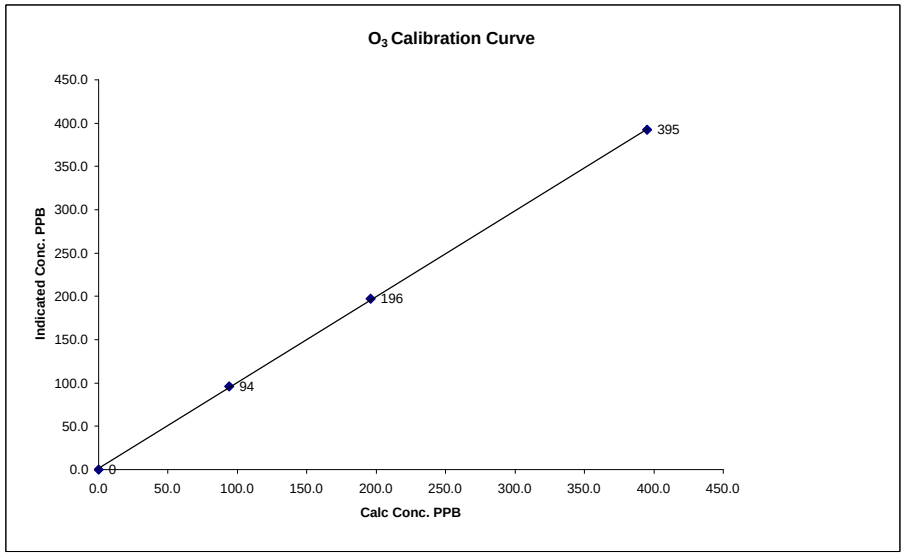
Calibration Performed by: Shea Beaton

O_3 Calibration Curve

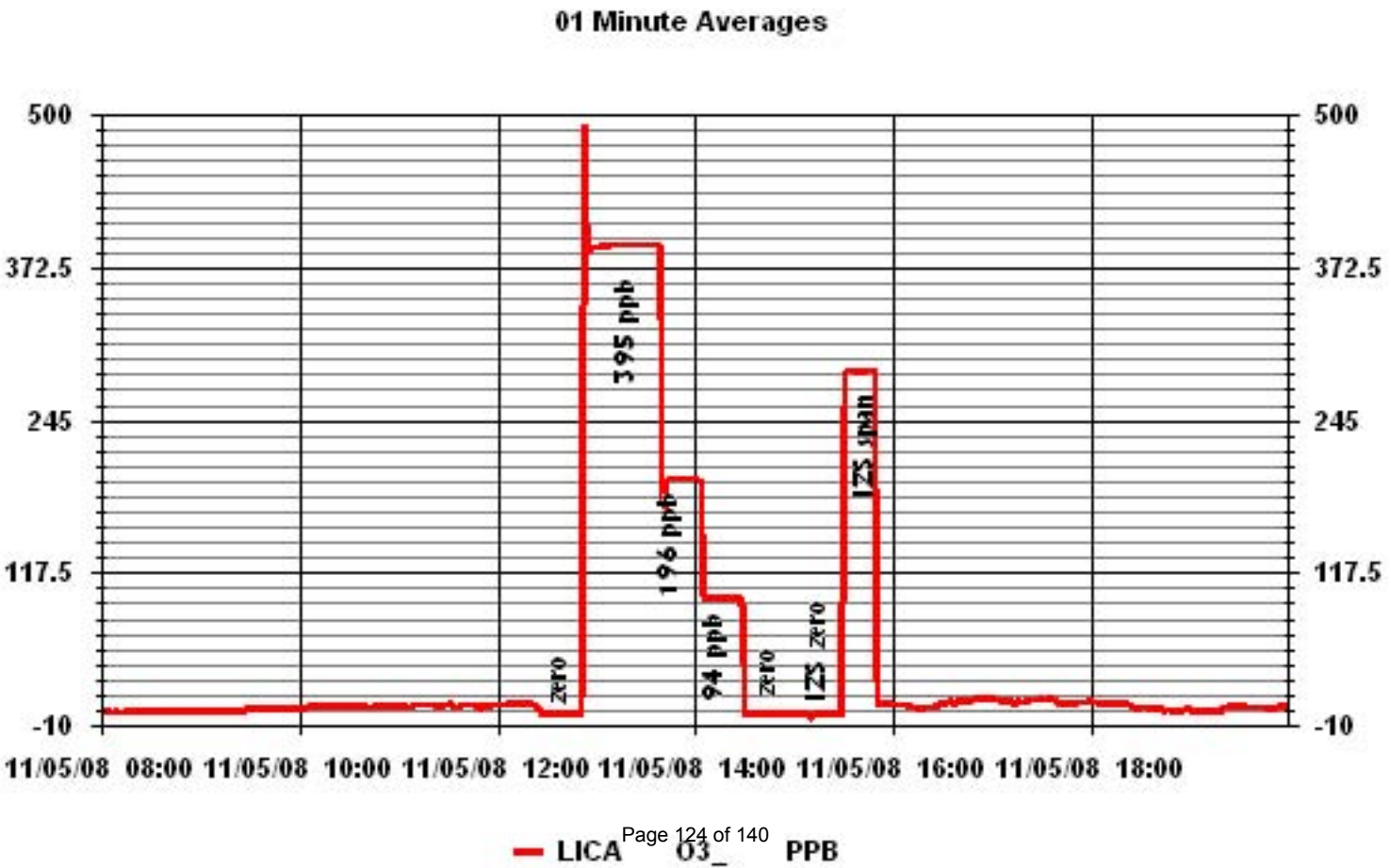
Calibration Date	November 5, 2008		
Company	**Lakeland Industry & Community Association**		
Plant / Location	**LICA 1 - Cold Lake South**		
Start Time (MST)	12:20	End Time (MST)	15:55

Calculated Conc. ppb	Indicated Response ppb	Correction Factor
0	0	n/a
94	96	0.9792
196	197	0.9949
395	392	1.0077

Correlation Coefficient	(≥ 0.995)	0.999923
Slope	(0.85 to 1.15)	0.990683
Intercept	(± 3% F.S.)	1.595557



Notes: pressure =708.3 mmHg , Bench Lamp = 53.6, O3 Lamp = 67.6


01 Minute Averages
500
372.5
245
117.5
-10
zero
395 ppb
196 ppb
94 ppb
zero
IZS zero
IZS span
11/05/08 08:00
11/05/08 10:00
11/05/08 12:00
11/05/08 14:00
11/05/08 16:00
11/05/08 18:00
LICA O3_ PPB

Wind System

LICA.

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

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

Sonic Wind Sensor Certificate of Calibration

Sensor Model No: 50.5H Sonic **Sensor Serial No:** F1644
Customer: **P.O. No:** **Sales Order:**
Final Calibration By: Kevin Ricks **Calibration Date:** 10-22-08
Quality Control Inspected By: Kevin L Ricks **Inspection Date:** 10-22-08

New Unit [ ] **Repair/Adjust** [X] **Re-Calibration** [X] **As Found** [ ]

Unit Within Tolerance as Found [ ] **Unit Within Tolerance as Left** [X]

Calibration Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Due
Digital Multimeter 1	Agilent	34401A	MY41039534	1/31/2009
Digital Multimeter 2	Agilent	34401A	MY41040097	11/09/2008
Frequency Counter	Agilent	53131A	MY40009285	4/30/2009
Standard Sensor	Climet	011-1	2551	7/11/2011
Standard Cup Set	Climet	014	0008	7/11/2011
Temperature Probe	Vaisala	HMI 31	530227	7/23/2009

Test 1: Average Wind Tunnel Speed: 3.12 **Meters per Second** **FirmwareVersion:** **3194-01 R2.62**

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .20 m/s)
30	.086	30.8	.8	3.14	.06	3.01	-.13
60	.164	58.9	-1.1	3.08	.06	2.99	-.09
120	.336	120.9	.9	3.09	.06	3.01	-.08
150	.415	149.3	-.7	3.1	.061	3.05	-.05
210	.584	210.1	.1	3.13	.061	3.03	-.1
240	.666	239.8	-.2	3.13	.06	3.02	-.11
300	.833	299.9	-.1	3.14	.061	3.04	-.09
330	.912	328.4	-1.6	3.12	.06	3.02	-.1

Output Type:

0 to 1 volt	X
0 to 2.5 volt	
0 to 5 volt	
RS-232	X
SDI-12	
RS-422	
RS-485	

Test 2: Average Wind Tunnel Speed: 11.82 **Meters per Second** **Output Range:** **0-50 m/s**

WD Setting (Deg)	WD Output (Volts)	WD Indication (Deg)	WD Error (+/- 3 Deg)	WS Standard (m/s)	WS Output (Volts)	WS Indication (m/s)	WS Error (+/- .24 m/s)
30	.084	30.2	.2	11.78	.236	11.82	.03
60	.164	59	-1	11.87	.238	11.92	.05
120	.336	120.8	.8	11.85	.239	11.96	.11
150	.414	149.2	-.8	11.82	.239	11.94	.13
210	.585	210.7	.7	11.84	.239	11.95	.11
240	.665	239.6	-.4	11.82	.237	11.84	.02
300	.835	300.4	.4	11.77	.238	11.91	.14
330	.913	328.6	-1.4	11.84	.24	11.99	.15

Test Items:

Array Alignment	✓
Jumper Config	✓
Firmware Config	✓
Zero Calibration	✓
Low Speed Test OK	✓
High Speed Test OK	✓
Sensor Function	✓
Physical Inspection	✓

The standards used for this calibration have accuracies equal to or greater than the instruments tested. These standards are on record and traceable to NIST to the extent allowed by the institute's calibration facility. Unless otherwise stated hereon, all instruments are calibrated to meet the manufacturer's published specifications. The calibration system complies with MIL-STD-45662A.

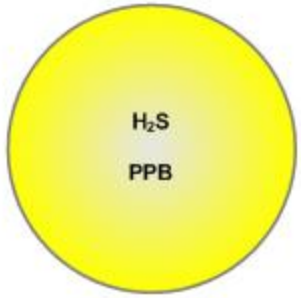
Passive Bubble Maps

Lakeland Industry & Community Association
H_2S Passive Bubble Map

NOVEMBER 2008

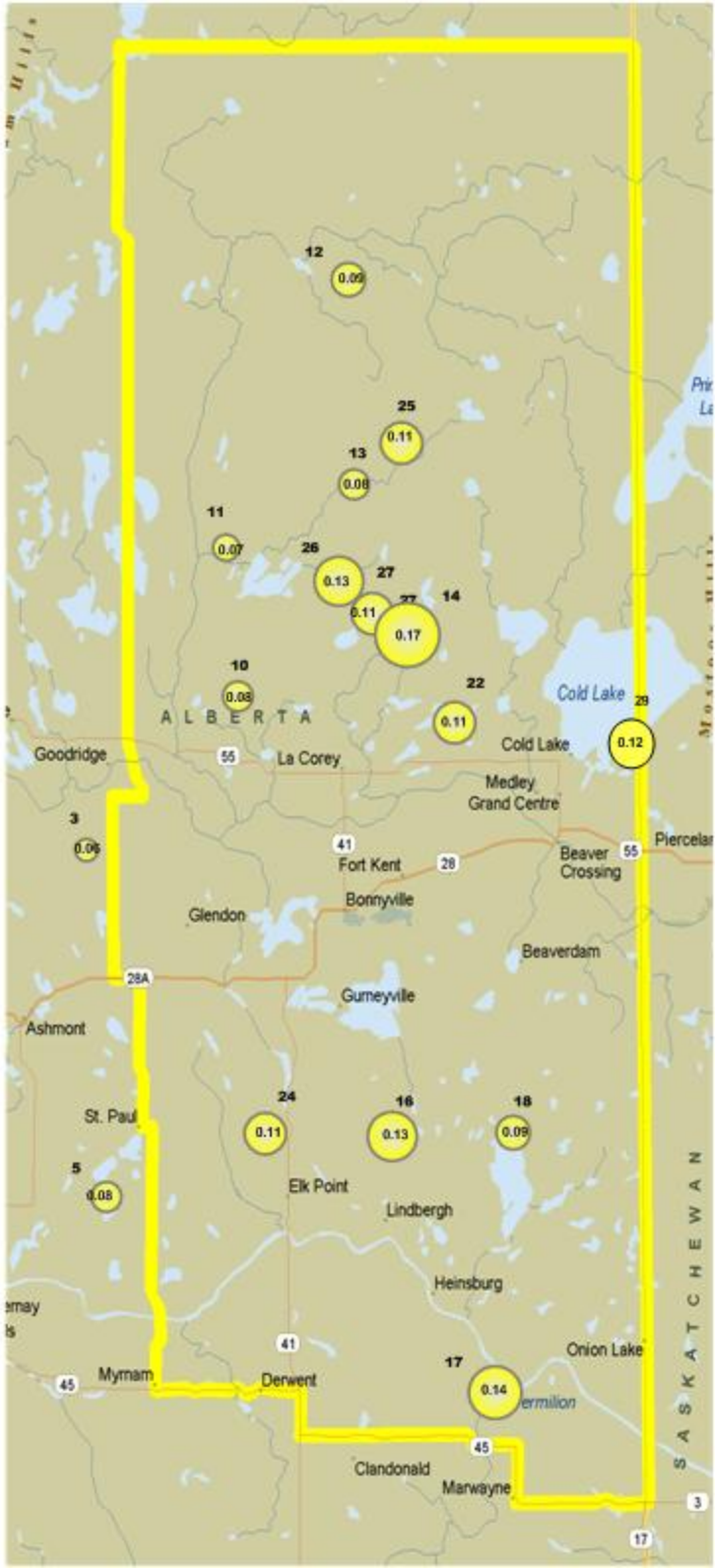
PASSIVE STATIONS

3 – Therien	0.06 PPB
5 – Lake Eliza	0.08 PPB
10 – La Corey	0.06 PPB
10A – La Corey	0.10 PPB
11 – Wolf Lake	0.06 PPB
11A – Wolf Lake	0.07 PPB
12 – Foster Creek	0.09 PPB
13 – Primrose	0.08 PPB
14 – Maskwa	0.17 PPB
16 – Frog Lake	0.13 PPB
17 – Clear Range	0.14 PPB
18 – Fishing Lake	0.09 PPB
22 – Cold Lake South	0.11 PPB
24 – Fort George	0.11 PPB
25 – Burnt Lake	0.11 PPB
26 – Mahihkan	0.13 PPB
27 – Hilda Lake	0.11 PPB
29 – Cold Lake South 2	0.12 PPB



Summary

Minimum : 0.06PPB – Various
Maximum: 0.17 PPB –Maskwa
Average: 0.10 PPB *Includes Duplicates

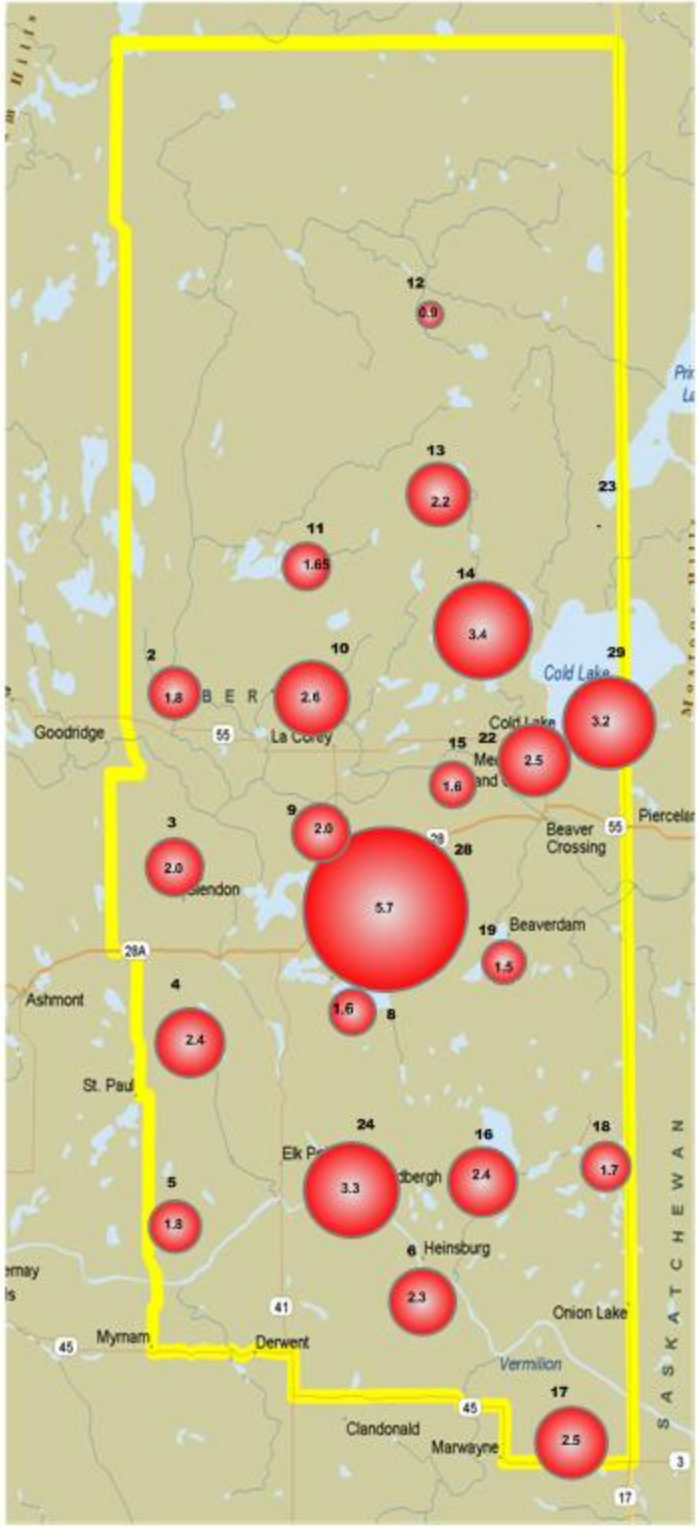


Lakeland Industry & Community Association
NO_2 Passive Bubble Map

NOVEMBER 2008

PASSIVE STATIONS

2 – Sand River	1.8 PPB
3 – Therien	2.0 PPB
4 – Flat Lake	2.4 PPB
5 – Lake Eliza	1.8 PPB
6 – Telegraph Creek	2.3 PPB
8 – Muriel-Kehewin	1.6 PPB
9 – Dupre	2.0 PPB
10 – La Corey	2.6 PPB
10A – La Corey	MISSING
11 – Wolf Lake	2.3 PPB
11A – Wolf Lake	1.0 PPB
12 – Foster Creek	0.9 PPB
13 – Primrose	2.2 PPB
14 – Maskwa	3.4 PPB
15 – Ardmore	1.6 PPB
16 – Frog Lake	2.4 PPB
17 – Clear Range	2.5 PPB
18 – Fishing Lake	1.7 PPB
19 – Beaverdam	1.5 PPB
22 – Cold Lake South	2.5 PPB
23 – Medley-Martineau	MISSING
24 – Fort George	3.3 PPB
28 – Town of Bonnyville	5.7 PPB
29 – Cold Lake South 2	3.2 PPB



Summary

Minimum : 0.9 PPB – Foster Creek
Maximum: 5.7 PPB – Town of Bonnyville
Average: 2.3 PPB *Includes Duplicates
Note: Sample at station #10 duplicate and sample at station # 23 were missing.

Lakeland Industry & Community Association
O_3 Passive Bubble Map

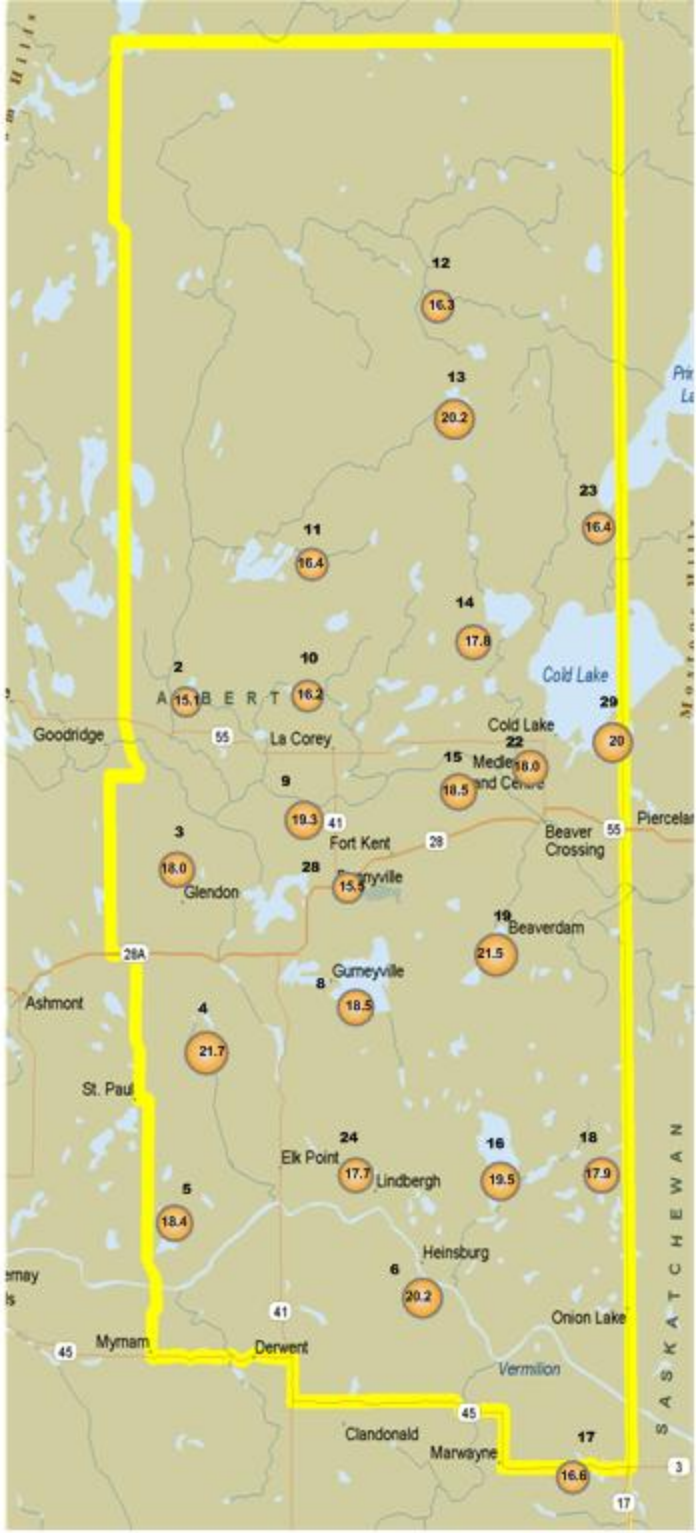
NOVEMBER 2008

PASSIVE STATIONS

2 – Sand River	15.1 PPB
3 – Therien	18.0 PPB
4 – Flat Lake	21.7 PPB
5 – Lake Eliza	18.4 PPB
6 – Telegraph Creek	20.2 PPB
8 – Muriel-Kehewin	18.5 PPB
9 – Dupre	19.3 PPB
10 – La Corey	16.3 PPB
10A – La Corey	16.1 PPB
11 – Wolf Lake	17.0 PPB
11A – Wolf Lake	15.7 PPB
12 – Foster Creek	16.3 PPB
13 – Primrose	20.2 PPB
14 – Maskwa	17.8 PPB
15 – Ardmore	18.5 PPB
16 – Frog Lake	19.5 PPB
17 – Clear Range	16.6 PPB
18 – Fishing Lake	17.9 PPB
19 – Beaverdam	21.5 PPB
22 – Cold Lake South	18.0 PPB
23 – Medley-Martineau	16.4 PPB
24 – Fort George	17.7 PPB
28 – Town of Bonnyville	15.5 PPB
29 – Cold Lake South 2	20.0 PPB

Summary

Minimum : 15.1 PPB –Sand River
Maximum: 21.7 PPB –Flat Lake
Average: 18.01 PPB *Includes Duplicates

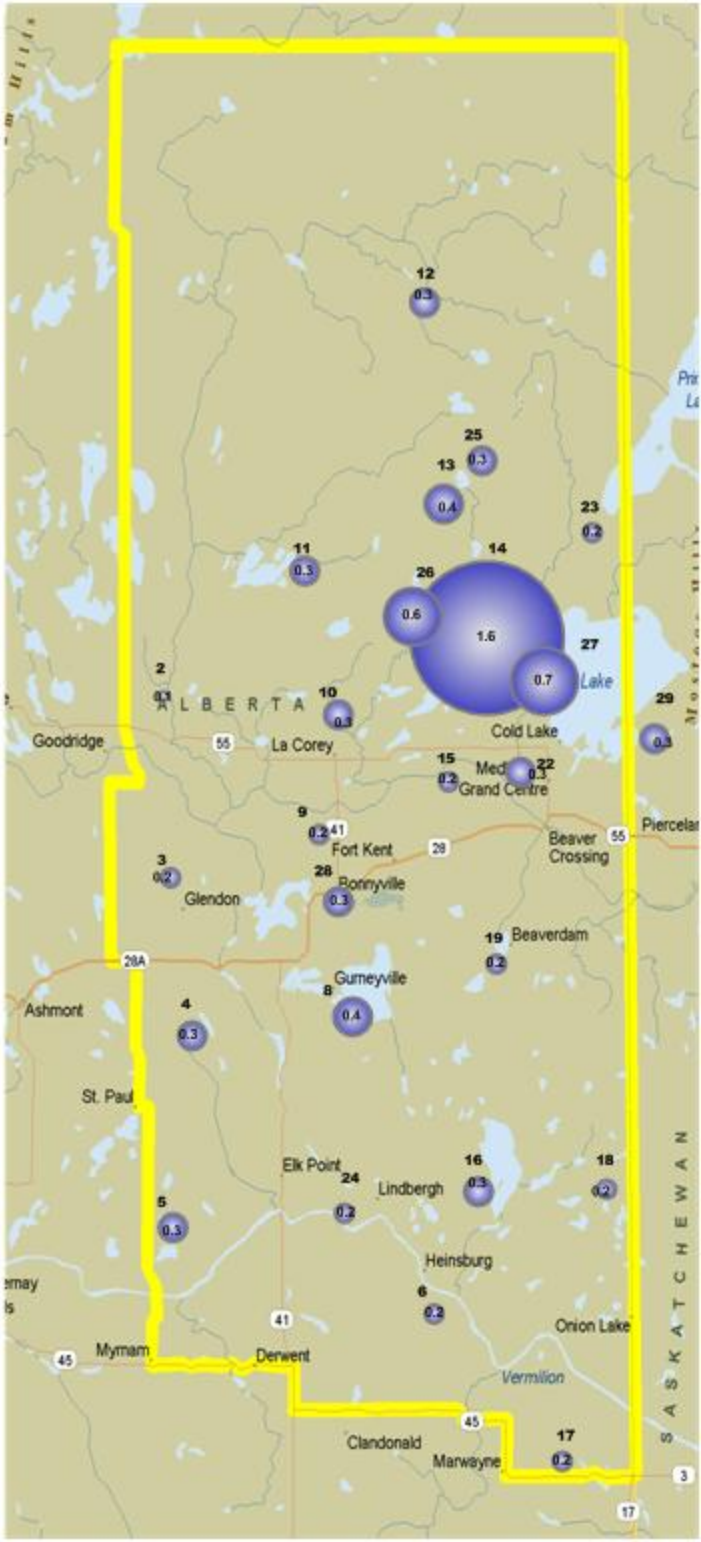


Lakeland Industry & Community Association
SO_2 Passive Bubble Map

NOVEMBER 2008

PASSIVE STATIONS

2 – Sand River	0.1 PPB
3 – Therien	0.2 PPB
4 – Flat Lake	0.3 PPB
5 – Lake Eliza	0.3 PPB
6 – Telegraph Creek	0.2 PPB
8 – Muriel-Kehewin	0.4 PPB
9 – Dupre	0.2 PPB
10 – La Corey	0.3 PPB
10A – La Corey	0.3 PPB
11 – Wolf Lake	0.3 PPB
11A – Wolf Lake	0.3 PPB
12 – Foster Creek	0.3 PPB
13 – Primrose	0.4 PPB
14 – Maskwa	1.6 PPB
15 – Ardmore	0.2 PPB
16 – Frog Lake	0.3 PPB
17 – Clear Range	0.2 PPB
18 – Fishing Lake	0.2 PPB
19 – Beaverdam	0.2 PPB
22 – Cold Lake South	0.3 PPB
23 – Medley-Martineau	0.2 PPB
24 – Fort George	0.2 PPB
25 – Burnt Lake	0.3 PPB
26 – Mahihkan	0.6 PPB
27 – Hilda Lake	0.7 PPB
28 – Town of Bonnyville	0.3 PPB
29 – Cold Lake South 2	0.3 PPB



Summary

Minimum : 0.1 PPB – Sand River
Maximum: 1.6 PPB – Maskwa
Average: 0.3 PPB *Includes Duplicates

Passive Network Laboratory Analysis

Your Project #: 2008/10/30 - 2008/11/27
Site:LICA

Attention: MICHAEL BISAGA
LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
PO BOX 8237
5006 - 50TH AVENUE
BONNYVILLE, AB
CANADA T9N 2J5

Report Date: 2008/12/15

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A866435
Received: 2008/12/03, 08:43

Sample Matrix: Air
Samples Received: 27

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis (1)	18	2008/12/10	2008/12/15		EDM SOP-0320
NO2 Passive Analysis (1)	23	2008/12/08	2008/12/10		EDM SOP-0318
O3 Passive Analysis (1)	24	2008/12/08	2008/12/10		EDM SOP-0317
SO2 Passive Analysis (1)	27	2008/12/05	2008/12/10		EDM SOP-0319

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

Encryption Key

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

LEVI MANCHAK,
Email:
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. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A866435
Report Date: 2008/12/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2008/10/30 - 2008/11/27
Site Reference: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		M98510	M98511	M98512	M98513		
Sampling Date		2008/10/30 07:10	2008/10/30 06:25	2008/10/31 11:45	2008/10/31 11:10		
	Units	**1**	**2**	**3**	**4**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated H2S	ppb		0.06		0.08	0.02	2806868
Calculated NO2	ppb	1.8	2.0	2.4	1.8	0.1	2789418
Calculated O3	ppb	15.1	18.0	21.7	18.4	0.1	2790629
Calculated SO2	ppb	0.1	0.2	0.3	0.3	0.1	2785919

RDL = Reportable Detection Limit

Maxxam ID		M98514	M98515	M98516	M98517		
Sampling Date		2008/10/31 09:55	2008/10/31 12:40	2008/10/30 15:45	2008/10/30 08:00		
	Units	**5**	**7**	**8**	**9**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated H2S	ppb				0.06	0.02	2806868
Calculated NO2	ppb	2.3	1.6	2.0	2.6	0.1	2789418
Calculated O3	ppb	20.2	18.5	19.3	16.3	0.1	2790629
Calculated SO2	ppb	0.2	0.4	0.2	0.3	0.1	2785919

RDL = Reportable Detection Limit

Maxxam ID		M98518	M98519	M98520	M98521		
Sampling Date		2008/10/30 07:45	2008/10/30 10:00	2008/10/30 11:20	2008/10/30 12:05		
	Units	**10**	**11**	**12**	**13**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated H2S	ppb	0.06	0.09	0.08	0.17	0.02	2806868
Calculated NO2	ppb	2.3	0.9	2.2	3.4	0.1	2789418
Calculated O3	ppb	17.0	16.3	20.2	17.8	0.1	2790629
Calculated SO2	ppb	0.3	0.3	0.4	1.6	0.1	2785919

RDL = Reportable Detection Limit

Maxxam Job #: A866435
Report Date: 2008/12/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2008/10/30 - 2008/11/27
Site Reference: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		M98522	M98523	M98524	M98525		
Sampling Date		2008/10/30 15:15	2008/10/31 08:35	2008/10/31 09:15	2008/10/31 07:50		
	Units	**14**	**15**	**16**	**17**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated H2S	ppb		0.13	0.14	0.09	0.02	2806868
Calculated NO2	ppb	1.6	2.4	2.5	1.7	0.1	2789418
Calculated O3	ppb	18.5	19.5	16.6	17.9	0.1	2790629
Calculated SO2	ppb	0.2	0.3	0.2	0.2	0.1	2785919

RDL = Reportable Detection Limit

Maxxam ID		M98526	M98527	M98528	M98529		
Sampling Date		2008/10/31 06:55	2008/10/30 14:20	2008/10/30 13:30	2008/10/31 10:30		
	Units	**18**	**19**	**20**	**21**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated H2S	ppb		0.11		0.11	0.02	2806868
Calculated NO2	ppb	1.5	2.5		3.3	0.1	2789418
Calculated O3	ppb	21.5	18.0	16.4	17.7	0.1	2790629
Calculated SO2	ppb	0.2	0.3	0.2	0.2	0.1	2785919

RDL = Reportable Detection Limit

Maxxam ID		M98532	M98533	M98534	M98535		
Sampling Date		2008/10/30 11:10	2008/10/30 11:55	2008/10/30 12:25	2008/10/30 16:05		
	Units	**22**	**23**	**24**	**25**	**RDL**	**QC Batch**
Passive Monitoring							
Calculated H2S	ppb	0.11	0.13	0.11		0.02	2806868
Calculated NO2	ppb				5.7	0.1	2789418
Calculated O3	ppb				15.5	0.1	2790629
Calculated SO2	ppb	0.3	0.6	0.7	0.3	0.1	2785919

RDL = Reportable Detection Limit

Maxxam Job #: A866435
Report Date: 2008/12/15

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: 2008/10/30 - 2008/11/27
Site Reference: LICA
Sampler Initials: SB

RESULTS OF CHEMICAL ANALYSES OF AIR

Maxxam ID		M98536	M98537	M98538		
Sampling Date		2008/10/30 14:20	2008/10/30 08:00	2008/10/30 08:45		
	Units	**26**	**9A**	**10A**	**RDL**	**QC Batch**
Passive Monitoring						
Calculated H2S	ppb	0.12	0.10	0.07	0.02	2806868
Calculated NO2	ppb	3.2	MISSING	1.0	0.1	2789418
Calculated O3	ppb	20.0	16.1	15.7	0.1	2790629
Calculated SO2	ppb	0.3	0.3	0.3	0.1	2785919

RDL = Reportable Detection Limit

General Comments

Results relate only to the items tested.

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Attention: MICHAEL BISAGA
Client Project #: 2008/10/30 - 2008/11/27
P.O. #:
Site Reference: LICA

Quality Assurance Report

Maxxam Job Number: PA866435

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2785919 DF4	Calibration Check	Calculated SO2	2008/12/05		98	%	95 - 105
	SPIKE	Calculated SO2	2008/12/05		102	%	N/A
	BLANK	Calculated SO2	2008/12/05	<0.1		ppb	
2789418 DF4	Calibration Check	Calculated NO2	2008/12/08		100	%	76 - 118
	SPIKE	Calculated NO2	2008/12/08		102	%	N/A
	BLANK	Calculated NO2	2008/12/08	<0.1		ppb	
2790629 OZ	Calibration Check	Calculated O3	2008/12/10		96	%	91 - 107
	SPIKE	Calculated O3	2008/12/10		99	%	N/A
	BLANK	Calculated O3	2008/12/10	<0.1		ppb	
2806868 TM5	Calibration Check	Calculated H2S	2008/12/15		103	%	80 - 120
	SPIKE	Calculated H2S	2008/12/15		101	%	N/A

N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics Edmonton: 9331 - 48th Street T6B 2R4 Telephone(780) 468-3500 FAX(780) 466-3332

Passive Field Data

Field Notes

SAMPLER	SITE	ID	START		END		NOTES
			DATE	TIME	DATE	TIME	
$SO_2/NO_2/O_3$		2	10/30/08	07:10	11/27/08	09:40	
$H_2S/SO_2/NO_2/O_3$		3	10/30/08	06:25	11/27/08	09:00	
$SO_2/NO_2/O_3$		4	10/31/08	11:45	11/28/08	15:15	
$H_2S/SO_2/NO_2/O_3$		5	10/31/08	11:10	11/28/08	14:35	
$SO_2/NO_2/O_3$		6	10/31/08	09:55	11/28/08	13:25	
$SO_2/NO_2/O_3$		8	10/31/08	12:40	11/28/08	16:05	
$SO_2/NO_2/O_3$		9	10/30/08	15:45	11/27/08	08:25	
$H_2S/SO_2/NO_2/O_3$		10	10/30/08	08:00	11/27/08	10:30	
$H_2S/SO_2/NO_2/O_3$		11	10/30/08	08:45	11/27/08	11:10	
$H_2S/SO_2/NO_2/O_3$		12	10/30/08	10:00	11/27/08	12:40	
$H_2S/SO_2/NO_2/O_3$		13	10/30/08	11:20	11/27/08	14:15	
$H_2S/SO_2/NO_2/O_3$		14	10/30/08	12:05	11/27/08	15:00	
$SO_2/NO_2/O_3$		15	10/30/08	15:15	11/27/08	07:40	
$H_2S/SO_2/NO_2/O_3$		16	10/31/08	08:35	11/28/08	10:00	
$H_2S/SO_2/NO_2/O_3$		17	10/31/08	09:15	11/28/08	12:40	
$H_2S/SO_2/NO_2/O_3$		18	10/31/08	07:50	11/28/08	09:10	
$SO_2/NO_2/O_3$		19	10/31/08	06:55	11/28/08	08:25	
$H_2S/SO_2/NO_2/O_3$		22	10/30/08	14:20	11/27/08	17:05	
$SO_2/NO_2/O_3$		23	10/30/08	13:30	11/27/08	16:15	
$H_2S/SO_2/NO_2/O_3$		24	10/31/08	10:30	11/28/08	13:55	
H_2S/SO_2		25	10/30/08	11:10	11/27/08	13:45	
H_2S/SO_2		26	10/30/08	11:55	11/27/08	14:45	
H_2S/SO_2		27	10/30/08	12:25	11/27/08	15:20	
$SO_2/NO_2/O_3$		28	10/30/08	16:25	11/27/08	08:10	
$H_2S/SO_2/NO_2/O_3$		29	10/30/08	14:20	11/27/08	17:10	
$H_2S/SO_2/NO_2/O_3$		10A	10/30/08	08:00	11/27/08	10:30	
$H_2S/SO_2/NO_2/O_3$		11A	10/30/08	08:45	11/27/08	11:10	