

Box 8237 5107W-50th Street Bonnyville, AB T9N 2J5 Phone: (780) 812-2182 Fax: (780) 812-2186 Toll Free: 1-877-737-2182

E-Mail: <u>lica2@lica.ca</u>
Website: http://www.lica.ca

Alberta Environment Monitoring and Science Data Management Floor 11 Oxbridge Place 9820 106 Street Edmonton Alberta T5K 2J6

January 29, 2016

RE: December 2015 Ambient Air Monitoring Monthly Reports

Attached are the monthly ambient air monitoring reports for the LICA Airshed Zone's Cold Lake South, Maskwa, St. Lina, and Elk Point continuous stations.

Should you have any questions, please don't hesitate to contact me directly at (780) 266-7068.

Respectfully,

Michael Bisaga

Airshed Program Manager
Lakeland Industry and Community Association

cc (email): LICA Office



AMBIENT AIR MONITORING MONTHLY DATA REPORT

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION COLD LAKE SOUTH SITE

JOB #:2833-2015-12-01- C

DECEMBER 2015

Prepared for:

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

BOX 8237, 5107W - 50 STREET BONNYVILLE, ALBERTA T9N 2J5

Attention: MIKE BISAGA

DATE:

January 20, 2016

Prepared by:

Wunmi Adekanmbi, M.Sc.

Project Manager Assistant, Source Testing, Maxxam Analytics

Reviewed by:

Lily Lin, B.Sc.

Senior Project Manager, Air Services, Maxxam Analytics



SUMMARY

In DECEMBER 2015, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Cold Lake South Site at Lakeland Industry & Community Association, near Bonnyville, Alberta. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the Project Coordinator.

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

NO2: The AEMERA-supplied Thermo 42C, S/N: 427408716, analyzer was replaced with the LICA-owned Thermo 42i, S/N: 1505664393, analyzer on December 14 following a shut-down calibration. The analyzer was allowed time to stabilize overnight and the installation calibration was performed on December 15. Seventeen hours of data are invalid due to the analyzer's stabilizing period.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0 Discussion. On this basis, Maxxam is issuing this completed report to Lakeland Industry & Community Association, Cold Lake South Site.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3677 or toll-free at 1-800-386-7247.



Monthly Continuous Data Summary

Lakeland Indu	stry & C	Commun	ity Ass	ociation		ļ		ľ	V MUMIXAN	ALUES			
Cold Lake Sout	th Site						-	1-HOUR			24-H	OUR	OPERATIONAL
PARAMETER	OBJE	CTIVES	EXCEE	DENCES	MONTHLY	READING	DAY	HOUR	WIND	WIND	READING	DAY	- TIME (%)
	1-HR	24-HR	1-HR	24-HR	AVERAGE				(KPH)	(DEGREES)			
SO2 (PPB)	172	48	0	0	0	3	11	14	8,4	ESE	0.6	18	100.0
TRS (PPB)	-	-	-	-	0	0	ALL	ALL	VAR	VAR	0.0	ALL	100.0
THC (PPM)	-	-	-	-	2.4	4.3	21, 22	VAR	VAR	VAR	3.7	22	100.0
NO2 (PPB)	159	-	0	-	6.4	26,9	3	7	2.6	E	15.8	1	97.7
NO (PPB)	-	-	-	-	3.1	39.8	3	8	2,4	E5E	21.1	22	97.7
NOX (PPB)	-	-	-	2	9,5	65.3	3	8	2.4	ESE	33.1	22	97.7
O3 (PPB)	82		0	-	14	34	16	14	10.8	NW	27.8	31	100.0
PM2.5 (UG/M3)	-	30	-	0	7.4	33.0	11	14	8.4	ESE	19.5	1	100.0
RELATIVE HUMIDITY (%)	-	-	-	1	79.7	100	9, 9	9, 10	2.8 0.7	NNW SE	97.0	9	100.0
AMBIENT TEMPERATURE (DEG C)	-	-	-	-	-10.0	4.7	4	14	10	NW	-1.3	9	100.0
VECTOR WS (KPH)	-	-	-	-	4.6	13.7	2	19	-	wsw	8.6	17	100.0
VECTOR WD (DEG)	-	-	-	-	S	-	_	-	-	-	-	-	100.0

NA-NOT AVAILABLE VAR-VARIOUS



Volatile Organics (VOCs) Data Summary

Sample Collected Date	Maximum reading (PPB)	Volatile Organic Compound
DECEMBER 2, 2015	5.09	N-BUTANE
DECEMBER 8, 2015	1.6	NAPHTHALENE
DECEMBER 14, 2015	6.2	ACETONE
DECEMBER 20, 2015	3.64	N-BUTANE
DECEMBER 26, 2015	1.90	N-BUTANE

Note: NA



Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

Sample Collected Date	Maximum reading (ug)	Semi-Volatile Organic
DECEMBER 2, 2015	0.65	PHENANTHRENE
DECEMBER 8, 2015	1.26	PHENANTHRENE
DECEMBER 14, 2015	0.33	PHENANTHRENE
DECEMBER 20, 2015	1.84	2-METHYLNAPHTHALENE
DECEMBER 26, 2015	0.90	NAPHTHALENE

Note: NA



Partisol Sampler Summary

Sample Collected Date	Concentration (mg)
DECEMBER 2, 2015	0,288
DECEMBER 8, 2015	0.085
DECEMBER 14, 2015	0.037
DECEMBER 20, 2015	0.158
DECEMBER 26, 2015	0.204

Note: NA





Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

\$0₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

PM2.5 24- Hour Exceedences
No Exceedences Recorded During the Month



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	Nitric Oxides
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	Ozone
	Particulate Matter 2.5
	Wind Speed
	Wind Direction
	Standard Deviation Wind Direction
	Relative Humidity
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	PAH Results
	Partisol Results
Appendix III	Analyzer Calibration Results
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	Ozone
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	Wind System
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Appendix IV	Analytical Results
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1.0 Discussion

This monthly report consists of data for parameters SO2, TRS, THC, NOx, NO, NO2, O3, PM2.5, WS, WD, STDWD, RH and Ambient Temperature. It also includes results for non-continuous parameters Passives, VOC, PAH and Partisol.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) is used for zero checks and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibration is done a minimum of once a month for each continuous air monitor. In addition calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor (greater than 15%).

Hourly data is corrected using daily zero information.

A new blower for the sample manifold was installed and trailer inspection was completed on December 14. No issues were identified during the inspection.



SULPHUR DIOXIDE (SO2)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on December 14.

TOTAL REDUCED SULPHUR (TRS)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on December 14.

TOTAL HYDROCARBONS (THC)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on December 14.

NITROGEN DIOXIDE (NO2)

The analyzer started drifting close to the high acceptance limit towards the end of the month of November. An as found points check was performed on December 5. The result was good. No data was discarded due to this issue. The AEMERA-supplied Thermo 42C, S/N: 427408716, analyzer was replaced with the LICA-owned Thermo 42i, S/N: 1505664393, analyzer on December 14 following a shut-down calibration. The sampling pump was rebuilt and a new perm tube was installed prior to installation. The analyzer was allowed time to stabilize overnight and the installation calibration was performed on December 15. Seventeen hours of data are invalid during the time the analyzer was stabilizing. The AEMERA-supplied analyzer was left in the station as spare.

OZONE (O3)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on December 15.

PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5)

Two Teom audits were performed this month: one was completed on December 9, and the other audit was performed on December 23. The FDMS filter was replaced during the audits. Data was corrected using Alberta air quality guidelines. If the data was between 0 to -3 ug/m3, the data was corrected to 0 ug/m3. If the data was below -3ug/m3, the data was invalidated. No hourly data was invalidated as all hourly data was above -3ug/m3 this month.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.

The wind system was working well throughout the month.

RELATIVE HUMIDITY (RH)

The humidity sensor was working well throughout the month.

AMBIENT TEMPERATURE (TPX)

The temperature sensor was working well throughout the month.





PASSIVE SAMPLES

No passive results are included in this monthly report as the sampling program is based on a two-month sample collection period.

VOC SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs were reported in ppb.

Samples were collected on December 2, 8, 14, 20 and 26. Analytical results are included in this report.

PAH SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs were reported in μg .

Samples were collected on December 2, 8, 14, 20 and 26. Analytical results are included in this report.

The PUF sampler audit was completed on December 22. The audit report is included in this report.

PARTISOL SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the Partisol were reported in mg.

Samples were collected on December 2, 8, 14, 20 and 26. Analytical results are included in this report.



2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling team consisted of Alexander Yakupov.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, and 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006).



5.0 Methods and Procedures

The following methods and procedures were used to complete the test program:

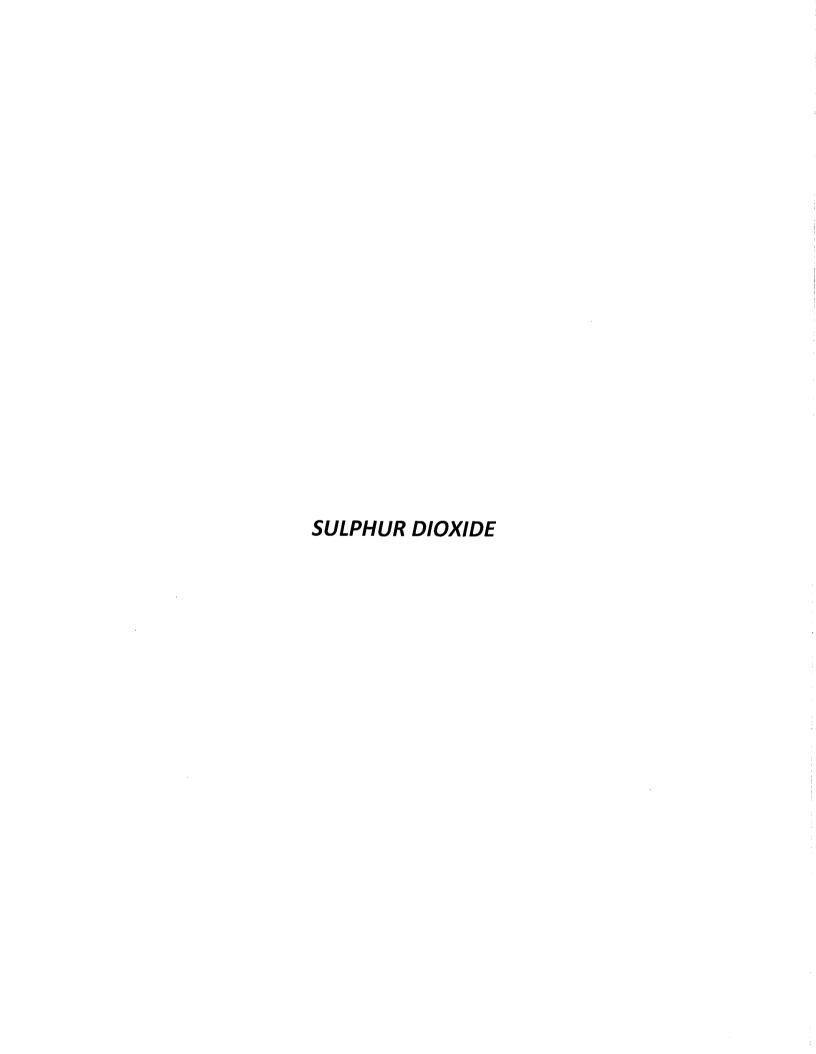
Maxxam AIR SOP-00210: Ambient TRS Monitoring
Maxxam AIR SOP-00211: Ambient SO2 Monitoring
Maxxam AIR SOP-00212: Ambient O3 Monitoring
Maxxam AIR SOP-00213: Ambient NO/NO2/NOx Monitoring
Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring
Maxxam AIR SOP-00215: Teom Operation
Maxxam AIR SOP-00225: The Collection of VOCs in Ambient Air Using Canister and Xontech

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - Thermo 43i UV Flourescent Analyzer
Total Reduced Sulphur - Thermo 450i UV Flourescent Analyzer
Total Hydrocarbons - Thermo 51C FID Analyzer
Oxides of Nitrogen - Thermo 42C and Thermo 42i Chemiluminescent Analyzers
Ozone - Thermo 49i Photometric Analyzer
Particulate Matter (PM2.5) - R&P 1405F Teom Unit
Wind System - Met One Unit
Relative Humidity - Met One Unit
Ambient Temperature - Met One Unit
Datalogger - ESC 8832
Partisol - R&P 2000H Unit

APPENDIX I CONTINUOUS MONITORING DATA RESULTS



MaxXam

Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

SULPHUR DIOXIDE (SO2) hourly averages in ppb

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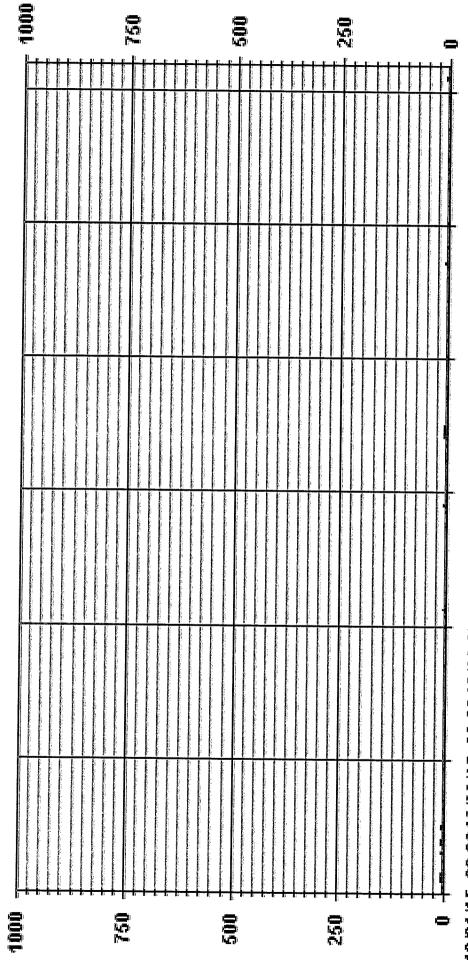
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MST

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

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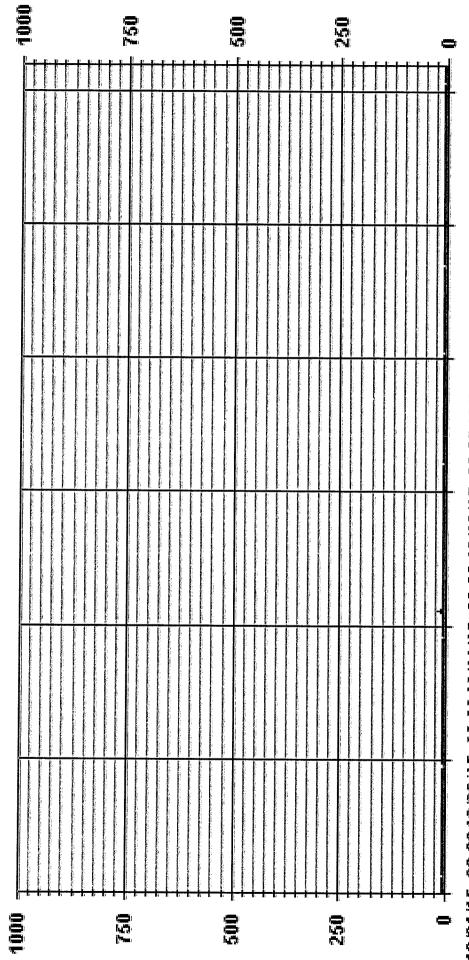
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MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:		705						
MAXIMUM INSTANTANEOUS VALUE:		10	ВЬВ	@ HOUR(S)	14	ON DAY(S)		11
					VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME: 32	HRS		OPERATI	OPERATIONAL TIME:			44	HRS
MONTHLY CALIBRATION TIME: 4	HRS							!
STANDARD DEVIATION: 0.42								

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA SOZMAX PPB

LICA SO2_ / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

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

NNW Freq 4.66 100.00 8 0. 80. 0. 00. 5.50 M 00. 00. 00. 8 8 3.95 WNW 80. 8 8. 8 00. 8.47 8 % 00. Wind Parameter : WDR Instrument Height : 10 Meters 80. 00. 19.06 00. % 8 00. 00. 4.80 80. 00. SW 00. 00. 00. 3.53 00. 00. 0. 8, SSW 80. 2.68 0 00. 00 00. 00. S 4.23 SSE 8. 00. 00. 00. 00. Direction 8 1.27 11.29 11.29 13.98 0. SE 00. 00. 00. ESE 00. 00. 8. 00. 00. 8 00. 8 00. 00. щ 00, ENE ENE 0. 00, 0. 00. g 86. 90. 80. 00. 00. 8 00. 1.83 N N 8. 00. 00. 8 2.40 8. 00. 8 00. 00. z Limit 20 9 340

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Totals

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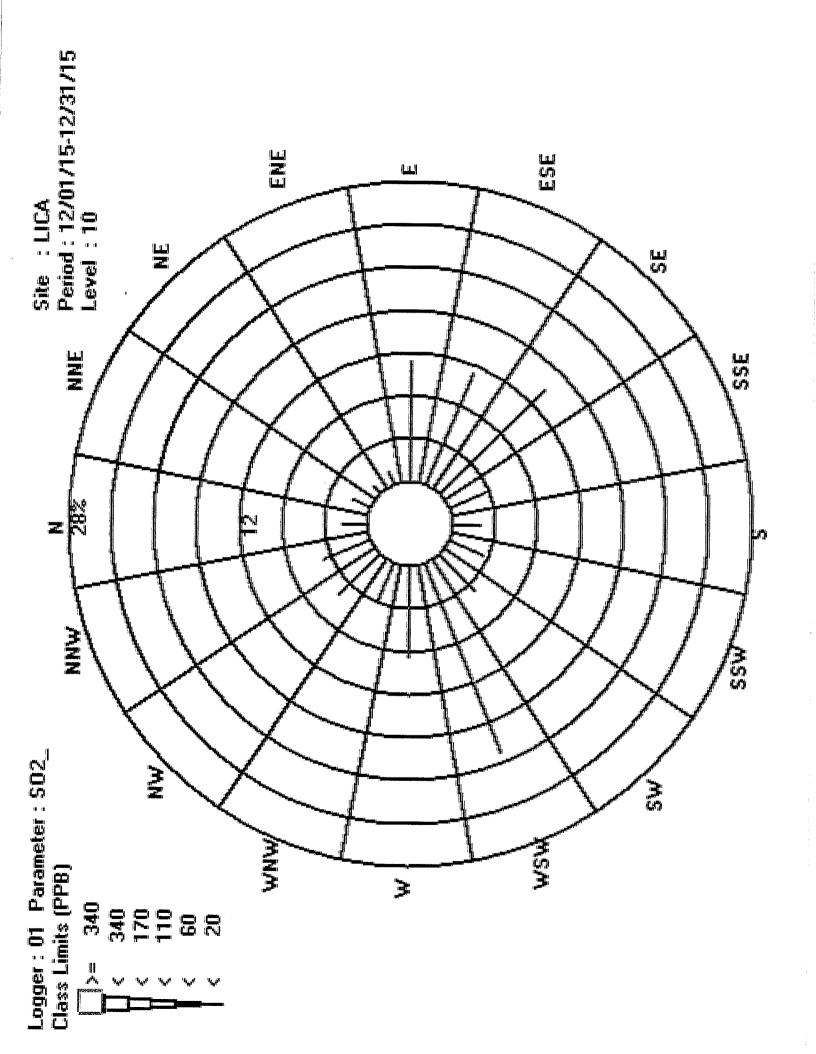
٧ ٧ Calm : .00 %

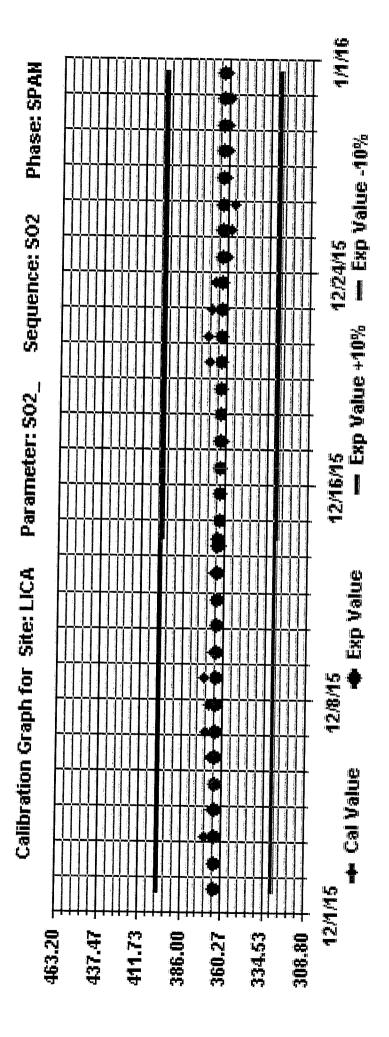
Total # Operational Hours : 708

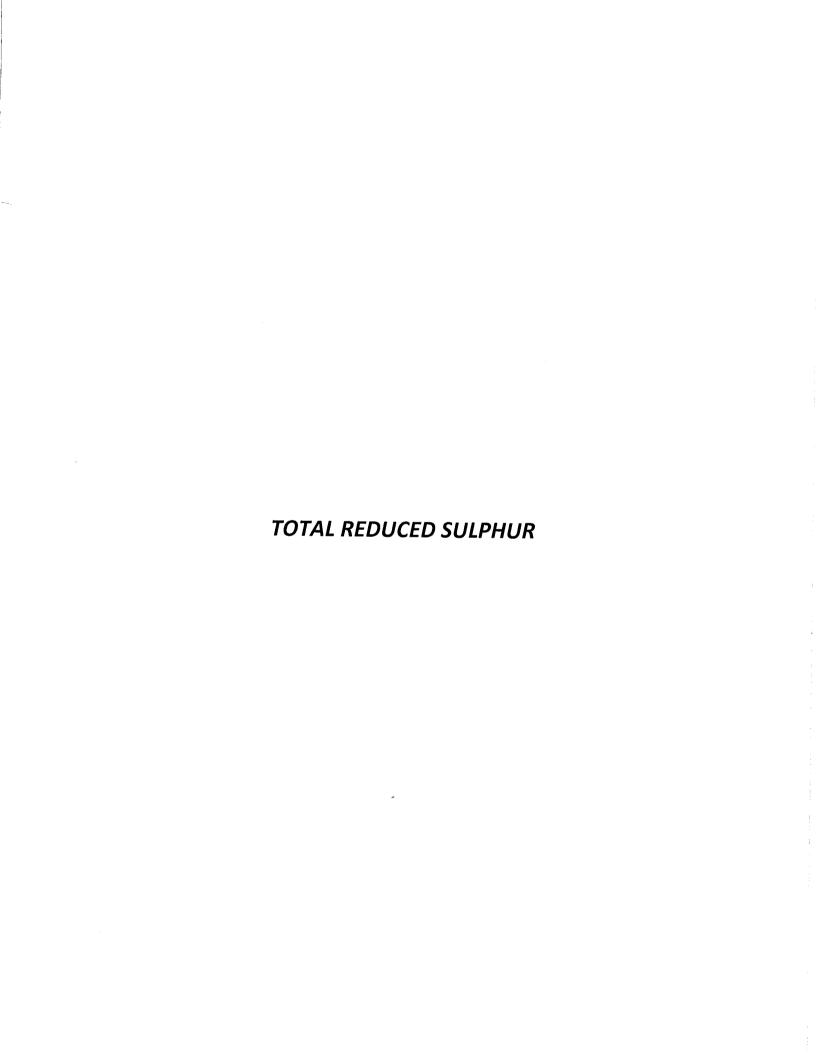
Distribution By Samples

	Fred	8							
		708							
	MNW	33						33	
	WM	39						33	
	WNW	28						28	
	×	9						9	
	WSW	135						135	
	SW	34						34	
	SSW	25						25	
	w	19						19	
	SSE	30						30	
Direction	S	66						66	
LIT	ESE	80						80	
	ы	80						80	
	ENE	Ø						a	
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	NNE	13						13	
	×	17						17	* 00
	Limit	20	09	110	170	340	340	Totals	Calm : .00 %
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Total # Operational Hours : 708







MST

Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

TOTAL REDUCED SULPHUR (TRS) hourly averages in ppb

	RDGS.	24	54	54	54	54	54	24	24	54	24	24	24	54	24	24	24	74	54	54	54	54	54	24	54	24	24	73	54	54	54	54		
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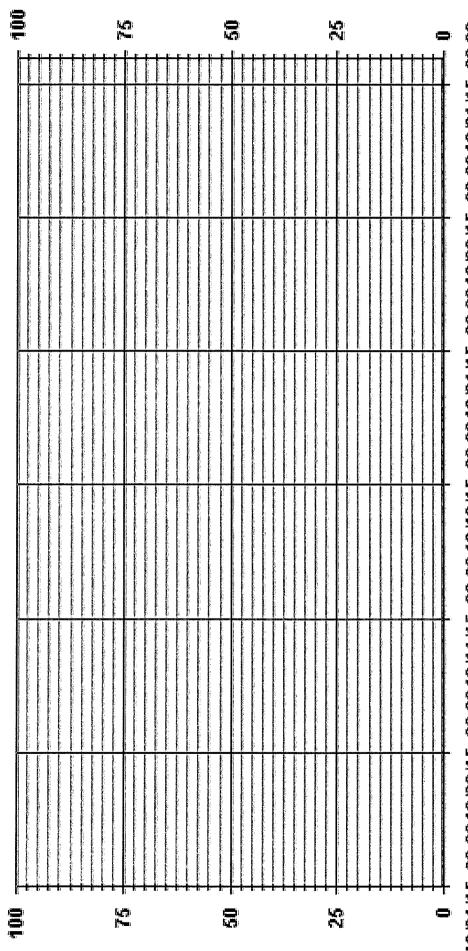
STATUS FLAG CODES

CALIBRATION O QUALITY ASSUBANCE WANTENANCE BALLA ERROSSAN CHECK - POWER FALLURE O OPERATOR HEROR - OUT FOR REPAIR K. COLLECTION ERROR	24 HOUR AVERAGES FOR DECEMBER 2016 24 HOUR AVERAGES FOR DECEMBER 2016 2 3 4 5 6 7 8 9 10 11 12 33 14 15 16 17 18 19 20 21 22 23 24 25 27 28 29 29 31	
o > v v o	0 8 8 5 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9	

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	dGS:		0						
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		0.0	PPB PPB	@ ноик(s)	ALL	ON DAY(S) ON DAY(S) VAR-VARIOUS	ALL	LL ALL	
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	32	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	1E: UPTIME:		744	% HRS	
STANDARD DEVIATION:	0.00			MONTHLY AVERAGE:	::		0	PPB	

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA TRS_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Site - DECEMBER 2015

JOB # 2833-2015-12-01- C

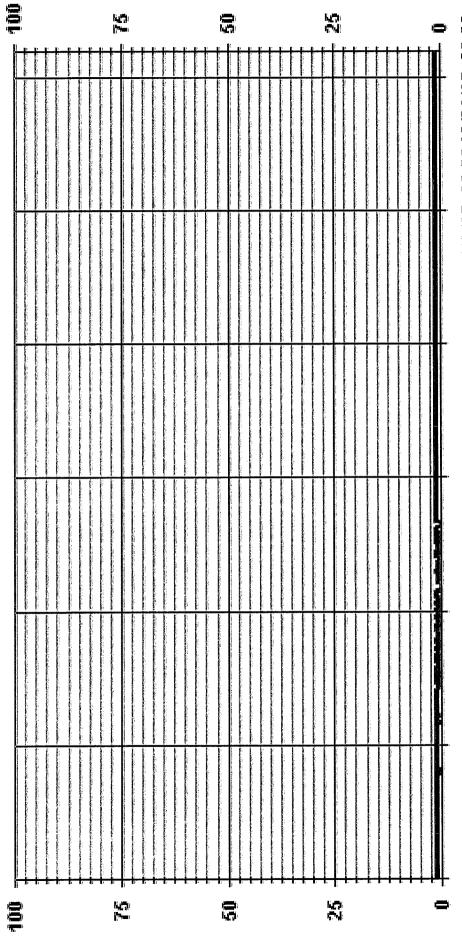
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HOUR START	00:0	1.00	0:00 1.00 2.00 3:00 4:00 5:00	3:00	4:00	5:00	00	7.00	3:00	00 II	.00	00 124	13:00	7:00 8:00 9:00 10:00 11:00 12:00 13:00 13:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22:00 23:00	15:00	16.00	17:00	18:00	19:00	0:00	1.00	2:00 23	200 DAILY		24-HOUR	
HOUR END	1:00	2:00	3:00	4:00	5:00	6.00	8	8:00	9:00 - 1(00:0	.00 12	00 13:0)0:- 14:00	15:00	16:00	17:00	18:00	19:00	20:00	1.00 - 2	2.00.2	3:00 -0:	.00 MAX	ı	AVG. RE	RDGS.
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STATUS FLAG CUDES	O R CHECK X	OR REPAIR
	CALIBRATION -MAINTENANC -DAILYZERO/S - POWER FAILU	OUT FOR REPAIR

NUMBER OF NON-ZERO READINGS:	gs:		633							
MAXIMUM INSTANTANEOUS VALUE:	TNE:		Н	PPB	@ HOUR(S)	IR(S)	VAR	ON DAY(S)		ALL
							VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS		OPERATIONAL TIME:	ONAL TIM	نن			744	HRS
MONTHLY CALIBRATION TIME:	4	HRS								
STANDARD DEVIATION:	0.31									

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA TRSMAX PPB

LICA TRS_ / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Farameter : TRS
Units : PPB
Units : PPB
Taget Id M
Taget In M
Taget

		Freq	00.00	00.	00.	0.	
		NNW	4.66 100.00	00.	00.	00.	4.66
		NW	5.50	00.	8.	00.	5.50
		WNW	3,95	00.	%	00.	3.95
eters.		苯	8.47	00.	00.	00.	8.47
Instrument Height : 10 Meters		WSW	3.53 4.80 19.06 8.47	9.	0.	0.	.98 1.27 11.29 11.29 13.98 4.23 2.68 3.53 4.80 19.06 8.47
t Height		SW	4.80	8.	0.	8.	4.80
strument		SSW	3.53	8.	00.	00.	3,53
Ϊ		Ø	2.68	%	0.	00.	2.68
		SSE	4.23	9.	00.	00.	4.23
	Direction	SE	13.98	9.	%	00,	13.98
	Dİ	ESE	11.29 11.29 13.98	00.	00.	00.	11.29
		ы	11.29	00.	00.	00.	11.29
		ENE	1.27	00.	8.	00.	1.27
		呂	86.	00.	00.	00.	86.
PPB		NNE	1.83	%	00.	00.	2.40 1.83
Units : PPB		z	2.40	%	00.	8.	2.40
Unit		Limit	м У	10	20	20	Totals
			٧	٧	٧	X	

Calm : .00 %

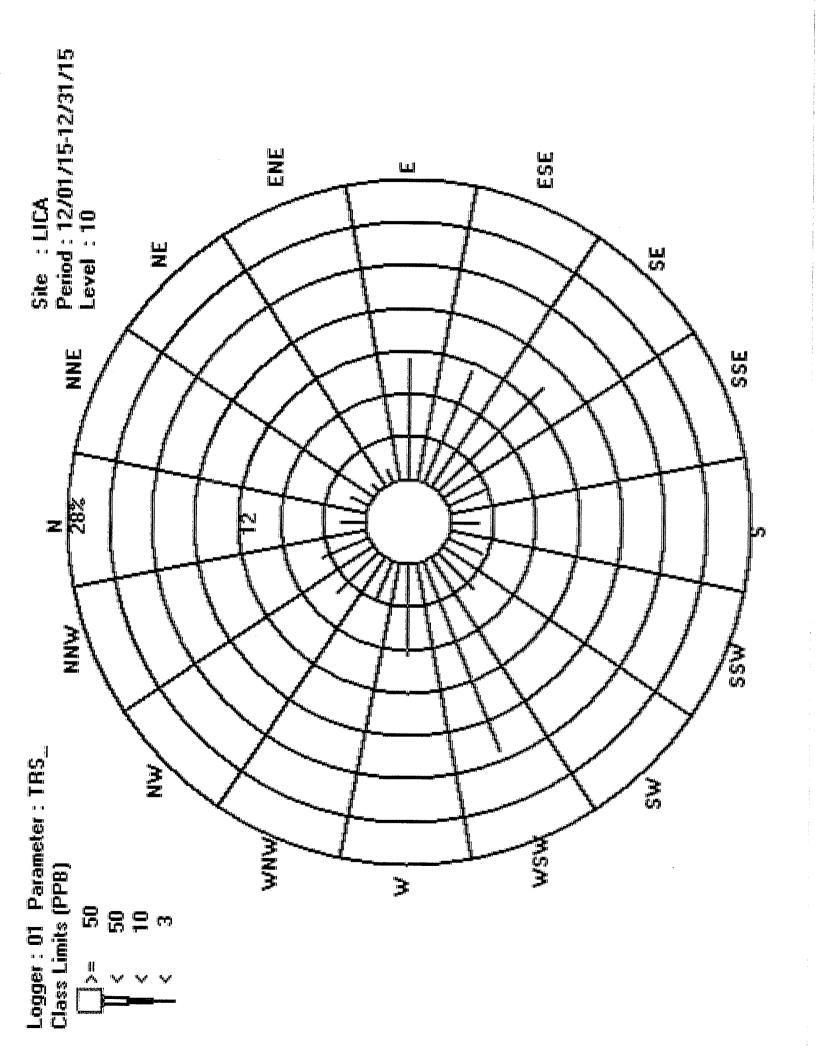
Total # Operational Hours : 708

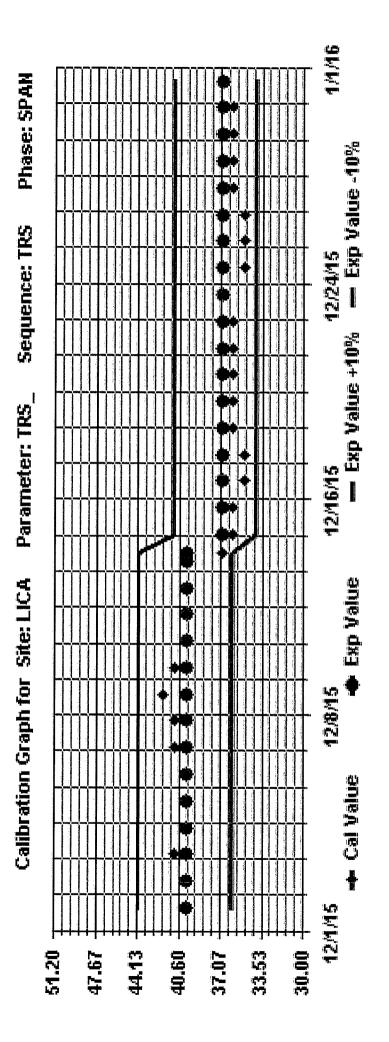
Distribution By Samples

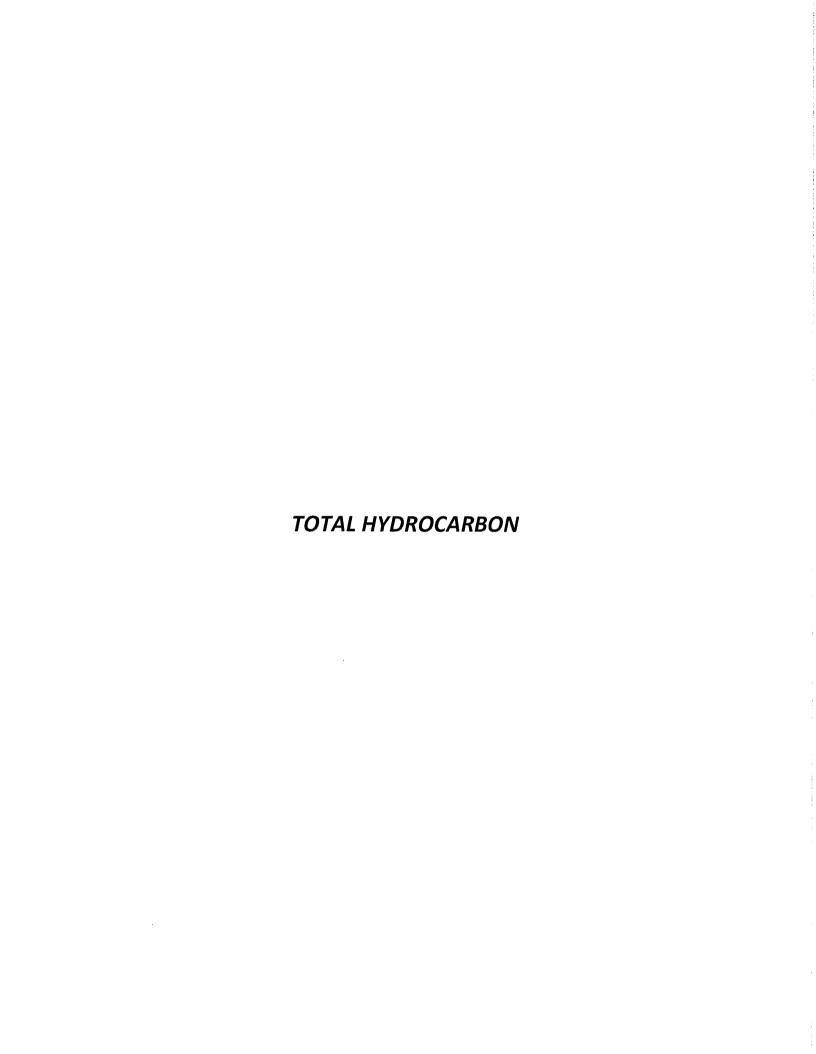
	Freq	708					
	MNIM	33				83	
	NW	39				8 8	
	WNW	28				58	
	Œ	09				9	
	WSW	135				135	
	SFE	34				34	
	SSW	25				25	
	w	19				19	
	SSE	30				30	
Direction	SE	66				თ თ	
Dir	ESE	80				80	
	ы	80				80	
	ENE	6				o,	
	Ħ	7				7	
	NNE	13				13	
	z	17				17	
	Limit	m	10	20	20	Totals	
	H	٧	٧	٧	X	•	

Calm : .00 %

Total # Operational Hours : 708



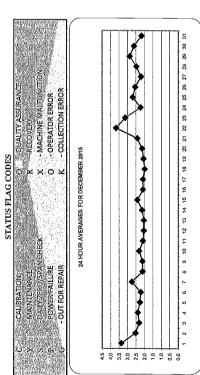






TOTAL HYDROCARBONS (THC) hourly averages in ppm

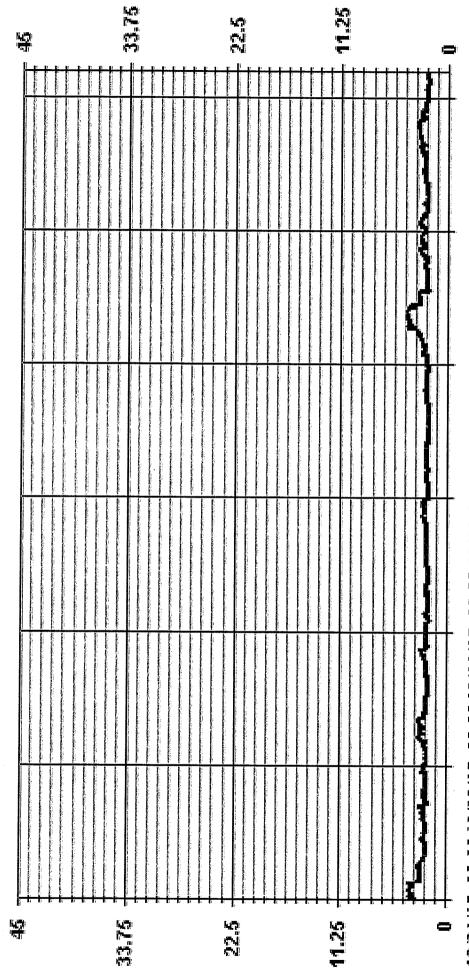
MST									5	יי ער היי	OTAL HTUROCARBONS (THC)		()	i non	nouny averages in ppin	E 528	E									
HOUR START	00:0	1.00	0:00 1:00 2:00 5:00 5:00	3:00	4.00	5:00	6.00	7.00		275.63	2293388	1	120000	170	0 15:00	15:00 16:00 17:00	17:00	200000	497701	20:00	21:00	22:00		DAILY	24-HOUR	
HOUR END	1:00	5:00	3:00	4:00	5:00	6:00	7.00	8.00	-00-6	T0:00	11:00	12:00:-1	13:00 14	14:00 15:00	KB.	0 17:00	T8:00	19:00	332	20:00: 21:00	22:00	23:00 0:00	.00:0	MAX.	AVG.	RDGS.
Ţ.	3.2	3.3	3.5	3.8	3.6	3.7	3.6	3.7	3.8	3.8	3.8					3.3	2.6	2.6	76	s	2.7	2.7	2.7	9.8	3.4	24
2-	2.7	2.7	2.7	2.7	2.8	2.8	3.0	2.9	2.8	2.7	2.7		2.6 2.	2.5 2.4	2.4	2.3	2.2	2.2	s	2.1	2.1	2.1	2.1	3.0	2.5	54
9	2.2	2.2	2.2	2.2	2.3	2.4	2.4	5.6	5.6	2.4	2.3	2.3				2.3	2.2	s	2.2	2.2	2.2	2.3	2.4	2.6	2.3	54
7	2.4	2.5	2.5	2.4	2.3	2.4	2.5	2.5	2.5	2.5	2.6		2.9 2.	2.5 2.0		2.2	s	2.2	2.2	2.4	2.3	2.3	2.2	2.9	2.4	24
Ŋ	2.3	2.3	2.2	2.3	2.3	2.2	2.2	2.2	2.2	2.3	2.2					s	2.2	2.2	2.6	5.6	2.4	2.4	2.4	5.6	23	54
9	2.3	2.3	2.3	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.1					2.2	2.2	2.3	2.3	2.3	2.3	2.2	2.5	2.5	2.2	24
7	2.7	5.9	3.0	3.0	2.8	2.5	5.6	2.8	2.9	2.8	2.7	5.6				3.0	2.9	3.0	2.9	5.6	2.5	2.3	2.3	3.0	2.7	24
80	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.2	2.3					2.1	2.0	2.0	2.0	2.0	5.0	5.0	1.9	2.3	2.1	24
O	1.9	2.0	5.0	2.0	20	2.0	2.0	2.1	2.0	2.1	2.1					2.2	2.2	2.2	2.3	2.2	2.3	2.2	2.3	2.3	2.1	24
10	2.4	2.4	2.4	2.5	2.5	5.6	5.6	5.6	2.7	2.4	2.3					2.1	2.1	2.2	2.1	2.2	2.2	2.1	2.1	2.7	2.3	24
Ħ	2.1	2.1	2.1	2.2	2.2	2.2	2.1	2.2	2.1	2.1	s					2.3	2.1	2.1	2.1	2.0	2.0	20	2.0	2.3	2.1	54
12	2.0	5.0	2.0	2.0	2.0	2.0	5.0	2.0	2.0	s	2.1					2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.1	5.0	54
<u>13</u>	2.0	2.0	2.0	2.0	2.0	1.9	13	5.0	s	2.0	2.0					2.1	2.1	2.1	2.1	2.1	2.1	21	2.1	2.1	2.0	54
14	2.1	2.1	2.1	2.1	2.1	2.2	2.2	s	2.1	2.1	2.1	2.1				2.2	2.1	2.2	2.2	23	2.2	2.1	2.1	2.3	2.1	54
Ŋ	2.2	2.2	2.2	2.3	2.3	2.4	s	2.5	5.6	U	U						26	2.4	2.4	2.5	5.6	5.6	2.4	5.6	2.4	54
16	2.1	2.2	2.2	2.1	2.0	s	2.0	2.0	5.0	2.0	2.0			2.0 2.0	2.1		2.1	2.1	2.2	2.2	2.3	2.2	2.1	2.3	2.1	24
7	2.1	2.1	2.0	2.0	s	2.1	2.1	2.1	2.1	2.1	2.1						2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	54
138	2.1	2.1	2.1	s	2.0	2.0	5.0	2.0	2.0	2.0	2.0			2.0 2.0		2.0	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.0	54
Ð	1.9	1.9	s	2.0	2.0	5.0	2.0	2.0	2.0	2.0	2.1	_					2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.2	2.1	24
20	2.2	s	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1					2.1	2.1	2.1	2.1	2.1	2.0	20	2.0	2.4	2.1	24
71	s	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.5	2.5		2.5 2.	25 25			2.6	2.5	2.6	2.6	5.6	2.7	S	2.7	2.4	24
22	2.8	2.8	5.9	2.9	3.1	3.1	3.1	3.2	3,3	3.6	4.2						4.1	4.2	4.2	4.2	4.2	S	43	4.3	3.7	24
E2	4.3	4.3	4.3	4.2	3.4	4.0	3.5	2.7	2.9	3.0	5.9					3.0	3.1	3.0	2.2	2.1	s	2.1	2.1	4.3	3.1	74
24	2.1	2.1	2.2	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2					2.4	2.4	2.4	s	2.2	2.2	2.2	2.4	2.2	54
53	2.2	2.4	2.5	5.6	2.7	2.8	2.8	2.8	5.9	2.9	2.6						2.7	2.9	s	2.9	2.8	2.8	2.7	2.9	2.7	24
26	2.5	2.3	2.3	2.4	5.6	2.7	2.8	2.8	5.9	3.0	2.9				2.5		2.4	s	2.2	2.2	2.2	2.2	2.2	3.0	2.5	54
2	2.3	2.5	2.3	2.2	2.2	2.2	2.1	2.1	2.1	2.2	2.2						s	2.3	2.2	2.3	2.3	2.3	2.3	2.5	2.2	24
28	2.4	2.4	2.4	2.5	5.6	2.5	5.6	5.6	5.6	2.5	2.5	2.4			2.4	s	2.5	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.5	24
29	5.6	2.8	5.9	2.8	2.9	2.7	2.5	2.6	2.7	2.8	5.9			3.0 2.9		3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1	3.1	5.9	54
ထိ	3.1	3.1	3.1	3.2	3.1	2.7	2.5	2.5	2.6	2.7	2.8				2.4	2.4	2.4	2.4	2.3	2.3	2.3	2.2	2.2	3.2	5.6	54
31	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.4	2.3	2.2	2.2	2.2			2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.2	24
HOURLY MAX	4.3	4.3	4.3	4.2	3.6	4.0	3.6	3.7	3.8	3.8	4.2		Ī	4.1 4.1	4.0	4.0	4.1	4.2	4.2	4.2	4.2	3.1	4.3			
HOURLY AVG	2.4	2.4	2.4	2.5	2.4	2.4	2.4	2.4	2.5	2.5	2.5					2.4	2.4	2.4	2.3	2.3	2.4	2.3	2.3			



STATUS FLAG CODES

			ω	MONTHLY SUMMARY	×			
NUMBER OF NON-ZERO READINGS:	:S		708					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		3.7	PPM PPM	PPM @ HOUR(S) PPM	VAR	ON DAY(S) ON DAY(S) VAR-VARIOUS	и.,	21 , 22 22
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	32	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	IME: N UPTIME:		744 100.0	HRS
STANDARD DEVIATION:	0.46			MONTHLY AVERAGE:	AGE:		2.4	2.4 PPM

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA THC PPM



Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

TOTAL HYDROCARBONS MAX

instantaneous maximum in ppm

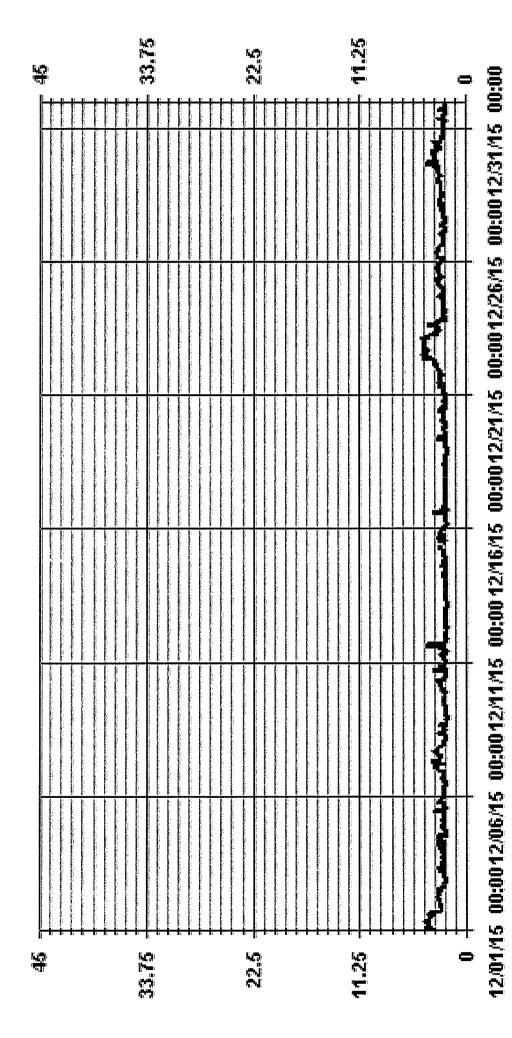
HOUREND T-000 E-00 2:00 3:00 4:00 5:00 6:00 7	2.00	2.00	3.00	4:00	5:00	00	200	쮋	13.00	0:00 I	Tr.00 1	12:00 13:00	.00 14:00	00 15:00	00 16:00		18-00	10.00	00.00	21.00	22.00	200		21.01
and the same of th				2.00	5.00	6	8:00	9.00	10:00	11.00 -17	Mir.	24			3883	344	19-00	00.00	71.00	22.00	00.50	0.00	MAX	AVG.
	3.6	4.2	4.3	4.0	4.0	9			1	91	žI.	1				29	2,8	8	,	۲ م	2.0	Š.	٨ ع	3.7
	2.8	2.8	2.8	3.0	3.0	3.1	3.1	3.0	3.1	3.0			2.9 2.6			2.3	2.3	S	2.2	2.2	2.2	2.2	3.1	2.7
	2.3			2.5	2.7	2.6												2.4	2.3	2.4	2.5	2.5	2.9	2.5
2.5	2.7			2.8	5.6	3.0	2.7		2.9		29		.0 2.1	1 2.1	1 2.3			2.4	2.6	2.6	2.5	2.5	3.0	5.6
	2.4		2.5	2.5	2.4	2.3	2.4	2.5 2	2.4	2.5 3	3.5	2.3 2.	2.2 2.4					2.9	2.9	2.7	2.7	5.6	3.5	2.5
	2.5		2.3	2.3	2.3	2.3	2.3				2.2						24	2.4	2.4	2.4	2.4	2.8	2.8	2.4
	3.0	3.3	3.2	3.2	5.6	2.7	3.0		3.0		2.8		2.7 \$					3.1	3.0	2.7	2.4	2.4	3.6	3.0
	2.5		2.3	2.2	2.2	2.2	2.3				2.4			3 2.3		2.1	2.1	2.1	21	2.2	2.1	2.0	2.9	2.3
2.0	2.1		2.1	2.1	2.1	2.1	2.2									2.3		2.4	2.3	2.4	2.3	2.5	2.5	2.3
	2.5			2.7	2.7	5.9					s			2 2.2		3.6		2.4	5.6	2.7	2.5	2.4	3.6	5.6
	2.2		2.5	2.4	2.5	2.4									1 4,3	2.4		2.3	2.2	2.3	2.1	2.2	4.3	2.5
	2.1			2.2	2.2	2.1								2 2.2		2.2		2.2	2.2	2.2	2.1	2.1	2.2	2.2
	2.1			2.0	2.0	2.0										2.2		2.2	2.2	2.2	2.2	2.2	2.3	2.2
	2.2			2.2	2.3	2.3										2.2		2.4	2.5	2.3	2.2	2.2	2.5	2.3
	2.3		2.4	2.4	2.5	s	2.7	2.7	J	J	U	C 2.	2.6 3.0	0 2.5		3.0	2.6	2.5	2.7	2.7	2.8	2.7	3.0	26
	2.3			2.1	s	2.1									5 2.3	2.8		2.3	2.4	2.4	2.4	2.3	3,5	2.3
	2.2			s	2.2	2.2										2.2		2.2	2.2	2.2	2.2	2.2	2.3	2.2
	2.2			2.1	2.1	2.2										2.2		2.1	2.1	2.0	2.0	2.0	2.3	2.1
	2.1			2.1	2.1	2.1	2.2									2.4		2.3	2.2	2.3	2.3	2.4	3.2	2.3
2.3	s			2.3	2.3	2.4							2.2 2.2		3 2.3	2.2	2.3	2.3	2.3	2.2	2.1	2.1	3.0	2.3
	2.2		2.4	2.4	2.3	2.3	2.3				2.9					2.8		2.7	2.8	27	78	s	5.9	2.6
3.0	3.0		3.1	3.2	3.2	3.3	3,3						4.3 4.2	2 4.2		4.4		4.4	4.5	4.4	s	4.4	4.5	3.9
	4.4			4.1	4.2	4.0										3.4		2.9	2.2	S	2.2	2.3	4.5	3.4
	23		2.3	2.2	2.3	2.3	2.3				2.4		2.3 2.4			2.8		5.6	s	2.3	2.3	2.3	2.8	2.4
2.4	2.5	2.7	2.8	2.8	3.0	3.0	5.9	3.1 3	3.1	2.8 2	2.6	2.7 2.		8 2.9		2.9		S	3.1	2.9	5.9	5.9	3.2	5.9
	2.5		2.5	2.8	2.9	3.0	3.0	3.1 3	3.1			3.0 2.				2.5	S	2.4	2.3	2.4	2.3	2.4	3.1	2.7
	2.7		2.3	2.4	2.3	2.2	2.2	2.3 2	2.4	2.7 2	2.3			2 2.2		s	2.4	2.4	2.4	2.4	2.4	2.5	2.7	2.4
	2.5		2.7	2.8	2.6	2.7	2.8	2.7 2	2.7		2.6		2.5 2.5		S	2.6		2.6	2.6	2.6	2.6	2.6	2.8	2.6
2.8	3.0		3.0	3.0	2.9	2.7	2.8	2.8 2								4.2		3.1	3.2	3.2	3.2	3.2	4.2	3.1
	3.4			3.4	3.0	2.6			3.1	3.0	3.2			2.6		2.5		2.4	2.4	2.4	24	2.3	3,4	2.8
	2.3	2.4	2.4	2.3	2.4	2.3		2.7 2				2.4 S				2.9		2.2	2.2	2.2	2.2	2.2	5.9	2.3
4.4	4.4			4.1	4.2	4.0		4.3 4	4.1	4.5	4.2	45 43	3 42	2 42	4.3	77	67	77	4.5	4.4	00	,		
																ŕ		•	}	ř	7.7	ţ		

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MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:	lGS:		708							
MAXIMUM INSTANTANEOUS VALUE:	ALUE:		4.5	PPM	4.5 PPM @ HOUR(S)	(S)	VAR	ON DAY(S)		22, 23
							VAR-VARIOUS	RIOUS		
IZS CALIBRATION TIME:	32	HRS		OPERATIC	OPERATIONAL TIME:				744	HRS
MONTHLY CAUBRATION TIME:	4	HRS								
STANDARD DEVIATION:	0.51									

Of Hour Averages



- LICA THCMAX PPM

LICA THC / WD Joint Frequency Distribution (Percent)

Distribution By % Of Samples

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

Fred 9.88 4.94 90.11 .14 00. 0. 5.08 4.80 00. 5.50 E .70 00. 2.96 3.95 00 WNW 98 % 6.35 8.47 2,11 % Wind Parameter : WD Instrument Height : 10 Meters % × 1,41 19.06 17.65 00. 00. 3.38 4.37 96. % 00. 2.68 00. 3.53 SSW .84 00. 2.54 1.83 .70 00. 00. Ø 4.23 3.81 .42 00. 00. SSE Direction SE 1.27 10.73 10.73 13.84 .14 00. 00. 1.27 11.29 11.29 13.98 ESE .56 00. 00. 00. .56 00. 00. 00. 00. ENE .70 8 96. 벍 .28 00. 1.83 00. % 1.83 SKI 00. 2.54 00. 2.54 8 00. z Totals Limit 3.0 10.0 50.0 50.0 V

00. 0.

Total # Operational Hours : 708

Calm : .00 %

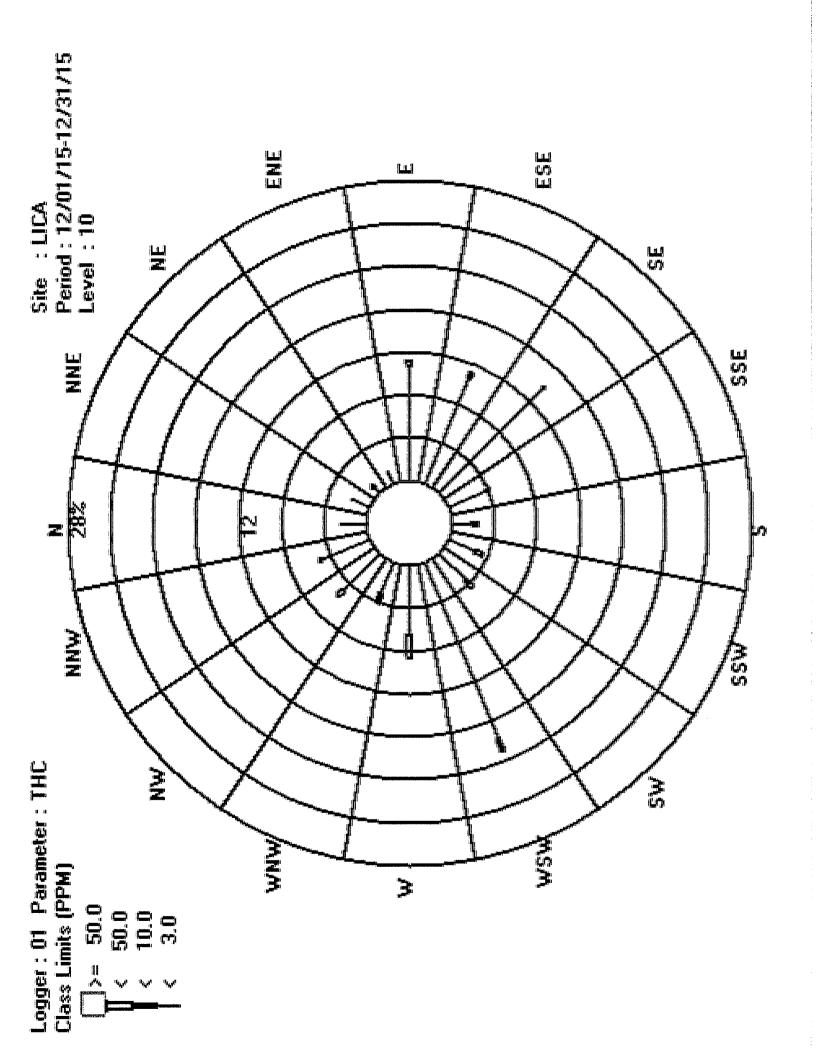
Distribution By Samples

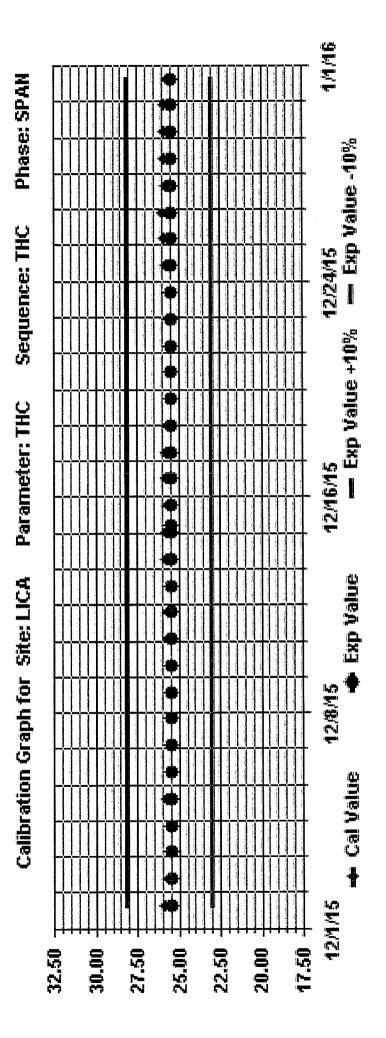
Direction

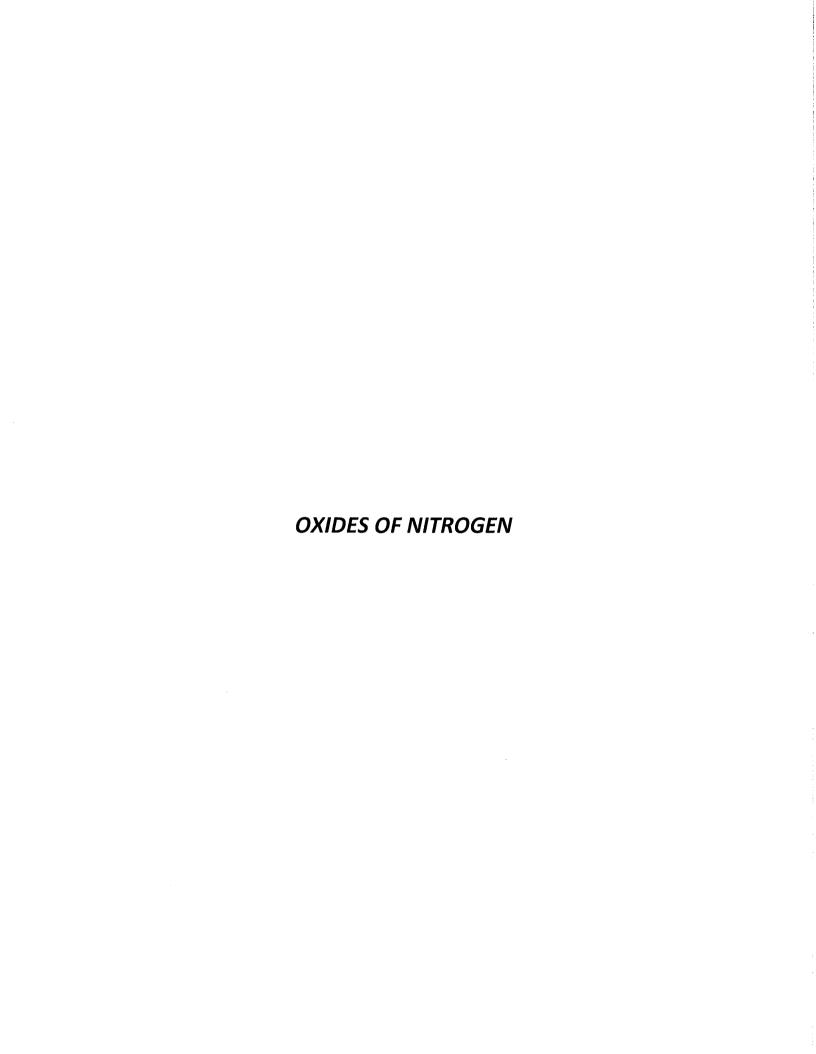
Fred 638 70 36 K 33 28 21 9 15 135 WSW 125 10 31 SSW 25 13 18 Ø 13 ហ SSE 30 27 66 SE 80 80 თ ENE თ Ή 13 SE 13 18 Totals Limit 3.0 10.0 50.0 50.0 ٧

Calm : .00 %

Total # Operational Hours: 708



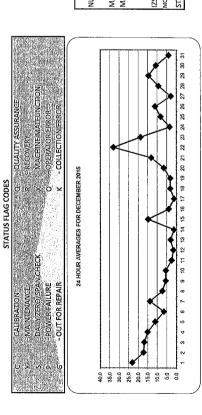




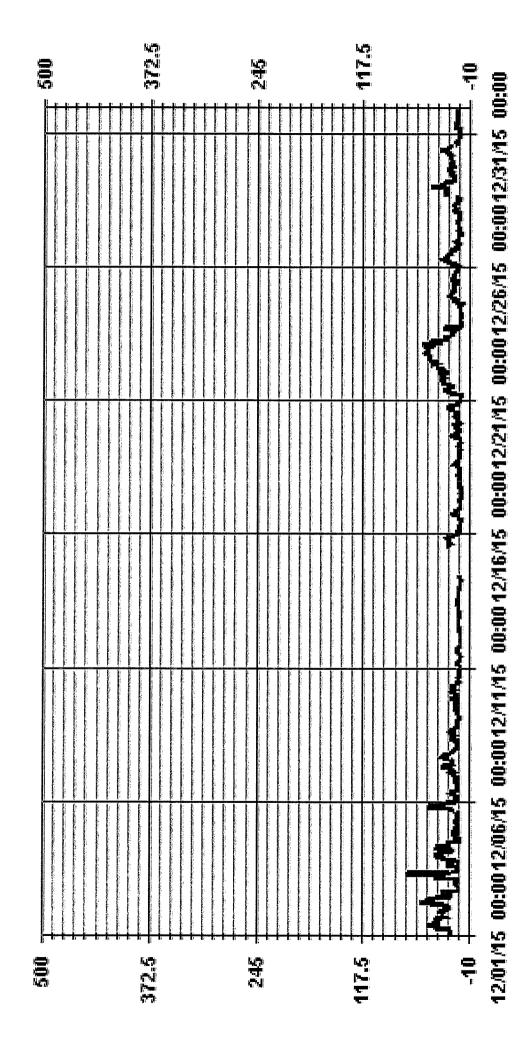


OXIDES OF NITROGEN (NOx) hourly averages in ppb

	ğ	i i	74	7 7	7 7	4 2	77	77	54	54	54	54	24	54	54	16	51	24	77	74	24	74	24	74	24	74	24	24	54	24	54	77	54		
	24-HOUR	j	23.2	17.3	16.9	11 1	11.2	9.9	14.0	7.4	5.7	5.7	2.6	1.7	3.1	1,4	14.9	4.1	1.3	3.3	3.3	9.9	13.2	33.1	18.8	3.6	8.3	11.2	3.0	9.4	14.6	10.8	4.2		
	DAILY		38.1	47.0	65.3	31.7	40.5	12.4	25.0	15.7	13.1	11.3	4.5	3.2	4.8	5.6	17.8	10.7	5.6	8.5	11.9	14.4	26.0	44.3	47.5	14.1	12.5	21.6	5.6	20.1	36.5	23.2	7.0		
	23:00	000	20.9	5.3	29.8	p.1	19.8	5.5	8.1	4.3	7.2	1.7	1.0	2.0	3.4	>	9.3	5.2	5.6	1.7	3,8	4.7	s	39.2	0.2	13.9	4.9	6.7	2.4	18.8	10.0	1.9	3.2	39.2	8.4
	22:00				22.3																														
	21:00				17.3																														
	0 20:00				ر.ر د ر																														
	00 IS 0				4.2																														
	17:00: 18:0	2.00			o																													·	
2	16:00 17	200			17.3 10.0																														
noany averages in ppu	5:00 16				8.3 1.																														
,	4:00 1				4, t																														
	3:00 I	å			5.0 2.1																														
(YON)	12:00				, y, t,																														
(YOU)	11.00	No. of the last of	9 ;	1;	δ	ŧ.;	4.T	6.2	11.3	8.7	4.7	s	1.3	1.3	3.6	Ų	Ų	0.3	0.2	1.7	0.4	5.5	13.3	31.0	14.1	0.3	5.3	18.4	3.1	3.7	8.8	17.2	6.0	31.0	8.0
	10:00		9,79	STS.	2.5	10.0	9.6	10.2	10.4	10.4	7.1	5.8	S	1.3	3.5	49	U	0.3	0.1	2.3	2.5	7.5	20.4	32.6	14.5	0.3	2.6	19.9	3.7	6.0	9.4	23.1	7.0	37.6	10.5
	00-6		79.T	4 6	13.6	7.nc	; ر	10.4	20.3	13.6	5.6	7.7	2.1	S	4.8	2.1	U	8.0	0.2	2.7	3.5	3.3	14.4	29.9	17.7	0.3	9.1	21.3	3.7	6.2	8.5	23.2	5.8	39.4	12.1
5	8:00		54.4	Λį	ביים ני	7.0	; ر	12.4	20.2	6.7	4.4	11.3	2.9	0.7	S	1.1	>	0.9	1.7	1.9	4.5	3.2	14.3	33.8	16.2	0.2	8.2	17.2	3.3	8.4	7.9	17.9	7.0	65.3	12.1
	7.00		7.8.5 C.5.5	n [91.7	77.	י מ	8.1	21.3	6.5	4.2	11.0	3.7	0.5	2.5	s	>	3.6	1.8	1.6	2.7	2.9	9.5	s	16.0	0.2	9.1	21.6	0.8	8.7	8.9	14.9	6.2	61.7	10.9
	6:00				30.0		0.0	7.2	14.4	4.1	3.0	8.6	3.0	9.0	2.5	6.0	>	3.0					10.4												
	5:00	o de la constante de la consta			625		0.0			3.1	2.3		4.5	1.0	2.9	1.0	>	S					11		,							-			
	0 4.00		ט בי נינו																				1.5												
	3:0				7.7																		9 1.1											.0 47.5	
	00 2:0		477		1.0 5.0 0.00																		1.5											41.0 43.0	
	0:00 E:00 2:00 8:00 4:00 5:00 6:11:00 7:00 6:00				2.0																														
F		-	न र वर्ष			7		- -		5						-										227.7				. Th		8/j.S	7 / C 7 / C		
MST	HOUR START	DAY	-1 (7 (n •	† L	Λ.	G	7	œ	O	7	Ħ	12	.	14	1 3	16	17	18	19	20	21	22	23	24	ĸ	26	27	28	29	8	31	HOURLY MAX	HOURLY AVG



PPB HRS % ж 23 727 97.7 9.5 ON DAY(S) ON DAY(S) VAR-VARIOUS OPERATIONAL TIME: AMD OPERATION UPTIME: MONTHLY AVERAGE: MONTHLY SUMMARY @ HOUR(S) PPB PPB 681 65.3 HRS H ¥ 21 12.9 NUMBER OF NON-ZERO READINGS: MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE: IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME: STANDARD DEVIATION:



- LICA NOX_ PPB



Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

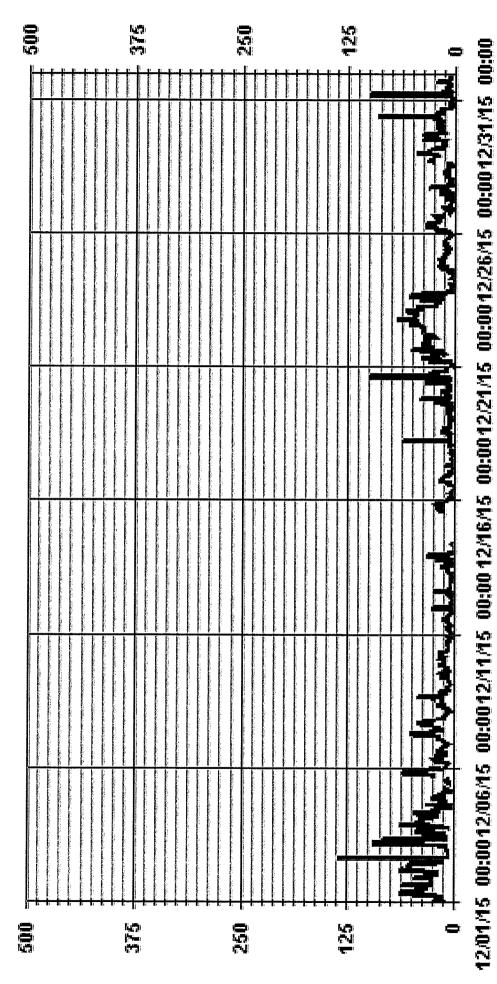
OXIDES OF NITROGEN MAX instantaneous maximum in ppb

MST
_

o	5.00	0:00 T:00 2:00 3:00 4:00	4-00	5.00	90-9	7.00	8-00	00-6	10:00	20076				450	17.00		188	595	21.00		23:00		24-HOUR	
3:00		4.00	5:00	336.	7:00	8:00	6:00	10:00	11:00	12:00	13:00 14	14:00 15:	15:00 16:00	32	17:00 - 18:00	19:00	20:00	21:00	22:00	23:00	0:00	MAX	AVG.	RDGS.
5 16.1		23.1	17.1	16.1	19.1	44.0	44.1	64.5	48.1				33.5 46.0	0 62.6		•	26.5	s	28.0	48.0	27.0	64.5	32.6	24
20.0 19.5		19.5	34.0	62.9	60.5	s	s	53.5	52.0	19.0	33.0 16	16.0 14	14.0 45.4	135.9			s	6.5	6.5	6.9	7.0	135.9	31.4	54
	_	18.5	32.9	91.4	91.4	70.4	84.9	45.4	10.0	6.9		9.4 11	11.9 20.9	9 44.9	22.9	s	7.5	10.5	27.5	64.5	48.0	91.4	34.0	24
38.4 36	ιvi	40.5	25.0	16.5	38.0	45.0	44.0	47.9	29.0	15.5							16.0	15.0	12.5	27.5	14.0	47.9	25.4	24
	7.		7.5	12.0	8.0	10.5	U	U	J						23.5	27.5	59.0	61.0	36.5	32.9	31.0	61.0	19.6	24
	2		7.5	10.0	15.5	20.9	23.5	18.5	16.0	13.0		9.5 10	10.0	18.5	13.5		13.5	10.0	10.5	7.5	10.5	23.5	13.5	54
	4.5		15.5	21.5	46.4	32.9	51.4	31.5	14.5		•		•		43.1		27.6	22.1	11.6	11.1	11.1	51.4	24.1	24
	2.		5.1	8.6	8.1	11.1	11.1	21.0	18.1				•		14.1		12.6	7.1	18.6	9.9	7.1	43.1	13.7	54
	7.0		3.6	5.1	5.1	9.9	7.1	9.6	16.6				.6 12.1	1.6	8.6		9.6	11.6	18.1	11.6	10.6	18.1	9.1	54
	16.1		12.6	16.6	17.1	15.1	18.1	9.6	8.6				0 7.0		7.5		4.0	4.0	9.9	3.0	3.0	18.1	8.6	54
	3.0		6.1	8.5	7.0	9.0	5.5	4.0	s			3.9 13	13.4 10.9		7.9	6.4	4.9	3.9	3.9	2.9	23.4	23.4	7.1	24
ς.	1.4		1.4	6.0	1.4	1.4	1.9	s	3.5	5.0		8.0 7.	0 25.5	5 6.5	8.0		5.0	4.5	4.5	2.0	4.0	25.5	5.9	54
	3.0		4.6	4.5	4.0	4.5	s	8.4	6,9				-		8.9	4.9	4.5	23.0	6.0	16.0	32.9	32.9	8.7	54
	4.9		1.0	2.0	15	s	2.0	4.5	3.0	U					>		>	۲	>	>	~	7.0	3.0	16
	>		>	>	>	>	>	U	J						19.3	17.8	17.1	20.6	22.7	17.1	14.3	22.7	17.8	15
_	6.7		3.4	s	3.8	6.0	5.6	3.1	1.0	6.0		0.6 0.		5.4	9.1	15.2	15.2	15.2	12.6	12.6	8.1	15.2	6.7	24
	5.0		s	2.4	5.6	2.8	13.1	13	1.1	1.1					1.3	1.3	4.8	3.2	3.7	3.7	4.8	13.1	3.2	24
_	2.8		7.3	4.2	61.1	2.6	5.4	6.2	7.2						8.3		6.3	5.6	5.4	2.0	0.9	61.1	9.5	73
e	S		5.2	7.2	5.1	5.4	10.5	6.3	7.4								11.8	41.2	6.2	3.0	9.0	41.2	9.5	75
	14.7		4.3	6.8	7.7	5.7	6.3	9.5	14.2	35.1		6.2 6.	8 16.7			21.9	25.0	21.8	10.5	8.6	8.6	100.5	16.7	54
5.6	1.8	4.1	5.8	2.3	31.7	13.9	40.1	28.9	26.8		13.2		.0 40.8			29.2	36.6	36.6	28.3	37.1	s	51.0	23.2	54
Ŋ	37.4		25.4	35.3	34.6	s	s	38.3	35.5				.0 53.0			•	68.2	47.9	48.4	s	48.0	68.2	40.6	54
Н	48.1		36.7	42.2	45.1	21.7	22.1	22.6	17.8	16.9	41.2 17	17.1 25.2	•	54.5	28.3	40.3	11.5	1.5	s	5.2	1.3	58.4	29.0	54
_	4.8		9.0	0.0	0.0	0.0	3.8	1.4	0.0								8.5	s	14.8	16.9	15.8	16.9	0.9	54
9	15.5		11.4	11.3	9.0	11.3	9.5	11.1	7.9				.9 12.1				s	9.3	6.2	6.3	5,3	16.9	10.5	54
_	8.7		21.1	23.2	21.1	34.4	26.1	33.7	25.3			15.6 22				s	7.0	0.9	4.3	11.3	12.9	34.4	16.8	54
c	4.2		5.2	3.3	4.7	2.4	9.1	9.0	7.7					16.3	s		16.4	3.0	3.1	7.1	7.1	28.3	8.1	54
	6.8	10.7	10.2	8.8	11.1	10.6	13.8	8.1	8.5	7.3			8 8.1		28.6		27.0	26.6	25.9	20.9	21.8	31.9	13.7	54
9	34.1		29.2	26.3	15.8	13.8	10.4	10.6	16.3	•		39.2 19			38.3		13.0	13.7	20.3	17.5	16.2	44.6	23.2	73
22.2	16.2		23.2	13.3	17.7	18.7	25.9	29.7	89.7	21.2		15.4 \$	12.8	3 18.6	10.4	6.5	4.6	6.3	5.5	4.1	5.7	89.7	18.4	54
6	2.9		5.0	100.5	8.2	11.5	16.4	7.4	8.9	9.1	9.01		5.6 6.3				6.0	5.6	5.9	4.8	5.9	100.5	11.7	54
1	48.1		36.7	100.5	91.4	70.4	84.9	64.5	89.7	35.6 4		39.2 40	.0 53.0		45.6	46.0	68.2	61.0	48.4	64.5	48.0			
12.7	12.9	13.4	12.7	19.6	20.1	15.9	19.6	19.4	17.9		14.8 13						16.8	15.8	14.3	14.7	14.5			

STATUS FLAG CODES	CALIBRATION A TECOVERY A TECOVERY DAILY ZERO/SPAN CHECK C TANACHINE MALFUNCTION POWER FAILURE O COPERATOR ERROR COLLECTION ERROR K • COLLECTION ERROR
	C CALBR NAMY S DAILYZ POWEF
	Acres Frank Professor

NUMBER OF NON-ZERO READINGS:		674						
MAXIMUM INSTANTANEOUS VALUE:		135.9	135.9 PPB	@ HOUR(S)	16	ON DAY(S)		2
					VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME: MONTHLY CALBRATION TIME: STANDARD DEVIATION: 16.	35 HRS 14 HRS 16.00	10.10	OPERATI	OPERATIONAL TIME:			727	HRS



PPB NOXMAX

 $\ensuremath{\text{LICA}}$ NOX_ / WD Joint Frequency Distribution (Percent)

Distribution By % Of Samples

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

Fred 99.70 00. .29 00. MAN 4.84 00. 4.84 00. 00. 5.72 00. % 5.72 00. 4.11 4.11 00. % 00. 8.81 8.81 8. 00. 00. 18.94 18.94 % 0 8 3.67 3.67 00. 00. 00. 3.23 3.23 8 % 0. 2.34 2.34 00. 00. 8 00. 4.11 4.11 0, 00. 1.32 11.74 11.74 14.09 % 00, 00. 11.60 14.09 .14 8 % 11.60 .14 00. 00. 1.32 0. 00. 00. 1.02 1.02 % 00. 00. 1.76 1.76 00. 00. 00. 2.49 2.49 00. 00. 00. z Totals 50.0 Limit 110.0 210.0 < 210.0 ٧ X

Total # Operational Hours : 681

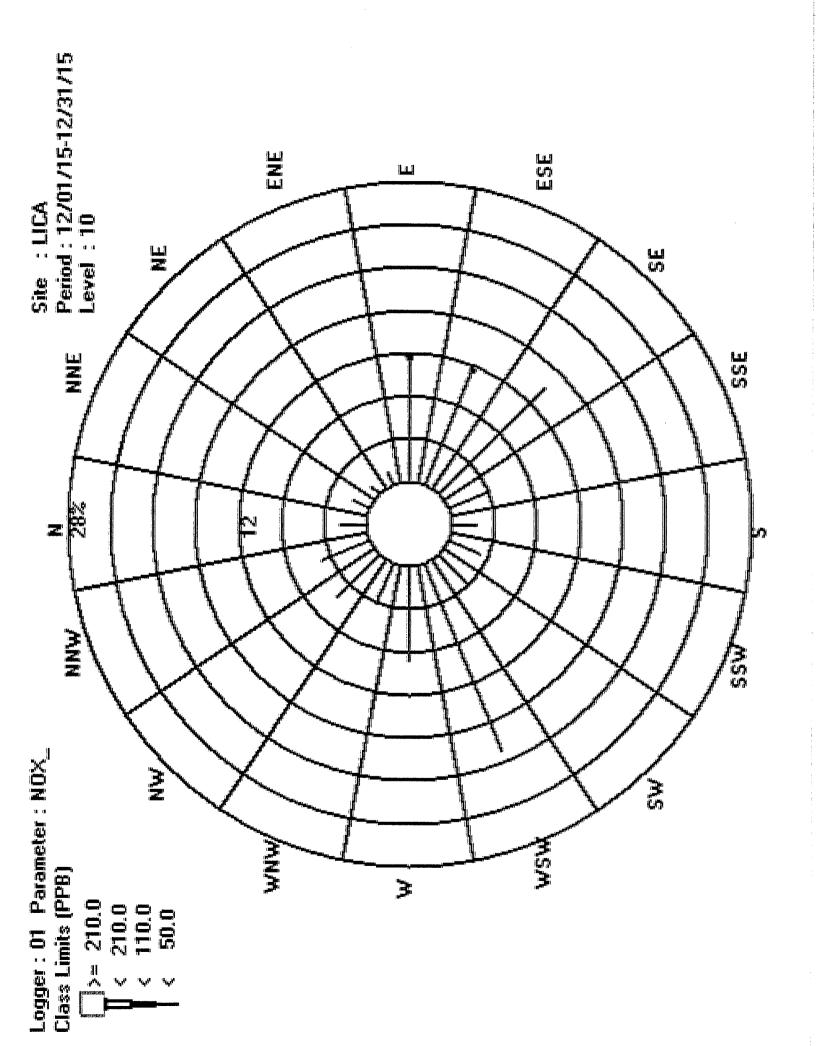
Calm : .00 %

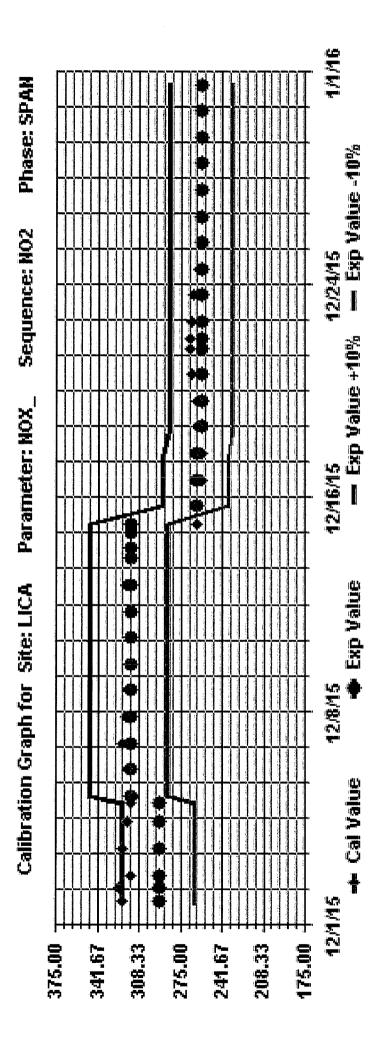
Distribution By Samples

Freq NNN 33 M 33 28 9 129 Š 25 SSW 22 16 28 SSE 28 띯 96 80 79 80 M 79 o, 7 뉟 NNE 12 12 17 z Totals 50.0 110.0 Limit < 210.0 >= 210.0

Total # Operational Hours : 681

Calm : .00 %









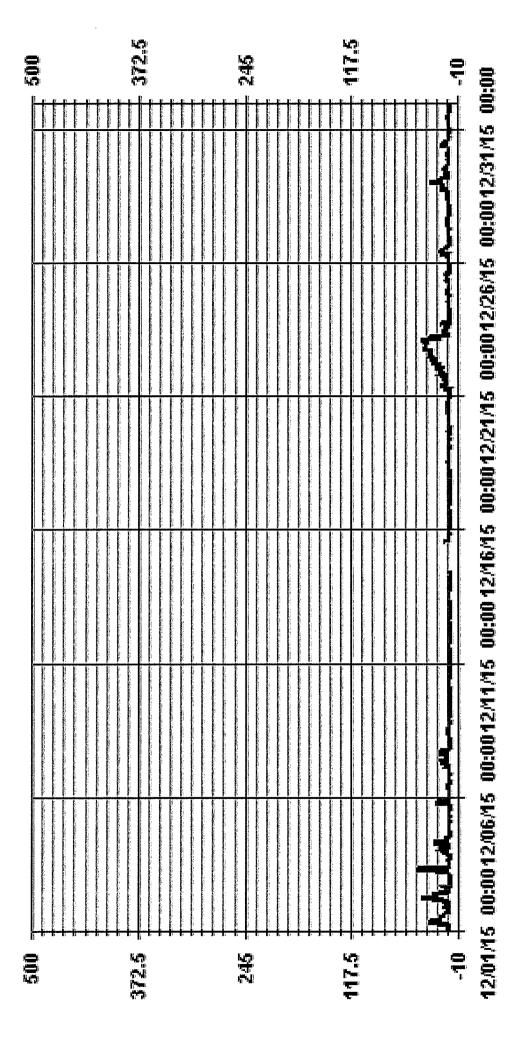
NITRIC OXIDE (NO) hourly averages in ppb

MST																											
HOUR START	0:00	0:00 1:00 2:00 3:00 4:00 5:00	2.00	3.00	4:00	5:00	6:00	7.00	8.00	9:00	10:00	11.00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21.00	22:00 2	23:00		24-HOUR	č
DAY	7	2.00	2003	00.4	00.0	000	30	000	On house	OO OT	non T	12.00	On:CT	14.00	nn:cr	TOTO	TYTOO	TO:On	00.51	30000	ZTOO	00.77	25.00		MAA.	AvG.	KDG5.
, 1	0.5	1.4	1.4	2.9	3,3	2.4	3.0		17.5	24.6	21.9	11.8	11.4	11.6	8.1	8.7	7.7	1.0	1.1	1.1	s	1.5			94.6	7.5	54
2	4.8	2.3	2.2	3.1	8.4	21.4	32.2		s	20.1	14.9	2.1	5.7	2.3	1.9	4.8	7.1	0.2	0.1	s	0.3	0.2			12.2	6.4	54
m	0.1	0.2	0.1	0.2	2.1	12.3	10.8		39.8	3.2	1.0	6.0	1.2	9.0	9.0	0.7	2.0	0.3	s	0.1	0.1	1.7			8.6	5.4	54
4	4.5	12.4	10.2	7.7	2.3	1.9	13.5		11.8	19.4	6.7	4.2	5.3	2.1	0.0	0.0	6.0	s	0.3	0.5	0.4	9.0			19.4	5.4	75
2	0.3	0.3	9.0	0.0	0.0	0.3	0.3		U	U	1.1	8.0	8.0	0.5	0.7	0.2	s	6.0	1.8	11.3	16.5	7.0			16.5	2.4	54
9	9.0	0.5	0.5	9.0	0.5	0.4	9.0		2.1	2.3	2.5	1.4	1.4	1.3	9.0	s	4.0	9.0	8.0	6.0	1.0	0.4			2.5	6.0	54
7	0.5	8.0	1,9	4.4	2.0	2.3	6.0		8.7	6.6	3.7	4.3	5.3	4.2	s	4.3	10.5	10.8	10.8	0.9	1.0	0.3			10.8	4.6	54
∞	0.3	0.1	0.4	0.2	0.2	0.4	0.2		9.0	2.9	2.2	1.6	13	s	1.9	5.0	2.4	0.7	0.5	8.0	0.1	0.4			2.9	6.0	54
6	0.4	0.2	0.1	0.0	0.0	0.0	0.0		0.2	9.0	1.2	0.4	s	9.0	0.7	0.5	0.1	0.1	0.0	0.0	0.2	6.0			12	0.3	54
2	0.2	0.2	0.3	0.2	0.4	0.4	11		0.8	0.4	0.4	s	0.1	0.3	0.2	0.1	0.2	0.1	0.2	0.0	0.0	0.0			1.1	0.3	54
17	0.0	0.0	0.0	0.2	0.2	0.4	0.1		0.0	0.0	s	0.0	0.3	0.2	9.0	0.5	0.5	0.4	9.0	0.3	0.1	0.1			9.6	0.2	54
12	0.0	0.0	0.0	0.0	0.0	0.1	0.0		0.0	s	0.0	0.0	0.0	0.2	0.4	0.5	0.4	0.2	0.2	0.2	0.2	0.2			5.0	0.1	54
13	0.2	0.2	0.2	0.2	0.2	0.3	0.2		S	1.2	8.0	0.7	0.7	9.0	0.4	9.0	0.7	0.4	0.3	0.2	0.7	0.3			1.2	0.5	54
14	0.7	0.0	0.0	0.0	0.0	0.0	0.0		0.0	9.0	0.4	U	U	U	U	U	>-	>	>	>-	>-	>-			9.0	0.1	16
15	>	>	>	>	>-	>			>	U	U	U	U	U	5.0	13	0.7	9.0	8.0	9.0	9.0	0.7			5.0	1.1	13
16	0.4	0.4	0.2	0.2	0.0	s			0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.4	0.3	9.0	0.3	9.0	8.0	0.4			8.0	0.3	54
17	0.1	0.2	0.1	0.0	s	0.1			0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1			0.3	0.1	54
18	0.1	0.1	0.1	s	0.1	0.1			0.3	0.4	0.7	0.8	8.0	1.1	1.4	1.8	1.1	1.5	1.0	6.0	8.0	9.0			1.8	0.7	74
ឡ	9.0	0.5	s	0.5	0.1	0.5			6.0	8.0	1.0	0.3	9.0	0.4	4.0	0.3	9.0	2.0	1.4	0.5	6.0	0.2			2.0	9.0	54
8	0.5	s	8.0	6.0	0.4	9.0			0.7	1.0	3.3	2.8	2.2	1.7	1.6	5.6	3.3	2.1	2.3	1.6	13	0.7			3.3	1.4	54
77	s	0.0	0.0	0.0	0.2	0.0			4.1	6.2	10.6	6.8	4.8	4.2	4.1	4.5	6.3	7.0	6.4	6.7	12.2	9.5			2.2	5.0	24
22	11.2	10.2	16.6	11.8	12.0	16.7			21.1	22.1	22.8	20.6	24.6	22.8	23.5	22.1	21.9	22.3	25.3	29.9	30.5	29.4			5.05	21.1	24
83	27.3	30.1	30.6	33.7	9.4	25.8			3.5	6.2	6.5	7.5	6.1	5.2	8.4	2.0	2.3	7.0	11.7	6.0	0.4	s			3.7	10.6	24
24	0.3	0.4	0.3	0.5	0.2	0.2			0.2	0.3	0.3	0.3	9.0	2.0	1.5	9.0	0.4	8.0	6.0	0.3	s	1.9			3.2	8.0	24
22	1.9	9.0	0.7	1.5	0.9	0.7			17	3.8	5.8	5.9	3.2	4.5	3.8	1.8	0.4	0.2	0.1	s	0.1	0.0			4.5	1.4	74
. 26	0.0	0.3	0.4	0.4	0.8	1.5			4.2	10.4	11.3	10.4	8.1	4.9	2.8	3,9	0.7	1.2	s	0.2	0.2	0.2			1.3	3.3	54
72	0.3	0.4	0.4	0.5	0.5	0.5			1.0	1.4	1.9	1.9	1.8	18	1.5	1.3	1.5	s	1.5	0.3	0.1	0.1			1.9	6.0	24
82	0.2	0.0	0.1	0.1	0.2	0.3			9.0	1.7	5.6	2.1	2.3	5.0	1.3	1.4	s	4.6	8.7	8.4	7.0	8.3			9.1	3.0	24
ຊ	12.8	23.9	16.1	11.6	10.5	8.7			9.0	2.7	4.5	5.1	6.3	6.4	4.4	S	3.2	2.7	1.2	0.8	0.8	2.5			3.9	5.7	74
30	1.9	2.4	1.2	1.5	1.3	9.0			1.8	7.2	11.2	7.5	6.3	4.6	s	1.1	8.0	9.0	0.2	0.3	0.4	0.4			1.2	23	24
31	0.4	0.4	0.1	0.3	0.5	1.4			0.5	0.7	1.6	1.9	1.8	s	6.0	0.5	0.2	9.0	0.2	0.2	0.2	0.2			1.9	9.0	54
HOURLY MAX	27.3	30.1	30.6	33.7	12.0	25.8	32.2	34.8	39.8	24.6	22.8	20.6	24.6	22.8	23.5	22.1	21.9	22.3	25.3	29.9	30.5	29.4	11.8	28.5			
HOURLY AVG	2.4	3.1	3.0	2.9	2.0	3.5			4.5	5.4	4.8	3.6	3.7	3.2	2.7	2.5	2.7	2.5	2.8	5.6	2.8	2.4		2.2			

STATUS FLAG CODES

CONTITY ASSURANCE RECOVERY X - MACHINE MALEUNCHON C - OPERATOR ERROR K - COLLECTION ERROR	24 HOUR AVERAGES FOR DECEMBER 2015			*			10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
C -CALIBYATION. YIMAINTENANCET SDAILY ZERO/SPANCHE PPOWER FAILURE GOUTFOR REPAIR	24 HO	40.0	30.0	20.0	16.0	5.0	1 2 3 4 5 6 7 8 9 16

NUMBER OF NON-ZERO READINGS:	GS:		625					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		40 21.1	PPB BPB	@ HOUR(S)	∞	ON DAY(S) ON DAY(S) VAR-VARIOUS		s 23
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	28 21	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	TIME		727 7.79	% HRS
STANDARD DEVIATION:	5.95			MONTHLY AVERAGE:			3.1	PPB



- LICA NO_ PPB



JOB # 2833-2015-12-01- C Cold Lake South Site - DECEMBER 2015 LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

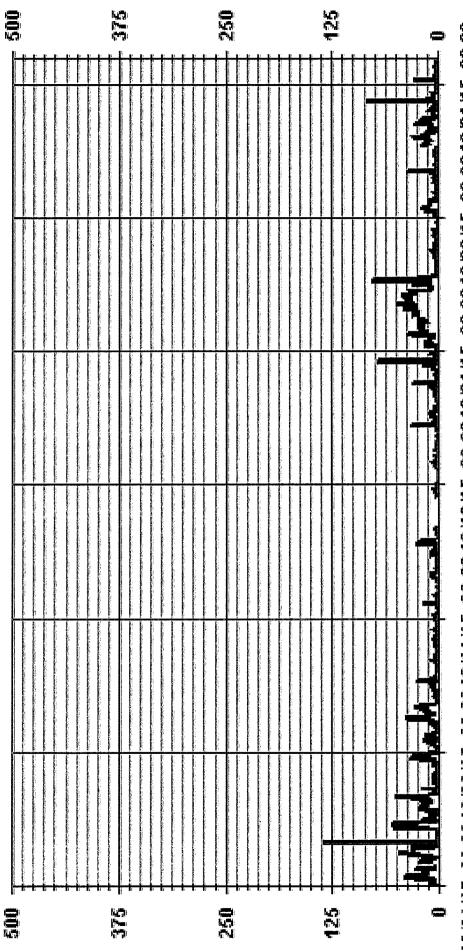
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MST									Ž		, ,	= <u>{</u>		enoaii.	шауш		2									
HOURSTART	00:0	0:00 I:00 Z:00	2:00	3:00	4:00	2:00 3:00 4:00 5:00	00:9	7:00	8:00	1.4	10:00	11:00	12:00 1	13:00 14	1000	15:00 -16:00	00 17:00	00 18:00	0 19:00	20:00	21.00	22:00	23.00	DAILY	24-HOUR	
HOUR END	1:00	5:00	3:00	4.00	2:00	÷00:9	7.00	8:00	00:6	10-00	11-00	12:00	13:00 1	14:00 15	15:00 16:	16:00: 17:0	45762	19:00	0 20:00		21:00 22:00	23:00	00:0	MAX.	AVG.	RDGS.
DAY	1.0	6.9	3.5	11.0	7.5	5.5	6.5	27.5	28.0	45.0	29.0	15.5										25.5	9.0	45.0	14.4	24
2	13.9	6.0	5.0	6.9	20.5	37.0	45.5	s	s	31.0	31.5	5.5	12.0	4.0 3	3.0 31	31.5 135.4	4 1.9	9 1.4	Ŋ	2.5	1.5	6.0	1.0	135.4	18.9	24
m	6.0	13	6.0	3.5	11.0	50.5	50.5	42.5	55.5	26.5	2.0	1.5										24.5	13.9	55.5	15.5	54
4	20.0	20.0	16.0	21.0	9.5	10.0	22.0	26.5	33.0	51.0	13.9	6.0										8.5	4.0	51.0	13.6	74
S	5.5	4.0	5.5	0.5	1.0	4.5	5.0	2.0	J	U	ပ	1.5										6.6	14.0	31.9	8.5	75
9	3.0	20	2.5	2.5	2.0	2.0	4.0	5.5	9.0	6.0	5.0	8.0										5.6	5.6	18.5	5.2	54
7	3.1	2.1	7.0	11.1	7.6	10.1	37.6	19.1	38.5	18.1	6.1	5.6										1.5	3.0	38.5	13.2	54
œ	2.0	172	4.5	2.5	1.5	3.5	2.0	2.5	3.5	6.9	7.9	2.5										1.5	2.0	26.5	4.9	54
Ø	2.5	3.0	5.0	1.0	1.5	0.5	0.5	6.0	2.0	3.5	6.5	2.0										2.0	4.5	6.5	2.3	24
Ą	3.0	3.5	4.0	6.0	1.5	3.5	7.5	2.5	3.5	1.0	15	s										0.4	4.0	7.5	24	24
11		0.0	0.4	3.4	6.0	3.9	1.4	1.9	6.0	6.0	s	1.9										6.0	6.0	18.9	2.5	54
12		0.4	0.4	0.4	0.4	1.9	0.4	0.4	4.0	s	1.4	6.0										3.4	13	8.4	2.4	24
13		1.4	1.4	1.4	6.0	17	1.4	1.4	s	8.9	3.5	2.5										12.5	20.4	27.4	5.2	54
4		0.4	1.4	0.5	0.5	0.5	0.5	s	0.5	2.0	1.0	J										>	>	5.0	1.4	16
15		>	>	>	>	>	>	>	>	J	ပ	ပ										2.2	2.2	5.6	2.8	51
16		2.2	13	1.0	0.4	s	0.2	0.4	9.0	0.1	0.2	0.2										3.9	1.4	6.5	1.8	54
17		1.7	3.0	0.1	s	0.3	0.2	0.2	5.4	0.7	0.7	6.0										1.2	9.0	5.4	1.0	24
18		1.3	1.3	S	6.0	9.0	32.3	0.4	6.8	2.4	3.2	4.8										1.8	3.7	32.3	6,4	54
5		1.2	s	2.8	2.2	2.5	2.1	2.1	4.4	4.3	3.3	1.1										0.8	1.9	30.2	4.5	54
70		s	2.2	3.9	1,4	2.0	2.5	2.0	3.5	6.5	8.8	16.5										7.3	4.8	72.2	8.5	24
7		0.4	0.4	1.1	2.1	6.0	16.4	3.6	13.7	15.3	13.9	10.3										217	s	36.8	12.5	24
22		17.8	24.2	14.0	15.2	23.4	23.9	s	S	29.4	25.2	25.7										s	33.9	48.8	27.7	24
23		41.5	34.9	42.9	24.3	30.1	31.7	6.7	9.7	9.5	8.4	9.1										2.5	1.2	78.1	21.0	24
24		2.4	1.7	3.0	2.1	0.7	0.8	1.1	1.7	2.0	6.0	1.7										4.7	3.6	7.6	2.6	54
25		1.5	3.9	4.1	2.0	5.6	1.7	3.7	2.5	5.6	4.1	3.6										1.5	0.2	5.6	2.8	24
56		1.5	4.3	5.9	3,9	5.9	4.6	16.7	9.5	20.9	15.2	13.4										2.8	8.4	20.9	6.9	54
27		1.6	1.5	16	1.9	1.3	1.9	1.1	4.8	3.6	3.8	3.8										2.4	3.3	34.6	4.3	24
28		0.3	0.4	1.2	1.0	15	5.6	1.5	3.8	2.8	3.7	4.7										10.3	11.9	19.4	5.9	24
ຄ		29.1	21.9	14.6	16.3	15.4	5.1	3.3	1.7	2.0	8.8	8.8										5.9	5.9	29.1	120	24
8		9.5	6.7	6.4	7.0	2.8	3.3	2.5	6.0	11.7	84.6	8.7										1.7	5.6	84.6	9.6	24
31		2.1	1.3	1.7	2.5	29.2	1.3	3.8	4.8	1.3	2.9	3.3										1.0	1.9	29.2	3.4	54
HOURLY MAX	29.8	41.5	34.9	42.9	24.3	50.5	50.5	42.5	55.5	51.0	84.6	25.7			ľ	-	١.		ľ			25.5	33.9			
HOURLY AVG	5.6	5.8	5.6	2.8	5.2	8.8	10.4	6.7	8.6	11.5	10.6	6.1										5.7	5.6			

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			MO	I HLY SU	MONTHLY SUMMARY				
NUMBER OF NON-ZERO READINGS:	IGS:		229						
MAXIMUM INSTANTANEOUS VALUE:	ALUE:		135.4	135.4 PPB	@ HOUR(S)	16	ON DAY(S)		2
						VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME:	33	35 HRS		OPERATI	OPERATIONAL TIME:			727	HRS
MONTHLY CAUBRATION TIME:	14	HRS							
STANDARD DEVIATION:	11.78								

id Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA NOMAX PPB

LICA NO2_ / WD Joint Frequency Distribution (Fercent)

Distribution By % Of Samples

Logger Id : 01 Site Name : LICA Parameter : NO2 Units : PPB

		Freq	00.00	00.	00.	00.		
		NNW	4.84 100.00	00.	00.	00.	4.84	
		MM	5.72	00.	00.	00.	5.72	
		WNW	4.11	00.	00.	00.	4.11	
eters		×	8.81	00.	00.	00.	8.81	
Wind Parameter : WD Instrument Height : 10 Meters		WSW	3.67 18.94	00.	00.	00.	18.94	
Wind Parameter : WD Instrument Height : 10		SW	3.67	00.	00.	00.	3.67	
d Param trument		SSW	3.23	00.	00.	00.	3.23	
Win		Ø	2.34	00.	00.	00.	2.34	
		SSE	4.11	00.	00.	00.	4.11	
	Direction	SE	14.09	00.	00.	00.	14.09	
	Dir	ESE	11.74 14.09	00.	00	00.	11.74	
		ы	11.74	00.	00.	00.	1.32 11.74	
		ENE	1.32	00.	00.	00.	1.32	
		Ä	1.02	00.	00.	00.	1.02	
NO2 NO2 PPB		NNE	1.76	00.	00.	00.	1.76	
Parameter: NO2_ Units: PPB_		z	2.49	00.	00.	00.	2.49	
Param Units		Limit	50.0	110.0	210.0	210.0	Totals	
		П	٧	·- V	·,	X		

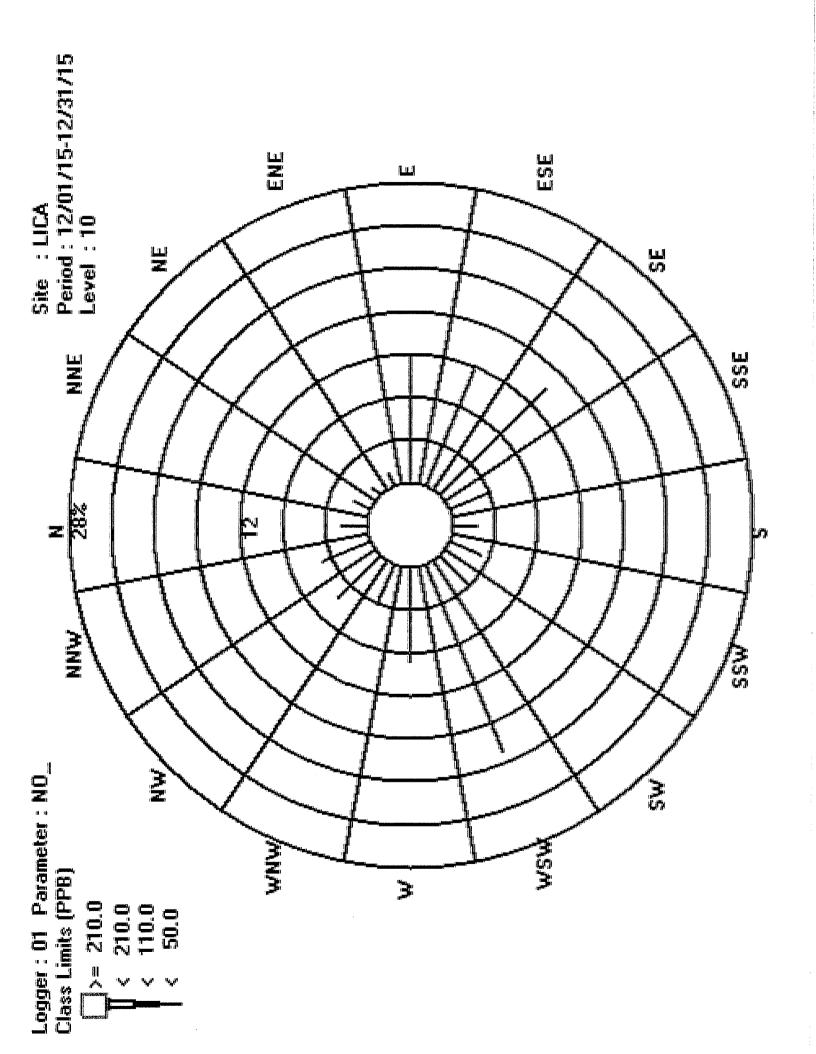
Calm : .00 %

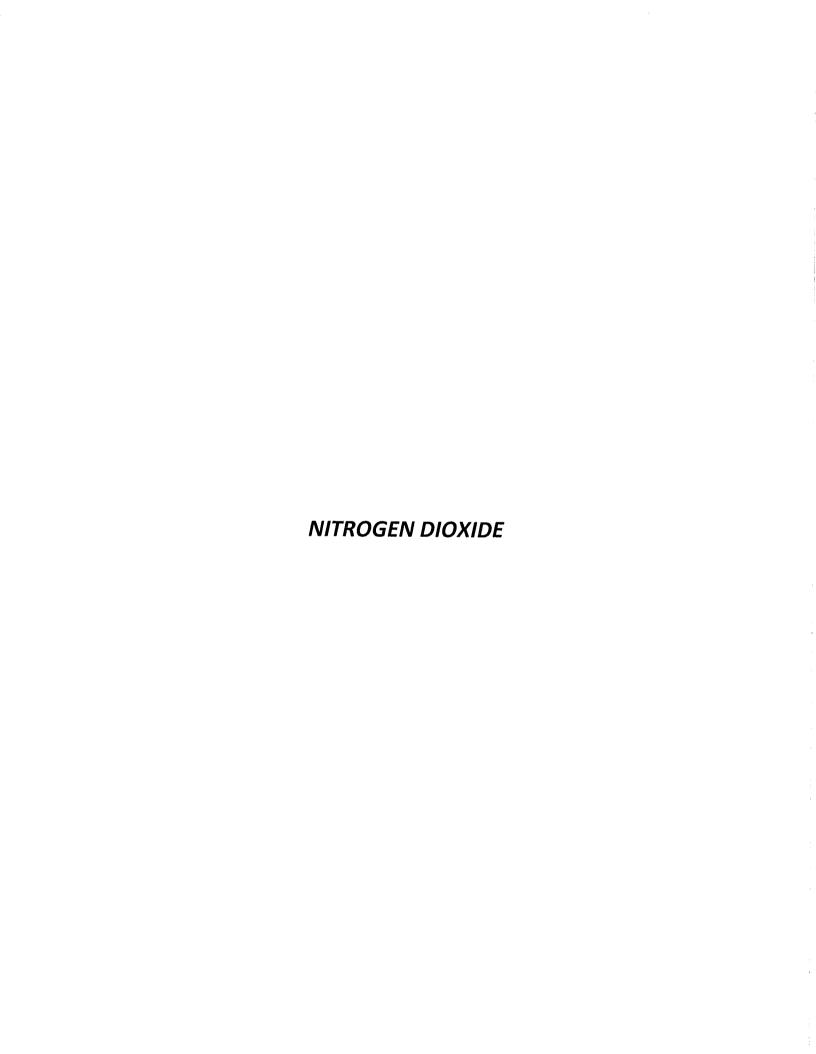
Total # Operational Hours : 681

Distribution By Samples

	Fred	681					
	NNW	33 (33	
	MN WA	39				39	
	WINW	28				28	
	其	9				9	
	WSW	129				129	
	SW	25				25	
	SSW	22				22	
	Ø	16				16	
	SSE	28				78	
Direction	SE	96				96	
Dir	ESE	80				80	
	ы	80				80	
	ENE	o				Ø	
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	NNE	12				12	
	z	17				17	* 00.
	Limit	50.0	10.0	210.0	0.01	Totals	Calm : .00 %
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Total # Operational Hours : 681



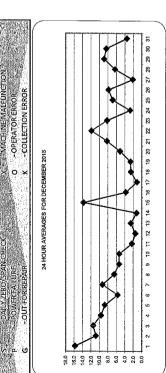




NITROGEN DIOXIDE (NO2) hourly averages in ppb

	RDGS.	24	24	54	24	24	24	24	54	24	74	24	24	24	16	1 3	24	24	24	24	54	24	24	24	24	24	24	24	24	24	24	24		
	24-HOUR AVG.	15.8	10.9	11.5	9.7	8.8	5.7	6.3	6.5	5.4	5.4	2.4	1.5	5.6	1.3	13.8	3.8	1.2	2.6	2.7	5.2	8.3	11.9	8.2	2.8	6.9	7.9	2.2	6.4	8.9	8.4	3.6		
	DAILY MAX.	23.1	19.3	26.9	18.5	24.0	10.3	14.5	13.7	12.2	11.0	4.1	3.0	3.6	2.4	17.1	10.1	2.5	6.7	6,6	12.6	15.1	17.3	13.8	11.5	10.6	16.0	4.1	11.9	12.6	16.1	6.5		
	23:00	16.8	5.2	21.8	5.6	17.2	5.0	7.8	3.9	8.9	1.7	1.0	1.7	2.7	>	9.0	4.9	2.5	1.0	3,5	3.8	S	10.7	0.0	11.5	4.9	5.7	2.1	5.7	6.8	1.4	2.9	21.8	6.2
	22:00	18.8	5.4	18.9	8.9	19.4	4.0	8.4	3.9	6.7	1.7	8.0	1.9	2.5	>	14.9	7.1	2.1	1.5	1.6	3.0	13.0	s	0.3	10.9	5.2	3.8	2.5	10.7	10.2	2.4	3.0	19.4	6.7
	21:00	20.5	4.2	15.6	5.9	20.7	4.2	10.4	4.9	12.2	2.3	1.0	2.4	2.5	>	17.1	6.7	1.9	2.4	2.1	5.2	12.8	11.8	S	9.9	5.4	5.6	1.5	10.5	10.8	2.8	3.5	20.7	7.4
	20:00	s	3.7	5.4	7.4	24.0	6.2	12.4	4.6	7.7	2.6	1.7	2.9	2.4	>	15.6	8.5	2.1	2.8	2.2	9.1	13.8	13.0	0.0	S	7.4	4.1	2.0	10.6	9.5	3.2	3.5	24.0	6.7
	19-00 20-00	20.7	s	4.1	8.7	20.5	7.1	12.3	6.1	7.9	2.4	1.8	2.7	2.6	>	14.4	10.1	2.3	2.6	5.5	12.6	13.7	14.4	0.5	6.3	S	5.1	2.8	11.7	8.5	3.2	3.8	20.7	7.7
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	3:00		12.1		13.8			7.7																									13.8	
	2:00	10.6	12.6	6.0				7.2																12.4									14.6	
	1.00	11.0	12.5	6.1				7.5																								0.5		
	0:00	10.3	14.2	6.1	16.2	4.9	7.7	6.7	7.4	3.7	7.5	13	0.8	1.7	2.4	>	6.2	2.4	2.9	1.5	3.2	s	10.4	8.8	0.0	10.6	4.0	3.4	2.2	10.1	8.7	0.7	16.2	ις 89
MST	HOURSTART 0:00 1:00 2:00 3:00 4:00 5:00 6:00 HOURSTART 0:00 2:00 3:00 4:00 5:00 5:00 7:00	-DAY	2	m	4	Ŋ	9	7		Ó	10	#	12	13	17	13	16	17	8	13	20	21	22	23	24	25	26	22	28	2)	ଳ	31	HOURLY MAX	HOURLY AVG

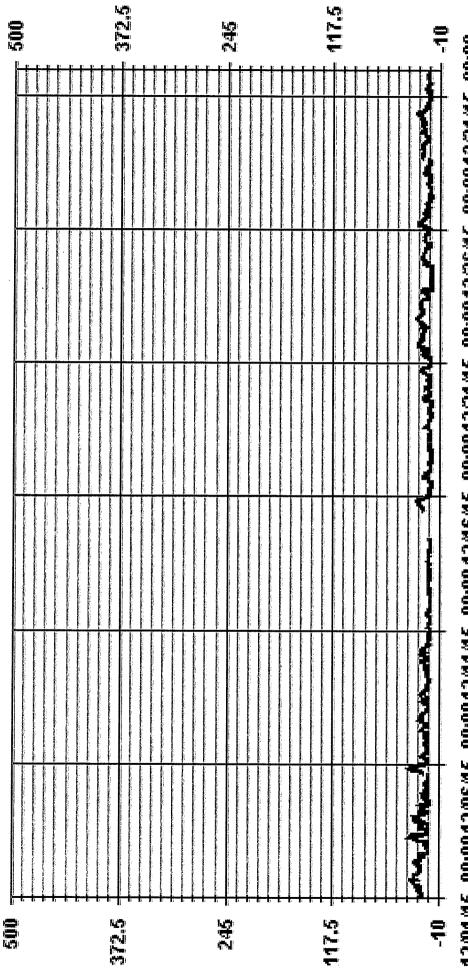




ALBERTA ENVIRONMENT: 1.HR 159 PBB

			Ā	MONTHLY SUMMARY					
NUMBER OF 1-HR EXCEEDENCES:			0						
NUMBER OF NON-ZERO READINGS:	;;		997						
MAXIMUM 1-HR AVERAGE:		26.9	PPB	PPB @ HOUR(S)	7	ON DAY(5)			
MAXIMUM 24-HR AVERAGE:		15.8	PPB			ON DAY(5) VAR-VARIOUS		-	
IZS CALIBRATION TIME: MONTHLY CAUBRATION TIME:	\$ 13	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	E: JPTIME:		727 97.7	HRS	
STANDARD DEVIATION:	5.02			MONTHLY AVERAGE:	نِن		6.4	PPB	_

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

PPB

NO2_



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

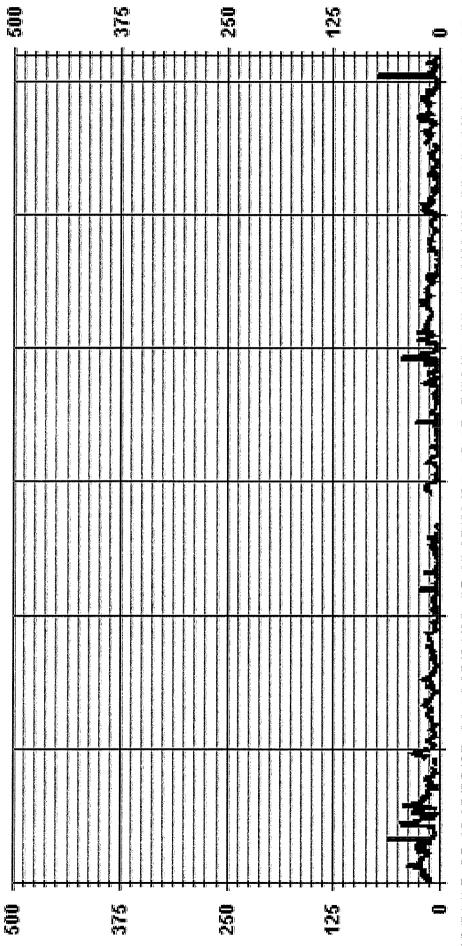
RDGS.	24	24	54	24	74	74	24	24	24	54	74	74	24	16	15	24	24	24	75	54	74	24	77	74	24	24	54	24	24	24	74		
24-HOUR AVG.	20.0	17.0	20.2	14.1	12.7	9.3	12.3	10.0	7.6	7.9	5.7	4.4	5.3	2.5	15.2	5.6	2.7	6.0	6.2	10.6	12.5	14.4	10.9	4.3	8.4	11.0	5.1	8.6	13.0	11.8	9.5		
DAILY MAX.	39.5	61.5	44.5	22.5	30.3	15.8	19.4	20.0	15.6	14.5	22.5	22.5	15.0	4.1	18.1	14.6	12.3	28.8	17.0	45.3	26.7	23.8	16.3	12.9	12.9	19.7	14.9	16.2	26.5	22.6	73.3		
23:00	20.0	6.0	34.4	12.5	20.3	9.0	9.0	6.1	8.6	2.5	22.5	2.5	15.0	>	13.2	7.2	4.5	3.9	7.3	7.1	s	14.4	9.0	12.5	5.5	8.1	4.6	11.2	12.4	3.7	4.7	34.4	
22:00	23.1	6.0	42.5	19.0	25.3	5.5	10.0	5.6	11.1	3.0	2.5	3.0	2.6	>	15.3	10.5	2.7	4.2	2.9	5.0	15.4	s	2.9	12.9	6.2	8.9	5.0	12.3	12.8	3.4	4.2	42.5	
22:00		5.6	23.5	10.6	25.8	6.9	110	12.6	15.6	4.0	2.5	3.5	4.6	>	18.1	11.0	2.6	4.2	4.9	9.6	15.2	13.8	s	11.4	6.0	3.8	2.5	12.1	16.4	4.4	5.0	25.8	
20:00 21:00		5.1	8.5	10.6	30.3	7.9	17.5	5.6	9.6	3.5	3.0	3.5	9.5	>	17.5	12.9	3.0	4.4	14.5	18.9	16.9	14.4	0.1	s	9.5	6.0	5.8	13.9	12.4	4.7	4.8	30.3	
19:00 20:00	23.6	s	6.4	13.0	27.3	10.5	16.9	9.1	9.1	4.0	3.5	4.5	4.1	>	14.8	13.1	4.2	4.9	6.6	21.2	16.7	23.8	7.3	7.9	s	6.2	10.9	14.4	10.7	4.3	4.9	27.3	
17.00 18.00 18.00 19.00	25.0	7.5	S	9.5	16.8	12.0	14.4	11.1	8.1	8.0	5.5	5.5	4.0	>	15.3	14.6	6.0	6.1	14.4	16.4	15.4	17.0	14.0	11.1	11.5	Ŋ	8.1	14.5	14.9	6.4	6.7	25.0	
	20.0	7.5	21.0	s	18.4	8.5	17.4	12.1	8.1	6.1	6.5	3.5	6.0	>	15.6	7.3	1.2	6.4	17.0	16.5	17.1	17,5	14.8	11.0	10.6	10.3	S	16.2	26.5	9.3	16.8	26.5	
16.00 17.00	39.5	61.5	32.0	14.4	s	9.4	19.4	17.6	7.0	6.1	6.0	4.5	9,5	>	14.7	4.7	1.3	7.0	12.2	45.3	21.0	19.1	14.7	7.2	9.0	10.2	9.2	s	15.8	15.2	6.8	61.5	
15:00 16:00	30.1	27.0	17.0	3.5	6.1	s	15.4	20.0	9.5	5.5	9.0	17.5	6.5	Ų	12.2	4.3	1.2	11.6	3.9	8.5	25.9	20.9	7.7	2.5	9.3	13.2	5.0	6.5	s	8.2	4.4	30.1	
15:00	22.6	11.6	5.0	4.0	6.0	6.3	s	17.1	8.1	5.5	8.5	5.0	5.1	U	U	0.1	3.3	8.0	2.9	4.4	9.5	15.3	9.5	4.5	8.7	12.5	2.6	3.1	10.1	s	4.2	22.6	
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NUMBER OF NON-ZERO READINGS:	671						
MAXIMUM INSTANTANEOUS VALUE:	73.3	3 PPB	@ HOUR(S)	Ŋ	ON DAY(S)		31
				VAR-VARIOUS	RIOUS		
IZS CALIBRATION TIME: 35 HKS MONTHLY CALIBRATION TIME: 14 HKS STANDARD DEVIATION: 7.61	55 55	OPERAT	OPERATIONAL TIME:			727 HRS	HRS

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

PPB

NO2MAX

■ LICA

LICA NO_ / WD Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 01 Site Name : LICA Parameter : NO Units : PPB

00. 00 00. NNW Freq 4.84 100.00 00. 8 0. 4.84 M 5.72 00. 00. 00. 5.72 WNW 4.11 4.11 % 0. 00. 8.81 8.81 Wind Parameter : WD Instrument Height : 10 Meters 00. 00. 00. WSW 18.94 00. 00. 00. 18.94 3.67 3.67 KS 00. 00. 8 3.23 3.23 SSW 00. 00. 00. 2.34 2.34 8 0 0. Ø 4.11 00. 4.11 SSE 00. 00. 11.74 14.09 Direction SE 11.74 14.09 00 00 00 ESE 00. 00. % 11.74 1.32 11.74 8 00. % М 1.32 00. 8. 00. 1.02 널 1.02 0, 00. 00. 1.76 1.76 00. 00. SE % 2.49 2.49 00. 8. 00. z Totals Limit 50.0 210.0 < 110.0 < 210.0

Calm : .00 %

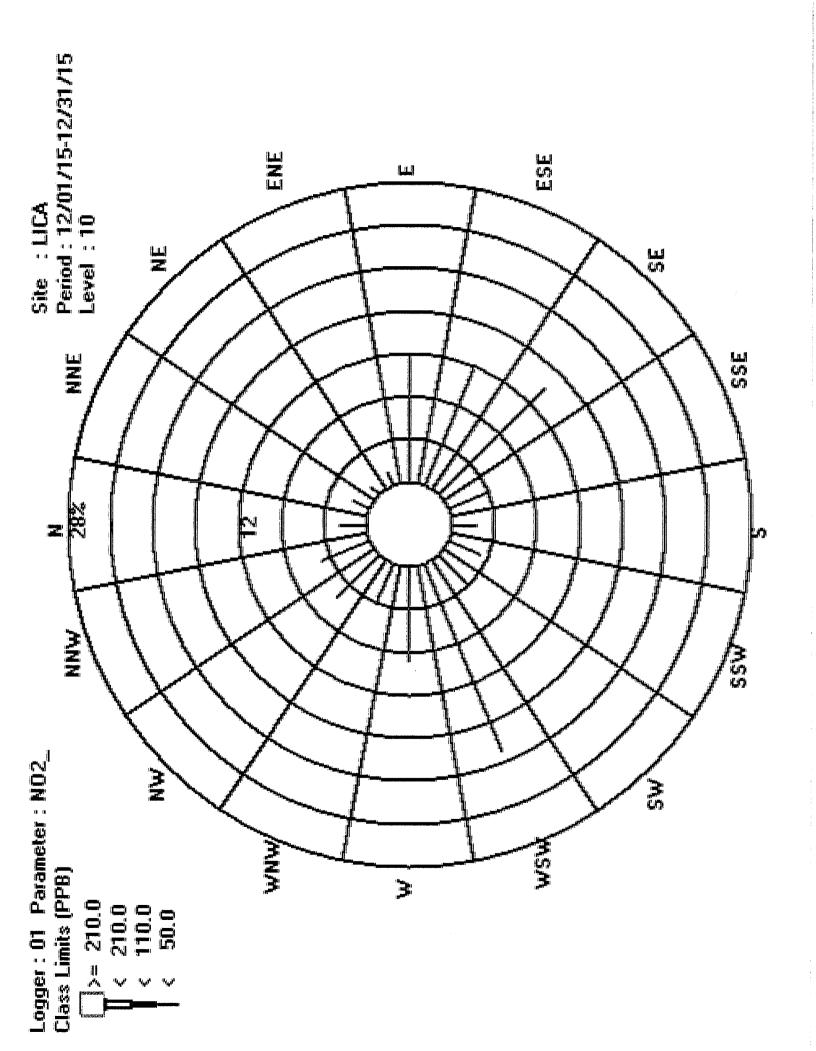
X,

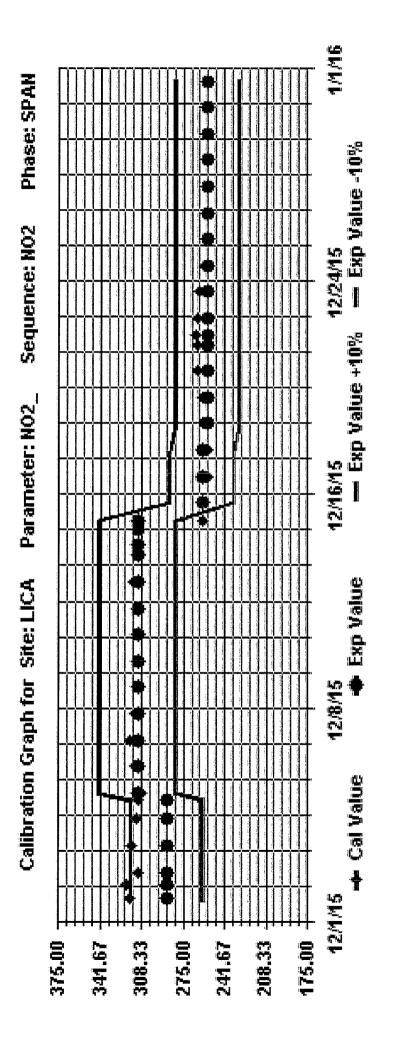
Total # Operational Hours : 681

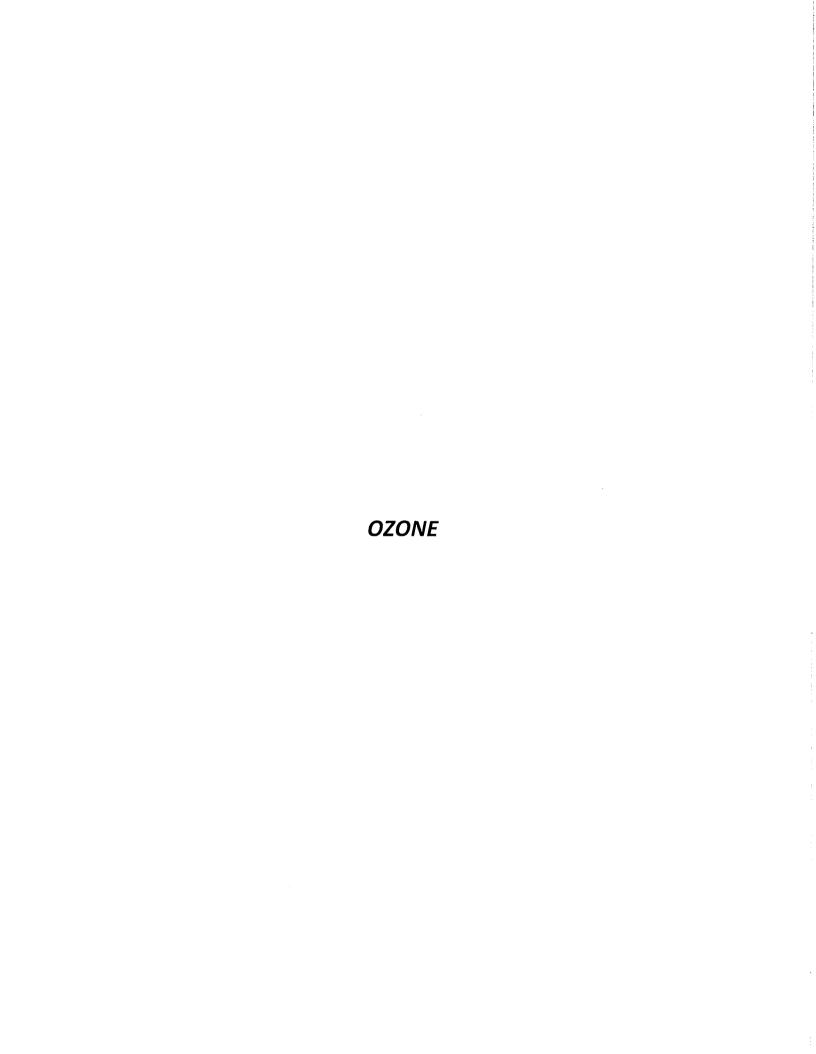
Distribution By Samples

Fred 681 NNM 33 33 Ę 33 39 WNW 28 9 129 SW 25 25 SSW 22 22 16 Ø 16 28 SSE 28 Direction SE 96 ESE 88 88 80 80 σ ENE 7 日 7 NNE 12 12 17 z 17 Totals 50.0 Limit < 110.0 >= 210.0 < 210.0

Total # Operational Hours : 681 Calm : .00 %









OZONE (03) hourly averages in ppb

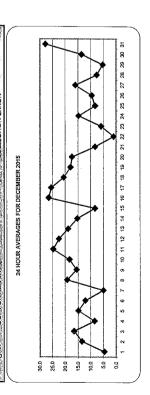
	200		7 7	54 64	54	24	54	24	24	54	24	54	24	24	24	54	54	54	54	54	54	54	54	24	24	24	54	74	24	24	74	24		
	24-HOUR		σ. ,	16.6	8.5	14.8	12.1	5.0	19.3	15.6	18.3	24.8	22.5	18.9	15.3	8.3	26.5	25.6	20.7	18.0	17.4	8.3	1.0	5.9	14.8	8.3	9.6	16.0	7.6	5.3	13.6	27.8		
	DAILY		¹ ′	7 80	24	28	18	15	22	77	53	33	56	77	20	53	34	31	23	73	77	21	Ŋ	19	Ħ	18	22	19	15	13	55	33		
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	3:00		۰ -	16	1	10	16	1	18	20	9	52	56	17	20	6	24	53	s	21	17	17	0	0	17	0	12	16	œ	0	7	25	53	12.6
	2.00		٠.	7 7	0	13	17	1	17	19	თ	56	56	18	13	10	23	31	70	s	15	2	0	0	16	Н	18	17	12	0	m	26	31	13.3
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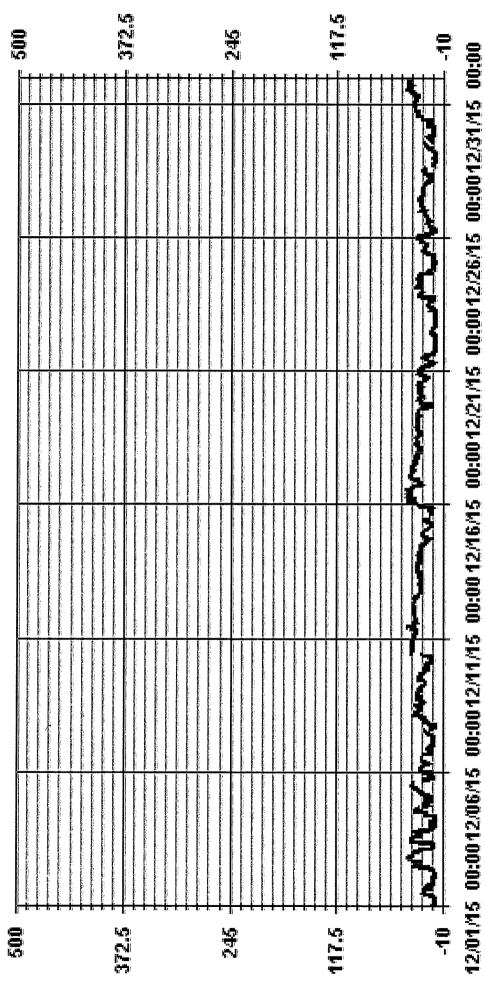
OBJECTIVE LIMIT:

STATUS FLAG CODES

ALBERTA ENVIRONMENT: THR 82

			2	INDIAL TEL SOLVINIAR T				
NUMBER OF 1-4R EXCEEDENCES			0					
NUMBER OF NON-ZERO READINGS:			299					
MAXIMUM 1-HR AVERAGE:		8	PPB	PPB @ HOUR(S)	14	ON DAY(S)	16	
MAXIMUM 24-HR AVERAGE:		27.8	PPB			ON DAY(5) VAR-VARIOUS	31	н
IZS CALIBRATION TIME: MONTHLY CAUBRATION TIME:	32	HRS HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	AE: UPTIME:		744 100.0	HRS
STANDARD DEVIATION:	9.07			MONTHLY AVERAGE:	GE:		14 PPB	PPB





PPB

60



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C

OZONE MAX instantaneous maximum in ppb

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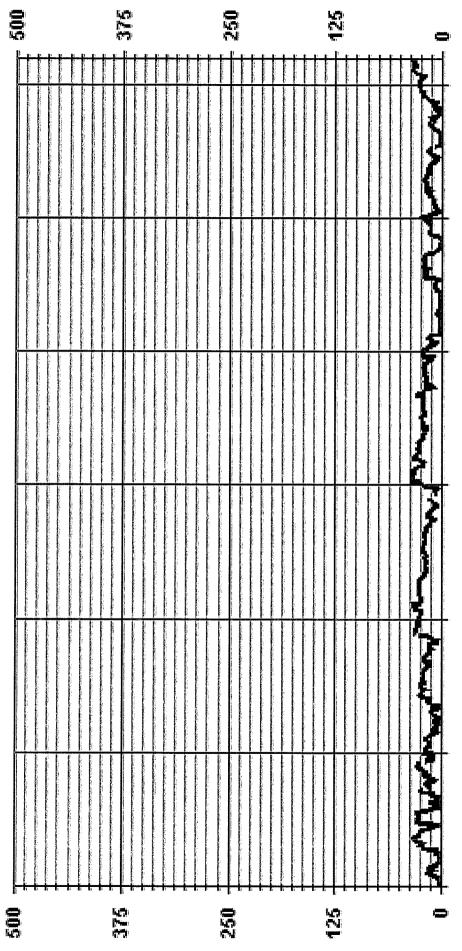
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NUMBER OF NON-ZERO READINGS:			708						
MAXIMUM INSTANTANEOUS VALUE:			35	PPB	@ HOUR(S)	4	ON DAY(S)		16
						VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS		OPERATIC	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	4	HRS							
STANDARD DEVIATION: 8	8.98								

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/36/15 00:00

- LICA O3MAX PPB

LICA 03_ / WD Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 01
Site Name : LICA
Parameter : 03
Units : PPB

00. 0. 00. NNW Freq 5.07 100.00 00. % 5.07 00. 5.50 M 00. 00. WNW 3.94 3.94 % % 00. 8.46 8.46 Wind Parameter : WD Instrument Height : 10 Meters 00. 00. 00. 4.65 18.75 WSW 18.75 0. 0. 00. 4.65 SW 00. 00. 00. 3.52 3.52 SSW 00. 00. 0. 2.67 % % 2.67 00. Ø 4.23 00. 4.23 SSE 00. 00. 1.26 11.28 11.28 13.96 Direction SE 1.26 11.28 11.28 13.96 00. 00. 00-00. ESE 00. 00. % 00. 00. 00. 0. 00. 86. 00. .98 00. 00. 1.83 1.83 % 00 00. 2.53 2.53 00. 00 00. Z Totals Limit 110 210 20 210

Calm : .00 %
Total # Operational Hours : 709

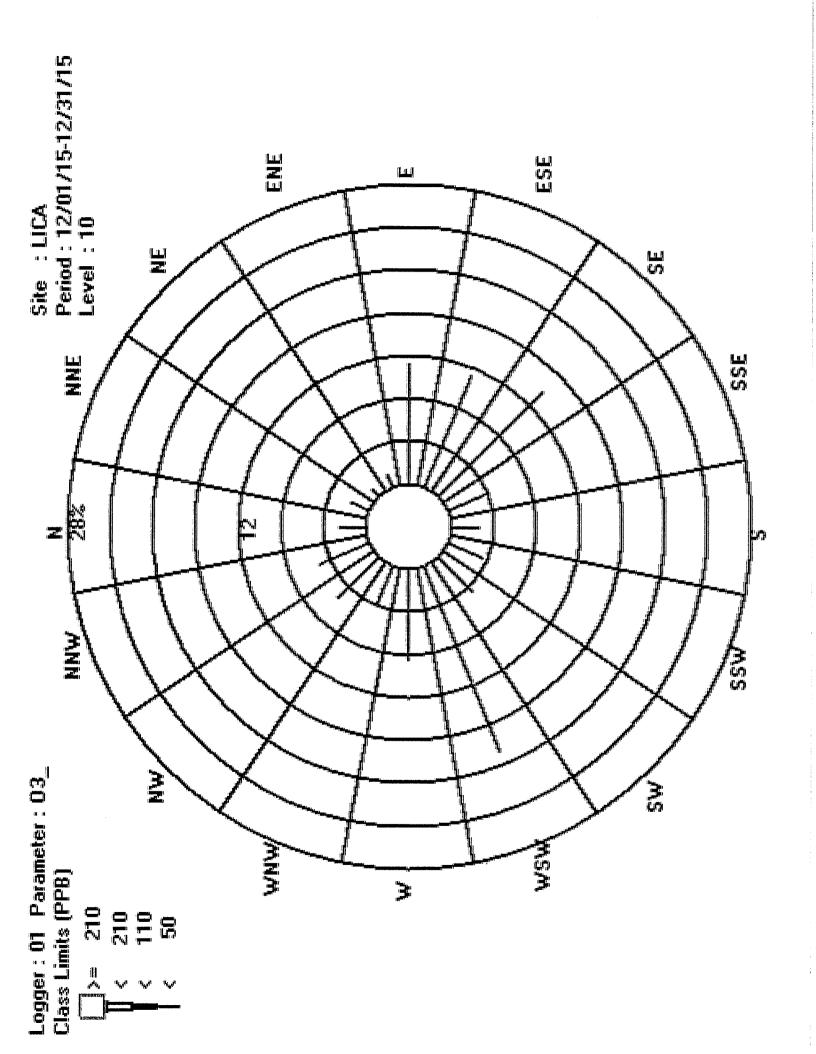
X

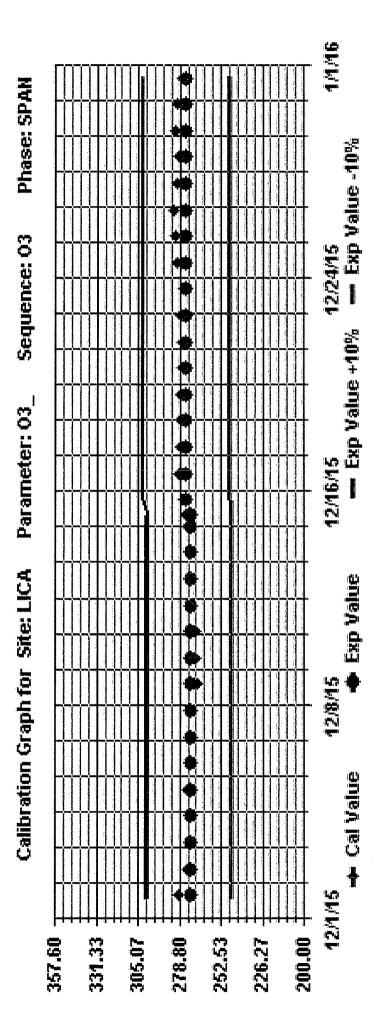
Distribution By Samples

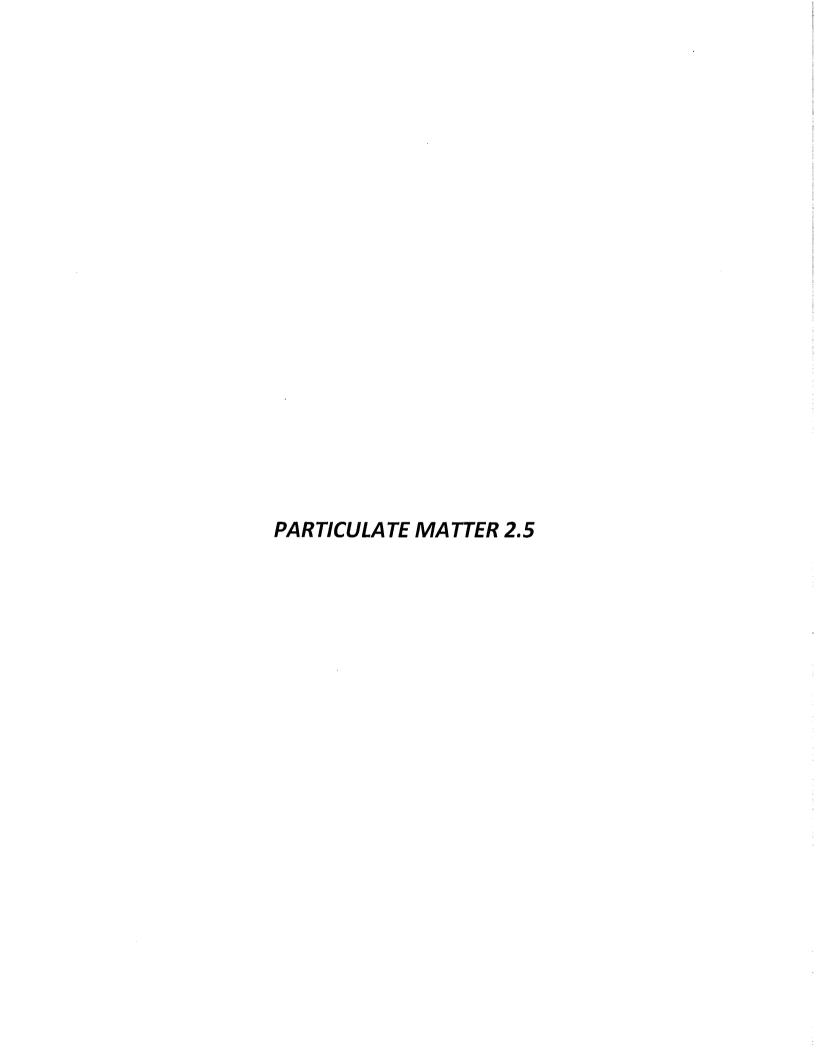
Freq 709 MNN 36 36 MN 39 33 MNM 28 28 9 133 33 SSW 25 25 13 Ø 5 SSE 30 30 Direction 66 없 80 ESE 80 80 [2] 80 σ ENE a 널 13 K 13 18 z Totals Limit 210 210 110 X

Calm : .00 %

Total # Operational Hours : 709







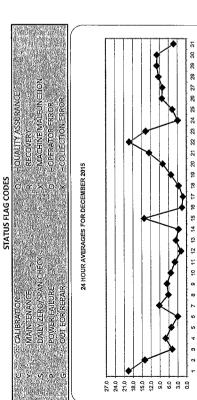
JOB # 2833-2015-12-01- C



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

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R RDGS.		24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	ř
24-HOUR AVG.	19.5	14.1	4,9	7.1	5.2	3.0	9.2	6.2	6.7	5.3	3.9	1.9	3.6	2.7	14.2	1.5	1.2	2.6	5.2	8.0	12.5	19.2	13.7	2.9	4.7	8.2	8.0	9.3	6.6	9.8	4.2
DAILY	29	25	16	20	9	7	15	22	11	10	33	9	7	80	19	80	4	9	13	12	24	56	21	თ	∞	13	11	12	15	70	-
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18:00	24	9	н	0	9	5	15	œ	2	7	m	m	5	0	13	0	2	н	4	12	19	26	14	თ	5	7	15	10	17	Ŋ	ď
17.00	21	9	7	5	m	7	13	7	∞	2	m	m	9	0	12	0	2	0	5	œ	13	25	14	9	7	6	00	#	Ħ	Ø	
16:00	22	Ŋ	m	m	7	7	∞	œ	5	4	16	н	4	5	13	0	н	m	9	9	21	24	15	5	4	10	10	17	∞	9	c
15:00	13	00	7	7	7	4	ø	œ	11	5	7	m	н	0	11	0	Н	0	н	00	21	23	17	4	Ŋ	13	4	σ	00	m	c
14:00	20	11	9	œ	7	4	12	Ŋ	11	7	33	0	Ŋ	4	14	Н	н	7	7	11	17	21	16	4	7	œ	7	9	17	9	·
13:00	23	13	10	7	0	7	10	22	10	7	7	0	5	m	14	7	7	4	4	6	13	23	4	н	5	œ	5	œ	11	9	c
12:00	21	13	5	7	0	н	13	9	თ	н	0	0	7	Н	11	m	0	0	m	7	12	22	U	4	2	7	თ	თ	14	თ	n
11:00	22	13	0	9	0	4	12	4	01	0	0	Н	7	2	14	0	0	2	4	12	11	56	16	н	4	11	œ	11	11	14	c
10:00	22	22	4	œ	4	7	თ	œ	0	m	0	7	m	7	15	7	7	m	13	œ	11	23	16	0	ø	Ŋ	14	11	9	13	,
9:00	13	25	9	9	m	7	7	2	ပ	œ	н	0	m	7	17	0	н	П	Ŋ	9	თ	12	16	0	9	თ	10	∞	9	20	c
8:00	18	22	16	7	н	7	12	4	œ	თ	0	0	0	0	16	н	0	4	4	σ	9	13	17	н	9	œ	œ	œ	4	17	,
7.00	H 51	23	9	4	7	9	D	7	9	σ	1	9	7	0	17	0	н	7	m	Ŋ	∞	13	17	Ŋ	7	12	9	∞	œ	16	ç
6:00		23	m	2	7	4	2	1	4	10	1	2	4	Н	12	0	0	ю	9	4	Ŋ	14	18	7	m	თ	S	œ	7	13	Ţ
5:00 6:00 6:00 7:00	14	23	2	7	m	m	4	н	7	σ	0	Н	9	0	17	0	н	H	ø	5	œ	13	20	0	7	11	4	11	œ	14	c
4:00	13	13	7	2	∞	9	14	7	m	80	7	0	4	0	19	0	0	7	ø	9	4	15	21	m	7	0	∞	6	თ	9	c
3.00	14	22	4	7	4	0	13	4	4	თ	m	0	4	ო	17	7	0	Н	12	ø	7	13	19	Н	9	6	4	ø	10	9	L
3:00	13	20	Н	10	10	m	m	4	∞	7	m	0	m	7	18	e	н	Ŋ	S	10	9	16	20	н	7	10	5	10	11	∞	•
	1	21	4	8	14	4	4	œ	9	œ	4	0	0	0	13	∞	Н	m	5	œ	S	17	17	Н	m	9	8	ø	12	11	r
0:00 1:00 1:00 2:00	1	21	m	4	19	1	Ŋ	6	9	10	m	0	9	m	თ	ø	4	2	m	თ	6	17	18	m	Ŋ	ю	12	11	12	10	,
HOUR START HOUR END	DAY 1	2	m	4	Ŋ	O,	7	ω	o	10	Ħ	12	13	71	15	16	17	18	-T	20	21	22	23	24	25	26	27	28	29	30	



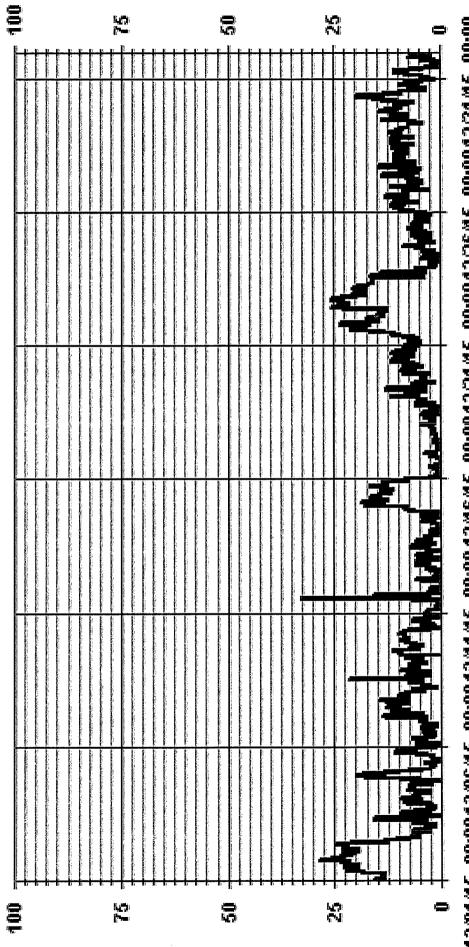
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR 30 0g/m3

MONTHLY SUMMARY

NUMBER OF 24 HR EXCEEDENCES.	· is		0					and an	
NUMBER OF NON-ZERO READINGS:	S:		629						
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		33 19.5	33 ug/m3 19.5 ug/m3	33 ug/m3 @ HOUR(S) 19.5 ug/m3	14	ON DAY(S) ON DAY(S) VAR-VARIOUS	11		
MONTHLY CALIBRATION TIME:	2	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	: TIME:		744 100.0	HRS %	
STANDARD DEVIATION:	6.09			MONTHLY AVERAGE:			7.4	7.4 ug/m3	

of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA PM2 UG/M3

LICA PMD Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

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

Wind Parameter : WD Instrument Height : 10 Meters

00. 00. 00. 00. 4.85 99.86 % % 00. 00. 00. 4.85 5.79 ž 5.79 00. 00. 80. % % 3.77 WNW 3.77 00. 00. 00. 00. 00. 8.35 8.35 00. 00. 00. 00. 00. 00. 4.71 19.00 0. 00. 00. 8. 4.71 19.00 SW 00. 00. 00. 00. 00. 3.63 00. 3.63 00. 00. 0. 00. 2.83 2.83 00. 00. 00. 0. 00. 4.31 4.31 00. 00. SSE 00. 00. 00. 00 Direction 1.48 10.91 11.18 13.88 S 1.48 10.91 11.05 13.88 00' 00 00. 8 ESE .13 00. 00. 00. 00. 00. 00. 00. 00. 00. pq 00. % 00. 00-00. .94 뛽 .94 00. 00. 00. 00. 00. 1.88 1.88 N. 00. 00. 00. 00. 0. 2.45 00. 00. 00. 8 Totals 2.42 0. Z Limit 240

Calm : .00 %

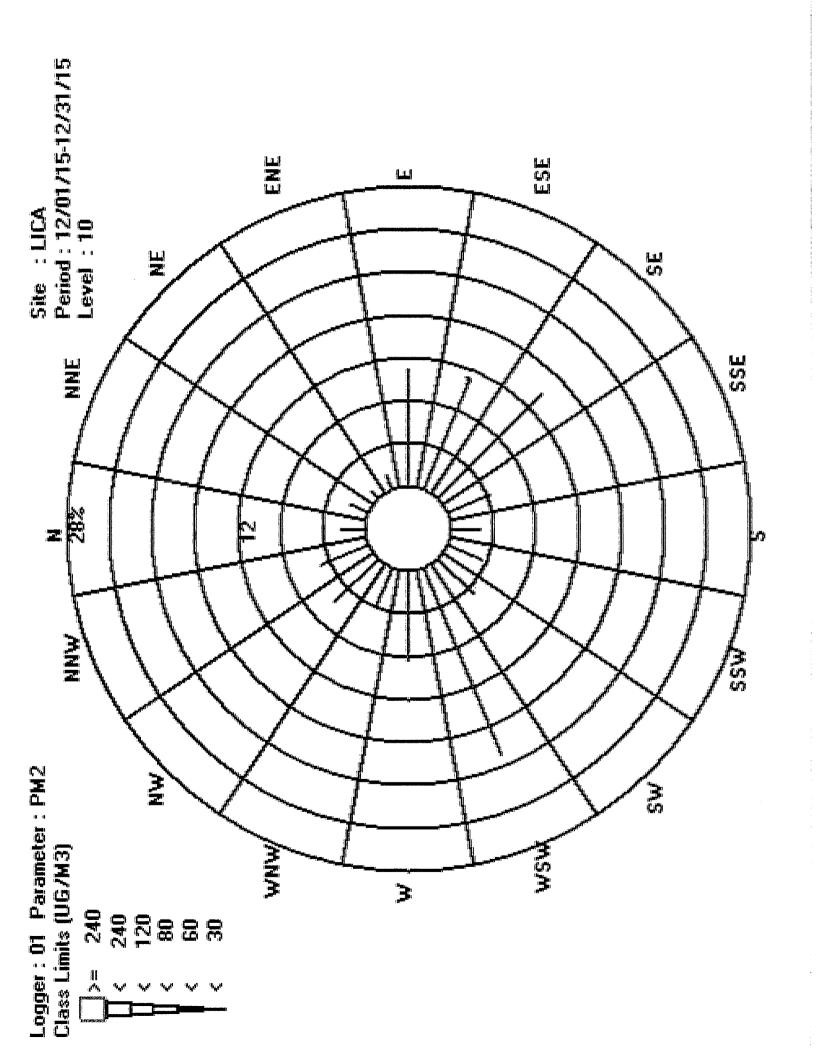
Total # Operational Hours : 742

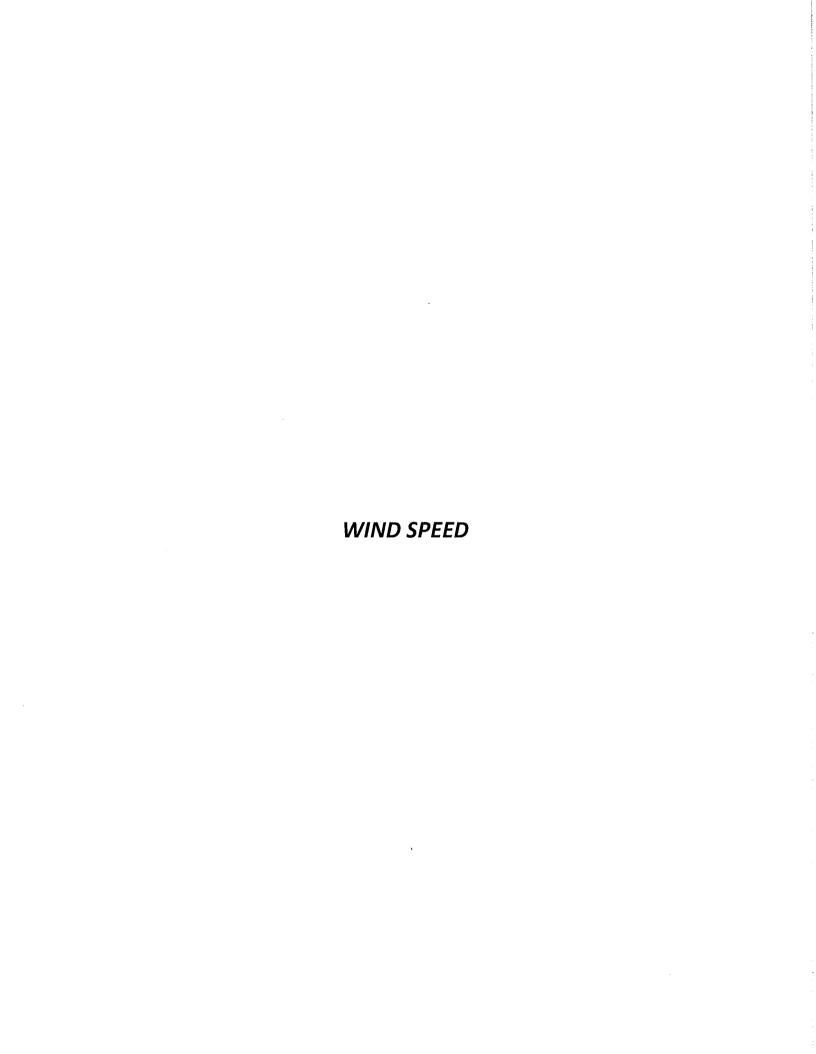
Distribution By Samples

	Freq	741	н						
	NNW	36						9 8	
	N	43						43	
	WNW	28						28	
	×	62						62	
	WSW	141						141	
	SW	35						35	
	SSW	27						27	
	Ø	21						21	
	SSE	32						32	
Direction	SE	103						103	
IIG	ESE	82	н					83	
	M	81						81	
	ENE	11						;;	
	NE	7						7	
	NNE	14						14	
	z	18						18	
	Limit	30	9	80	120	240	240	Totals	
		٧	٧	٧	٧	٧	!		

Calm : .00 %

Total # Operational Hours : 742





JOB # 2833-2015-12-01- C



ı km/hr
averages ir
hourly:
ND SPEED (WS
WIND S

	24-HOUR	AVG.	46 24	6.4	3.7	4.7	3.0	£.	5.3	3.6	4.2	7.0	7.6	7.9	4.7	5.3	7.3	8.6	6.8	4.2	4.7	1.9	1.2	2.8	4.3		4.3 24	5.8 24			5.9 24			
		1	13.7	11.3	10.0	9.0	7.1	6.2	9.6	5.8	9.5	9.7	10.0	6.6	7.7	7.9	12.9	13.3	10.9	7.5	7.3	5.2	3.4	8.0	9.6	4.2	7.1	8.6	5.4	59	8.8	13.2		
	23:00		8.5														4.0																8.5	
	20:00 21:00 22:00	600	10.2																				1.8	5.7	1.0	3.4					7.5	7.4	10.9	
	0 210	17	10.3														4.8				5.4					4.2			0.3			6.8		4.8
	203.25(203)		7 11.2						6.5				6.9				5.8																, 11.2	
	19:00	36-	13.7					4.8	1 7.2				3 7.0		4.4		5.2								0.8								13.7	
	00 18:00	SS .	5 9.7			2 1.9		3 2.5	5 5.4								3.8			3 1.2			7 1.0		5 1.1					3 1.4	8.8	7.3		
>	16:00 17:00		3.9 7.5					1.6 0.3		2 4.4				7.0 8.3			3 6.3							2 1.3			4 4.8			9.0	7 7.9	5 5.4	5 10.2	
nourly averages in km/hr			5.1 3.														.0 7.3		.0 8.4						9 2.8			3 5.9		0 1.6			13.3 9.5	
agesı	14:00 15:00 17:50 15:50		7.2 5					2.5 2																									11.1 13	
y aver	13:00 14	41	7.0																														11.2 11	
nou	12:00 1		2.3						1.5								10.9 1																13.2	
	11.50 1	ŝ	1.4																													•	12.9 1	
WIND SPEED (WS)	10:00		1.2						2.1																								10.9	
VIND			1.6											7.6								3.5											6.6	
•	8:00 - 9:00	12	0.3	2.4	1.9	7.3	2.3	0.7	4.7	4.1	3.0	7.6	8.9	7.2	6.1	5.6	2.7	7.7	7.5	4.3	5.1	1.7	5.0	2.0	5.1	0.5	5.1	5.9	3.3	1.0	0.9	6.1	7.7	4.1
	7.00	0.7	2.5	5.6	0.7	5.7	5.9	3.7	5.2	1.6	1.8	6.1	7.2	9.6	7.0	2.3	8.8	6.3	6.3	4.4	5.4	1.0	0.8	5.9	6.9	0.2	0.8	8.6	5.8	0.5	5.6	6.2	8.6	4.0
	6:00	0.9	6.0	6.0	5.6	9.9	2.2	0.7	8.6	1.5	0.8	2.7	7.5	8.6	6.8	1.6	6.9	89 89	4.2	4.0	3.9	6.0	0.5	13	8.2	1.4	4.1	7.9	4.0	0.4	5.9	7.2	8.6	4.1
	5:00	1.5	1.4	1.9	1.7	9.9	7.0	2.1	8.7	4.3	9.0	8.8	7.9	9.5	5.9	2.7	8.4	7.6	5.6	6.4	4.8	11	1.3	9.0	9.6	0.7	2.8	6.9	3.2	1.3	6.9	7.1	9.6	4.5
	4:00	1.0	0.8	1.8	2.6	2.3	9.9	3.0	9.6	5.4	0.4	4.4	8.0	6. 6.	7.4	4.8	12.5	9.4	9	2.8	4.6	1.2	0.4	7	o. 0	0.7	6.1	6.9	3.2	9.0	4.9	9.9	12.5	4.5
	3:00	0.5	0.5	1.1	1.7	2.5	7.1	2.3	5.7	4.6	0.9	3.5	8. 8.	8.8	7.7	5.6	7.1	8.0	4.0	5.4	4.2	0.7	17	10	4.1	0.1	6.1	8.9	3.7	9.0	1.1	6.2	დ დ	4.0
	2:00	6.0	9.0	2.5	0.2	3.1	6.1	1.2	6.4	5.6	2.7	6.8 8.	9.5	8.5	2.0	5.9	6.6	7.5	5.1	7.0	3.7	1.7	0.1	0.8	89 ·	1.0	0.0	8.4	2.9	1.0	1.0	6.9	6.6	4.1
	1.50	0.5	1.2	7.0	1.7	2.5	4.5	6.0				8.1	10.0	8.5	3.8	6.7	8.7	5.1	4.5	7.5	3.1	6. 6. 1	0.7	4. 0	ν, α υ, α	0.7	6.2	8.4	0.8	0.4	1.8	8.8	10.0	4.3
	0:00	0.4	0.7	8.4	2.1	1.4	3.2	1.8	5.1	2.6	2.9	2.5	ຫ ຫ	6.9	2.1	6.9	ტ რ	4.3	m o	6	4.1	2.7	ς ;	0.0	8 4		4.6	8.5	1.4	9.0	17	7.9	9.9	4.0
MST	HOURSTART 0:00 1:00 2:00 3:00 4:00 5:00 4:00 5:00 HOUREND 0:59 1:59 3:59 3:59 41:59 5:59	DAY 1	2	e.	4	Ŋ	φ	7	ω	თ	ព	되	12	13	14	51	16	17	18	21	8	21	22	73		52	56	27	88	53	ଚ୍ଚ	31	HOURLY MAX	HOURLY AVG

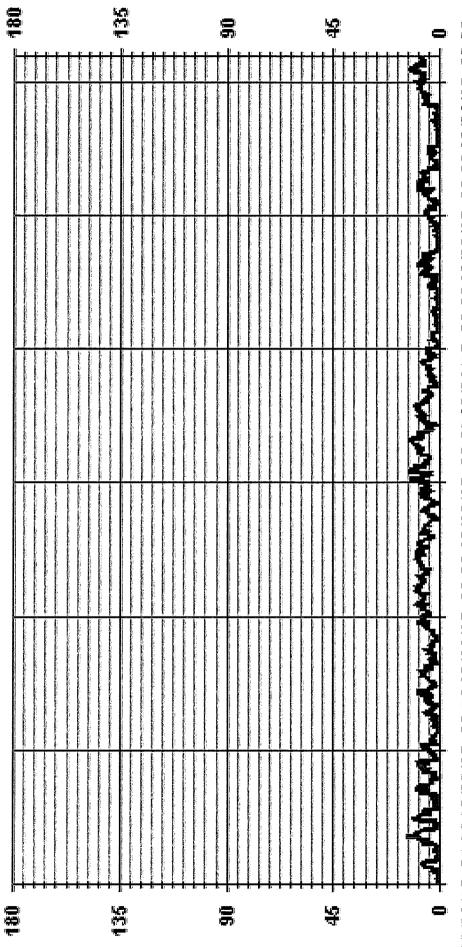
STATUS FLAG CODES	C - CALJERATION O - QUALITY ASSURANCE A - MANINTENANCE S - DAILY ZERO/SPANCHECK X - NACHINE MALEUNGTION P - POWER FAILURE G - QUITFOR REPART K - COLI FOTTION FERDAR
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24 HOUR AVERAGES FOR DECEMBER 2015	1 2 3 4 5 6 7 8 9 10 11 72 13 44 15 66 17 18 15 20 21 22 20 20 32 32 33 33 33 33 33 33 33 33 33 33 33
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April 1, 2015	MAGNETIC DECLINATION 19 DEGREE EAST
LAST CALIBRATION:	DECLINATION:

			ğ	MONTHLY SUMMARY			i	
NUMBER OF NON-ZERO READINGS:	i;		44					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		13.7	KPH H H	@ ноur(s)	91	ON DAY(S) ON DAY(S) VAR-VARIOUS	7 11	ト
MONTHLY CALIBRATION TIME:	0	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	1E: UPTIME:		744 100.0	HRS %
STANDARD DEVIATION:	2.99			MONTHLY AVERAGE:	ij		4.6	KPH

id Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

KPH

MSP

- LICA



Cold Lake South Site - DECEMBER 2015
JOB # 2833-2015-12-01- C

VECTOR WIND SPEED MAX instantaneous maximum in km/hr

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Ë
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RDGS.	24	72	24	24	24	24	54	24	54	24	24	54	54	54	24	24	24	54	75	54	24	24	24	73	54	24	24	24	74	74	54	
24-HOUR AVG.	5.8	8.6	6.8	7.6	8.2	6.7	6.8	9.1	7.1	8.0	12.0	12.8	13.3	8.3	9.7	12.4	14.4	11.6	8.0	8.2	5.4	4.8	5.8	8.3	4.2	7.9	10.3	2.0	4.1	8.6	11.9	
DAILY MAX.	11.3	19.1	18.4	16.4	15.0	14.3	10.3	13.6	11.0	15.8	16.4	16.3	17.3	12.7	14.8	21.0	21.5	17.8	13.5	12.0	8.6	9.3	13.0	16.0	8.4	11.6	16.8	9.0	8.9	13.9	17.9	
23:00	4.2	12.8	4.4	4.8	4.2	7.5	8.1	12.2	6.3	15.8	13.5	13.6	7.6	11.3	10.5	6.2	8.5	14.1	5.2	7.5	2.7	3.0	10.0	2.8	5.9	8.3	4.5	2.5	2.8	11.7	11.4	15.8
22:00	4.6	14.3	4.0	3.3	6.4	7.6	6.6	13.4	6.3	11.7	14.5	13.3	10.7	10.5	9.1	7.0	12.9	17.8	5.8	7.5	3.9	6.1	11.0	5.6	6.7	7.6	3.6	23	3.6	11.8	10.6	17.8
21.00	5.1	14.3	3.6	7.9	4.9	3.0	9.5	11.5	9.9	12.7	14.0	12.5	11.2	7.6	8.0	7.1	13.3	17.3	6.3	9.3	4.8	4.5	12.7	3.3	8.2	10.0	6.4	2.0	3.2	11.4	6. 8.	17.3
20:00	9.4	16.6	3.7	6.1	4.3	4.1	7.9	13.6	5.8	12.8	6 6	10.5	12.9	8.4	9.5	8.8	14.0	13.7	7.3	8.9	8.0	3.7	11.9	5.0	8.4	11.6	3.9	3,4	3.1	12.2	8.7	16.6
19:00	8	19.1	8.3	5.0	4.9	3.2	8.2	11.2	7.5	14.9	12.4	13.9	16.6	7.4	12.3	9.0	13.5	15.5	6.7	4.7	7.0	3.3	13.0	2.9	6.2	9.4	7.2	3.7	4.8	12.1	10.0	19.1
18:00	9.7	15.6	12.3	7.6	3.9	5.8	4.6	9.3	7.5	6.6	10.7	9.6	14.5	4.2	8.4	6.4	14.3	14.3	4.6	6.3	6.9	6.2	4.1	4.1	5.6	5.5	8.6	2.3	3.8	13.9	10.5	15.6
17:00	9.7	10.8	11.7	7.9	3.0	3.6	4.0	8.4	8.0	6.6	8.9	10.5	14.5	3.6	6,9	9.1	15.8	14.2	4.2	5.8	2.8	7.0	4.1	2.2	3.4	9.1	9.5	2.3	4.5	11.4	8.5	15.8
16:00	1	8.0	5.9	11.3	4.6	4.8	4.3	7.6	5.4	9.7	10.9	8.7	12.9	2.8	9.0	11.8	16.6	14.1	3.6	8.1	2.7	5.1	3.1	6.0	2.7	9.6	10.7	2.4	4.8	11.9	8.6	16.6
14:00 15:00 16:00 15:00 16:00 17:00		8.7	8.5	11.9	11.7	4.5	5.6	7.2	7.0	10.8	12.9	12.1	14.7	3.0	11.2	11.4	21.5	12.2	6.2	8.4	6.7	4.2	3.1	9.3	3.9	6.9	10.5	4.5	4.0	11.5	13.8	21.5
700	5.8	10.8	12.3	16.4	14.3	5.0	7.1	4.6	7.8	8.0	15.8	14.7	8.2	7.5	14.8	18.7	19.1	10.5	7.9	11.3	6.8	4,3	1.7	11.7	4.1	5.1	11.3	5.8	4.7	9.3	14.1	19.1
13:00	8.2	14.5	14.0	15.0	13.4	5.3	7.0	5.5	6.4	8.7	13.1	11.2	15.5	9.4	11.9	18.4	19.0	9.7	8.3	11.6	5.9	5.0	5.0	11.1	3.3	6.7	10.4	7.1	6.2	8.3 8.3	16.3	19.0
12:00	8.7	8.0	15.1	11.4	15.0	7.1	5,9	4.5	7.3	8.4	16.4	14.3	11.2	9.8	10.9	19.1	16.9	12.8	7.3	10.1	6.5	6.7	6.5	11.5	4.0	7.3	10.7	8.2	5.5	9.7	17.9	19.1
11:00	7.0	6.2	16.0	13.3	13.7	6.7	7.4	6.9	7.7	7.8	15.8	13.9	17.3	8.5	11.7	21.0	19.9	14.0	10.7	12.0	6.5	9.3	7.1	10.3	6.0	6.9	11.8	9.0	4.1	9.0	17.1	21.0
10:00	4.3	6.7	18,4	10.0	11.7	7.0	10.3	5.2	5.3	5.3	10.2	14.5	14.5	7.8	11.2	17.1	15.9	11.0	8.6	10.6	5.3	4.3	8.4	10.2	4.3	3.0	10.4	7.3	4.5	10.2	16.5	18.4
9:00	4.5		15.3				9.3										14.8											4.7	6.8	8.8	15.3	15.3
00:8			6.0																											8.6	•	15.8
7.00	1		4.4																													16.8
6:00	3.2	4.2	5.4	5.5	10.1	6.9	5.5	13.3	5.3	2.5	13.0	12.2	16.6	10.4	4.4	12.0	13.3	6.2	7.9	6.8	3.9	3.6	4.5	12.9	3.2	5.8	14.0	7.1	4.2	11.0	10.5	16.6
5:00	3.3	2.8	3.3	4.8	9,5	14.3	7.1	12.2	8.5	4.0	11.1	13.2	14.9	10.8	5.8	15.2	13.8	7.0	8.3	8.6	4.1	6.1	2.3	16.0	4.0	7.3	13.3	8.1	5.2	11.7	10.0	16.0
4:00	3.9	2.6	4.2	4.7	5,4	12.2	8.3	13.5	9.0	2.3	7.8	12.9	14.2	10.4	10.9	20.6	16.7	4.8	11.3	7.2	5.1	2.7	2.9	11.5	3.0	8.1	11.1	5.5	3.1	8.8	8.2	20.6
3:00	3.4	3.0	6.4	5.1	4.7	10.9	5.1	10.7	8.5	4.3	6.3	16.3	12.9	12.7	13.6	13.3	12.1	6.8	9.4	7.7	2.8	3.7	2.7	9.0	1.7	8.6	10.9	6.5	2.3	6.4	8.6	16.3
2.00	1.6	2.2	5.6	3.5	7.4	10.5	3.1	9.6	5.0	5.7	11.5	12.9	13.2	10.1	9.2	16.3	14.0	9.7	11.8	6.7	3.7	3.5	2.3	7.7	3.0	9.0	14.2	4.8	2.6	6.3	9.9	16.3
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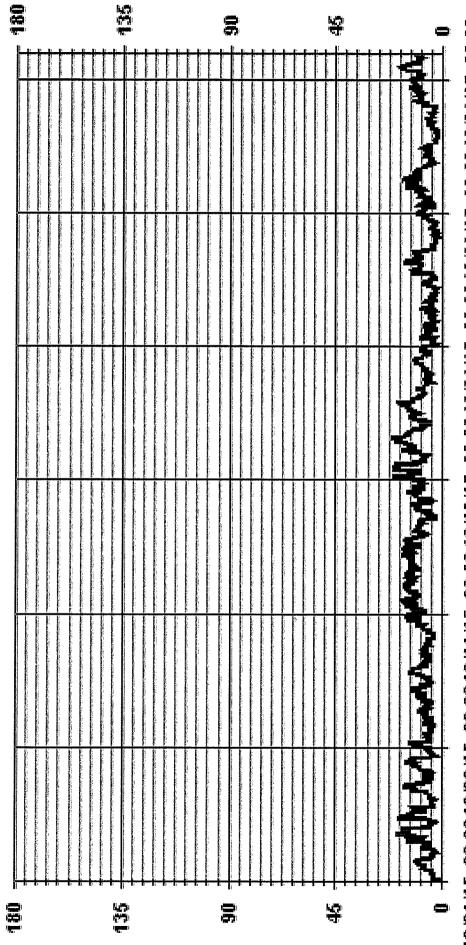


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MONTHLY SUMMARY

MAXIMUM INSTANTANEOUS VALUE:	21.5	KPH	21.5 KPH @ HOUR(S)	15	ON DAY(S)		17
				VAR-V	VAR-VARIOUS		
		OPERATI	OPERATIONAL TIME:		74	744 HRS	Ş

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

KPH

WSMAX

- LICA

LICA WB Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

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

Wind Parameter : WD Instrument Height : 10 Meters

2.41 2.28 4.83 3.22 E 2.15 5.64 .26 0. 8 00. 2.95 .67 00. 00. 8 00. 3.62 6.18 2.15 8.33 00 00. 00-00. 8.73 9.67 18.81 .40 8. 0. 0. 4.56 3.89 .67 00. 00. % 8. 2.95 2.95 8 00. 8 80. 8 2.68 2.68 00. % 0. 00. 0. Ø 3.49 SSE .40 0. 8. 8 80. Direction 6.85 7.12 00 13.97 SE 00. 00. 00. 4.16 6.85 11.02 ESE 00. 0. 00. 0 10.75 5.10 5.64 8. 00. 00. 8 μ 1.47 1.47 8 00 00. 00. 00. .80 Ä 80 0. 00. 00. % 8 1.07 1.74 Ŕ - 67 00. 90, % 00. 1.74 2.28 .53 8. 00. 00. z .00 Totals 12.0 0.9 20.0 29.0 39.0 39.0 Limit X

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Calm : 2.55 %

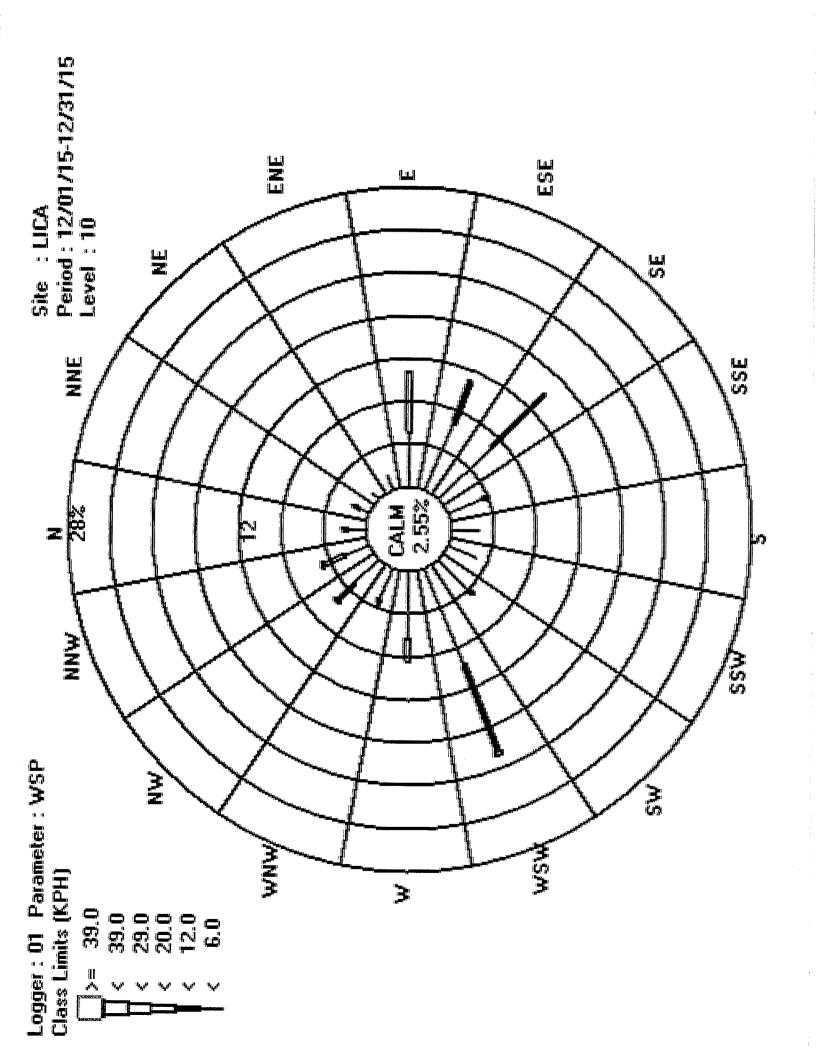
Total # Operational Hours : 744

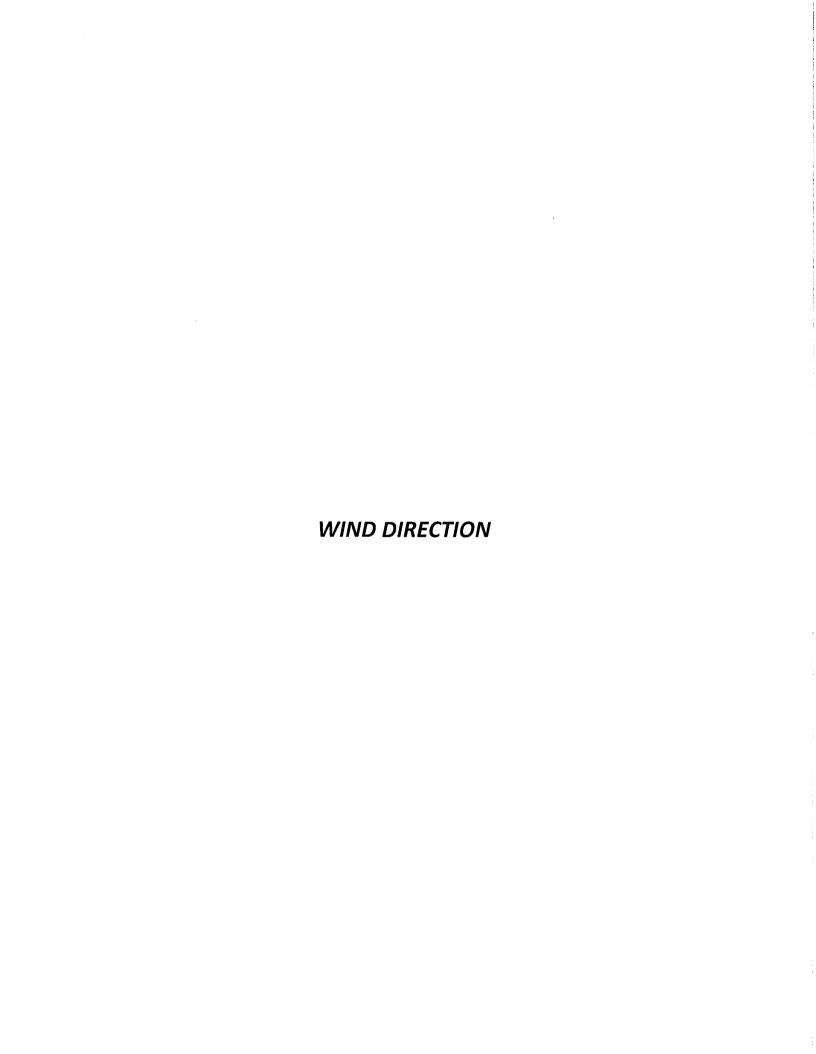
Distribution By Samples

	Freq	457	262	9				
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	MN	24	16	8				42
	WNW	22	Ŋ					27
	×	46	16					62
	WSW	72	65	m				140
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ulrection	SE	51	53					104
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	Limit	6.0	12.0	20.0	29.0	39.0	39.0	Totals
		٧	٧	٧	٧	٧	X	

Calm : 2.55 %

Total # Operational Hours : 744







LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C

WIND DIRECTION (WD) hourly averages

MST

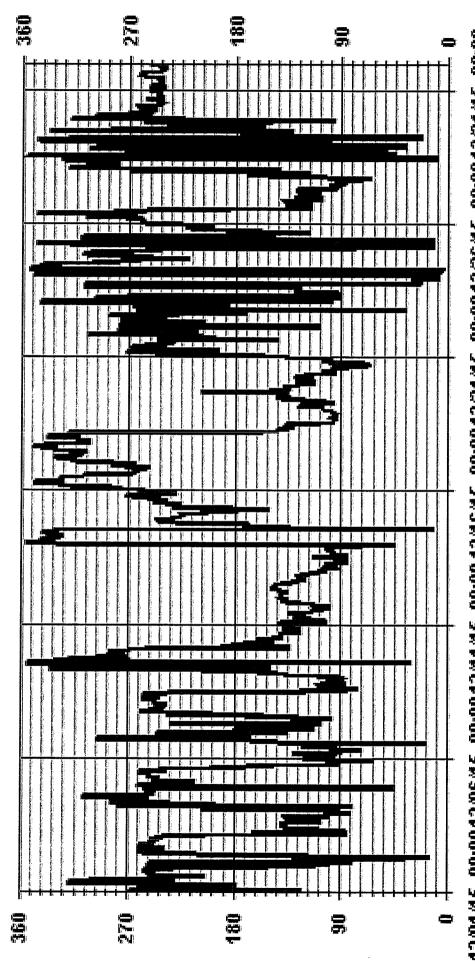
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Committee de la Company	21.00	MS	WSW	ш	WSW	ш	SSW	WSW	ш	3	ESE	SE	SE	ш	WSW	WSW	WSW	ΝN	ш	띯	ш	WNW	SSW	NNE	ΝN	SW	SE	SSE	ESE	ш	WSW	WSW
California de Caracteria	20:00	WSW	WSW	SE	wsw	ш	SSE	WSW	ESE	×	꼸	ESE	ESE	ш	SW	*	WSW	ΝM	ш	몴	ш	wsw \	NS.	NNE	WNW	SSW	SE	s	WNW	SSE	wsw.	SW ,
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Cothetiatical	18:00		WSW				_											_														
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C. pet (Monthly Court	16:00		WSW																					-							_	
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CALIBRATION COLUMN	A CATALINA MATERIAL PARTICIPATION AND A PARTIC	INITIAL EIGHINGE	S DAILYZERO/SPAN CHECK	6.7	A PART OF THE PROPERTY OF THE

April 1, 2015	MAGNETIC DECLINATION 19 DEGREE EAST	
LASI CALIBRATION:	DECLINATION:	

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	86.04	AMD OPERATION UPTIME:	100.0	%
		MONTHLY AVERAGE:	S	



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA WOR DEG





JOB # 2833-2015-12-01- C Cold Lake South Site - DECEMBER 2015 LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

1	18 20 1	45	38	14	40	77	19	20	23	51	23	20	20	18	22	19	17	17		57	36	22	55	30	23	. 85	57	01
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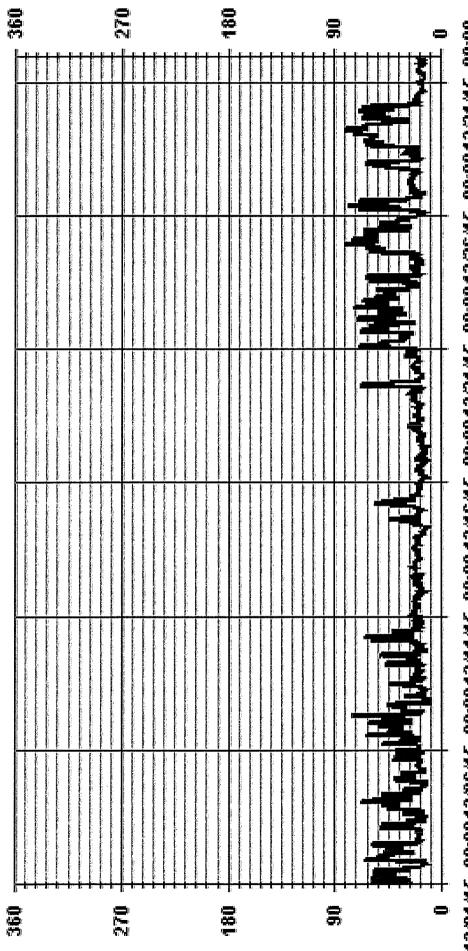
1 200 F	April 1, 2015			
The second control of	LASI CALIBRATION:			

OPERATIONAL TIME: 744 HRS

HRS 0

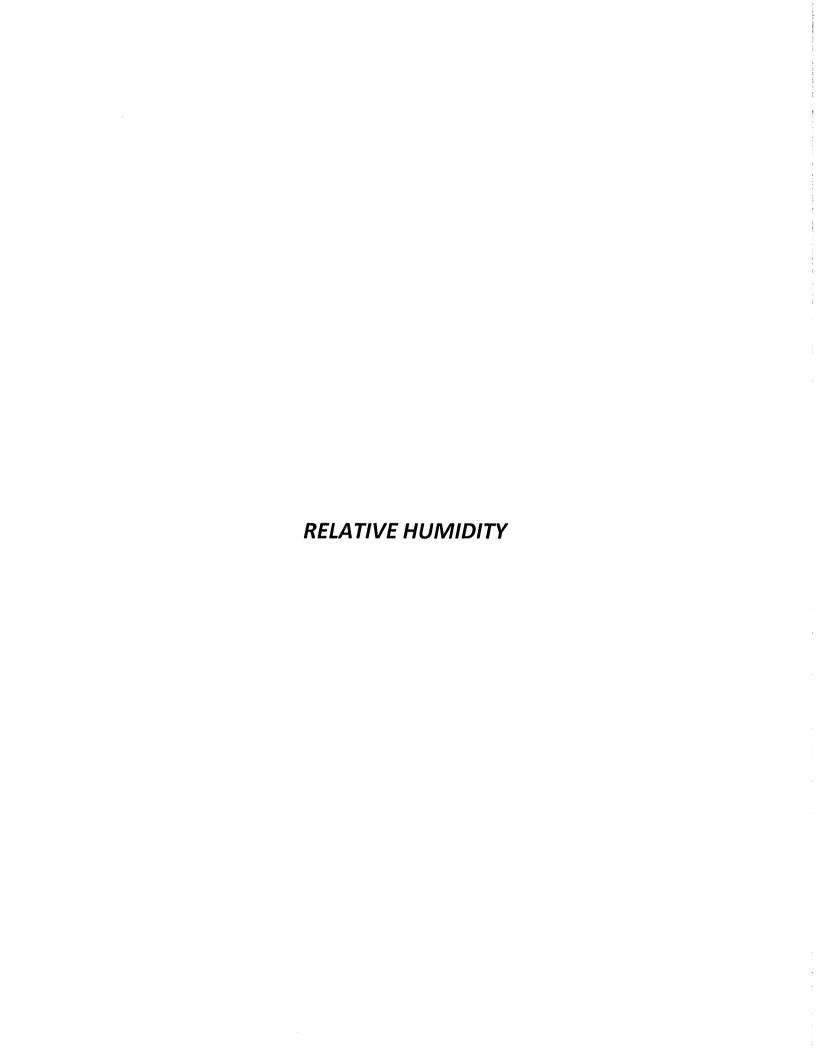
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Út Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

STOWDIR DEG





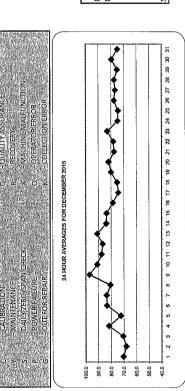
LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Cold Lake South Site - DECEMBER 2015 JOB # 2833-2015-12-01- C

RELATIVE HUMIDITY (RH) hourly averages in %

MST

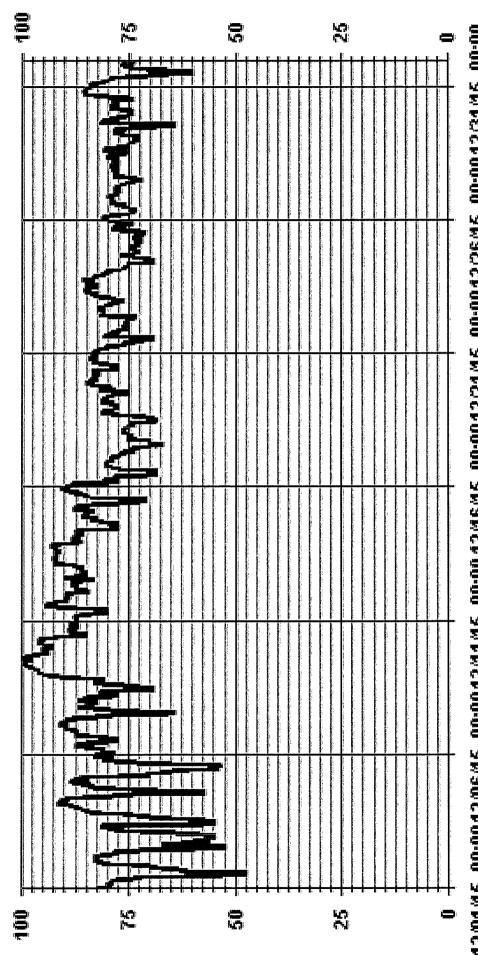
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0:00	82	8	57	87	8	8	8	82	95	95	87	8	98	86	85	8	79	75	78	2	83	76	76	81	74	8	78	78	73	74	8	95	81.8
HOUR START HOUR END	. DAY	2.	°E	4	. 2	9	7	. 8	6	10	11	. 12	13	14	15	16	17	- 18	19	20	21	23	23	24	23	26	72	78	23	ဓ	31	HOURLY MAX	HOURLY AVG

STATUS FLAG CODES



MONTHLY SUMMARY

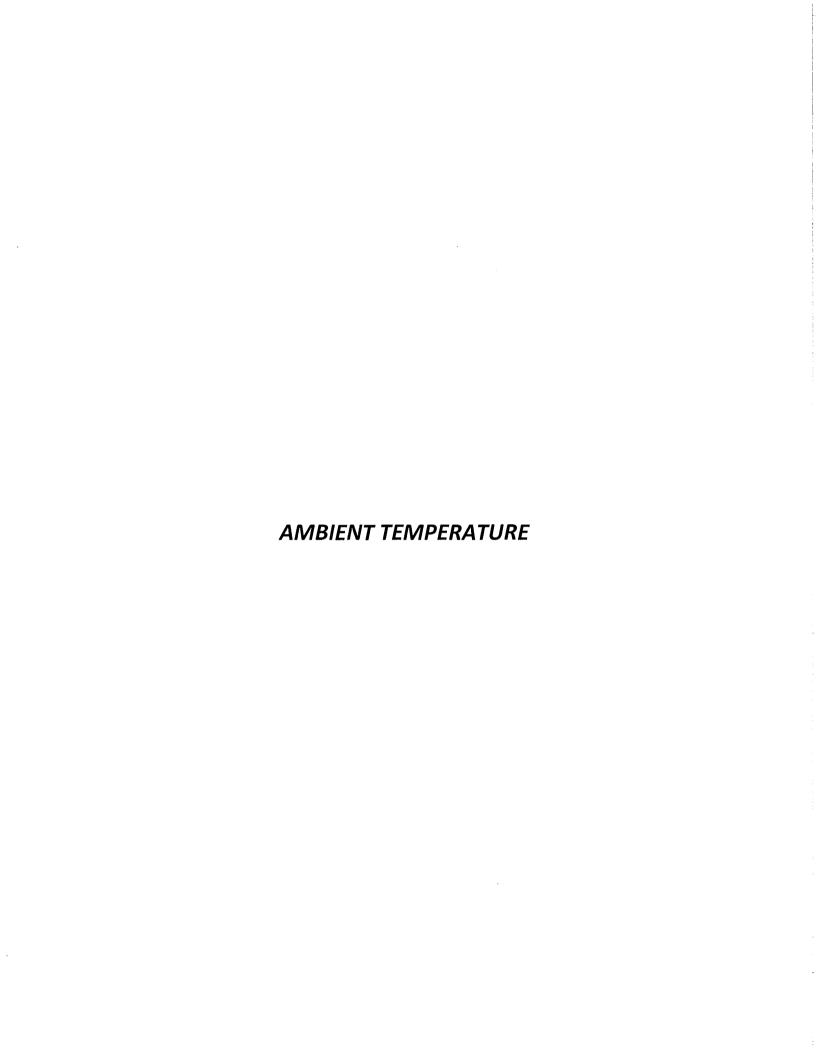
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		100 97.0	% %	@ HOUR(5)	9,10	ON DAY(S) ON DAY(S) VAR-VARIOUS	UI -	6,6
				OPERATIONAL TIME: AMD OPERATION UPTIME:	ïME		744 100.0	% HRS
STANDARD DEVIATION:	8.56			MONTHLY AVERAGE:			80	%



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

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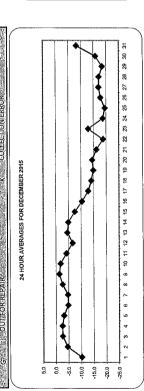


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TPX)
MBIENT TEMPERATURE (TPX)

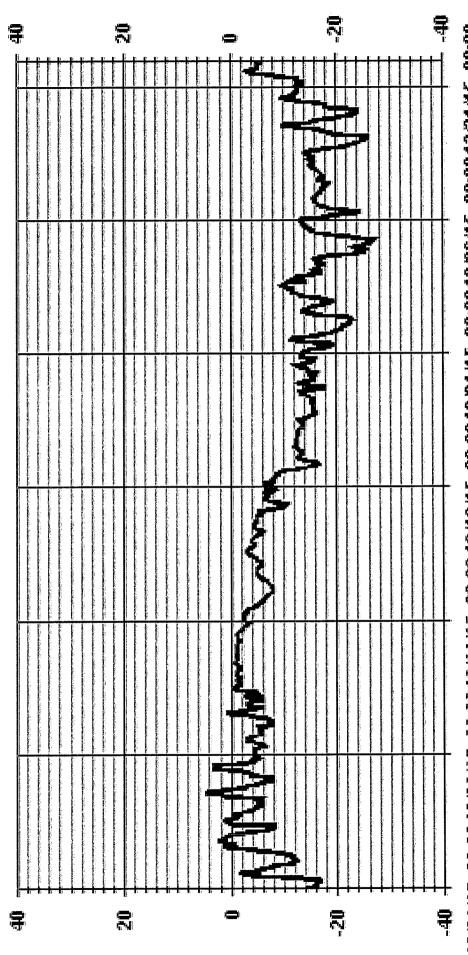
HOURSTAN COO LOU STOR STOR STOR STOR STOR STOR STOR STOR	6 7:00 8:00 9:00 6 8:00 9:00
4.2 4.2 6.7 6.7 8.1.1 6.4 4.1.4	4.4 -3.6 -5.3 -6.3 -7.1 -7.7 -1.5 -1.4 -1.5 -1.5 -1.5
23 22 24 28 7.9 7.9 7.7 7.6 5.6 5.4 5.1 5.6 6.1 8.4 9.4 9.7 10.0 7.3 8.2 8.3 8.1 1.9 1.32 1.34 1.34	2.4 2.8 -7.7 -7.6 -5.1 5.0 -5.6 6.1 -9.7 -10.0 -8.3 -8.1 -13.4 13.4
-12.7 -12.8 -13.3 -13.6 -13.9 -13.9 -13.9 -13.9 -13.5 -15.5 -15.5 -15.5 -15.5 -15.5 -15.1 -14.8 -16.0 -17.4 -18.9 -19.9 -19.0 -22.1 -22.6 -22.7 -23.1 -22.9 -22.5 -13.5 -13.6 -13.0 -13.7 -11.8 -12.6 -13.0 -13.6 -13.0 -13.6	13.6 13.9 15.4 14.9 16.1 19.9 18.1 19.9 23.1 22.9 11.7 11.7 16.7 17.0 25.6 24.6
17.2 - 17.3 - 17.6 - 18.0 - 15.6 - 15.4 - 14.8 - 15.2 - 17.7 - 17.1 - 17.7 - 17.9 - 17.7 - 17.9 - 12.9 - 12.4 - 12.7 - 12.6 - 14.4 - 12.7 - 12.6 - 14.7 - 14.5 - 14	17.6 18.0 18.3 14.8 15.2 15.5 17.7 17.1 17.1 17.1 17.1 17.1 17.1

R --RECOVERY X --MACHINE-MALEUNCTION O, TOPERATIONERROR (COLLECTIONERROR 24 HOUR AVERAGES FOR DECEMBER 2015 STATUS FLAG CODES



MONTHLY SUMMARY

					į			
MINIMUM 1-HR AVERAGE:		-27.0	ပ္	°C @ HOUR(S)	9	ON DAY(S)	25	
MAXIMUM 1-HR AVERAGE:		4.7	ပွ	@ HOUR(S)	14	ON DAY(S)	7	
MAXIMUM 24-HR AVERAGE:		-1.3	ပ္			ON DAY(S)	•	6
						VAR-VARIOUS		
				OPERATIONAL TIME:	لنه		744	HRS
				AMD OPERATION UPTIME:	JPTIME:		100.0	%
STANDARD DEVIATION:	6.84			MONTHLY AVERAGE:	نن		-10.0 °C	သ



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

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- LICA

APPENDIX II NON-CONTINUOUS MONITORING DATA RESULTS



Sample ID: 15120089-001

Customer ID: LICA
Cust Samp ID: LICAVOC/CLS/Dec 2,
2015

Maxxam

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RECEIVED DEC 09 2015

	£919	17120	\$ 3015 (B) CA	40 (B) 2015.
VOC Sample Collection Data Sheet	Sampler S/N:	Canister ID:	Canister Installation Date/Time: ハケレ タチ, スの/5 (②	1 VOC / 24.5 Dec 1, 1005 Canister Removal Date/Time: Dec 4, 2015 (3) Of
	LICA	Lake South	LICA O/	VOC/ 249 / Dec 1, NDB
	Client	Location: Cold Lake South	Station ID:	Field Sample ID: LICA/

	rlow Settings	S
Meter Reading	Pot Set Pt	Meter Reading Pot Set Pt. Pump Pressure
(sccm)		Setting (psig)
0'01	25'9	24

Canister Information	ormation
Initial Canister	Final Canister
Vacuum (inHg)	Pressure (psig)
26.0	23.1

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

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	Sample in - by Alex Yakupou
	rd - 41
	Sample
	Technician Signiture:

Date: Dec 4, 2015

by Alex Yampers

Sample



Date: DECEMBER 2 , 2015

Canister ID: 17120

PARAMETERS	CONCENTRATION (PPB
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	0.08
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.22
1-Hexene	0.03
1-Pentene	< 0.01
2,2,4-Trimethylpentane	0.13
2,2-Dimethylbutane	0.04
2,3,4-Trimethylpentane	0.04
2,3-Dimethylbutane	0.14
2,3-Dimethylpentane	0.11
2,4-Dimethylpentane	0.09
2-Methylheptane	0.06
2-Methylhexane	0,18
2-Methylpentane	0.51
3-Methylheptane	0.05
3-Methylhexane	0.17
3-Methylpentane	0.29
Acetone	< 0.4
Acrolein	< 0.3
Benzene	0.55
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	0.01
Carbon tetrachloride	0.11
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.04
Chloromethane	0.63
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.04
cis-2-Pentene	< 0.02
Cyclohexane	0.25
Cyclopentane	0.11
Dibromochloromethane	< 0.01
Ethanol	2.2
Ethyl acetate	< 0.4
Ethylbenzene	0.09
Freon-11	0.37



Date: DECEMBER 2 , 2015
Canister ID: 17120

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.08
Freon-114	0.02
Freon-12	0.66
Hexachioro-1,3-butadiene	< 0.50
Isobutane	2.66
Isopentane	2.19
Isoprene	0.02
Isopropyl alcohol	0.7
Isopropylbenzene	< 0.01
m,p-Xylene	0.26
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.28
Methylcyclopentane	0.27
Methylene chloride	< 0.3
n-Butane	5.09
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	0.17
n-Hexane	0.46
n-Nonane	0.04
n-Octane	0.09
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	1.3
o-Ethyltoluene	0.03
o-Xylene	0.10
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.59
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	0.03
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

Sample ID: 15120124-001

Customer ID: LICA

Cust Samp ID: LICAVOC/ELK/Dec 8,

Priority: Normal

Maxxam

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AIR FCD-01320/2

VOC Sample Collection Data Sheet

4919 2653 2015 210% Dec Canister Installation Date/Time: Canister Removal Date/Time: Sampler S/N: Canister ID: Field Sample ID: LICH/VOC/CLS/ Dec 8, LOIS Socita Leko LICA LICA (eo (e/ Client: Location: Station ID:

Meter Reading Pot Set Pt. Pump Pressure (sccm) Setting (psig)		Flow Settings	S
6.52	Meter Reading	Pot Set Pt.	Pump Pressure
6.52	 (sccm)		Setting (psig)
	0.07	6.52	42

apsed Time

(Hours)

24.0

		Date and Time Information	nformation	
-	Sample Date	Start Time	End Time	凿
		(MST)	(MST)	
. *<	Dr. 0 000	00:00	00:00	
7	URC 8, N. 13	Dec 2, 2015	Dec 9, 2015	
		A Committee of the Comm		
	Canister Information	formation		
-	Initial Canister	Final Canister	-	
	Vacuum (inHa)	Pressure (nsid)		

Timer set to 0.00 minutes prior to sampling? (YES) Canister valve closed prior to disconnection?: Canister valve open prior to sampling?: (YES

23. B

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Comments:

by Mex Youwoov Sample in - by their Yaurepox out-Technician Signiture:

Pate: Dec 9, 2015



Date:

DECEMBER 8 , 2015

Canister ID:

Freon-11

2653

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	0.06
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.13
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	0.06
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	0.03
2,3-Dimethylbutane	0.07
2,3-Dimethylpentane	0.06
2,4-Dimethylpentane	0.05
2-Methylheptane	0.04
2-Methylhexane	< 0.01
2-Methylpentane	0.21
3-Methylheptane	0.03
3-Methylhexane	0.09
3-Methylpentane	0.12
Acetone	1.2
Acrolein	< 0.3
Benzene	0.27
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	0.14
Carbon tetrachloride	0.11
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.03
Chloromethane	0.55
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.13
Cyclopentane	0.05
Dibromochloromethane	< 0.01
Ethanol	< 0.01 1.1
	< 0.4
Ethyl acetate	
Ethylbenzene	0.05

0.42



Date:

DECEMBER 8 , 2015

Canister ID:

2653

PARAMETERS	CONCENTRATION (PPI
Freon-113	0.07
Freon-114	0.02
Freon-12	0.61
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.78
Isopentane	0.66
Isoprene	0.02
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.16
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.15
Methylcyclopentane	0.13
Methylene chloride	< 0.3
n-Butane	1,61
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	0.09
n-Hexane	0.18
n-Nonane	0.02
n-Octane	0.05
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	1.6
o-Ethyltoluene	0.02
o-Xylene	0.06
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4 0.34
Toluene	
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene trans-2-Butene	< 0.04 < 0.01
trans-z-Butene trans-2-Pentene	< 0.01 0.02
	0.02 < 0.04
Trichloroethylene Vinyl acetate	< 0.04 < 0.4
Vinyi acetate Vinyi chloride	< 0.4 < 0.02
viriyi chioriae	< 0.02

Sample ID: 15120215-004

Cust Samp ID: LICAVOC/CLS/Dec 14, 2015 Customer ID: LICA

Maxxam

VOC Sample Collection Data Sheet

£919 1664 80 Dec Canister Installation Date/Time: Canister Removal Date/Time: Sampler S/N: Canister ID: Field Sample ID: Lich/voc/c1s/Dec 14, xocs South LICA O Location: Client: Station ID:

Elapsed Time (Hours) End Time (NIST) Date and Time Information Start Time (MST) Sample Date

24.0

Dec 15, 2015

Dec 14, 8015

Dec 14, 2015

00:00

00:00

	Flow Settings	S
Meter Reading	Pot Set Pt.	Pot Set Pt. Pump Pressure
(sccm)		Setting (psig)
0.01	6.52	48

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Dec

Canister Information	ormation
Initial Canister	Final Canister
Vacuum (inHg)	Pressure (psig)
- 23.0	+ 22.5

Canister valve closed prior to disconnection?: Canister valve open prior to sampling?: (YES_ Timer set to 0.00 minutes prior to sampling?

<u>び</u> Comments:

DEC-2 2 2015

Alberta innovates - Technology Futures Technician Signiture:

Sample out - by Alex Yaunpor

Date: December 18, 2015



Date:

DECEMBER 14,2015

Canister ID:

2664

PARAMETERS	CONCENTRATION (PPB)
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.22
1-Hexene	< 0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	< 0.01
2,3-Dimethylbutane	< 0.02
2,3-Dimethylpentane	< 0.02
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.02
2-Methylhexane	0.04
2-Methylpentane	0.13
3-Methylheptane	< 0.02
3-Methylhexane	0.05
3-Methylpentane	0.07
Acetone	6.2
Acrolein	< 0.3
Benzene	0.16
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	3.10
Carbon tetrachloride	0.09
Chlorobenzene	< 0.02
Chloroethane	0.02
Chloroform	0.02
Chloromethane	0.65
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.03
cis-2-Pentene	< 0.02
Cyclohexane	0.08
•	0.08
Cyclopentane Dibromochloromethane	
	< 0.01
Ethanol	0.8
Ethyl acetate	< 0.4
Ethylbenzene	0.02
Freon-11	0.27



Date:

DECEMBER 14,2015

Canister ID:

2664

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.08
Freon-114	0.02
Freon-12	0.60
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.66
Isopentane	0.44
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.04
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	0.6
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.10
Methylcyclopentane	0.07
Methylene chloride	< 0.3
n-Butane	1.62
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	< 0.01
n-Hexane	0.19
n-Nonane	0.01
n-Octane	< 0.02
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	< 0.01
o-Xylene	0.02
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.11
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	0.07
trans-2-Pentene	0.03
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

Sample ID: 16010003-003

Customer ID: LICA

LICANOC/CLS/Dec 20, 2015 Cust Samp ID:

Maxxam

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VOC Sample Collection Data Sheet

Field Sample ID: LICA | VOC | CLS | Dec 20, 20 IS Canister Removal Date/Time: Canister Installation Date/Time: South LICA O LICA cold Lake Location: Client: Station ID:

1684 December 18, 2015 @ 18:31

7/7:

	Date and Time Information	Information	
Sample Date	Start Time	End Time	Elapsed Time
	(MST)	(MST)	(Hours)
720 20 00G	00:00	00:00	
C107 107 554	Dec 20, 2015	Dec 21,2015	24.0

	Ta	T .
Si	Meter Reading Pot Set Pt. Pump Pressure (sccm)	24
Flow Settings	Pot Set Pt.	6.52
	Meter Reading (sccm)	10. 6

formation	Final Canister	Pressure (psig)	+23.5
Canister Information	Initial Canister	Vacuum (inHg)	- 280

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

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Alex Vakuper Aler Yanupor ļ Sample out -Sample in Technician Signiture:

Date; December 23, 205



Date:

DECEMBER 20 , 2015

Canister ID: 1684

PARAMETERS	CONCENTRATION (PPE
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.19
1-Hexene	0.04
1-Pentene	< 0.01
	< 0.01
2,2,4-Trimethylpentane	
2,2-Dimethylbutane	0.06
2,3,4-Trimethylpentane	0.01
2,3-Dimethylbutane	0.16
2,3-Dimethylpentane	0.08
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.04
2-Methylhexane	0.06
2-Methylpentane	0.36
3-Methylheptane	0.02
3-Methylhexane	0.10
3-Methylpentane	0.20
Acetone	2.1
Acrolein	< 0.3
Benzene	0.15
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.01
Carbon disulfide	0.02
Carbon tetrachloride	0.10
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.03
Chloromethane	0.89
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.21
Cyclopentane	0.10
Dibromochloromethane	< 0.01
Ethanol	0.7
Ethyl acetate	< 0.4
Ethylbenzene	0.02
Freon-11	0.35



Volatile Organics Data Results

Date:

DECEMBER 20 , 2015

Canister ID:

1684

PARAMETERS	CONCENTRATION (PPB
Freon-113	0.09
Freon-114	0.03
Freon-12	0.77
Hexachloro-1,3-butadiene	< 0.50
Isobutane	1.89
Isopentane	1.21
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.04
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	0.4
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.37
Methylcyclopentane	0.20
Methylene chloride	< 0.3
n-Butane	3.64
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	0.12
n-Hexane	0.40
n-Nonane	0.02
n-Octane	0.05
n-Pentane	1.3
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	< 0.01
o-Xylene	0.02
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.10
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

AIR FCD-01320/2

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Dec. 26, 2015

Maxxam

VOC Sample Collection Data Sheet

RECEIVED JAN 06 2016

13.42

@@

55587 7.919 2015 2015 23, 30 Dec 000 Canister Installation Date/Time: Canister Removal Date/Time: Sampler S/N: Canister ID: Field Sample ID: LICH/VOC/CLS/DCC 26, XEVS South LICA 01 Location: cold Lake Client: Station ID:

	Flow Settings	Š
Weter Reading	Pot Set Pt.	Pump Pressure
(sccm)		Setting (psig)
0.0%	6.52	24

Elapsed Time

End Time (MST)

Start Time (MST)

Sample Date

Date and Time Information

(Hours)

24.0

Dec 27,206

00:00 Dec 26, 2015

Dee 26, 2015

iormation	Final Canister	Pressure (psig)	+ 88 +
Canister Information	Initial Canister	Vacuum (inHg)	-28.0

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

Comments:

Alex Yaumpor Alex Yakupou Sample out Sample Technician Signiture:

Date: Dec 20, 2015



Volatile Organics Data Results

Date:

DECEMBER 26 , 2015

Canister ID:

Freon-11

S5587

PARAMETERS	CONCENTRATION (PP
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1.2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.08
1-Hexene	< 0.02
1-Pentene	0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.05
2,3,4-Trimethylpentane	0.01
2,3-Dimethylbutane	0.10
2,3-Dimethylpentane	0.06
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.03
2-Methylhexane	0.05
2-Methylpentane	0.22
3-Methylheptane	< 0.02
3-Methylhexane	0.07
3-Methylpentane	0.12
Acetone	1.0
Acrolein	< 0.3
Benzene	0.23
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.10
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.03
Chloromethane	0.70
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.26
Cyclopentane	0.11
Dibromochloromethane	< 0.01
Ethanol	< 0.3
Ethyl acetate	< 0.4
Ethylbenzene	0.02

0.34



Volatile Organics Data Results

Date:

DECEMBER 26 , 2015

Canister ID:

S5587

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.08
Freon-114	0.03
Freon-12	0.75
Hexachloro-1,3-butadiene	< 0.50
Isobutane	1.06
Isopentane	0.90
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.05
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.31
Methylcyclopentane	0.21
Methylene chloride	< 0.3
n-Butane	1,90
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	0.10
n-Hexane	0.19
n-Nonane	0.02
n-Octane	0.04
n-Pentane	0.8
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	< 0.01
o-Xylene	0.02
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.16
rans-1,2-Dichloroethylene	< 0.01
ans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02



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DEC 0.9 2015

Sample ID: 15120089-002

Customer ID: UCA

Cust Samp ID: LICA/PUF/CLS/Dec 2, 2015

Priority: Normal

Maxxam

Hi-Vol PUF+ Sample Collection Data Sheet

Field Sample ID: 1/04/PUF/ CLS/ Dec 2, 2015 South Location: Client: Station ID:

101 Removal Date/Time: Puf+ S/N: Motor S/N: Installation Date/Time:

1086

(a) 02: 43 00-00 5108 Dec

	Date and Time Information	nformation	
Sample Date	Start Time	End Time	Elapsed Time
	(MST)	(MST)	(Hours)
(00:00	00:00	0 77 0
URE 1, 2015	Dec 4, 2015	Dee 4, 2015 Dee 5, 2015	74.0

	PUF and QFF Information	Information	
Data Daginad	Date	Puf Expiration	QFF Prep
חמום ואפרם ואפר	Shipped	Date	Date
6/11	0/6	410	<i>5/u</i>

230	05- May -10
Set Flow Rate (slpm):	Date of Last Calibration:

	Sampling Data	ig Data	
Average	AverageFlow	Average	Volume
Pressure(mmHg) (Ostd slpm) Tempurature (C) (Vstd m³)	(Qstd slpm)	Tempurature (C)	(Vstd m³)
tot	229	-3.60	530,19

Sampling data saved to memory card after sampling? YES (NO) Time set correctly prior to sampling? (YES NO Timer set correctly prior to sampling? (YES NO

4
C
a
¢
-
-
C

pr Technician Signiture:

Date, Dec 4, 2015



Date: DECEMBER 2 , 2015 PUF S/N: 9801

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.13
2-Methylnaphthalene	0.20
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	0.01
Acenaphthene	0.21
Acenaphthylene	0.10
Acridine	< 0.01
Anthracene	0.07
Benzo(a)anthracene	0.04
Benzo(a)pyrene	0.04
Benzo(b,j,k)fluoranthene	0.12
Benzo(c)phenanthrene	0.07
Benzo(e)pyrene	0.04
Benzo(ghi)perylene	0.07
Chrysene	0.06
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	0.03
Dibenzo(ah)anthracene	0.01
Fluoranthene	0.27
Fluorene	0.46
Indeno(1,2,3-cd)pyrene	0.05
Naphthalene	0.20
Perylene	0.01
Phenanthrene	0.65
Pyrene	0.22
Retene	0.32

Sample ID: 15120124-001

Customer ID: LICA

Cust Samp ID: LICANOC/ELK/Dec 8,

/OC/ELK/Dec 8,			**************************************	RECEIVED
Priority: Normal				DEC 1 1 2015
25	TISCH PUF PLUS Sample Collection Data Sheet	ollection Data Sh	et	
Client:	4104	Puf+ S/N:	76-03	
Location:	Cold lake South	Motor S/N:	Motor S/N: 7139 / 100 - 1020	
Station ID:	LICA 01	Installation Date/Time:	89:47 Dec 4, 2015	
Field Sample ID:	LICA (PUF) CLS,	Dec 2, 2015 Removal Date/Time:	Dec 9,	
		on Information		
Sample Date:	Dec 8, 2015	Average Pressure (mmHg)	70%	
Start Time (mst):	00:00	Average Flow (Q _{std})	223	
End Time (mst):	00:00 Dee 9, 2015	Average Tempurature (°C)	-1.6°	
Elapsed Time (Hours):	24.0	Volume (Vstd m ³)	330.21	
	Sample Recovery	Recovery Checklist		
	(circle one)			
Flow Rate 230 slpm +/- 0.2 slpm ?	(SZA)	ON	eren egenet a nnyte, a	
Average temperature appears correct?	Ž.	NO		
Average pressure appears correct?	(B	NO NO		
Any error messages? (if yes list below)) &	ON	VII. 100-10-, pt	
Sample duration 24 hours?	(REX) on		
Date of last calibration/audit:	05 - May -10			
Other observations?	1/4			
Deployed 8y:	ALR Yauupor	Dec 41,	XOLS	
Collected By:	Alex Yamupou	Doc 9.	20 15	



Date: DECEMBER 8 ,2015
PUF S/N: TE03

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.22
2-Methylnaphthalene	0.32
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	0.06
Acenaphthene	0.22
Acenaphthylene	0.51
Acridine	< 0.01
Anthracene	0.22
Benzo(a)anthracene	0.06
Benzo(a)pyrene	0.04
Benzo(b,j,k)fluoranthene	0.18
Benzo(c)phenanthrene	0.02
Benzo(e)pyrene	0.06
Benzo(ghi)perylene	< 0.01
Chrysene	0.06
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	0.03
Fluoranthene	0.40
Fluorene	0.44
Indeno(1,2,3-cd)pyrene	0.06
Naphthalene	0.28
Perylene	0.02
Phenanthrene	1,26
Pyrene	0.30
Retene	0.50

Sample ID: 15120215-005

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Dec 14,
2015

		1	à est activité de la constitue de la constitue de la constitue de la constitue de la constitue de la constitue				NAMES OF TRACE					************************				nobour normalismo		BESTWEN	ファー	DEC 2 2 2015		Alberta Innovates - Technology Futures		
et.	3402	Motor S/N: 1138/100 - 1020	Dec 9, 2015 / 09:41	DEC 14, 2015/18:41		711	229	- 3,70	330.23										3		97	Alben		Dec 18, 2015
Collection Data She	Puř÷ S/N:	Motor S/N:	Installation Date/Time: Dec 9, 2015	1, 2015 Removal Date/Time:	ion Information	Average Pressure (mmHg)	Average Flow (Q_{erd})	15, 2015 Average Tempurature (°C)	Volume (Vstd m³)	ry Checklist	(a)	NO	NO	NO	(ON) &	6						76	Date:
TISCH PUF PLUS Sample Collection Data Sheet	7164	told Lake South	1104 01	Field Sample ID: LICA/ PUF/CLS/Dec 14, 2015 Removal Date/Time: De C 18, EDLS	Sample Data Collection Information	Dec 14, 2015	00:00	00.00/ Die 15, 20	94;00	Sample Recovery Checklist	(dirde one)	(FES	YES	YES	YES	YES	05- May -10	plu					ALCX VALLYON	Alex Yampon
	Client	Location: Cold	Station ID:	Field Sample ID: 2		Sample Date:	Start Time (mst):	End Time (mst):	Elapsed Time (Hours):			Flow Rate 239 slpm +/- 0.2 slpm ?	Average temperature appears correct?	Average pressure appears correct?	Any error messages? (if yes list below)	Sample duration 24 hours?	Date of last calibration/audit:	Other observations?	1				Deployed By:	Collected By:



Date: DECEMBER 14,2015

PUF S/N: 9702

PARAMETERS	CONCENTRATION (U
1-Methylnaphthalene	0.13
2-Methylnaphthalene	0.18
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.06
Acenaphthylene	0.12
Acridine	< 0.01
Anthracene	0.04
Benzo(a)anthracene	0.03
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.11
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	0.04
Benzo(ghi)perylene	< 0.01
Chrysene	0.03
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.14
Fluorene	0.14
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.19
Perylene	< 0.01
Phenanthrene	0.33
Pyrene	0.11
Retene	0.04

Customer ID: LICA

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Cust Samp ID: LICA/PUF/CLS/Dec 20, 2015

TIS	TISCH PUF PLUS Sample Collection Data Sheet	Mection Data She		
Client:	7164	Puf÷ 5/N:	7E-08	
Location:	Cold Late South	Motor S/N:	Motor S/N: 1138/100- 1020	***************************************
Station ID:	10 4017	Installation Date/Time:	Installation Date/Time: Dec 18, 2015 13:42	5
Field Sample ID:	LICAL PULL CLS Dec 20, 2015 Removel Date/Time: De C 43, 2015 / 13, 33	2015 Removal Date/Time:	Dec 23, 2015/13:35	~
	Sample Data Collection Information	in Information		
Sample Date:	Dec 20, 2015	Average Pressure (mmHg)	90±	
Start Time (mst): 00:00	00:00	Average Flow (Q _{std})	123	
End Time (mst): DCC	DEC 21, 2015 /00:00	Average Tempurature (°C)	-13.9°	,
Elapsed Time (Hours):	24.0	Volume (Vstd m³)	330,20	
	Sample Recovery Checklist	Checklist		
	(circle one)	***************************************		<u> </u>
Flow Rate 230 sipm +/- 6.2 sipm ?	(XIX)	ON		
Average temperature appears correct?	(YES)	NO		a des sa manor que se
Average pressure appears correct?	(SE)	ON		
Any error messages? (if yes list below)	YES	(<u>S</u>)		
Sample duration 24 hours?	YES	ON		************
Date of last calibration/audit:	05- May -10			********
Other observations?	11/9			
1				
Deployed By:	Alex Yaudpor			•
Collected By:	Alex Yakupov		Date: Dec 13, 2015	ما
				İ



Date: DECEMBER 20, 2015

PUF S/N: TE06

PARAMETERS	CONCENTRATION (UG)	:
1-Methylnaphthalene	1.24	
2-Methylnaphthalene	1.84	
3-Methylcholanthrene	< 0.01	
7,12-Dimethylbenz(a)anthracene	0.05	
Acenaphthene	0.23	
Acenaphthylene	0.75	
Acridine	< 0.01	
Anthracene	0.15	
Benzo(a)anthracene	0.07	
Benzo(a)pyrene	0.04	
Benzo(b,j,k)fluoranthene	0.19	
Benzo(c)phenanthrene	0.02	
Benzo(e)pyrene	0.06	
Benzo(ghi)perylene	< 0.01	
Chrysene	0.08	
Dibenzo(a,h)pyrene	< 0.01	
Dibenzo(a,i)pyrene	< 0.01	
Dibenzo(a,l)pyrene	< 0.01	
Dibenzo(ah)anthracene	0.02	
Fluoranthene	0.51	
Fluorene	0.42	
Indeno(1,2,3-cd)pyrene	0.06	
Naphthalene	1.25	
Perylene	0.01	
Phenanthrene	1.38	
Pyrene	0.34	
Retene	0.31	

Sample ID: 16010004-002

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Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Dec. 26,
2015

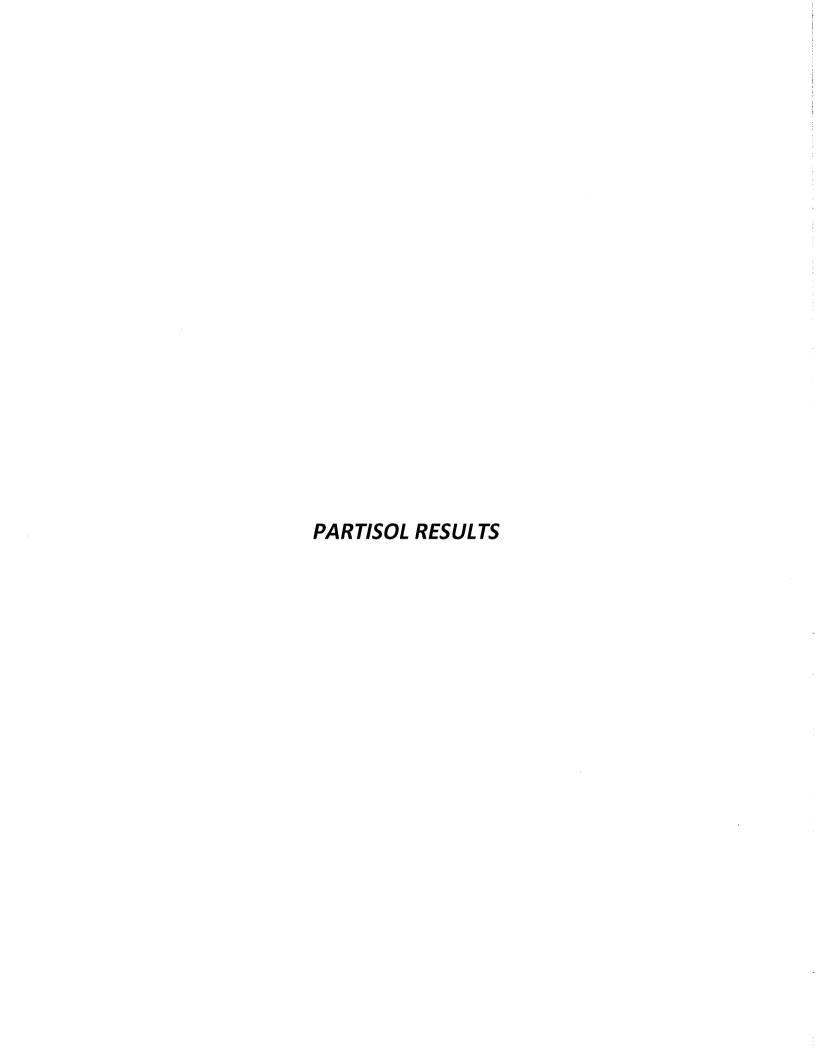
SIT	TISCH PUF PLUS Sample Collection Data Sheet	ollection Data She	eet
Client:	2104	Puft S/N:	75-02
Location:	location: Cold Lake South	Motor S/N:	Motor S/N: 1138/100-1020
Station ID:	10 4317	Installation Date/Time:	Installation Date/Time: $\mathcal{D}_{\mathcal{CC}}$ 23, 20(5/13.34)
Field Sample ID:	Field Sample ID: LICAL PUF/CLS/Drc 26,2015	O/5 Removal Date/Time:	Removal Date/Time: Dec 30, x015/09:07
	Sample Data Collection Information	on Information	
Sample Date:	Dec 16, 2015	Average Pressure (mmHg)	725
Start Time (mst):	00:00	Average Flow (Q _{std})	229
End Time (mst): 2	End Time (mst): 00:00 Dec 27, 2015	Average Tempurature (°C)	- 16.3
Elapsed Time (Hours):	240	Volume (Vstd m²)	330,22
	Sample Recovery Checklist	y Checklist	
	(circle one)		
Flow Rate 230 sipm +/- 0.2 sipm ?	(YES)	NO	
Average temperature appears correct?	YES	ON	
Average pressure appears correct?	(YES)	ON	
Any error messages? (if yes list below)	YES	(OM)	
Sample duration 24 hours?	YES	CN	
Date of last calibration/audit:	Doe 22, 2015		
Other observations?	n/a		
Deployed By:	ALEX YORUGOV		
Collected By:	Alex Yakupov	D	Date: Dec 30, 2015



Date: DECEMBER 26,2015

PUF S/N: TE02

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.53
2-Methylnaphthalene	0.69
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	0.05
Acenaphthene	0.09
Acenaphthylene	0.17
Acridine	< 0.01
Anthracene	0.02
Benzo(a)anthracene	0.03
Benzo(a)pyrene	0.01
Benzo(b,j,k)fluoranthene	0.13
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	0.04
Benzo(ghi)perylene	< 0.01
Chrysene	0.04
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.11
Fluorene	0.16
Indeno(1,2,3-cd)pyrene	0.02
Naphthalene	0.90
Perylene	< 0.01
Phenanthrene	0.31
Pyrene	0.10
Retene	0.10



Customer ID: LICA

Cust Samp ID: LICA P5012879

Partisol Sample Data Sheet

Priority: Norma	1			RECEIVED
Date Sampled:	Dec 2, 2015			DEC 0 9 2015
Location:	Cold Lake s	outh		are had one any two two day the day the day the bay the had
Parameter:	TSP I	PM10	(PM2.5)	
Filter #:	11CA P5012	D 79	The state of the s	
Start Time	00:00 Dec 2,	2015		
End Time	00:00 Dec 2,	2015		
Status	<u>OK</u>			
Std Vol	24.652			
Valid Time	24:00			
Total Time	24.0			
	eather Conditions, e			
Technician Sig	nature:	Alex Yake	ipor ! Dec 4	
	m is in "Stop Mode" creen then "Program" 0:00 24:00:00 dd-Aug dd-Aug		ginning & End uld be same date	Đ

Cust Samp ID: LICA P5012876

'artisol Sample Data Sheet

RECEIVED

AIR FCD-01318/2

DEC 1 1 2015

Date	Sampled:	Dec	P	2015

Priority: Normal

Location:

Cold Lake South

Parameter:

TSP

PM10

Filter #:

LICA P501 28 76

PM2.5

Start Time

00:00 Dec P, 2015

End Time

00:00 Dec 9, 2015

Status

OK

Std Vol

24.290

Valid Time

24:00

Total Time

24.0

comments:	Weather	Conditions,	etc.

Liberra.

Technician Signature:

Alex Yakupov

Date: Dec 09,2015 (08:13)

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1

0:00

4) Enter Dur

24:00:00

5) Enter Beg D 6) Enter End D dd-Aug

dd-Aug

Note: Beginning & End Date should be same date

7) "Stop/Run"

Customer ID: LICA

Cust Samp ID: LICA P5012877

Partisol Sample Data Sheet

Priority: Normal				
Date Sampled:	Dec 14, 201	5		
Location:	Cold Lake Sou	eth		
Parameter:	TSP F	PM10	(PM2.5)	
Filter #:	LICA P 501 28	77	ARMADON SOURCE SILE ALS	* Farman Charles
Start Time	00:00 Dec 14,	2015	RE	BEUVE EC 2 2 2015
End Time	00:00 Dec 15	, 2015		
Status	<u> </u>		Alberta Innov	vates - Technology Future
Std Vol	24.840			
Valid Time	24:00			
Total Time	24.0			
Comments: We	eather Conditions, e	etc.		
Technician Sig	nature:	Alex	Yakupov Date: 1	 Dec 18, 2015

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1

0:00

4) Enter Dur

24:00:00

5) Enter Beg D

dd-Aug

Note: Beginning & End Date should be same date

dd-Aug

6) Enter End D

7) "Stop/Run"

Sample ID: 16010001-001

Customer ID: LICA

Cust Samp ID: LICA P5012878

Partisol Sample Data Sheet

Priority: Normal

Date Sampled: Dec 20, 2015

Location:

cold Lane South

Parameter:

TSP

PM10

Filter #:

LICA P 50/2878

Start Time

00:00 Dec 20, 2015

End Time

00:00 Dec 21, 2015

Status

OK

Std Vol

25.482

Valid Time

24:00

Total Time

24.0

Comments: Weather Conditions, etc.

<u>n/9</u>	

Technician Signature:

PM2.5

Date: Dec 23, 2015

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1

0:00

4) Enter Dur

24:00:00

5) Enter Beg D

dd-Aug

6) Enter End D

dd-Aug

Note: Beginning & End Date should be same date

7) "Stop/Run"

AIR FCD-01318/2

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JAN 0-6 2016

Partisol Sample Data Sheet

Priority: Normai

AIR FCD-01318/2

V 06 2018

Date Sampled:	Dec 26, 20	215		JAN
Location:	cold Lake	South		
Parameter:	TSP	PM10	(PM2.5)	
Filter #:	LICH P500 C	173		
Start Time	00:00 Dec 26,	2015		
End Time	00:00 Dec 2	7,2015		
Status	OK	•		
Std Vol	26.520	-		
Valid Time	24:00	··		
Total Time	24.0	•		
Comments: We	eather Conditions,	etc.		
n/a				
h which and I frish any are suppose to price of the second		**************************************	franklika stifti kaivalise dikine separaturan attisi kili akaisa sokiayaka a tan ka ka ka kili	adachterium Parten Strong (Wije (Arryster Sept
ro w raceronalism (1974) she had she had she had she had a she had a she had been she had been she had been had	rfa tibini riikkiini kifa kiika fii Rest tin Ya, anga ki kida sahankashasha fahad , iyo ahala sayay e	a hiji dilabiha da kalikaa kaisin reegen pp daga kado ka masa ay a maray 1923 ah sa sa		wards stranded of recent account and a strang

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т о (мен)) у уул а такжа такжа жа жа жа жа жа жа жа жа жа жа жа жа жа жа		THE CONTRACTOR OF THE CONTRACTOR AND A SECURE OF THE CONTRACTOR OF		overheiderundbeiteiler (25 fehrte des sehriftenstraßienen
Technician Sig	nature:	Mex Yo	rkypev	nga kana ta ke mala a manana mangga a ya
		Date:	Dee 30, 2015	

Programming

- 1) Make sure system is in "Stop Mode"
- 2) "ESC" to Time Screen then "Program"
- 3) Enter Beg 1
- 0:00 24:00:00

4) Enter Dur

- dd-Aug
- 5) Enter Beg D

- 6) Enter End D
- dd-Aug
- Note: Beginning & End Date should be same date

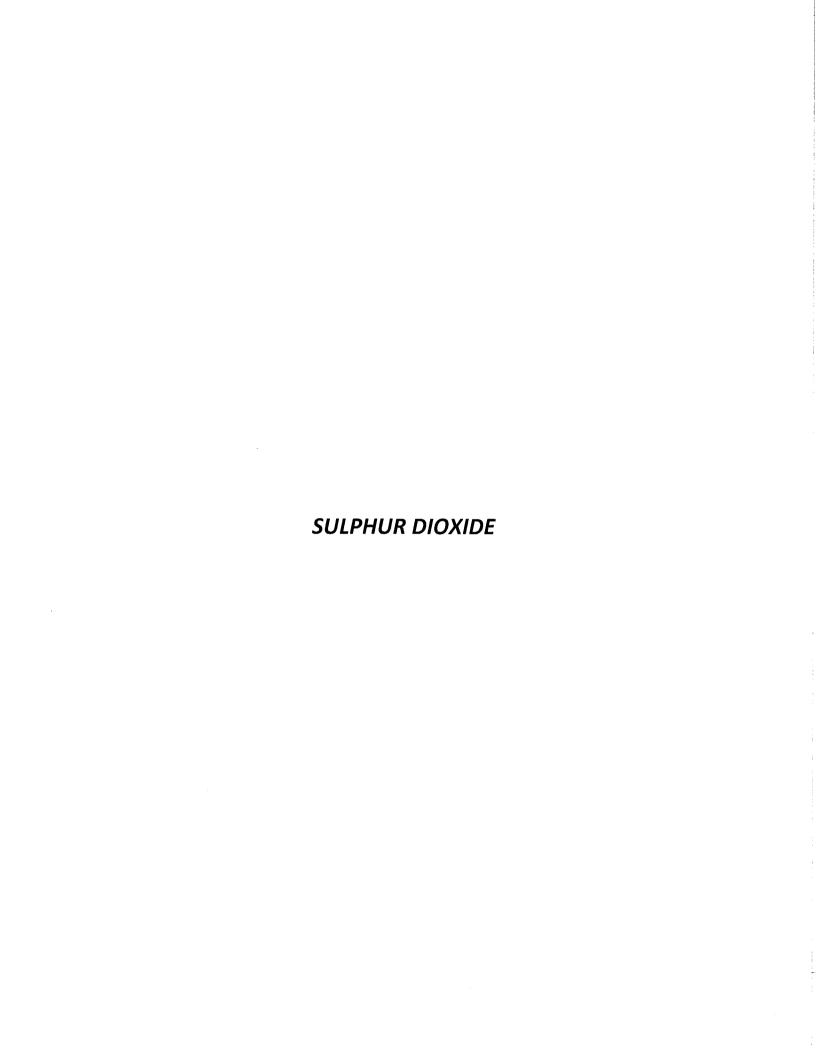
7) "Stop/Run"



Partisol Sampler Results

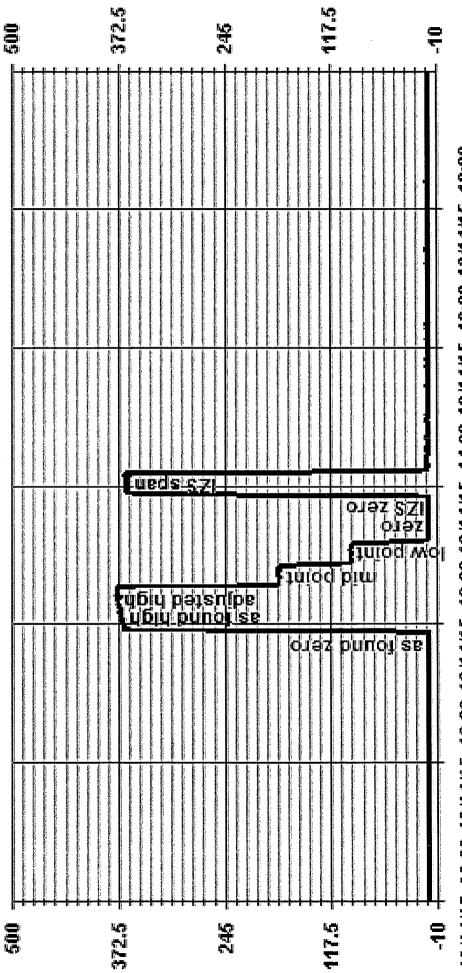
		P5012879	0.288
DECEMBER	2	P30120/3	0,200
DECEMBER	8	P5012876	0.085
DECEMBER	14	P5012877	0.037
DECEMBER	20	P5012878	0.158
DECEMBER	26	P5006173	0,204

APPENDIX III ANALYZER CALIBRATION RESULTS



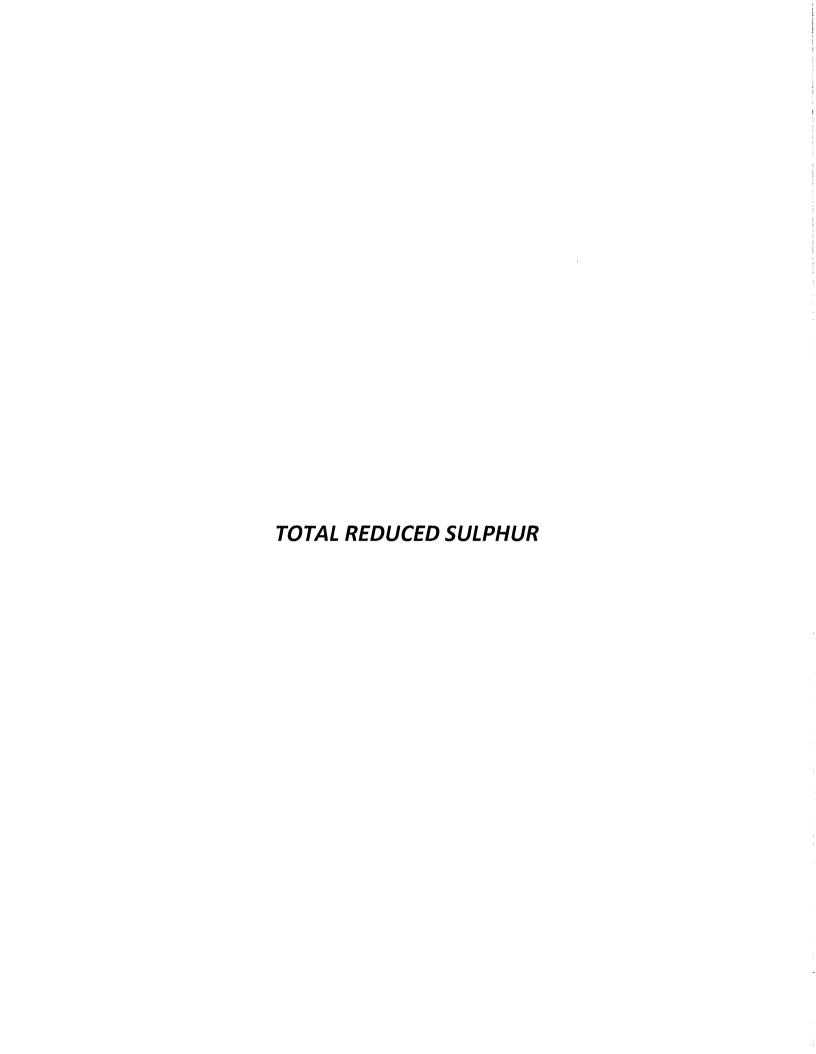
	December 14,	2015		В	arometric Pressure:	0,928 at	m
Company/Airshed	l: LICA		-	Stati	on Temperature °C:	22	
ocation/Station Name			-		Veather Conditions:	A few clou	
Parameter		kide	-		Calibration Purpose:	routine mo	
Start Time 24 hr. (mst			-		ormed By/Reviewer: Alex Cal Gas Expiry Date:	Yakupov March 12,	Trina Whitsiti
End Time 24 hr. (mst) Calibration Method		n	-		& s/n (if applicable):	n/a	2013
alyzer: Serial Numbe			_	Range ppb:			
Last Calibration Date		2015	-	As Found C.F.:			
Previous C.F	.:1.001		-	New C.F.:	1,001		
librator:				Standard Ca	libration Points for Ranges		
Flow Meter ID's			_ [Point	Sulphur Dioxide Standard Cali	bration Points	
Make & Mode			- L	High	380		
Serial #			- ┝	Mld	180		
Cal Gas Cylinder I.D. #		3	. L	Low	90		
Cal Gas Conc. (ppm): 49,5	ALL POINTS	ARE 15 MINU	ITES OF STABILITY AS OF SEI	PTEMBER 23, 2015		
Call	brator Flow Rates (cc/ml	n)		Calculated Concentration:	Indicated Concentration:	Correction	Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(dqq)		./.
as found zero	5012	0.00	5012	0.0	0.0		I/A
as found high	4976	37.70	5014 5014	372.2 372.2	370.0 372.0		006
adjusted high mid	4976 4997	37.70 17.90	5014	372.2 176.7	179.0		987
low	5004	9.00	5013	88.9	92.0		966
calibrator zero	5012	0.00	5012	0.0	0.0	ı	n/a
		cept as % of f	n last cal=	-0.35% -0.50% Alphur Dloxide Analyzer Call	± 3% F.S. ± 10% bration		
400							▶ 372.0
350 300 - GL 250 - SL 200 -							
300 - dd 250 - 302 200 - jul 150 - 100 - 50 -		92.0	· 	→ 179,0			
100 - 200 - 300 - 300 -	50	100	150	200 calculated ppb	250 300	350	400
300 - GE 250 - SE 200		100 As fou	nd:	200 calculated ppb	As left:	350	400
300 - 82 250 - 83 200 - 100 150 - 100 - 50 -	BKG:	100 As fou 7.0	nd:	200 calculated ppb BKG:	As left: 7.0	350	400
300 - 82 250 - 83 200 - 100 150 - 100 - 50 -	BKG: COEF:	100 As fou	nd:	200 calculated ppb	As left:	350	400
300 - 82 250 - 83 200 - 100 150 - 100 - 50 -	BKG:	As fou 7.0 1.08 -632 707	nd: 3 ,0	200 calculated ppb BKG: COFF: PMT: FLASH:	As left: 7.0 1.089 -632.0 708	350	400
300 - 82 250 - 83 200 - 100 150 - 100 - 50 -	BKG: COEF: PMT: FLASH: INTERNAL:	As fou 7.0 1.08 -632 707 28,4	nd: 3 .0	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL:	As left: 7.0 1.089 -632.0 708 28.2	350	400
300 - 82 250 - 83 200 - 100 150 - 100 - 50 -	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER:	As fou 7.0 1.08 -632 700 28,4	nd: 3 .0 ,	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER:	As left: 7.0 1.089 -632.0 708 28.2 45.0	350	400
300 - 82 250 - 93 200 - 93 150 - 94 150 - 95 0 - 95	BKG: COEF: PMT: FLASH: INTENAL: CHAMBER: PERM OVEN GAS:	As fou 7.0 1.08 -632 700 28, 45,	nd: 3 ,0 ,4 ,0	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS:	As left: 7.0 1.089 -632.0 708 28.2 45.0 45.0	350	400
300 - 82 250 - 83 200 - 100 150 - 100 - 50 -	BKG: COEF: PMT: FLASH! INTERNAL: CHAMBER: PERM OVEN GAS: PERM OVEN GAS:	As fou 7.0 1.08 -632 700 28,4	nd: 3 .0 .4 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN BASS PERM OVEN HEATER:	As left: 7.0 1.089 -632.0 708 28.2 45.0	350	400
300 - GB 250 - SP 200 - DP 150 - 100 - 50 -	BKG: COEF: PMT: FLASH: INTENAL: CHAMBER: PERM OVEN GAS:	As fou 7.0 1.08 -632 700 28, 45, 45,	nd: 3 .0 .7 4 5 5 9	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS:	As left: 7.0 1.089 -632.0 708 28.2 45.0 45.0 44.19	350	400
300 - 82 250 - 83 200 - 100 150 - 100 - 50 -	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS: PERM OVEN HEATER: PRESSURE:	As fou 7.0 1.08 -632 700 28. 45. 44.1 677	nd: 3 .00 / 4 00 00 9 7 4	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS: PERM OVEN HEATER: PRESSURE: SAMPLE FLOW: LAMP INTENSITY:	As left: 7.0 1.089 -632.0 708 28.2 45.0 45.0 44.19 678.0	350	400
300 - GE 250 - SE 200	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS: PERM OVEN HEATER: PRESSURE: SAMPLE FLOW: LAMP INTENSITY. CONVERTER:	As four 7.0 1.08 6.03 7.0 1.08 6.03 7.0 1.08 6.03 7.0 1.08 6.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	nd: 3 .00 , 4 0 0 0 0 7 7	ZOO Calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS: PERM OVEN HEATER: PRESSURE: SAMPLE FLOW: LAMP INTENSITY: CONVERTER:	As left: 7.0 1.089 -632.0 708 28.2 45.0 44.19 678.0 0.474 77 n/a	350	400
300 - GB 250 - SP 200 - DP 150 - 100 - 50 -	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS: PERM OVEN HEATER: SAMPLE FLOW: LAMP INTENSITY: CONVERTER: CONVERTER:	As four 7.0. 1.08 -632 -700 28.8 -45.1 45.1 47.7 0.47 777 0/47	3	ZOO calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN HEATER: PRESSURE: SAMPLE FLOW: LAMP INTENSITY: CONVERTER: CONVERTER:	As left: 7.0 1.089 -632.0 708 28.2 45.0 45.0 45.0 44.19 678.0 0.474 77 n/a n/a	350	400
300 - GB 250 - SB 200 - SB 100	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS: PERM OVEN HEATER: PRESSURE: SAMPLE FLOW: LAMP INTENSITY. CONVERTER:	As four 7.0 1.08 6.03 7.0 1.08 6.03 7.0 1.08 6.03 7.0 1.08 6.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	3	ZOO Calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: PERM OVEN GAS: PERM OVEN HEATER: PRESSURE: SAMPLE FLOW: LAMP INTENSITY: CONVERTER:	As left: 7.0 1.089 -632.0 708 28.2 45.0 44.19 678.0 0.474 77 n/a	350	400

of Minute Averages



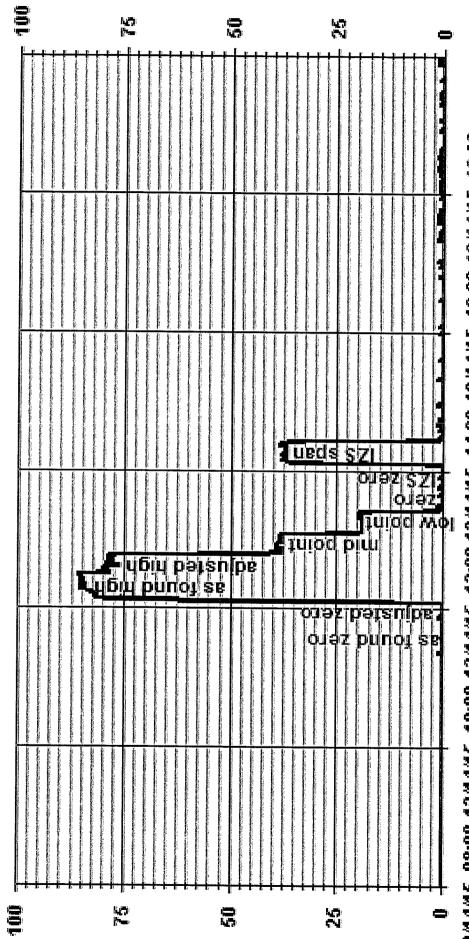
12M4M5 08:00 12M4M5 10:00 12M4M5 12:00 12M4M5 14:00 12M4M5 16:00 12M4M5 18:00

- LICA SO2_ PPB



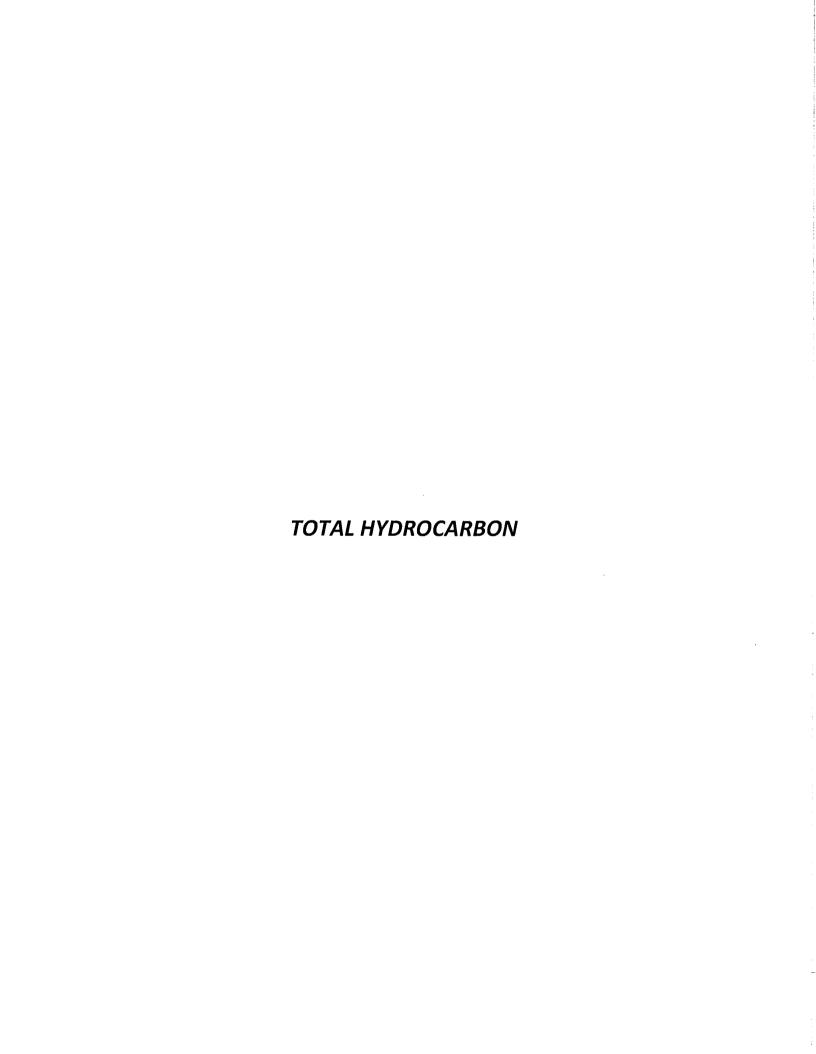
Company Al Finder LiCA	-	December 14	2015			Barometric Pressure:	0.928 atm	
Colic Lake South Parameter Total Reduced Sulphur Parameter			-515	-				
Training Parameter Total Reduced Sulphur Parameter Parameter Total Reduced Sulphur Parameter Param			uth	-		· —		
Collitation Converter Model & str. (if applicable)				-				y
A	Start Time 24 hr. (mst):			_	Perf	ormed By/Reviewer: Ale	ex Yakupov T	rina Whitsitt
				_				
Serial Number S12778560 Range ppb 100 Lact cellibration better November 5, 2015 New C.F. 1,000 New C.F. 1,0	Calibration Method:	Gas Dilutio	n	-	Converter Model	& s/n (if applicable):	CDNova CDN-101	#501
International pate November 5, 2015 New C.F.; 0.918		81272856	0		Range ppb:	100		
Standard Calibration Points for Ranges		November 5,	2015	_				
Point Total Reduced Sulphur Sandard Calibration Points Nake & Model: APT 700 Serial ##; 830 Mild 38	Previous C.F.:	1,000		-	New C.F.:	1.000		
Flow Meter ID's:	brator:		<u> </u>		Standard C	alibration Points for Ranges		
Serial #: \$30		n/a					Calibration Points	
California Cal	Make & Model:	API 700		_	High	78		
Calibrator Flow Rates (cc/min) Cali Gas Votal Calibrator Flow Rates (cc/min) Caliculated Concentration: Indicated Concentration: Indicated Concentration: Society Calibrator Flow Rates (cc/min) Caliculated Concentration: Indicated Concentration: Society Calibrator Flow Rates (cc/min) Calibrator Flow Rates (cc/min) Calibrator Flow Rates (cc/min) Calibrator Rates Calibrator Rate	Serial #:	830		_	Mld	38		
Calibrator Flow Rates (ce/min Cal Gas Total Condition Col Gas Total Condition Col Gas Total Condition Col Gas Total Condition Col Gas Total Condition Col Gas Total Condition Conditio				_	Low	19		
Calibrator Flow Rates (cc/min)	Cal Gas Conc. (ppm):		ALL DOMEST	. Dr. 4 - 4	AUITE OF STATE OF STATE	PDTC44DCD 44 CC45		
Point	Calibr			-не 15 Mi			Correction Fac	ors (C.F.)
as found high as found high as found high as found high as found high as found high as found high as found high as found high as found high as found high as found high as found high A411 S8.50 7500 78.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0				Total			Correction rac	(6.7.);
as found high adjusted tero 7496 0.00 7496 0.00 7496 0.00 7496 0.00 78.0 78.0 78.0 1.000 1	*						N/A	
adjusted high 7496								
Mid	adjusted zero		0.00	7496	0.0			
Tow 7486								
Calibrator xero 7496 0.00 7496 0.0 0.0 0.0 0.0 0.0 0.0								
Linear Regression/Calibration Results: LIMITS								
Linear Regression/Calibration Results: LIMITS	Calibrator Zero	7450	0.00	1 7490	0,0			
As found: As left:			Thern	no 450i To	tal Reduced Sulphur Analyze	r Calibration		
As found: As left: BKG: 14.5 BKG: 13.2 COPE: 1.037 COPE: 0.944 PMT: -650.5 PMT: -650.8 FLASH: 742 FLASH: 743 INTERNAL: 32.0 INTERNAL: 32.2 CHAMBER: 45.0 CONVERTER TEMP: 325.0 CONVERTER TEMP: 325.0 CONVERTER SET: 325.0 CONVERTER SET: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	į.						77	3,0
As found: As left:								
As found: As left:								
As found: BKG: 14.5 COEF: 1.037 COEF: 0.944 PMT: -650.5 PMT: -650.8 FLASH: 742 FLASH: 742 FLASH: 743 INTERNAL: 32.0 CHAMBER: 45.0 CONVERTER TEMP: 326.0 CONVERTER TEMP: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.37 PRESSURE: 654.4 PRESSURE: 654.4					A-380			
0 50 100 150 200 250 300 350 400 calculated ppb	indicated ppb 30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				38.0			
BKG: 14.5 BKG: 13.2 COFE: 1.037 COEF: 0.944 PMT: -650.5 PMT: -650.8 FLASH: 742 FLASH: 743 INTERNAL: 32.0 INTERNAL: 32.2 CHAMBER: 45.0 CHAMBER: 45.0 CONVERTER TEMP: 326.0 CONVERTER TEMP: 325.2 CONVERTER SET: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN SAS: 45.0 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated pp 200 200 200 200 200 200 200 200 200		9.0		→ 38.0			
BKG: 14.5 BKG: 13.2 COFE: 1.037 COEF: 0.944 PMT: -650.5 PMT: -650.8 FLASH: 742 FLASH: 743 INTERNAL: 32.0 INTERNAL: 32.2 CHAMBER: 45.0 CHAMBER: 45.0 CONVERTER TEMP: 326.0 CONVERTER TEMP: 325.2 CONVERTER SET: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN SAS: 45.0 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10			150	200	250 300	350	400
PMT: -650.5 PMT: -650.8 FLASH: 742 FLASH: 743 INTERNAL: 32.0 INTERNAL: 32.2 CHAMBER: 45.0 CHAMBER: 45.0 CONVERTER TEMP: 326.0 CONVERTER TEMP: 325.2 CONVERTER SET: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.3 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10		100		200		350	400
FLASH: 742 FLASH: 743 INTERNAL: 32.0 INTERNAL: 32.2 CHAMBER: 45.0 CHAMBER: 45.0 CONVERTER TEMP: 326.0 CONVERTER TEMP: 325.2 CONVERTER SET: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated by 20 10 10 10 10 10 10 10 10 10 10 10 10 10	50 BKG:	100 As four 14.5	nd:	200 calculated ppb BKG:	As left: 13.2	350	400
INTERNAL: 32.0 INTERNAL: 32.2 CHAMBER: 45.0 CHAMBER: 45.0 CONVERTER TEMP: 326.0 CONVERTER TEMP: 325.2 CONVERTER SET: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10	50 BKG: COEF:	As four 14.5	nd:	200 calculated ppb BKG; COEF:	As left: 13.2 0.944	350	400
CHAMBER: 45.0 CHAMBER: 45.0 CONVERTER TEMP: 326.0 CONVERTER TEMP: 325.2 CONVERTER SET: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10	SO BKG: COEF: PMT:	As four 14.5 1.03 -650.	n d: ; 7	200 calculated ppb BKG: COEF: PMT:	As left: 13.2 0.944 -650.8	350	400
CONVERTER TEMP: 326.0 CONVERTER TEMP: 325.2 CONVERTER SET: 325.0 CONVERTER SET: 325.0 PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10	SO BKG: COEF: PMT: FLASH:	As four 14.5 1.03 -650. 742	nd: ; 7	200 calculated ppb BKG: COEF: PMT: FLASH:	As left: 13.2 0.944 -650.8 743	350	400
PERM OVEN GAS: 45.0 PERM OVEN GAS: 45.0 PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10	50 BKG: COEF: PMT: FLASH: INTERNAL:	As four 14.5 1.03 -650, 742	nd: ; 7 5	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL:	As left: 13.2 0.944 -650.8 743 32.2	350	400
PERM OVEN HTR: 44.37 PERM OVEN HTR: 44.38 PRESSURE: 654.4 PRESSURE: 654.7	indicated by 20 10 10 10 10 10 10 10 10 10 10 10 10 10	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP:	As four 14.5 1.03 -650, 742 32.0 45.0	nd: ; 7 5	200 calculated ppb BKG; COEF: PMT: FLASH: INTERNAL: CHAMBER;	As left: 13.2 0.944 -650.8 743 32.2 45.0 325.2	350	400
PRESSURE: 654.4 PRESSURE: 654.7	indicated by 20 10 10 10 10 10 10 10 10 10 10 10 10 10	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET:	As four 14.5 1.03 -650. 742 32.0 45.0 326.1	nd: ; 7 5 0	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEME	As left: 13.2 0.944 -650.8 743 32.2 45.0 325.2 325.0	350	400
	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10	BKG: COFF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS:	As four 14.5.1.03 -650. 742 32.0 45.0 326.4 45.0 45.0 45.0 45.0 45.0 45.0 45.0 45	nd: 7 5	200 calculated ppb BKG; COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS:	As left: 13.2 0.944 -650.8 743 32.2 45.0 325.2 325.0 45.0	350	400
	indicated by 20 10 10 10 10 10 10 10 10 10 10 10 10 10	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS: PERM OVEN HTR:	As four 14.5 1.03 -650. 742 32.6 325. 45.6 44.3	nd: 7 5 0 0 0	200 calculated ppb BKG; COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS: PERM OVEN HTR:	As left: 13.2 0.944 -650.8 743 32.2 45.0 325.2 325.0 45.0 44.38	350	400
LAMP INTENSITY: 91 LAMP INTENSITY: 92	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS: PERM OVEN HTR:	As four 14.5.1.03 As four 14.5	nd: 	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS: PERM OVEN HTR: PRESSURE:	As left: 13.2 0.944 -650.8 743 32.2 45.0 325.2 325.0 45.0 44.38	350	400
Internal Span: 40.0 Internal Span: 37.4	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10	BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS: PERM OVEN HTR: PERSSURE: SAMPLE FLOW:	As four 14.5 1.03 -650, 742 32.0. 45.0 325.1 45.0 45.0 44.3 654.0 .0.505 91	nd: 7755 0000 0000 07744	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN HTR: PRESSURE: SAMPLE FLOW:	As left: 13.2 0.944650.8 743 32.2 45.0 325.2 325.0 44.38 654.7 0.509	350	400
nments:	indicated ppb 20 10 10 10 10 10 10 10 10 10 10 10 10 10	BKG: COFF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS: PERM OVEN HTR: PRESSURE: SAMPLE FLOW: LAMP INTENSITY:	As four 14.5 1.03 -650, 742 32.0. 45.0 325.1 45.0 45.0 44.3 654.0 .0.505 91	nd: 7755 0000 0000 07744	200 calculated ppb BKG: COEF: PMT: FLASH: INTERNAL: CHAMBER: CONVERTER TEMP: CONVERTER SET: PERM OVEN GAS: PERM OVEN HTR: PRESSURE: SAMPLE FLOW: LAMP INTENSITY:	As left: 13.2 0.944 -650.8 743 32.2 45.0 325.2 325.0 45.0 44.38 654.7 0.509	350	400

of Minute Averages



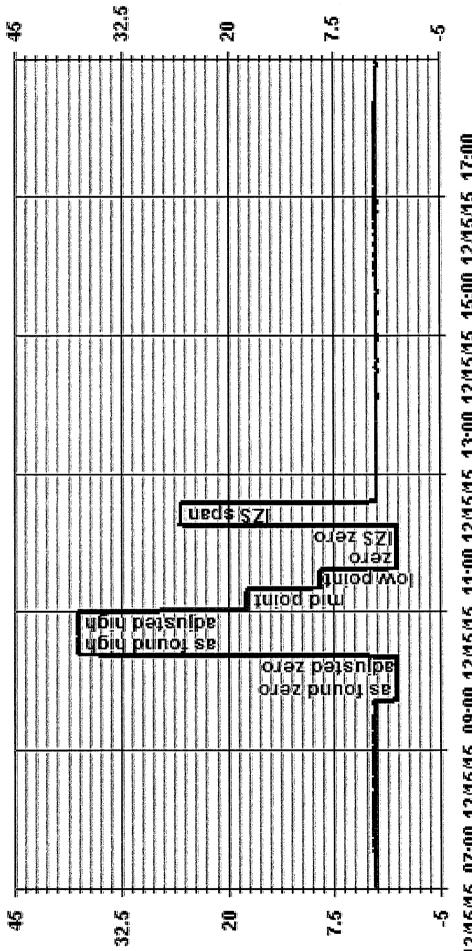
12/14/15 08:00 12/14/15 10:00 12/14/15 12:00 12/14/15 14:00 12/14/15 16:00 12/14/15 18:00

- LICA TRS_ PPB



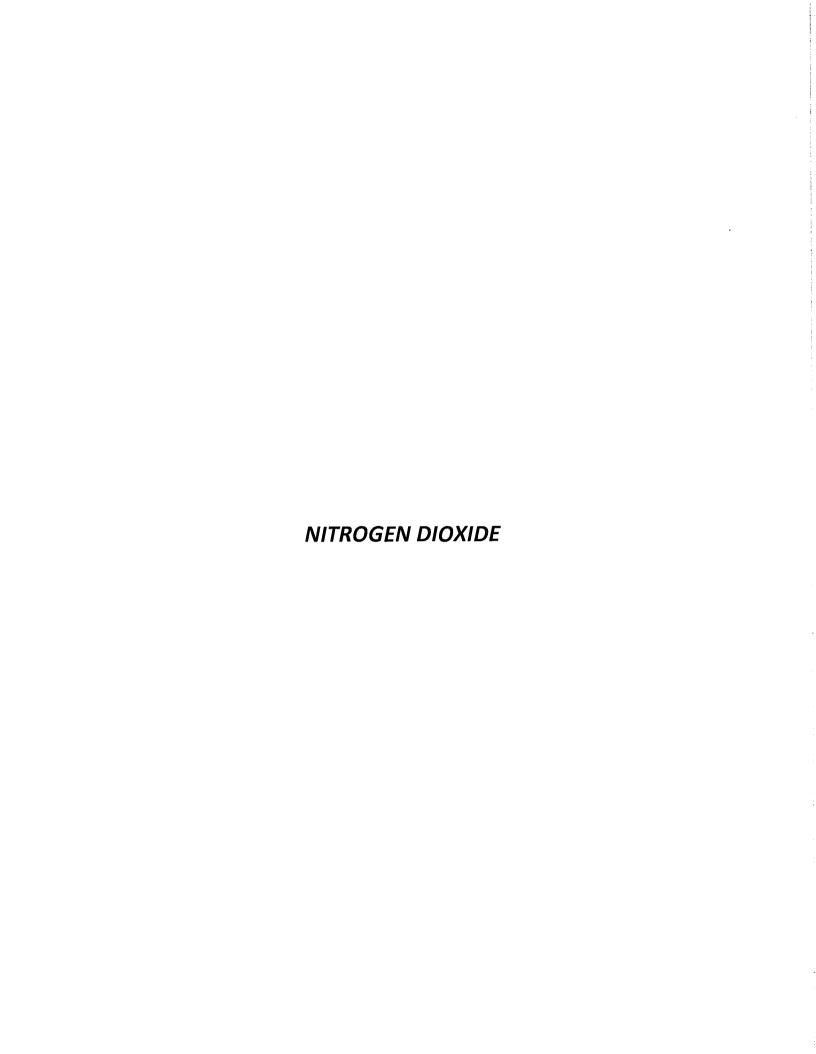
Date:	December 15	5, 2015	_		metric Pressure:		0,925 atm	
Company/Airshed: _ Location/Station Name:	Cold Lake S	outh	_		Temperature °C: ther Conditions:	Mainly clo	22 oudy with sunn	v hroake
Parameter:	Total Hydrod				bration Purpose:		outine monthly	
Start/End Time 24 hr. (mst): Calibration Method:	9:19 / 12 Gas Dilut		_		ed By/Reviewer;	Alex Yakupo		Trina Whitsitt
Cumpletion Metilod.	Out Blide	1011		Car	Gas Expiry Date:		ugust 12, 2017	
alyzer: Serial Number:	4274087	10		D		50		
Last Calibration Date:	November 5	, 2015		Range ppm; As Found C.F.;		.001		
Previous Cal High Point C.F.:	1.001			New C.F.:		.000		
lbrator:				***************************************				
Flow Meter ID's:	n/a API 700		_			_		
Make & Model: _ Serial #:	830	,	_	Standard Calibration Po		ge of: Target pp	60 ppm m	
Cal Gas Cylinder I.D. #:	LL3367		_	Hi		38		
CH ₄ /C ₃ H ₈ Cylinder Conc. (ppm): CH ₄ as propane/total CH ₄	601.4 555.5	202,0	٦	M Lo		18 9		
equivilants (ppm):		1156.9	Murre or	CTABULTIVAC OF C	FORFAGED OR OR			
Callbusto		NIS ARE 15 W	INOTES OF	STABILITY AS OF S Calculated				
	r Flow Rates (cc/min)	<u> </u>	7	Concentration:		oncentration:	Correcti	ion Factors:
Point as found zero	Diluent 1999	Cal Gas 0,00	Total 1999	(ppm) 0.0		pm) .10		n/a
as found high	1932	65.00	1997	37.66	3	7.70	1	.001
adjusted zero adjusted high	1999 1932	0,00 65,00	1999 1997	0,00 37.66		7.65		n/a .,000
mid	1969	31.00	2000	17.93	1	7.80	1	.007
low calibrator zero	1984 1999	0.00	2000 1999	9,26 0,0		.10		.017 n/a
		0,00	1333	VIO.		Average C.F.=		.008
		Han	r Regress!	n/Calibration Res	ults:			
	b (Inte	Correlation Coo ercept as % of 1	Slope = =(full scale	0.18%	> or = 0.995 .95-1.05 ± 3% F.S.			
	% cha	nge in C.F. froi	m last cal≃	-0,05%	± 10%			
		Thermo 51C	Total Hydro	ocarbon Analyzer (Calibration			
40								
35 30 40 40 40 40 40 40 40 40 40 40 40 40 40		_		17.80				37.65
30 PE 15 PE 10 PE	9,10			17.80				37.65
30 pg 25 co bg 25 co		15						
10 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	9,10	15		17.80 20 alculated ppm	25	30	35	37.65
30 pg 25 co bg 25 co	10	15 ound:		20		30 As left:		
30 pg 25 co bg 25 co	10	······································		20	H2 cylinder			
30 and 25	10 As for H2 cylinder (psi):	ound: 1300		20	H2 cylinder (psi): H2 cylinder reg	As left:		
30 and 25	As for H2 cylinder (psi): cylinder reg set (psi):	1300 22		20	H2 cylinder (psi): H2 cylinder reg set (psi):	As left: 1300		
30	As for H2 cylinder (psi): cylinder reg set (psi); Span Cylinder (psi):	ound: 1300		20	H2 cylinder (psi): H2 cylinder reg set (nsi): Span Cylinder (psi):	As left:		
30 82 92 20 10 5 0 0000 5	As for H2 cylinder (psi): cylinder reg set (psi): Span Cylinder (psi): pan Cylinder Reg Set (psi):	1300 22		20	H2 cylinder (psi): H2 cylinder reg set (osi): Span Cylinder	As left: 1300		
30	10 As for H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Alr Gen	1300 22 1200		20	H2 cylinder (psl): H2 cylinder reg set (nsl): Span Cylinder (psl): Span Cylinder Reg Set (nsl): Zero Alr Gen	As left: 1300 22 1200		
30 82 92 20 10 5 0 0 0 0 5	As for H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement	1300 22 1200 22		20	H2 cylinder (ps): H2 cylinder reg set (osi): Span Cylinder (ps): Span Cylinder Reg Set (osi): Zero Air Gen Pressure: measurement	As left: 1300 22 1200 22		
30 82 92 20 10 5 0 0 0 0 5	As for H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms:	1300 22 1200 22 34 None		20	H2 cylinder (psi): H2 cylinder reg set (nsil): Span Cylinder (psi): Span Cylinder Reg Set (psil): Zero Air Gen Pressure: measurement alarms:	As left: 1300 22 1200 22 34 None		
30 82 92 20 10 5 0 0 0 0 5	As for H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms:	1300 22 1200 22 34 None		20	H2 cylinder (pst): H2 cylinder reg set (nsil): Span Cylinder (psi): Span Cylinder Reg Set (psil): Zero Air Gen Perssure: measurement alarms: service alarms:	As left: 1300 22 1200 22 34 None		
30 82 92 20 10 5 0 0 0 0 5	As for H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms:	1300 22 1200 22 34 None None 1395		20	H2 cylinder (psi): H2 cylinder reg set (nsil): Span Cylinder (psi): Span Cylinder Reg Set (psil): Zero Air Gen Pressure: measurement alarms:	As left: 1300 22 1200 22 34 None		
30 82 92 20 10 5 0 0 0 0 5	As for H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try:	1300 22 1200 22 34 None None 1395 1		20	H2 cylinder (psi): H2 cylinder reg set (nsil): Span Cylinder (psi): Span Cylinder (psi): Span Cylinder (psi): Zero Alr Gen Pressure: measurement alarms: service alarms: cnt: rng: try:	As left: 1300 22 1200 22 34 None None 1369		
30 82 92 20 10 5 0 0 0 0 5	As fr H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Alar Gen Pressure: measurement alarms: service alarms: cnt: rng:	1300 22 1200 22 34 None None 1395		20	H2 cylinder (psi): H2 cylinder reg set (osi): Span Cylinder (psi): Span Cylinder Reg Set (osi): Zero Air Gen Pressure: measurement alarms: service alarms:	As left: 1300 22 1200 22 34 None None 1369		
30 80 80 80 80 80 80 80 80 80 8	As fr. H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: fim: det: Hame:	1300 22 1200 22 34 None None 1395 1 0 183,4 125,3 183		20	H2 cylinder (psi): H2 cylinder reg set (nsil): Span Cylinder (psi): Span Cylinder (psi): Span Cylinder (psi): Zero Alr Gen Perssure: measurement alarms: service alarms: cnt: rng: try: film: det: Flame:	As left: 1300 22 1200 22 34 None None 1369 1 0 182,9 125,4 182		
30 82 92 20 10 5 0 0 0 0 5	10 As fe H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: cnt: rng: try: film: det: Flame: Flame: Base:	1300 22 1200 22 34 None None 1395 1 0 183.4 125.3 188 125		20	H2 cylinder (psi): H2 cylinder reg set (osi): Span Cylinder (psi): Span Cylinder Reg Set (osi): Zero Alr Gen Pressure: measurement alarms: service alarms: try: fim: det:	As left: 1300 22 1200 22 34 None None 1369 1 0 182.9 125.4 182 125 125		
30 44 25 94 20 9 15 5 0 0 0 000 5	As fr H2 cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: fim: dett: Flame: Filter: Base: Sample psi:	1300 22 1200 22 34 None None 1395 1 0 183,4 125,3 183 125 06,53		20	H2 cylinder (psi): H2 cylinder reg set (nsii): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Alr Gen Pressure: measurement alarms: service alarms: cnt: rng: try: film: det; Flame: Filter: Base: Sample psi:	As left: 1300 22 1200 22 34 None None 1369 1 0 182,9 125,4 182 125 125 06,53		
30	As fr H2 cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: fim: dett: Flame: Filter: Base: Sample psi: chternal Air Pressure:	1300 22 1200 22 34 None None 1395 1 0 183,4 125,3 183 125 06,53 20		20	H2 cylinder (psi): H2 cylinder reg set (nsi): Span Cylinder (psi): Span Cylinder Res Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: try: film: filter: Flame: Filter: Base:	As left: 1300 22 1200 22 34 None None 1369 1 0 182,9 125,4 182 125 06,53 20		
30	As fr As fr H2 cylinder (psi): cylinder reg set {psi}: cylinder Reg Set	1300 22 1200 22 34 None None 1395 1 0 183.4 125.3 183 125 125 06.53 20 14		20 akulated ppm	H2 cylinder (psi): H2 cylinder reg set (nsii): Span Cylinder (psi): Span Cylinder (psi): Span Cylinder Reg Set (psii): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: film: dett: Flame: Filter: Flame: Sample psi: Internal Air Internal Fuel Pressure:	As left: 1300 22 1200 22 34 None None 1369 1 0 182,9 125,4 182 125 06,53 20 14		
30	As fr H2 cylinder (psi): cylinder reg set (psi); Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: fim: det: Flame: Fliter: Basee: Sample psi: sternal Air Pressure: ernal Fuel Pressure:	1300 22 1200 22 34 None None 1395 1 0 183.4 125.3 183 125 125 20 14		20 akulated ppm	H2 cylinder (psi): H2 cylinder reg set (osi): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: cnt: rng: try: fim: det: Flame: Flame: Filter: Base: Sample psi: internal Air Internal Fuel Pressure: Gauge psi:	As left: 1300 22 1200 22 34 None None 1369 1 0 182.9 125.4 182 125 20 14 27		
30	As fr As fr H2 cylinder (psi): cylinder reg set {psi}: cylinder Reg Set	1300 22 1200 22 34 None None 1395 1 0 183.4 125.3 183 125 125 06.53 20 14		20 akulated ppm	H2 cylinder (psi): H2 cylinder reg set (nsii): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Alr Gen Pressure: measurement alarms: service alarms: cnt: rng: try: fim: det: Flame: Filter: Base: Sample psi: Internal Air Internal Fuel Pressure: Internal Fuel	As left: 1300 22 1200 22 34 None None 1369 1 0 182,9 125,4 182 125 06,53 20 14		
30	As fr H2 cylinder (psi): cylinder reg set (psi); Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: fim: det: Flame: Fliter: Basee: Sample psi: sternal Air Pressure: ernal Fuel Pressure:	1300 22 1200 22 34 None None 1395 1 0 183.4 125.3 183 125 125 20 14		20 akulated ppm	H2 cylinder (psi): H2 cylinder reg set (osi): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: cnt: rng: try: fim: det: Flame: Flame: Filter: Base: Sample psi: internal Air Internal Fuel Pressure: Gauge psi:	As left: 1300 22 1200 22 34 None None 1369 1 0 182.9 125.4 182 125 20 14 27		- ,

of Minute Averages



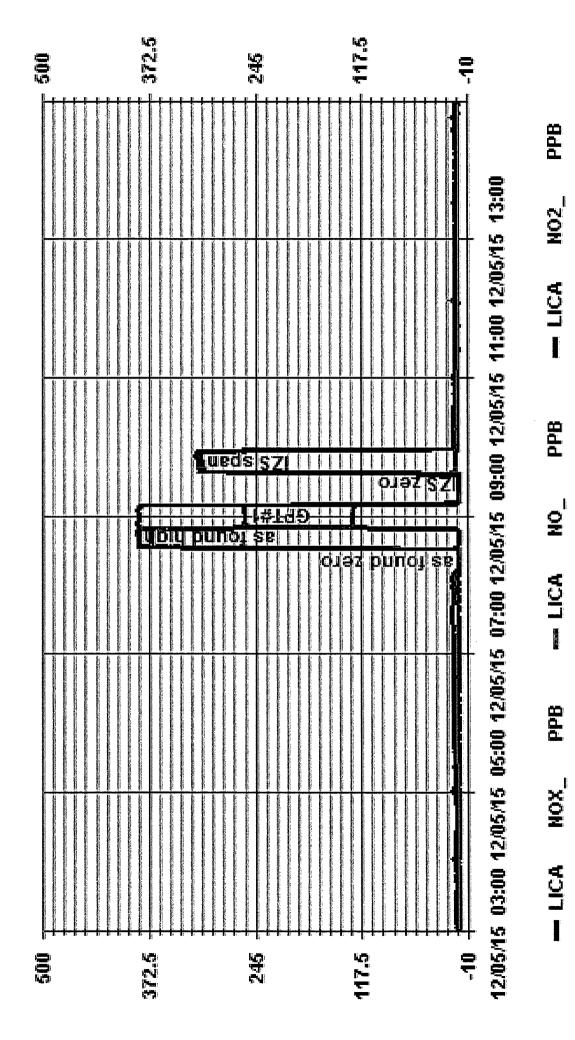
12/15/15 07:00 12/15/15 09:00 12/15/15 11:00 12/15/15 13:00 12/15/15 15:00 12/15/15 17:00

PPG H I LEA

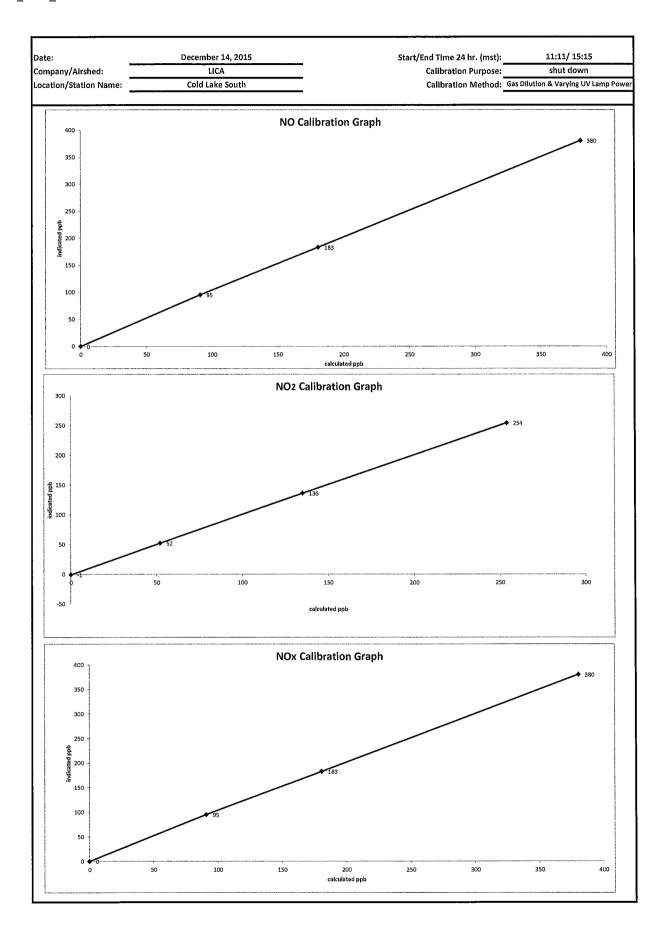


Serial Numbers	Date:	Dec	cember 5, 2	2015				Barometric Pressure:		0.924 a	atm
Septemble Property Septemble Septe					•		Sta				
R.P. T. to be used for Cloner No											
Calibration Methods Calibration Nethods Calibration Nethods Calibration Nethods Calibration Nethods No.	_			.2			Par		Alex V		
Serial Number: 427468716 NO o		Gas Dilution		V Lamp Power	•		rei	• • • • • • • • • • • • • • • • • • • •	Alex I		
Serial Number					-			,,			
Serial Number: A27406716 No weeker 5, 2015 No weeker 5, 201	nalyzer:									_	
Last Calibration Date: November 5, 2015 NO NO NO 0.099 0.388 n/s			40740071	•							
All Points Are 15 Minutes (Commit) Solid Store Solid	-										
Standard Calibration Points for a Range of S00 ppb Serial ## Standard Calibration Points for a Range of S00 ppb Serial ## 11000613	_			2015	•	- 1					
Flow Mate & Models Sable 3010					•						
Make & Model SABIO 2010 SABIO 2010 Sarget No (psb) Terget No (psb) Terget No (psb) Co Coc Coc Sabid # 1190613 1190613											
Serial #1 1900613 BLM002073 Mild 180 146 77	-			-	1					IO (muh)	0.0
Mild 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150 146 150	_			-							
NO/NOK Gas Conc. (ppm) 50.6 50.6	_			-							·
Star Point #1				-							n/a
Stra Point #2	· · · · · · · · · · · · · · · · · · ·			-							n/a
Calibrator Flow Rates cc/min Calculated NO Indicated NO Indicated NO NO CF, NOX CF, NOX CF, Point Diluent Diluent Diluent Cal Gas Total Flow (ppb)										via .	n/a
Point	A-III	. Date : 1	Inch 1	ALL P					NO 0 "	NO. 07	
as found zero 5012 0.0 5012 0.0 0 0.0 0.0 0.0 n/a r/a around high 4976 37.7 5014 380.5 380.5 380.5 380.5 380.5 380.5 0.988 0.988 0.988 *********************************				Total Flow					NO C.F.	NOX C.F.	
as found high 4976 37.7 5014 380.5 380.5 385.0 385.0 0.385 0.988 0.988 Average C.F.= n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a									n/a	n/a	
Calibrator Flow Rates (cc/mln) Calibrator Setting Indicated NO Indicated NO Indicated NO (ppb) (
Calibrator Flow Rates (zc/mln) Calibrator Setting Indicated NO Indicated NO Indicated NO NO drop NO₂ gain NO₂									n/a	n/a	
Point Diluent Cal Gas Total Flow Volts or ppb (ppb) (pp			<u> </u>	ALLF							
NOx reference	-							-			NO ₂ C.F.
as found high NO2											(ppb)
Linear Regression/Calibration Results: NO NOx NO2 NOx NO2 NOx NO3 NOx NO4 NO5 NO4 NO4 NO5											1,000
NO	as is an a might rese				200,0						n/a
Correlation Coeffecient					Linear Re	gression/Calibration	Results:			-	
Slope					NO	NOx	NO ₂	LIMITS			
b (Intercept as % of full scale)=		Cor	rrelation C								
Noz converter effeciency 1.00% 1.07% 1.00% 1.00% 0.96 to 1.04 1.00 0.96 to 1.04 1.00 0.96 to 1.04 1.00 1.00 0.96 to 1.04 1.00 0.96 to 1.04 1.00 0.96 to 1.04 1.00											
NO2 converter effeciency 1.00 1.00 1.04											
As found: As left: NO Bkg ppb: 5.2 NO Bkg ppb: 5.4 NOX Bkg ppb: 5.4 NOX Bkg ppb: 5.4 NOX Bkg ppb: 5.4 NOX Bkg ppb: 5.4 NOX Coef: 1.040 NOX Coef: 1.040 NOX Coef: 1.012 NOX Coef: 1.012 NOX Coef: 1.003 PMT: -850 PMT:		_				0.00%					
NO Bkg ppb: 5.2 NO Bkg ppb: 5.2 NOx Bkg ppb: 5.4 NOX Bkg ppb: 5.4 NO Coef: 1.040 NO Coef: 1.040 NOx Coef: 1.012 NOX Coef: 1.003 NO2 Coef: 1.003 NO2 Coef: 1.003 PMT: -850 PMT: -850 Battery: 3.2 Battery: 3.2 Internal: 27.7 Internal: 27.7 Chamber: 49.9 Chamber: 50.0 Cooler: -2.4 Coler: -2.5 Converter: 317 Converter: 318 Converter Set: 319 Converter Set: 319 Pressure: 201.9 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 311.4		,,,,	2 001176116					0.00 (0 2.0 .			
NOx Bkg ppb: 5.4 NOx Bkg ppb: 5.4 NO Coef: 1.040 NO Coef: 1.040 NOx Coef: 1.012 NOx Coef: 1.003 NO2 Coef: 1.003 NO2 Coef: 1.003 PMT: -850 PMT: -850 Battery: 3.2 Battery: 3.2 Internal: 27.7 Internal: 27.7 Chamber: 49.9 Chamber: 50.0 Cooler: -2.4 Cooler: -2.5 Converter: 317 Converter: 318 Converter Set: 319 Converter Set: 319 Pressure: 201.9 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 311.4	<u> </u>		As f	ound:				As left:			
NO Coef: 1.040 NO Coef: 1.040 NOx Coef: 1.012 NOx Coef: 1.012 NO2 Coef: 1.003 NO2 Coef: 1.003 PMT: -850 PMT: -850 Battery: 3.2 Battery: 3.2 Internal: 27.7 Internal: 27.7 Chamber: 49.9 Chamber: 50.0 Cooler: -2.4 Cooler: -2.5 Converter: 317 Converter: 318 Converter Set: 319 Converter Set: 319 Pressure: 201.8 Pressure: 201.9 Sample Flow: 0.490 Ozonator Flow: 0.490 Ozonator Flow: OK Ozonator Flow: 0K Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO: 288 Internal Span NO: 311.4	NO	Bkg ppb:		5.2	_		NO Bkg ppb:	5.2			
NOx Coef: 1.012 NOx Coef: 1.012 NO2 Coef: 1.003 NO2 Coef: 1.003 PMT: -850 PMT: -850 Battery: 3.2 Battery: 3.2 Internal: 27.7 Internal: 27.7 Chamber: 49.9 Chamber: 50.0 Cooler: -2.4 Cooler: -2.5 Converter: 317 Converter: 318 Converter Set: 319 Pressure: 319 Pressure: 201.8 Pressure: 201.9 Sample Flow: 0.490 Ozonator Flow: 0.490 Ozonator Flow: OK Ozonator Flow: 0K Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO: 288 Internal Span NO: 311.4	NO	Bkg ppb:			- -				•		
NO2 Coef: 1.003 NO2 Coef: 1.003 PMT: -850 PMT: -850 Battery: 3.2 Battery: 3.2 Internal: 27.7 Internal: 27.7 Chamber: 49.9 Chamber: 50.0 Cooler: -2.4 Cooler: -2.5 Converter: 317 Converter: 318 Converter Set: 319 Converter Set: 319 Pressure: 201.8 Pressure: 201.9 Sample Flow: 0.490 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO: 288 Internal Span NO: 311.4											
PMT: -850 PMT: -850 Battery: 3.2 Battery: 3.2 Internal: 27.7 Internal: 27.7 Chamber: 49.9 Chamber: 50.0 Cooler: -2.4 Cooler: -2.5 Converter: 317 Converter: 318 Converter Set: 319 Converter Set: 319 Pressure: 201.8 Pressure: 201.9 Sample Flow: 0.490 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO: 288 Internal Span NO: 311.4									-		
Battery: 3.2 Battery: 3.2 Internal: 27.7 Internal: 27.7 Chamber: 49.9 Chamber: 50.0 Cooler: -2.4 Cooler: -2.5 Converter: 317 Converter: 318 Converter Set: 319 Converter Set: 319 Pressure: 201.8 Pressure: 201.9 Sample Flow: 0.490 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO: 288 Internal Span NO: 311.4	Į.				•				-		
Internal: 27.7					-				-		
Cooler: -2.4 Cooler: -2.5 Converter: 317 Converter: 318 Converter Set: 319 Converter Set: 319 Pressure: 201.8 Pressure: 201.9 Sample Flow: 0.490 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO: 288 Internal Span NO: 311.4					•				-		
Converter: 317 Converter: 318 Converter Set: 319 Converter Set: 319 Pressure: 201.8 Pressure: 201.9 Sample Flow: 0.490 O.490 Ozonator Flow: OK O.200 OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO2: 288 Internal Span NO2: 311.4											
Converter Set: 319 Converter Set: 319 Pressure: 201.8 Pressure: 201.9 Sample Flow: 0.490 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO2: 288 Internal Span NO2: 311.4											
Pressure: 201.8 Pressure: 201.9 5ample Flow: 0.490 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO2: 288 Internal Span NO2: 311.4									-		
Sample Flow: 0.490 Sample Flow: 0.490 Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO2: 288 Internal Span NO2: 311.4					-				-		
Ozonator Flow: OK Ozonator Flow: OK Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO2: 288 Internal Span NO2: 311.4					•				-		
Internal Span NO: 4.4 Internal Span NO: 4.4 Internal Span NO2: 288 Internal Span NO2: 311.4					•				•		
·					-		Internal Span NO:	4.4			
Internal Span NOx: 292 Internal Span NOx: 315.9		•			<u> -</u>						
	Internal	span NOx:		797	<u> </u>		Internal Span NOx:	315.9			
omments:											

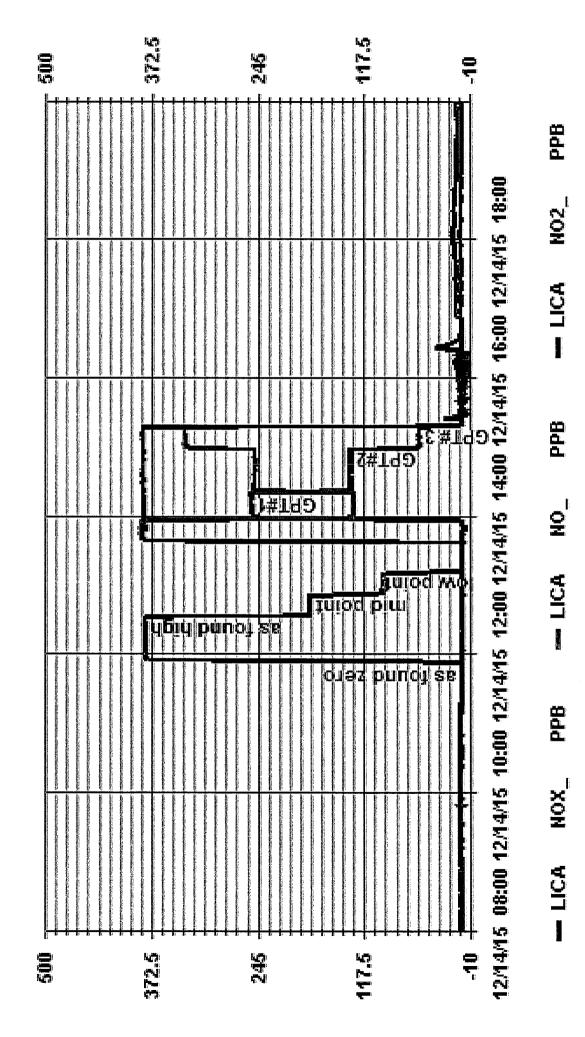
of Winds Averages



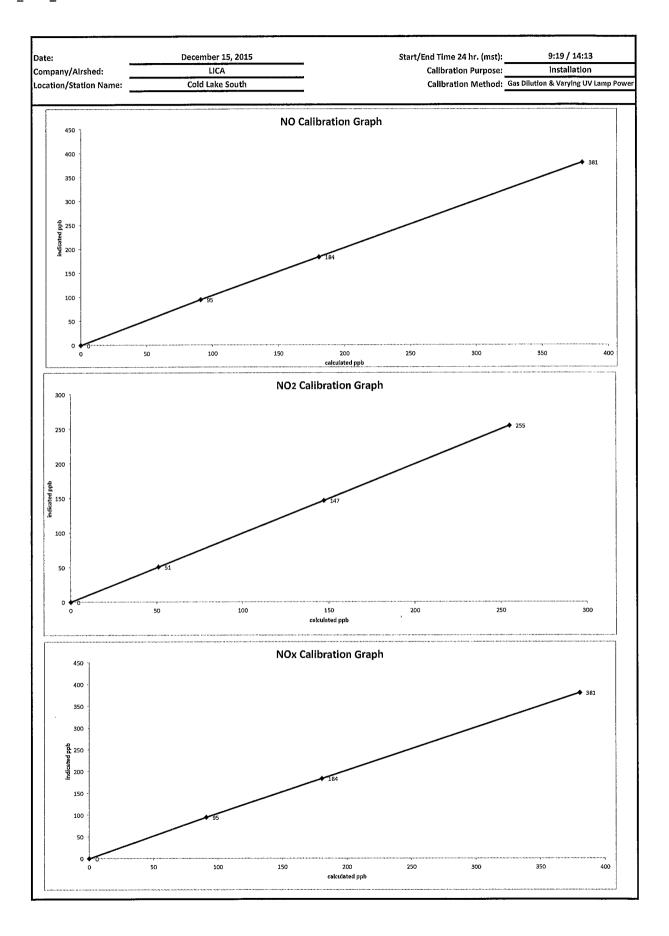
Date:	Dece	ember 14,	2015				Barometric Pressure:		0.92	8
Company/Airshed:		LICA					tion Temperature °C:		22	
Location/Station Name:		ld Lake Soi 1:11/ 15:1					Weather Conditions: Calibration Purpose:		A few clo	
Start/End Time 24 hr. (mst): 3.P.T. to be used for Ozone?	1	No No	<u> </u>	•			ormed By/Reviewer:	Alex Ya		Trina Whitsi
Calibration Method:	Gas Dilution		Lamp Power	•			Cal Gas Explry Date:		March 12	, 2019
nalyzer:			- W-V			Corr	ection Factors:			
			_		[Previous C.F.:	As Found C.F.:		C.F.:	
Serial Number:		427408716 ember 5, 2		•	NO = NO ₂ =	0.999 1.000	1.001	n,	/a /a	
Last Calibration Date: Range ppb:	IVOV	500	.013		NO ₂ =	0.999	1.001		/a	
allbrator:										
Flow Meter ID's:	n/					ndard Calibration Po		500 ppb		
Make & Model:	SABIO 2				Po		Target NO (ppb)		1O ₂ (ppb) 50	Cc Ozone S
Serial #:	11900				HI		380 180	_	45	n/a n/a
Cal Gas Cylinder I.D. #: NO/NOx Gas Conc. (ppm):	50.6	50.6			Lo		90		50	n/a
HO/ NOX das conc. (ppm):	20.0	30.0	•		Extra P		n/a		va 💮	n/a
					Extra P	oint #2	n/a	n	√a	n/a
			ALLF	OINTS ARE 15 MINU	TES OF STABILITY AS	OF SEPTEMBER 23, 2	0 <u>15</u>			
Calibrator Flo				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.	
Point	Diluent		Total Flow	(ppb)	(ppb)	(ppb)	(ppb)	$\geq \leq$		
as found zero	5012	0.0	5012	0	0	0.0 380.0	0.0	n/a 1.001	n/a 1.001	
as found high	4976 4997	37.7 17.90	5014 5015	380,5 180.6	380.5 180.6	183.0	183.0	0.987	0.987	
mid low	5004	9.00	5013	90,8	90.8	95.0	95.0	0.956	0.956	
1017		5.00				······	Average C.F.=	0.981	0,981	
			<u>ALL F</u>	POINTS ARE 15 MINU	TES OF STABILITY AS	OF SEPTEMBER 23, 2	015			
Calibrator Flo	w Rates (cc	:/min)		Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ gain	NO2 C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(ppb)	(ppb)	(dqq)	(ppb)	(ppb)	(ppb)
NOx reference	4976	37.70	5014	0.0	384.0	383,0	-1.0	0.0	-1.0	1,000
as found high NO2	4976	37.70	5014	260.0 135.0	130.0 249.0	383.0 383.0	253.0 135.0	254.0 135.0	254.0 136.0	1.000 0.993
gpt mid gpt low	4976 4976	37.70 37.70	5014 5014	50.0	332.0	383,0	51.0	52.0	52.0	1.000
Spt 1044	1570	27170	542.1	L				Average	e NO₂ C.F.≈	0.998
				Linear Re	gression/Calibration	Results:			_	
				NO	NOx	NO ₂	LIMITS			
	Con	rrelation C	oeffecient =	1.000	1,000	1.000	> or = 0.995			
			Slope =		1.004	0.996	0.90-1.10			
			f full scale)=		0.45%	-0.08%	± 3% F.S. ± 10%			
			om last cal≔ er effeciency		0.00%	-0.23% 0.99	0.96 to 1.04			
	NO	z converte	reneciency			0,99	0.50 to 1.04			
			found:			NO Pleasely	As left:			
	IO Bkg ppb:		5,2 5,4 .	_		NO Bkg ppb: NOx Bkg ppb:	n/a n/a	-		
(4)	Ox Bkg ppb: NO Coef:		.040	-		NO Coef:	n/a	-		
	NOx Coef:		,012	-		NOx Coef:	n/a	-		
	NO2 Coef:	1	.003	- -		NO2 Coef:	n/a	_		
	PMT:		850	<u>-</u>		PMT:	n/a	_		
	Battery:		3.2	_		Battery:	n/a	-		
	Internal: Chamber:		27.3 50.0	_		Internal: Chamber:	n/a n/a	-		
	Cooler:		-2.4	_		Cooler:	n/a	-		
	Converter:		317	-		Converter:	n/a	-		
Co	nverter Set:		320	-		Converter Set:	n/a	-		
	Pressure:		05.6			Pressure:	n/a	-		
C.	ample Flow:		,492	_		Sample Flow:	n/a	-		
	nator Flow:		OK 15.9	_		Ozonator Flow: Internal Span NO:	n/a n/a	-		
Ozo	al Span NO:		4.4	-		internal Span NO2:	n/a	-		
Ozo Intern	I Span NO?	:								
Ozo Interna Interna	l Span N O2: Il Span NOx:		11.4	-		Internal Span NOx:	n/a	_		



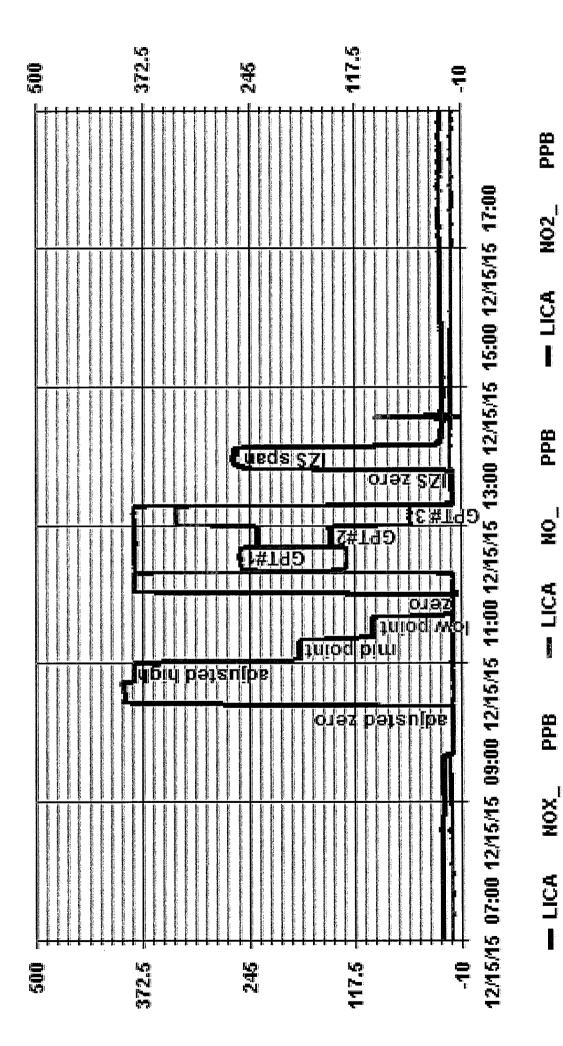
Of Minute Averages

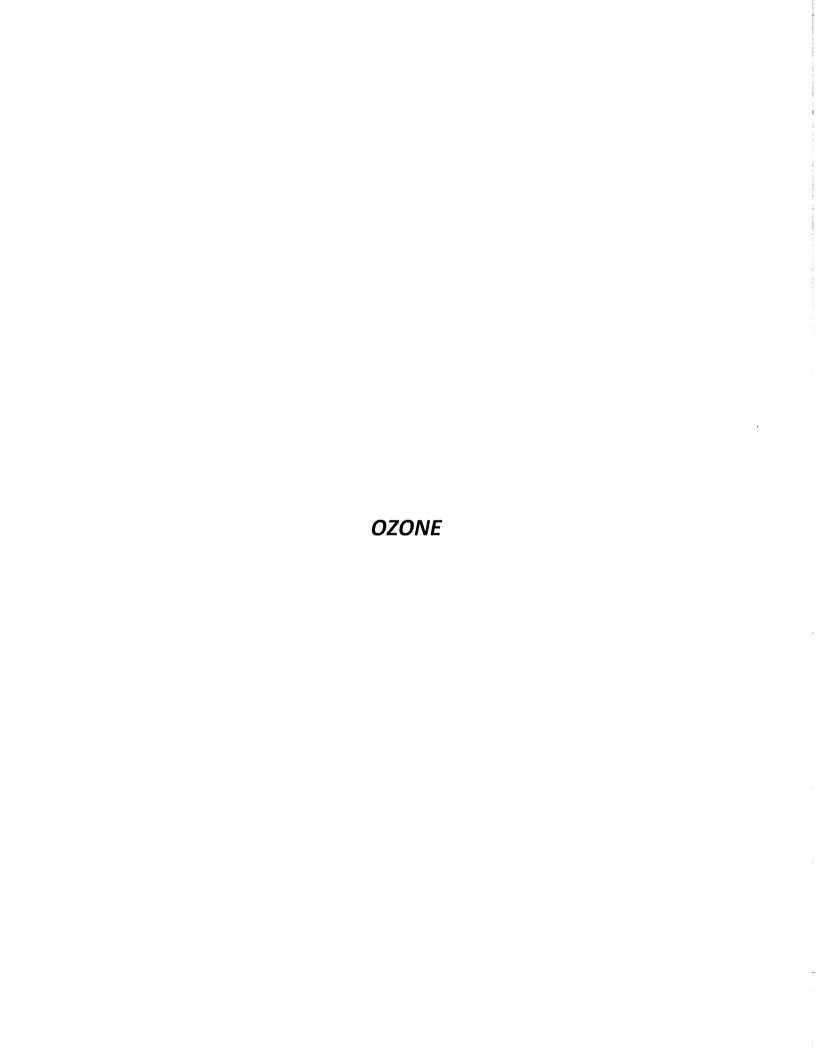


Date:	Dec	cember 15,	2015				Barometric Pressure:		0.925 a	atm
Company/Airshed:		LICA				St	ation Temperature °C:		22	
Location/Station Name:		old Lake So		•			Weather Conditions:	Ma	inly cloudy with	
Start/End Time 24 hr. (mst):		9:19 / 14:1	13				Calibration Purpose:		installa	
G.P.T. to be used for Ozone? Calibration Method:		No n & Varving U	V Lamp Power	-		Pe	rformed By/Reviewer: Cal Gas Expiry Date:		Yakupov March 12	Trina Whits
nalyzer:				•		Cor	rection Factors:			, 2013
iaiyzei:					·	Previous C.F.:	As Found C.F.:	Nev	w C.F.:	
Serial Number:		150566439	93	•	NO =	n/a	n/a		.999	
Last Calibration Date:		n/a 500			NO₂≍	n/a	n/a		.000	
Range ppb:		500		•	NOx =	n/a	n/a	0.	.999	
librator: Flow Meter ID's:	n	ı/a			Sta	ndard Calibration Po	oints for a Range of:	500 ppb		
Make & Model:		2010 D	-		Table 100 and	Int	Target NO (ppb)		NO ₂ (ppb)	Cc Ozone
Serial #:	1190	00613	-		H	lgh	380	- 2	250	n/a
Cal Gas Cylinder I.D. #:		02073	_			Ild	180		146	n/a
NO/NOx Gas Conc. (ppm):	50.6	50,6	_			OW No. Inc. 444	90		50	n/a
						oint #1 oint #2	n/a		n/a n/a	n/a
			ALLF	OINTS ARE 15 MINU			n/a 015		1 14 64	n/a
Calibrator Flo	w Rates (co	:/min)		Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.	
Point	Diluent		Total Flow	(ppb)	(ppb)	(ppb)	(ppb)	> <	$\geq <$	
adjusted zero	5012	0,0	5012	0	0	0.0	0.0	n/a	n/a	
adjusted high	4976	37.7	5014	380,5	380.5	381.0	381.0	0.999	0,999	
mid	4997 5004	17.90 9.00	5015	180,6 90,8	180.6	184.0	184.0	0.982	0.982	
low calibrator zero	5012	0.00	5013 5012	90.8	90.8	95.0	95.0 0.0	0.956 n/a	0,956 n/a	
	3012						Average C.F.=	0,979	0.979	
0.10 . 11	D/		ALLF	OINTS ARE 15 MINU			015			
Calibrator Flo			I	Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop		NO ₂ C.F.
Point NOx reference	Diluent 4976	Cal Gas 37.70	Total Flow 5014	volts or ppb 0.0	(ppb) 382,0	(ppb) 382.0	(ppb)	(ppb)	(ppb)	(ppb)
adjusted high NO2	4976	37.70	5014	260.0	127.0	382.0	0.0 255.0	0.0 255.0	0.0 255.0	1,000
gpt mid	4976	37.70	5014	145.0	235.0	382.0	147.0	147.0	147.0	1.000
gpt low	4976	37.70	5014	50,0	331.0	382.0	51.0	51.0	51.0	1,000
				Linear Re	gression/Calibration	Roculter		Averag	e NO₂ C.F.≔	1.000
			ĺ	NO NO	NOx	NO ₂	LIMITS			
	Co	rrelation Co	oeffecient =	1.000	1.000	1.000	> or = 0.995			
			Slope ≈	1,001	1.001	1.000	.95-1.05			
	b (Interc	ept as % of	full scale)=	0.46%	0.46%	0.00%	± 3% F.S.			
			om last cal≍	n/a	n/a	n/a	± 10%			
	NO	2 converte	r effeciency			1.00	0.96 to 1.04			
	NO Ph-		ound: n/a			NO BL	As left:			
	NO Bkg: NOx Bkg:		1/a 1/a			NO Bkg: NOx Bkg:	3,1			
	NO Coef:		1/a			NO Coef:	0.966			
	NO2 Coef:		n/a			NO2 Coef:	1.000			
	NOx Coef:		n/a			NOx Coef:	0.997			
	PMT:		n/a n/a			PMT:	-854.7			
	Internal: Chamber:		n/a n/a			Internal: Chamber:	25,4 50.6			
	21,4,110011		n/a			Cooler:	-3.0			
	Cooler:		n/a			NO2 Converter:	325.5			
NO2	Cooler: Converter:		ı/a			NO2 Converter Set:	325.0			
	Converter: verter 5et:		_			Pressure:	184.4			
	Converter: verter 5et: Pressure:	n	/a				0.803			
NO2 Cor	Converter: verter 5et: Pressure: Flow:	n	1/a			Flow:				
NO2 Cor	Converter: everter 5et: Pressure: Flow: nator Flow:	n n	n/a n/a			Ozonator Flow:	OK			
NO2 Cor Ozoi Interna	Converter: iverter 5et: Pressure: Flow: nator Flow: il Span NO:	n n n	n/a n/a n/a			Ozonator Flow: Internal Span NO:	OK 2.5			
NO2 Cor Ozo Interna Internal	Converter: everter 5et: Pressure: Flow: nator Flow:	n n n	n/a n/a			Ozonator Flow:	OK			



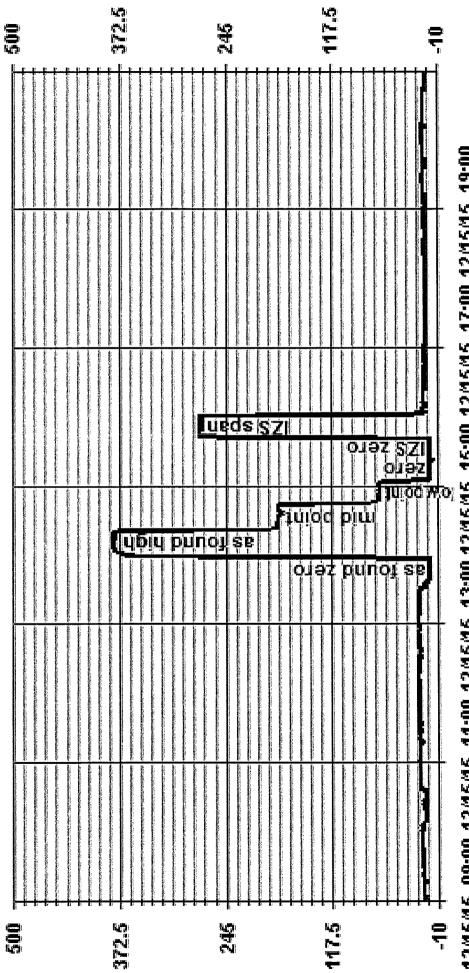
Of Minute Averages





Date:	December	15, 2015		Barometric Pressure:		0,925 atm
Company/Airshed:			-	Station Temperature °C:		22
Location/Station Name:		South	•	Weather Conditions:	Mainly cl	oudy with sunny breaks
rt/End Time 24 hr. (mst):				Calibration Purpose:		utine monthly
one Calibration Method:	Varying UV L n/a-done by Varyin			erformed By/Reviewer: Cal Gas Expiry Date:		Trina Whitsitt
	nyu done by varying	5 OV LUMP I ONCE		cui dus Expiry Dute.		.40
yzer: Serial Number:	70041	9951	Ozone Range ppb:	500		
Last Callbration Date:	November	5, 2015	As Found C.F.:	1.000		
vious Cal High Point C.F.:	1,00	00	New C.F.:	1,000	<u></u>	
orator:	,				4840 D	
Flow Meter ID's: Make & Model:		010 0	-	Point High		ge of Ozone Calibration Po 300-400 ppb
Serial #:			-	Mid		150-200 ppb
Cal Gas Cylinder I.D. #:			•	Low		50-75 ppb
car ous cymrae: no. # .			-			
	<u>AL</u>	L POINTS ARE 15 N	MINUTES OF STABILIT	Y AS OF SEPTEMBER 23, .	2015	
	Calibrator Flow	Rate (cc/min)	Calculated Concentration:	Corrected Calculated Conentration:	Indicated Concentration:	Correction Factors:
Point	Total Flow @ Point Start	Total Flow @ Point Finish	(ddd)	(ppb)	(ppb)	
as found zero	5013	5013	0.0	n/a	0,0	· n/a
as found high	5013	5013	380,0	380.0	380.0	1.000
mid	5013	5013	180.0	180.0	181.0	0.994
low	5013	5013	60.0	60.0	60.0	1,000 n/a
calibrator zero	5013	5013	0.0	n/a	0,0 Average C.F.≔	0,998
350						→ 380.0
300 - a 250 -						
dg 250 -			181.0			
100	60.0					
0 0.0				750	200	250
0	50 10		50 200 calculated	d ppb	300 As left:	350
	O3 Bkg:	As found: 0.2		O3 Bkg:	0.2	
	O3 Coef:	1,011		O3 Coef:	1.011	
	Photo Lamp O3 Lamp	9.0	-	Photo Lamp O3 Lamp	9.0	
	Bench:	27.3	-	Bench:	27.6	
	Bench Lamp:	53.4		Bench Lamp:	53.4	
	O3 Lamp:	67.3	•	O3 Lamp:	67.3	
		702.3	-	Pressure:	702.3	
	Pressure:			Cell A lpm: Cell B lpm:	0.713	
	Cell A Ipm:	0.713	•			
	Cell A lpm: Cell B lpm:	0.752 0.9	•	O3 ppb:	-0.6	
	Cell A Ipm:	0.752	· ·	•	-0.6 20.9	
	Cell A lpm: Cell B lpm: O3 ppb; Cell A ppb; Cell B ppb;	0.752 0.9 25.5 -23.7	· · ·	O3 ppb: Cell A ppb: Cell B ppb:	20.9 -22.1	
	Cell A Ipm: Cell B Ipm; O3 ppb; Cell A ppb; Cell B ppb; Cell A int;	0.752 0.9 25.5 -23.7 57443	· · · · · · · · · · · · · · · · · · ·	O3 ppb: Cell A ppb: Cell B ppb: Cell A int:	20.9 -22.1 57433	
	Cell A lpm: Cell B lpm: O3 ppb: Cell A ppb: Cell B ppb: Cell A int: Cell B int:	0.752 0.9 25.5 -23.7 57443 56111	- - - - -	O3 ppb: Cell A ppb: Cell B ppb: Cell A int: Cell B int:	20.9 -22.1 57433 56098	
	Cell A Ipm: Cell B Ipm; O3 ppb; Cell A ppb; Cell B ppb; Cell A int;	0.752 0.9 25.5 -23.7 57443		O3 ppb: Cell A ppb: Cell B ppb: Cell A int:	20.9 -22.1 57433	

Of Minute Averages



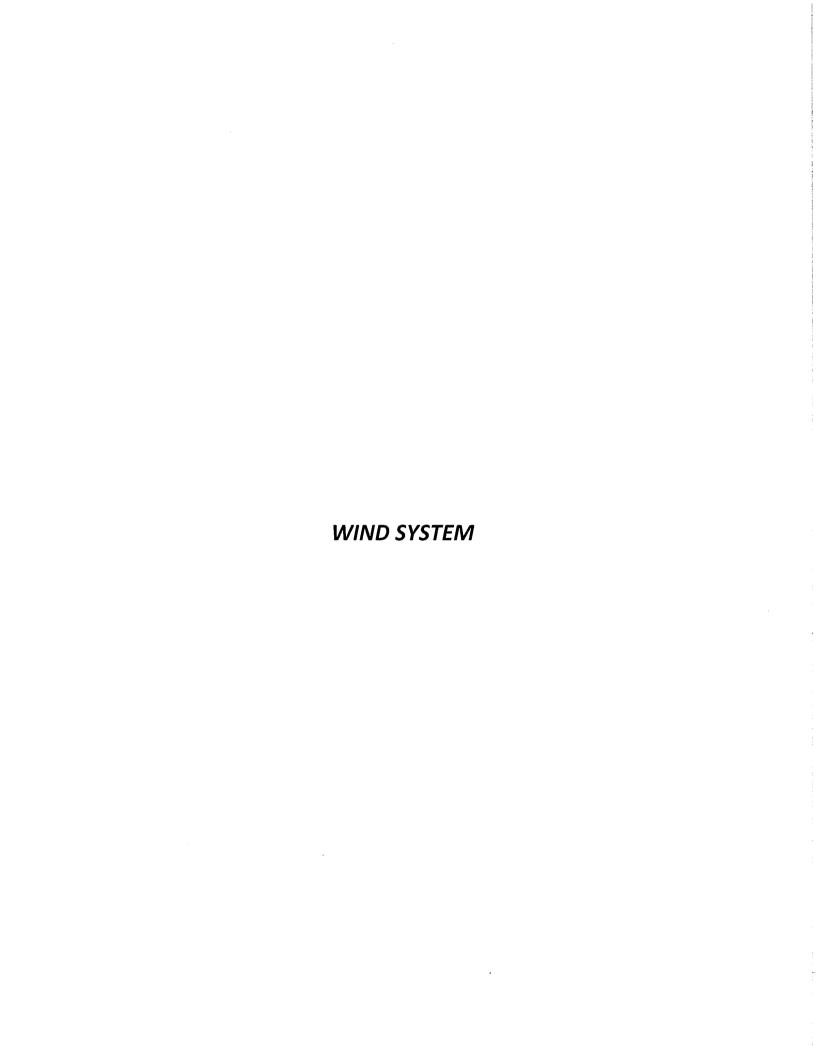
12/15/15 09:00 12/15/15 11:00 12/15/15 13:00 12/15/15 15:00 12/15/15 17:00 12/15/15 19:00

РРВ 80 - LCA



Date:	Decembe	er 9, 2015		Perfo	rmed By/Reviewer:	Alex Yakupov Trina Whits
Company:	LIC	CA			Start Time (mst):	9:47
Station Name/Location:	Cold Lal	e South			End Time (mst):	10:36
Previous Audit Date:	Novembe	r 23, 2015		C	Calibration Purpose:	Bi-monthly #1
Parameter:	PM	2.5		v	Veather Conditions:	Fog
00A Information and Status:						
Serial Number:	1405A20	1620804	As Found F	ilter Loading %:	33.08	<u> </u>
Ko Factor:	145	578	As Left F	ilter Loading %:	35.12	
Ambient Temperature °C:		75		As Found Noise:	0.005	
Ambient Pressure atm:	0.9	009		As Left Noise:	0.000	· · · · · · · · · · · · · · · · · · ·
Main Flow Reading Ipm:	3.	00		Pump Vacuum:	0.31	· · · · · · · · · · · · · · · · · · ·
Aux Flow Reading Ipm:	16	.66	****	Warnings:	N o ne	
eference Standards:						
Make:		w: yer	Pres:	1	Temperat Fisher	
Model:	475 N			291	FB 129	
Serial Number:		/a	13016		1301684	
Calibration Date:		/a		ar-15	18-Mar-	
found leak check:		<u> </u>				
		Base	Zero	Reference	Zero	
PM 2.5 Flow	actual	0.01	0.15	0.01	0.15	
	limit	0.15	\sim	0.15	> <	
Bypass Flow	actual	0.08	-0.09	0.05	-0.09	
	limit	0.60	\sim	0.60	>	
left leak check (same as above if as	found passes):					***
		Base	Zero	Reference	Zero	
PM 2.5 Flow	actual	0.01	0.15	0.01	0.15	
	limit	0.15	<u>><</u>	0.15	\geq	
Bypass Flow	actual	0.08	-0.09	0.05	-0.09	
	limit	0.60		0.60		
found temperature and pressure:	9-					
tolerance	-/- 2.0°C -0.8		4.40		+/- 0.01 atm	
1405F temperature °C:	-0.8			F pressure atm:	0.909	
reference temperature °C: difference °C:	-0.1		rere	erence pressure: difference :	-0.001	
s left temperature and pressure (san		ound adequate):		difference :	-0.001	
tolerance			•	tolerance	+/- 0.01 atm	
1405F temperature °C:	-0.8		1405	F pressure atm:	0.910	
reference temperature °C:	-0.8			erence pressure:	0.910	
difference °C:	0.0			difference :	0.000	
s found flows:						
main flow tolerance 3.00 lpm +/ 1405F main flow lpm:	' - 0.20 lpm 3.00				ux flow tolerance 16.67/ total/aux flow lpm:	13.67 lpm +/- 1.00 lpm/+/- 7% 16.66
reference main flow lpm:	2.99				total/aux flow lpm:	16.75
difference lpm:	-0.01				difference lpm:	0.09
left flows (same as above if as foun						
main flow tolerance 3.00 lpm +/	•				•	13.67 lpm +/- 1.00 lpm/+/- 7%
1405F main flow ipm: reference main flow ipm:	2.99				total/aux flow lpm: total/aux flow lpm:	16.66 16.75
difference lpm:	-0.01			reterence	difference lpm:	0.09
Audit:			·		•	1,"
Last K _o audit date:	3-Nov-15					
1405F K _o factor:	14578					
Measured K _o factor:	14764.1000					
% difference:	1.28					

Date:	December	23, 2015		Perform	ed By/Reviewer: Ale	x Yakupov Trina Whits
Company:	LIC	A			Start Time (mst):	12;43
Station Name/Location:	Cold Lake	e South			End Time (mst):	13:31
Previous Audit Date:	December				bration Purpose:	Bi-monthly #2 Mainly cloudy with snow
Parameter:	PM :	2,5		Wea	ather Conditions:	Mainly cloudy with show
100A Information and Status:						
Serial Number:	1405A201	1620804	As Found F	ilter Loading %:	39.62	
Ko Factor:	145		— As Left F	ilter Loading %:	40.25	
Ambient Temperature °C:	-10.	14		As Found Noise:	0.003	
Ambient Pressure atm:	0.9	19		As Left Noise:	0.000	
Main Flow Reading Ipm:	3.0			Pump Vacuum:	0.32	
Aux Flow Reading Ipm:	16.	66		Warnings:	None	
eference Standards:	-1		Buss		Tomporatura	
Make:	Flor Dwy		Press Fish		Temperature Fisher	•
Model:	475 M		FB 1		FB 1291	
Serial Number:	n/		13016		130168457	
Calibration Date:	n/		18-M	ar-15	18-Mar-15	
s found leak check:						
		Base	Zero	Reference	Zero	
PM 2.5 Flow	actual	0.01	0.15	0.01	0.15	
	limit actual	0.15	-0.09	0.05	-0.09	
Bypass Flow	limit	0.60	-0,05	0.60	95	
s left leak check (same as above if as						
	[Base	Zero	Reference	Zero	
PM 2.5 Flow	actual	0.01	0.15	0.01	0.15	
	limit	0.15	<u>><</u>	0.15		
Bypass Flow	actual	0.08	-0.09	0.05	-0.09	
	limit	0.60		0.60		
s found temperature and pressure: tolerance	+/- 2 0°C			tolerance +	/- 0.01 atm	
1405F temperature °C:	-10.1		1405	F pressure atm:	0.919	
reference temperature °C:	-10.7		refe	erence pressure:	0.923	
difference °C:	-0.6			difference:	-0.004	
As left temperature and pressure (sar	_	ound adequate)	:	*********	/ 0.01 atm	
tolerance 1405F temperature °C:	+/- 2.0°C -10.7		140	tolerance + tolerance +	- /- 0.01 atm 0.923	
reference temperature °C:	-10.7			erence pressure:	0.923	
difference °C:	0.0			difference :	0.000	
As found flows:					45.67/40	67 have 1/ 4 00 have 1/ 1/ 70/
main flow tolerance 3.00 lpm + 1405F main flow lpm:	/- 0.20 lpm 3.00				tiow tolerance 16.67/13. otal/aux flow lpm:	67 lpm +/- 1.00 lpm/+/- 7% 16.66
reference main flow lpm:	3.03				otal/aux flow lpm:	16.86
difference lpm:	0.03				difference lpm:	0.20
s left flows (same as above if as four main flow tolerance 3.00 lpm +				total/aux	flow tolerance 16.67/13.	67 lpm +/- 1.00 lpm/+/- 7%
1405F main flow lpm:	3.00			•	otal/aux flow lpm:	16.66
reference main flow lpm:	3.03	•		reference to	otal/aux flow lpm:	16.86
difference lpm:	0.03				difference lpm:	0.20
Co Audit:	3-Nov-15					
Last K _o audit date: _ 1405F K _o factor:	3-NOV-15 14578	•				
Measured K _o factor:	14764.1000	-				
% difference:	1,28	-				





Met One Instruments 1600 NW Washington Blvd. Grants Pass, Oregon 97526 Telephone 541-471-7111 Facsimile 541-471-7116 Regional Service 3206 Main St. Suite 106 Rowiett, Texas 75088 Telephone 972-412-4715 Facsimile 972-412-4716

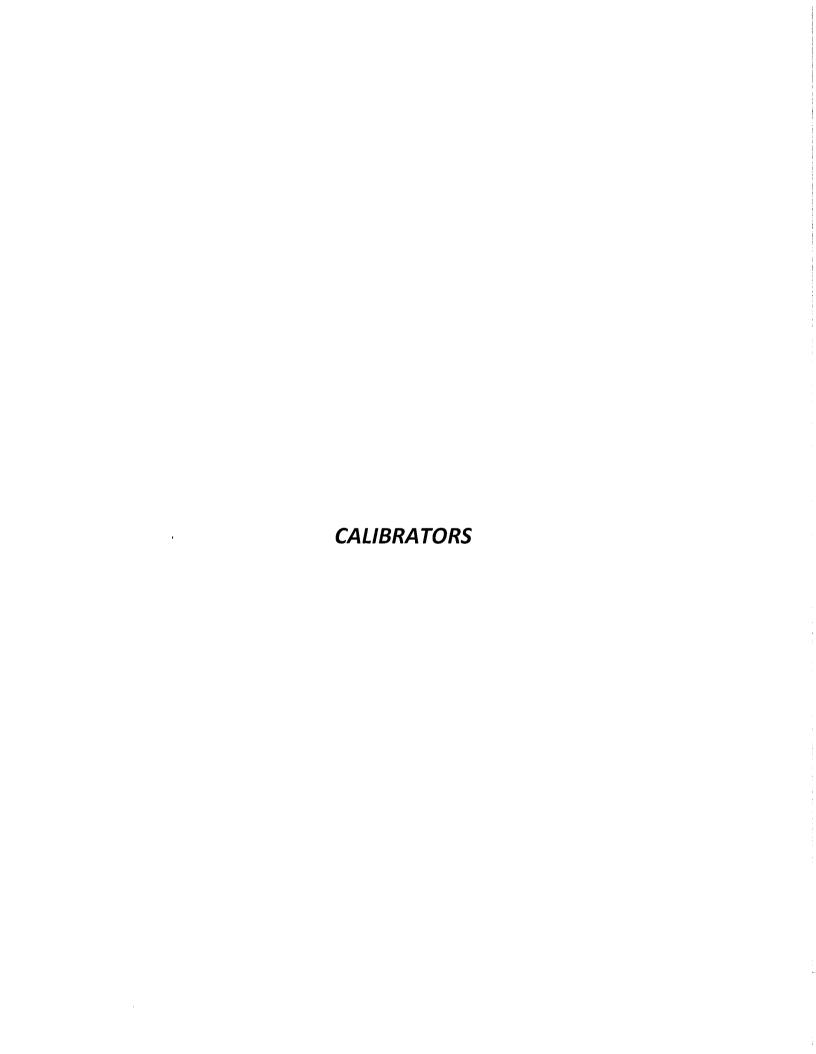
Sonic Wind Sensor Certificate of Calibration

<u>.</u>			O ATT O				Ø	e.	anta FWa	F1644
			0.511 Sonic		75 4				erial No: Sales Order	
Custom	er:		K	T	P.C). No:		111, 4	omes Order	04-01-15
Final C	alibratio	n By:	K	evin k	CICKS				ion Date:	APR 0 3 2015
Quality	Control	Inspected	By:		2			ınspec	mon pate:	HLU O O COLO
New Un	it[]	Repai	r/Adjust 🛚		R					r
Unit W.	ithin Tol	lerance as i	Found					Withi	1 Tolerance	ns Left X
				Calib	ratio	n Equipme	ent			
E	juipmen	t I	Manufacture	er.	ì	Model No.		S	erial No.	Cal. Due
	Multime		Agilent/HP			34401A		M'	Y41039534	4/11/2015
	Multime		Agilent/HP	***	M4244-M41-1-1-1-1	34401A	· · · · · · · · · · · · · · · · · · ·	U	336094551	8/26/2015
	ncy Coun		Agilent/IIP		1910, 1911, 1 111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 1111, 111	53131A	*************	M	Y40009285	5/22/2015
	d Sensor		MOI		**********	010C-1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	P22383	7/11/2017
	rature Pro		MOI		920	0005/PC83	40	**************************************	E3402	9/03/2015
Principal and the			*******************	1-		***************************************		. r		
Test 1: A	verage Wi	nd Tunnel S	peed:	3.08		Meters pe	er Sec	ind Fi	rmwareVersio	n: 3194-01 R2.62
								NS.	ws 1	
WD	WD	WD	WD Error	Stand		WS Output		eation	Error	Output Type:
Setting	Output (Volts)	Indication		Sunt (m/		(Volts)		n/s)	(+/20 m/s)	
(Deg) 30	.084	30.3	(+/- 3 Deg) .3	3.0		.059		.96	1	0 to 1 volt X
60	.165	59.3	7	3.0		.059		.94	13	0 to 2.5 volt
120	.334	120.2	.2	3.0		.059	2	.94	14	0 to 5 volt
150	.415	149.5	5	3,0)7	.059		.94	- .13	RS-232 X
210	.583	210	0	3.0	80	.059		.95	~.12	SDI-12
240	.668	240.3	.3	3.0	80	.00		.98	1	RS-422
300	.834	300.4	.4 -,2	3.0		.06		.02	04	RS-485
330	.916	329.8	2	3,0	9	.059	2	.97	12	أحسسا
Test 2: A	verage Wi	ind Tunnel S	peed:	11.85	5	Meters	ner Se	cond	Output R	ange: 0-50 m/s
2 500 201 22	· Prings it		* · · · · · · · · · · · · · · · · · · ·				•			1
WD	WD	WD	WD	W		ws		VS	WS	Test Items:
Setting	Output	Indication		Stan		Output		cation	Error (+/- ,24 m/s)	t est Hems!
(Deg)	(Volts)	(Deg)	(+/- 3 Deg) 7	(m	/s) .79	(Volts) ,235		n/s) 1.76	-,04	Array Alignment
30	.081	29,3		11.		.237		1.87	.01	Jumper Config
. 60	.165	59.5 119.1	~.5 ~.9	11.		.236		1.81	03	Firmware Config
120 150	,331 ,415	149.3	7	11.		.236		1.8	08	Zero Calibration
210	.582	209.5	5	11.		,236		1.79	02	Low Speed Test OK
240	.666	239.9	-,5 -,1	11.		.235		1.73	16	High Speed Test OK
300	.833	299.7	~.3	11		.235		1.73		
330	915	329 6	4	11.	.84	.238	1	1.9	.06	Sensor Function Physical Inspection
e standard	s used for	this calibrat	ion have accur	neles c	gual t	o or greater	than t	he Instr	uments tested.	These standards are

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 compiles with MIL-STD-45662A. Calibration performed by direct comparison to the above standard following test procedure: 50.5-6100 Rev E



A Bureau Verites Oroup Company					
Date:		er 22, 2015	PUF PLUS Serial #:		
Company/Airshed:		ICA	Performed By/Reviewer:		Trina Whitsitt
Location/Station Name:		ike South	Weather Conditions:		
erence Standards:		low:	Pressure:	Temper	
Make:		Scientific	Fisher Scientific FB61291	Practical Instrum	
Model: _ Serial Number:		168457	130168457	1072	
Calibration Date:		18, 2015	March 18, 2015	January 2	
Canstation Date:			RE AND TEMPERATURE AUDIT	· · · · · · · · · · · · · · · · · · ·	
AS FOUND Reference Barom				_	
(mmHg):		697	AS FOUND Reference Temp	perature (°C):	-22.7
AS FOUND PUF PLUS Barom (mmHg):	etric Pressure	705	AS FOUND PUF PLUS Temp	erature (°C):	-22.9
% Differen	ce (+/- 2% max.):	-1.15%	% Diffe	rence (+/- 2 °C max.):	0.2
**IF THE PRESSURE DEV	TATES BY MORE T	HAN +/- 2%	**IF THE TEMPERATURE DE		
A FLOW CALIBRA	ATION IS REQUIRE	ED**	A FLOW CALIBRA	ATION IS REQUIRED**	
			LUS FLOW AUDIT		
		Flow Aud	it Calculations:		
		Certification Date:	October 12, 2015	-	
Enter Baro		rom refrence (inHg) _	27.43	-	
		ic Pressure (mmHg)	697.0	_	
		e from reference °C_	-22.7	_	
		n calibrated orifice	6.07570	_	
Enter	"b" variable fror	n calibrated orifice	-0.03578	-	
		Enter Δp In. H ₂ O	1,76	-	
		dardized Flow Ipm=_	233.98	-	
		Flow Set Point Ipm=_	230.00	-	
		ence (+/- 2% max.)=_	-1.73%		
**	IF THE FLOW DEV		N +/- 2% A FLOW CALIBRATION IS I	REQUIRED**	
			PRESSURE CALIBRATION		
Reference Barometric Pr			n/a	_	
PUF Barometric Pi	ressure <u> AFTER CAI</u>	LIBRATION(mmHg):	n/a	- NA 2 00/	
		% Difference:	#VALUE1	Max 2.0%	
alibration Point (mmHg):	,	quired for target	As Found barometric pressure	As Left barometric	% Difference ve
	barometr	ric pressure:	(mmHg):	pressure (mmHg):	Target:
73 7	1	L.57	n/a	n/a	#VALUE!
717		0.79	n/a	n/a	#VALUE!
697		0.00	n/a	n/a	#VALUE!
677		0.79	n/a	n/a	#VALUE!
657		1.57	n/a	n/a	#VALUE!
		TIGOLI DILIT DI LIGUETT		erence (+/- 2% max.)=	#VALUE!
			MPERATURE CALIBRATION		***
•		r Certification Date:	n/a	=	
		CALIBRATION (°C):		-	
TISCH PUF PLUS To	emperature_AFTE	R CALIBRATION(°C): _		-	
		Difference (°C):	#VALUE!	_ Max 2.0 °C	
Calibration Point (°C):		und (°C)	As Left (°C)	+/- Differ	
20		n/a	n/a	#VAL	
-20		n/a	n/a	#VAL	
40		n/a	n/a	#VAL	
0		n/a	n/a	#VAL	
-30		n/a	n/a	#VAL	
		TICOU POST STO	% Difference (+/- 2 °C max.)	II #VAI	.061
			S FLOW CALIBRATION		
	0.10		ntion Calculations:		
		e Certification Date:	n/a	-	
Enter Bard		rom refrence (inHg) ric Pressure (mmHg)	n/a	-	
-			n/a	-	
		e from reference °C m calibrated orifice	n/a	-	
		m calibrated orifice _ m calibrated orifice _	n/a	_	
enter	n variable if0i	m calibrated orifice _ Enter Δp in, H ₂ O	n/a	_	
			n/a	-	
		dardized Flow lpm=	#VALUE!	-	
		Flow Set Point Ipm=	230.00 #VALUEI	-	
		ence (+/- 2% max.)≓ !IATES BY MORE THA	N +/- 2% A FLOW CALIBRATION IS	_ REQUIRED**	
**			nd A0 Factors:		
**			As Found/As Left Temperature:	As Found/A	s Left Flow:
**		s Left Pressure			
	As Found/A			0.44	
A0	As Found/A	23.1796	-6613.4765	0.4:	
A0 A1	As Found/A 1482 22	23.1796 .8942	-6613.4765 0.1641	16.7	042
A0 A1 R	As Found/A 1482 22	23.1796	-6613.4765		042
A0 A1	As Found/A 1482 22	23.1796 .8942	-6613.4765 0.1641	16.7	042





Calibrator Performance Audit OZONE

File No. 2015-030A

					
Company: Maxx	am	_	Operator: Lim	in Li	
Calibrator:			Flow Measurement	Device:	
Make/Model	Sabic	2010D	Make/Model	N/	'A
Serial Number		00613	Serial Number	N/	
Oven Temperature		J/A	Temperature (°C)	N/	<u>'A</u>
Last Verification Date	<u> </u>	I/A	Barometric Pressure	N/	
Flow Measurem	ents				
Pt. No. 1 5000 I	Pt. No. 2	5000	Pt. No. 3 5000	_	
Calibrator Flow	Calc	ulated	Indicated	% Dif	ference
(sccm)		ation (ppm)	Concentration (ppm)		% Diff. Limit
5013		000	. 0.001	15 75 05 45 MM Table	
5013	·	400	0.407	1%	± 10%
5013		200	0.204	1%	± 10%
5014		100	0.101	0%	± 10%
			Average Percent Difference		± 10%
O ₃ Correlation= m (Slope)=	1.0000 1.0163	<u>LIMITS</u> ≥ 0.995 0.90-1.10			
b (Intercept % of FS)=	0.0800	± 3% F.S.			
- Application of the state of t	0.0800 tandards		Ozone A	nalyzer	
- Application of the state of t			Ozone A Make/Model		o 49i
AENV S	tandards				
AENV S Audit Calibrator Make/Model Serial/AMU Number	tandards Teco	±3% F.S.	Make/Model Serial/AMU Number Last Calibration Date	Tecc	
AENV S Audit Calibrator Make/Model	tandards Teco AML	± 3% F.S. 49i PS	Make/Model · Serial/AMU Number	Tecc	1843 1, 2015
AENV S Audit Calibrator Make/Model Serial/AMU Number	tandards Teco AML	± 3% F.S. 49i PS	Make/Model Serial/AMU Number Last Calibration Date	Tecc AMU May 21	1843 1, 2015
AENV S Audit Calibrator Make/Model Serial/AMU Number Ozone Standard COMMENTS:	tandards Teco AMU Pri	± 3% F.S. 49i PS 11808 mary	Make/Model Serial/AMU Number Last Calibration Date Full Scale (ppm)	Tecc AMU May 21	1843 1, 2015
AENV S Audit Calibrator Make/Model Serial/AMU Number Ozone Standard	tandards Teco AMU Pri	± 3% F.S. 49i PS	Make/Model Serial/AMU Number Last Calibration Date Full Scale (ppm)	Tecc AMU May 21	1843 1, 2015

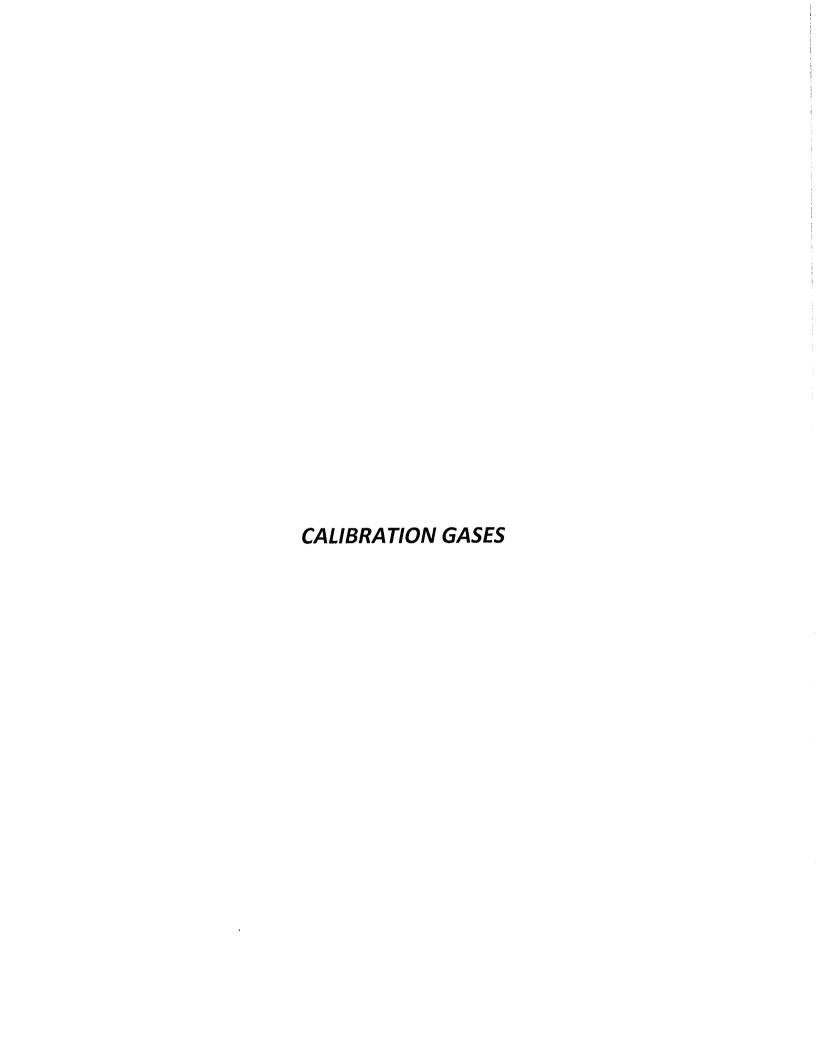


Calibrator Performance Audit

Sulphur Dioxide (by Cylinder Dilution)

File No. 2014-258A

Company: Max	(xam		Operator:	Limir	ı Li	
Calibrator	1 6		Flow M	easurement I	evice:	
Make/Model	API	700	Make/	Model (N/	Α
Serial Number	8	30	Serial ?	Vumber .	N/	Α
Last Verification Date	Oct	2013	Tempera	iture (°C)	N/	A
SO ₂ Cylinder Conc.	50	D.3	-	c Pressure	N/	Α
SO ₂ Cylinder S/N	LL4	2475		•		
						alice Carrier of
Flow Measure	nents					
Pt. No. 1 79.5	Pt. No. 2	39.8	Pt. No. 3	19.9		
			T	. 1	0/ TS:4	· · · · · · · · · · · · · · · · · · ·
Calibrator Flow		ulated	l i	cated		ference
(sccm)		ntion (ppm)	(2)	tion (ppm)	vs Audit Gas	% Diff, Limit
Zero Air	0.	000		000		
4918		800		798	0%	± 10%
4960	- 0.	***************************************		398	-1%	± 10%
4977	0.	200	la., l	200	0%	± 10%
		Absolute	Average Perce	ent Difference	0%	± 10%
	LIN	EAR REGRE	SSION ANAI	LYSIS		
go.		LIMITS	mx+b (where x=c	alculated concentra	ation, y=indicated	a concentration)
SO ₂	4.0000	≥ 0.995				
Correlation=						
m (Slope)=		0.90-1.10 ± 3% F.S.				
b (Intercept % of FS)=	0.0000	# 5 % F.S.				
ATTATE	C411-			SO ₂ An	olymon	
i i	Standards		Malco	/Model	-	43C
Audit Calibrator Make/Model		лFC 201		(U Number		1623
Serial/AMU Number		J 1690 .	•	ration Date		15/14
Serial/Alvio Ivultioet	Atvic	. 1090	_	ale (ppm)		.0
				(P.P.	,,	
COMMENTS:	H2S nae wae	slow to move t	hrough the calib	rator Check fo	or contamnati	on inside
COMMINICATIO,		D2 moves throu				
						Secretary Control of the Control of
Auditor	Al	Clark	Date	: Decembe	r 16, 2014	_
Operator Signature			Location	: McIntyre Cen	ter Edmontor	1
,	program 444		-	T		_



Form No. Version No. F-GAS-002 1.1



Calibration Gas Audit Single Component Cylinder Gas

File No. 2015-344CGA

* v	Max	kam	Oper	ator's Name: Limi	n Li
Cylinder#:_	BLM002073	Concentration PPM:	49.5	Tolerance(%) 2	Certified By: Alr Liquid
Reference (Calibrator a	nd Gas:	***************************************	Flow Measurement	Device:
M	[ake/Model: _	R&R MFC 201		Make/Model:	Blos DC2
Seri	ial Number:	AMU 1690		Serial Number:	AMU 1659
	_	March 31, 2015			22.5 C
	_	SO2 Conc.	98.57		690 mmhg
Cylin	_	CAL016720		•	
Reference A	•	T 490	Sovia1/A	MU Number: 1623	
		Teco 43C			4.0
Instrument S		Zero: 7.9		1.028 Range:	
Last Calibra	tion:	Date: Mar 31/15	C.F.	Done By:	Al Clark
		Indicated	Gas Flow/	Concentration	Cylinder
Calibrator Flo	ows (scem) Gas	Concentration (PPM)	Dilution Flow	Factor	Concentration
					-
Dilution	Gas	Concentration (PPM)			-
Dilution 5000	Gas 0.0	0.000 0.801 0.396	0,01660 0,00821	60.242 121.780	Concentration 48.3 48.2
Dilution 5000 4976	Gas 0.0 82.6	Concentration (PPM) 0.000 0.801	0,01660 0,00821 0,00406	60.242 121.780 246.386	48.3 48.2 47.6
5000 4976 4993 4977 Previous S	Gas 0.0 82.6 41.0 20.2 Stated Concentreent variance	Concentration (PPM) 0.000 0.801 0.396 0.193 tration PPM: 49.5 from Stated: 3.0	0.01660 0.00821 0.00406 Avera	60.242 121.780	48.3 48.2 47.6
Dilution 5000 4976 4993 4977 Previous S Per	Gas 0.0 82.6 41.0 20.2 Stated Concentreent variance	Concentration (PPM) 0,000 0,801 0,396 0,193 tration PPM: 49.5	0.01660 0.00821 0.00406 Avera	Factor 60.242 121.780 246.386 ge Cylinder Concentration:	48.3 48.2 47.6
Dilution	Gas 0.0 82.6 41.0 20.2 Stated Concentreent variance aufacturer Tolerale Manufacturer	Concentration (PPM) 0.000 0.801 0.396 0.193 tration PPM: 49.5 from Stated: 3.0 ance, Use manufacturers state Tolerance, Use manufacturer	0.01660 0.00821 0.00406 Avera	Factor 60.242 121.780 246.386 ge Cylinder Concentration:	48.3 48.2 47.6
Dilution	Gas 0.0 82.6 41.0 20.2 Stated Concentreent variance aufacturer Tolerale Manufacturer	Concentration (PPM) 0,000 0,801 0,396 0,193 tration PPM: 49.5 from Stated: 3.0 ance. Use manufacturers state	0.01660 0.00821 0.00406 Avera	Factor 60.242 121.780 246.386 ge Cylinder Concentration: COMMENTS:	48.3 48.2 47.6

Form No. Version No. F-GAS-002

Alberta

Calibration Gas Audit Single Component Cylinder Gas

File No. 2014-251CGA

Company:	Maxx	am	Oper	ator's Name:	Limin Li	· · · · · · · · · · · · · · · · · · ·
****		Concentration PPM:	10.0	Tolerance(%) 2	Certifie	d By: Air Liquide
Reference Ca	librator ar	nd Gas:	- 1 - 1/10 - 1/2 -	Flow Measuren		
Mal	ke/Model:	R&R MFC 201			odel:	
		AMU 1690			iber:	
		December 15, 2014		Temp	o,°C:	23.0 C
		H2S Conc.	20,43		B.P	702 mmhg
	_	CAL015108				
	ke/Model:	Teco 45C Zero: 6.4		AMU Number: 162		1
Instrument Se		***		_		
Last Calibrati	ion:	Date:Dec15/14	C,F,	1,000 DOIL	e By:	Al Clark
		Indicated	Gas Flow/	Concentration		Cylinder
		Indicated Concentration (PPM)	A = 0			
Calibrator Floy Dilution 5000	ws (seem) Gas 0.0	Indicated Concentration (PPM) 0.0000	Gas Flow/ Dilution Flow	Concentration Factor		Cylinder
Calibrator Flov Dilution 5000 5099	ws (scem) Gas 0.0 38,5	Indicated Concentration (PPM) 0.0000 0.0754	Gas Flow/ Dilution Flow 0.00755	Concentration Factor		Cylinder Concentration
Calibrator Flow Dilution 5000 5099 5092	ws (sccm) Gas 0.0 38,5 18.0	Indicated Concentration (PPM) 0.0000	Gas Flow/ Dilution Flow 0.00755 0.00353 0.00182	Concentration Factor 132.442 282.889 550.652		Cylinder Concentration 10.0 9.9 9.8
Calibrator Flov Dilution 5000 5099	ws (scem) Gas 0.0 38,5	Indicated Concentration (PPM) 0.0000 0.0754 0.0349	Gas Flow/ Dilution Flow 0.00755 0.00353 0.00182	Concentration Factor 132.442 282.889		Cylinder Concentration 10.0 9.9 9.8
Calibrator Flov Dilution 5000 5099 5092 5066	ws (seem) Gas 0.0 38.5 18.0 9.2	Indicated Concentration (PPM) 0.0000 0.0754 0.0349	Gas Flow/ Dilution Flow 0.00755 0.00353 0.00182	Concentration Factor 132.442 282.889 550.652		Cylinder Concentration 10.0 9.9 9.8
Calibrator Floy Dilution 5000 5099 5092 5066 Previous St	ws (scem) Gas 0.0 38,5 18,0 9,2 Stated Concer	Indicated Concentration (PPM) 0.0000 0.0754 0.0349 0.0178 htration PPM: 10.0 e from Stated: 1.1	Gas Flow/ Dilution Flow 0.00755 0.00353 0.00182 Averaged concentration	Concentration Factor 132.442 282.889 560.652 age Cylinder Concentr		Cylinder Concentration 10.0 9.9 9.8
Calibrator Floy Dilution 5000 5099 5092 5066 Previous State Per- Meets Manu <=5% Outside	ws (seem) Gas 0.0 38.5 18.0 9.2 Stated Concert variance ufacturer Tole le Manufactur	Indicated Concentration (PPM) 0.0000 0.0754 0.0349 0.0178 htration PPM: 10.0 e from Stated: 1.1	Gas Flow/ Dilution Flow 0.00755 0.00353 0.00182 Aver ed concentration	Concentration Factor 132.442 282.889 550.652 age Cylinder Concentr		Cylinder Concentration 10.0 9.9 9.8
Calibrator Floy Dilution 5000 5099 5092 5066 Previous State Per- Meets Manu <=5% Outside	ws (seem) Gas 0.0 38.5 18.0 9.2 Stated Concert variance ufacturer Tole le Manufactur	Indicated Concentration (PPM) 0.0000 0.0754 0.0349 0.0178 Atration PPM: 10.0 e from Stated: 1.1 brance, Use manufacturers state or Tolerance, Use manufacture acturer Tolerance, DO NOT U	Gas Flow/ Dilution Flow 0.00755 0.00353 0.00182 Aver ed concentration	Concentration Factor 132.442 282.889 550.652 age Cylinder Concentr		Cylinder Concentration 10.0 9.9 9.8 9.9



Pracay Canada Inc 9501-34m Strent Ednionson AB TED 2X6 Tel: 764-440-4778 Fex 760-440-5302

03/27/2014

MAXXAM ANALYTICS INC 'NA' 9372 49TH ST EDMONTON, AB T6B 2L7

Work Order No.

20248656

Gustomer Reference No.

Product Lov Batch No.

Z582 4 085 02

Product Part No.

NI ME600P2P-AQ

CERTIFICATE OF ANALYSIS Primary Standard

Component. Molhana Propane Nitrogen

Requested Concentration 600.0ppm 200.0ppm

Certified Concentration 601.4ppm 202ppm Balance

Analytical Analytical ACCULACY Principle ±1% rel ±1% rol

Balance

Analytical Instruments:

Mettler-Tolodo Analytical Balance-ID2sx/USA--Hewlett-Packard (Agilent)-6890 -- GC-FID

Cylinder Style Cylinder Pressure 6070F: Cylinder Volume:

Cylinder No(s).

Valve Dullet Connection:

AQ 2200 psig 82.0 (13

CGA-350 LL33674

Filling Method: Date of Fill: **Expiration Date:**

Gravimetric 03/26/2014 03/26/2017

U

u

Analysi

Our calculation cyroon barrand present by Vyson Darway be, in consistent distribut His proparation presents, successful its partial presents of partial propagation of the period of the

- Denkth Chei Clemathy Hay wat Ferrandskari T
- Commission of the Commission o
- the Claiming any air Carrely is Christiany
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- assistanti maga kan metalbara berbasah
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 - Bright (*175 a 1866)
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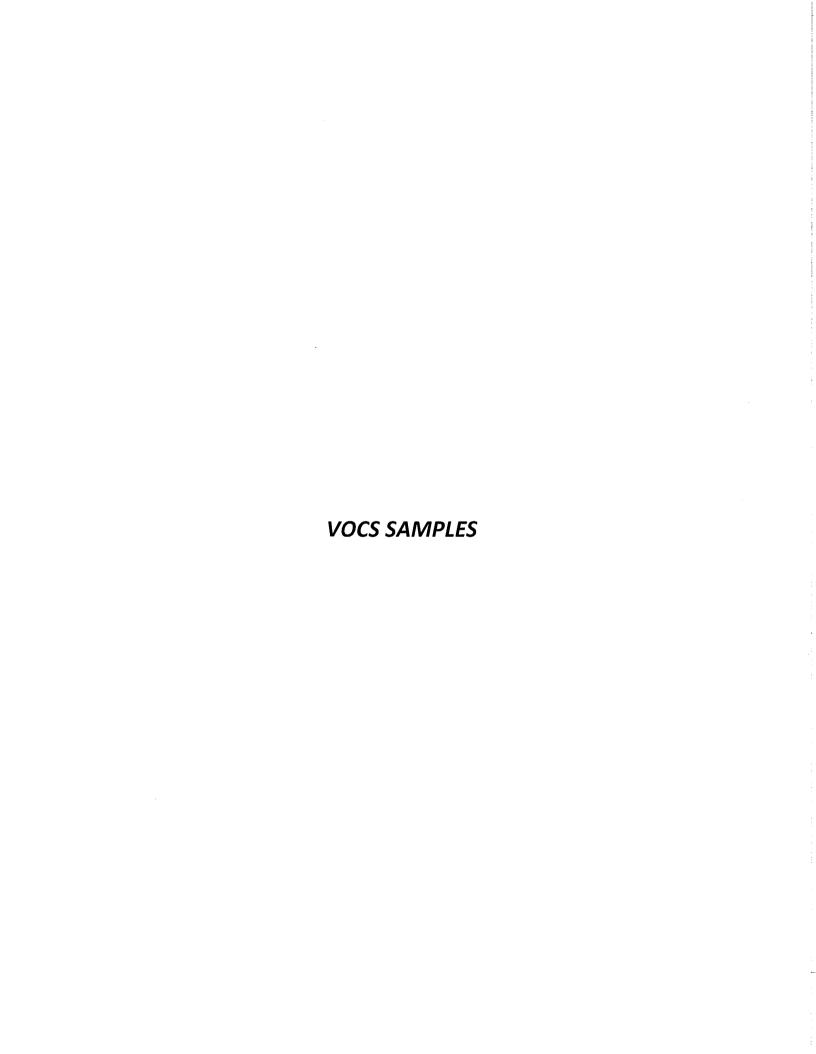
The information contented from the bown prepriet at your explant by personnel with thomas Curatile, and "the well-tensive the information to content to do the content of the enterior to content to do the enterior to content to do the enterior to do t

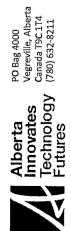
An

Calibration Gas Audit

Combana	Max	cxam		Operators nat	me:	Limir	ı Li	
Cylinder#:	BLM002073	Conc (PPM)	50.6/50.6	Tolerance (%)	2	Certified By:	Air Liq	ulde
Reference (Calibrator a	and Gas:			Flo	ow Measureme	ent Device:	
Make/	Model	Teco 1	461		M	Iake/Model	Bios D	C2
Serial 1	Vumber	AMU 1	809		Se	rial Number	AMU 1	659
Last Verifi	cation Date	March 31	, 2015			Temp.°C	22.5	С
		NO		48.79			690 mi	
		CAL018						
Instrument	Model Settings	Teco	4.2	Sp	-	1.008	_	1.0
Last Calibra	ation:	Date:	Mar 31/15	. (C.F.	1.000	Done By:	Al Clark
Calibrator Fl Dilution	ows (sccm) Gas	Indicated Co	nc. (ppm) NOX	Gas Flow/ Dilution Flow		Concentration Factor	Cylinder Cor	ncentration NOX
5000	0,0	0.000	0,000	Dittion		7 40101		
4976	82.6	0.855	0.848	0.01660		60.242	51.5	51.1
–	41.0	0.427	0,421	0.00821		121.780	52.0	51.3
4993		0.213	0.209	0.00406	der (246.386 Concentration:	52.5 52.0	51.5 51.3
	20.2			Average Cynn				
4993	20.2		<u>NO</u>	Average Cynn		<u>NOx</u>		
4993 4977		ntration PPM:		Average Cynn		<u>NOx</u> 50.6		
4993 4977 Previous	Stated Conce	ntration PPM:		Average Cynn				
4993 4977 Previous Po Cy Meets Ma <=5% Outs:	Stated Conce ercent variand linder gas (nufacturer Tol- ide Manufactur	ce from Stated: colerances baserance. Use manuer Tolerance. Us	50.6 2.8 sed on NC ufacturers state e manufacturers	only ted concentration rers concentration		50.6	m SO2 in cylinde	r
4993 4977 Previous Po Cy Meets Ma <=5% Outs:	Stated Conce ercent variand linder gas (nufacturer Tol- ide Manufactur	ce from Stated: colerances baserance. Use manuer Tolerance. Us	2.8 sed on NC afacturers state manufacture. DO NOT	O only Ited concentration rers concentration USE this cylinder		50.6 1.4 COMMENTS:	5:040-00	r

APPENDIX IV ANALYTICAL RESULTS

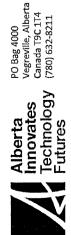




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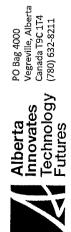
CLIENT CAMPLE IN	ANDIE IN	di dittoliaro						
CEIEINI 3/	AVIT LE 10	CANISTER ID	Matrix	XI.	DATE SAMPLED	LED		
LICA/VOC/CL	LICA/VOC/CLS/Dec 2, 2015	17120	Ambient Air	nt Air	02-Dec-15	00:00		
DESCRIPTION:	Cold Lake South	th						
REPORT NUMBER:	R: 15120089	REPORT	REPORT CREATED:	08-Jan-16			VERSION:	Version 01
Lab ID	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
15120089-001	1,1,1-Trichloroethane	ane		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-001	1,1,2,2-Tetrachloroethane	oethane		Κ, Τ, U	< 0.02 ppbv	0.02	AC-058	10 Dec 15
15120089-001	1,1,2-Trichloroethane	iane		K, T, U		0.02	AC-058	10-Dec-15
15120089-001	1,1-Dichloroethane	ē		K, T, U		20:0	AC-058	10-Dec-15
15120089-001	1,1-Dichloroethylene	ene		K, T, U		0.04	AC-058	10-Dec-15
15120089-001	1,2,3-Trimethylbenzene	nzene		K, T, U		0.02	AC-058	10-Dec-15
15120089-001	1,2,4-Trichlorobenzene	ızene		K, T, U	< 0.8 ppbv	0.8	AC-058	10-Dec-15
15120089-001	1,2,4-Trimethylbenzene	nzene		_	0.08 vdqq	0.03	AC-058	10-Dec-15
15120089-001	1,2-Dibromoethane	Je		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-001	1,2-Dichlorobenzene	ne		Κ, Τ, U		50.0	AC-058	10-Dec-15
15120089-001	1,2-Dichloroethane	a		· <u> </u>		0.01	AC-058	10-Dec-15
15120089-001	1,2-Dichloropropane	ne		K, T, U		0.01	AC-058	10-Dec-15
15120089-001	1,3,5-Trimethylbenzene	nzene				0.02	AC-058	10-Dec-15
15120089-001	1,3-Butadiene			K, T, U		0.02	AC-058	10-Dec-15
15120089-001	1,3-Dichlorobenzene	ne		K, T, U	< 0.3 pabv	0.3	AC-058	10-Dec-15
15120089-001	1,4-Dichlorobenzene	ne		K, T, U		0.4	AC-058	10-Dec-15
	1,4-Dioxane			K, T, U		0.4	AC-058	10-Dec-15
	1-Butene			_	0.22 ppbv	0.02	AC-058	10-Dec-15
	1-Hexene			_	0.03 ppbv	0.02	AC-058	10-Dec-15
	1-Pentene			K, T, U	< 0.01 ppbv	0.01	AC-058	10-Dec-15
_	2,2,4-Trimethylpentane	ntane		_	0.13 ppbv	0.01	AC-058	10-Dec-15
	2,2-Dimethylbutane	e.			0.04 ppbv	0.01	AC-058	10-Dec-15
	2,3,4-Trimethylpentane	ıtane			0.04 ppbv	0.01	AC-058	10-Dec-15
	2,3-Dimethylbutane	je		_	0.14 ppbv	0.02	AC-058	10-Dec-15
15120089-001	2,3-Dimethylpentane	ine		-	0.11 ppbv	0.02	AC-058	10-Dec-15
Report certified by:	Graham Knox, Team Lead	Lead	On behalf of: PJP	retorius, Manager, Analy	of PI Pretorius, Manager, Analysis and Testing Services			
Date: Friday, January 08, 2016	y 08, 2016				Inquiries: (Inquiries: (780) 632 8455 E-	E-mail: EAS.Results@albertainnovates.ca	unnovates.ca



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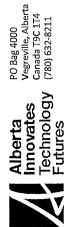
Analysis Date 10-Dec-15 10-Dec-15 0-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: AC-058 AC-058 AC-058 AC-058 Method AC-058 AC-058 4C-058 AC-058 0.02 0.02 0.02 0.01 0.4 0.3 0.01 0.4 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.01 0.04 0.02 0.02 0.02 0.01 0.01 Inquiries: (780) 632 8455 00:00 DATE SAMPLED 02-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv vddd ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv Result Units ppbv 0.02 ppbv 0.04 0.09 0.55 < 0.02 0.01 0.11 < 0.02 0.04 < 0.04 90.0 0.18 0.51 0.29 < 0.4 < 0.3 < 0.4 < 0.02 < 0.01 < 0.02 0.63 < 0.01 0.25 0.05 0.17 K, T, U 38-Jan-16 K, T, U K, T, U Κ, T, U K, T, U Κ, Τ, U K, T, U K, T, U Κ, T, U Κ, T, U K, T, U Qualifier Ambient Air Matrix REPORT CREATED: **CANISTER ID** 17120 cis-1,3-Dichloropropene **3romodichloromethane** cis-1,2-Dichloroethene Graham Knox, Team Lead 2,4-Dimethylpentane Carbon tetrachloride Cold Lake South 2-Methylpentane 3-Methylheptane 3-Methylpentane 2-Methylheptane 2-Methylhexane 3-Methylhexane Carbon disulfide Chloromethane **Sromomethane 3enzyl chloride** Chlorobenzene Chloroethane 15120089 cis-2-Pentene LICA/VOC/CLS/Dec 2, 2015 cis-2-Butene Cyclohexane Chloroform Bromoform Parameter Benzene Acetone **CLIENT SAMPLE ID** Acrolein Date: Friday, January 08, 2016 REPORT NUMBER: Report certified by: DESCRIPTION: 15120089-001 Lab ID



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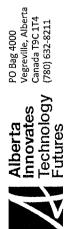
CLIENT	CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED			
LICA/VOC/C	LICA/VOC/CLS/Dec 2, 2015	17120	Ambient Air	02-Dec-15 0(00:00		
DESCRIPTION:	Cold Lake South						
REPORT NUMBER:	ER: 15120089	REPORT CREATED:	ED: 08-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120089-001	Cyclopentane		_	0.11 ppbv	0.01	AC-058	10-Dec-15
15120089-001	Dibromochloromethane	nethane	K, T, U		0.01	AC-058	10-Dec-15
15120089-001	Ethanol			2.2 ppbv	0.3	AC-058	10-Dec-15
15120089-001	Ethyl acetate		K, T, U	< 0.4 ppbv	0.4	AC-058	10-Dec-15
15120089-001	Ethylbenzene			vdqq 60.0	0.01	AC-058	10-Dec-15
15120089-001	Freon-11			0.37 ppbv	0.02	AC-058	10-Dec-15
15120089-001	Freon-113		_	0.08 ppbv	0.01	AC-058	10-Dec-15
15120089-001	Freon-114			0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-001	Freon-12			0.66 ppbv	0.02	AC-058	10-Dec-15
15120089-001	Hexachloro-1,3-butadiene	outadiene	K, T, U	< 0.50 ppbv	0.50	AC-058	10-Dec-15
15120089-001	Isobutane			2.66 ppbv	0.02	AC-058	10-Dec-15
15120089-001	Isopentane			2.19 ppbv	0.03	AC-058	10-Dec-15
15120089-001	Isoprene		_	0.02 ppbv	0.01	AC-058	10-Dec-15
15120089-001	Isopropyl alcohol			0.7 ppbv	0.4	AC-058	10-Dec-15
15120089-001	Isopropylbenzene	υ	K, T, U	< 0.01 ppbv	0.01	AC-058	10-Dec-15
15120089-001	m,p-Xylene		_	0.26 ppbv	0.03	AC-058	10-Dec-15
15120089-001	m-Diethylbenzene	ē	K, T, U	< 0.04 ppbv	0.04	AC-058	10-Dec-15
15120089-001	m-Ethyltoluene		K, T, U	< 0.08 ppbv	0.08	AC-058	10-Dec-15
15120089-001	Methyl butyl ketone	one	K, T, U	< 0.50 ppbv	0.50	AC-058	10-Dec-15
15120089-001	Methyl ethyl ketone	one	K, T, U	< 0.3 ppbv	0.3	AC-058	10-Dec-15
15120089-001	Methyl isobutyl ketone	etone	K, T, U	< 0.4 ppbv	0.4	AC-058	10-Dec-15
15120089-001	Methyl methacrylate	ılate	K, T, U	< 0.07 ppbv	0.07	AC-058	10-Dec-15
15120089-001	Methyl tert butyl ether	ether	K, T, U	< 0.03 ppbv	0.03	AC-058	10-Dec-15
15120089-001	Methylcyclohexane	ne	_	0.28 ppbv	0.01	AC-058	10-Dec-15
15120089-001	Methylcyclopentane	ane	_	0.27 ppbv	0.02	AC-058	10-Dec-15
Report certified by:	Graham Knox, Team Lead	m Lead On behalf	alf of: PJ Pretorius, Manager, Analysis and Testing Services	ysis and Testing Services			
Date: Friday, January 08, 2016	ary 08, 2016			Inquiries: (780) 632 8455		E-mail: EAS.Results@albertainnovates.ca	innovates.ca



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Analysis Date .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 0-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca **VERSION:** AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 1C-058 AC-058 AC-058 AC-058 0.5 0.5 90.0 0.02 0.05 0.01 0.04 0.07 0.04 0.04 0.4 0.01 0.01 0.04 0.02 0.04 0.03 0.01 0.01 0.01 0.01 0.01 0.1 Inquiries: (780) 632 8455 00:00 DATE SAMPLED 02-Dec-15 On behalf of: PI Pretorius, Manager, Analysis and Testing Services vddd ppbv ppbv ppbv ppbv ppbv ppbv ppbv vdqq ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv vddd < 0.04 ppbv < 0.3 ppbv Result Units 5.09 0.46 0.09 < 0.1 < 0.05 < 0.5 0.04 0.10 < 0.04 < 0.07 < 0.04 < 0.04 < 0.4 0.59 < 0.01 < 0.04 < 0.01 0.03 > 0.06 < 0.4 1.3 0.03 0.17 K, T, U Κ, Τ, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U K, T, U 08-Jan-16 Κ, Τ, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Qualifier **Ambient Air** Matrix REPORT CREATED: **CANISTER ID** trans-1,3-Dichloropropylene 17120 trans-1,2-Dichloroethylene Graham Knox, Team Lead **Tetrachloroethylene** Methylene chloride Cold Lake South o-Diethylbenzene **Trichloroethylene** n-Propylbenzene **etrahydrofuran** rans-2-Pentene trans-2-Butene p-Ethyltoluene o-Ethyltoluene 15120089 LICA/VOC/CLS/Dec 2, 2015 **Vaphthalene** n-Undecane 1-Dodecane n-Heptane n-Pentane Parameter n-Nonane n-Decane า-Hexane ı-Octane 1-Butane o-Xylene **CLIENT SAMPLE ID** Foluene Date: Friday, January 08, 2016 styrene REPORT NUMBER: Report certified by: **DESCRIPTION:** 15120089-001 Lab ID



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CLIENT SAMPLE ID	MPLE ID	CANISTER ID	Matrix	ı,	DATE SAMPLED			
LICA/VOC/CLS/Dec 2, 2015	/Dec 2, 2015	17120	Ambient Air	t Air	02-Dec-15 00:00			
DESCRIPTION: REPORT NUMBER:	Cold Lake South: 15120089		REPORT CREATED:	08-Jan-16			VERSION:	Version 01
Lab ID P	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
15120089-001	Vinyl acetate			K, T, U	< 0.4 ppbv	0.4	AC-058	10-Dec-15
15120089-001	Vinyl chloride			K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
						-		
Report certified by:	Graham Knox, Team Lead	eam Lead	On behalf of: PJF	Pretorius, Manager, Anal	On behalf of. PJ Pretorius, Manager, Analysis and Testing Services			
Date: Friday, January 08, 2016	y 08, 2016				Inquiries: (780) 632 8455		E-mail: EAS.Results@albertainnovates.ca	innovates.ca

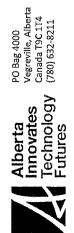
PO Bag 4000 Vegreville, Alberta Canada T9C 1T4 (780) 632-8211
Alberta Innovates Technology Futures

ENVIRONMENTAL ANALYTICAL SERVICES

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Analysis Date [4-Dec-15] [4-Dec-15] .4-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 [4-Dec-15] .4-Dec-15 [4-Dec-15] [4-Dec-15] .4-Dec-15 14-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: Method AC-058 4C-058 AC-058 AC-058 AC-058 AC-058 0.3 0.4 0.4 0.8 0.03 0.02 0.02 0.02 0.01 0.02 0.02 0.04 0.05 0.02 0.03 0.01 0.01 0.02 0.01 0.01 0.01 0.02 0.02 Inquiries: (780) 632 8455 0:00 DATE SAMPLED 08-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services vddd ppbv vddd ppbv ppbv ppbv ppbv ppbv ppbv vddd ppbv ppbv ppbv ppbv ppbv < 0.4 ppbv vddd vddd : 0.02 ppbv 0.03 ppbv 0.07 ppbv Result Units < 0.02 ppbv < 0.02 ppbv < 0.02 ppbv 0.06 yddo < 0.4 < 0.01 < 0.05 < 0.8 90.0 < 0.03 < 0.3 0.13 0.06 < 0.04 < 0.02 < 0.02 < 0.02 0.02 < 0.01 0.02 0.02 K, T, U 15-Jan-16 K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U Κ, Τ, U Κ, Τ, U K, T, U Qualifier Ambient Air Matrix REPORT CREATED: CANISTER ID 2653 1,1,2,2-Tetrachloroethane 1,3,5-Trimethylbenzene 2,2,4-Trimethylpentane 2,3,4-Trimethylpentane 1,2,3-Trimethylbenzene 1,2,4-Trimethylbenzene 1,2,4-Trichlorobenzene Graham Knox, Team Lead 1,1,1-Trichloroethane 1,1,2-Trichloroethane 2,3-Dimethylpentane 1,1-Dichloroethylene 1,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene 2,2-Dimethylbutane 2,3-Dimethylbutane 1,2-Dibromoethane 1,2-Dichloroethane Cold Lake South 1,1-Dichloroethane 1,3-Butadiene 15120124 LICA/VOC/CLS/Dec 8, 2015 1,4-Dioxane Parameter L-Pentene 1-Hexene 1-Butene **CLIENT SAMPLE ID** REPORT NUMBER: Date: January-15-16 Report certified by: DESCRIPTION: 15120124-003 Lab ID



TEST REPORT

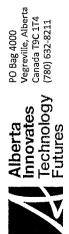
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CLIENTS	CLIENT SAMPLE ID	CANISTER ID	Matrix		DATE SAMPLED	PLED		
LICA/VOC/CI	LICA/VOC/CLS/Dec 8, 2015	2653	Ambient Air		08-Dec-15	0:00		
DESCRIPTION:	Cold Lake South							
REPORT NUMBER:	ER: 15120124	REPORT CREATED:	1	5-Jan-16			VERSION:	Version 01
Lab ID	Parameter	To the second se		Qualifier	Result Units	RDL	Method	Analysis Date
15120124-003	2,4-Dimethylpentane	ne		_	0.05 ppbv	0.01	AC-058	14-Dec-15
15120124-003	2-Methylheptane			_	0.04 ppbv	0.01	AC-058	14-Dec-15
15120124-003	2-Methylhexane			K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-003	2-Methylpentane			_	0.21 ppbv	0.01	AC-058	14-Dec-15
15120124-003	3-Methylheptane			_	0.03 ppbv	0.02	AC-058	14-Dec-15
15120124-003	3-Methylhexane			_	vdqq 90.0	0.02	AC-058	14-Dec-15
15120124-003	3-Methylpentane			_	0.12 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Acetone				1.2 ppbv	0.4	AC-058	14-Dec-15
15120124-003	Acrolein			K, T, U	< 0.3 ppbv	0.3	AC-058	14-Dec-15
15120124-003	Benzene			_	0.27 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Benzyl chloride			K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-003	Bromodichloromethane	hane		K, T, U	< 0.02 ppbv	0.05	AC-058	14-Dec-15
15120124-003	Bromoform			K, T, U	< 0.02 ppbv	0.02	AC-058	14-Dec-15
15120124-003	Bromomethane			K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Carbon disulfide			_	0.14 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Carbon tetrachloride	łe		_	0.11 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Chlorobenzene			K, T, U	< 0.02 ppbv	0.05	AC-058	14-Dec-15
15120124-003	Chloroethane			K, T, U	< 0.02 ppbv	0.02	AC-058	14-Dec-15
15120124-003	Chloroform			_	0.03 ppbv	0.02	AC-058	14-Dec-15
15120124-003	Chloromethane				0.55 ppbv	0.02	AC-058	14-Dec-15
15120124-003	cis-1,2-Dichloroethene	ene		K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-003	cis-1,3-Dichloropropene	pene		K, T, U	< 0.04 ppbv	0.04	AC-058	14-Dec-15
15120124-003	cis-2-Butene			_	0.02 ppbv	0.02	AC-058	14-Dec-15
15120124-003	cis-2-Pentene			K, T, U	< 0.02 ppbv	0.02	AC-058	14-Dec-15
15120124-003	Cyclohexane			_	0.13 ppbv	0.02	AC-058	14-Dec-15
Report certified by:	Graham Knox, Team Lead		On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	is, Manager, Analys	is and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

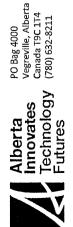
Date: January-15-16



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CLIENT	CLIENT SAMPLE ID	CANISTER ID	Matrix		DATE SAMPLED	LED		
LICA/VOC/C	LICA/VOC/CLS/Dec 8, 2015	2653	Ambient Air	Air	08-Dec-15	0:00		
DESCRIPTION:	Cold Lake South	outh						
REPORT NUMBER:	ER: 15120124	REPORT CREATE	EATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
15120124-003	Cyclopentane				0.05 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Dibromochloromethane	methane		K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Ethanol				1.1 ppbv	0.3	AC-058	14-Dec-15
15120124-003	Ethyl acetate			K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-003	Ethylbenzene			_	0.05 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Freon-11				0.42 ppbv	0.02	AC-058	14-Dec-15
15120124-003	Freon-113			_	0.07 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Freon-114			_	0.02 ppbv	0.02	AC-058	14-Dec-15
15120124-003	Freon-12				0.61 ppbv	0.02	AC-058	14-Dec-15
15120124-003	Hexachloro-1,3-butadiene	-butadiene		K, T, U	< 0.50 ppbv	0.50	AC-058	14-Dec-15
15120124-003	Isobutane				0.78 ppbv	0.02	AC-058	14-Dec-15
15120124-003	Isopentane				0.66 ppbv	0.03	AC-058	14-Dec-15
15120124-003	Isoprene				0.02 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Isopropyl alcohol	lo		K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-003	Isopropylbenzene	ne		K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-003	m,p-Xylene			_	0.16 ppbv	0.03	AC-058	14-Dec-15
15120124-003	m-Diethylbenzene	ine		K, T, U	< 0.04 ppbv	0.04	AC-058	14-Dec-15
15120124-003	m-Ethyltoluene			K, T, U	< 0.08 ppbv	0.08	AC-058	14-Dec-15
15120124-003	Methyl butyl ketone	tone		K, T, U	< 0.50 ppbv	0.50	AC-058	14-Dec-15
15120124-003	Methyl ethyl ketone	tone		K, T, U	< 0.3 ppbv	0.3	AC-058	14-Dec-15
15120124-003	Methyl isobutyl ketone	ketone		K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-003	Methyl methacrylate	rylate		K, T, U	< 0.07 ppbv	0.07	AC-058	14-Dec-15
15120124-003	Methyl tert butyl ether	yl ether		K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-15
15120124-003	Methylcyclohexane	ane		-	0.15 ppbv	0.01	AC-058	14-Dec-15
15120124-003	Methylcyclopentane	ıtane		_	0.13 ppbv	0.02	AC-058	14-Dec-15
Report certified by:	: Graham Knox, Team Lead		On behalf of: PJ Pr	etorius, Manager, Anal	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services			
Dote: Inning 15	,				Marine	Inamiriae: (780) 632 8455	E.mail: FAS Recults@alhertainnovates ca	tainnovates ca
Date: January-15-16	Ø.				carrmhm	CCTO 450 (001) :	E-main Day.womogano	Idilliovates.ca



TEST REPORT

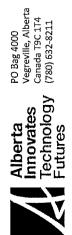
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Analysis Date 14-Dec-15 14-Dec-15 [4-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 14-Dec-15 4-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 4-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 Version 01 VERSION: Method AC-058 90.0 0.05 0.5 0.5 0.01 0.01 0.04 0.07 0.04 0.04 0.4 0.01 0.01 0.04 0.03 0.01 0.02 0.01 0.01 0.02 0.04 0.01 0.1 0:0 DATE SAMPLED 08-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv vddd ppbv Result Units ppbv ppbv ppbv ppbv ppbv < 0.1 ppbv ppbv ppbv ppbv < 0.3 ppbv : 0.06 ppbv < 0.5 1.61 < 0.4 0.09 0.18 0.05 < 0.05 1.6 0.02 90.0 < 0.04 < 0.04 < 0.4 < 0.01 < 0.01 0.02 < 0.04 0.02 < 0.07 < 0.04 0.34 < 0.04 K, T, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U Κ, Τ, U 15-Jan-16 Qualifier K, T, U K, T, U K, T, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** rans-1,3-Dichloropropylene 2653 rans-1,2-Dichloroethylene Graham Knox, Team Lead etrachloroethylene Cold Lake South Methylene chloride Trichloroethylene o-Diethylbenzene -Propylbenzene etrahydrofuran :rans-2-Pentene rans-2-Butene o-Ethyltoluene o-Ethyltoluene 15120124 LICA/VOC/CLS/Dec 8, 2015 **Naphthalene** 1-Undecane n-Dodecane 1-Pentane n-Heptane Parameter n-Butane n-Hexane n-Nonane 1-Decane -Octane o-Xylene **CLIENT SAMPLE ID** oluene tyrene REPORT NUMBER: Report certified by: DESCRIPTION: 15120124-003 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

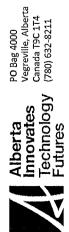
Date: January-15-16



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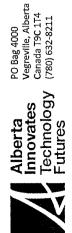
CLIENT SAMPLE ID	MPLE ID	CANISTER ID	Matrix	×	DATE SAMPLED	LED		
LICA/VOC/CLS/Dec 8, 2015	//Dec 8, 2015	2653	Ambient Air	t Air	08-Dec-15	0:00		
DESCRIPTION: REPORT NUMBER:	Cold Lake South 15120124	outh REPORT CREATED:	:REATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
15120124-003	Vinyl acetate			K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-003	Vinyl chloride			K, T, U	< 0.02 ppbv	0.02		14-Dec-15
Report certified by:	Graham Knox, Team Lead	cam Lead	On behalf of: PJPr	retorius, Manager, Anal	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services			
Date: January-15-16	10				Inquiries:	Inquiries: (780) 632 8455	E-mail: EAS.Results@albertainnovates.ca	tainnovates.ca



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CLIENT SAMPLE ID	AMPLE ID CANISTER ID	R ID Matrix	rix	DATE SAMPLED	.ED		
LICA/VOC/CLS	LICA/VOC/CLS/Dec 14, 2015 2664	q Ambient Air	nt Air	14-Dec-15	0:00		
DESCRIPTION: REPORT NUMBER:	Cold Lake South R: 15120215	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120215-004	1,1,1-Trichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-004	1,1,2,2-Tetrachloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-004	1,1,2-Trichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-004	1,1-Dichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-004	1,1-Dichloroethylene		K, T, U	< 0.04 ppbv	0.04	AC-058	30-Dec-15
15120215-004	1,2,3-Trimethylbenzene		K, T, U	< 0.05 ppbv	0.02	AC-058	30-Dec-15
15120215-004	1,2,4-Trichlorobenzene		K, T, U	< 0.8 ppbv	0.8	AC-058	30-Dec-15
15120215-004	1,2,4-Trimethylbenzene		K, T, U	< 0.03 ppbv	0.03	AC-058	30-Dec-15
15120215-004	1,2-Dibromoethane		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-004	1,2-Dichlorobenzene		K, T, U	< 0.03 ppbv	0.03	AC-058	30-Dec-15
15120215-004	1,2-Dichloroethane		_	0.02 ppbv	0.01	AC-058	30-Dec-15
15120215-004	1,2-Dichloropropane		K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-004	1,3,5-Trimethylbenzene		K, T, U	< 0.02 ppbv	0.05	AC-058	30-Dec-15
15120215-004	1,3-Butadiene		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-004	1,3-Dichlorobenzene		K, T, U	< 0.3 ppbv	0.3	AC-058	30-Dec-15
15120215-004	1,4-Dichlorobenzene		K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-004	1,4-Dioxane		K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-004	1-Butene			0.22 ppbv	0.05	AC-058	30-Dec-15
15120215-004	1-Hexene		K, T, U	< 0.02 ppbv	0.05	AC-058	30-Dec-15
15120215-004	1-Pentene		K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-004	2,2,4-Trimethylpentane		K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-004	2,2-Dimethylbutane		_	0.02 ppbv	0.01	AC-058	30-Dec-15
15120215-004	2,3,4-Trimethylpentane		K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-004	2,3-Dimethylbutane		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-004	2,3-Dimethylpentane		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
Report certified by:	Graham Knox, Team Lead	On behalf of: PJ	Pretorius, Manager, Anal	of: PJ Pretorius, Manager, Analysis and Testing Services			
Date: January-15-16	9			Inquiries:	Inquiries: (780) 632 8455	E-mail: EAS.Results@albertainnovates.ca	tainnovates.ca
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Analysis Date 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 0-Dec-15 30-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca AC-058 VERSION: AC-058 AC-058 AC-058 AC-058 AC-058 Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.4 0.3 0.4 0.01 0.01 0.02 0.04 0.01 0.02 0.02 0.01 0.01 0.02 0.02 0.01 0.02 0.02 0.02 0.01 0.02 0.02 0.02 0.01 Inquiries: (780) 632 8455 0:00 DATE SAMPLED 14-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv Result Units ppbv ppbv ppbv ppbv ppbv < 0.01 ppbv 3.10 < 0.01 0.03 0.02 < 0.04 0.08 0.16 < 0.02 0.02 0.02 0.04 6.2 < 0.4 < 0.02 < 0.01 0.09 < 0.02 0.02 0.65 0.13 < 0.02 0.05 0.07 < 0.3 K, T, U 15-Jan-16 K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Qualifier Ambient Air Matrix REPORT CREATED: **CANISTER ID** 2664 cis-1,3-Dichloropropene **Bromodichloromethane** cis-1,2-Dichloroethene Graham Knox, Team Lead 2,4-Dimethylpentane Carbon tetrachloride Cold Lake South 2-Methylpentane 2-Methylheptane 3-Methylheptane 3-Methylpentane 2-Methylhexane 3-Methylhexane Carbon disulfide **Bromomethane** Chloromethane **Benzyl** chloride Chlorobenzene 15120215 Chloroethane cis-2-Pentene LICA/VOC/CLS/Dec 14, 2015 cis-2-Butene Cyclohexane Chloroform **Bromoform** Parameter Benzene **CLIENT SAMPLE ID** Acetone Acrolein REPORT NUMBER: Date: January-15-16 Report certified by: **DESCRIPTION:** 15120215-004 Lab ID



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Analysis Date 30-Dec-15 0-Dec-15 30-Dec-15 Version 01 VERSION: Method AC-058 4C-058 AC-058 AC-058 0.02 0.02 0.50 0.4 0.4 0.01 0.4 0.01 0.02 0.01 0.02 0.03 0.01 0.01 0.03 0.04 0.08 0.50 0.07 0.03 0.01 0.3 0.01 0.02 000 DATE SAMPLED 14-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv **Result Units** ppbv < 0.01 ppbv ppbv ppbv vddd ppbv ppbv ppbv 0.66 ppbv ppbv < 0.01 ppbv ppbv < 0.01 ppbv 0.04 ppbv < 0.04 ppbv < 0.50 ppbv : 0.08 ppbv 0.6 ppbv : 0.07 ppbv < 0.4 ppbv < 0.03 ppbv 0.10 ppbv 0.03 0.50 < 0.4 0.02 0.08 0.02 0.60 0.44 < 0.4 0.27 0.07 15-Jan-16 Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U _ **Ambient Air** Matrix REPORT CREATED: **CANISTER ID** 2664 Hexachloro-1,3-butadiene **Dibromochloromethane** Methyl isobutyl ketone Methyl tert butyl ether Graham Knox, Team Lead Methyl methacrylate Methylcyclopentane Methyl butyl ketone Viethyl ethyl ketone Cold Lake South Methylcyclohexane n-Diethylbenzene sopropylbenzene sopropyl alcohol n-Ethyltoluene 15120215 Cyclopentane LICA/VOC/CLS/Dec 14, 2015 Ethylbenzene Ethyl acetate m,p-Xylene sopentane Parameter -reon-113 -reon-114 sobutane reon-11 Freon-12 soprene **CLIENT SAMPLE ID** thanol REPORT NUMBER: Report certified by: DESCRIPTION: 15120215-004 Lab ID

E-mail: EAS.Results@albertainnovates.ca

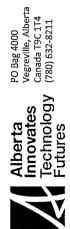
Inquiries: (780) 632 8455



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Analysis Date 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 0-Dec-15 30-Dec-15 30-Dec-15 0-Dec-15 30-Dec-15 0-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: Viethod AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 4C-058 AC-058 0.1 0.05 0.5 0.5 0.4 0.03 90.0 0.4 0.01 0.01 0.02 0.01 0.01 0.01 0.04 0.07 0.04 0.04 0.01 0.01 0.04 0.01 0.02 Inquiries: (780) 632 8455 0:0 DATE SAMPLED 14-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv ppbv ppbv Result Units ppbv ppbv ppbv ppbv ppbv ppbv ppbv < 0.3 ppbv < 0.1 ppbv < 0.5 ppbv < 0.5 ppbv 0.01 ppbv < 0.01 ppbv : 0.04 ppbv < 0.04 ppbv < 0.4 ppbv < 0.01 ppbv < 0.04 ppbv 0.07 ppbv 0.03 ppbv < 0.04 ppbv < 0.05 1.62 < 0.06 < 0.4 : 0.02 < 0.04 0.19 0.02 < 0.07 0.11 < 0.01 15-Jan-16 Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U _ _ **Ambient Air** Matrix REPORT CREATED: **CANISTER ID** rans-1,3-Dichloropropylene 2664 rans-1,2-Dichloroethylene Graham Knox, Team Lead **Tetrachloroethylene** Cold Lake South Methylene chloride o-Diethylbenzene Trichloroethylene n-Propylbenzene etrahydrofuran :rans-2-Pentene trans-2-Butene o-Ethyltoluene o-Ethyltoluene 15120215 LICA/VOC/CLS/Dec 14, 2015 Vaphthalene n-Undecane 1-Dodecane n-Heptane n-Pentane Parameter n-Decane n-Hexane Nonane-רn-Octane յ-Butane o-Xylene **CLIENT SAMPLE ID** oluene styrene REPORT NUMBER: Date: January-15-16 Report certified by: **DESCRIPTION:** 15120215-004 Lab ID



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CLIENT SAMPLE ID	MPLE ID	CANISTER ID	1D Matrix	trix	DATE SAMPLED	ED		
LICA/VOC/CLS/Dec 14, 2015	/Dec 14, 2015	2664	Ar	int Air	14-Dec-15 0	0:00		
DESCRIPTION: REPORT NUMBER:	Cold Lake South 15120215		REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter	:		Qualifier	Result Units	RDL	Method	Analysis Date
15120215-004	Vinyl acetate			K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-004	Vinyl chloride			K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
Report certified by:	Graham Knox, Team Lead	am Lead	On behalf of: PJ	l Pretorius, Manager, Anal	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services			
Date: January-15-16	\$				Inquiries: (Inquiries: (780) 632 8455 E-n	E-mail: EAS.Results@albertainnovates.ca	ainnovates.ca



Vegreville, Alberta Canada T9C 1T4 (780) 632-8211 PO Bag 4000

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Analysis Date 07-Jan-16 07-Jan-16 J7-Jan-16 J7-Jan-16)7-Jan-16 7-Jan-16 77-Jan-16 37-Jan-16 37-Jan-16 7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16 37-Jan-16 J7-Jan-16)7-Jan-16)7-Jan-16 J7-Jan-16 J7-Jan-16)7-Jan-16)7-Jan-16 7-Jan-16 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: AC-058 Method AC-058 0.05 0.8 0.3 0.4 0.4 0.02 0.02 0.04 0.03 0.02 0.03 0.01 0.02 0.02 0.01 0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.01 Inquiries: (780) 632 8455 0:00 DATE SAMPLED 20-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppv < 0.4 ppbv ppbv ppbv ppbv Result Units ppbv ppbv ppbv ppbv 0.02 ppbv < 0.3 ppbv < 0.4 ppbv : 0.01 ppbv < 0.01 ppbv 0.06 ppbv 0.01 ppbv 0.16 ppbv : 0.02 ppbv 0.02 < 0.02 < 0.02 < 0.04 < 0.05 < 0.8 < 0.03 < 0.02 < 0.03 0.01 < 0.02 < 0.02 0.19 0.04 0.08 15-Jan-16 K, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, ∪ K, T, U K, T, U K, T, U K, T, U K, T, ∪ K, T, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U K, T, U Qualifier **Ambient Air** Matrix REPORT CREATED: **CANISTER ID** 16841,1,2,2-Tetrachloroethane 1,3,5-Trimethylbenzene 1,2,3-Trimethylbenzene 1,2,4-Trimethylbenzene 2,3,4-Trimethylpentane 2,2,4-Trimethylpentane 1,2,4-Trichlorobenzene Graham Knox, Team Lead 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,1-Dichloroethylene 1,2-Dichloropropane 1,3-Dichlorobenzene 2,3-Dimethylpentane 1,2-Dichlorobenzene 1,4-Dichlorobenzene 2,2-Dimethylbutane 2,3-Dimethylbutane 1,2-Dibromoethane Cold Lake South 1,1-Dichloroethane .,2-Dichloroethane 1,3-Butadiene 16010003 LICA/VOC/CLS/Dec 20, 2015 1,4-Dioxane L-Pentene Parameter 1-Hexene -Butene **CLIENT SAMPLE ID** REPORT NUMBER: Report certified by: **DESCRIPTION:** 16010003-003 Lab ID



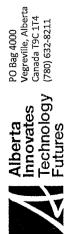
TEST REPORT

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Analysis Date 07-Jan-16 07-Jan-16 07-Jan-16 07-Jan-16 07-Jan-16 07-Jan-16 07-Jan-16 7-Jan-16 J7-Jan-16 07-Jan-16 37-Jan-16)7-Jan-16 37-Jan-16)7-Jan-16 07-Jan-16 J7-Jan-16)7-Jan-16 37-Jan-16 J7-Jan-16 J7-Jan-16)7-Jan-16 77-Jan-16 07-Jan-16 07-Jan-16 07-Jan-16 Version 01 VERSION: Method AC-058 0.01 0.4 0.3 0.01 0.01 0.01 0.02 0.02 0.01 0.4 0.02 0.01 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.04 0.01 0.02 0.02 0:00 DATE SAMPLED 20-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services **Result Units** ppbv ppbv ppbv vddd ppbv ppbv < 0.01 ppbv 0.04 ppbv ppbv 0.36 ppbv 0.10 ppbv : 0.02 ppbv 0.02 ppbv < 0.02 ppbv 0.01 ppbv 0.10 ppbv < 0.02 ppbv ppbv ppbv < 0.01 ppbv ppbv 0.89 ppbv < 0.04 ppbv ppbv 0.02 ppbv 0.06 0.20 0.15 < 0.4 0.02 < 0.3 < 0.02 0.03 0.02 0.21 15-Jan-16 K, T, U Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U K, T, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** 1684 **Bromodichloromethane** cis-1,3-Dichloropropene cis-1,2-Dichloroethene 2,4-Dimethylpentane Graham Knox, Team Lead Carbon tetrachloride Cold Lake South 2-Methylheptane 2-Methylpentane 3-Methylheptane 3-Methylpentane 2-Methylhexane 3-Methylhexane Carbon disulfide Bromomethane 3enzyl chloride Chloromethane Chlorobenzene 16010003 LICA/VOC/CLS/Dec 20, 2015 Chloroethane cis-2-Pentene cis-2-Butene Cyclohexane **3romoform** Chloroform Parameter **CLIENT SAMPLE ID** Benzene Acrolein Acetone REPORT NUMBER: Report certified by: DESCRIPTION: 16010003-003 Lab ID

E-mail: EAS.Results@albertainnovates.ca

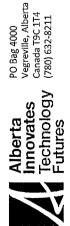
Inquiries: (780) 632 8455



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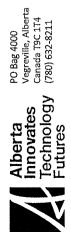
CLIENT S	CLIENT SAMPLE ID CAN	CANISTER ID ME	Matrix	DATE SAMPLED	ED		
LICA/VOC/CL	UCA/VOC/CLS/Dec 20, 2015	1684 Ambi	mbient Air	20-Dec-15	0:00		
DESCRIPTION: REPORT NUMBER:	Cold Lake South :R: 16010003	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
16010003-003	Cyclopentane		_	0.10 ppbv	0.01	AC-058	07-Jan-16
16010003-003	Dibromochloromethane	ne	K, T, U	< 0.01 ppbv	0.01	AC-058	07-Jan-16
16010003-003	Ethanol			0.7 ppbv	0.3	AC-058	07-Jan-16
16010003-003	Ethyl acetate		K, T, U	< 0.4 ppbv	0.4	AC-058	07-Jan-16
16010003-003	Ethylbenzene		_	0.02 ppbv	0.01	AC-058	07-Jan-16
16010003-003	Freon-11			0.35 ppbv	0.02	AC-058	07-Jan-16
16010003-003	Freon-113		_	vdqq 60.0	0.01	AC-058	07-Jan-16
16010003-003	Freon-114			0.03 ppbv	0.02	AC-058	07-Jan-16
16010003-003	Freon-12			0.77 ppbv	0.02	AC-058	07-Jan-16
16010003-003	Hexachloro-1,3-butadiene	liene	K, T, U	< 0.50 ppbv	0.50	AC-058	07-Jan-16
16010003-003	Isobutane			1.89 ppbv	0.02	AC-058	07-Jan-16
16010003-003	Isopentane			1.21 ppbv	0.03	AC-058	07-Jan-16
16010003-003	Isoprene		K, T, U	< 0.01 ppbv	0.01	AC-058	07-Jan-16
16010003-003	Isopropyl alcohol		K, T, U	< 0.4 ppbv	0.4	AC-058	07-Jan-16
16010003-003	Isopropylbenzene		K, T, U	< 0.01 ppbv	0.01	AC-058	07-Jan-16
16010003-003	m,p-Xylene		_	0.04 ppbv	0.03	AC-058	07-Jan-16
16010003-003	m-Diethylbenzene		K, T, U	< 0.04 ppbv	0.04	AC-058	07-Jan-16
16010003-003	m-Ethyltoluene		K, T, U	< 0.08 ppbv	0.08	AC-058	07-Jan-16
16010003-003	Methyl butyl ketone		K, T, U	< 0.50 ppbv	0.50	AC-058	07-Jan-16
16010003-003	Methyl ethyl ketone			0.4 ppbv	0.3	AC-058	07-Jan-16
16010003-003	Methyl isobutyl ketone	je Je	K, T, U	< 0.4 ppbv	0.4	AC-058	07-Jan-16
16010003-003	Methyl methacrylate		K, T, U	< 0.07 ppbv	0.07	AC-058	07-Jan-16
16010003-003	Methyl tert butyl ether	ıe	K, T, U	< 0.03 ppbv	0.03	AC-058	07-Jan-16
16010003-003	Methylcyclohexane			0.37 ppbv	0.01	AC-058	07-Jan-16
16010003-003	Methylcyclopentane			0.20 ppbv	0.05	AC-058	07-Jan-16
Report certified by:	Graham Knox, Team Lead		On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	lysis and Testing Services			
Date: January-15-16	9			Inquiries:	Inquiries: (780) 632 8455 E-	E-mail: EAS Results@albertainnovates.ca	tainnovates.ca
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Analysis Date 37-Jan-16 J7-Jan-16 37-Jan-16)7-Jan-16 7-Jan-16 7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16 7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16 J7-Jan-16)7-Jan-16)7-Jan-16)7-Jan-16 J7-Jan-16 J7-Jan-16 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 Method AC-058 AC-058 AC-058 AC-058 4C-058 AC-058 0.05 0.5 0.5 0.04 0.07 0.04 0.04 0.4 0.04 90.0 0.02 0.1 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 Inquiries: (780) 632 8455 0:00 DATE SAMPLED 20-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services λqdd ppbv ppbv vddd ppbv ppbv ppbv ppbv ppbv vadd ppbv ppbv ppbv ppbv ppbv Result Units ppbv ppbv ppbv ppbv ppbv ppbv ppbv < 0.3 ppbv < 0.06 < 0.04 < 0.01 < 0.02 < 0.04 3.64 < 0.4 0.40 0.05 1.3 < 0.5 < 0.5 0.02 < 0.01 0.02 < 0.07 < 0.04 < 0.04 < 0.4 0.10 < 0.01 < 0.04 0.12 < 0.05 Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, ∪ 15-Jan-16 Qualifier K, T, U K, T, U K, T, U Ambient Air Matrix REPORT CREATED: CANISTER ID trans-1,3-Dichloropropylene trans-1,2-Dichloroethylene 1684 Graham Knox, Team Lead **Tetrachloroethylene** Methylene chloride Cold Lake South o-Diethylbenzene **Frichloroethylene** n-Propylbenzene etrahydrofuran_ rans-2-Pentene trans-2-Butene o-Ethyltoluene p-Ethyltoluene 16010003 LICA/VOC/CLS/Dec 20, 2015 Vaphthalene 1-Dodecane 1-Undecane n-Heptane n-Pentane Parameter n-Nonane n-Decane n-Octane **η-Butane** n-Hexane o-Xylene **CLIENT SAMPLE ID** Foluene Styrene REPORT NUMBER: Date: January-15-16 Report certified by: DESCRIPTION: 16010003-003 Lab ID



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CLIENT SAMPLE ID	(MPLE ID	CANISTER ID	\ ID Matrix	rix	DATE SAMPLED	Q		
LICA/VOC/CLS/Dec 20, 2015	/Dec 20, 2015	1684	Ar	nt Air	20-Dec-15 0:	0:00		
DESCRIPTION: REPORT NUMBER:	Cold Lake South R: 16010003	outh	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
16010003-003	Vinyl acetate			K, T, U	< 0.4 ppbv	0.4	AC-058	07-Jan-16
16010003-003	Vinyl chloride			K, T, U	< 0.02 ppbv	0.02	AC-058	07-Jan-16
Report certified by:	Graham Knox, Team Lead	eam Lead	On behalf of: PJ	l Pretorius, Manager, Ana	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services			
Date: January-15-16	9				Inquiries: (,	Inquiries: (780) 632 8455 E-mai	E-mail: EAS.Results@albertainnovates.ca	ainnovates.ca



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Analysis Date 36-Jan-16 36-Jan-16 06-Jan-16 **36-Jan-16 36-Jan-16**)6-Jan-16)6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16)6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16)6-Jan-16)6-Jan-16 36-Jan-16)6-Jan-16)6-Jan-16)6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 **36-Jan-16**)6-Jan-16 Version 01 VERSION: Method AC-058 4C-058 AC-058 AC-058 4C-058 AC-058 0.8 0.3 0.02 0.02 0.02 0.04 0.05 0.03 0.02 0.03 0.01 0.01 0.02 0.02 0.4 0.4 0.02 0.02 0.01 0.01 0.01 0.02 0.01 0.02 0:00 DATE SAMPLED 26-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services vddd ppbv vddd vddd ppbv ppbv ppbv vddd vddd ppbv ppbv ppbv Result Units < 0.02 ppbv ppbv pbbv ppbv < 0.02 ppbv vddd ppbv < 0.02 ppbv < 0.05 ppbv 0.01 ppbv 0.01 ppbv 0.10 ppbv ppbv < 0.01 < 0.02 < 0.04 < 0.8 < 0.03 < 0.02 < 0.03 0.02 0.01 < 0.02 < 0.3 < 0.4 < 0.4 0.05 0.06 < 0.02 < 0.02 0.08 15-Jan-16 K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** 55587 1,1,2,2-Tetrachloroethane 1,2,3-Trimethylbenzene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene 2,2,4-Trimethylpentane 2,3,4-Trimethylpentane 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane Graham Knox, Team Lead 1,1,2-Trichloroethane 1,1-Dichloroethylene 2,3-Dimethylpentane .,2-Dichlorobenzene 1,2-Dichloropropane ,3-Dichlorobenzene L,4-Dichlorobenzene 2,2-Dimethylbutane L,2-Dibromoethane 2,3-Dimethylbutane Cold Lake South 1,1-Dichloroethane 1,2-Dichloroethane 1,3-Butadiene LICA/VOC/CLS/Dec. 26, 2015 16010004 L,4-Dioxane 1-Pentene Parameter L-Hexene **I-Butene CLIENT SAMPLE ID** REPORT NUMBER: Report certified by: DESCRIPTION: 16010004-001 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



TEST REPORT

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Analysis Date 06-Jan-16 36-Jan-16 06-Jan-16 06-Jan-16 36-Jan-16 36-Jan-16 06-Jan-16 06-Jan-16 06-Jan-16 36-Jan-16 36-Jan-16 06-Jan-16 36-Jan-16 36-Jan-16)6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16)6-Jan-16 **36-Jan-16** 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 Version 01 /ERSION: Method AC-058 0.4 0.3 0.4 0.02 0.02 0.01 0.01 0.01 0.01 0.02 0.02 0.01 0.01 0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.01 0.04 0.02 5.02 0:00 DATE SAMPLED 26-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv Result Units : 0.02 ppbv 0.26 ppbv < 0.01 0.03 0.05 0.22 < 0.3 < 0.4 < 0.01 0.10 < 0.02 < 0.02 0.12 1.0 < 0.02 0.70 0.23 < 0.02 < 0.02 0.03 < 0.01 < 0.04 < 0.02 0.07 0.01 K, T, U 15-Jan-16 Κ, Τ, U K, T, U K, T, U Qualifier K, T, U K, T, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** 55587 Bromodichloromethane cis-1,3-Dichloropropene cis-1,2-Dichloroethene Graham Knox, Team Lead 2,4-Dimethylpentane Carbon tetrachloride Cold Lake South 2-Methylheptane 2-Methylpentane 3-Methylheptane 3-Methylpentane 2-Methylhexane 3-Methylhexane Carbon disulfide Bromomethane Chloromethane Benzyl chloride Chlorobenzene LICA/VOC/CLS/Dec. 26, 2015 16010004 Chloroethane cis-2-Pentene cis-2-Butene Cyclohexane Chloroform Bromoform Parameter **CLIENT SAMPLE ID** Benzene Acrolein Acetone REPORT NUMBER: Report certified by: DESCRIPTION: 16010004-001 Lab ID

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Inquiries: (780) 632 8455



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Analysis Date 06-Jan-16 36-Jan-16 36-Jan-16)6-Jan-16)6-Jan-16 6-Jan-16)6-Jan-16 36-Jan-16 36-Jan-16)6-Jan-16)6-Jan-16 36-Jan-16)6-Jan-16)6-Jan-16)6-Jan-16)6-Jan-16)6-Jan-16)6-Jan-16)6-Jan-16 36-Jan-16)6-Jan-16)6-Jan-16 Version 01 VERSION: AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 Method 4C-058 AC-058 0.02 0.03 0.01 0.4 0.01 0.03 0.04 0.08 0.50 0.3 0.4 0.07 0.01 0.01 0.02 0.02 0.50 0.01 0.01 0.02 0:00 DATE SAMPLED 26-Dec-15 vddd vdqq vdqq vddd ppbv ppbv ppbv ppbv ppbv vddd ppbv ppbv ppbv ppbv vadd Result Units 0.11 ppbv vddd vddd ppbv ppbv ppbv < 0.01 06.0 < 0.01 < 0.4 < 0.4 < 0.3 < 0.4 0.34 0.08 0.03 0.75 1.06 < 0.01 0.05 < 0.04 < 0.08 < 0.50 < 0.3 0.02 < 0.50 < 0.07 K, T, U K, T, U K, T, U Κ, Τ, U Κ, Τ, U Κ, Τ, U K, T, U K, T, U Κ, Τ, U K, T, U K, T, U 15-Jan-16 Qualifier K, T, U _ Ambient Air Matrix REPORT CREATED: CANISTER ID 55587 Hexachloro-1,3-butadiene **Dibromochloromethane** Methyl isobutyl ketone Methyl methacrylate Methyl butyl ketone Methyl ethyl ketone Cold Lake South m-Diethylbenzene sopropylbenzene sopropyl alcohol m-Ethyltoluene LICA/VOC/CLS/Dec. 26, 2015 16010004 Cyclopentane **Ethylbenzene** Ethyl acetate n,p-Xylene sopentane Parameter Freon-113 Freon-114 sobutane Freon-12 Freon-11 soprene **CLIENT SAMPLE ID** Ethanol REPORT NUMBER: **DESCRIPTION:** 16010004-001 Lab ID

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Graham Knox, Team Lead

Date: January-15-16 Report certified by:

Methylcyclopentane

Methylcyclohexane

Inquiries: (780) 632 8455

E-mail: EAS.Results@albertainnovates.ca

)6-Jan-16)6-Jan-16)6-Jan-16

AC-058

0.03

vada vddd

< 0.03 0.31

Methyl tert butyl ether

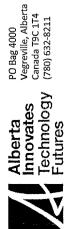
16010004-001 16010004-001 16010004-001

AC-058

0.02

0.21

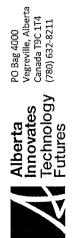
AC-058



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Analysis Date 36-Jan-16)6-Jan-16)6-Jan-16)6-Jan-16 36-Jan-16)6-Jan-16)6-Jan-16)6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 **36-Jan-16** 06-Jan-16 06-Jan-16 36-Jan-16)6-Jan-16)6-Jan-16 36-Jan-16)6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 **J6-Jan-16**)6-Jan-16)6-Jan-16 Version 01 E-mail: EAS.Results@albertainnovates.ca AC-058 AC-058 VERSION: AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 4C-058 AC-058 Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.5 0.5 0.04 0.04 0.04 0.4 0.01 0.04 0.02 0.05 0.01 0.07 0.01 90.0 0.02 0.1 0.01 0.01 0.01 0.03 0.01 0.01 Inquiries: (780) 632 8455 0:00 DATE SAMPLED On behalf of: PJ Pretorius, Manager, Analysis and Testing Services 26-Dec-15 ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv vdqq ppbv ppbv ppbv < 0.04 ppbv ppbv ppbv Result Units < 0.3 ppbv 0.10 ppbv < 0.06 ppbv < 0.5 0.02 0.04 0.8 < 0.05 < 0.5 < 0.04 < 0.04 < 0.4 0.16 < 0.01 < 0.02 1.90 0.19 0.02 < 0.01 < 0.07 < 0.04 < 0.01 < 0.04 < 0.4 Κ, Τ, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U Κ, Τ, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U 15-Jan-16 Κ, Τ, U K, T, U K, T, U Qualifier ---Ambient Air Matrix REPORT CREATED: **CANISTER ID** rans-1,3-Dichloropropylene 55587 rans-1,2-Dichloroethylene Graham Knox, Team Lead **Tetrachloroethylene** Methylene chloride Cold Lake South **Trichloroethylene** o-Diethylbenzene n-Propylbenzene etrahydrofuran_ trans-2-Pentene rans-2-Butene o-Ethyltoluene o-Ethyltoluene 16010004 LICA/VOC/CLS/Dec. 26, 2015 **Naphthalene** n-Undecane n-Dodecane n-Heptane n-Pentane Parameter n-Nonane n-Decane n-Hexane 1-Octane n-Butane o-Xylene oluene-**CLIENT SAMPLE ID** styrene REPORT NUMBER: Date: January-15-16 Report certified by: **DESCRIPTION:** 16010004-001 Lab ID

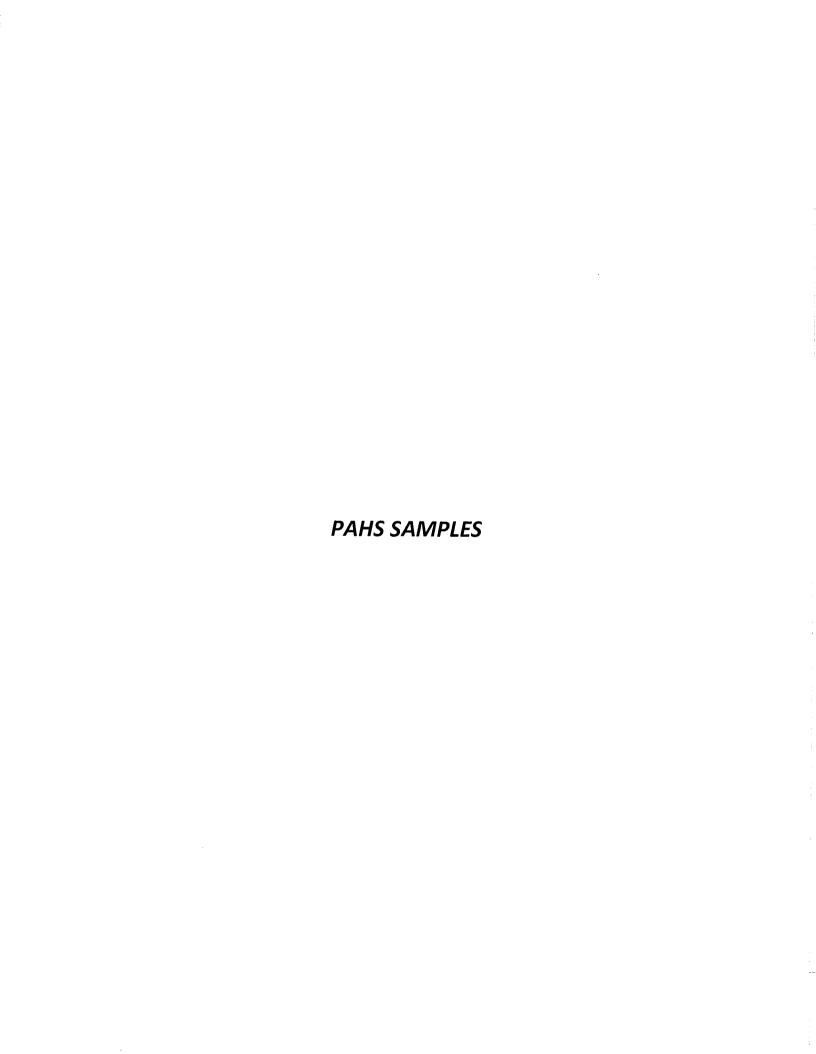


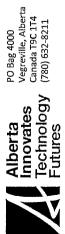
TEST REPORT

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Inquiries: (780) 632 8455





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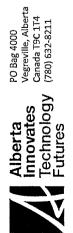
Page 1 of 30

RESULTS: Ad	Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE	CLIENT SAMPLE ID LICA/PUF/CLS/Dec 2, 2015		CANISTER ID 9801	Matr ix Air Filter		Priority Normal
Cal NVOICE: Cha PO PO S10	Calgary AB T2E 6P8 Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	DESCRIPTION: DATE SAMPLED: REPORT CREATED:	Cold Lake South 02-Dec-15): 08-Jan-16	00:00	DATE RECEIVED: REPORT NUMBER: VERSION:	09-Dec-15 15120089 Version 01	c-15 089 n 01
Lab ID	Parameter	Qualifier	Result Units		RDL Me	Method	Analysis Date
15120089-002	1-Methylnaphthalene		0.13 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	2-Methylnaphthalene		0.20 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	3-Methylcholanthrene	K, T, U	< 0.01 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	7,12-Dimethylbenz(a)anthracene		0.01 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Acenaphthene		0.21 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Acenaphthylene		0.10 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Acridine	K, T, U	< 0.01 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Anthracene		0.07 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Benzo(a)anthracene		0.04 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Benzo(a)pyrene		0.04 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Benzo(b,j,k)fluoranthene		0.12 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Benzo(c)phenanthrene		0.07 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Benzo(e)pyrene		0.04 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Benzo(ghi)perylene		0.07 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Chrysene		0.06 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01 ug/Filter		0.01 NA	NA-017	19-Dec-15
15120089-002	Dibenzo(a,l)pyrene		0.03 ug/Filter		0.01 NA	NA-017	19-Dec-15

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Date: Friday, January 08, 2016



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			Version 01	Analysis Date	19-Dec-15	19-Dec-15	19-Dec-15	19-Dec-15	19-Dec-15	19-Dec-15	19-Dec-15	19-Dec-15	19-Dec-15	
			VERSION:	Method	NA-017	NA-017	NA-017	NA-017	NA-017	NA-017	NA-017	NA-017	NA-017	
	0			RDL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
DATE SAMPLED	02-Dec-15 00:00			Result Units	0.01 ug/Filter	0.27 ug/Filter	0.46 ug/Filter	0.05 ug/Filter	0.20 ug/Filter	0.01 ug/Filter	0.65 ug/Filter	0.22 ug/Filter	0.32 ug/Filter	
Matrix	Air Filter		08-Jan-16	Qualifier										
			REPORT CREATED:											
MPLE ID CANISTER ID		Cold Lake South	15120089	Parameter	Dibenzo(ah)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Perylene	Phenanthrene	Pyrene	Retene	
CLIENT SAMPLE ID	LICA/PUF/CLS/Dec 2, 2015	DESCRIPTION:	REPORT NUMBER:	Lab ID P	15120089-002 D	15120089-002 F	15120089-002 F		15120089-002 N	15120089-002 F	15120089-002 F	15120089-002 F	15120089-002 F	

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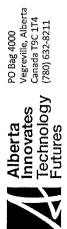
Inquiries: (780) 632 8455

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Julius Pretorius, Portfolio Manager

Report certified by:

Date: Friday, January 08, 2016



TEST REPORT

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	4000, 19 St NE			,ec 0, 2013	IE-03	און בוונפו		Norma
O 4	Calgary AB T2E 6P8		DESCRIPTION:	Cold Lake South				
INVOICE:	rmaine Code	780 812-2182	DATE SAMPLED:	08-Dec-15	0:00	DATE RECEIVED:	11-Dec-15	c-15
	PO Box 8237	700 012-7107	REPORT CREATED:	: 15-Jan- <u>1</u> 6		REPORT NUMBER:	: 15120124	124
	5107W-50 St Bonnyville					VERSION:	Version 01	n 01
A	AB T9N 2J5							
Lab ID	Parameter		Qualifier	Result Units		RDL M	Method	Analysis Date
15120124-004	1-Methylnaphthalene			0.22 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	2-Methylnaphthalene			0.32 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	3-Methylcholanthrene		K, T, U	< 0.01 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	7,12-Dimethylbenz(a)anthracene	thracene		0.06 ug/Filter			NA-017	14-Jan-16
15120124-004	Acenaphthene			0.22 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Acenaphthylene		-	0.51 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Acridine		K, T, U	< 0.01 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Anthracene			0.22 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Benzo(a)anthracene			0.06 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Benzo(a)pyrene			0.04 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Benzo(b,j,k)fluoranthene	d)		0.18 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Benzo(c)phenanthrene			0.02 ug/Filter		0.01 N	VA-017	14-Jan-16
15120124-004	Benzo(e)pyrene			0.06 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Benzo(ghi)perylene		K, T, U	< 0.01 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Chrysene			0.06 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Dibenzo(a,h)pyrene		K, T, U	< 0.01 ug/Filter		0.01 N	NA-017	14-Jan-16
15120124-004	Dibenzo(a,i)pyrene		K, T, U	< 0.01 ug/Filter		0.01 N	VA-017	14-Jan-16
15120124-004	Dibenzo(a,l)pyrene		K, T, U	< 0.01 ug/Filter		0.01 N	NA-017	14-Jan-16

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Inquiries: (780) 632 8455



TEST REPORT

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IENT SA		CANISTER ID		Matrix	DATE SAMPLED	.ED		
S	LICA/PUF/CLS/Dec 8, 2015	TE-03	d	Air Filter	08-Dec-15	0:00		
į	_	i						
REPORT NUMBER:	R: 15120124	22	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
	Dibenzo(ah)anthracene	ne			0.03 ug/Filter	0.01	NA-017	14-Jan-16
	Fluoranthene				0.40 ug/Filter	0.01	NA-017	14-Jan-16
15120124-004	Fluorene				0.44 ug/Filter	0.01	NA-017	14-Jan-16
15120124-004	Indeno(1,2,3-cd)pyrene	ene			0.06 ug/Filter	0.01	NA-017	14-Jan-16
15120124-004	Naphthalene				0.28 ug/Filter	0.01	NA-017	14-Jan-16
15120124-004	Perylene				0.02 ug/Filter	0.01	NA-017	14-Jan-16
15120124-004	Phenanthrene				1.26 ug/Filter	0.01	NA-017	14-Jan-16
15120124-004	Pyrene				0.30 ug/Filter	0.01	NA-017	14-Jan-16
15120124-004	Retene				0.50 ug/Filter	0.01	NA-017	14-Jan-16
Report certified by:	Graham Knox, Team Lead	ad	On behalf of	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	alysis and Testing Services			
January-15-16					Inquiries:	Inquiries: (780) 632 8455 E	E-mail: EAS.Results@albertainnovates.ca	tinnovates.ca

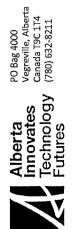
PO Bag 4000 Vegreville, Alberta Canada T9C 174 (780) 632-8211
Alberta Innovates Technology Futures

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

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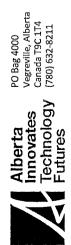
Analysis Date 14-Jan-16 4-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 .4-Jan-16 [4-Jan-16 14-Jan-16 14-Jan-16 .4-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 .4-Jan-16 14-Jan-16 14-Jan-16 [4-Jan-16 Priority Normal E-mail: EAS.Results@albertainnovates.ca Version 01 22-Dec-15 15120215 NA-017 NA-017 NA-017 NA-017 NA-017 NA-017 NA-017 NA-017 NA-017 NA-017 Method **VA-017** NA-017 NA-017 NA-017 NA-017 **NA-017 JA-017 VA-017** REPORT NUMBER: DATE RECEIVED: Air Filter Matrix VERSION: 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 Inquiries: (780) 632 8455 **CANISTER ID** 9702 0:00 0.03 ug/Filter 0.11 ug/Filter < 0.01 ug/Filter 0.04 ug/Filter < 0.01 ug/Filter 0.03 ug/Filter < 0.01 ug/Filter < 0.01 ug/Filter 0.13 ug/Filter 0.06 ug/Filter 0.12 ug/Filter < 0.01 ug/Filter 0.04 ug/Filter < 0.01 ug/Filter < 0.01 ug/Filter 0.18 ug/Filter < 0.01 ug/Filter < 0.01 ug/Filter Cold Lake South On behalf of: PJ Pretorius, Manager, Analysis and Testing Services 14-Dec-15 Result Units 15-Jan-16 LICA/PUF/CLS/Dec 14, 2015 CLIENT SAMPLE ID REPORT CREATED: DATE SAMPLED: **DESCRIPTION:** K, T, U K, T, U K, T, U Κ, Τ, U K, **T**, U K, T, U K, T, U K, T, U K, T, U Qualifier 780 812-2182 Lakeland Industry and Community Assn 7,12-Dimethylbenz(a)anthracene Benzo(b,j,k)fluoranthene T2E 6P8 T9N 2J5 Benzo(c)phenanthrene 3-Methylcholanthrene 2-Methylnaphthalene 1-Methylnaphthalene Graham Knox, Team Lead Benzo(a)anthracene Dibenzo(a,h)pyrene Adewunmi Adekanmbi Benzo(ghi)perylene Dibenzo(a,i)pyrene Dibenzo(a,I)pyrene Acenaphthylene Benzo(a)pyrene Benzo(e)pyrene Acenaphthene Charmaine Code Anthracene Parameter 4000, 19 St NE Chrysene Acridine 5107W-50 St PO Box 8237 Bonnyville Calgary Date: January-15-16 Report certified by: AB AB 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 15120215-005 RESULTS: **INVOICE:** Lab ID



TEST REPORT

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CLIENTS	CLIENT SAMPLE ID CANIS	CANISTER ID MA	Matrix	DATE SAMPLED			
LICA/PUF/CL	LICA/PUF/CLS/Dec 14, 2015 97		Air Filter	14-Dec-15 0:00			
DESCRIPTION: REPORT NUMBER:	Cold Lake South ER: 15120215	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120215-005	Dibenzo(ah)anthracene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-005	Fluoranthene			0.14 ug/Filter	0.01	NA-017	14-Jan-16
15120215-005	Fluorene			0.14 ug/Filter	0.01	NA-017	14-Jan-16
15120215-005	Indeno(1,2,3-cd)pyrene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-005	Naphthalene			0.19 ug/Filter	0.01	NA-017	14-Jan-16
15120215-005	Perylene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-005	Phenanthrene			0.33 ug/Filter	0.01	NA-017	14-Jan-16
15120215-005	Pyrene			0.11 ug/Filter	0.01	NA-017	14-Jan-16
15120215-005	Retene			0.04 ug/Filter	0.01	NA-017	14-Jan-16
Report certified by:	: Graham Knox, Team Lead	On behalf of:	On behalf of: PI Pretorius, Manager, Analysis and Testing Services	lysis and Testing Services			
Date: January-15-16	-16			Inquiries: (780) 632 8455		E-mail: EAS.Results@albertainnovates.ca	ainnovates.ca



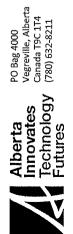
TEST REPORT

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RESULTS:	Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE	CLIENT SAMPLE ID LICA/PUF/CLS/Dec 20, 2015	MPLE ID CANISTER ID Jec 20, 2015 TE-06	·	Matrix Air Filter	Priority Normal
	Calgary T2E 6P8	DESCRIPTION:	Cold Lake South			
INVOICE:	rmaine Code	DATE SAMPLED: REPORT CREATED:	20-Dec-15 0:00): 15-Jan-16		نہ	04-Jan-16 16010003
	FO BOX 6257 5107W-50 St Bonnyville			VERSION:		Version 01
	AB T9N 2J5					
Lab ID	Parameter	Qualifier	Result Units	RDL	Method	Analysis Date
16010003-004	4 1-Methylnaphthalene		1.24 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 2-Methylnaphthalene		1.84 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 3-Methylcholanthrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 7,12-Dimethylbenz(a)anthracene		0.05 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Acenaphthene		0.23 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Acenaphthylene		0.75 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Acridine	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Anthracene		0.15 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Benzo(a)anthracene		0.07 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Benzo(a)pyrene		0.04 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Benzo(b,j,k)fluoranthene		0.19 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Benzo(c)phenanthrene		0.02 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Benzo(e)pyrene		0.06 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Benzo(ghi)perylene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Chrysene		0.08 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Dibenzo(a,h)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Dibenzo(a,i)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-004	4 Dibenzo(a,l)pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
Report certified by:	Graham Knox, Team Lead	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	is and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



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				7 (
			Version 01	Analysis Date	14-Jan-16	14-Jan-16	14-Jan-16	14-Jan-16	14-Jan-16	14-Jan-16	14-Jan-16	14-Jan-16	14-Jan-16	
			VERSION:	Method	NA-017	NA-017	NA-017	NA-017	NA-017	NA-017	NA-017	NA-017	NA-017	
	0			RDL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
DATE SAMPLED	20-Dec-15 0:00			Result Units	0.02 ug/Filter	0.51 ug/Filter	0.42 ug/Filter	0.06 ug/Filter	1.25 ug/Filter	0.01 ug/Filter	1.38 ug/Filter	0.34 ug/Filter	0.31 ug/Filter	ysis and Testing Services
Matrix	Air Filter		15-Jan-16	Qualifier										On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
	Air		REPORT CREATED:											On behalf of: 1
E ID CANISTER ID	20, 2015 TE-06	Cold Lake South	16010003	Parameter	Dibenzo(ah)anthracene	Fluoranthene	ene	Indeno(1,2,3-cd)pyrene	Naphthalene	ene	Phenanthrene	Je	ne	Graham Knox, Team Lead
CLIENT SAMPLE ID	LICA/PUF/CLS/Dec 20, 2015		REPORT NUMBER: 1	Lab ID Parar	16010003-004 Diber		16010003-004 Fluorene	16010003-004 Inden		16010003-004 Perylene	16010003-004 Phena	16010003-004 Pyrene	16010003-004 Retene	Report certified by: Gra

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



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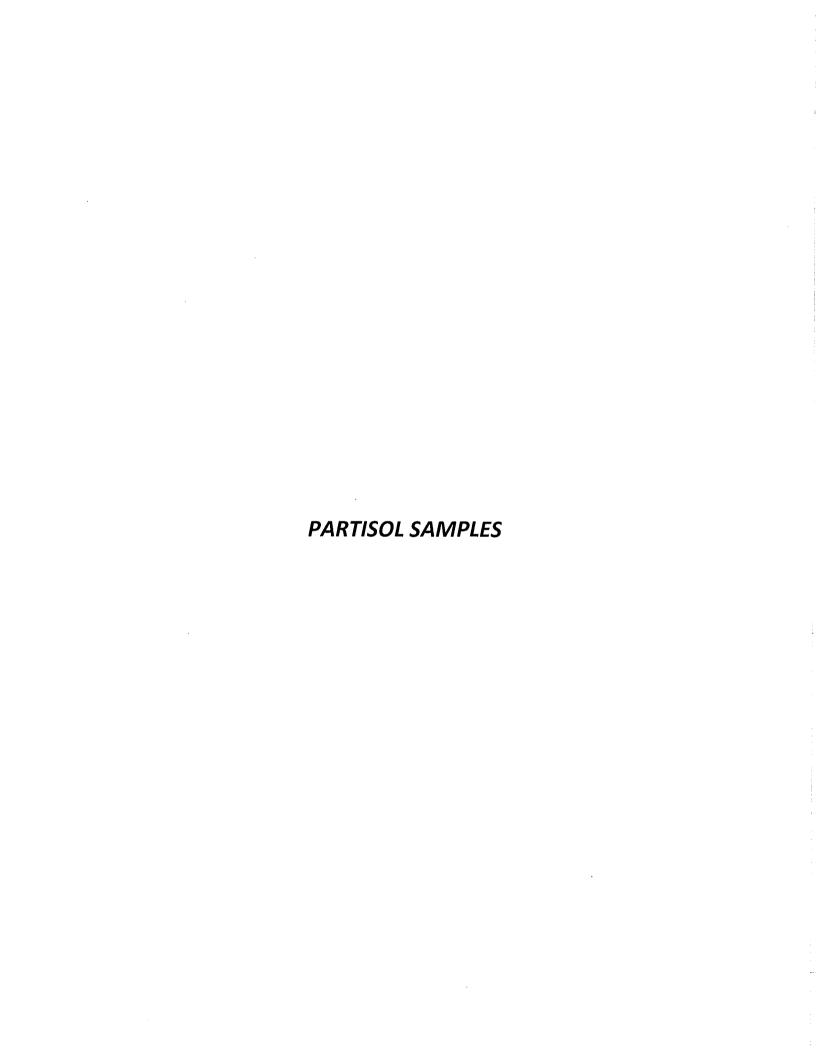
Analysis Date 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 .4-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 [4-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 Priority Normal E-mail: EAS.Results@albertainnovates.ca Version 01 04-Jan-16 16010004 NA-017 NA-017 NA-017 NA-017 NA-017 NA-017 Method NA-017 **VA-017 VA-017 IA-017 VA-017 VA-017 IA-017 NA-017 VA-017 VA-017 IA-017 VA-017** REPORT NUMBER: DATE RECEIVED: Air Filter Matrix VERSION: 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 Inquiries: (780) 632 8455 CANISTER ID TE-02 0:00 0.04 ug/Filter < 0.01 ug/Filter : 0.01 ug/Filter : 0.01 ug/Filter 0.03 ug/Filter 0.01 ug/Filter 0.13 ug/Filter < 0.01 ug/Filter 0.04 ug/Filter < 0.01 ug/Filter 0.53 ug/Filter 0.69 ug/Filter < 0.01 ug/Filter 0.05 ug/Filter 0.09 ug/Filter 0.17 ug/Filter < 0.01 ug/Filter 0.02 ug/Filter Cold Lake South On behalf of: PJ Pretorius, Manager, Analysis and Testing Services 26-Dec-15 **Result Units** 15-Jan-16 LICA/PUF/CLS/Dec. 26, 2015 **CLIENT SAMPLE ID** REPORT CREATED: DATE SAMPLED: **DESCRIPTION:** Κ, Τ, U K, T, U K, T, U К, Т, U Κ, Τ, U K, T, U K, T, U Qualifier 780 812-2182 Lakeland Industry and Community Assn 7,12-Dimethylbenz(a)anthracene Benzo(b,j,k)fluoranthene T2E 6P8 **19N 2J5** Benzo(c)phenanthrene 3-Methylcholanthrene Graham Knox, Team Lead 1-Methylnaphthalene 2-Methylnaphthalene Benzo(a)anthracene Dibenzo(a,h)pyrene Benzo(ghi)perylene Dibenzo(a,i)pyrene Adewunmi Adekanmbi Dibenzo(a,l)pyrene Acenaphthylene Benzo(a)pyrene Benzo(e)pyrene Acenaphthene Charmaine Code Anthracene Parameter Chrysene 4000, 19 St NE Acridine 5107W-50 St PO Box 8237 Bonnyville Calgary Date: January-15-16 Report certified by: AB AB 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 16010004-002 **INVOICE: RESULTS:** Lab ID



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CLIENT S	CLIENT SAMPLE ID CANI	CANISTER ID MA	Matrix	DATE SAMPLED			
LICA/PUF/CL	LICA/PUF/CLS/Dec. 26, 2015		Air Filter	26-Dec-15 0:00			
DESCRIPTION: REPORT NUMBER:	Cold Lake South ER: 16010004	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
16010004-002	Dibenzo(ah)anthracene	a	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010004-002	Fluoranthene			0.11 ug/Filter	0.01	NA-017	14-Jan-16
16010004-002	Fluorene			0.16 ug/Filter	0.01	NA-017	14-Jan-16
16010004-002	Indeno(1,2,3-cd)pyrene	υ		0.02 ug/Filter	0.01	NA-017	14-Jan-16
16010004-002	Naphthalene			0.90 ug/Filter	0.01	NA-017	14-Jan-16
16010004-002	Perylene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010004-002	Phenanthrene			0.31 ug/Filter	0.01	NA-017	14-Jan-16
16010004-002	Pyrene			0.10 ug/Filter	0.01	NA-017	14-Jan-16
16010004-002	Retene			0.10 ug/Filter	0.01	NA-017	14-Jan-16
Report certified by:	r: Graham Knox, Team Lead		On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	lysis and Testing Services			
Date: January-15-16	.16			Inquiries: (780) 632 8455		E-mail: EAS.Results@albertainnovates.ca	ainnovates.ca





TEST REPORT

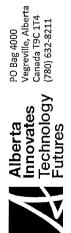
Page 1 of 7

RESULTS:	Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE	CLIENT SAMPLE ID LICA P5012879	ID CANISTER ID	ID Matrix Air Filter	Priority Normal	rity nal
INVOICE:	Calgary AB T2E 6P8 Charmaine Code 780 812-2182 PO Box 8237 5107W-50 St Bonnyville T9N 2J5	DESCRIPTION: Cold DATE SAMPLED: (REPORT CREATED: (Cold Lake South 02-Dec-15 0:00 : 05-Jan-16	DATE RECEIVED: REPORT NUMBER: VERSION:	: 09-Dec-15 : R: 15120088 Version 01	
Lab ID 15120088-001	Parameter Particulate Weight	Qualifier Res	0.288 mg	0.004	Method Analy AC-029 11-L	Analysis Date 11-Dec-15
Report certified by:	Graham Knox, Team Lead	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	lesting Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Date: January 5, 2016



TEST REPORT

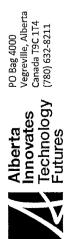
Page 1 of 7

RESULTS:	Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE	oi Community Assn	CLIENT SAMPLE ID LICA P5012876		CANISTER ID	Matrix Air Filter		Priority Normal
INVOICE:	Calgary AB T2I Charmaine Code P0 Box 8237 5107W-50 St Bonnyville AB T91	T2E 6P8 780 812-2182 T9N 2J5	DESCRIPTION: DATE SAMPLED: REPORT CREATED:	Cold Lake South 08-Dec-15 12-Jan-16	0:00	DATE RECEIVED: REPORT NUMBER: VERSION:	11-Dec-15 R: 15120123 Version 01	c-15 123 n 01
Lab ID 15120123-001	Parameter 01 Particulate Weight		Qualifier	Result Units 0.085 mg	0	0.004 h	Method AC-029	Analysis Date 16-Dec-15
Report certified by:	ied by: Graham Knox, Team Lead		On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	and Testing Services				

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

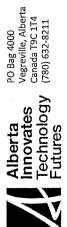
Date: January 12, 2016



TEST REPORT

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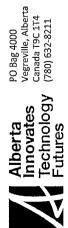
RESULTS:	Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE	CLIENT SAMPLE ID LICA P5012877	CANISTER ID	Matrix Air Filter	Priority Normal
INVOICE:	Calgary AB T2E 6P8 Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	DESCRIPTION: Cold Lake South DATE SAMPLED: 14-Dec-15 REPORT CREATED: 06-Jan-16	outh 15 0:00 .6	DATE RECEIVED: REPORT NUMBER: VERSION:	22-Dec-15 15120213 Version 01
Lab ID 15120213-001	Parameter Darticulate Weight	Qualifier Result Units		RDL М	Method Analysis Date AC-029 29-Dec-15
Report certified by: Date: January 6, 2016	Graham Knox, Team Lead	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	vices Inquiries: (780) 632 8455		E-mail: EAS.Results@albertainnovates.ca



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RESULTS:	Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE	CLIENT SAMPLE ID CA	CANISTER ID Matrix Air Filter	Priority Normal
INVOICE:	Calgary AB T2E 6P8 Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	DESCRIPTION: Cold Lake South DATE SAMPLED: 20-Dec-15 REPORT CREATED: 12-Jan-16	0:00 DATE RECEIVED: C REPORT NUMBER: 1 VERSION:	04-Jan-16 16010001 Version 01
Lab ID 16010001-001	Parameter 001 Particulate Weight	Qualifier Result Units 0.158 mg	8DL Method 0.004 AC-029	od Analysis Date
Report certified by: Date: January 12.	Report certified by: Graham Knox, Team Lead Date: January 12, 2016	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Inqui	ices Inquiries: (780) 632 8455 E-mail: EAS.Results@albertainnovates.ca	bertainnovates.ca



TEST REPORT

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RESULTS:	Adewunmi Adekanmbi Lakeland Industry and Community Assn 4000, 19 St NE	CLIENT SAMPLE ID CANISTER ID LICA P5006173	ER ID Matrix Air Filter	Priority If Normal
INVOICE:	Calgary AB T2E 6P8 Charmaine Code PO Box 8237 5107W-50 St Bonnyville AB T9N 2J5	DESCRIPTION: Cold Lake South DATE SAMPLED: 26-Dec-15 0:00 REPORT CREATED: 12-Jan-16 REPORT REVISED: 13-Jan-16	00 DATE RECEIVED: REPORT NUMBER: VERSION:	. D: 04-Jan-16 BER: 16010002 Version 02
Lab ID 16010002-001	Parameter 001 Particulate Weight	Qualifier Result Units 0.204 mg	RDL 0.004	Method Analysis Date AC-029 05-Jan-16
Report certified by:	Graham Knox, Team Lead	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services		

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

APPENDIX V CHAIN OF CUSTODY



Client: Lakeland Industry & Community Association

Site: Cold Lake South Site

Maxxam Analytics - Air Services Group Project Chain of Custody

Project #: 2833-2015-12-01- C

Contact: Mike Bisaga

QA Check Complete	modmita	Date	19-Jan-2016
QA Check Review	worlnie	Date _	19-Jan-2016
Report Complete	Ingelocker	Date _	21-Jan-2016
Report Reviewed	Mg/	Date _	21-Jan-16
Report Shipped		Date _	
Notes			



AMBIENT AIR MONITORING MONTHLY DATA REPORT

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION ELK POINT AIRPORT SITE

JOB #:2833-2015-12-35- C

DECEMBER 2015

Prepared for:

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

BOX 8237, 5107W - 50 STREET BONNYVILLE, ALBERTA T9N 2J5

Attention: MIKE BISAGA

DATE: January 19, 2016

Prepared by:

Wunmi Adekanmbi, M.Sc.

Project Manager Assistant, Source Testing, Maxxam Analytics

Reviewed by:

Lily Lin, B.Sg

Senior Project Manager, Air Services, Maxxam Analytics



SUMMARY

In DECEMBER 2015, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Elk Point Airport Site at Lakeland Industry & Community Association, near Bonnyville, Alberta. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the Project Coordinator.

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

PM 2.5: Three hours of data were invalidated as the data were below –3 ug/m3 this month.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0 Discussion. On this basis, Maxxam is issuing this completed report to Lakeland Industry & Community Association, Elk Point Airport Site.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3677 or toll-free at 1-800-386-7247.



Monthly Continuous Data Summary

Lakeland Indu	stry & C	ommun	ity Ass	ociation				N	IAXIMUM V	ALUES			
Elk Point Airpo	ort Site							1-HOUR			24-H0	OUR	OPERATIONAL TIME
PARAMETER	OBJE	TIVES	EXCEE	DENCES	MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED	WIND DIRECTION	READING	DAY	(%)
	1-HR	24-HR	1-HR	24-HR	AVERAGE				(KPH)	(DEGREES)			
SO2 (PPB)	172	48	0	0	0	1	VAR	VAR	VAR	VAR	0.3	1	100.0
H2S (PPB)	10	3	0	0	0	1	VAR	VAR	VAR	VAR	0.4	1	100.0
THC (PPM)	-		-	,	3.0	9.4	1	17	9.2	WNW	6,4	22	100.0
CH4 (PPM)	-	-	-	-	3.0	9.0	1	17	9.2	WNW	6.3	22	100.0
NMHC (PPM)	-	_	-	_	0.01	0.40	1	17	9.2	wnw	0.14	1	100.0
NO2 (PPB)	159	-	0	-	10.7	27.1	1	18	11.3	w	19.3	1	100.0
NO (PPB)	-	-	-	-	8.5	89.3	22	12	0.8	SE	57.0	22	100.0
NOX (PPB)	-	_	-	ı	19.2	108.8	22	12	0.8	SE	74.1	22	100.0
O3 (PPB)	82	-	0	-	10	30	31	22	23.7	WNW	22.7	17	100.0
PM2.5 (UG/M3)	-	30	-	0	8.1	29.0	21	12	6.8	w	20.0	22	99.6
VECTOR WS (KPH)	-	-	-	-	8.7	29.7	31	15	-	w	16.3	31	100.0
VECTOR WD (DEG)	-	-	-	-	SE	-	-	-	-	-	-	-	100.0

NA-NOT AVAILABLE VAR-VARIOUS



Exceedence Summary Report

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences
No Exceedences Recorded During the Month

H₂S 1- Hour Exceedences No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences
No Exceedences Recorded During the Month

PM2.5 24- Hour Exceedences
No Exceedences Recorded During the Month



Volatile Organics (VOCs) Data Summary

Sample Collected Date	Maximum reading (PPB)	Volatile Organic Compound
DECEMBER 2, 2015	4.31	N-BUTANE
DECEMBER 8, 2015	3.5	ACETONE
DECEMBER 14, 2015	1.82	N-BUTANE
DECEMBER 20, 2015	2.44	N-BUTANE
DECEMBER 26, 2015	3.03	N-BUTANE

Note: NA



Polycyclic Aromatic Hydrocarbons (PAHs) Data Summary

Sample Collected Date	Maximum reading (ug)	Semi-Volatile Organic
DECEMBER 2, 2015	0.53	PHENANTHRENE
DECEMBER 8, 2015	0.22	PHENANTHRENE
DECEMBER 14, 2015	0.31	NAPHTHALENE
DECEMBER 20, 2015	0.57	2-METHYLNAPHTHALENE
DECEMBER 26, 2015	0.31	2-METHYLNAPHTHALENE

Note: NA



Volatile Organics (VOCs) Data Summary - NMHC Canister System

Sample Collected Date	Maximum reading (PPB)	Volatile Organic Compound
DECEMBER 1, 2015	9.99	ISOBUTANE
DECEMBER 12, 2015	6.18	N-BUTANE

Note: NA



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<u>Title</u>	<u>Page</u>
1.0 Discussion	4
2.0 Project Personnel	7
3.0 Plant Monthly Required Al	MD Summary 7
4.0 Calculations and Results	7
5.0 Methods and Procedures	8
Appendix I	Continuous Monitoring Data Results
	Sulphur Dioxide
	Hydrogen Sulphide
	Total Hydrocarbon
	Methane
	Non-Methane Hydrocarbon
	Oxides of Nitrogen
	Nitric Oxides
	Nitrogen Dioxide Ozone
	Particulate Matter 2.5
	Wind Speed
	Wind Direction
	Standard Deviation Wind Direction
Appendix II	
	VOC Results
	PAH Results
	NMHC Canister Results
Appendix III	Analyzer Calibration Results
	Sulphur Dioxide
	Hydrogen Sulphide
	Total Hydrocarbon
	Nitrogen Dioxide
	Ozone
	Particulate Matter
	Wind System
	Calibrators
	Calibration Gases





Appendix IV	Analytical Results
	VOCs Samples
	PAHs Samples
	NMHC Canister Samples
Appendix V	Chain of Custody



1.0 Discussion

This monthly report consists of data for parameters SO2, H2S, THC, CH4, NMHC, NOx, NO, NO2, O3, PM2.5, WS, WD and STDWD. It also includes results for non-continuous parameters VOC, PAH and NMHC canister.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) is used for zero checks and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibration is done a minimum of once a month for each continuous air monitor. In addition calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor (greater than 15%).

Hourly data is corrected using daily zero information.



SULPHUR DIOXIDE (SO2)

The analyzer was working well throughout the month. A shut-down calibration was completed prior to performing a digital output calibration on December 7. A one-point check was performed afterwards followed by a zero/span check. The results for both checks were good. A full post-repair calibration was completed on December 8. The analyzer met the calibration requirements.

HYDROGEN SULPHIDE (H2S)

The daily zero drifted close to the acceptable high limit on November 30. An as found points check was performed on December 4 to check the analyzer's functionality. The result was good. The routine monthly calibration was completed on December 7.

TOTAL HYDROCARBONS (THC), METHANE (CH4), and NON-METHANE HYDROCARBONS (NMHC)

The analyzer was working well throughout the month. The Nitrogen and span gas cylinders were replaced on December 1. The routine monthly calibration was performed on December 8.

NITROGEN DIOXIDE (NO2)

The analyzer was working well throughout the month. A shut-down calibration was completed prior to performing a digital output calibration on December 7. A one-point check was performed afterwards followed by a zero/span check. The results for both checks were good. A full post-repair calibration was completed on December 8. The analyzer met the calibration requirements.

OZONE (O3)

The analyzer was working well throughout the month. The routine monthly calibration was performed on December 8.

PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5)

Two Teom audits were performed on this month: one was completed on December 9, and the other audit was performed on December 24. The FDMS filter were replaced during the audits. The flow calibration was not done during the audit on December 24 due to extreme cold weather conditions. Data was corrected using Alberta air quality guideline. If the data was between 0 to -3 ug/m3, the data was corrected to 0 ug/m3. If the data was below -3 ug/m3, the data was invalidated. Three hours of data were invalidated as the data were below -3 ug/m3 this month.

WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.

The wind system was working well throughout the month.





VOC SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the VOCs were reported in ppb.

Samples were collected on December 2, 8, 14, 20 and 26. Analytical results are included in this report.

PAH SAMPLES

The sampler was programmed to run for 24 hours, and, every 6 days per sample cycle. The values for the PAHs were reported in µg.

Samples were collected on December 2, 8, 14, 20 and 26. Analytical results are included in this report.

NMHC CANISTER SAMPLES

The sampler was programmed to be triggered when the 5-minute average concentration of NMHC is above 0.30 ppm. Two canister events were recorded this month: concentrations of 0.3 ppm on December 1 at 17:00 and 0.5 ppm on December 12 at 10:10. Analytical results are included in this report.



2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling team consisted of Alexander Yakupov and Raja Ashraf.

3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, and 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006).



5.0 Methods and Procedures

The following methods and procedures were used to complete the test program:

Maxxam AIR SOP-00001 - Methane, Non-Methane Hydrocarbon Analyzer

Monitoring

Maxxam AIR SOP-00208: RM Young Monitor Calibration

Maxxam AIR SOP-00209: Ambient H2S Monitoring

Maxxam AIR SOP-00211: Ambient SO2 Monitoring

Maxxam AIR SOP-00212: Ambient O3 Monitoring

Maxxam AIR SOP-00213: Ambient NO/NO2/NOx Monitoring

Maxxam AIR SOP-00215: Teom Operation

Maxxam AIR SOP-00225: The Collection of VOCs in Ambient Air Using Canister

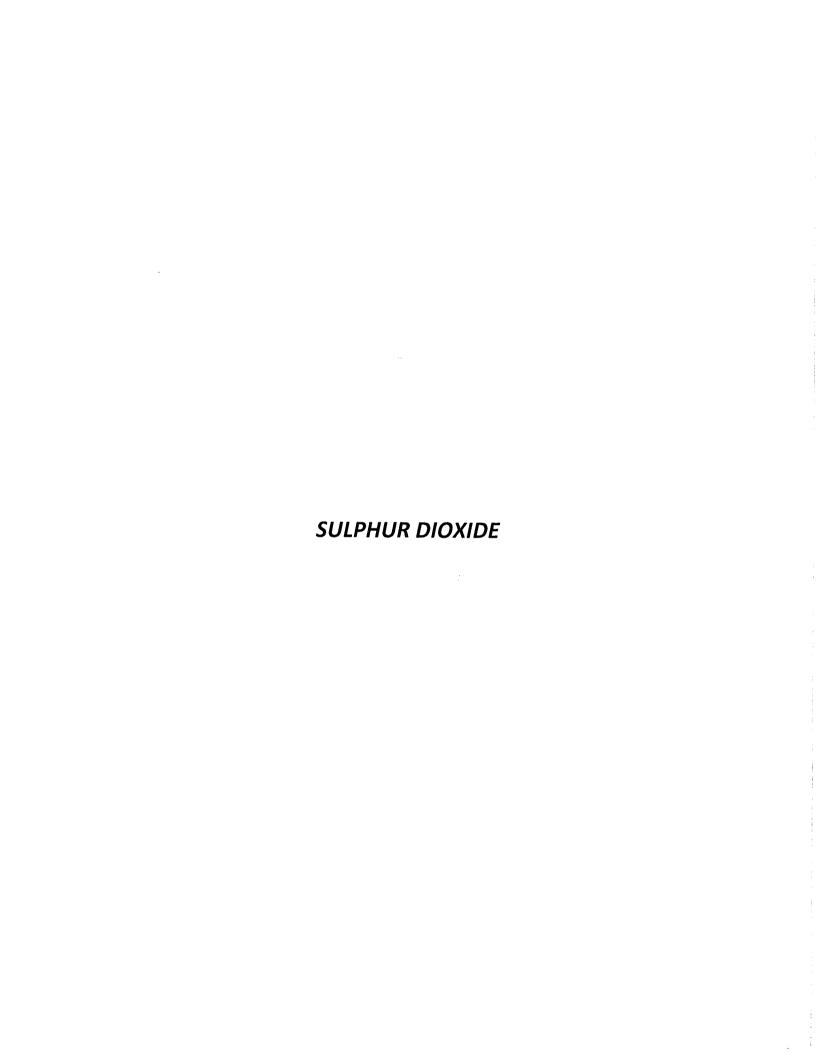
and Xontech

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - API 100E UV Flourescent Analyzer
Hydrogen Sulphide - API 101A UV Flourescent Analyzer
Total Hydrocarbons - Thermo 55i FID Analyzer
Methane, Non-Methane Hydrocarbon - Thermo 55i FID Analyzer
Oxides of Nitrogen - API 200E Chemiluminescent Analyzer
Ozone - Thermo 49i Photometric Analyzer
Particulate Matter (PM2.5) - R&P 1405F Teom Unit
Wind System - RM Young Unit
Datalogger - ESC 8832

APPENDIX I CONTINUOUS MONITORING DATA RESULTS



Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C



MST

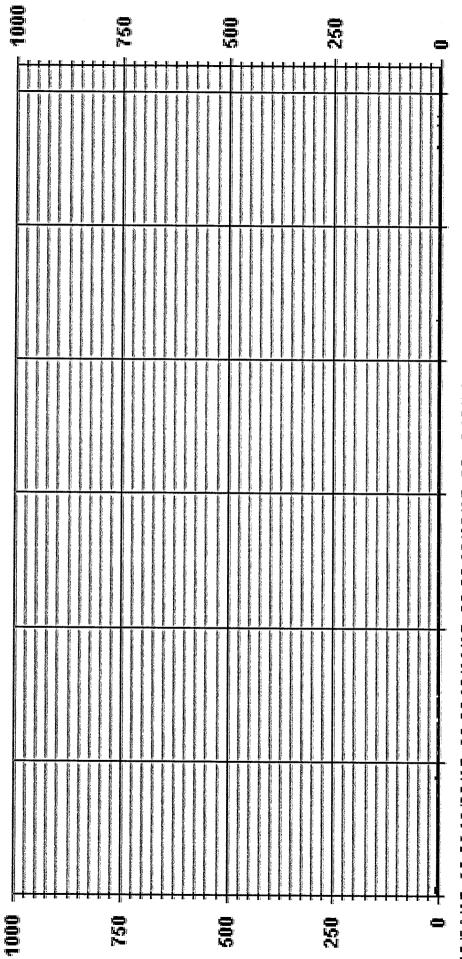
SULPHUR DIOXIDE (SO2) hourly averages in ppb

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of Hour Averages



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- LICA35 SO2_ PPB



Maxxam A Bureau Veritas Group Compeny

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION
Elk Point Airport Site - DECEMBER 2015
JOB # 2833-2015-12-35- C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

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- LICA35 SOZMAX PPB

LICA-EIK SO2_ / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

Logger Id : 35 Site Name : LICA-ELK Parameter : SO2 Units : PPB

Wind Parameter : WDR Instrument Height : 10 Meters

Instrument

Direction

Freq	100.00	%	00.	00.	00-	00.	
NNW	3.00	00.	00.	00.	00.	%	3.00
WM	7.28	00.	%	00.	%	%	7.28
WNW	8.57	00.	00.	00.	00.	00.	8.57
Œ	10.85	%	00.	00.	00.	%	10.85
WSW	9.57	%	00.	00.	8.	00.	9.57
SW	2.42	00.	00.	00.	00.	00.	2.42
SSW	1.57	00.	00.	00.	00.	00.	1.57
w	1.42	00.	00.	00.	00.	00.	1.42
SSE	2.85	%	00.	00.	00.	00.	2.85
SE	8.14	00.	00.	00'	00.	00.	8.14
ESE	22.57	00.	00.	00.	00	· 0	22.57
ы	15.57	00.	00.	00.	00.	00.	15.57
ENE	2.28	00.	00.	00.	%	00.	2.28
E	1.00	.00	00.	%	%	00.	1.00
NNE	1.00	00,	%	00.	00	00.	1.00
z	1.85	00.	00.	00.	00.	00.	1.85
Limit	70	9	110	170	340	340	Totals
	٧	٧	v	٧	٧	X	

Calm : .00 %

Total # Operational Hours: 700

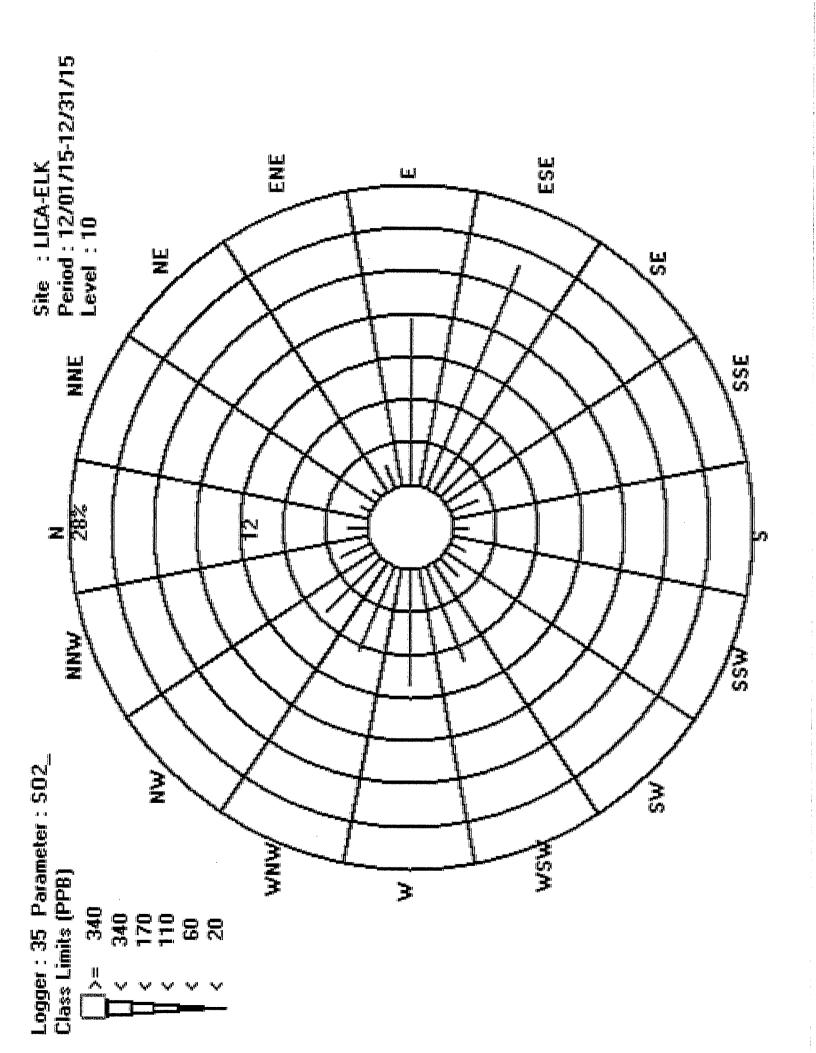
Distribution By Samples

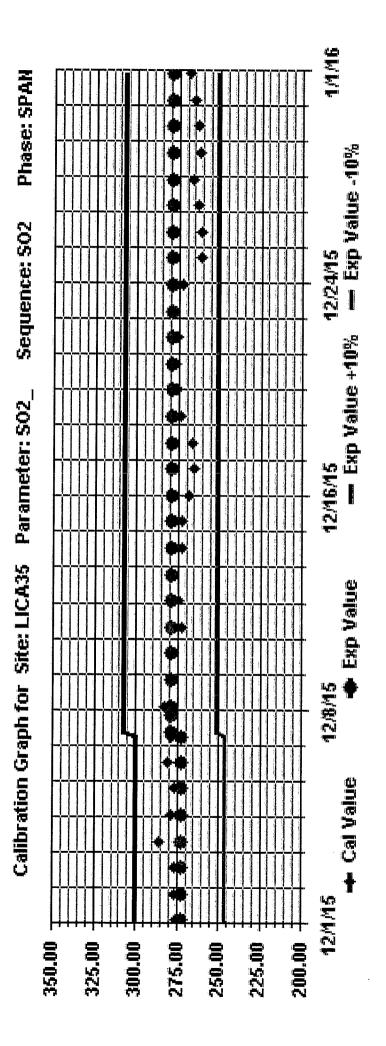
Direction

	Freq	700						
	NNW	21 7						21
	NW	21						51
	WNW	09						09
	įz.	92						92
	WSW							29
	SW	17						17
	SSW	11						11
	w	61						10
	SSE	20						20
i i	SE	57						57
	ESE	158						158
	M							109
		109						
	ENE	16						16
	Ä	7						7
	NNE	7						7
	×	13						13
	Limit	20	09	110	170	340	340	Totals
	Ħ	٧	٧	v	٧	v	X	ΣĬ

Calm : .00 %

Total # Operational Hours : 700







JOB # 2833-2015-12-35- C



MST

urly averages in ppb

hou
(H2S)
SULPHIDE (
HYDROGEN

		8 8	4.00	5:00	1:00 2:00 3:00 4:00 5:00 6:00 77	2.00.7 2.00.7	9 5 9	00 10:0) 14.00	12:00	13:00	14:00	15:00	16:00	00.4	7:00 13	8:00 3:00 Z0	98	90	5. 8 2. 9. 2. 9.	23:00	DAILY	24-HOUR AVG	RDGS
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1	0	0		0	0	0				0	0	0	0	s	0	0						0	0.0	54
1		0		0	0	0				0	0	0	s	0	0	0						0	0.0	24
1		0		0	0	0				0	0	S	0	0	0	0						0	0.0	24
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1		0		0	0	0				0	0	0	0	0	0	0						0	0.0	24
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S O		0		0	0	0				0	1	7	0	0	0	0						1	0.1	54
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0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0		0	0	0				0	0	0	0	0	0	0						Ţ	0.1	24
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0		0	0	0				0	0	0	0	0	0	0						0	0.0	54
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		0.0		0.1	0.0	0	Ī	_	_	0.0	0.0	0.1	0.0	0.0	0.0	_								

MAINTENANCE DALIZZERO/SPANCHECK X - MACHINE MALFUNCTION: POWER:EAILURE O - OPERATOR ERROR OUT FOR REPAIR X - COLLECTION ERROR	24 HOUR AVERAGES FOR DECEMBER 2015				3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 17 22 26 24 25 26 27 26 26 26 26 26 26 26 26 26 26 26 26 26
P-W-P-D		9.0	8 2 8	2 4 8 6	128

STATUS FLAG CODES

OBJECTIVE LIMIT:	ALBERTA	ALBERTA ENVIRONMENT: T-HR	1-HR 10	0 RPB 24-HR	3≤ ppB
	M	MONTHLY SUMMARY			
NUMBER OF 144R EXCREDENCES: NUMBER OF 24 HR EXCREDENCES:	o o				
NUMBER OF NON-ZERO READINGS:	15				
MAXIMUM 1-HR AVERAGE: 0.4 MAXIMUM 24-HR AVERAGE: 0.4		PPB @ HOUR(S) PPB	VAR	ON DAY(S) ON DAY(S) VAR-VARIOUS	VAR 1

744 HRS 100.0 % 0 PPB

OPERATIONAL TIME:
AMD OPERATION UPTIME:
MONTHLY AVERAGE:

HRS H

35

IZS CALIBRATION TIME:
MONTHLY CALIBRATION TIME:
STANDARD DEVIATION:

Of Hour Averages

		. 20	55	
=	HCD P	20	25	

12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

PP Bdd

H2S_

- LICA35



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Elk Point Airport Site - DECEMBER 2015

JOB # 2833-2015-12-35- C

HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

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	RDGS.	24	24	24	54	54	54	54	24	54	54	77	24	24	54	54	54	54	54	54	54	54	24	24	54	54	54	54	54	54	54	54		
24-HOUR	AVG.	0.7	0.1	0.0	0.1	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	9.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.2	0.0		
DAILY	MAX.	7	₩	₩	1	0	1	Н	1	0	0	0	0	7	0	7	0	0	0	7	0	r	н	0	0	1	0	0	1	7	er,	-		
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22:00	23:00	0	0	0	s	0	0	s	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	s	0	1	0.0
21:00	22:00	0	0	0	0	s	0	0	s	0	0	0	0	0	0	0	0	0	0	0	0	Н	0	0	0	0	0	0	0	0	0	s	1	0.0
20:00	21:00	0	0	0	0	0	s	0	0	s	0	0	0	0	0	0	0	0	0	0	0	٦	0	0	0	0	0	0	0	0	0	0	1	0.0
19:00	20:00	0	0	0	0	0	Ţ	0	0	0	s	0	0	0	0	0	0	0	0	7	0	1	1	0	0	0	0	0	0	7	0	0	2	0.2
18:00 19:00	19:00	1	0	0	0	0	1	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	2	0.1
17.00		1	0	1	0	0	Н	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	2	0.2
16:00	17:00	₽	0	0	ပ	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	0	0	Н	0	0	0	0	0	0	0	0	0	1	0.1
15:00	16:00	Н	0	0	ပ	0	0	ပ	0	0	0	0	0	1	S	0	0	0	0	0	0	ч	Н	0	0	0	0	0	0	0	0	0	т	0.1
14:00	Ç [-	0	0	0	0	0	ပ	0	0	0	0	0	0	0	S	0	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0	1	0.1
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6.7.3	13.00	₽	0	0	0	0	0	ပ	0	0	0	0	0	0	0	0	0	s	0	0	0	ᆏ	ᆏ	0	0	0	0	0	0	0	0	0	1	0.1
30	12:00	Н	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	S	0	0	0	П	0	0	0	0	0	0	0	0	0	1	0.1
10:00	375	∺	0	0	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	s	0	0	-	0	0	+	0	0	0	0	0	0	1	0.1
00-6	10:00	↔	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	S	CT.	0	0	0	Н	0	0	0	0	0	1	6	0.3
8:00	- 3:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	s	0	0	0	0	0	0	0	0	0	0	1	0.0
7:00	8:00	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	S	0	0	0	0	0	0	0	0	0	Т	0.0
9:00	7:00	₩	0	0	₩	0	0	∺	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	v	0	0	0	0	0	0	0	0	1	0.1
4:00. 5:00	9:00	7	H	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	Н	0	0	S	0	0	0	0	0	0	0	1	0.1
4:00	5:00	1	н	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	0	0	0	0	н	0.1
3.00	4:00	0	Н	0	0	0	0	۲-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	0	М	0	0	П	0.1
	3:00	S	0	0	0	0	0	Н	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	0	4	CO.	0	m	0.2
W	5:00	0	s	0	0	0	0	₽	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	S	(-1	0	0	ы	0.1
100	1:0	0	0	S	0	0	0	0	0	0	0	<u> </u>	<u> </u>	0	0				0	0	0	0	0	•	<u> </u>	0	0	0	0	v	त्न	0	М	0.0
MIS I HOUR START	HOUR END	, _T	7	m	4	Ŋ	g	7	œ	on .	10	#	77	13	14	13	19	17	23	61	20	77	22	73	54	23	56	27	78	53	8	31	HOURLY MAX	HOURLY AVG
¥	<u> </u>																																¥	Ĭ

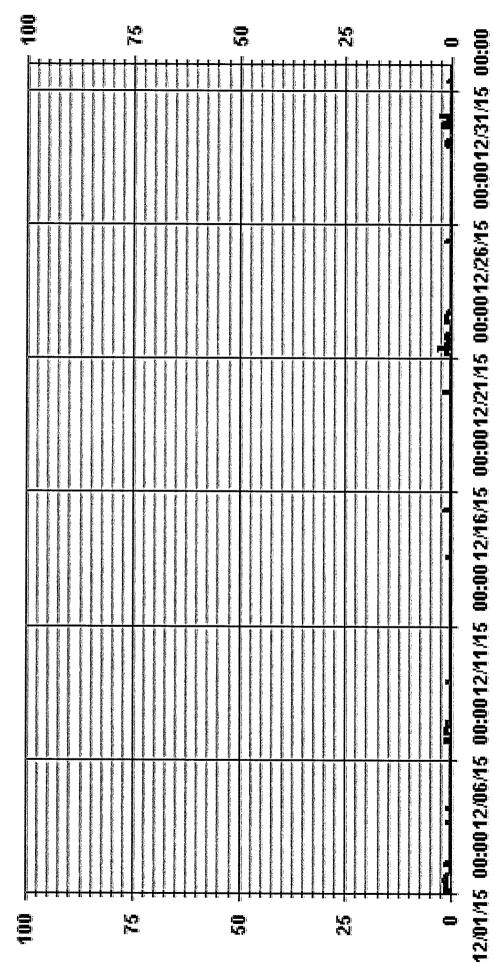
STATUS FLAG CODES

CALIBRATION MAINTENANCE DAILY ZERO/SPAI POWER FAILURE OUT FOR REPAIR
--

MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			93						
MAXIMUM INSTANTANEOUS VALUE:			m	PPB	@ HOUR(S)	9,2	ON DAY(S)		21, 30
						VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS		OPERATIC	OPERATIONAL TIME:			744	HRS
MONTHLY CAUBRATION TIME:	9	HRS							
STANDARD DEVIATION: 0	0.36								

Of Hour Averages



PPB

- LICA35 H2SMAX

LICA-EIK H2S_ / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

Logger Id : 35 Site Name : LICA-ELK Parameter : LISS Units : PPB

NNW Freq 00. % 0. 2.98 100.00 2.98 0. 00. 00. 7.25 7.25 Ę 0 0. 00. 8.67 00. 8.67 8. 0. Wind Parameter : WDR Instrument Height : 10 Meters 9.53 10.81 0. 00. 00. 9.53 10.81 MSM 00. % 0. 2.41 2.41 00. SW 8. 0, 1.70 1.70 00. SSW 8 00. 1.42 1.42 00. 8. 0. 2.84 2.84 00. 00. % Direction 8.10 SE 2.27 15.78 22.33 8.10 00. 00. % 2.27 15.78 22.33 ESE 00. 00. 00. 00. 8 8. ы 8 00. 8, 66. 邑 66. 8 8. 80. 00. 66 66. 00. 00. 00. 1.84 1.84 00. 8 z Totals Limit m 20 20

Calm : .00 %

Total # Operational Hours : 703

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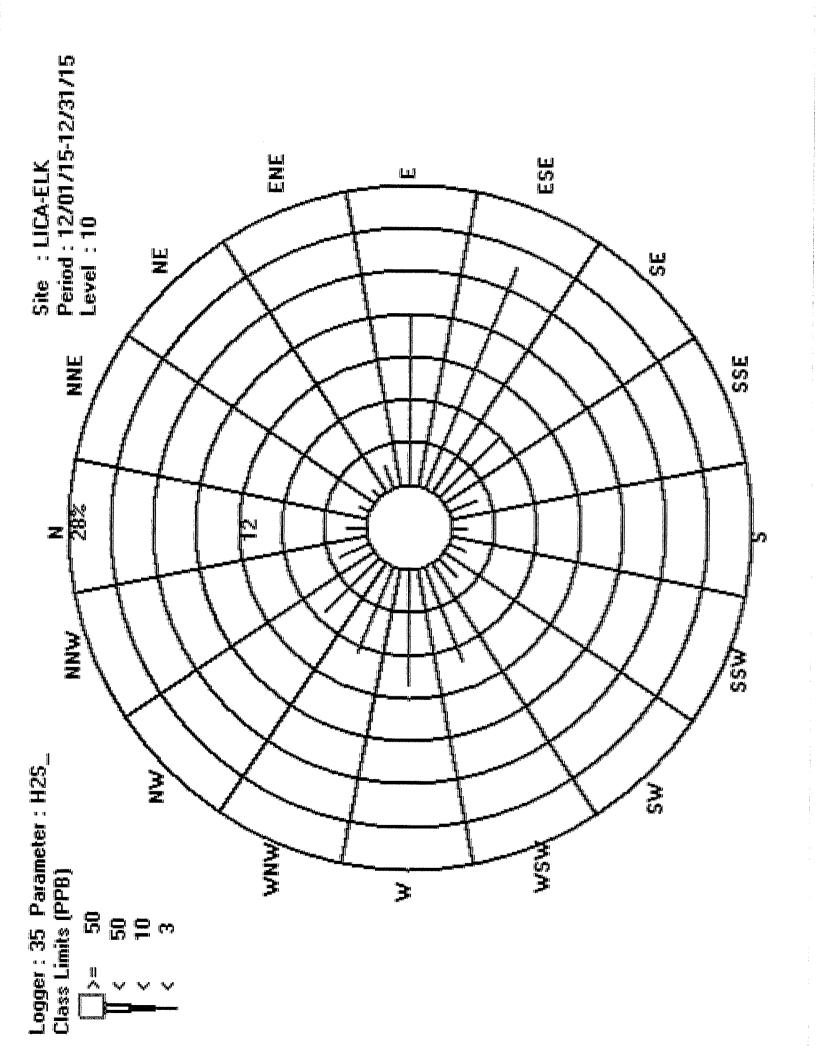
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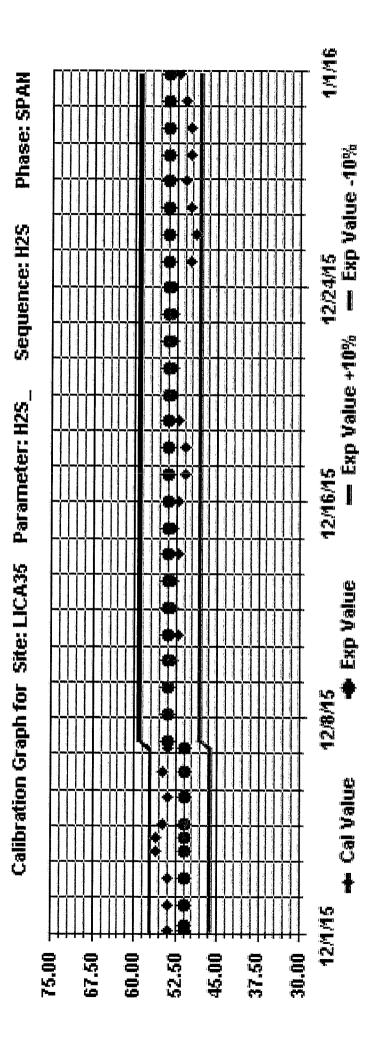
Distribution By Samples

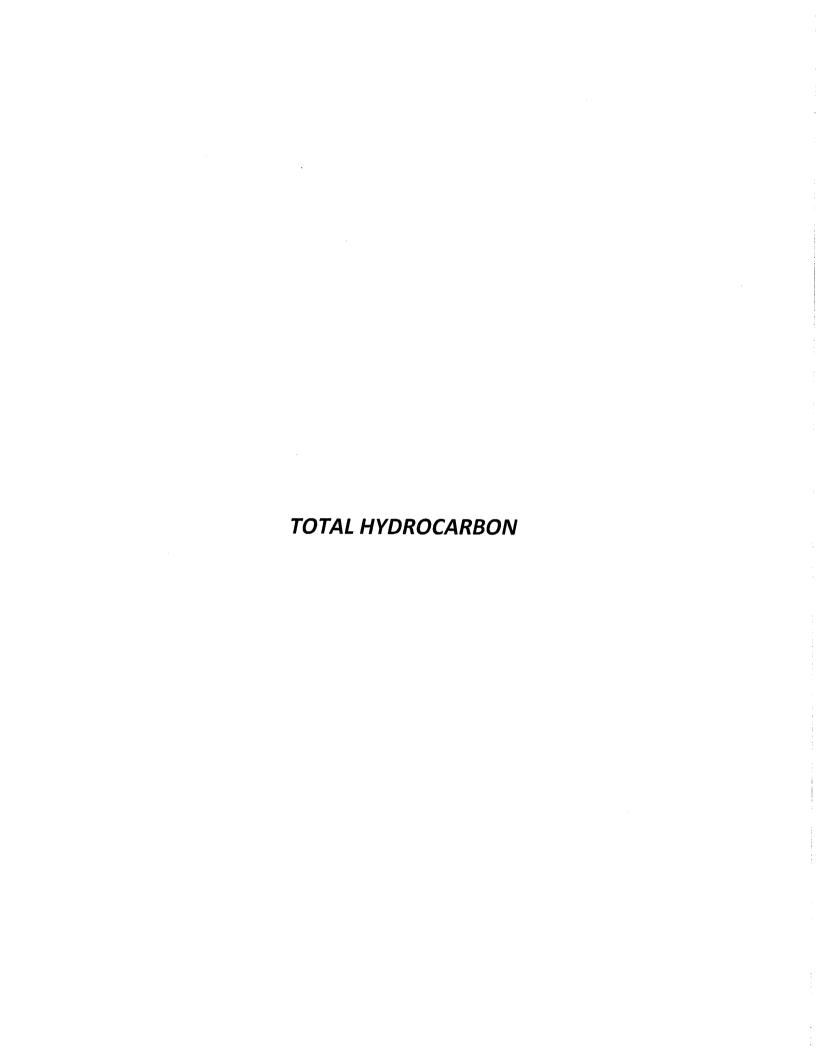
Fred 703 MNN 21 E 21 61 16 29 SW 17 SSW 12 12 10 Ø 10 20 SSE 20 Direction R) 57 ESE 157 157 111 ы 11 16 ENE 벍 13 13 Totals 20 Limit 유 20 X ٧

Calm : .00 %

Total # Operational Hours : 703





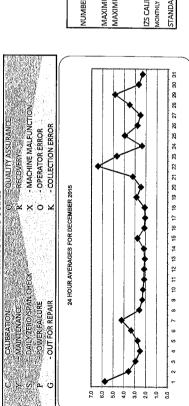




mdd ı

v averages in ppr
hour
(THC)
ARBONS
YDROCA
TOTAL HY

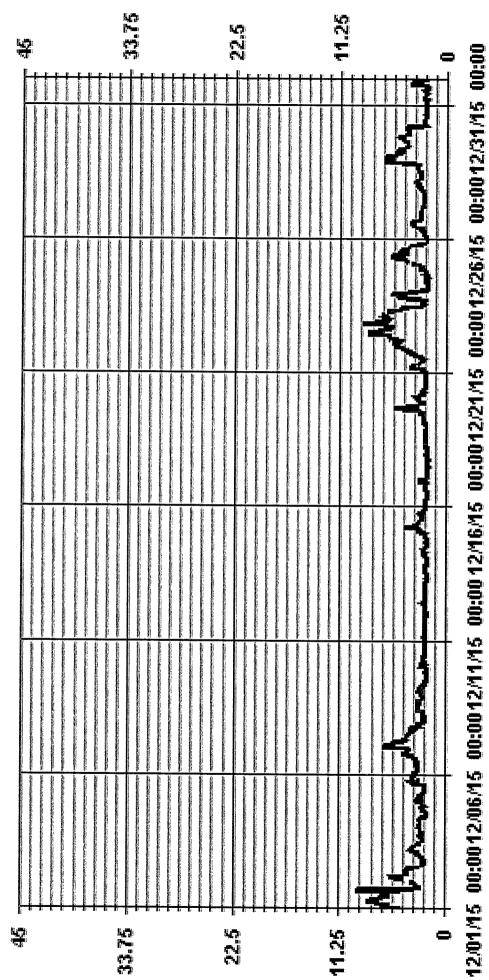
Housement 1670 2670 270 270 270 270 270 270 270 270 270 2	MST															•											
1,	<u>ب</u> ۾	0:00	1.00	2:00	3.00	400	25:00	6:00	7:00	8:00	00:6	00-0	300000	65,38539	. 6	Sec. 25.		7.5	523/33/4	150		10.00	200	3.7668		24-HOUR	
	<u> </u>	1:00	2:00	3:00:5	4.00	200	00:0	00.	8:00	- 6:00	TO:00	00.0	2101	256	356	SK-		200		VV242			2.00	38.		AVG.	RDGS.
No. 1, No. 1,	-). G	ر ر	ν	r G	n n o	7.5	7.3	 	8.1	7.1	8.6	6.8	6.0	s ;	s (6,4	6.1	9.4							5.7	74
Name	1 3		2.9	0 0	0 6	0 K	ກຸດ	1 დ ე დ	0. ¢	9. k	4 u	4. 4	4.4 2.4	4 c	3.5 5.6	, i, v	4.2	2.3	23							3.6	75 7
		2.7	2.9	2.9	78	2.7	2.6	5.6	2.7	2.7	2.7	2.6	2.1	2.0	50	2.0	2.4	4 C	2.5							2.9	4 2
		3.1	3.2	3.1	3.0	2.3	3.0	2.6	2.5	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.2	2.6	3.5						3.7	3 7	54 24
4.3 54 6.6 5.7 5.8 5.7 5.8 5.7 4.5 4.2 4.4 4.4 4.2 4.1 4.1 4.1 4.1 3.9 3.9 3.7 3.8 3.9 3.7 3.8 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9		3.3	3.2	3.3	3.1	3.0	5.9	2.9	2.9	3.1	3.0	3.1	3.1	3.0	3.1	3.1	3.2	3.3	3.4						4.5	i m	7 7
2.5 2.3 2.6 2.3 2.6 2.3 2.6 2.7 <th></th> <td>4.3</td> <td>5.4</td> <td>9.9</td> <td>5.7</td> <td>5.8</td> <td>5.7</td> <td>4.5</td> <td>4.2</td> <td>4.4</td> <td>4.2</td> <td>4.1</td> <td>4.1</td> <td>4.0</td> <td>3.9</td> <td>3.9</td> <td>3.7</td> <td>3.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>6.6</td> <td>4.2</td> <td>. 42</td>		4.3	5.4	9.9	5.7	5.8	5.7	4.5	4.2	4.4	4.2	4.1	4.1	4.0	3.9	3.9	3.7	3.5							6.6	4.2	. 42
2.5 2.5		2.5	2.3	2.2	2.2	2.6	2.3	2.4	2.3	2.3	2.6	3.0	U	U	U	3.0	3.0	2.8							3.0	5.6	54
2.1 2.2		2.5	2.5	2.5	3.0	3.0	2.7	2.7	2.5	2.3	2.4	2.2	2.1	2.1	2.1	2.0	2.1	2.0							3.0	23	24
2. 2.<		2.1	52	2.3	2.5	2.2	2.4	2.2	2.3	2.3	2.5	2.4	2.2	2.2	2.1	2.1	2.1	2.2							2.5	2.2	24
2.0 2.0 2.1 <th></th> <td>2.1</td> <td>2.2</td> <td>2.2</td> <td>2.3</td> <td>2.4</td> <td>2.2</td> <td>2.2</td> <td>2.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.4</td> <td>2.1</td> <td>24</td>		2.1	2.2	2.2	2.3	2.4	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1							2.4	2.1	24
2.1 2.1 <th></th> <td>2.0</td> <td>5.0</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.4</td> <td>2.1</td> <td>2.1</td> <td>2.2</td> <td>2.2</td> <td>2.2</td> <td>2.2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.4</td> <td>2.1</td> <td>24</td>		2.0	5.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.4	2.1	2.1	2.2	2.2	2.2	2.2							2.4	2.1	24
2.0 2.0 2.1 2.1 2.1 2.1 2.2 2.1 2.0 2.1 2.0 <th></th> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.0</td> <td>2.1</td> <td>2.1</td> <td>2.0</td> <td>2.0</td> <td>2.0</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>s</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.1</td> <td>2.1</td> <td>75</td>		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.0	2.1	2.1	2.1	s							2.1	2.1	75
26 23 25 29 21 44 37 31 31 32 25 25 25 29 21 44 37 31 44 37 31 44 37 31 44 37 31 40 20<		2.1	2.0	2.0	2.1	2.1	23	2.3	2.1	2.3	2.3	2.5	2.3	2.2	2.1	2.0	s	2.1							2.5	2.2	24
2.1 2.1 <th>-</th> <td>5.6</td> <td>2.3</td> <td>2.5</td> <td>5.9</td> <td>5.9</td> <td>3.1</td> <td>4.4</td> <td>3.7</td> <td>3.1</td> <td>3.0</td> <td>2.9</td> <td>5.8</td> <td>2.8</td> <td>2.5</td> <td>s</td> <td>2.5</td> <td>2.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4.4</td> <td>2.8</td> <td>24</td>	-	5.6	2.3	2.5	5.9	5.9	3.1	4.4	3.7	3.1	3.0	2.9	5.8	2.8	2.5	s	2.5	2.5							4.4	2.8	24
27 27 22 20<		2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	1.9	1.9	s	2.0	2.1	2.2							2.7	2.1	54
2.1 2.0 <th>17 -</th> <td>2.7</td> <td>2.7</td> <td>2.2</td> <td>2.0</td> <td>2.0</td> <td>5.0</td> <td>2.0</td> <td>2.0</td> <td>2.0</td> <td>2.0</td> <td>1.9</td> <td>1.9</td> <td>s</td> <td>1.9</td> <td>2.0</td> <td>2.0</td> <td>2.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.7</td> <td>2.1</td> <td>24</td>	17 -	2.7	2.7	2.2	2.0	2.0	5.0	2.0	2.0	2.0	2.0	1.9	1.9	s	1.9	2.0	2.0	2.1							2.7	2.1	24
2.1 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.3 2.4 2.3 2.3 2.3 2.3 2.3 2.3 2.4 2.3 2.3 2.3 2.3 2.4 2.4 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.4 2.4 4.3 4.3 4.3 4.3 4.3 4.3 <th></th> <td>2.1</td> <td>2.0</td> <td>2.0</td> <td>2.0</td> <td>5.0</td> <td>2.0</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>s</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.2</td> <td>2.2</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.2</td> <td>2.1</td> <td>24</td>		2.1	2.0	2.0	2.0	5.0	2.0	2.1	2.1	2.1	2.1	2.1	s	2.1	2.1	2.1	2.2	2.2							2.2	2.1	24
2.9 2.9 3.2 3.4 3.1 2.7 2.6 2.4 5.6 2.9 <th>7</th> <td>2.1</td> <td>2.2</td> <td>2.2</td> <td>2.2</td> <td>2.3</td> <td>2.3</td> <td>2.3</td> <td>2.3</td> <td>2.4</td> <td>2.5</td> <td>s</td> <td>2.4</td> <td>2.4</td> <td>3.0</td> <td>2.7</td> <td>4.1</td> <td>4.7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5.6</td> <td>2.9</td> <td>24</td>	7	2.1	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.4	2.5	s	2.4	2.4	3.0	2.7	4.1	4.7							5.6	2.9	24
2.3 2.4 2.7 3.4 3.8 3.4 5 3.0 2.9 2.5 2.6 2.8 3.1 3.5 4.0 3.9 4.2 4.7 4.8 3.2 5.2 2.2 2.3 2.4 2.7 3.0 2.9 2.9 2.0 2.0 5.0		5.9	2.9	3.2	3.4	3.1	2.7	5.6	2.4	5.6	s	2.3	2.1	2.1	2.1	2.1	2.1	2.2							3.4	2.4	77
5.5 5.0 5.3 5.6 5.2 5.0 5.6 5. 5 6.1 5.2 5.0 5.6 5. 5 6.1 5.2 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	100	2.3	2.2	2.3	2.4	2.7	3.4	3.8	3.4	s	3.0	5.9	2.5	2.3	2.5	2.6	2.8	3.1							4.8	3.2	74
63 61 64 68 66 67 5 61 58 51 49 41 27 25 26 23 24 23 26 42 49 48 53 60 68 47 43 33 35 29 21 2 5 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		5.5	2.0	5.3	5.6	5.2	2.0	2.6	S	6.1	6.2	5.8	6.7	8.4	7.9	7.3	6.9	6.0							8.9	6.4	73
4.3 3.3 2.9 2.1 2.0 5 2.0		6.3	6.1	6.4	6.8	9.9	6.7	S	6.1	5.8	5.1	6.4	4.1	2.7	2.5	5.6	2.3	2.4							6.8	4.7	54
27 30 35 35 5 44 55 57 57 51 40 45 48 44 41 41 39 33 27 23 21 27 30 39 32 34 44 41 </td <th></th> <td>4.3</td> <td></td> <td>5.9</td> <td>2.1</td> <td>5.0</td> <td>s</td> <td>2.0</td> <td>5.0</td> <td>2.0</td> <td>2.0</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>1.9</td> <td>2.1</td> <td>2.2</td> <td>2.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4.3</td> <td>2.4</td> <td>54</td>		4.3		5.9	2.1	5.0	s	2.0	5.0	2.0	2.0	2.1	2.1	2.1	1.9	2.1	2.2	2.1							4.3	2.4	54
22 2 2 2 2 5 8 4 2.3 2.3 2.5 2.7 2.5 2.5 3.3 3.5 3.4 3.4 3.9 3.4 2.9 2.7 2.7 2.8 2.8 2.7 2.7 3.0 3.0 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8 2.8		2.7	3.0	3.5	3.5	s	4.3	4.4	5.5	5.7	2.7	5.1	4.0	4.5	4.9	4.8	4.4	4.1							5.7	9.6	74
28 28 5 27 26 26 26 26 26 26 26 26 27 27 26 27 27 36 25 36 28 28 28 27 27 36 28 27 27 30 31 31 31 36 26 27 27 30 25 36 48 37 27 27 30 31 31 31 36 49 67 48 57 49 42 41 41 41 41 43 46 48 57 42 41 41 41 43 46 48 57 42 41 41 41 43 46 48 57 48 41 41 41 41 43 46 41 5 66 48 41 42 41 41 41 41 43 42 42 42 42 42 <th></th> <td>2.2</td> <td>2.2</td> <td>2.2</td> <td>s</td> <td>2.4</td> <td>2.3</td> <td>2.3</td> <td>2.5</td> <td>2.7</td> <td>2.5</td> <td>5.5</td> <td>3.3</td> <td>3.5</td> <td>3.4</td> <td>3.4</td> <td>3.9</td> <td>3.4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>3.9</td> <td>2.8</td> <td>24</td>		2.2	2.2	2.2	s	2.4	2.3	2.3	2.5	2.7	2.5	5.5	3.3	3.5	3.4	3.4	3.9	3.4							3.9	2.8	24
3.3 S 3.0 3.1 3.5 3.0 3.1 3.5 3.0 3.1 3.5 3.0 3.1 3.1 3.0 3.4 4.9 6.7 6.4 5.8 6.7 3.5 5 6.1 6.6 5.8 5.2 5.3 5.0 4.8 5.1 4.1 4.1 4.3 4.6 4.8 5.2 5.0 4.6 4.8 5.2 5.0 4.8 5.0 4.8 4.8 5.2 5.0 4.6 4.8 5.2 5.0 4.6 4.8 5.2 5.0 4.8 5.2 5.0 4.8 4.8 5.7 5.0 4.8 4.8 5.2		2.8	5.8	s	2.7	5.6	2.6	2.6	2.5	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3							3.0	2.5	24
S 6.1 6.6 5.8 5.2 5.3 5.0 4.8 5.1 4.1 4.3 4.6 4.8 5.2 5.0 4.6 4.1 S 6.6 4.8 4.1 4.2 4.1 4.2 4.1 4.2 4.1 4.2 4.1 4.2 4.1 4.2 4.1 4.2 4.1 5.2 5.2 2.2		3.3	s	3.0	3.1	3.5	3.0	2.7	2.7	2.7	2.8	2.8	2.7	2.7	3.0	3.0	3.1	3.1							6.7	3.5	75
4.1 4.2 4.1 4.2 4.1 4.3 2.3 2.3 2.3 2.1 2.1 2.1 2.2 2.2 2.2 2.3 2.3 2.1 2.1 2.1 2.2 2.2 2.4 2.1 2.3 2.2 2.4 2.1 2.0 2.1 2.4 3.1 2.5 3.8 2.3 6.3 6.3 6.4 6.5 6.4 6.4 7.1 6.8 6.8 7.3 6.9 6.1 9.4 6.5 6.6 8.9 7.8 6.6 3.0 3.1 3.1 3.1 3.1 3.1 3.0 3.0 2.9 2.9 3.1 2.9 2.9 3.1 3.0 3.0		S	6.1	9.9	2.8	5.2	5.3	5.0	4.8	5.1	6,4	4.5	4.2	4.1	4.2	4.1	4.1	4.3							6.6	4.8	54
2.1 2.1 2.2 2.1 2.2 2.4 2.3 2.1 2.3 2.2 2.4 2.1 2.0 2.1 2.4 3.1 2.5 3.8 2.3 2.3 6.3 6.1 6.6 6.6 6.6 6.6 6.6 6.6 6.6 6.9 7.8 6.6 6.9 7.8 6.6 8.9 7.8 6.6 3.0 3.1 3.1 3.1 3.1 3.1 3.1 3.0 3.0 2.9 2.9 3.1 2.9 2.9 3.1 3.0 3.0		4.1	4.2	4.1	4.3	4.3	5.6	2.2	2.3	2.4	2.4	2.3	2.3	2.3	2.1	2.1	2.1	2.3							4.3	2.7	24
6.3 6.1 6.6 6.8 6.9 7.5 7.3 8.3 8.1 7.1 6.8 6.8 8.4 7.9 7.3 6.9 6.1 9.4 6.5 6.2 6.6 8.9 7.8 3. 3.0 3.1 3.2 3.3 3.3 3.1 3.1 3.2 3.1 3.0 3.0 2.9 2.8 2.7 2.9 2.9 3.1 2.9 2.9 3.1 3.0		2.1	2.1	2.2	2.1	2.2	2.1	2.4	2.5	2.4	2.3	2.1	2.3	2.2	2.2	2.4	2.1	2.0	2.1	2.4	•				3.8	2.3	75
3.0 3.1 3.2 3.3 3.3 3.3 3.1 3.1 3.2 3.1 3.0 3.0 2.9 2.8 2.7 2.9 2.9 3.1 2.9 2.9 3.1 3.0		6.3	6.1	6.6	6.8	6.9	7.5	7.3	8.3	8.1	7.1	6.8	6.8	8.4	7.9	7.3	6.9				l		l		ı		
		3.0	3.1	3.2	3.3	3.3	3.3	3.1	3.1	3.2	3.1	3.0	3.0	2.9	2.8	2.7	2.9										



STATUS FLAG CODES

			Θ	MONTHLY SUMMARY				
NUMBER OF NON-ZERO READINGS:	GS:		706					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		9.4	PPM PPM	PPM @ HOUR(5) PPM	17	ON DAY(5) ON DAY(5) VAR-VARIOUS		1 22
IZS CAUBRATION TIME: MONTHLY CAUBRATION TIME:	35.	HR5 HR5		OPERATIONAL TIME: AMD OPERATION UPTIME:	IE: JPTIME:		744 100.0	HRS %
STANDARD DEVIATION:	1.31			MONTHLY AVERAGE:	ij		3.0	3.0 PPM

Of Hour Averages



- LICA35 THC55



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION EIK Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C

TOTAL HYDROCARBONS MAX instantaneous maximum in ppm

MCT								2	1 1 1	5	K B C I	OTAL HTDROCARBOINS INIAN		tantai	ınstantaneous maxımum ın ppm	naxir	E E	E dd								
	0:00	1:00	2:00	3.00	4:00	5-00	6:00	7:00	8:00	- 00-6	10:00	11:00	12:00 13	13:00 14	14.00 75-0	75:00 16:00	17.00 N	18.00	18:00 19:00	- DU-UC	24-00	20.00		NIV.	al Oi le	
HOUR END	1:00	1:00 2:00 3:00 4:00 5:00 6:00 7:	3:00	4:00	5:00	6:00	7.00	8:00	10.0	30 J. C.	11.00	-12:00 1	4011	100	00 16.00	0. 17:00		19:00	20:00	21.00	22:00	23.00	0:00	MAX.	AVG.	RDGS.
DAY 1	5.3	5.8	s	6.4	7.2	8.5	8.1	8.9	8.6	7.9				S	1				2.7	3,	3.2	2 2		11.2	v.	5
2	3.8	s	5.2	5.7	6.1	6.4	5.3	4.3	4.3	4.3	4.4		4.4 4.	.3 3.0	0 2.7	2.5	2.6	2.3	2.4	2.7	2.6	2.5	2.7	6.4	t 6.	2 4
m	s	3.0	3.1	3.8	3.8	4.1	4.0	3.6	3.7	3.5	3.3			2.6 2.4					2.6	2.6	2.6	2.8	S	4.1	3.1	. 42
4	2.8	3.1	3.0	2.9	5.8	2.7	2.7	2.8	2.8	2.9	3.0		2.1 2.	.1 2.1					2.7	2.4	2.6	s	2.9	3.1	2.6	54
2	3.2	3.5	3.2	3.2	3.1	3,3	2.8	2.6	2.7	2.5	2.4	2.3						4.1	3.4	3.1	s	3.6	3.5	4.1	3.0	24
φ	3.5	3.3	3.4	3.2	3.2	2.9	3.1	3.1	3.2	3.1	3.2		3.2 3.	.2 3.2	2 3.3	3.4	3.7	4.4	5.0	s	5.0	4.3	3.8	2.0	3.5	24
7	8.8	5.8	7.4	6.4	6.0	6.1	5.3	4.3	4.5	4.4	4.3				0 4.0			3.3	4.5	3.2	3.3	s	3.1	7.4	4.6	54
∞	5.8	2.7	2.3	2.2	3.0	2.8	2.6	2.5	2.4	2.9	U	J					3.0	3.1	3.1	2.5	s	2.5	5.6	3.3	28	54
Ø	2.7	5.6	2.8	3.2	3.2	2.9	2.9	2.7	2.4	2.8	2.5							2.0	2.2	s	2.2	2.2	2.2	3.2	2.4	24
ឧ	2.4	7.8	2.7	5.9	2.5	2.5	2.5	2.5	3.0	3.2	3.5			.2 2.1	1 2.2	2.7		2.2	s	2.2	2.1	2.2	2.2	3.5	2.5	24
#	2.2	2.3	2.2	2.4	2.4	2.3	2.2	2.1	2.1	2.1	2.1							s	2.2	2.2	2.1	2.1	2.1	2.4	2.2	24
12	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.7							2.2	2.3	2.2	2.2	2.2	2.1	2.7	2.2	54
13	2.1	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.1	2.1	2.1							2.2	2.2	2.2	2.2	2.1	5.0	2.3	2.1	54
14	2.1	2.0	2.1	2.1	2.2	5.6	2.6	2.1	2.7	2.4	5.8							2.3	2.1	2.1	2.3	2.4	5.6	2.8	2.3	54
£1	2.8	2.3	3.6	3.5	3.1	3.5	5.2	4.1	3.5	3.1	3.0							3.0	2.8	2.7	2.4	2.4	2.4	5.2	3.0	24
16	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.4	2.3	2.1	2.1							2.3	2.2	2.7	2.7	2.3	3.1	3.1	2.3	24
17	3.0	2.8	5.6	5.0	2.0	2.0	5.0	5.0	2.0	5.0	2.0							2.0	2.0	2.1	2.1	2.1	2.2	3.0	2.1	24
٠.	2.2	2.1	2.0	5.0	2.0	2.1	2.1	2.3	2.2	2.2	2.1							2.3	2.2	2.2	2.2	2.1	2.1	2.3	2.2	75
	2.1	2.2	2.2	2.3	2.4	5.4	2.3	2.3	2.4	2.6	s							5.7	3.4	3.2	2.8	2.8	5.9	7.0	3.2	24
	3.0	3.1	e,	3.4	3.4	2.9	2.8	2.5	2.7	s	2.5		2.2 2.					2.3	2.3	2.3	2.3	2.3	2.3	3.4	5.6	54
17	2.3	2.3	2.3	2.5	3.1	3.6	4.5	3.8	S	3.2	3.2							4.2	4.0	4.4	4.5	5.3	5.3	5.3	3.4	54
	6.3	6.2	2.8	5.9	2.7	2.5	5.9	s	9.9	6.7	6.1							6.8	9.9	7.6	9.3	8.5	7.2	8.3	7.0	54
ន	9.9	9.9	7.1	7.1	6.8 8.9	7.0	s	6.5	6.0	5.6	5.2							3.1	5.0	5.2	5.2	5.6	6.4	7.1	5.0	74
24	6.4	3.4	3.5	2.3	2.1	S	2.0	5.0	5.0	2.0	2.1							2.3	2.3	2.5	3.5	2.8	5.6	6.4	5.6	54
£3	2.9	3.1	3.9	3.7	s	5.2	2.0	6.6	7.0	6.0	5.8							4.0	3.6	3.2	2.5	2.2	2.2	7.0	4.3	54
56	2.2	2.3	2.3	s	2.5	2.4	2.4	5.6	2.9	2.7	2.8			3.6 3.7				2.9	2.7	2.9	2.9	2.8	2.8	4.0	2.9	24
27	2.8	5.8	s	2.7	5.6	2.7	5.6	5.6	2.5	2.4	2.4	2.3	2.3 2.	2.3 2.3	3 2.3	2.5	2.5	2.5	2.6	2.7	2.8	3.0	3.0	3.0	5.6	54
	3.5	s	3.2	3.3	8.6	3.6	2.8	5.9	5.8	2.8	5.9		2.8 3.	3.3 3.1	1 3.2	3.2	3.3	3.1	3.6	5.9	7.2	6.7	6.1	7.2	3.7	24
29	S	6.5	8.9	6.7	5.3	5.5	5.1	2.0	5.3	5.2	4.8	4.3 4	•	3 4.	2 4.2		4.8	5.2	5.3	5.2	2.0	4.2	s	6.8	5.1	54
8	£.3	4.5	4.2	6.4	8.4	3.2	2.3	2.6	5.6	5.6	2.4		2.5 2.1	1 2.	1 2.2	2.5		2.3	2.3	2.1	2.3	s	2.3	4.9	2.9	24
31	22	2.2	2.2	2.2	2.3	2.3	2.5	2.5	2.5	2.6	2.2					2.1	2.3	4.5	5.7	3.9	S	2.3	3.3	5.7	2.7	24
HOURLY MAX	9.9	9.9	7.4	7.1	7.2	8.5	8.1	8.9	8.6	7.9	7.0	7.6 8	8.8	8.8	0 7.1	9.4	11.2	6.8	9.9	7.6	9.3	8.5	7.2			
HOURLY AVG	3.3	3.3	3,4	3.5	3.5	3.6	3.3	3.3	3.4	3.3	3.3							3.3	3.2	3.2	3.3	3.2	3.2			

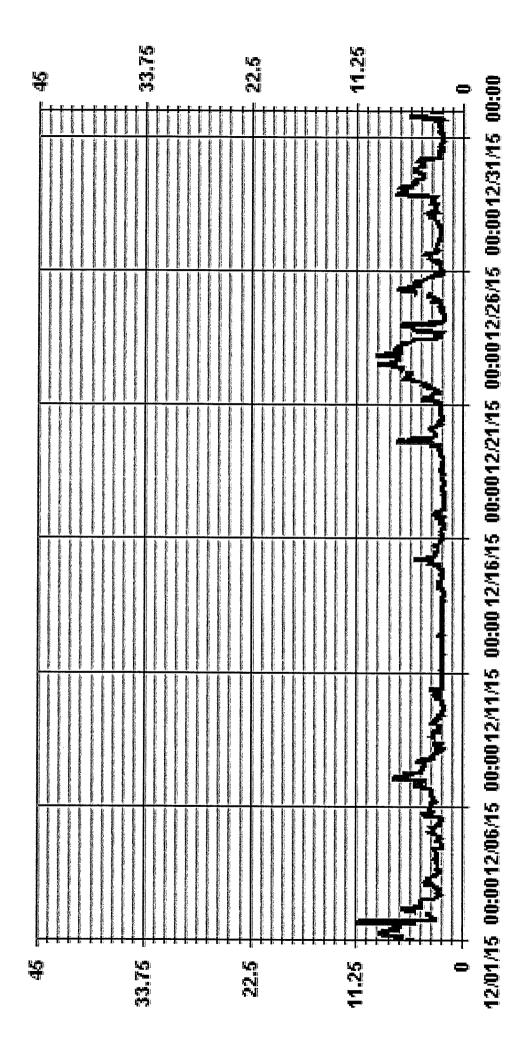
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MONTHLY SUMMARY

								1.49	TANDARD DEVIATION:
							HRS	4	AONTHLY CALIBRATION TIME:
HRS	744			OPERATIONAL TIME:	OPERATI		HRS	35	ZS CALIBRATION TIME:
		VAR-VARIOUS	VAR-1						
1		ON DAY(S)	17	@ HOUR(5)	Mdd	11.2		JS VALUE:	MAXIMUM INSTANTANEOUS VALUE:
						705		ADINGS:	NUMBER OF NON-ZERO READINGS:

of Hour Averages



LICA35 THC55MAX PPM

LICA35 THC55 / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

Logger Id : 35 Site Name : LICA35 Parameter : THC55 Units : PPM

Wind Parameter : WDR Instrument Height : 10 Meters

Fred 66.85 33.14 00. 00.

NNW 2.12

WNW 60-9 2.69 00. 00. 8.78

6.37 MN

9.91

00.

00. 00. 7.22

00. 00.

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2.97

%

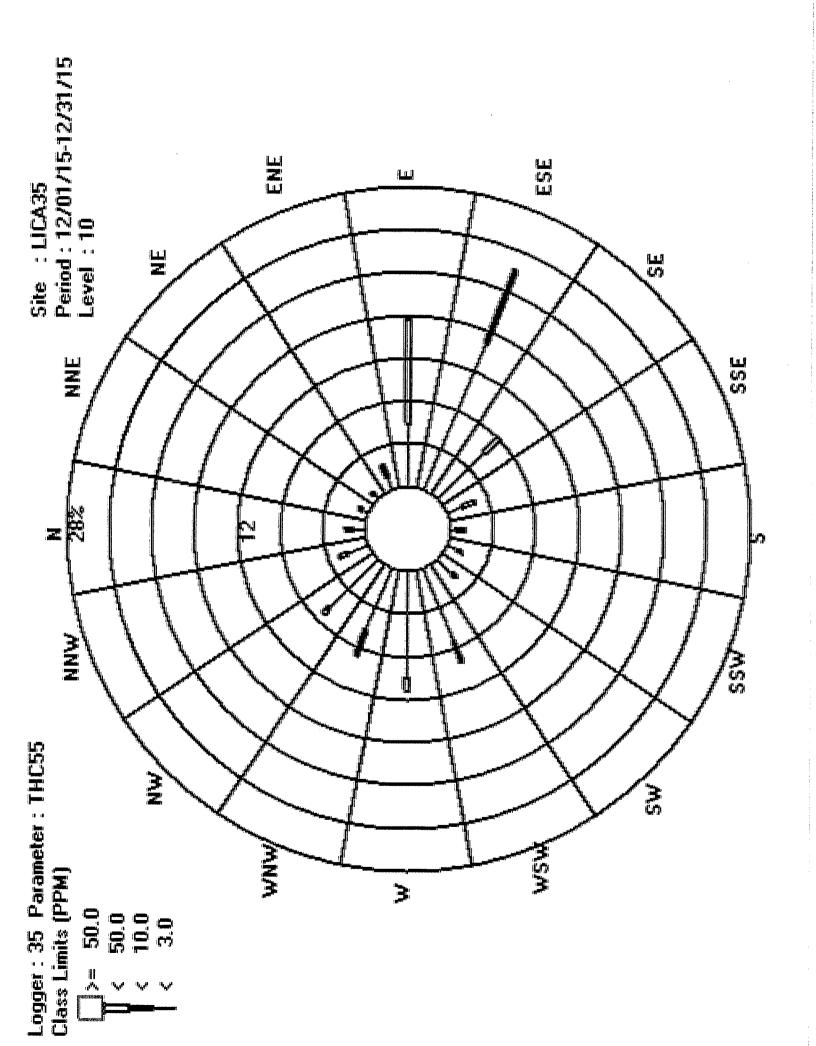
11.04 7.22 2.26 9.49 0. 0. 1.84 2.40 SW .56 0. 0. 1.55 66. .56 0. 00. 1.41 .56 0. .84 00. 1.41 1.41 2.83 SSE 00. 00. Direction 60.9 1.98 8.07 SE 00. 00. 7.36 ESE 2.54 15.58 22.23 5.94 14.87 00. 00. 9.63 0. 00. ы 1.13 1.41 00. 00. .42 .84 Ä .42 00. 00. .28 00. 00. 66. Calm : .00 % 1.13 .84 00 00. Totals 1.98 z Limit 3.0 10.0 50.0 50.0 X

Total # Operational Hours : 706

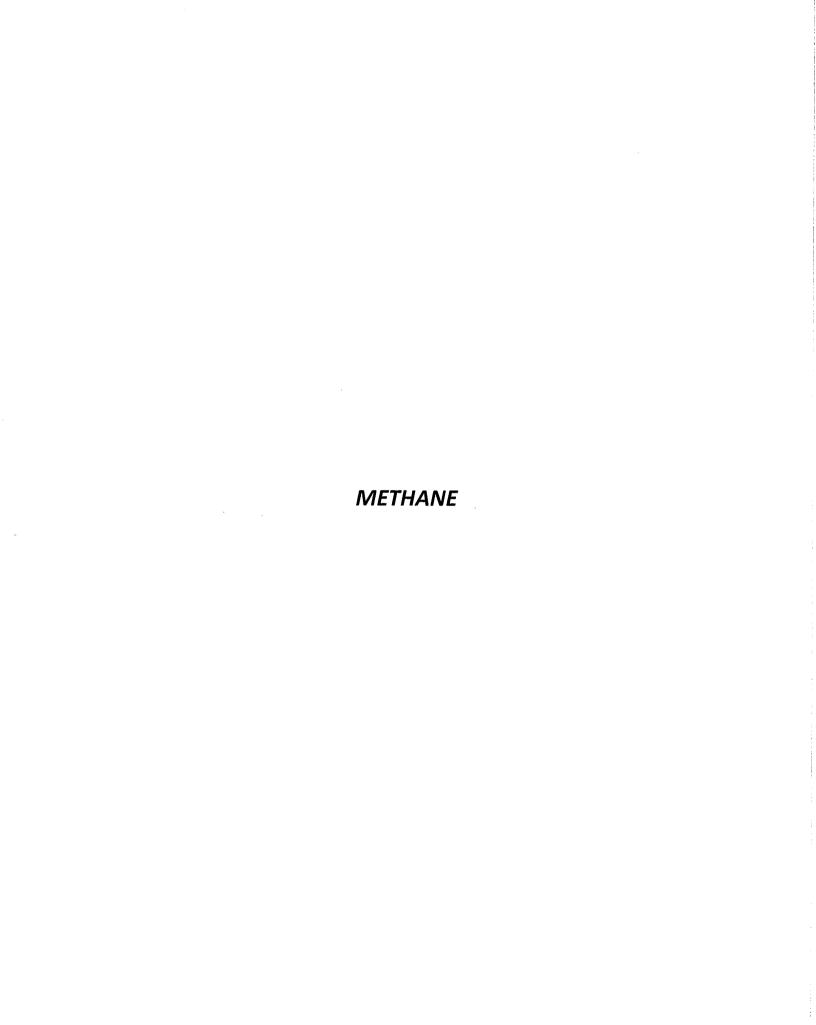
Distribution By Samples

Calm : .00 %

Total # Operational Hours : 706



1MMG Phase: SPAN - Exp Value -10% Sequence: THC55 12/24/15 = Exp Value +10% Calibration Graph for Site: LICA35 Parameter: THC55 12/16/15 💠 Exp Value 12/8/15 + Cal Value 121165 12.50 + 32.50 29.17 25.83 22,50 15.83 19.17



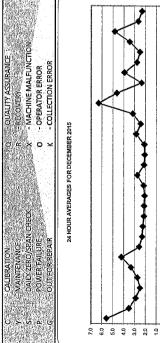
Elk Point Airport Site - DECEMBER 2015

JOB # 2833-2015-12-35- C

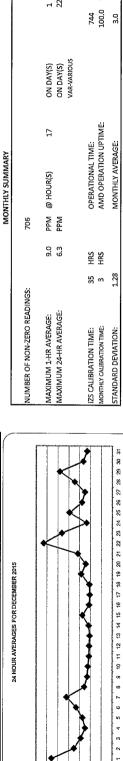


METHANE (CH4) hourly averages in ppm

12.00 12.00 <th< th=""><th>0, 2,00</th><th>0, 2,00</th><th>0, 2,00</th><th>0, 2,00</th><th>1/2</th><th>יייבוודייבוי</th><th></th><th>ָל בו לבו לבו לבו לבו לבו לבו לבו לבו לבו</th><th>inom (</th><th>וא מאבונ</th><th>18C3 III</th><th>- 10 10 10 10 10 10 10 10 10 10 10 10 10 1</th><th></th><th>Ç</th><th></th><th>83</th><th>.00</th><th></th><th></th><th></th><th></th></th<>	0, 2,00	0, 2,00	0, 2,00	0, 2,00	1/2	יייבוודייבוי		ָל בו לבו לבו לבו לבו לבו לבו לבו לבו לבו	inom (וא מאבונ	18C3 III	- 10 10 10 10 10 10 10 10 10 10 10 10 10 1		Ç		83	.00				
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57 57 51 40 45 49 48 43 41 41 39 33 27 23 21 21 21 21 21 21 21 21 21 21 21 21 21 21 21 22<	2.0 \$ 2.0	S 2.0	2.0				2.1	2.1							2.2	2.4	3.0			2.4	24
27 2.5 2.5 3.3 3.5 3.4 3.4 3.9 3.4 2.9 2.7 2.7 2.8 2.8 2.7 2.7 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.7 2.7 2.8 2.7	5 4.3 4.4	4.3 4.4	4.4		41		5.1	4.0							3.3	2.7	2.3	2.1 2	.1 5.7	9.6	54
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7.9 7.0 6.6 6.6 8.2 7.8 7.2 6.8 6.0 9.0 6.4 6.1 6.5 8.7 7.7 3.2 3.1 3.0 2.9 2.9 2.8 2.7 2.9 2.9 3.1 2.9 2.9 3.0 3.0	2.2 2.1	2.1		4	2.5		2.1	2.3							3.7	5.6	s		5 3.7	2.3	24
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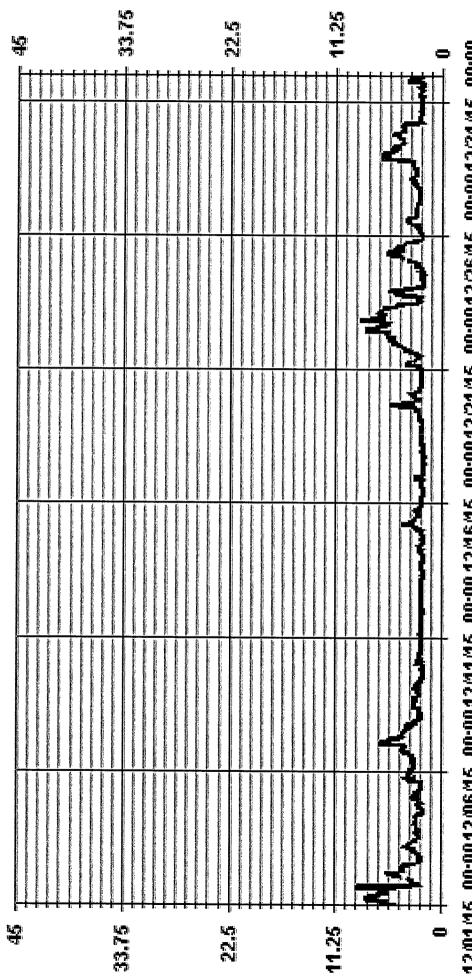
STATUS FLAG CODES



HRS

7 2

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA35 METHANE



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35-C

METHANE MAX instantaneous maximum in ppm

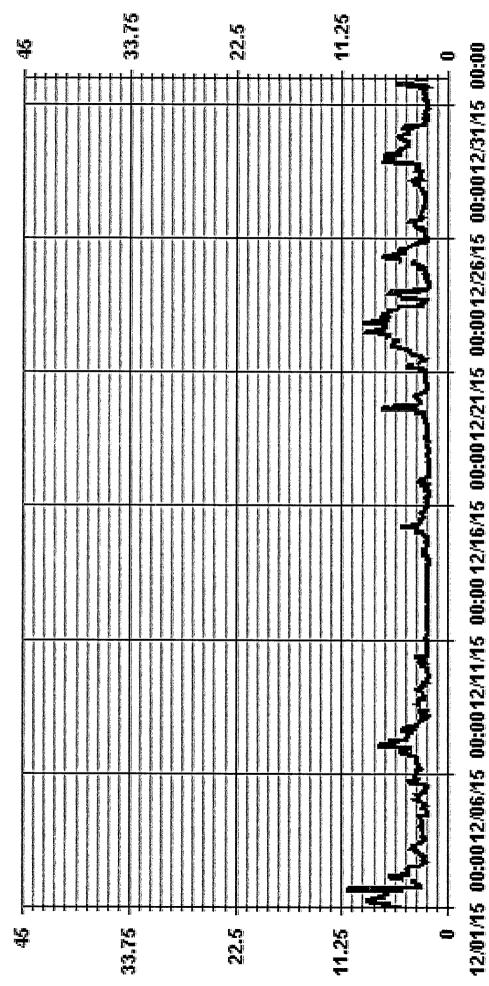
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HOUR START HOUR END	0:00	1:00 2:00	0:00	3:00 4 4:00 5	00.0	5:00	6:00	7:00	8:00 9:09 9:00 10:	9:00 10:00 10:00 11:00	10:00 11:00 11:00 12:00	0 12:00	13:00	33900000000000000000000000000000000000	14:00: 15:00 15:00 16:00	16:00	17:00	18:00 £	19:00 2 20:00 2	20:00 Z 21:00 Z	21:00 22	22:00 23:00	0 DAILY	24-HOUR AVG.	BDGS
DAY 1	5.2	5.7	s	6.2	7.1	8.3	7.9	8.7	8.3 7.6	6.8	7.0	6.5	s	s	6,4	0.6	10.8	5.5		4		1		6.9	77
2	3.7	s	5.0		6.0	6.3	5.2	4.3	4.2 4.2	2 4.2	4.4	4.3	4.1	3.0	2.7	2.5	2.6	2.3	2.4			25 27		8.6	1 73
m	s	3.0	3.1		3.7	4.1	4.0	3.6	3.7 3.5	5 3.3	3 2.9	2.8	2.6	2.4	2.5	2.5	2.7	2.7		2.6	2.6 2			3.1	74
4	2.8	3.1	3.0		2.8	2.7	2.7		2.8 2.9		1 2.1	2.1		2.1	2.2	2.4	2.8	2.8	2.7					2.6	24
Ŋ	3.2	3.5	3.2		3.1	3.3	2.8				1 2.3	2.3		2.4	2.4	3.0	4.0		3.4					3.0	74
ø	3.5	3.3			3.2	2.9	3.1	3.1		1 3.2	3.2	3.2	3.2	3.2	3.3	3.4	3.7		4.9			4.3 3.8		3.5	74
7	4.8	2.7				6.0	5.3	4.3			4.2	4.2	3.9	4.0	3.9	4.7	4.7	3.3	4.4					4.6	74
œ	2.8	2.7			3.0	2.8	2.7	2.5	2.4 2.9			U	U	3.1	3.3	3.0	3.0	3.1	3.1			2.5 2.6		2.8	74
o	5.6	5.6	2.8		3.3	2.9	2.9	2.7		8 2.5		2.2	2.1	2.1	2.1	2.0	2.0	2.1	2.2		2.2 2			2.4	24
10	2.4	2.8			2.4	2.5	2.5	2.5	3.0 3.2		2.2	2.2	2.2	2.1	2.2	2.2	2.2	2.2	s			2.2 2.2		2.5	24
#	2.2	2.3		2.4	2.4	2.3	2.2	2.2	2.1 2.1	1 2.2	2.1	2.1	2.1	2.1	2.1	2.2	2.2	S	2.2					2.2	24
12	2.1	2.1			2.2	2.2	2.2	2.2	2.1 2.1		2.1	2.2	2.2	2.2	2.2	2.2	s		2.3					2.2	24
13	2.2	2.2			2.2	2.1	2.1		2.1 2.1		. 2.1	2.1	2.1	2.1	2.2	s	2.1							2.1	24
14	2.2	2.0			2.2	2.6	2.6	2.1	2.7 2.		2.4	2.3	2.1	2.1	s	2.2	2.3	2.3	2.1	2.1 2		2.4 2.6		2.3	24
15	2.8	2.4		3.4	3.0	3.4	5.0		3.5 3.1	1 3.0		3.0	2.7	s	2.5	2.6	2.7	2.9	2.8	2.6		2.4 2.4		3.0	24
16	2.2	2.2			2.2	2.4	2.3	2.4			. 2.0	2.0	S	2.0	2.4	2.3	2.3	2.3	2.2	2.7	2.7 2	2.3 3.1		2.3	24
17	3.0	2.8	5.6		2.0	2.0	2.0	2.0	2.0 2.0	0 2.0		S	2.0	2.0	2.0	2.1	2.1	2.0	2.0	2.1 2		2.2 2.2		2.1	54
18	2.2	2.1			2.0	2.1	2.1	2.3				2.1	2.1	2.3	2.3	2.3	2.2	2.3	2.2	2.2 2		2.1 2.1		2.2	74
51	2.2	2.2			2.4	2.4	2.3	2.4				2.4	3.5	3.0	6.0	7.0	6.1	5.8	3.4	3.2 2		2.8 2.9		3.2	24
20	3.0	3.2				2.9	2.8	2.4			2.2	2.2	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3		2.3 2.3		2.5	24
21	2.3	2.3				3.6	4.4	~			2.6		2.6	2.7	3.0	3.3	3.8	4.0	4.0	4.4	4.4 5	5.1 5.1		3.4	24
22	6.1	5.9			5.6	5.1	5.8				7.4	8.7	8.6	7.9	6.9	6.9	9.9	9.9	6.4		9.1 8		9.1	6.8	24
23	6.5	6.4		7.0		6.9	s				5.2	3.1	2.5	7.8	2.5	2.5	2.4					5.3 6.3		2.0	54
75	6.2	3.4			2.1	s	2.0				2.3	2.4	2.0	2.3	2.3	2.5	2.5	2.3			3.4 2	2.8 2.6		5.6	77
22	2.9	3.1			S	5.2	5.0				4.4	4.7	5.1	5.1	4.7	4.3	4.1	4.0		3.2 2		2.2 2.2		4.3	74
26	2.2	2.3			2.5	2.4	2.4				3.4	3.6	3.5	3.7	4.0	3.8	3.1	2.9	2.7	2.9 2		2.8 2.8		2.9	54
27	2.8	2.8			5.6	2.7	2.6	2.6			2.3	2.3	2.3	2.3	2.3	2.5	2.5	2.5		2.7 2	2.8 3	3.0 3.0		2.6	24
28	3.5	S				3.6	2.8					2.8	3.3	3.1	3.2	3.2	3.1	3.1		5.8 7		6.5 5.9	7.0	3.7	54
ଷ	s	6.3				5.4	5.1	5.0	5.2 5.1		4.3	4.2	4.2	4.2	4.2	4.4	4.8	5.1		5.1 4	4.9 4	4.2 S	9.9	2.0	54
8	4.2	4.3				3.2	2.3		.6 2.5	5 2.3	2.4	2.5	2.1	2.1	2.2	2.5	2.3	2.3	2.3	2.1 2		S 2.3	4.8	2.8	77
31	2.2	2.2	2.2	2.2		2.3	2.5	2.5	2.5 2.0		2.8	2.4	2.4	2.7	2.4	2.1	2.3	4.5	3.6	3.8	S 2	2.3 3.3	5.6	2.7	77
HOURLY MAX	6.5	6.4	7.4	7.0 7	7.1	8.3	7.9			5 6.8	7.4	8.7	8.6	7.9	6.9	9.0	10.8	9.9	6.4	7.5 9		8.3 7.1	1		
HOURLY AVG	3.2	3.3				3.6	3.3	3.3	3.4 3.3			3.1	2.9	2.9	3.0	3.3	3.3				3.2 3.	.2 3.1			

STATUS FLAG CODES

NUMBER OF NON-ZERO READINGS:	705						
MAXIMUM INSTANTANEOUS VALUE:	10.8	PPIM	@ HOUR(S)	17	ON DAY(S)		
				VAR-VARIOUS	stous		
IZS CALIBRATION TIME: 35 HRS MONTHY CAUSANTON TIME: 4 HRS STANDARD DEVIATION: 1.45		OPERATIC	OPERATIONAL TIME:			744	HRS

Of Hour Averages



LICA35 MATHMAX PPM

LICA35 METHANE / WDR Joint Frequency Distribution (Percent)

c Frequency Dist December 2015 Distribution By % Of Samples

Logger Id : 35 Site Name : LiCA35 Parameter : MCTHANE Units : PPM

Wind Parameter : WDR Instrument Height : 10 Meters

Fred 00. 33.00 66.99 00. NNW 2.12 .84 00. 2.97 % M 6.37 00. 00. 7.22 .84 WNW 60.9 2.69 0. 00. 8.78 1.13 9.91 11.04 00. 00. 7.36 2.12 9.49 0. 00. 1.84 2.40 .56 0. 00. 1.55 00. 0. 1.41 .56 00. 00, .84 2.83 1.41 1.41 % SSE 0. Direction 60.9 1.98 00. 8.07 SE 8. 7.36 ESE 5.94 14.87 15.58 22.23 % 00. 9.63 90. 00. ы 1.13 2.54 1.41 ENE 00. 00. 뜆 .42 . 42 % 0. .84 00. 0. .70 .28 66. 1.13 1.98 .84 % 00, z Totals Limit 3.0 10.0 50.0 50.0

Calm : .00 %

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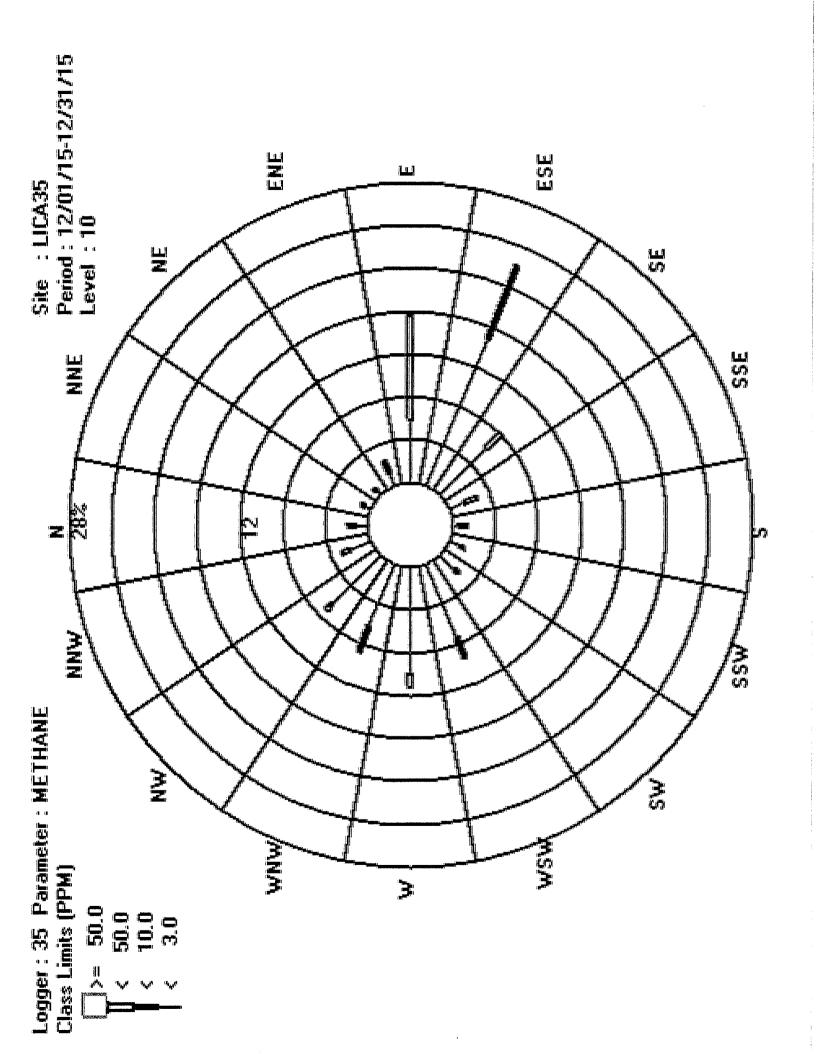
Total # Operational Hours : 706

Distribution By Samples

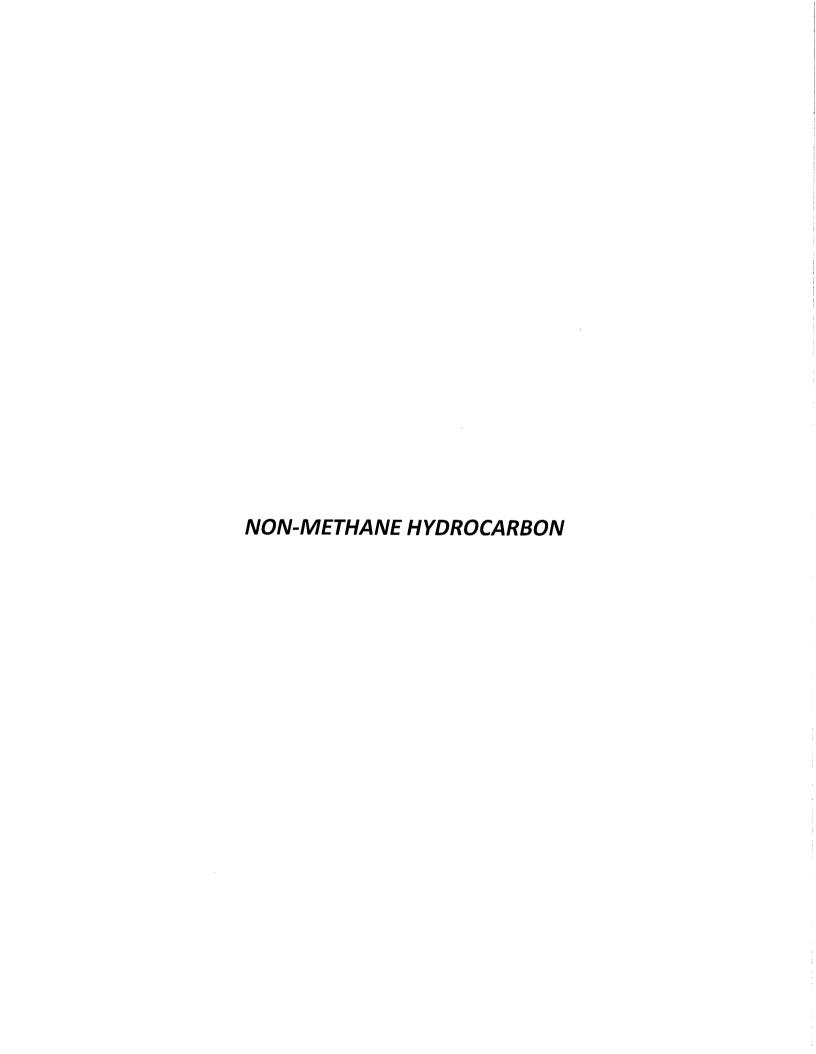
Fred

473

Calm : .00 %



1416 Phase: SPAN - Exp Value -10% Calibration Graph for Site: LICA35 Parameter: METHANE Sequence: THC55 1224/15 - Exp Value +10% 12/16/15 💠 Exp Value 12,8,45 🛨 Cal Value 12MM5 7.50 10.83 12.50 11.67 10.00 8.33 9.17



Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

NON-METHANE HYDROCARBONS (NMHC) hourly averages in ppm

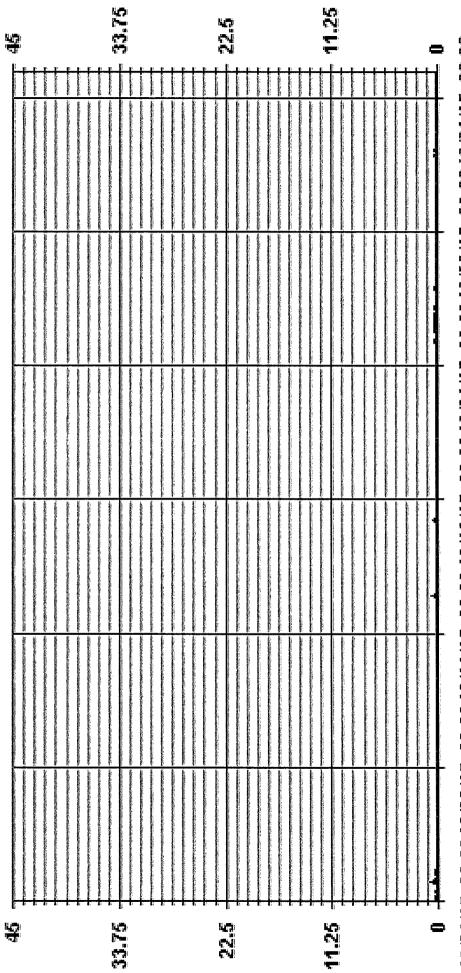
MST

STATUS FLAG CODES - CALIBRATION Q - QUALITY ASSURANCE - MAINTENANCE R RECOVERY DALLY ZENO/SANY CHECK X - MACHINELMALUNCTION - POWERFALUNE O - OPERATOR ERROR 24 HOUR AVERAGES FOR DECEMBER 2015
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24 HOUR AVERAGES FOR DECEMBER 2015	155	020	0.15	01:0	2 500	0.00 1 2 3 4 5 6 7 8 8 10 11 12 13 14 15 15 17 18 15 20 21 22 25 25 25 25 25 25 25 25 25 25 25 25
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			MO	MONTHLY SUMMARY				
NUMBER OF NON-ZERO READINGS:			E					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		0.40	PPM PPM	PPM @ HOUR(S) PPM	7.1	ON DAY(S) ON DAY(S) VAR-VARIOUS		. .
IZS CALIBRATION TIME: MONTHLY CALBRATION TIME:	335	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	IE: UPTIME:		744 100.0	HRS
STANDARD DEVIATION: 0	0.04			MONTHLY AVERAGE:	Ë.		0.01	0.01 PPM

of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA35 NMHC PPM



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C

EIK PON-METHANE HYDROCARBONS MAX instantaneous maximum in ppm

MST

0	24	54	24	54	24	54	54	24	24	24	24	54	54	24	54	54	54	54	54	54	24	24	24	54	24	54	24	54	54	24	24		
24-HOUR	AVG.	0.11	0.03	0.00	0.01	0.03	0.11	0.02	0.01	0.00	0.00	0.02	0.04	0.01	0.08	0.00	0.00	0.00	0.01	0.03	0.11	0.24	0.17	0.02	0.04	0.02	0.00	90.0	0.11	90.0	0.02		
DAILY	0.52	0.28	0.26	0.05	0.10	0.16	0.26	0.13	0.10	0.04	0.00	0.55	0.13	90.0	0.24	0.00	0.00	90.0	0.11	0.19	0.25	0.33	0.29	0.23	0.17	0.11	0.07	0.26	0.24	0.19	0.12		
23.00	0.18	0.00	s	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.18	s	0.00	0.00	0.25	0.04
22.00	0.20	0.00	0.00	s	0.00	0.00	s	0.05	0.00	0.00	0.00	0.00	60.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.31	0.29	0.00	0.00	0.00	0.00	0.23	0.10	s	0.00	0.31	0.05
21.00	0.19	0.00	0.00	0.00	s	60.0	0.10	s	0.00	0.00	0.00	0.00	0.13	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.17	0.33	0.23	0.03	0.00	0.08	0.00	0.26	0.12	0.00	S	0.33	90.0
20:00	0.21	0.00	0.00	0.00	0.00	s	0.00	0.00	s	0.00	0.00	0.00	0.12	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.17	0.26	0.25	0.00	0.00	0.00	0.00	0.19	0.14	0.00	0.09	0.26	0.05
19:00	0.19	0.00	0.00	0.00	0.00	0.15	0.13	0.00	0.00	s	0.00	0.00	0.12	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.14	0.26	0.22	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.12	0.26	0.05
18:00	0.22	00.00	0.00	0.00	0.04	0.16	0.04	0.00	0.00	0.00	s	0.00	0.11	0.00	0.10	0.00	0.00	0.00	0.08	0.00	0.18	0.26	0.14	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.07	0.26	90'0
17.00	0.52	0.00	0.00	0.00	0.10	0.00	0.14	0.00	0.00	0.00	0.00	s	0.09	0.00	0.11	0.00	0.00	0.00	0.05	0.00	0.15	0.26	0.11	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.00	0.52	90.0
16:00	0.34	0.00	0.00	0.05	0.00	0.00	0.20	0.12	0.00	0.00	0.00	0.00	s	0.00	0.11	0.00	0.00	0.00	0.08	0.00	0.13	0.22	0.11	0.00	0.00	0.11	0.07	0.16	0.07	0.00	0.00	0.34	90.0
15:00	0.21	0.00	0.00	0.00	0.00	90.0	0.14	0.00	0.00	0.00	0.00	0.00	0.11	s	0.11	0.00	0.00	90.0	0.11	0.00	0.11	0.26	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	90.0
14:00	S	0.00	0.00	0.00	0.00	0.10	0.10	0.13	0.00	0.00	0.00	0.00	0.09	0.00	s	0.00	0.00	0.00	0.00	0.00	0.14	0.23	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.03
13:00	S	0.13	0.00	0.00	0.00	0.00	0.13	U	0.07	0.02	0.00	0.00	90.0	0.00	0.00	s	0.00	0.00	0.00	0.00	0.10	0:30	0.11	0.00	90.0	0.07	0.00	0.00	0.13	0.00	0.00	0.30	0.04
12:00	0.22	0.18	0.00	0.00	0.00	0.07	0.00	U	0.00	0.00	0.00	0.00	0.07	0.00	0.08	0.00	s	0.00	0.00	90.0	0.08	0:30	0.00	0.00	90.0	0.00	0.00	0.00	0.14	0.00	0.00	0.30	0.04
11:00	0.24	0.17	0.00	0.00	0.00	0.00	0.17	U	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	s	0.00	0.00	0.00	0.27	0.18	0.00	0.00	0.00	0.00	0.00	90.0	0.05	0.00	0.27	0.04
10:00	0.25	0.18	0.00	0.00	0.00	0.00	0.14	U	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00	s	0.16	0.11	0.20	90.0	0.00	0.17	0.09	0.00	0.00	90.0	0.10	0.00	0.55	0.07
9-00	0.28	0.15	0.00	0.00	0.00	0.00	0.12	0.00	0.09	0.00	0.00	0.00	0.00	0.06	0.09	0.00	0.00	0.00	0.00	s	0.08	0.26	0.13	0.00	0.08	0.00	0.00	0.00	0.13	0.12	0.00	0.28	0.05
8:00	0.33	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.19	s	0.22	0.16	0.00	0.08	0.00	0.00	0.00	0.14	0.10	0.00	0.33	0.05
7.00	0.31	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.0	0.14	0.00	0.00	0.00	0.00	0.09	0.13	s	0.23	0.00	0.09	0.00	0.00	0.00	0.10	0.09	0.00	0.31	0.05
6:00		0.20	0.11	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.14	0.19	s	0.00	0.08	0.00	0.00	0.00	0.08	90.0	0.00	0.28	0.05
0 2:00 3:00 4:00 5:00 0 3:00 4:00 5:00	0.32	0.25	0.09	0.00	0.01	0.00	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.14	0.19	0.26	s	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.32	90.0
4:00	0.33	0.27	0.26	0.00	00.0	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00	0.00	0.06	0.10	0.16	0.20	0.00	s	0.00	0.00	0.00	0.10	0.15	0.07	0.33	0.07
3:00	0.28	0.28	0.26	0.00	0.09	0.00	0.17	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.05	0.18	0.22	0.00	0.00	s	0.00	0.00	0.17	0.16	0.00	0.28	0.07
2.00	S	0.23	0.00	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.05	0.00	0.21	0.20	0.00	0.14	0.00	s	0.00	0.19	0.13	0.00	0.23	0.05
1.00	0.26	s	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.26	0.09	0.00	0.00	0.00	s	0.24	0.19	0.00	0.26	0.05
0.00	0.24	CANCEL OF	S	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.00	0.00	0.05	0.25	0.24	0.23	0.00	0.00	0.00	0.00	S	0.17	0.00	0.25	0.05
HOURSTART 0:00 1:00	DAY 1		6	4	5	9	7	œ	თ	01 O1	H	12	13	17	15	16	17	18	19	8	21	22	53	24	25	. 26	27	78	53	30	31	HOURLY MAX	HOURLY AVG

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NUMBER OF NON-ZERO READINGS:			237						
MAXIMUM INSTANTANEOUS VALUE:	ü		0.55	ММ	@ HOUR(S)	10	ON DAY(S)		12
						VAR-V	VAR-VARIOUS		
IZS CALIBRAȚION TIME:	35	HRS		OPERATIO	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	4	HRS							
STANDARD DEVIATION:	0.09								

Of Hour Averages

4	2.5	22.5	57 –	
	10 10 10	22.5	11.25	•

- LICA35 NMHCMAX PPM

12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

LICA35 NMEC / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

Logger Id : 35 Site Name : LICA35 Parameter : NMHC Units : PPM

00. % 00. 00. .28 2.97 99.71 00. 00. 00. 00. 00. 2.97 7.22 7.22 ž 00. 00. 8. 00. 00. 8.64 8. 8.78 MNM 8. 00. 00. .14 00. 00 00. 00. Wind Parameter : WDR Instrument Height : 10 Meters 00. 9.49 11.04 9.49 11.04 00. 80. 80. 00. 8 2.40 2.40 00. 00. SW 00. 00, 00. 1.55 1.55 0. 0. 00. 00 SSW 00. 1.41 0. 00. 00. 00. 00 1.41 S 2.83 2.83 SSE 8. 00. 0. 00. 8. Direction 8.07 2.54 15.58 22.23 7.93 8. 00. 8. SE .14 00, ESE 2.54 15.58 22.23 8. 00. 00. 00. 00. 0. 00. 00. 00. 00. ы 00. 00. 00. % 00. .84 벌 .84 00. 00. 00. 00. 00. 00. 66. 00. 66. 00. 00. 00. 1.98 0. 00. Totals 1.98 0, 00. 00. z Limit 1.0 7 ď 2.0 4.0 4.0

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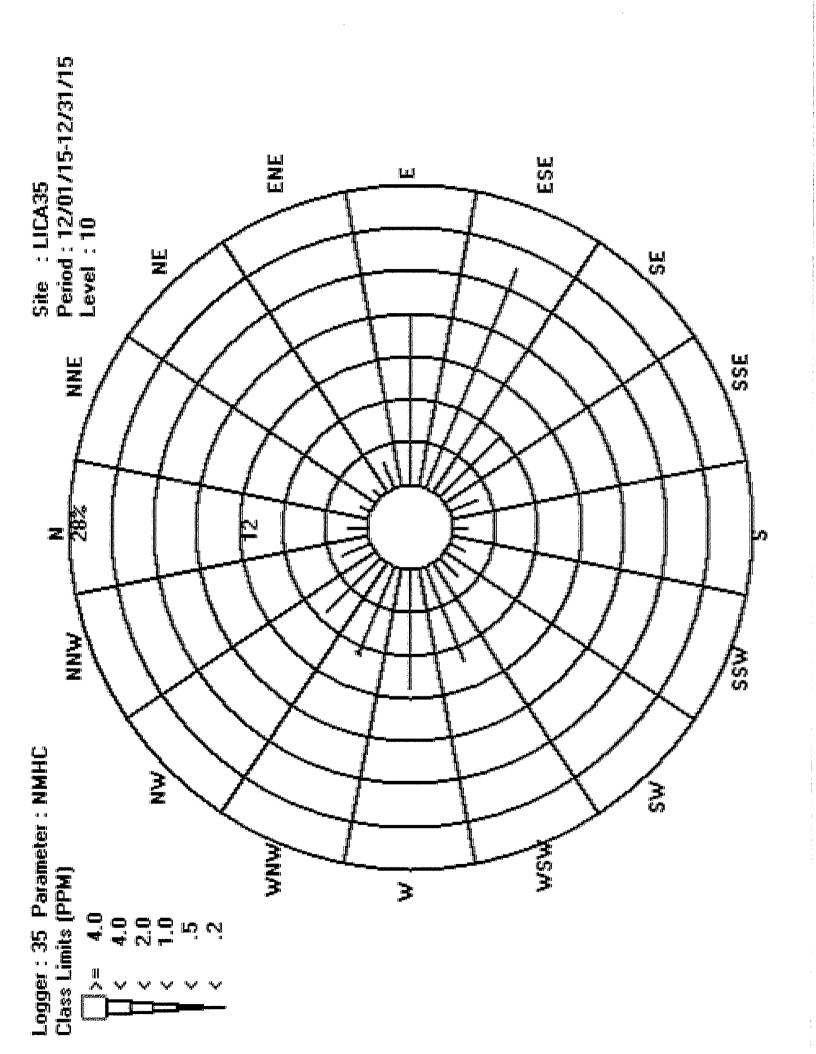
٧ ٧ Total # Operational Hours : 706

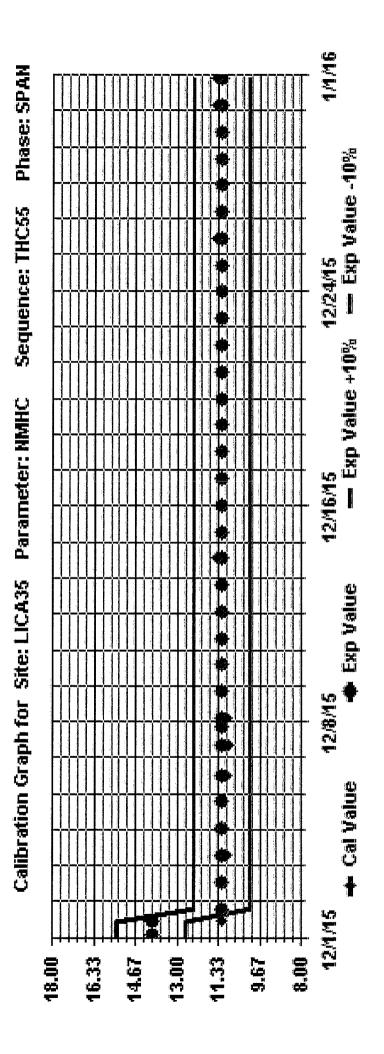
Calm : .00 %

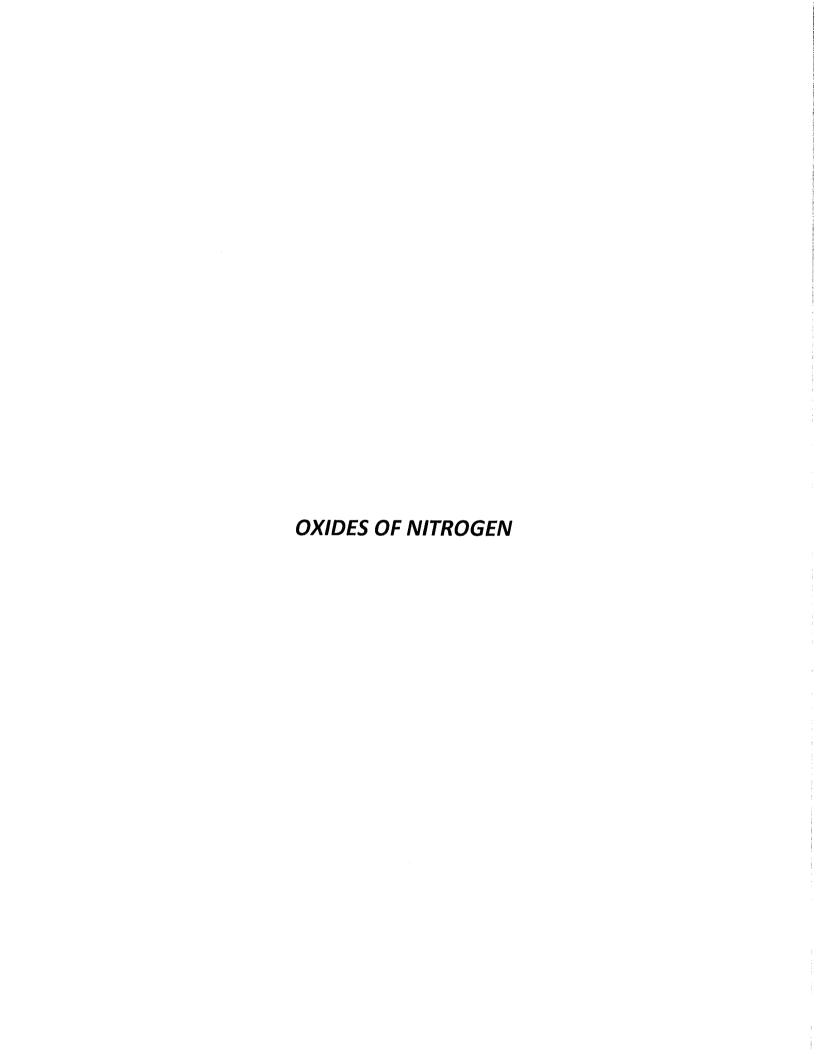
Distribution By Samples

	Ъ,		61					
	Fred	704	.,					
	NNN	21						21
	WN	51						51
	WNW	61	н					62
	×	78						78
	WSW	29						29
	SW	17						17
	SSW	11						11
	w	10						10
	SSE	20						20
Direction	SE	56	н					57
Dir	ESE	157						157
	ы	110						110
	ENE	18						18
	Ä	9						v
	NNE	7						7
	Z	14						14
	Limit	2.	٠. دی	1.0	2.0	4.0	4.0	Totals
		٧	٧	٧	٧	٧	X	

Calm : .00 %



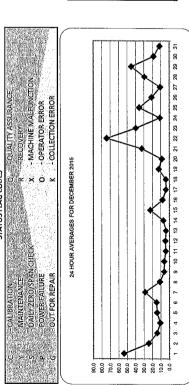






OXIDES OF NITROGEN (NOx) hourly averages in ppb

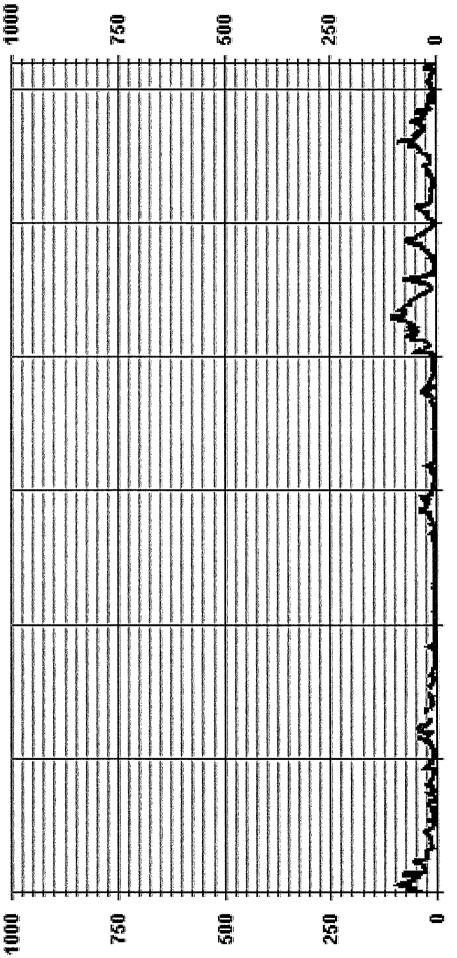
	RDGS.	24	24	54	24	24	54	24	24	74	24	24	24	24	54	54	24	24	24	54	24	24	54	74	24	74	74	74	24	74	74	24		
	24-HOUR AVG.	53.8	24.5	14.6	10.9	14.6	15.2	28.8	11.2	6.2	6.2	4.3	4.9	4.1	7.3	22.6	8.2	4.1	4.1	12.6	9.1	32.7	74.1	39.7	11.2	35.6	20.8	10.9	29.4	45.1	18.6	11.6		
	DAILY MAX.	93.3	54.6	30.2	20.5	25.9	40.3	45.3	18.6	15.4	15.5	5.3	7.4	5.2	14.3	39.9	22.0	15.9	6.5	31.4	17.0	72.8	108.8	76.9	37.0	71.1	48.5	24.2	64.7	88.9	48.8	27.2		
	23:00	3	12.8	s	13.2	14.6	17.6	14.2	5.5	2.7	3.5	4.0	4.8	5.9	14.3	10.5	22.0	4.7	3.4	20.9	7.6	48.5	66.7	66.1	21.1	6.5	10.8	16.5	7.49	s	8.6	10.8	66.7	18.3
	22:00	27.2	12.5	9.9	S	14.3	21.2	s	5.4	3.6	4.1	3.4	5.5	2.9	8.4	13.8	13.8	3.4	3.4	8.1	5.5	51.2	75.5	76.9	21.9	6.1	11.2	17.5	57.3	30.0	s	4.0	76.9	18.4
	21:00	1	12.6	9.9	13.9	s	21.3	24.7	s	3.3	3.1	4.1	4.2	3.6	8.4	14.1	8.6	4.8	3.8	9.4	5.4	49.7	76.8	55.0	18.5	117	11.3	17.5	63.8	38.6	8.1	S	76.8	19.0
	20:00	3	15.9	6.4	7.6	11.9	s	23.9	5.8	s	3.9	3.7	4.6	3.9	6.7	19.3	11.5	3.6	3.3	15.6	5.3	53.2	74.3	54.1	10.3	15.9	14.0	24.2	44.0	51.8	7.8	9.5	74.3	18.6
	19:00		11.7	7.2	10.1	23.6	40.3	U	10.9	2.9	s	4.2	6.0	3.7	6.3	32.4	9.4	2.0	3.6	18.8	7.7	72.8	82.7	41.7	7.9	19.9	16.7	10.7	38.5	59.5	13.9	27.2	82.7	21.3
	18:00	38.2	11.1	15.6	10.1	25.7	33.2	U	17.1	2.1	5.2	s	5.6	3.7	12.3	28.8	13.0	2.5	5.1	30.8	9.9	60.2	85.8	21.9	9.5	24.0	21.1	9.5	35.9	41.7	14.2	7.0	85.8	20.6
2	17:00		12.7																											32.3	15.8	5.8	81.3	21.1
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MST	HOUR START	DAY	7	m	4	S	œ	7	∞	σ	9	11	12	13	14	15	16	17	87	19	20	21	22	23	24	53	26	27	28	8	æ	31	HOURLY MAX	HOURLY AVG



STATUS FLAG CODES

			Σ	MONTHLY SUMMARY				
NUMBER OF NON-ZERO READINGS:	κ̈		969					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		108.8 74.1	PPB PPB	@ HOUR(S)	11	ON DAY(S) ON DAY(5) VAR-VARIOUS	2, 23	22
IZS CALIBRATION TIME: MONTHLY CALBRATION TIME:	33	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	E: JPTIME:		744 100.0	HRS %
STANDARD DEVIATION:	19.35			MONTHLY AVERAGE:	نِبْ		19.2	PPB

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA35 NOX_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C

OXIDES OF NITROGEN MAX instantaneous maximum in ppb

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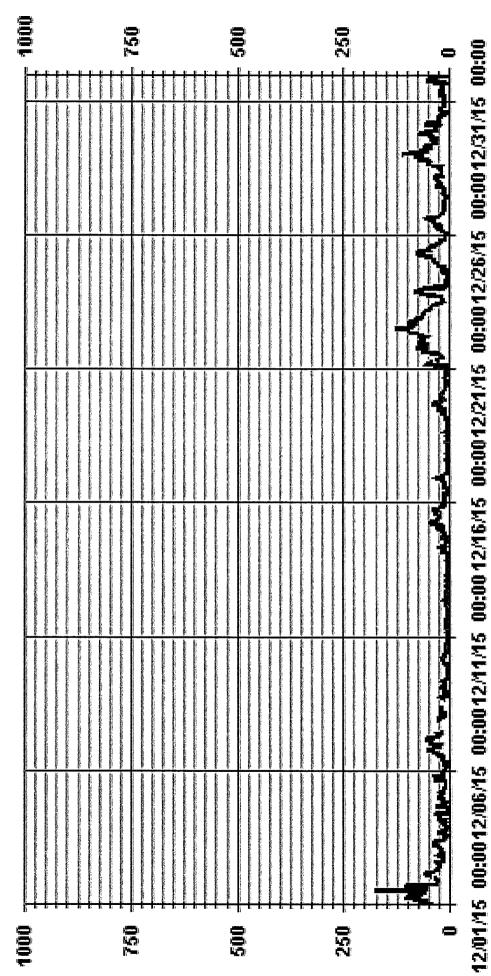
000 ±50 200 300 400 500 650 7700 850 950 1000 100 100 100 100 100 100 100 100	11 00:5 00:8 00:7 00:01	11 00:5 00:8 00:7 00:01	11 00:5 00:8 00:7 00:01	11 00:5 00:8 00:7 00:01	11 00:5 00:8 00:7 00:01	8:00 9:00 TC	8:00 9:00 TC	H	10:00		11.00	12:00 I	13:00 I	14:00 15:	15:00 16:00	0 17:00	00 18:0	19:00	20:00	21.00	22:00	23:00	DAILY 2	24-HOUR	i d
20.00		[7000	36	8		62 I	2	8	ă	7	20.00	OO'T Z	22,00	00.02		MIPAC.	Ave.	, LOGS.
45.2 50.2 5 5/.4 68.3 //	7 57.4 68.3	57.4 68.3	68.3		70.8		-		80.8	98.9	65.5	• •					-, .	32.5	9.5	30.6	29.6		7.7	66.0	24
22.0 18.9 19.9 23.2	18.9 19.9 23.2	19.9 23.2	23.2			37.6	37.4	34.3	35.3	14.5	10.3	12.1	10.1	7.3 9.0	0 17.4	2 t	1 22.9	2 2	7.3	7.5	8.2	s. 4	37.6	26.3 19.3	7 7
17.0 11.1 14.6 11.6	11.1 14.6 11.6	14.6 11.6	11.6						s	30.8	6.2								10.4	18.6	s		30.8	15.2	24
20.8 19.3 17.4	20.8 19.3 17.4	19.3 17.4	17.4				5 13.4	14.6	11.5	11.4	8.9						5 34.8		13.7	s	15.5		36.8	18.3	24
12.8 11.1 8.3 8.4	11.1 8.3 8.4	8.3 8.4	8.4						14.9	17.0	14.7								s	32.0	23.5		48.8	19.3	24
45.1 44.5 45.6 50.7	44.5 45.6 50.7	45.6 50.7	20.7						27.0	18.0	17.7								J	26.4	s		50.7	34.0	24
18.0	11.7 6.0 18.0	6.0 18.0	18.0				9 21.0	13.8	22.9	U	ပ	ပ						20.1	7.3	s	6.4		22.9	15.3	24
9.7 9.8 19.8 19.8	9.8 19.8 19.8	19.8 19.8	19.8						17.0	13.4	5.1								s	5.6	6.2		19.8	8.7	54
9.7 11.5 14.6 14.2	11.5 14.6 14.2	14.6 14.2	14.2						12.7	10.2	2.8								5.1	4.5	6.2		18.1	8.9	24
4.9 4.2 5.0 6.2	4.2 5.0 6.2	5.0 6.2	6.2						7.5	8.7	8.1								4.6	5.2	5.0		8.7	5.8	24
4.7 4.9 5.2 6.5	4.9 5.2 6.5	5.2 6.5	6.5						4.3	13.6	10.6								5.5	5.1	6.7		13.6	6.4	24
5.1 5.6 5.3 6.1	5.6 5.3 6.1	5.3 6.1	6.1		_				5.2	5.3	2.0								5.1	5.2	3.9		6.7	5.2	24
3.5 4.0 3.9 6.4	4.0 3.9 6.4	3.9 6.4	6.4		$^{\circ}$				12.3	20.3	14.7								8.0	10.2	12.5		20.3	10.2	24
14.4 14.0 14.4 17.2	14.0 14.4 17.2	14.4 17.2	17.2		O				31.8	28.2	24.5								29.1	16.0	16.8		45.6	26.6	77
10.4 9.3 11.4	9.3 11.4 12.5	11.4 12.5	12.5		0	12.5			4.7	5.5	3,3								14.4	13.6	18.4		28.6	11.6	54
16.9 14.7 3.2 3.6	14.7 3.2 3.6	3.2 3.6	3.6						3.5	2.7	5.6								5.1	6.0	5.4		23.3	5.9	24
3.6 3.6 3.4 3.4	3.6 3.4 3.4	3.4 3.4	3.4						6.4	5.7	s								4.1	4.7	4.5		11.4	5.5	77
4.7 5.1 6.0 7.1	5.1 6.0 7.1	6.0 7.1	7.1		•				16.6	s	10.2								18.6	13.6	15.0		36.4	15.8	77
18.1 19.3 19.7 17.0	19.3 19.7 17.0	19.7 17.0	17.0						S	7.9	8.1								0.9	8.9	9.9		19.7	11.0	24
7.9 9.0 8.5 36.4	9.0 8.5 36.4	8.5 36.4	36.4	·			44.0		28.1	24.6	16.3								73.0	56.7	56.6		79.3	38.9	24
73,4 55.5 65.2 61.9	55.5 65.2 61.9	62.2 61.9	61.9	·					92.6	94.6	95.3	٠.			.4 86.2				78.3	80.1	79.6		24.3	82.3	77
62.6 62.5 62.5 59.4	62.5 62.5 59.4	62.5 59.4	59.4				•		40.8	29.7	28.4	17.7							57.9	70.2	83.3		83.3	44.2	54
24.8 28.2 11.9 8.3	28.2 11.9 8.3	11.9 8.3	8.3						5.2	4.8	4.6								12.3	26.1	25.1		65.7	15.3	24
34.9 35.3 35.1 S	35.3 35.1 S	35.1 S	S	•	٦,		_		76.8	69.4	49.1		•					22.2	20.1	13.0	10.5		76.8	39.7	24
9.1 8.0 S 14.2	8.0 S 14.2	S 14.2	14.2		• • •				22.7	24.3	33.9	38.2	Ť	45.4 50.5				•	15.7	13.0	13.2		50.5	24.5	24
12.3 S 10.4 10.2	S 10.4 10.2	10.4 10.2	10.2		~				8.9	9.4	7.0			4.2 11.9					32.6	28.2	21.7		32.6	13.6	24
S 30.2 34.2 35.7	30.2 34.2 35.7	34.2 35.7	35.7		- 5		16.9		17.6	18.9	19.0	20.5	•	22.8 41.6	.6 50.4		5 46.0	48.1	6.69	9.69	60.7		76.2	36.8	24
108.5 99.3 75.3 54.4	99.3 75.3 54.4	75.3 54.4	54.4		50.7		5 44.8	59.4	51.3	42,4	33.7			0.4 41.1			•	•	62.4	44.7	31.6		.08.5	51.8	24
32.9 28.8 41.6	28.8 41.6	41.6		œ	32.5		3 23.0	25.3	26.5	20.5	21.3			7.5 14.5	.5 20.7	7 19.3	14	18.3	10.4	11.1	s		55.8	22.6	54
11.3 12.0 12.1	12.0 12.1	12.1		0	11.5				20.9	11.6	18.9								30.0	S	6.2		52.4	17.9	24
65.9 108.5 99.3 75.3 68.3	99.3 75.3	75.3		e	70.8		3 102.0	6.66	97.6	94.6	95.3	ľ	<u>.</u>	38.9 86.4	4 86.2		1 96.0	95.7	78.3	80.1	83.3	76.2			
23.2 22.2 23.2 24.2	22.2 23.2 24.2	23.2 24.2	24.2		5.			•	25.3	22.7	19.8	20.0	24.2 1	•	•••	3 26.1	•		23.6	23.0	21.3	22.3			

STATUS FLAG CODES

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WCHECK	BOWER FAILURE OUT FOR REPAIR
	POWER FAILURE -OUT FOR REPAIR
WCHECK	ROWER EAILURE OUT FOR REPAIR

NUMBER OF NON-ZERO READINGS:		693						
MAXIMUM INSTANTANEOUS VALUE:		177.1	177.1 PPB	@ HOUR(S)	13	ON DAY(S)		н
					VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME: 35	HRS		OPERATIC	OPERATIONAL TIME:			744 HRS	HRS
MONTHLY CALIBRATION TIME: 16	16 HRS							
STANDARD DEVIATION: 22.43	3							

Of Hour Averages



PP HOXMAX - LICA35

 $\label{eq:loss_loss} \mbox{LICA-SIK} \mbox{NOX} \ / \ \mbox{WDR Joint Frequency Distribution (Percent)}$

December 2015

Distribution By % Of Samples

Logger Id : 35 Site Name : LICA-ELK Parameter : NOX Units : PPB

90.22 NNN 2.72 .28 00. 00. 3.01 68.9 0, 00. 7.32 MM .43 8.18 8.62 00. 00. WNW .43 9.62 10.63 Wind Parameter : WDR Instrument Height : 10 Meters 9.62 10.34 90. 00. .28 ⋉ % 00. 00. 2.44 2.44 00. SW 8. 00. 1.29 1.58 .28 00. 00. SSW 1.43 1.14 .28 00. 00. 2.87 2.29 00 % SSE .57 8.18 Direction 00. 00, SE 2.15 12.64 20.25 7.04 .14 3.01 2.29 1.14 ESE 00. 22.55 00. 2.29 15.66 0, 00. 0. 00. ENE 1.00 .43 00. 00. 뛵 00. .86 NA EN 98. 90. 90-1.86 1.72 .14 0. 00. z Totals Limit 50.0 < 110.0 × 210.0 < 210.0

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9.77 00. 00.

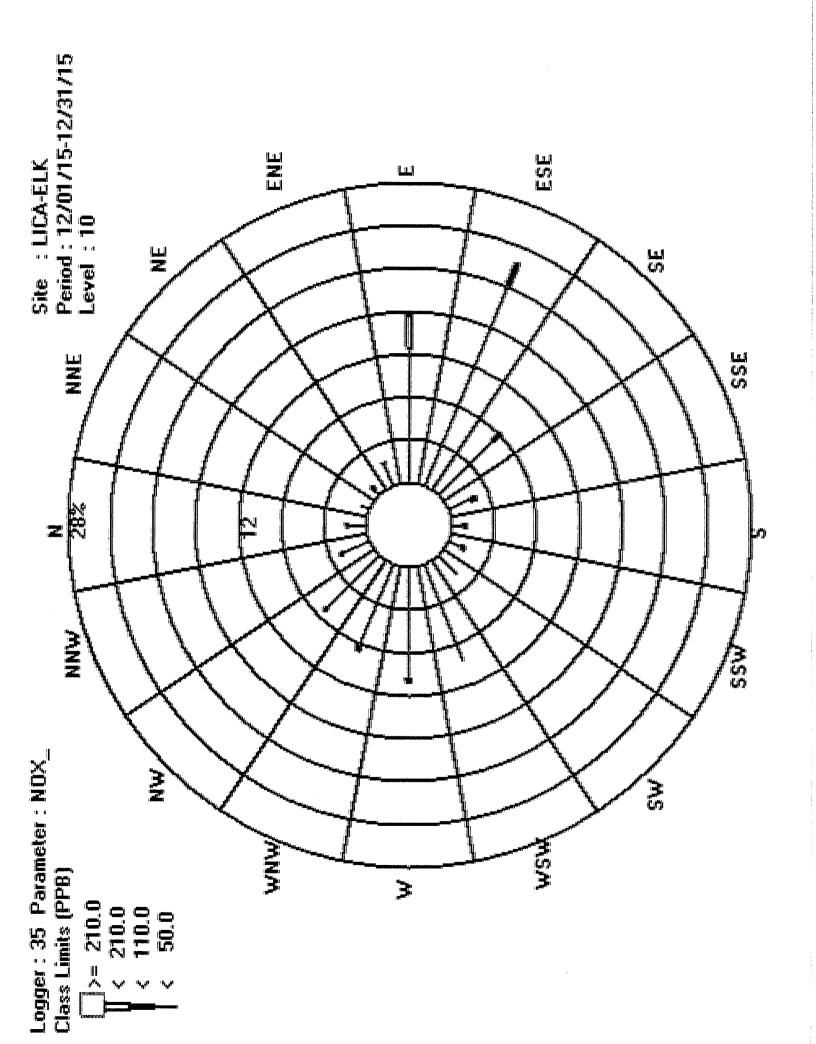
Calm : .00 %

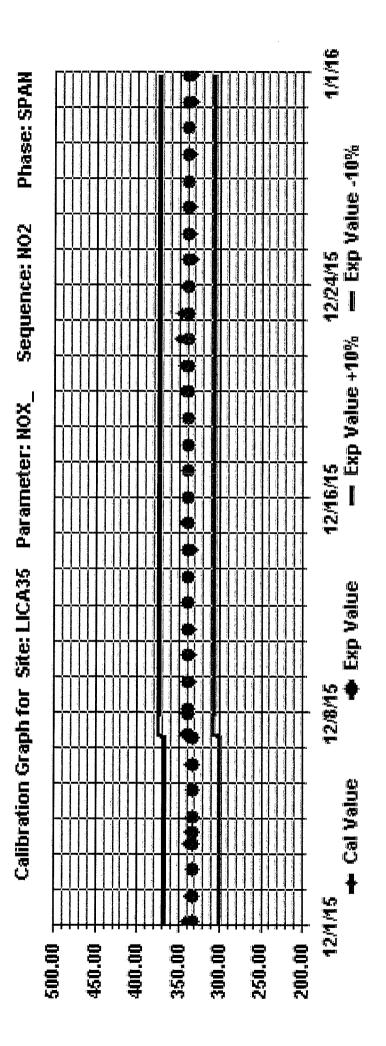
Total # Operational Hours : 696

Distribution By Samples

	MNN	19	Ø			21	
	WM	48	m			51	
	WNW	57	т			09	
	×	72	8			74	
	WSW	29				29	
	SW	17				17	
	SSW	o,	8			11	
	Ø	ω	7			10	
	SSE	16	4			50	
Direction	SS	49	œ			57	
Dir	ESE	141	16			157	
	ы	88	21			109	
	ENE	15	н			16	
	N.	4	m			7	
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	z	12	н			13	* 00
	Limit	50.0	110.0	< 210.0	210.0	Totals	Calm : .00 %
		٧	٧	٧	X		

Freq 628 89









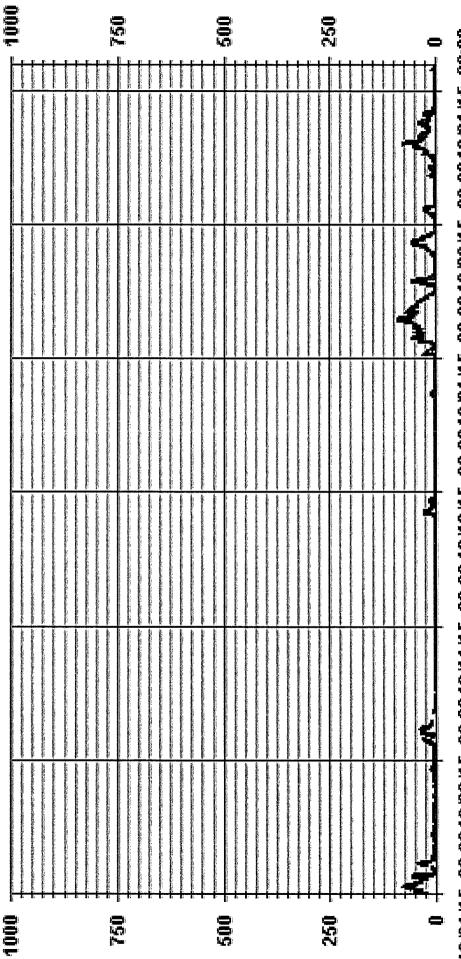
NITRIC OXIDE (NO) hourly averages in ppb

FACT									-				WITHIE ONIDE (INO) HOURS AVEIAGES III PAR	ıy avcı	48c3 II	7										
HOUR START	00:0	1.90	0:00 1:00 2:00 3:00	3:00	4:00	4:00 5:00 6:	00:9	7.00	8:00	9:00 - 1	1.1%	11:00 12	300 13	00 14:0	58	2.33	0.71	0 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	00:9	7:00	8:00	00:6		11:00 1	12:00 = 1	3:00: 14:	00 15:00	0 : 16.00	0. 17:00	3 IS:0	0.45.00	20:00	. 21.00	22:00	23:00	0.00	MAX.	AVG.	RDGS.
₹ ∺	24.0	29.9		37.1	50.7	52.9	60.7	76.8											3.4	3.5	4.5	3.5	6.2	76.8	34.6	24
2	6.6	s	22.8	36.8	40.0	28.8	12.2	4.6	8.8	7.0	5.3	5.8	6.3 5.1	1 4.5	5.0	1.3	1.4	1.5	1,4	1.7	1.4	1.4	1.2	40.0	9.1	24
<u>ر</u>	s	2.1		1.6	3.1	4.7	9.5	8.2											1.2	1.1	1.1	1.3	s	9.5	2.8	24
4	1.7	1.6		1.4	1.2	4.4	9.9	5.7											1.3	1.3	2.5	s	1.9	9.9	2.5	24
Ŋ	3.2	3.7		2.6	1.3	2.4	1.4	1.2											6.5	1.4	s	2.1	2.1	7.8	2.6	24
မ	1.6	1.5		1.1	1.2	1.1	1.1	1.5											29.3	s	9.7	10.4	8.3	29.3	6.3	24
7	22.2	33.1		31.9	37.3	34.6	18.5	12.8											U	3.1	3.0	s	0.5	37.3	18.1	24
∞	0.1	0.0		0.0	0.0	0.0	0.0	0.0											0.0	0.0	s	0.0	0.0	2.3	0.3	24
ō	0.0	0.0		0.0	0.0	0.0	0.0	0.0											0.0	s	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											s	0.0	0.0	0.0	0.0	0.0	0.0	54
H	0.0	0.0		0.0	0.0	0.0	0.0	0.0											0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
12	0.0	0.0		0.0	0.0	0.0	0.0	0.0											0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
13	0.0	0.0		0.0	0.0	0.0	0.0	0.0											0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
14	0.0	0.0		0.0	0.0	0.0	0.0	0.0											0.0	0.0	0.0	0.0	0.3	0.3	0.0	54
51	1.4	0.0		0.3	1.2	9.3	24.3	24.9											10.4	1.2	0.0	0.0	0.0	24.9	7.3	77
19	0.0	0.0		0.0	0.0	0.0	0.0	0.0											0.0	0.0	0.0	0.2	1.0	1.0	0.1	54
17	0.1	0.0		0.0	0.0	0.0	0.0	0.0											0.0	0.0	0.0	0.0	0.0	0.3	0.0	24
18	0.0	0.0		0.0	0.0	0.0	0.0	0.0											0.0	0.0	0.0	0.0	0.0	0.1	0.0	54
13	0.0	0.0		0.0	0.0	0.0	0.0	0.0											0.8	0.3	0.0	0.0	1.7	10.2	1.5	57
8	0.1	0.0		1.0	0.3	0.0	0.0	0.0											0.0	0.0	0.0	0.0	0.0	1.0	0.1	54
21	0.0	0.0		0.0	4.6	25.3	23.1	18.2											55.4	36.2	33.5	36.5	33.6	55.4	18.0	24
22	44.2	39.4		44.6	41.0	40.9	48.9	s										_	65.1	58.1	61.2	59.5	50.3	89.3	27.0	24
23	44.5	43.4		42.7	37.8	32.9	s	24.9											21.2	33.7	34.9	56.9	47.2	56.9	22.7	24
24	19.8	4.6		0.0	0.0	s	0.2	0.0											0.0	0.2	3.8	5.9	6.0	19.8	2.1	74
52	12.1	16.7		19.2	s	24.0	37.3	50.0		•									2.2	1.1	0.1	0.0	0.0	55.9	21.6	54
56	0.0	0.0		s	0.7	6.0	1.6	5.1											1.5	9.0	0.0	0.1	0.1	29.8	6.7	77
27	0.0	0.1		4.0	0.2	0.5	8.0	0.2											0.1	8.6	2.7	3.0	2.5	9.6	1.0	54
28	4.6	s		11.2	12.2	5.6	9.0	9.0											24.4	28.8	50.4	45.7	52.3	52.3	15.4	54
53	s	76.9		42.4	36.0	32.4	28.7	26.4											45.0	34.1	22.6	15.2	s	76.9	30.2	54
R	17.2	15.7		18.2	29.5	3.6	6.0	13											0.0	0.0	0.0	s	0.0	29.5	4.8	54
31	0.0	0.0		0.0	0.0	0.0	0.0	9.0								1	-		4.4	0.0	S	0.0	0.0	4.4	0.3	54
HOURLY MAX	44.5	76.9		44.6	50.7	52.9	60.7	76.8		_					-		-		65.1	58.1	61.2	59.5	52.3			
HOURLY AVG	7.1	9.3		8.6	6.6	10.1	9.2	8.8											9.3	7.4	8.3	8.6	7.4			

STATUS FLAG CODES C -CALIBRATION D - CULALITY ASSURANCE N NAUVENANCE S DAUCZERO/SPAN CHECK X - MACHINE MALFUNCTION P POWER FALLUSE G - OUTFOR REPAIR K -COLLECTION ERROR	24 HOUR AVERAGES FOR DECEMBER 2015	009		000 000
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			δ	MONTHLY SUMMARY				
NUMBER OF NON-ZERO READINGS:	ëS:		401					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		89.3	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	@ HOUR(S)	12	ON DAY(5) ON DAY(5) VAR-VARIOUS	2 2	77
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	33	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	1E: UPTIME:		744	% HRS
STANDARD DEVIATION:	15.99			MONTHLY AVERAGE:	3E:		8.5	PPB

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA35 NO_ PPB

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C

NITRIC OXIDE MAX instantaneous maximum in ppb

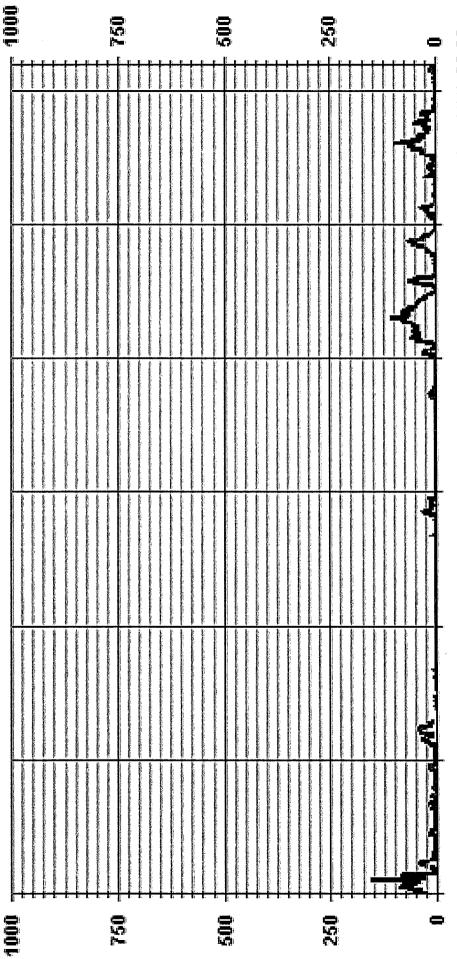
MST

RDGS.	24	24	24	24	24	24	24	24	24	24	54	54	54	24	54	24	24	24	24	24	24	24	54	54	24	24	24	24	24	24	24		
24-HOUR AVG.	45.9	11.7	5,3	4.7	4.6	9.3	23.3	1.2	9.0	0.3	0.2	0.3	0.1	6.0	10.4	9.0	0.4	0.4	2.9	0.7	23.2	64.9	26.7	8.4	25.1	9.5	5.6	22.0	36.6	7.0	2.0		
DAILY 2 MAX.	155.9	42.8	16.9	14.7	16.1	35.7	42.0	6.4	5.3	6.0	1.2	13	8.0	7.0	31.2	2.5	11	2.2	14.8	3.2	9.19	103.1	64.4	47.2	60.5	32.2	15.6	63.2	95.3	36.1	17.5		
23:00	8.2	1.9	s	2.8	3.1	11.8	3.0	0.0	0.1	0.1	0.0	0.2	0.0	1.3	0.3	2.5	0.5	0.0	3.5	0.1	40.3	53.7	55.5	11.4	0.5	6.0	3.9	63.2	s	0.7	2.6	63.2	9.4
22:00																																64.4	
22:00	5.5	2.1	2.0	4.5	s	19.5	4.5	s	9.0	0.1	0.2	0.0	0.0	0.4	0.7	0.7	0.3	0.4	0.7	0.1	40.9	63.8	50.8	9.6	0.7	0.7	11.0	54.3	27.9	0.4	s	63.8	10.8
20:00 21:00	5.1	4.7	17	2.1	2.1	s	U	0.1	s	9.0	0.4	0:0	0.0	0.3	5.8	0.7	0.2	0.2	17	0.0	54.5	8.09	37.3	6.0	2.1	1.5	15.6	53.9	44.3	0.4	4.4	8.09	10.8
19:00 20:00	5.7	5.6	2.1	2.1	16.1	35.7	U	1.1	0.0	s	6.0	0.4	0.1	0.4	15.6	0.5	0.2	0.1	2.7	0.4	61.6	77.9	32.2	0.7	5.1	5.5	1.4	34.2	54.2	1.2	17.5	6.77	13.0
18:00	28.3	2.3	3.8	5.6	15.1	28.0	U	8.7	0.0	0.1	s	6.0	0.2	1.4	13.7	0.7	0.0	0.4	12.6	0.3	47.6	77.3	7.3	1.5	10.0	7.5	9.0	33.1	31.6	1.5	6.9	77.3	11.7
17:00	7.78	2.4	6.5	10.7	5.9	26.5	U	1.1	0.0	0.0	0.0	s	8.0	0.5	89 89	0.5	0.2	0.3	14.8	0.5	45.0	60.2	1.1	3.9	13.3	10.3	1.2	35.5	19.9	1.5	0.0	87.7	12.4
16:00	49.0	2.1	3.6	10.9	14.4	18.4	U	U	0.0	0.0	0.0	0.2	s	11	12.3	0.4	0.2	2.2	7.5	0.4	31.5	65.3	0.7	0.7	13.8	24.6	0.7	34.8	27.1	1.4	0.0	65.3	11.5
15:00 16:00	20.5	5.9	1.8	2.2	2.1	13.5	U	U	0.0	0.2	0.1	0.1	0.0	s	13.3	8.0	0.4	0.7	4.7	0.4	25.0	65.7	0.7	1.2	20.2	32.2	1.5	24.6	25.0	1.0	9.0	65.7	9.3
14:00	32.5	7.0	2.4	1.4	2.0	5.4	U	ပ	0.0	0.0	0.1	0.2	0.0	0.0	s	1.2	0.5	0.7	2.8	0.2	7.9	69.4	1.8	1.7	31.2	27.8	2.8	7.7	16.0	0.3	0.8	69.4	8.0
13:00 14:00	155.9	7.1	2.2	15	1.9	4.4	U	U	0.0	0.1	0.4	0.5	0.0	0.1	7.4	s	1.1	9.0	7.6	0.3	6.1	103.1	1.5	9.0	34.8	20.4	1.6	10.7	16.9	0.7	1.3	155.9	13.9
12:00	37.4	7.8	2.8	1.5	2.4	4.4	U	U	0.2	0.0	0.0	0.5	0.0	1.3	10.7	0.4	s	1.0	2.1	0.7	3.9	101.8	2.2	0.7	36.4	22.2	1.1	6.4	18.3	5.8	1.5	101.8	9.7
11.00	45.8	9.9	2.6	2.0	2.4	4.7	9.4	U	0.0	0.0	6.0	0.7	0.1	5.8	10.4	0.2	0.2	s	1.4	0.8	3.5	75.9	11.0	9.0	34.6	18.1	6.0	6.4	19.9	3.5	1.7	75.9	9.5
10:00	50.4	6.8	3.2	14.7	2.2	5.4	9.6	U	0.8	0.1	1.2	1.3	0.0	7.0	12.7	0.4	0.0	0.5	s	1.5	8.8	78.6	12.0	0.5	54.0	8.5	1.3	9.9	28.4	3.5	0.8	78.6	11.1
9:00	65.7	8.4	13.5	s	2.0	5.0	17.0	4.9	5.3	0.9	0.0	0.0	0.0	9.0	16.3	0.0	0.2	0.4	2.1	s	11.1	76.5	21.5	0.4	60.5	7.0	0.9	4.7	36.2	5.7	7.5	76.5	12.7
8:00	83.1	8.1	12.7	s	1.9	2.2	14.0	0.7	9.0	0.7	0.1	0.2	0.3	1.7	24.4	0.2	9.0	0.5	0.1	0.8	s	6.09	23.7	0.7	53.3	12.8	1.0	3.0	4.9	4.6	1.1	83.1	12.4
7:00	84.8	6.3	16.5	7.8	1.8	2.1	15.9	1.5	8.0	0.3	0.0	0.0	0.3	0.0	31.2	0.4	0.3	0.2	0.0	0.5	25.0	s	28.1	0.3	53.6	9.3	0.8	2.1	30.1	2.8	2.0	84.8	10.8
6:00	70.2	21.8	16.9	9.4	2.1	2.2	29.4	1.9	13	0.2	0.0	0.2	0.3	0.4	28.2	0.3	0.3	0.2	0.3	0.7	30.4	55.0	s	1:1	43.1	3.6	1.8	2.0	31.3	1.7	0.8	70.2	11.9
5:00																																58.1	
4:00																																54.4	
3:00																																. 62.0	
3.00																																85.4	
) 1:00) 2:00																																1 95.3	
0:0	27.	13.	S	2.8	5.6	2.3	78	1.6	0.1	0.2	0.7	8	0.2	0.2	4.4	0.7	10	E.	8	7	00	20.	47.	47.	82	0.4	0.7	7.4	S	19.	0.5	50.1	9.7
HOURSTARF 8:00 1:00 2:00 3:00 4:00 5:00 7:00 7:00 7:00 2:00 3:00 4:00 5:00 6:00 7	. DAY	2	£	4	'n	9	7	∞	o	10	T	12	13	4	15	16	17	18	19	20	21	22	23	24	25	26	27	28	82	30	33	HOURLY MAX	HOURLY AVG

	ASSURANCE XX # E-MALFUNCTION DR ERROR ION ERROR
CODES	QI QUALITY R RECOVER X - MACHIN O - OPERATO K - COLLECT
STATUS FLAG CODES	ECK
	Jbration Internance Inzero/spanchi Werfailure Teorrepair
	C - CAI S - DAI P - POV G - OUT

NUMBER OF NON-ZERO READINGS:		929						
MAXIMUM INSTANTANEOUS VALUE:		155.9	PPB	@ HOUR(S)	13	ON DAY(S)		н
					VAR-v	VAR-VARIOUS		
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME: STANDARD DEVIATION:	35 HRS 16 HRS 19.37		OPERATIC	OPERATIONAL TIME:			447	HRS

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA35 NOMAX PPB

LICA-EIK NO_ / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

Logger Id : 35 Site Name : LICA-EIK Parameter : NO_ Units : PPB

		Fred	95.54	4.45	%	00.		
		MNN	3.01	00.	00.	00.	3.01	
		W	7.04	.28	00.	00.	7.32	
		WNW	8.33	.28	00.	00.	8.62	
sters (Þ	10.63	00.	00.	00.	10.63	
Wind Parameter : WDR Instrument Height : 10 Meters		WSW	9.62	00.	00.	00.	9.62	
Wind Parameter : WDR Instrument Height : 10 N		SW	2.44	00.	00,	00.	2.44	
d Param trument		SSW	1.43	.14	00.	00.	1.58	
Wir		Ø	1.29	.14	00.	00.	1.43	
		SSE	2.58	.28	00.	00.	2.87	
	Direction	SE	7.47	.71	00.	00.	8.18	
	Dir	ESE	21.69	.86	00.	00.	22.55	
		ы	14.22	1.43	%	00.	15.66	
		ENE	2.15	.14	00.	00.	2.29	
4		NE	.86	.14	00.	.00	1.00	
NO NO PPB		NNE	.86	00.	00.	00.	.86	
Site Mame : Lica-ELN Parameter : NO Units : PPB		z	1.86	00.	00.	00.	1.86	
Paran Unit		Limi t	50.0	0.011	210.0	210.0	Totals	
			٧	٧	v	!		

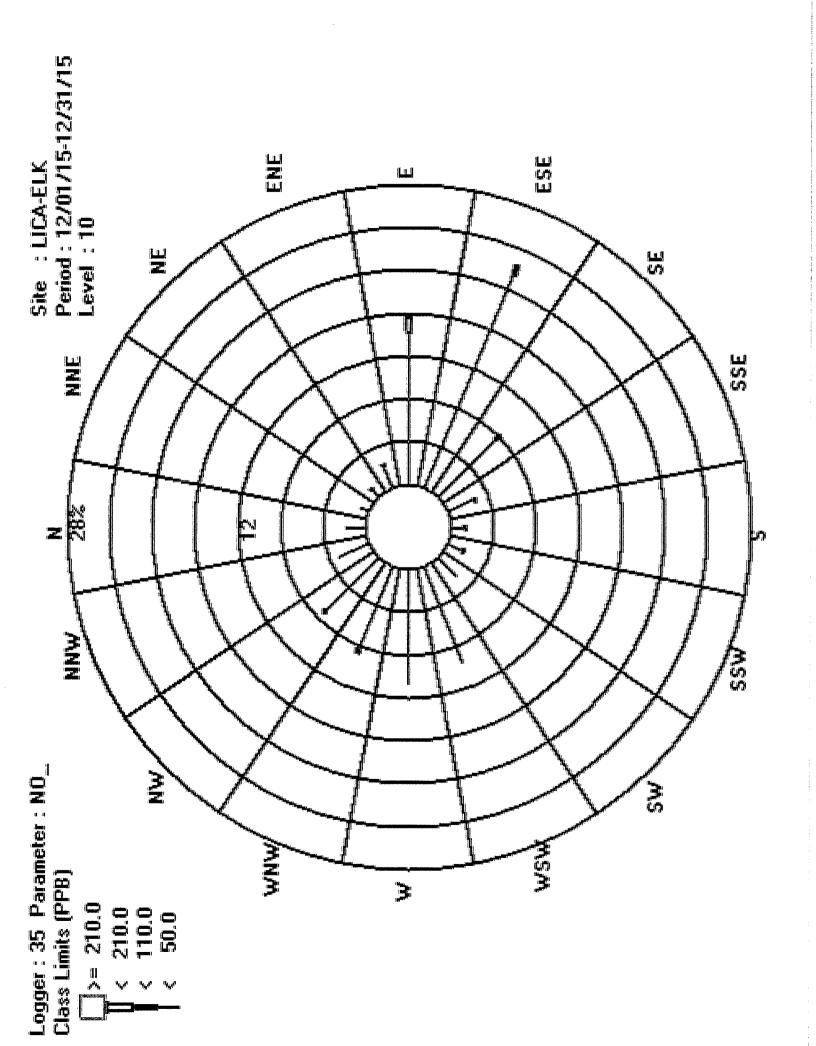
Calm : .00 %

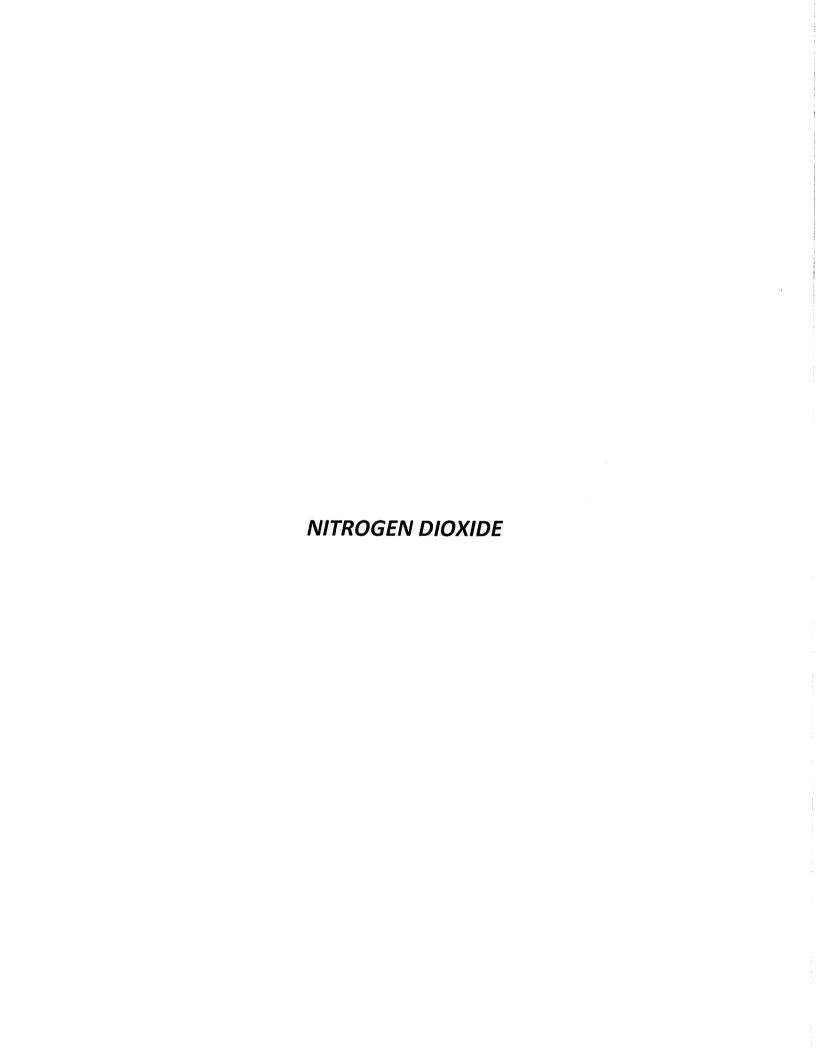
Total # Operational Hours : 696

Distribution By Samples

	Fred	665	31			
	NNW	21				21
	MM	49	7			51
	WNW	58	7			9
	赵	74				74
	WSW	29				67
	SW	17				17
	SSW	10	П			11
	w	o	н			10
	SSE	18	7			20
Direction	SE	52	ស			57
Dir	ESE	151	9			157
	м	თ თ	10			109
	ENE	15	н			16
	Ä	ø	н			7
	NNE	ø				ω
	z	13				13
	Limi t	< 50.0	110.0	210.0	210.0	Totals
		٧	٧	٧	X	

Calm : .00 %





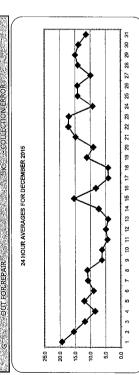
Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

es in ppb

hourly average
(NO ₂)
I DIOXIDE (
NITROGEN

2000
20:00 21:00
23.3 23.7 24.7 23.7 24.6
10.3
5.3 5.5 5.3 \$
6.3 11.4 S 11.3
17.1 10.5 S 12.2
11.6 10.8
10.9 5.8 S 5.4
2.9 \$ 3.3 3.6 2.7
3.1 4.1 3.5
4.2 3.7 4.1 3.4 4.0
6.0 4.6 4.2 5.5 4.8
3.7 3.9 3.6 2.9 2.9
6.3 6.7 8.4 8.4 14.0
22.0 18.1 14.1 13.8
9.4 11.5 8.6 13.6 21.0
2.0 3.6 4.8 3.4 4.7
3.3 3.8 3.4 3.4
18.0 15.3 9.4 8.1 19.2
7.7 5.3 5.4 5.5 7.6
17.4 17.0 16.2 14.7 14.9
17.6 16.2 15.6 16.0 16.4
20.4 20.1 20.0
7.9 10.1 14.7 16.0 15.1
17.7 14.8 11.6 6.1 6.5
10.7
10.6 15.6 14.8 14.5
13.9 14.1 15.2 13.4 11.6 12.4 16.9
14.2 13.9 7.8 8.1 S 9.8 19.5
22.8 9.5 \$ 4.0 10.8
27.1 23.3 23.7 24.7 23.7 24.6
12.0 11.2 10.7 9.8

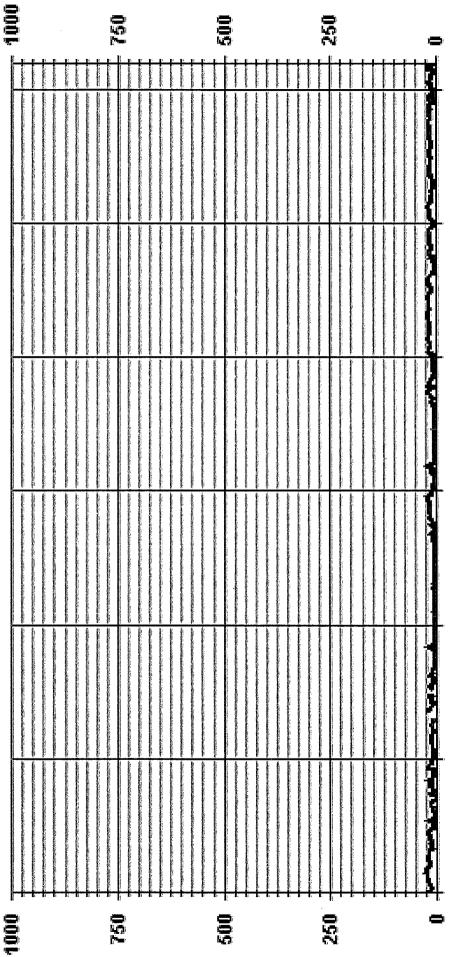
OBJECTIVE LIMIT: A SSURANCE Q QUALITY ASSURANCE R TRECOVER, X MACHINEMALEUNCTION O OPERATORIEROR K COLLECTION ERROR STATUS FLAG CODES 5- — DANDYZERO/SPAN CHECK p. - POWER FAILURE G. -- OUT FOR REPAIR



ALBERTA ENVIRONMENT: 1-HR% 159 % PPB

			Ø.	MONTHLY SUMMARY				
NUMBER OF 1-HR EXCEEDENCES			0					
NUMBER OF NON-ZERO READINGS:	Š		969					
MAXIMUM 1-HR AVERAGE:		27.1	PPB	@ HOUR(5)	18	ON DAY(S)	₽	
MAXIMUM 24-HR AVERAGE:		19.3	PPB			ON DAY(S) VAR-VARIOUS		
IZS CALIBRATION TIME:	35	HRS		OPERATIONAL TIME:	نن		744	HRS
MONTHLY CALIBRATION TIME:	13	HRS		AMD OPERATION UPTIME:	JPTIME:		100.0	%
STANDARD DEVIATION:	5.54			MONTHLY AVERAGE:	نیز		10.7 PPB	PPB

Of Hour Averages



12,01/15 00:0012,06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

LICA35 NO2_ PPB



Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

qdc

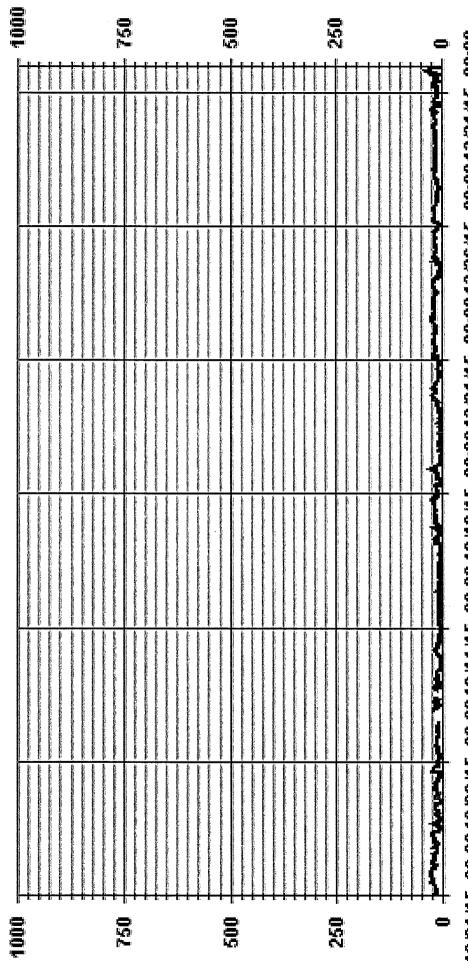
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"	17.1	s	16.4	15.2	14.5	17.3	18.9	17.8	18.4				ı	ı	''			· ·	25.6	26.2	26.1	26.7	30.1	22.2	74
25.9	s	19.0	19.1	16.7	19.8	22.3	22.9	23.4	21.3		18.9	20.4 19	19.1 22.8	8 15.6	5 14.1		3 12.9	12.7	20.7	17.7	15.9	13.6	25.9	18.6	54
	19.5	17.3	18.5	20.2	21.8	22.6	22.8	22.1	22.8	12.3						23.7			6.4	6.7	7.3	s	23.7	15.1	24
οį	14.5	10.0	12.3	10.6	14.3	15.7	17.5	s	s										9.2	15.2	S	15.8	18.6	11.7	24
19.5	20.9	18.6	17.4	15.4	19.7	15.6	13.0	13.6	10.6						23.6				12.5	s	14.3	15.0	23.6	15.0	24
2.5	11.5	10.4	7.7	9.7	6.9	9.0	10.0	8.0	10.7	12.6								•	s	13.6	12.3	12.4	14.6	11.3	24
11.4	9.2	9.4	10.2	10.2	10.3	12.1	11.9	11.8							U			U	U	23.4	s	22.1	23.4	12.3	24
6.4	15.7	11.5	9.9	17.4	15.8	20.4	19.8	13.4											7.7	s	8.9	7.2	20.7	14.5	24
0.7	10.6	10.6	19.3	18.4	13.2	13.2	10.7	11.7											s	5.5	8.9	6.4	19.3	8.9	24
9.	10.2	11.4	14.7	13.8	18.0	12.9	12.3	11.2		10.7									4.9	5.1	8.9	5.1	18.0	9.2	24
6.	5.6	5.1	5.6	6.5	6.0	6.4	5.5	7.7											5.3	5.6	5.4	5.6	8.3	6.2	24
4.	5.3	5.4	5.9	7.1	6.0	7.2	6.1	7.2											6.0	5.7	7.2	7.0	13.2	6.8	24
7.1	5.7	6.3	5.7	6.1	6.0	6.4	5.5	5.9					2 4.9					5.2	5.6	2.8	4.8	4.3	7.1	5.6	24
6.	4.3	4.5	4.6	6.7	14.4	14.2	6.2	15.4											7.9	10.6	12.4	16.9	16.9	6.6	24
8.2	14.0	13.9	13.8	14.4	15.5	15.9	17.4	16.7									3 19.5		23.8	15.7	16.5	12.6	24.2	17.1	24
8.0	10.8	10.1	11.3	12.7	15.0	12.9	13.8	14.3	5.6						11.2				14.7	13.8	18.4	27.2	27.2	11.8	24
3.1	17.3	14.8	4.1	4.1	4.2	4,4	4.1	4.9	4.1								4.3		5.8	6.5	6.2	7.1	23.1	6.4	24
ω	4.3	4.3	4.3	4.3	4.9	5.8	8.7	7,9	7.0										4.7	5.7	5.2	8.4	10.2	6.0	54
oj.	5.4	5.6	8.9	7.7	8.1	7.6	8.5	9.7	14.9										17.4	13.6	14.3	21.9	23.6	13.6	54
3.1	17.6	18.9	17.4	16.2	127	11.5	9.5	10.8	s										6.5	7.1	7.0	10.6	18.9	10.9	24
2.7	8,5	8.7	8.7	20.3	20.8	18.9	19.6	S	17.9	17.1		13.9 16	7.71 7.3		9 22.0	19.7	7 19.9	19.1	18.8	17.4	16.9	16.7	22.0	16.6	24
8.8	18.2	16.6	18.0	17.2	15.5	16.5	s	17.1	18.2										18.5	17.1	17.3	17.9	23.2	19.1	54
18.4	17.9	18.0	18.4	18.6	18.9	s	19.6	19.7	19.8										21.5	21.5	21.6	20.0	21.6	18.5	54
19.1	18.6	17.3	11.8	8.8	s	9.9	6.2	6.0	5.6								12.4		12.1	18.2	18.1	16.5	19.1	11.4	54
17.0	17.7	15.3	14.1	s	15.1	15.9	15.9	16.0	18.4										18.6	13.2	10.9	8.9	19.0	16.1	54
8.6	9.5	8.4	s	13.8	16.8	18.2	19.1	19.9	16.7						7 19.4				15.1	13.2	12.9	12.1	19.9	16.0	24
11.5	11.8	s	10.2	10.0	12.8	13.2	12.5	10.7	8.7				.6 12.0				5 11.6		18.4	17.6	16.8	16.2	18.4	11.8	24
16.5	s	17.7	18.8	17.8	17.2	15.0	15.5	15.3	13.7	13.4	13.5		•	7 17.8					18.8	16.7	13.8	14.9	18.8	16.0	24
s	15.1	15.9	15.3	16.9	17.3	16.3	15.8	16.2	16.4				•		•		18.1	19.1	19.6	17.8	16.3	s	19.6	16.6	24
5.9	17.5	17.7	17.1	21.3	20.9	16.4	20.9	21.8	21.8		18.6								10.7	11.7	s	11.9	21.8	16.7	54
9.6	11.8	12.7	12.2	13.4	11.7	21.0	21.8	20.5	20.1					` '				,	27.8	S	5.8	24.8	35.2	16.7	24
25.9	20.9	19.0	19.3	21.3	21.8	22.6	22.9	23.4	22.8	20.7	20.7	22.4 30	30.0 23.0		1 23.6	, 26.6	5 29.4	35.2	27.8	26.2	26.1	27.2			
3.3	12.6	12.3	12.2	13.0	13.8	13.7	13.7	13.7	13.6					•		•			13.7	13.1	12.3	13.9			

STATUS FIAG CODES C - CALIBRATION Q - QUALITY ASSURANCE Y - MAINTENANCE S - DALI (TERO, SPAN CHECK P - POWER FALLIGE C - COLITIOR REPAIR. C - COLITIOR REPAIR. C - COLITIOR REPAIR.

			MON	MONTHLY SUMMARY	MMARY				
NUMBER OF NON-ZERO READINGS:			693						
MAXIMUM INSTANTANEOUS VALUE:	نن		35.2	PPB	@ HOUR(S)	19	ON DAY(S)		31
						VA	VAR-VARIOUS		
IZS CALIBRATION TIME:	32	HRS	Ū	OPERATIC	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	16	HRS							
STANDARD DEVIATION:	5.92								

of hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

PPB

- LICA35 HO2MAX

LICA-ELK NO2_ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 35 Site Name : LICA-ELK Parameter : NO2_ Units : PPB_

Wind Parameter : WDR Instrument Height : 10 Meters

	Freq	00.00	00.	00.	00.	
	MNN	3.01 100.00	00.	00.	%	3.01
	MN	7.32	00.	00.	00.	7.32
	WNW	8.62	00.	00.	00.	8.62
	×	10.63	00.	00.	00.	10.63
	WSW	9.62	00.	00-	00.	9.62
	SW	2.44	00.	00.	00.	2.44
	SSW	1.58	00.	00.	00.	1.58
	Ø	1.43	00.	00.	00.	1.43
	SSE	2.87	.00	00.	00.	2.87
Direction	S	8.18	00.	00.	00.	8.18
Di	ESE	22.55	00.	00.	%	22.55
	Þi	15.66	00.	00.	00.	15.66
	ENE	2.29	00.	00.	00.	2.29
	뜊	1.00	00.	00.	00.	1.00
	NNE	.86	00.	00.	00.	-86
	z	1.86	00.	%	%	1.86
	Limit	50.0	110.0	210.0	210.0	Totals
		٧	٧	٧	X	

Calm : .00 %

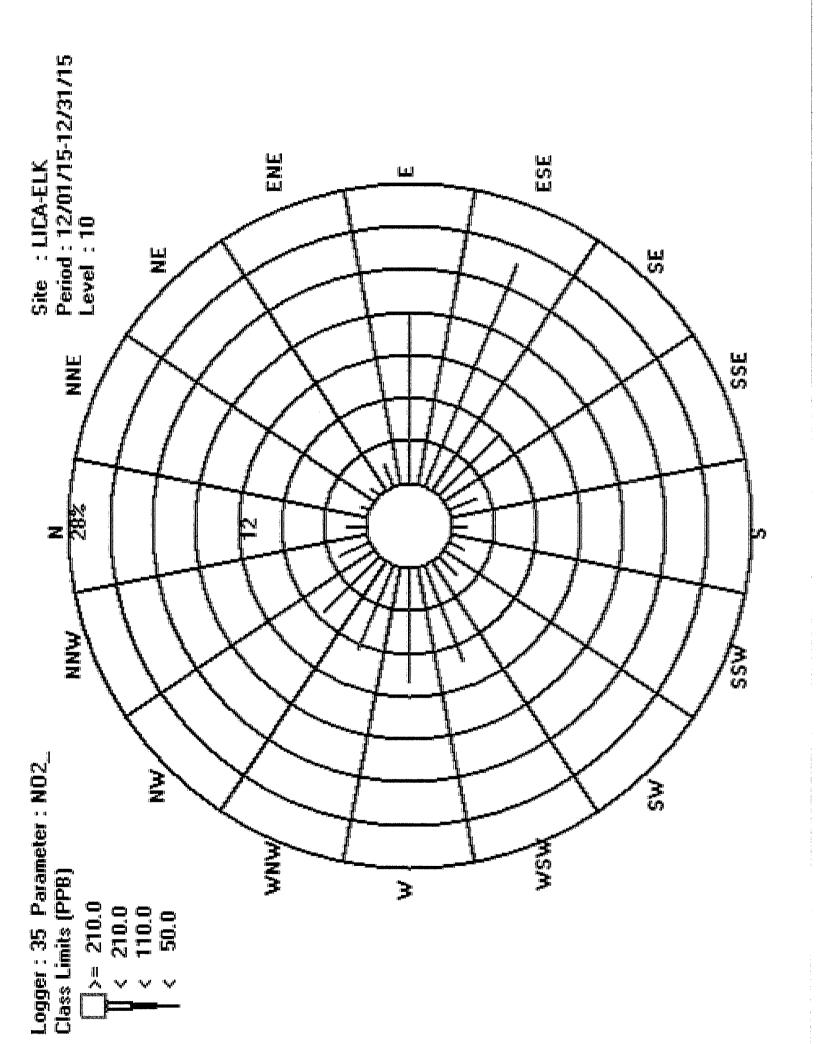
Total # Operational Hours : 696

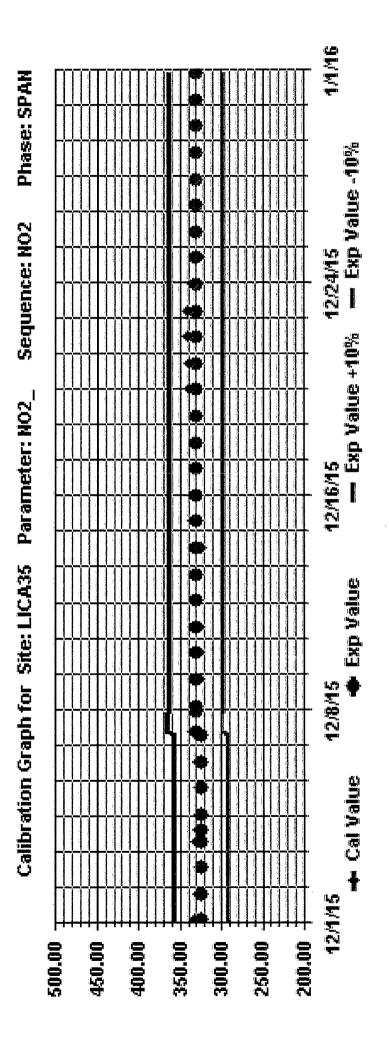
Distribution By Samples

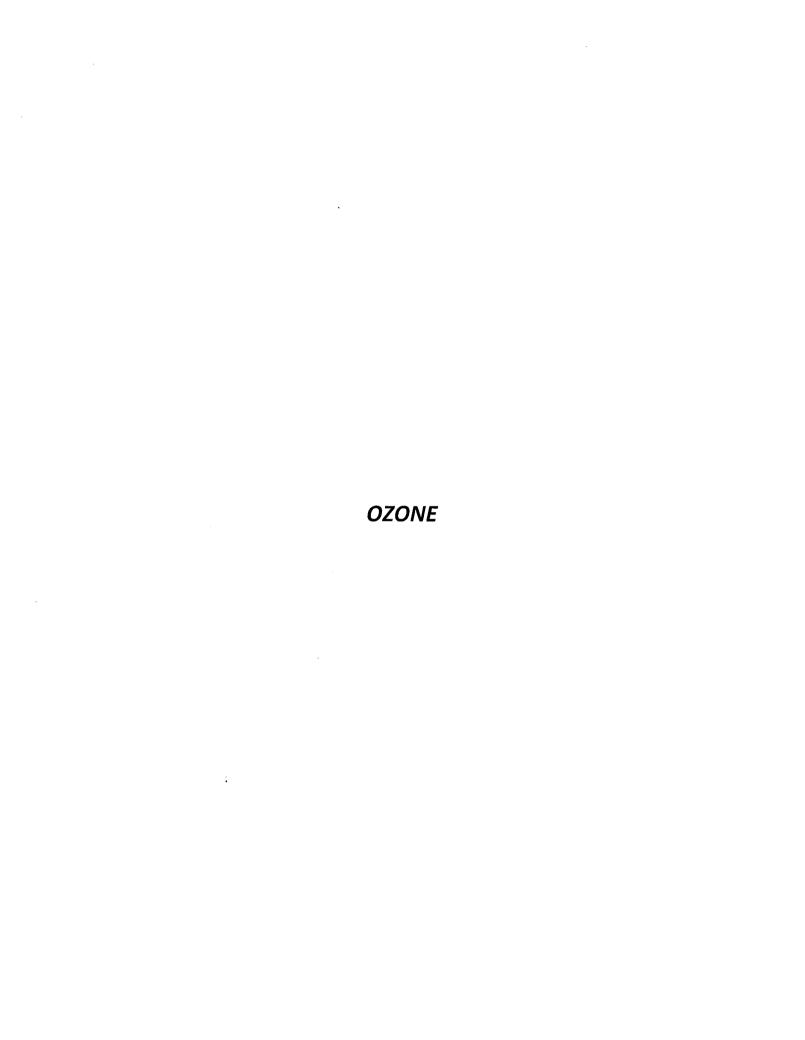
Fred 969 NNM 21 21 MN 21 WNW 9 9 74 WSW 67 SW 17 17 11 SSW ΙŢ 10 Ø 10 SSE 20 20 Direction SE 57 ESE 157 157 109 м 109 16 뛾 13 Totals 50.0 < 210.0 Limit < 110.0 >= 210.0

Calm : .00 %

Total # Operational Hours : 696



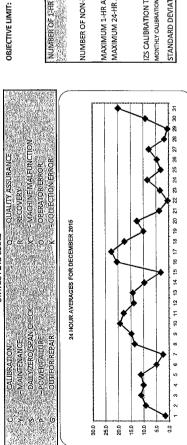






OZONE (O3) hourly averages in ppb

		KUGS.																						54												
	75	AVG.		7	9.3	11.1	10.1	11.1	5.0	2.4	13.6	14.8	19.3	17.9	13.9	14.3	9.7	3.2	20.5	22.7	17.5	10.0	12.5	3.7	0.4	3.4	8.3	3.1	4.6	7.8	17	0.4	9.1	19.8		
		MAX	•	4	23	9	23	23	თ	10	21	21	23	21	70	18	14	13	78	78	20	16	17	14	Н	13	13	22	16	17	'n	1	71	30		
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Anna Canal Canal		J0:07	•	4	13	18	12	4	₽	2	14	18	S	18	თ	14	11	۲	77	22	16	S	17	П	0	0	თ	Н	m	7	0	0	17	13	22	9.0
Section Services (SES)	100	nn:Fire																																	77	
one conference		n Ts:nn																																	78	
- 5	100	P:00: - 17:00					9																	7											30	
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and the Character	12:00 13:00	.00		7 7																				9											27 2	
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- 1	8:00	00.6		-	-	Ŋ	Ŋ	17	7	H	16	∞	18	13	13	14	7	₽	25	25	18	11	13	s	0	0	15	0	+ 1	6	e	0	4	11	25	9.1
	7:00	8.00		-	-	m	Н	14	7	1	13	∞	16	20	18	15	11	0	21	56	17	12	15	₽	s	0	11	0	₽	7	m	0	4	9	56	8.5
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	5:00	9:00			7	H	5	9	თ	Н	16	10	6	15	16	13	7	₽	21	22	20	13	11	Н	0	0	s	0	4	7	7	0	m	18	27	7.9
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MST	HOUR START	HOUR END	DAY	: -:: : -::	2	m	4	Ŋ	ú	7	60	ნ	10	Ħ	12	ដ	14	Ð	16	17	18	19	22	ฆ	8	23	24	25	26	27	78	52	ဇ္တ	31	HOURLY MAX	HOURLY AVG

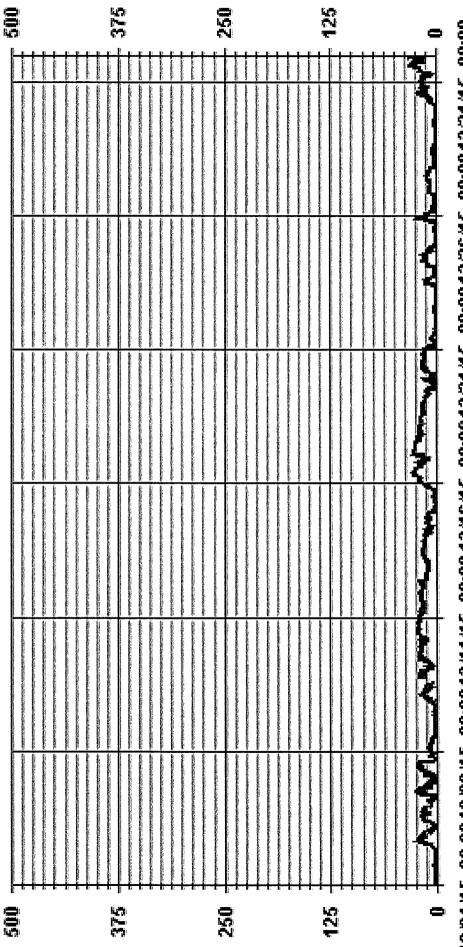


ALBERTA ENVIRONMENT: 1-HR 322 PPB

STATUS FLAG CODES

			Σ	MONTHLY SUMMARY					
NUMBER OF 1-HR EXCEEDENCES			o						Sparestower
NUMBER OF NON-ZERO READINGS:	:S		642						
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		30 22.7	PPB PPB	PPB @ HOUR(S) PPB	22	ON DAY(5) ON DAY(5)	31	17	
						VAR-VARIOUS			
125 CALIBRATION TIME:	8	HRS		OPERATIONAL TIME:	ME:		744	HRS	
MONTHLY CALIBRATION TIME:	4	HRS		AMD OPERATION UPTIME:	UPTIME		100.0	%	
STANDARD DEVIATION:	7.83			MONTHLY AVERAGE:	ĞË		10	PPB	

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA35 03_ PPB



LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C

OZONE MAX instantaneous maximum in ppb

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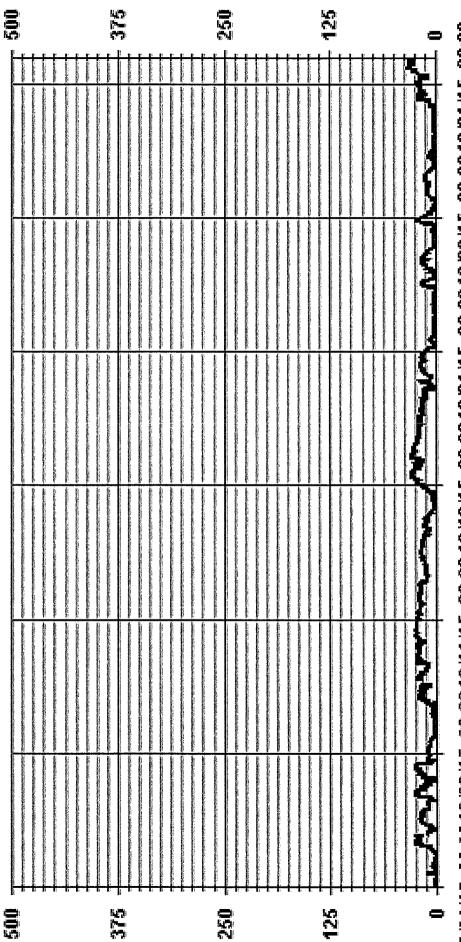
HOUR START	0:00 1.00 2:00	1.00	2:00 3	3:00 4:00 5:00	00 5.6)O-9 - O(00:Z C	8:00	9:00	10:00	11.00	12:00:13	200 14:0	0. 15.00	16:00	17:00	18:00	19:00	0:00	1:00	2.00 23.00	DAILY	24-HOUR	
HOUR END	1:00	2:00	3:00 4	4:00 5:00 6:00	00 - 6:t)0 Z 0(0 8 00	00.6	10:00	11:00	12:00	13:00 14	15.0	16:00 10:- 16:00	17:00	18:00	19:00	20:00	1.00 2	2:00	3:00 0:00	MAX.	AVG.	RDGS.
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ō	17	18						6	12	22	77				77	77	77	23					17.7	54
9	22	77						20	77	22	24				24	ឧ	23	s					22.0	54
뒤	22	77						22	21	19	19				18	19	s	20					19.9	54
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13	11	11						15	17	17	18				s	17	16	15					15.5	54
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15	Ŋ	9						н	1	7	m				7	4	7	7					4.2	74
16	13	17						78	78	53	53				22	20	13	23					22.7	54
17	19	20						22	56	56	56				77	22	23	23					24.1	54
18	20	Z						20	13	70	s				15	16	16	17					18.6	54
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HOURLY MAX	77	22	78	28 23	28 28		27		28	53	59				32	31	31	24			32 31			
HOURLY AVG	10.3	10.8				7 10.2			11.1	12.5	12.9		•		12.0	10.9	10.7	10.9			• •			

STATUS FLAG CODES

C - CALBERATION BANGE - CALBERATION BANGE - CALBERATION BANGE - CALBERATION BANGE - CALBERATION BANGE - CALBERATION BANGERATION #### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			705						
MAXIMUM INSTANTANEOUS VALUE:	üi		32	PPB	@ HOUR(5)	22	ON DAY(S)		31
						VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME:	35	HRS		OPERATIC	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME:	4	HRS							
STANDARD DEVIATION:	8.28								

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA35 03MAX PPB

LICA-ELK
O3_ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Wind Parameter : WDR Logger Id : 35 Site Name : LICA-ELK Parameter : 03_

		Freq	00.00	00.	00.	00.	
		MNN	2.97 100.00	00.	00.	00.	2.97
		N	7.22	8.	00.	00.	7.22
		WNW	8.64	00.	00.	00.	8.64
feters		Ħ	11.04	00.	00.	00.	11.04
Instrument Height : 10 Meters		WSW	9.63	00.	00.	00.	9.63
t Heigh		SH	2.40	00.	00,	00.	2.40
strumen;		SSW	1.69	00.	00.	00.	1.69
In		Ø	1.41	00.	00.	00.	1.41
		SSE	2.83	00.	00.	00.	2.83
	Direction	SE	8.07	%	00.	00.	8.07
	Di	ESE	21.95	00.	00.	00.	21.95
		ы	2.54 15.58	00.	00.	00.	2.54 15.58 21.95
		ENE	2.54	00.	00.	00.	2.54
		呂	66.	00.	0.	0.	66.
PPB		NA	66	00.	00.	00.	66.
••		×	1.98	00.	00.	00.	1.98
Units		Limit	50	110	210	210	Totals
			٧	٧	٧	X	

Calm : .00 %

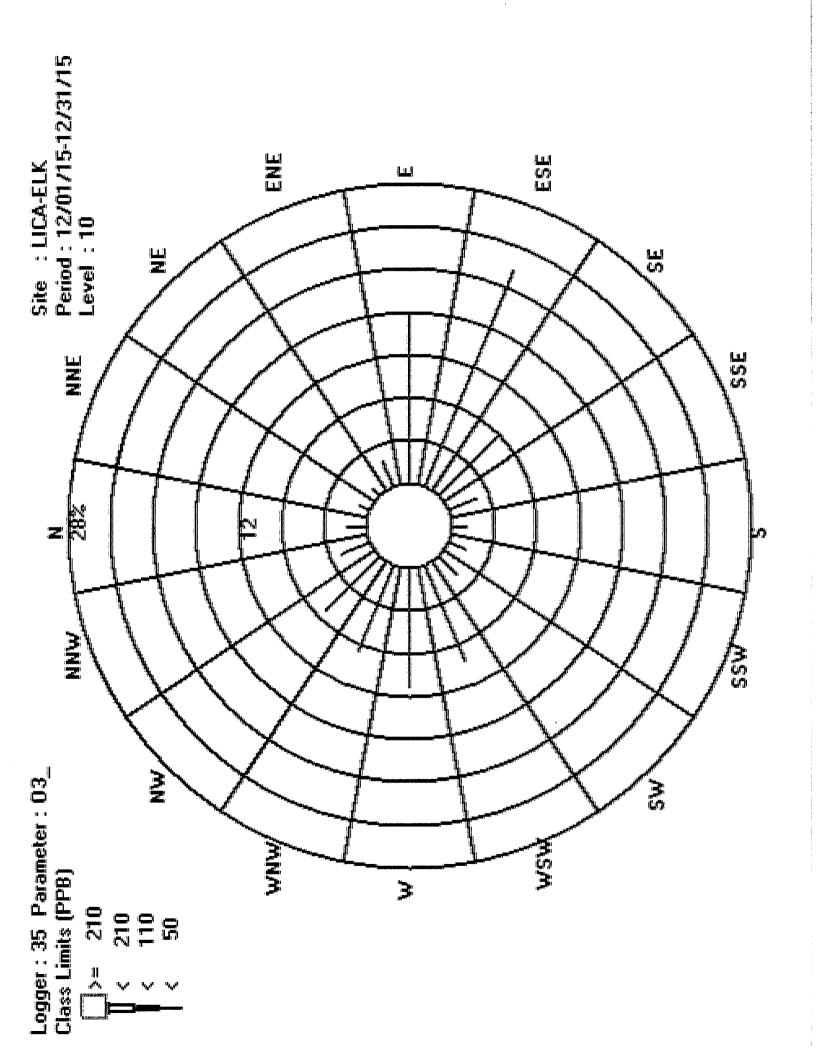
Total # Operational Hours : 706

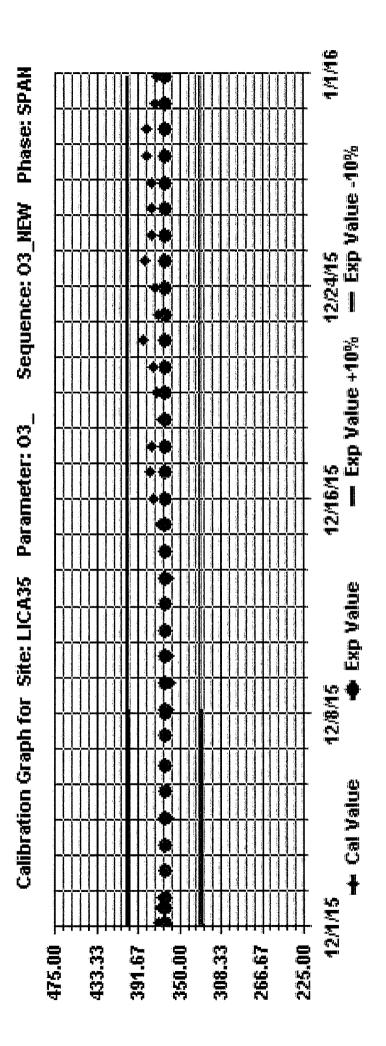
Distribution By Samples

	Freq	706					
	MNN	21				21	
	NW	51				51	
	WNW	19				61	
	赵	78				78	
	WSW	89				89	
	SW	17				17	
	SSW	12				12	
	Ø	10				10	
	SSE	20				20	
Direction	S	57				57	
Dire	ESE	155				155	
	м	110				110	
	ENE	18				18	
	呂	7				7	
	KINE	7				7	
	×	14				14	*
	Limit	20	110	210	210	Totals	* E.
	н	v	v	v	> 210	EH	į.

Calm : .00 %

Total # Operational Hours : 706







JOB # 2833-2015-12-35- C



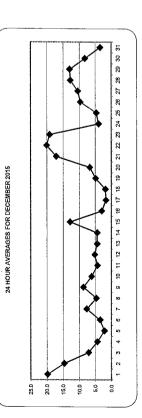
PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5) hourly averages in ug/m3

ı			
i			١
	į		
	ė		

IR RDGS.			22																													
24-HOUR AVG.	19.8	14.6	7.1	4.3	2.2	3.5	7.7	4.6	8.7	6.1	4.3	5.1	4.4	4.3	12.8	2.9	1.6	1.8	4.8	6.7	17.0	20.0	19.1	3.9	4.6	9.6	10.4	12.7	12.9	8.2	3.5	
DAILY MAX.	78	26	18	13	7	7	14	თ	17	9	6	თ	∞	13	19	œ	9	9	10	11	53	24	27	10	∞	17	15	19	20	14	თ	
23:00	14	Ŋ	7	13	Н	7	ø	0	ø	Ŋ	7	7	0	11	6	00	H	H	7	m	26	19	17	m	0	13	12	16	11	7	0	76
22.00	25	Ŋ	m	12	m	4	ø	Ŋ	Ŋ	S	4	7	4	∞	14	00	4	4	5	7	26	21	21	Н	m	13	11	14	11	7	H	26
22:00	80	œ	н	m	0	S	Ŋ	0	ø	80	4	9	4	11	13	Н	7	н	1	9	25	70	24	9	1	12	11	13	10	S	m	75
20:00 21:00	26	ø	m	17	Н	Ŋ	œ	Ŋ	œ	7	S	9	П	13	13	0	0	0	S	7	22	21	21	9	Ŋ	10	σ	11	13	ø	0	3,0
19:00	18	10	н	m	ო	Ŋ	6	ø	7	7	Н	Ŋ	Н	9	15	H	m	2	7	9	25	22	23	φ	4	œ	00	9	13	4	Н	ř
18:00	16	σ	10	7	0	7	5	4	7	2	9	9	н	0	15	4	Н	0	Ŋ	9	22	17	19	m	Ŋ	17	თ	15	13	9	4	22
17:00	24	7	13	0	m	Ŋ	00	00	7	H	7	7	Ŋ	0	11	2	0	9	00	9	24	20	13	7	9	თ	11	∞	16	∞	Н	70
16:00	21	9	18	0	Ŋ	9	17	9	œ	Ŋ	4	œ	m	0	11	0	Н	1	4	∞	20	21	σι	7	4	13	13	14	14	7	0	,
15:00	23	Ŋ	Ŋ	4	0	0	ø	4	ø	9	∞	o,	m	ø	13	7	7	0	4	7	26	24	10	н	9	10	6	15	14	7	7	۲
14:00 15:00	25	11	m	7	0	9	თ	7	0	ø	Ŋ	ις	4	Ŋ	14	П	0	0	10	9	25	24	13	7	5	თ	11	11	14	ø	m	1
13:00	78	17	10	4	0	4	Ŋ	9	U	6	7	7	9	Ŋ	17	m	4	4	4	9	25	21	œ	m	7	11	12	12	12	00	0	٩
12:00	25	21	×	m	0	0	13	7	11	∞	Н	4	9	m	œ	П	0	Н	4	7	53	70	10	0	œ	2	11	13	12	9	0	۶
11:00	23	23	×	Н	н	7	14	9	00	9	m	4	7	×	13	н	0	0	9	7	13	15	18	U	4	7	Ŋ	13	12	7	m	۶
10:00	27	21	10	П	Н	П	7	vo	17	7	7	m	7	4	14	4	н	0	Ŋ	œ	∞	15	24	0	4	13	11	თ	11	17	m	
9:00	23	16	7	4	н	Н	12	m	17	00	Ŋ	m	н	m	11	m	н	7	9	ø	11	19	24	∞	5	11	∞	12	13	13	4	,
00:8	21	23	10	4	Ŋ	7	σ	4	17	7	0	7	Ŋ	9	11	0	н	Н	Ŋ	ው	11	20	26	Н	Ŋ	14	10	19	13	17	5	20
7:00	17	70	10	7	4	5	∞	∞	11	Ŋ	4	m	m	4	17	m	0	7	თ	7	12	19	24	0	9	12	10	13	12	17	7	,
6:00 7:0 7:00 8:0	16	21	7	m	Ŋ	7	σ	н	13	œ	7	Ŋ	Ŋ	4	19	7	7	Н	4	თ	11	20	27	Ŋ	н	12	10	13	12	14	7	7,0
5:00	16	12	14	ወ	7	0	7	2	12	7	o,	m	φ	Ŋ	11	н	0	Н	4	w	12	22	22	m	Ŋ	11	13	12	16	13	7	ç
4:00	19	18	0	m	Н	0	0	4	o,	9	ø	7	9	0	10	0	m	Ŋ	Ŋ	თ	00	19	19	Ŋ	7	2	თ	10	13	10	თ	2
3:00	17	20	m	4	Ŋ	4	10	н	∞	9	Ŋ	Ŋ	9	7	13	5	0	4	m	11	თ	19	23	m	Н	9	12	15	œ	7	9	22
3:00	17	21	10	Ŋ	н	0	10	4	7	10	m	4	7	7	14	4	4	4	7	4	7	19	22	9	2	Ŋ	9	თ	10	9	6	23
1:00	15	21	Ŋ	7	m	7	0	თ	Ŋ	4	4	m	φ	0	13	œ	m	7	9	7	7	20	23	6	œ	7	თ	15	70	12	9	22
0:00	16	56	9	m	7	Ŋ	4	Ŋ	10	Ŋ	'n	4	∞	7	13	∞	ø	7	7	7	Ŋ	24	19	10	2	ო	12	10	17	17	7	30
HOUR START HOUR END	DAY 1	7	e	4	Ŋ	9	7	œ	O	10	17	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	93	31	YAMAYIGIYCH

STATUS FLAG CODES

C. -CALBRATION.
O: -CUMJITY ASSURANCE
R. -RECOVER
R. -RECOVER
S DAJAZZERO/SPANICHECK
X - MACHINE MALEUNCHON
P - OPERATION ERROR
G - OPERATION ERROR
G - OUTFORREPAIR
K - COLLECTION ERROR



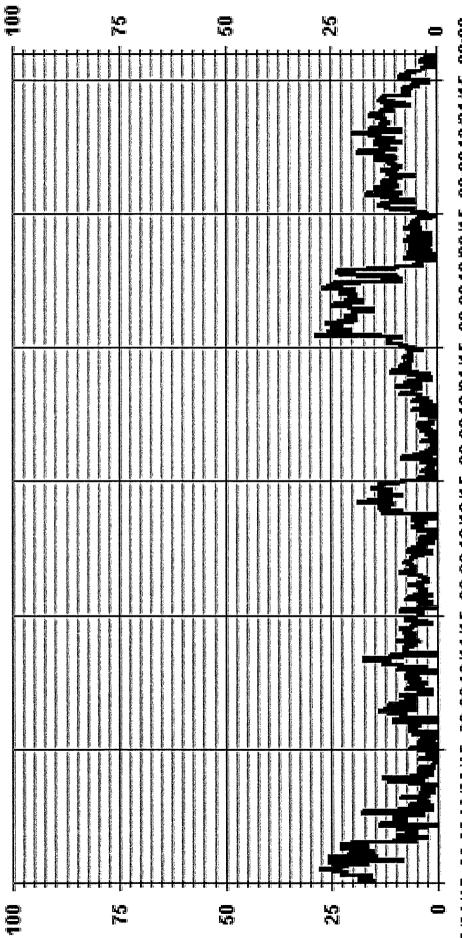
OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: 24-HR 30 0g/m3

MONTHLY SUMMARY

HRS 22 741 99.6 ON DAY(S) ON DAY(S) VAR-VARIOUS OPERATIONAL TIME: AMD OPERATION UPTIME: 12 MONTHLY AVERAGE: ug/m3 @ HOUR(S) ug/m3 989 29 20.0 NUMBER OF 24-HR EXCEEDENCES: HRS 6.44 7 NUMBER OF NON-ZERO READINGS: MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE: MONTHLY CALIBRATION TIME: STANDARD DEVIATION:

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

UG/M3

PM2

- LICA35

LICA-EIK
PMZ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 35
Site Name : LICA-ELK
Barameter : PMZ

Parame Units	ter	: PM2 : UG/M3	4						Win	Wind Parameter Instrument Height	eter : Height		WDR 10 Meters				
						Dir	Direction										
Limit	z	NNE	Ħ	ENE	ы	ESE	SE	SSE	Ø	SSW	SW	WSW	丝	WINW	MN	NNW	Fred
30	2.02	.94	1.07	2.56	15.51	22.26	7.96	2.69	1.48	1.75	2.29	9.98	10.66	8.50	7.28	2.96 100.00	00.00
09	00.	00.	00.	00.	.00	00.	00.	00-	00.	00.	00.	00.	00.	00.	00.	00.	00.
80	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.
120	00.	00.	00.	00.	.00	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.
240	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.
240	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.	00.
Totals	2.02	.94	1.07	2.56	15.51	22.26	7.96	2.69	1.48	1.75	2.29	96.6	10.66	8.50	7.28	2.96	

v v X

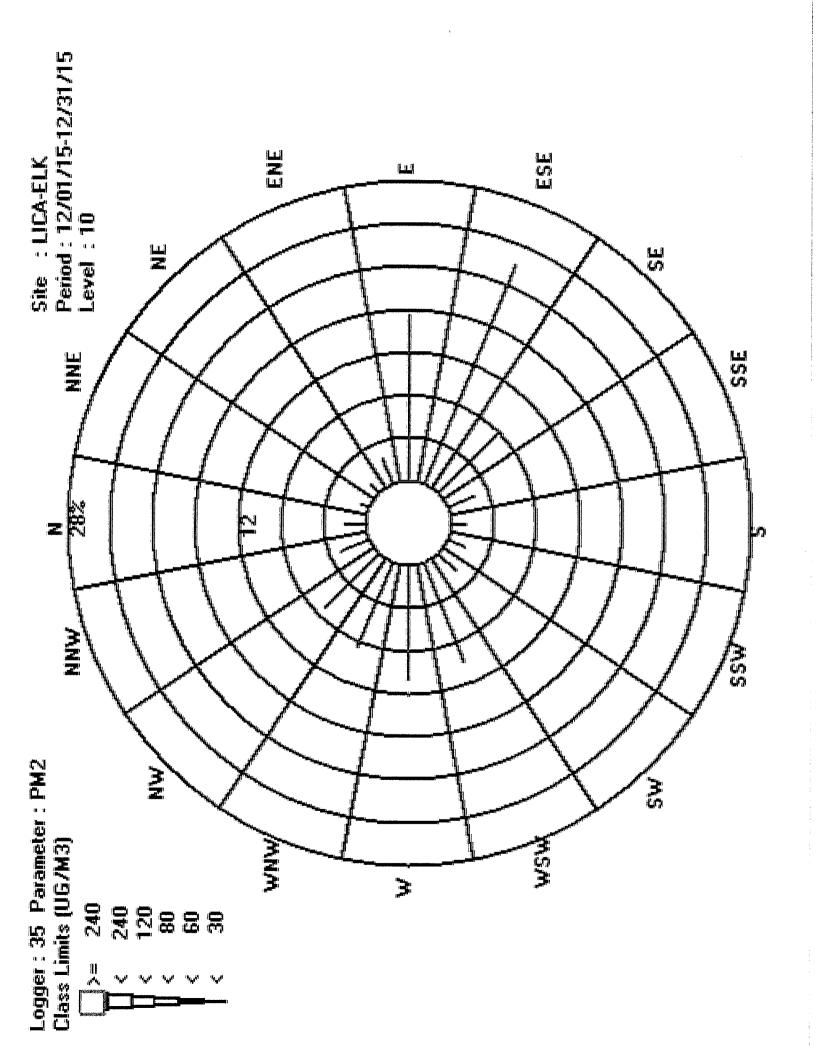
Total # Operational Hours : 741

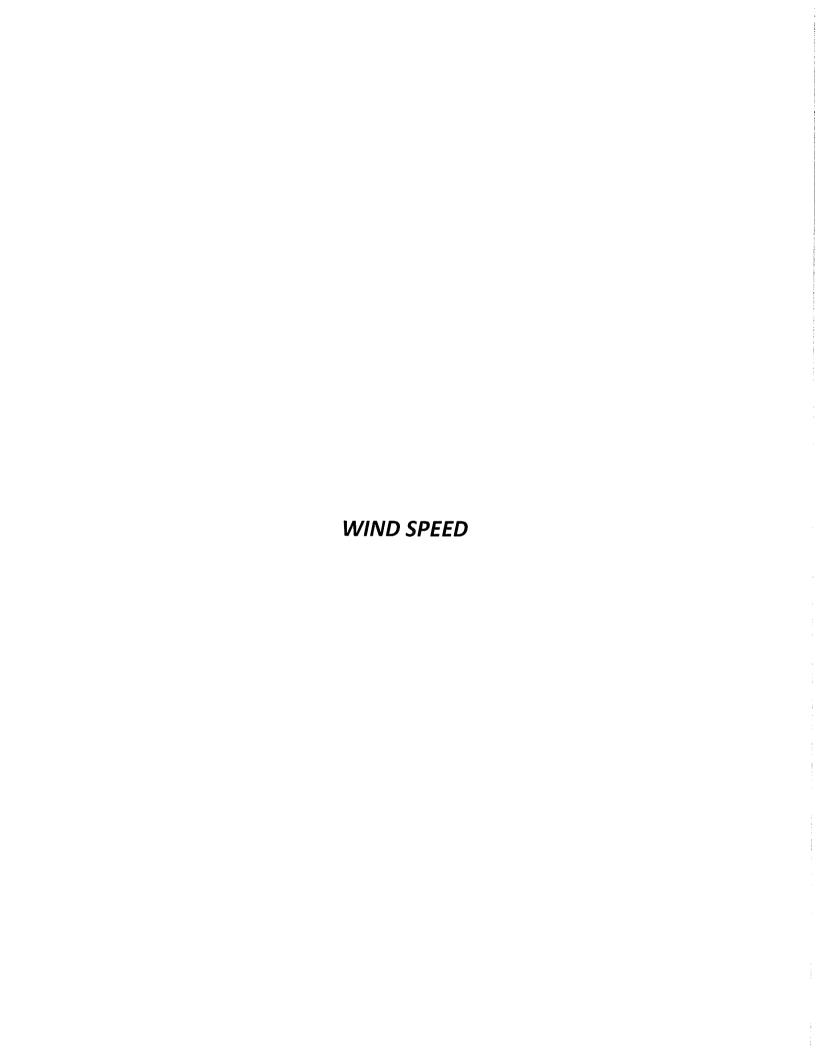
Calm : .00 %

Distribution By Samples

	Fred	741						
	NNW	22						22
	MN	54						54
	WNW	63						63
	×	4						79
	WSW	74						74
	SM	17						17
	SSW	13						13
	Ø	11						11
	SSE	20						70
Direction	SE	න ග						59
Dί	ESE	165						165
	ы	115						115
	ENE	19						61
	E	ω						α
	NNE	7						7
	×	15						15
	Limit	30	09	80	120	240	240	Totals
		٧	v	v	v	v	X	

Calm : .00 %
Total # Operational Hours : 741



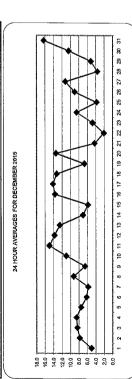




WIND SPEED (WS) hourly averages in km/hr

MST									5		Ì		wind of LLD (wo) modify averages in Mill in	DAD.												
₽ 0	0:00	1.59 2.59		3:00 4:00 5:00 3:59 4:59 5:59	4:00	5.00	6:00	7.00	8:59	9:59	10:00 1: 10:59 1:1	11.00 IS	12:00 13:00 12:59 13:59	00 14:00 59 14:59	15:00 9 15:59	16:00	17:00	18:00	19:00	20:00	21-00	22:00-	23:00	DAILY ;	24-HOUR AVG	RDGS
17.	1	1.5		2.0	1.2	2.5	2.9				il	1	3	b l	4		6		9	10.5	17.3	8		12.6	r,	24
. 7	1.0	1.2	4.1	3.1	6.4	6.9	10.9	10.2	7.7	8.0	4.1	3.0	3. 4.5	5 6.6	7.9	16.4	17.4		5.6	7.8	18.4	8.7	10.2	18.4	7.8	7
e	2.3	1.3	4.2	1.3	5.1	5.2	6.5	6.4									12.4	15.7	12.6	7.1	6.8	7.4		15.7	8.4	54
7	4.4	6.1	6.7	7.1	7.3	3.7	4.4	2.7				18.3 2	24.4 24.4	.4 19.9			8.8		5.8	1.7	0.4	3.0		24.4	9.8	24
ហ	2.9	3.3	2.1	3.7	110	5.7	8.8	7.5				•					5.4	8.5	8.9	6.6	8.8	8.7		12.0	7.5	24
φ	8.6	10.4	10.7	10.1	9.7	10.9	11.5	8.3									2.7		4.6	6.5	3.8	5.8		11.5	6.2	24
7	2.7	3.0	4.2	3.4	5.5	5.8	9.1	5.6					5.5 1.5				4.5	6.0	8.0	5.6	8.2	14.2		14.2	2.8	54
∞	6.7	12.7	9.3	7.3	8.4	13.0	11.3	10.9									10.5		12.9	14.6	11.2	11.8		14.6	9.3	54
o	2.5	2.1	1.9	5.5	10.7	10.2	11.5	14.0									2.9		7.3	6.4	8.8	7.8		14.0	9.9	54
ន	6.7	4.0	6.5	4.8	4.7	2.1	3.6	5.2							12.4		15.2		17.4	17.0	18.7	17.5		18.7	11.0	54
TT.	12.0	9.3	9.4	10.1	14.6	16.5	17.6	17.5			•			.3 15.3			14.7		14.6	14.1	15.0	15.8		20.9	15.0	54
12	16.4	15.3	13.6	11.7	12.8	11.1	11.1	11.2				13.1					12.3		13.9	16.7	18.0	18.7		19.8	13.8	54
£1	19.1	18.5	18.5	16.1	16.5	17.7	21.9	17.0					15.9 11.4				3.0		3.4	5.7	7.0	5.5		21.9	12.5	54
14	6.3	6.5	9.9	9.9	0.9	6.7	7.0	5.1	5.7	4.2	5.8						5.4	8,5	8.6	9.6	10.8	6.4		10.8	7.0	54
13	7.6	9.3	6.7	3.0	4.3	5.6	3.6	9.9									5.8		10.0	11.2	11.4	10.7		11.4	5.9	24
16	11.4	9.3	10.7	8.6	9.5	15.7	14.8	12.4		17.1							16.0		12.9	14.1	12.5	6.7		21.9	13.6	74
17	9.7	11.1	15.9	17.5	22.5	21.7	18.9	15.1						.7 16.4			12.5		9.7	7.6	6.4	6.1		22.5	14.1	74
18	5.1	3.8	3.5	2.7	3.9	3.7	3.2	5.4								19.1	20.5		20.2	18.2	16.3	19.7		21.0	13.3	54
19	15.9	13.5	11.6	9.5	6.1	4.7	7.7	5.5									5.0		4.4	7.2	7.7	9.4		15.9	6.7	54
20	7.9	7.7	7.1	8.3	9.5	10.3	10.3	15.3									15.1		12.8	14.1	12.5	12.1		21.7	13.4	54
12	6.1	1.8	2.9	2.0	4.3	6.8	5.2	9.9	9.9	7.3	3.8	6.8 6	6.8 4.0	0 3.7	5.3		4.5	4.1	3.4	3.4	0.7	1.1		7.3	4.3	74
22	1.5	5.6	3.0	9.0	0.2	2.0	4.3	1.5									2.5		2.2	2.9	3.5	2.7		4.5	2.1	54
ឧ	0.1	2.9	6.2	3.2	5.2	7.0	2.3	2.4								4.9	4.4		9.7	7.6	7.2	8.9		9.7	4.8	54
24	8.2	8.5	7.1	8.5	6.5	9.4	8.4	10.2									4.4		10.5	10.1	8.7	2.8		12.6	8.5	54
22	4.1	1.0	0.7	1.8	0.3	1.9	5.4	6.0									5.1		2.5	6.5	9.7	10.0		10.0	8 6	24
26	12.4	14.2	9.0	12.6	13.0	11.0	7.5	9.6									10.9		11.9	11.3	11.5	13.5		14.2	9.0	24
27	13.1	14.1	14.2	14.4	14.9	11.4	12.0	12.3									12.1		4.9	4.6	5.0	5.9		16.7	11.2	74
88	1.3	0.2	8.0	2.4	5.7	8.1	9.9	5.3		7.7			1.9 3.7		2.4		1.4		4.1	3.7	2.6	9.0		8.1	3.6	24
ଯ	0.5	3.8	4.4	4.8	7.8	4.6	4.3	4.5									7.5		5.6	5.6	3.6	1.9		8.4	5.1	24
8	5.9	2.7	0.4	2.7	6.1	9.7	10.7	10.8		13.0 1		11.5 18					12.1	12.5	10.9	13.0	12.2	11.6		18.6	10.4	24
31	11.8	11.0	5.3	2.8	8.2	7.7	5.1	3.6			`				``		26.9	25.6	24.8	23.1	22.0	23.7	٠,	29.7	16.3	54
HOURLY MAX	19.1	18.5	18.5	17.5	22.5	21.7	21.9	17.5	17.1	19.7	19.9	21.9 24	24.4 24.4	. ,	3 29.7	27.4	26.9	25.6	24.8	23.1	22.0	23.7	19.8			
HOURLY AVG	6.9	6.9	6.7	6.4	8.0	8.3	8.5	8.1					10.1				9.4	9.6	9.5	9.6	9.7	9.3	8.3			

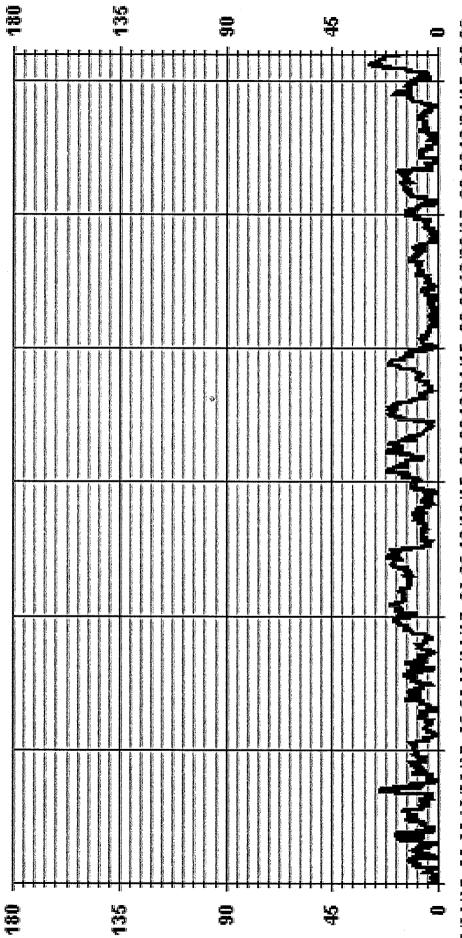
	LAST CALIBRATIC	DECLINATION:	
STATUS FLAG CODES	C - CALIBRATION - Q - QUALITY ASSURANCE	Y REGOVERY	S - DAIDYZERO/SPANICHECK - X MACHINE MALEUNCTION P. POWER FAILURE - O - OPERATOR ERROR G - OUT FORREPAIR: K - COLLECTION FROR



November 23, 2015	MAGNETIC DECLINATION 19 DEGREE EAST	
LAST CALIBRATION:	DECLINATION:	

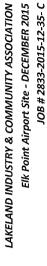
			MO	MONTHLY SUMMARY				
NUMBER OF NON-ZERO READINGS:			744					
MAXIMUM 24-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		29.7 16.3	KPH KPH	KPH @ HOUR(S) KPH	15	ON DAY(S) ON DAY(S) VAR-VARIOUS	31 9.	31 31
MONTHLY CALIBRATION TIME: STANDARD DEVIATION:	0 5.62	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME: MONTHLY AVERAGE:	TIME:		744 100.0 8.7	HRS % KPH

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

- LICA35 WSP KPH



24-HOUR

DAILY

20.8 28.8 28.8 28.8 28.8 29.1 20.1

25.8 29.4 29.4 29.4 29.6

17.5 8.5 2.2 9 2.2 9 2.2 9 2.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.2 9 3.3

13.1 13.1 13.2 13.2 13.3

11.0 17.9 18.6 19.6

215 215 225 225 24 4 4 5 24 4 4 5 24 4 4 5 24 4 4 5 24 4 4 5 24 4 4 5 24 4 4 5 24 4 4 5 24 4 5 24 4 5 24 4 5 24 4 5 24 5

110 14.7 14.8 14.8 14.8 14.8 15.9 16.1 16.1 16.1 17.0 18.5 1

10.1 44.5



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TOR)	8:00	3.4	11.1	13.0	7.6	17.5	12.8	11.3
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	6:00	6.3	15.9	8.6	7.0	16.7	16.1	13.8
	5:00	5.4	13.9	7.5	7.7	12.9	17.4	8.6
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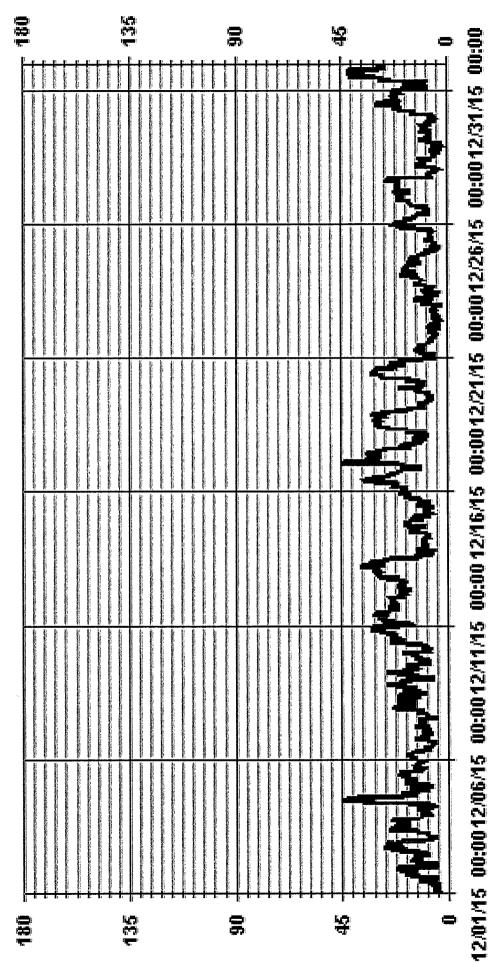
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MONTHLY SUMMARY	45.3 КРН @ НОUR(S)		OPERATIONAL TIME:
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Of Hour Averages



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WSMAX

- LICA35

LICA-SIK WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 35 Site Name : LICA-ELK Parameter : WSP Units : XPH

Wind Parameter : WDR Instrument Height : 10 Meters

7.25 3.22 1.74 1.47 2.95 2.95 1.34 8.60 MNM 1.20 .13 00. 3.36 5.10 2.15 9.94 10.61 00. 00. 00. 2.28 5.64 2.01 MSM 00. 00. 00. 2.28 1.07 .53 00 S .67 00. 00. 1.20 1.74 .53 % 00. 00. 00. 1.07 1.47 00. 00. .40 00. 00. Ø 2.41 2.68 -26 00. 00. 00. 00. Direction 2.41 1.34 3.89 7.93 .26 SE 00. 00, 4.97 5.91 ESE 10.75 00. .67 00. 15.59 22.31 5.91 8.60 .94 00. .13 00. М 1.88 2.55 . 67 00. 00. 00. 00. 1.07 1.07 00. 爿 00. 00. 00. 00, 00. 00. 94 00. 00, 00 .94 00. 2.01 1.74 .26 00. 00. 00. z Totals 29.0 Limit 6.0 12.0 20.0 39.0 39.0

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Total # Operational Hours : 744 Calm : .00 %

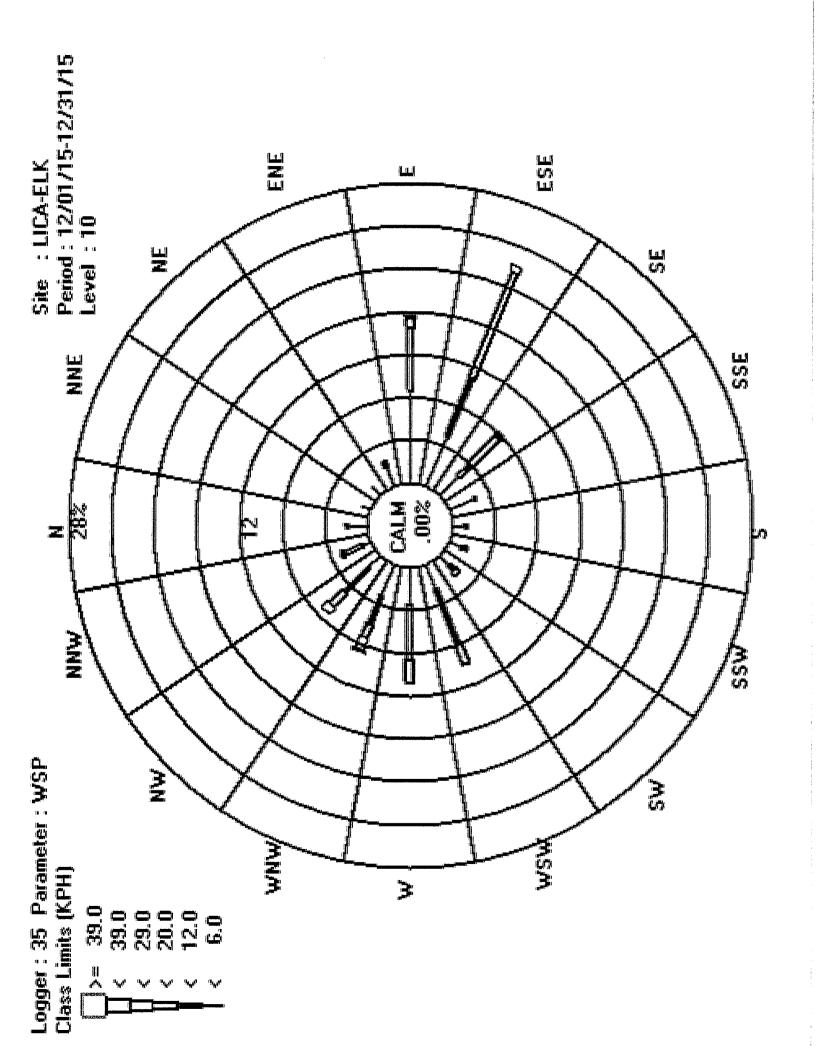
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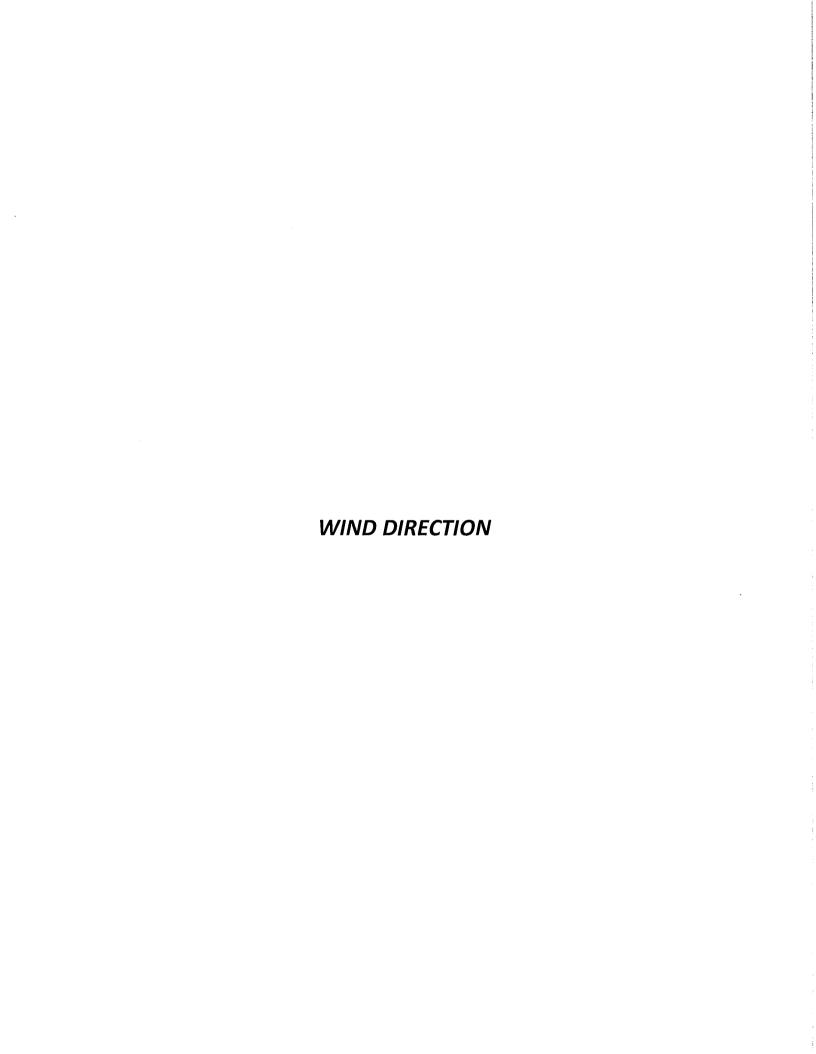
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Calm : .00 %

Total # Operational Hours : 744







LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Elk Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C

WIND DIRECTION (WD) hourly averages

MST

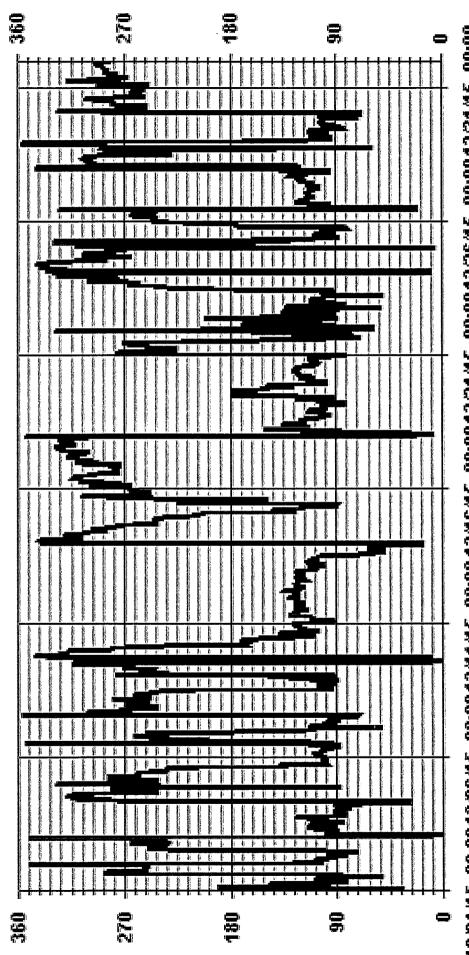
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November 23, 2015	MAGNETIC DECLINATION 19 DEGREE EAST
LAST CALIBRATION:	DECLINATION:

MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	90.84	AMD OPERATION UPTIME:	100.0	%
		MONTHLY AVERAGE:	SE	



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- LICA35





LAKELAND INDUSTRY & COMMUNITY ASSOCIATION EIK Point Airport Site - DECEMBER 2015 JOB # 2833-2015-12-35- C

EIN YOUR AIR

STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

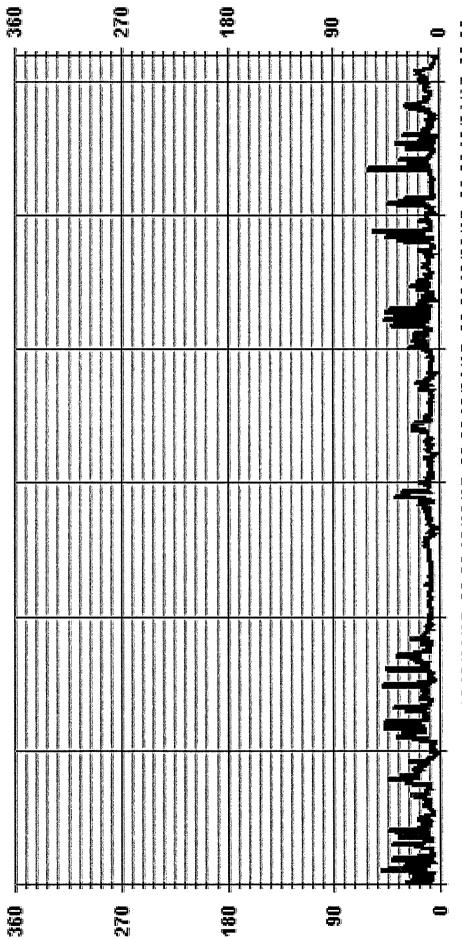
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OPERATIONAL TIME: 744 HRS
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CALIBRATION TIME:



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LICA35 STDWDIR DEG

APPENDIX II NON-CONTINUOUS MONITORING DATA RESULTS



Sample ID: 15120089-003

Customer ID: LICA

Cust Samp ID: LICANOC/ELK/Dec 2,

Priority: Normal

Maxxam

ECEIVED DEC 0 9 2015

VOC Sample Collection Data Sheet

RIFFOLI LICA Point Location: Client: Station ID:

Canister Installation Date/Time: Canister Removal Date/Time: 1 Dec 2, 205 -ICA ELK R Field Sample ID: LICA/ VOC.

6200

Sampler S/N: Canister ID:

......

h-B-m	Flow Settings	S
Meter Reading	Pot Set Pt.	Meter Reading Pot Set Pt. Pump Pressure
(sccm)		Setting (psig)
0.01	454	26

formation	Final Canister	Pressure (psig)	200
Canister Information	Initial Canister	Vacuum (inHg)	0.7%

Canister valve open prior to sampling?: (YES Canister valve closed prior to disconnection?; Timer set to 0.00 minutes prior to sampling?

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		Technician Signiture:

by Alax Yauspor

Date: Dee 7, 2015



Volatile Organics Data Results

Date:

DECEMBER 2 , 2015

Canister ID: 1532

PARAMETERS	CONCENTRATION (PPI
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	0.05
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.17
1-Hexene	0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.11
2,3,4-Trimethylpentane	0.04
2,3-Dimethylbutane	0.32
2,3-Dimethylpentane	0.17
2,4-Dimethylpentane	0.13
2-Methylheptane	0.10
2-Methylhexane	0.22
2-Methylpentane	0.61
3-Methylheptane	0.06
3-Methylhexane	0.24
3-Methylpentane	0.35
Acetone	< 0.4
Acrolein	< 0.3
Benzene	0.35
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.02
Carbon disulfide	
	0.44
Carbon tetrachloride	0.10
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	0.60
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.05
cis-2-Pentene	< 0.02
Cyclohexane	0.43
Cyclopentane	0.15
Dibromochloromethane	< 0.01
Ethanol	1.3
Ethyl acetate	< 0.4
Ethylbenzene	0.07
Freon-11	0.32



Volatile Organics Data Results

Date: DECEN

DECEMBER 2 , 2015

Canister ID: 1532

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.07
Freon-114	< 0.02
Freon-12	0.60
Hexachloro-1,3-butadiene	< 0.50
Isobutane	2.54
Isopentane	2.09
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.18
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08 < 0.50
Methyl butyl ketone Methyl ethyl ketone	0.50
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.66
Methylcyclopentane	0.37
Methylene chloride	< 0.3
n-Butane	4.31
n-Decane	< 0.06
n-Dodecane	0.5
n-Heptane	0.27
n-Hexane	0.66
n-Nonane	0.04
n-Octane	0.13
n-Pentane	< 0.1
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	1.5
o-Ethyltoluene	0.02
o-Xylene	0.07
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran 	< 0.4
Toluene	0.41
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene Trichloroethylene	< 0.02
Vinyl acetate	< 0.04 < 0.4
Vinyl acetate Vinyl chloride	< 0.4
Viriyi chloride	< 0.02

Cust Samp ID: LICANOC/ELK/Dec 8, Customer ID: LICA

Priority: Normal

Maxxam

RECEIVED DEC 1 1 2015

AIR FCD-01320/2

VOC Sample Collection Data Sheet

Sampler S/N: Canister ID: Canister Installation Date/Time Canister Removal Date/Time Field Sample ID: LICH VOC| ELK | Doc LICA Location: ELK Client: Station ID:

26	4.34	0.01	
Setting (psig)		(sccm)	
Pump Pressure	Pot Set Pt.	Meter Reading Pot Set Pt.	
S	Flow Settings		
12:57	8) SIGN	Pec 9.	<u>نو</u>
±1:74 (80KS (Q)	Dec 7, 2015	<u>.</u>

Elapsed Time

End Time (NAST)

Start Time

Sample Date

(MST)

Date and Time Information

(Hours) 24.0

00:00 Doc 9,2015

00:00 Dee P, 2015

Dec 8, 2015

ormation	Final Canister	
Canister Information	Initial Canister	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2

Canister valve closed prior to disconnection?:, Canister valve open prior to sampling?: (YES) Timer set to 0.00 minutes prior to sampling? Vacuum (inHg) | Pressure (psig) 19.0

2.0

Comments:

Hex Youngoor by Alex Yampoor by Alex Yampoor -Sample ceet -Technician Signiture:

Date: Dec 9, 2015



Volatile Organics Data Results

Date: DECEMBER 8 , 2015

Canister ID: \$5593

1,2,4-Trichlorobenzene < 0.8 1,2-Dirbiromoethane < 0.02 1,2-Dichlorobenzene < 0.03 1,2-Dichlorobenzene < 0.03 1,2-Dichloropropane < 0.01 1,3-Dichloropropane < 0.02 1,3-Butadlene < 0.02 1,3-Dichlorobenzene < 0.3 1,4-Dicklorobenzene < 0.4 1,4-Dioxane < 0.4 1,4-Dioxane < 0.04 1,4-Pentene < 0.01 2,2,4-Trimethylpentane < 0.01 2,2,2-Dimethylbutane < 0.01 2,3-Dimethylpentane < 0.03 2,3-Dimethylpentane < 0.07 2,4-Dimethylpentane < 0.05 2-Methylheptane < 0.05 2-Methylpentane < 0.03 3-Methylpentane < 0.03 3-Methylpentane < 0.11 3-Methylpentane < 0.13 Acrolein < 0.3 Benzene < 0.20 Benzyl chloride < 0.4 Bromodlchloromethane < 0.01 Carbon tetrachlori	
1,1-Dichloroethane	
1,1-Dichloroethylene < 0.04	
1,2,3-Trimethylbenzene < 0.05	
1,2,4-Trichlorobenzene < 0.8	
1,2,4-Trichlorobenzene < 0.8	
1,2,4-Trimethylbenzene	
1,2-Dichlorobenzene < 0.03	
1,2-Dichloroethane < 0.03	
1,2-Dichloroethane	
1,2-Dichloropropane	
1,3,5-Trimethylbenzene	
1,3-Butadiene < 0.02	
1,3-Dichlorobenzene	
1,4-Dichlorobenzene < 0.4	
1,4-Dioxane < 0.4	
1-Butene 0.08 1-Hexene <0.02 1-Pentene <0.01 2,2,4-Trimethylpentane <0.01 2,2-Dimethylbutane 0.04 2,3,4-Trimethylpentane 0.03 2,3-Dimethylbutane 0.13 2,3-Dimethylpentane 0.07 2,4-Dimethylpentane 0.05 2-Methylheptane 0.05 2-Methylheptane 0.09 2-Methylpentane 0.09 2-Methylpentane 0.03 3-Methylheptane 0.03 3-Methylheptane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein <0.13 Acetone 3.5 Acrolein <0.02 Benzyl chloride <0.4 Bromodichloromethane 0.02 Bromomethane <0.02 Bromomethane <0.01 Carbon disulfide 0.05 Carbon tetrachloride 0.11 Chlorobenzene <0.02 Chloroethane <0.02 Chloroethane 0.56 cis-1,2-Dichloropropene <0.04 cis-2-Butene <0.02 Cyclopentane 0.05 Cyclopentane 0.05 Cyclopentane 0.05 Cyclopentane 0.05 Cyclopentane 0.05 Dibromochloromethane <0.01 Ethanol 1.8	
1-Hexene < 0.02	
1-Pentene < 0.01	
2,2,4-Trimethylpentane < 0.01	
2,2-Dimethylbutane 0.04 2,3,4-Trimethylpentane 0.03 2,3-Dimethylpentane 0.07 2,4-Dimethylpentane 0.05 2-Methylheptane 0.04 2-Methylheptane 0.09 2-Methylheptane 0.03 3-Methylheptane 0.03 3-Methylpentane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
2,3,4-Trimethylpentane 0.03 2,3-Dimethylbutane 0.13 2,3-Dimethylpentane 0.07 2,4-Dimethylpentane 0.05 2-Methylheptane 0.09 2-Methylpentane 0.09 2-Methylpentane 0.03 3-Methylheptane 0.03 3-Methylpentane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
2,3-Dimethylbutane 0.13 2,3-Dimethylpentane 0.07 2,4-Dimethylpentane 0.05 2-Methylheptane 0.09 2-Methylpentane 0.23 3-Methylheptane 0.03 3-Methylpentane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
2,3-Dimethylpentane 0.07 2,4-Dimethylpentane 0.05 2-Methylheptane 0.09 2-Methylpentane 0.03 3-Methylheptane 0.03 3-Methylpentane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
2,4-Dimethylpentane 0.05 2-Methylheptane 0.04 2-Methylhexane 0.09 2-Methylpentane 0.23 3-Methylhexane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
2-Methylheptane 0.04 2-Methylpentane 0.09 2-Methylpentane 0.03 3-Methylheptane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
2-Methylhexane 0.09 2-Methylpentane 0.23 3-Methylheptane 0.01 3-Methylpentane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
2-Methylpentane 0.23 3-Methylheptane 0.01 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
3-Methylheptane 0.03 3-Methylpentane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
3-Methylhexane 0.11 3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
3-Methylpentane 0.13 Acetone 3.5 Acrolein < 0.3	
Acetone 3.5 Acrolein < 0.3	
Acrolein	
Benzene 0.20 Benzyl chloride < 0.4	
Benzyl chloride < 0.4	
Bromodichloromethane < 0.02	
Bromoform < 0.02	
Bromomethane < 0.01 Carbon disulfide 0.05 Carbon tetrachloride 0.11 Chlorobenzene < 0.02 Chlorothane < 0.02 Chloroform 0.02 Chloromethane 0.56 cls-1,2-Dichloroethene < 0.01 cls-1,3-Dichloropropene < 0.04 cls-2-Butene < 0.02 cls-2-Pentene < 0.02 Cyclohexane 0.20 Cyclopentane 0.05 Dibromochloromethane < 0.01 Ethanol 1.8	
Carbon disulfide 0.05 Carbon tetrachloride 0.11 Chlorobenzene < 0.02	
Carbon tetrachloride 0.11 Chlorobenzene < 0.02	
Chlorobenzene < 0.02	
Chloroethane < 0.02	
Chloroform 0.02 Chloromethane 0.56 cis-1,2-Dichloroethene < 0.01	
Chloromethane 0.56 cls-1,2-Dichloroethene < 0.01	
cis-1,2-Dichloroethene < 0.01	
cis-1,3-Dichloropropene < 0.04	
cis-2-Butene < 0.02 cls-2-Pentene < 0.02 Cyclohexane 0.20 Cyclopentane 0.05 Dibromochloromethane < 0.01 Ethanol 1.8	
cis-2-Pentene < 0.02 Cyclohexane 0.20 Cyclopentane 0.05 Dibromochloromethane < 0.01 Ethanol 1.8	
Cyclohexane 0.20 Cyclopentane 0.05 Dibromochloromethane < 0.01 Ethanol 1.8	
Cyclopentane 0.05 Dibromochloromethane < 0.01 Ethanol 1.8	
Dibromochloromethane < 0.01 Ethanol 1.8	
Ethanol 1.8	
Ethyl scatato	
•	
Ethylbenzene 0.04 Freon-11 0.41	



Date:

DECEMBER 8,2015

Canister ID: \$5593

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.07
Freon-114	< 0.02
Freon-12	0.56
Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.93
Isopentane	0.80
Isoprene	0.23
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.08
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.29
Methylcyclopentane	0.15
Methylene chloride	< 0.3
n-Butane	1.60
n-Decane	< 0.06
n-Dodecane	0.8
n-Heptane	0.12 0.26
n-Hexane	0.26
n-Nonane	0.02
n-Octane n-Pentane	0.06
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	3.0
o-Ethyltoluene	0.01
o-Xylene	0.03
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	0.05
Tetrahydrofuran	< 0.4
Toluene	0.23
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

Sample ID: 15120215-002

Customer ID: LICA

Cust Samp ID: LICA/VOC/ELK/Dec 14, 2015

Maxxam

VOC Sample Collection Data Sheet

		BS: 71	10:91
7	Ŋ	6	G
6200	2535	Dec 9, 2015 (2)	" LOIS
		É	8
		Dee	DEC 14.
Sampler S/N:	Canister ID:	Canister Installation Date/Time:	24/Dec /4, 2015 Canister Removal Date/Time:
LICA	ELK Point Aioport	LICA 35	V
Client:	Location: ELK	Station ID:	Field Sample ID: LICA / VOC/

	Date and Time Information	nformation	
Sample Date	Start Time	End Time	Elapsed Time
	(MST)	(MST)	(Hours)
De. 11: 10:	00:00	00:00	
Ve 14, 125	Doc 14, 2015	DOC 14, 2015 Dec 15, 2015	74.0

	Flow Settings	Ş
Meter Reading	Pot Set Pt	Pump Pressure
(sccm)		Setting (psig)
0.01	454	97

Canister Information	ormation
Initial Canister	Final Canister
Vacuum (inHg)	Pressure (psig)
- 28.0	20,0

Canister valve open prior to sampling?: (YES) / NO Canister valve closed prior to disconnection?:

Comments:

<u>Received</u>	

Alberta Innovates - Technology Futures

Technician Signiture:

Alex Yamyson Alax Yakupon Sample in - Date: Dec 18, 2015



Date:

Freon-11

DECEMBER 14 , 2015

Canister ID:

2535

PARAMETERS	CONCENTRATION (PPB
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.08
1-Hexene	0.02
1-Pentene	< 0.01
2,2,4-Trimethylpentane	< 0.01
2,2,4-11methylbutane	0.04
	0.04
2,3,4-Trimethylpentane 2,3-Dimethylbutane	0.02
2,3-Dimethylpentane	< 0.02
, ,,	
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.03
2-Methylhexane	0.04
2-Methylpentane	0.16
3-Methylheptane	0.02
3-Methylhexane	0.05
3-Methylpentane	0.10
Acetone	1.0
Acrolein	< 0.3
Benzene	0.15
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.01
Carbon disulfide	0.03
Carbon tetrachloride	0.09
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	0.84
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	< 0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.11
Cyclopentane	0.05
Dibromochloromethane	< 0.01
Ethanol	0.3
Ethyl acetate	< 0.4
Ethylbenzene	0.03

0.28



Date:

DECEMBER 14 , 2015

Canister ID:

2535

PARAMETERS Freon-113	CONCENTRATION 0.08
Freon-114	0.03
Freon-12	0.62

Hexachloro-1,3-butadiene	< 0.50
Isobutane	0.84
Isopentane	0.51
Isoprene	0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	0.01
m,p-Xylene	0.05
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.14
Methylcyclopentane	0.10
Methylene chloride	< 0.3
n-Butane	1.82
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	< 0.01
n-Hexane	0.18
n-Nonane	0.03
n-Octane	0.05
n-Pentane	0.6
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	0.01
o-Xylene	0.03
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.10
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
,	

Sample ID: 16010003-001

Customer ID: LICA

Cust Samp ID: LICANOC/ELK/Dec 20, 2015

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RECEIVED JAN 06 2016

VOC Sample Collection Data Sheet

Client: LICA

Location: Elk Point Airport

Station ID: LICA | VOC | Elk| Dec 20, 2015

Canister Installation Date/Time:

Canister Removal Date/Time:

0000

Sampler S/N:

2530 Dec 18, 2015 B 16:02 Dec 24, 2015 By 10:42 Flow Settings

	Date and Time Information	nformation	
Sample Date	Start Time	End Time	Elapsed Time
	(WST)	(MST)	(Hours)
Dec 20, 2015	Dre 20, 2015	00:00 Dre 20, 2015 Dec 21, 2015	24.0

	Flow Settings	sí
Meter Reading	Pot Set Pt.	Meter Reading Pot Set Pt. Pump Pressure
(sccm)		Setting (psig)
10.0	484	98

Canister Information	ormation
Initial Canister	Final Canister
Vacuum (inHg)	Pressure (psig)
-28.0	7 18.5

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

Comments:

Technician Signiture: Sample in - by Alex Yauspor

Date; Dec 24, 2015



Date:

DECEMBER 20 , 2015

Canister ID:

2530

PARAMETERS	CONCENTRATION (PP
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1,4-Dioxane 1-Butene	0.10
	< 0.02
1-Hexene	
1-Pentene	0.02
2,2,4-Trimethylpentane	0.07
2,2-Dimethylbutane	0.02
2,3,4-Trimethylpentane	0.02
2,3-Dimethylbutane	0.07
2,3-Dimethylpentane	0.07
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.02
2-Methylhexane	0.05
2-Methylpentane	0,19
3-Methylheptane	< 0.02
3-Methylhexane	0.07
3-Methylpentane	0.11
Acetone	0.9
Acrolein	< 0.3
Benzene	0.24
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	0.01
Carbon disulfide	< 0.01
Carbon tetrachloride	0.10
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.03
Chloromethane	0.75
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.02
cis-2-Pentene	< 0.02
Cyclohexane	0.06
Cyclopentane	0.04
Dibromochloromethane	< 0.01
Ethanol	1.4
Ethyl acetate	< 0.4
Ethylbenzene	0.03
Freon-11	0.31
I I GOIT-II	0.31



Date: Di

DECEMBER 20 , 2015

Canister ID: 2530

PARAMETERS	CONCENTRATION (PPB)	
Freon-113	0.08	
Freon-114	0.03	
Freon-12	0.73	
Hexachloro-1,3-butadiene	< 0.50	
Isobutane	1,48	
Isopentane	0.79	
Isoprene	0.01	
Isopropyl alcohol	< 0.4	
Isopropylbenzene	< 0.01	
m,p-Xylene	0.10	
m-Diethylbenzene	< 0.04	
m-Ethyltoluene	< 0.08	
Methyl butyl ketone	< 0.50	
Methyl ethyl ketone	< 0.3	
Methyl isobutyl ketone	< 0.4	
Methyl methacrylate	< 0.07	
Methyl tert butyl ether	< 0.03	
Methylcyclohexane	0.10	
Methylcyclopentane	0.09	
Methylene chloride	< 0.3	
n-Butane	2.44	
n-Decane	< 0.06	
n-Dodecane	< 0.4	
n-Heptane	0.06	
n-Hexane	0.15	
n-Nonane	0.02	
n-Octane	0.02	
n-Pentane	0.5	
n-Propylbenzene	< 0.05	
n-Undecane	< 0.5	
Naphthalene	< 0.5	
o-Ethyltoluene o-Xylene	< 0.01	
p-Diethylbenzene	0.04 < 0.04	
p-Ethyltoluene	< 0.04	
Styrene	< 0.04	
Tetrachloroethylene	0.05	
Tetrahydrofuran	< 0.4	
Toluene	0.20	
trans-1,2-Dichloroethylene	< 0.01	
trans-1,3-Dichloropropylene	< 0.04	
trans-2-Butene	< 0.01	
trans-2-Pentene	0.03	
Trichloroethylene	< 0.04	
Vinyl acetate	< 0.4	
Vinyl chloride	< 0.02	

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JAN 06 2016

2659

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Sample ID: 16010004-003

Customer ID: LICA

Cust Samp ID: LICANOC/ELK/Dec. 26, 2015

Maxxam

VOC Sample Collection Data Sheet

6200 Ø 202 2015 Dec 24, Sampler S/N: Canister Installation Date/Time: Canister Removal Date/Time: Canister ID: Field Sample ID: LICAI voc/ ELK | Dec 26, 2015 AIRPORT Location: Client: Station ID:

Elapsed Time

End Time (MST)

Start Time

Sample Date

(MST)

Date and Time Information

(Hours)

24.0

	Flow Settings	S
Meter Reading	Pot Set Pt.	Pump Pressure
(sccm)		Setting (psig)
10.0	4.34	26

	00					
(1)	00:00 Dec 27,201		John Property	port kina	• • • • • • • • • • • • • • • • • • •	r 49pones
, , , , ,	00:00 00:00 Dec 26. En 15 Dec 27, 2015		ormation	Final Canister	Pressure (psig)	+ 20.9
	Dec 26,2015		Canister Information	Initial Canister	Vacuum (inHg)	1.28.0
		•				- Name and

S Canister valve open prior to sampling?: (YES)! NO Canister valve closed prior to disconnection?: Timer set to 0.00 minutes prior to sampling?

Comments:

2/9

by Alex Yakupov by Alex Yakespour Sample out Technician Signiture:

Date: Der 30, 2015



DECEMBER 26 , 2015 Date:

Canister ID;

2659

PARAMETERS	CONCENTRATION (PF
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0.02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.8
1,2,4-Trimethylbenzene	< 0.03
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	< 0.01
1,3,5-Trimethylbenzene	< 0.02
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	0.21
1-Hexene	< 0.02
1-Pentene	0.02
2,2,4-Trimethylpentane	< 0.01
2,2-Dimethylbutane	0.08
2,3,4-Trimethylpentane	0.02
2,3-Dimethylbutane	0.21
2,3-Dimethylpentane	0.11
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.05
2-Methylhexane	0.08
2-Methylpentane	0.32
3-Methylheptane	0.03
3-Methylhexane	0.11
3-Methylpentane	0.17
Acetone	2.8
Acrolein	
Benzene	< 0.3
Benzyl chloride	0.29
Bromodichloromethane	< 0.4
Bromoform	< 0.02
Bromomethane	< 0.02
Carbon disulfide	0.01
Carbon disulide Carbon tetrachloride	0.20
	0.10
Chloropenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.02
Chloromethane	0.83
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene cis-2-Butene	< 0.04
	0.03
cis-2-Pentene	< 0.02
Cyclohexane	0.23
Cyclopentane	80.0
Dibromochloromethane	< 0.01
Ethanol	< 0.3
Ethyl acetate	< 0.4
Ethylbenzene	0.02
Freon-11	0.35

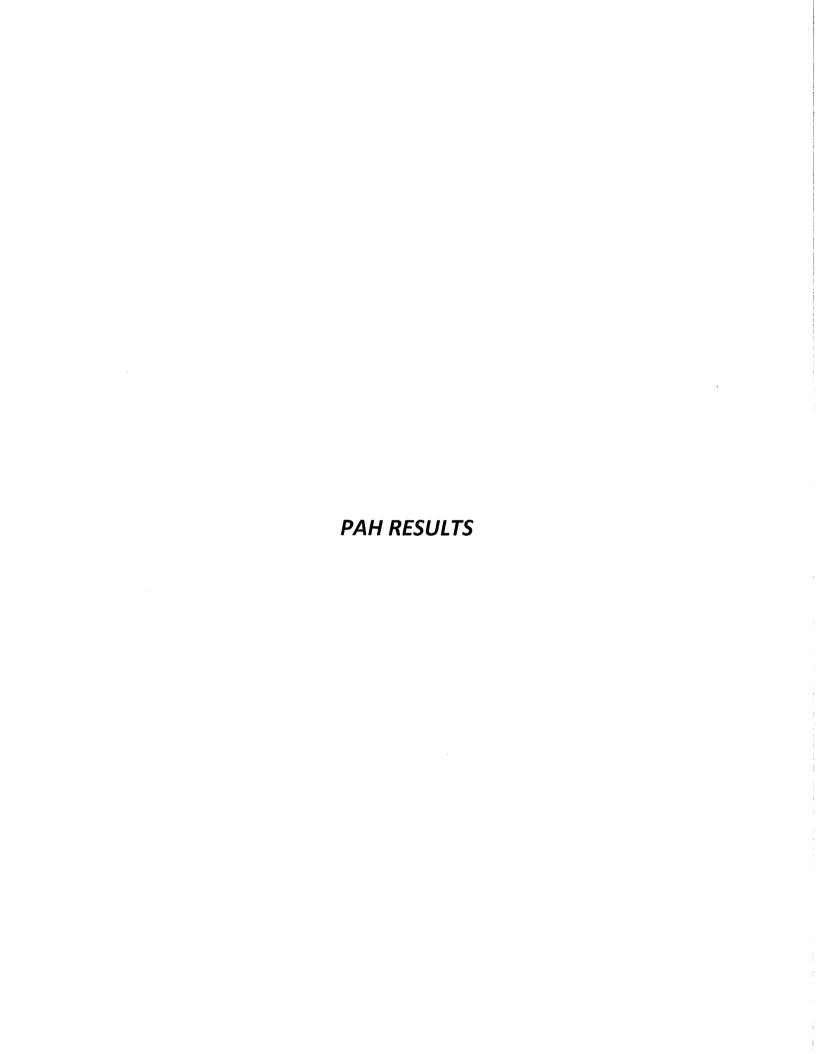


Date:

DECEMBER 26 , 2015

Canister ID: 2659

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.08
Freon-114	0.02
Freon-12	0.78
Hexachloro-1,3-butadiene	< 0.50
Isobutane	1.87
Isopentane	1.36
Isoprene	< 0.01
Isopropyl alcohol	< 0.4
Isopropylbenzene	< 0.01
m,p-Xylene	0.06
m-Diethylbenzene	< 0.04
m-Ethyltoluene	< 0.08
Methyl butyl ketone	< 0.50
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.07
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.38
Methylcyclopentane	0.21
Methylene chloride	< 0.3
n-Butane	3.03
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	0.15
n-Hexane	0.31
n-Nonane	0.02
n-Octane	0.08
n-Pentane	1.5
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	< 0.5
o-Ethyltoluene	< 0.01
o-Xylene	0.02
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.07
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.21
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	< 0.01
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02



Sample ID: 15120089-004

Customer ID: LICA

Cust Samp ID: LICA/PUF/ELK/Dec 2, 2015

Priority: Normal

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Hi-Vol PUF+ Sample Collection Data Sheet

LICA Client:

Airport Point Field Sample ID: レバス/アロド Location: 2k

Station ID:

873 E1K

Puf+ S/N: Motor S/N: Installation Date/Time:

75-05

000

100 - 1015

J.1:50 NOK QFF Prep

Puf Expiration

Date Shipped

Date Received

5/10

10/0

Date

PUF and QFF Information

Date 20

and the special content of the special conten	Date and Time Information	nformation	
Sample Date	Start Time	End Time	Elapsed Time
	(MST)	(MST)	(Hours)
ر ا ا	00:00	00:00	,
Uec 2, 2013	Dec 1, 2015	Dec 3, work	74.0

230 Set Flow Rate (slpm):

102 Date of Last Calibration:

	Volume	(Vstd m³)	330.19
ig Data	Average	Pressure(mmHg) (Qstd slpm) Tempurature (C) (Vstd m³)	- 5.2"
Sampling Data	AverageFlow	(Qstd slpm)	229
	Average	Pressure(mmHg)	695

Sampling data saved to memory card after sampling? YES// NO Time set correctly prior to sampling? (YES //NO Timer set correctly prior to sampling? (YES //NO

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	c	

Her Yampor Sample in Jample out Technician Signiture:



Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: DECEMBER 2 , 2015

PUF S/N: TE05

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.25
2-Methylnaphthalene	0.38
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.13
Acenaphthylene	0.03
Acridine	< 0.01
Anthracene	0.03
Benzo(a)anthracene	0.01
Benzo(a)pyrene	0.02
Benzo(b,j,k)fluoranthene	0.08
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	0.02
Benzo(ghi)perylene	0.04
Chrysene	0.04
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	0.02
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.16
Fluorene	0.48
Indeno(1,2,3-cd)pyrene	0.03
Naphthalene	0.30
Perylene	< 0.01
Phenanthrene	0.53
Pyrene	0.09
Retene	0.22

Sample ID: 15120124-001

Customer ID: LICA
Cust Samp ID: LICAVOC/ELK/Dec 8,

RECEIVED DEC 1 1 2015

Deployed By: Alex Yakupov



Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: DECEMBER 8 , 2015
PUF S/N: A1302

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.13
2-Methylnaphthalene	0.19
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	0.05
Acenaphthene	0.07
Acenaphthylene	0.04
Acridine	< 0.01
Anthracene	0.01
Benzo(a)anthracene	0.03
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.12
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	0.04
Benzo(ghi)perylene	< 0.01
Chrysene	0.03
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	0.02
Fluoranthene	0.09
Fluorene	0.21
indeno(1,2,3-cd)pyrene	0.02
Naphthalene	0.13
Perylene	< 0.01
Phenanthrene	0.22
Pyrene	0.07
Retene	0.08

Sample ID: 15120215-003

Customer ID: LICA Cust Samp ID: LICA/PUF/ELK/Dec 14, 2015

																		DEC 2.2 2015	2	Alberta Innovates - Technology Futures		
et	F-03	433/ 100-1015	Dec 9, 2015/ 12:52	Dec 12, 2015/15:50		869	229	- 5.30	330.12	The second secon		green and the second	nes digest trait	en under de messen gen elevan	a kan ga tad daga k			3		Alberta Innovate		Date: Dec 18, 2015
llection Data She	Puf+ S/N:	Motor S/N: 1439	Installation Date/Time: $\mathcal{D}_{\mathcal{RC}}$ g_j 2015,	## Removal Date/Time:	n Information	Average Pressure (mmHg)	Average Flow (Q _{std})	Average Tempurature (°C)	Volume (Vstd m²)	Checklist		NC	ON	ON	(ON)	NO						7
TISCH PUF PLUS Sample Collection Data Sheet	£1CA	ELK Point Airport	LICA 35	Field Sample ID: LICH PULF ELK Dec 14, 2015 Removal Date/Time: Dr.C. 18, 2015	Sample Data Collection Information	Dec 14, 2015	00:00	:00 / Dee 15, 2015	24.0	Sample Recovery Checklist	(circle one)	(YES)	(YES)	YES	YES	YES	NOV 25, 2015	n/a			Alex Yakenpou	Aler Yampor
	Clent	Location:	Station ID:	Field Sample ID:		Sample Date:	Start Time (mst):	End Time (mst): $\mathcal{O}\mathcal{O}$	Elapsed Time (Hours):			Flow Rate 230 slpm +/- 0.2 slpm ?	Average temperature appears correct?	Average pressure appears correct?	Any error messages? (if yes list below)	Sample duration 24 hours?	Date of last calibration/audit:	Other observations?			Deployed By:	Collected By:



Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: DECEMBER 14,2015

PUF S/N: TE08

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.18
2-Methylnaphthalene	0.26
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.06
Acenaphthylene	0.05
Acridine	< 0.01
Anthracene	0.01
Benzo(a)anthracene	0.03
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.10
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	0.03
Benzo(ghi)perylene	< 0.01
Chrysene	0.02
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,I)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.07
Fluorene	0.14
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.31
Perylene	< 0.01
Phenanthrene	0.21
Pyrene	0.07
Retene	0.03

Customer ID: LICA
Cust Samp ID: LICAPUF/ELK/Dec 20.
2015

Customer ID: LICA				
Cust Samp ID: LICA/PUF/ELK/Dec 20,				RECEIVED
0.00				JAN 06 2016
TIS	TISCH PUF PLUS Sample Collection Data Sheet	Mection Data She	et	
Client:	<i>2/64</i>	Puf+ 5/N:	1086	
Location:	Location: ELK POINT AIRPORT	Motor S/N:	Motor S/N: 1139/100-1015	Tr. (1883) 1 (1981)
Station ID:	11CA 35	Installation Date/Time:	Dec 18, 2015/15:51	
Field Sample ID: 1	Field Sample ID: $L/CA/DUF/ELK/Dfe$ 20,20/5 Removal Date/Time:	10/5 Removal Date/Time:	Dec 24, 2015/10:52	
	Sample Data Collection Information	on Information		
Sample Date:	Dee 40, 2015	Average Pressure (mmHg)	263	
Start Time (mst):	00:00	Average Flow (Q _{ctd})	223	
End Time (mst): 00:00	10:00 / Dec 21, 2015	Average Tempurature (°C)	- 14.90	
Elapsed Time (Hours):	24.0	Volume (Vstd m³)	330.17	
	Sample Recovery Checklist	Checklist		
	(cárcle one)			
Flow Rate 230 sipm +/- 0.2 slpm ?	(YES)	NO		a Well de de constant
Average temperature appears correct?	(SES)	NO.		-
Average pressure appears correct?	(SIL)	ON		10 10 au 20 10
Any error messages? (if yes list below)	洒	(Sy		4 N. 100 - 1
Sample duration 24 hours?	(YES)	ON		EF SAN 147-3 AF-SA SAN
Date of last calibration/audit:	NOV 25, 2015			
Other observations?	Na			***************************************
				,
				nuo piumana
Depioyed By:	Alex Yakupov			y Sagarak (Autopaga ay
Collected By:	Alex Yakeyoov	7	Date: Dec 24, 2015	
				7



Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: DECEMBER 20 ,2015
PUF S/N: 9801

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.40
2-Methylnaphthalene	0.57
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	< 0.01
Acenaphthene	0.08
Acenaphthylene	0.04
Acridine	< 0.01
Anthracene	0.01
Benzo(a)anthracene	0.03
Benzo(a)pyrene	< 0.01
Benzo(b,j,k)fluoranthene	0.11
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	0.03
Benzo(ghi)perylene	< 0.01
Chrysene	0.02
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.08
Fluorene	0.14
Indeno(1,2,3-cd)pyrene	< 0.01
Naphthalene	0.35
Perylene	< 0.01
Phenanthrene	0.20
Pyrene	0.08
Retene	0.03

Sample ID: 16010004-004

Customer ID: LICA

Cust Samp ID: LICAPUF/ELK/Dec. 26, 2015

RECEIVED JAN 06 2016

Sheet	IN: P13-01	1381	Dec.	ne: Dec 50, 2015/12,27		//E (8)	rd) 229	° - 18.2	330.18													. Dec 30, 2015	
TISCH PUF PLUS Sample Collection Data Sheet	Z1CA Put+ S/N:	ELK POINT AIRPORT Motor SIN:	L/CA 35 Installation Date/Time:	Field Sample ID: LICA/PULL/ELK/Dec 26, 2015 Removal Data/Time: Dec	Sample Data Collection Information	Dec 26, 2015 'Average Pressure (mmHg)	00:00 Average Flow (Q _{cd.})	10:00 / Dec 27, 2015 Average Tempurature (°C)	2 4. O Volume (Vstd m³)	Sample Recovery Checklist	(circle one)	(YES) NC	YES	(YES) NO	YES	YES	NOV 25, 2015	nla			Alex Varupov	Alex Yakupsu Date:	
JSI	Clent	Location: 6	Station ID:	field Sample ID:		Sample Date:	Start Time (mst):	End Time (mst): 00:00 / Dec	Elapsed Time (Hours):			Flow Rate 230 sipm +/- 0.2 sipm ?	Average temperature appears correct?	Average pressure appears correct?	Any error messages? (if yes list below)	Sample duration 24 hours?	Date of last calibration/audit:	Other observations?			Depioyed 8y:	Collected By:	

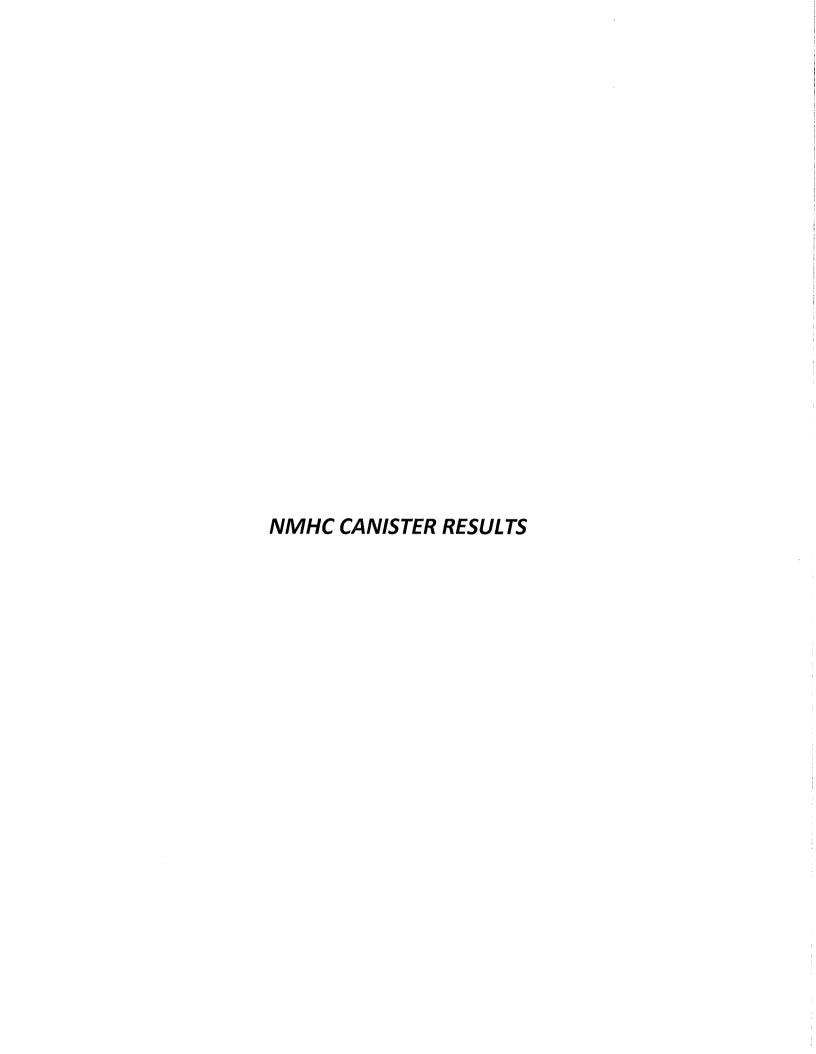


Polycyclic Aromatic Hydrocarbons (PAHs) Data Results

Date: DECEMBER 26,2015

PUF S/N: P1301

PARAMETERS	CONCENTRATION (UG)
1-Methylnaphthalene	0.94
2-Methylnaphthalene	1.31
3-Methylcholanthrene	< 0.01
7,12-Dimethylbenz(a)anthracene	0.05
Acenaphthene	0.10
Acenaphthylene	0.10
Acridine	< 0.01
Anthracene	0.02
Benzo(a)anthracene	0.03
Benzo(a)pyrene	0.01
Benzo(b,j,k)fluoranthene	0.12
Benzo(c)phenanthrene	< 0.01
Benzo(e)pyrene	0.04
Benzo(ghi)perylene	< 0.01
Chrysene	0.04
Dibenzo(a,h)pyrene	< 0.01
Dibenzo(a,i)pyrene	< 0.01
Dibenzo(a,l)pyrene	< 0.01
Dibenzo(ah)anthracene	< 0.01
Fluoranthene	0.09
Fluorene	0.19
Indeno(1,2,3-cd)pyrene	0.02
Naphthalene	1.01
Perylene	< 0.01
Phenanthrene	0.28
Pyrene	0.09
Retene	0.10



Sample ID: 15120089-005

Customer ID: LICA

Cust Samp ID: LICANOC/ELK/Dec 1,

Priority: Normal

Maxxam



VOC Sample Collection Data Sheet

Sampler S/N:	Canister ID:	Canister Installation Date/Time:	Canister Removal Date/Time:
LICA	ELK Point Alroort	LICA 35	Field Sample ID: LICA/ VOC/ EUX / Dec 1, 2015
Client	Location:	Station ID:	Field Sample ID:

Canister ID:		0998			
tallation Date/Time:	December	Y	SION	B)	12:53
Removal Date/Time:	December	1/	2015	(g)	20:28

2/0

	Date and Time Information	nformation	
Sample Date	Start Time	End Time	Elapsed Time
	(MST)	(N/ST)	(Hours)
Dec 1, 2015	00:±1	du	<i>b)u</i>

	Flow Settings	sl
Meter Reading	Pot Set Pt	Pump Pressure
(sccm)		Setting (psig)
oju	6/4	3/4

Canister Information	ormation
Initial Canister	Final Canister
Vacuum (inHg)	Pressure (psig)
0.8.	- 4.0

Canister valve open prior to sampling?: (YES) NO
Timer set to 0.00 minutes prior to sampling? YES / NO - \(\gamma/\epsilon\) Results (YES) NO

(WMMC)-conister

Comments:

Technician Signiture: Sample in by Alex Yakuper

Sumple out

– by Alex Yanupor Date: December 7, 2018



Volatile Organics Data Results (NMHC Canister System)

Date:

DECEMBER 1 , 2015

Canister ID: 2660

1,1,2-Trichloroethane	PARAMETERS	CONCENTRATION (PPB)
1,1,2,2-Tetrachloroethane < 0.02 1,1,2-Dichloroethane < 0.02 1,1-Dichloroethane < 0.05 1,2,3-Trimethylbenzene < 0.06 1,2,4-Trichlorobenzene < 1.0 1,2,4-Trimethylbenzene < 0.02 1,2-Dichlorobenzene < 0.02 1,2-Dichloropethane < 0.03 1,2-Dichloropropane < 0.01 1,3-5-Trimethylbenzene < 0.06 1,3-5-Trimethylbenzene < 0.06 1,3-5-Trimethylbenzene < 0.0 1,3-Dichlorobenzene < 0.4 1,4-Diokorae < 0.5 1,4-Diokorae < 0.5 1-Butene 1.18 1-Hexene < 0.05 1-Pentene < 0.01 2,2-Dimethylbutane < 0.6 2,2-Dimethylpentane < 0.01 2,2-Dimethylpentane < 0.69 2,4-Dimethylpentane < 0.55 2,4-Dimethylpentane < 0.55 2,4-Dimethylpentane < 0.55 2,4-Dimethylpentane < 0.09 2,4-Dimethylpentane < 0.1 </th <th>1,1,1-Trichloroethane</th> <th>< 0.02</th>	1,1,1-Trichloroethane	< 0.02
1,1,2-Trichloroethane < 0.02	• •	< 0.02
1,1-Dichloroethylene < 0.02		< 0.02
1,1-Dichloroethylene < 0.05	• •	< 0.02
1,2,3-Trimethylbenzene < 1.0	•	
1,2,4-Trichlorobenzene		
1,2-4-Trimethylbenzene 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dichloropenane 1,2-Dichloropropane 1,3-Dichloropenane 1,3-Dichlorobenzene 1,3-Butadiene 1,3-Butadiene 1,3-Butadiene 1,3-Butadiene 1,3-Butane 1,3-Butane 1,3-Butane 1,3-Butane 1,3-Butane 1,3-Butane 1,3-Butane 1,3-Butane 1,3-Butane 1,3-Butane 1,4-Dioxane 1,5-Dioxane 1,5-Dioxane 1,6-Dioxane 1,8-Dioxane	· ·	
1,2-Dibriomoethane 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dichloropropane 1,2-Dichloropropane 1,3-Butadlene 1,3-Butadlene 1,3-Butadlene 1,3-Butadlene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dimethylbutane 1,2-Dimethylbutane 1,2-Dimethylbutane 1,2-Dimethylbutane 1,2-Dimethylpentane 1,2-Dimethylpentane 1,2-Methylpentane 1,2	• •	
1,2-Dichloroethane 0.03 1,2-Dichloropropane < 0.01		
1,2-Dichloropropane 0.01 1,2-Dichloropropane 0.01 1,3-5-Trimethylbenzene 0.06 1,3-Butadlene < 0.02	· ·	
1,2-Dichloropropane 1,3-Butadiene 1,3-Butadiene 1,3-Butadiene 1,3-Butadiene 1,3-Butadiene 1,3-Dichlorobenzene 1,4-Dichorobenzene 2,0-Dimethylbentane 2,2-Dimethylbutane 2,3-Dimethylbutane 2,3-Dimethylbentane 2,3-Dimethylpentane 2,3-Dimethylpentane 2,3-Dimethylpentane 2,3-Dimethylpentane 2,4-Dimethylpentane 2,4-Dimethylpentane 2-Methylpentane 2-Methylpentane 2-Methylpentane 3-Methylpentane 3-Methylpentane 3-Methylpentane 3-Methylpentane 3-Methylpentane 3-Methylpentane 3-Methylpentane 3-Methylpentane 3-Methylpentane 4-O.5 Bromodichloromethane 4-O.02 Bromodichloromethane 4-O.02 Bromodorm 4-O.02 Bromodorm 5-Bromomethane 4-O.02 Chlorobenzene 4-O.02 Chlorobenzene 4-O.03 Chloromethane 4-O.03 Chloromethane 4-O.03 Chloromethane 4-O.04 Cis-1,2-Dichloropropene 4-O.05 cis-2-Butene 4-O.05 cis-2-Butene 4-O.07 cis-2-Pentene 4-O.02 Cyclopentane Dibromochloromethane 4-O.01 Ethyl acetate 5-Dibromochloromethane 5-Dibromochlorometha	•	
1,3-Frimethylbenzene	•	
1,3-Butadiene		
1,3-Dichlorobenzene		
1,4-Dichlorobenzene		
1,4-Dioxane	•	
1-Butene 1.18 1-Hexene 0.05 1-Pentene < 0.01	·	
1-Hexene	•	
1-Pentene		-
2,2,4-Trimethylpentane 0.56 2,3,4-Trimethylpentane 0.21 2,3-Dimethylbutane 1.67 2,3-Dimethylpentane 0.69 2,4-Dimethylpentane 0.55 2-Methylpentane 0.31 2-Methylpentane 0.61 2-Methylpentane 2.12 3-Methylpentane 0.20 3-Methylpentane 1.21 Acetone <0.5		
2,2-Dimethylbutane 0.56 2,3,4-Trimethylpentane 0.21 2,3-Dimethylbutane 1.67 2,3-Dimethylpentane 0.69 2,4-Dimethylpentane 0.55 2-Methylheptane 0.31 2-Methylpentane 0.61 2-Methylpentane 2.12 3-Methylpentane 0.72 3-Methylpentane 1.21 Acetone < 0.5		
2,3,4-Trimethylpentane 0.21 2,3-Dimethylpentane 0.69 2,4-Dimethylpentane 0.55 2-Methylheptane 0.31 2-Methylhexane 0.61 2-Methylpentane 2.12 3-Methylpentane 0.20 3-Methylpentane 1.21 Acetone < 0.5		
2,3-Dimethylbutane 1.67 2,3-Dimethylpentane 0.69 2,4-Dimethylpentane 0.55 2-Methylheptane 0.31 2-Methylpentane 0.61 2-Methylpentane 2.12 3-Methylhexane 0.72 3-Methylpentane 1.21 Acetone < 0.5		
2,3-Dimethylpentane 0.69 2,4-Dimethylpentane 0.55 2-Methylpentane 0.61 2-Methylpentane 2.12 3-Methylpentane 0.72 3-Methylpentane 1.21 Acetone < 0.5	* *	
2,4-Dimethylpentane 0.55 2-Methylheptane 0.31 2-Methylhexane 0.61 2-Methylpentane 2.12 3-Methylheptane 0.72 3-Methylpentane 1.21 Acetone < 0.5	•	
2-Methylheptane 0.61 2-Methylpentane 2.12 3-Methylpentane 0.20 3-Methylpentane 0.72 3-Methylpentane 1.21 Acetone < 0.5		
2-Methylhexane 0.61 2-Methylpentane 2.12 3-Methylhexane 0.72 3-Methylpentane 1.21 Acetone < 0.5	• • •	
2-Methylpentane 0.20 3-Methylhexane 0.72 3-Methylpentane 1.21 Acetone < 0.5		
3-Methylhexane 0.72 3-Methylpentane 1.21 Acetone < 0.5	·	
3-Methylpentane 1.21 Acetone < 0.5	·	
3-Methylpentane 1.21 Acetone < 0.5		
Actone < 0.5	-	
Acrolein < 0.4	• •	
Benzene 0.91 Benzyl chloride < 0.5		
Benzyl chloride < 0.5	Acrolein	< 0.4
Bromodichloromethane < 0.02	Benzene	0.91
Bromoform < 0.02	Benzyl chloride	< 0.5
Bromomethane < 0.01	Bromodichloromethane	< 0.02
Carbon disulfide 0.06 Carbon tetrachloride 0.13 Chlorobenzene < 0.02	Bromoform	< 0.02
Carbon tetrachloride 0.13 Chlorobenzene < 0.02	Bromomethane	< 0.01
Chlorobenzene < 0.02	Carbon disulfide	0.06
Chloroethane < 0.02	Carbon tetrachloride	0.13
Chloroform 0.03 Chloromethane 0.74 cis-1,2-Dichloroethene < 0.01	Chlorobenzene	< 0.02
Chloromethane 0.74 cis-1,2-Dichloroethene < 0.01	Chloroethane	< 0.02
cis-1,2-Dichloroethene < 0.01	Chloroform	0.03
cis-1,3-Dichloropropene < 0.05	Chloromethane	0.74
cis-2-Butene 0.07 cis-2-Pentene < 0.02	cis-1,2-Dichloroethene	< 0.01
cis-2-Pentene < 0.02	cis-1,3-Dichloropropene	< 0.05
Cyclohexane 1.60 Cyclopentane 0.51 Dibromochloromethane < 0.01	cis-2-Butene	0.07
Cyclopentane 0.51 Dibromochloromethane <0.01 Ethanol 3.0 Ethyl acetate <0.5 Ethylbenzene 0.16	cis-2-Pentene	< 0.02
Dibromochloromethane < 0.01 Ethanol 3.0 Ethyl acetate < 0.5 Ethylbenzene 0.16	Cyclohexane	1.60
Dibromochloromethane < 0.01 Ethanol 3.0 Ethyl acetate < 0.5 Ethylbenzene 0.16	Cyclopentane	0.51
Ethanol 3.0 Ethyl acetate < 0.5 Ethylbenzene 0.16		< 0.01
Ethyl acetate < 0.5 Ethylbenzene 0.16	Ethanol	
Ethylbenzene 0.16		
·	·	
	Freon-11	0.54



Volatile Organics Data Results (NMHC Canister System)

Date:

DECEMBER 1 ,2015

Canister ID: 2660

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.10
Freon-114	< 0.02
Freon-12	0.55
Hexachloro-1,3-butadiene	< 0.60
Isobutane	9.99
Isopentane	6.56
Isoprene	0.02
Isopropyl alcohol	< 0.5
Isopropylbenzene	0.03
m,p-Xylene	0.41
m-Diethylbenzene	< 0.05
m-Ethyltoluene	< 0.10
Methyl butyl ketone	< 0.60
Methyl ethyl ketone	0.9
Methyl isobutyl ketone	< 0.5
Methyl methacrylate	< 0.08
Methyl tert butyl ether	< 0.04
Methylcyclohexane	2.63
Methylcyclopentane	1.41
Methylene chloride	< 0.4
n-Butane	13.1
n-Decane	0.09
n-Dodecane	1,1
n-Heptane	0.85
n-Hexane	2.13
n-Nonane	0.13
n-Octane	0.37
n-Pentane	< 0.1
n-Propylbenzene	< 0.06
n-Undecane	< 0.6
Naphthalene	2.3
o-Ethyltoluene	0.04
o-Xylene	0.15
p-Diethylbenzene	< 0.05
p-Ethyltoluene	< 0.08
Styrene	< 0.05
Tetrachloroethylene	< 0.05
Tetrahydrofuran	< 0.5
Toluene	1.06
trans-1,2-Dichloroethylene	< 0.01
trans-1,3-Dichloropropylene	< 0.05
trans-2-Butene	< 0.01
trans-2-Pentene	0.04
Trichloroethylene	< 0.05
Vinyl acetate	0.5
Vinyl chloride	< 0.02

Sample ID: 15120215-001

Customer ID: LICA

Cust Samp ID: LICANOC/ELK/Dec 12, 2015

Maxxam

VOC Sample Collection Data Sheet

	***************************************	44.01	15:27
		100	@
	60	2015	2015
2/0	3201	N	18
Ì	1,	Decamber 7, 2015 10,47	1. 1
Sampler S/N:	Canister ID:	Canister Installation Date/Time:	Dee 14, 2015 Canister Removal Date/Time:
LICA	ax Point Airport	LICA 35	WAINOU IELKI
Client	Location:	Station ID:	Field Sample ID:

	Date and Time Information	nformation	
Sample Date	Start Time	End Time	Elapsed Time
	(MST)	(MST)	(Hours)
Dec 12, 2015	01:01	olu	6/4
			,

	Flow Settings	S
Meter Reading	Pot Set Pt.	Pump Pressure
(sccm)		Setting (psig)
5/4	oju	nle

		10 Hg (AX))
ormation	Final Canister	Pressure (psig)	10-
Canister Information	Initial Canister	Vacuum (inHg)	-23.0

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

Albata Innovates - Technology Futures DEC 2.2 2015

Comments:

cansfer NKIKC-

Sample in -Technician Signiture:

by Her Yamysor Sample out-

by Aler Yaurepoil

Date: December 14, 2015



Volatile Organics Data Results (NMHC Canister System)

Date:

DECEMBER 12,2015

Canister ID:

H3302

PARAMETERS	CONCENTRATION (PPI
1,1,1-Trichloroethane	< 0.02
1,1,2,2-Tetrachloroethane	< 0,02
1,1,2-Trichloroethane	< 0.02
1,1-Dichloroethane	< 0.02
1,1-Dichloroethylene	< 0.04
1,2,3-Trimethylbenzene	< 0.05
1,2,4-Trichlorobenzene	< 0.9
1,2,4-Trimethylbenzene	0.19
1,2-Dibromoethane	< 0.02
1,2-Dichlorobenzene	< 0.03
1,2-Dichloroethane	0.02
1,2-Dichloropropane	0.01
1,3,5-Trimethylbenzene	0.06
1,3-Butadiene	< 0.02
1,3-Dichlorobenzene	< 0.3
1,4-Dichlorobenzene	< 0.4
1,4-Dioxane	< 0.4
1-Butene	1.51
1-Hexene	0.03
1-Pentene	< 0.01
2,2,4-Trimethylpentane	1.09
2,2-Dimethylbutane	< 0.01
2,3,4-Trimethylpentane	0.33
2,3-Dimethylbutane	0.41
2,3-Dimethylpentane	0.89
2,4-Dimethylpentane	< 0.01
2-Methylheptane	0.24
2-Methylhexane	0.34
2-Methylpentane	1.21
3-Methylheptane	0.15
3-Methylhexane	0.39
3-Methylpentane	0.68
Acetone	10.7
Acrolein	< 0.3
Benzene	1.72
Benzyl chloride	< 0.4
Bromodichloromethane	< 0.02
Bromoform	< 0.02
Bromomethane	< 0.01
Carbon disulfide	0.04
Carbon tetrachloride	0.10
Chlorobenzene	< 0.02
Chloroethane	< 0.02
Chloroform	0.03
Chloromethane	1.08
cis-1,2-Dichloroethene	< 0.01
cis-1,3-Dichloropropene	< 0.04
cis-2-Butene	0.12
cis-2-Pentene	0.03
Cyclohexane	0.24
Cyclopentane	0.20
Dibromochloromethane	< 0.01
Ethanol	1.5
Ethyl acetate	< 0.4
Ethylbenzene	0.11
Freon-11	0.32
FICOIPEE	UIJA



Volatile Organics Data Results (NMHC Canister System)

Date:

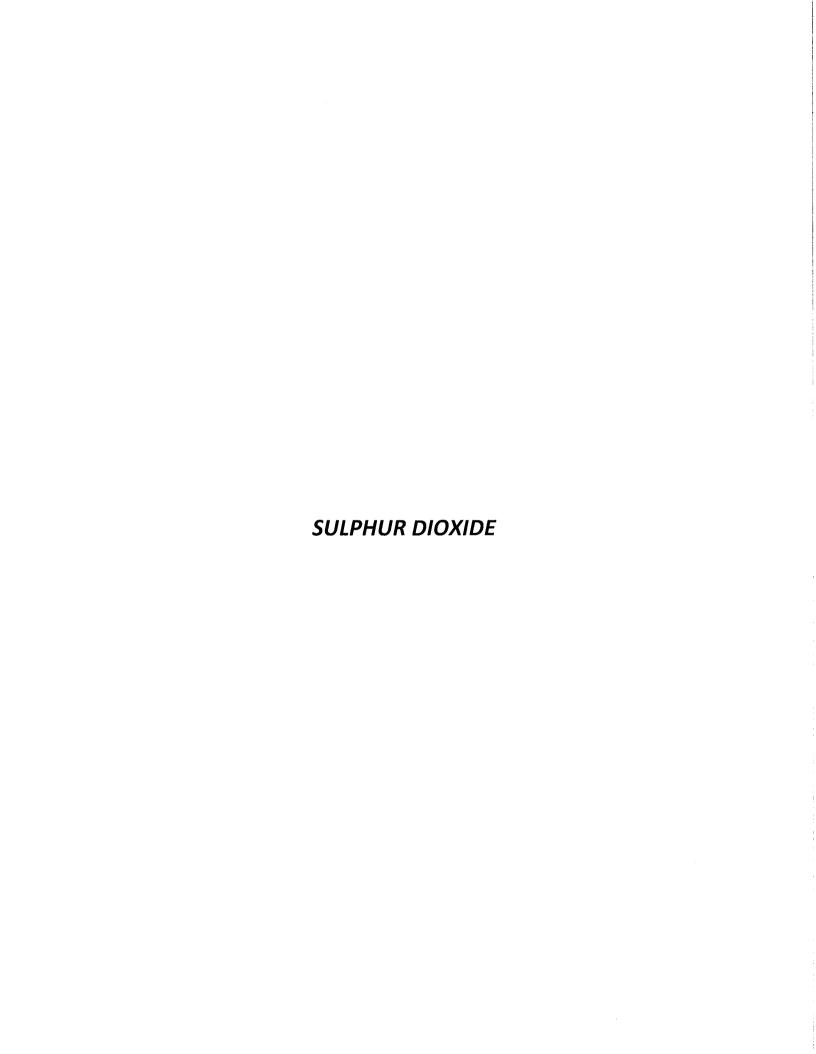
DECEMBER 12,2015

Canister ID:

H3302

PARAMETERS	CONCENTRATION (PPB)
Freon-113	0.09
Freon-114	0.03
Freon-12	0.63
Hexachloro-1,3-butadiene	< 0.54
Isobutane	2.23
Isopentane	3.20
Isoprene	1.28
Isopropyl alcohol	< 0.4
Isopropylbenzene	0.01
m,p-Xylene	0.44
m-Diethylbenzene	< 0.04
m-Ethyltoluene	0.10
Methyl butyl ketone	< 0.54
Methyl ethyl ketone	< 0.3
Methyl isobutyl ketone	< 0.4
Methyl methacrylate	< 0.08
Methyl tert butyl ether	< 0.03
Methylcyclohexane	0.63
Methylcyclopentane	0.73
Methylene chloride	< 0.3
n-Butane	6.18
n-Decane	< 0.06
n-Dodecane	< 0.4
n-Heptane	0.40
n-Hexane	0.80
n-Nonane	0.18
n-Octane	0.30
n-Pentane	1.8
n-Propylbenzene	< 0.05
n-Undecane	< 0.5
Naphthalene	2.0
o-Ethyltoluene	0.04
o-Xylene	0.17
p-Diethylbenzene	< 0.04
p-Ethyltoluene	< 0.08
Styrene	< 0.04
Tetrachloroethylene	< 0.04
Tetrahydrofuran	< 0.4
Toluene	0.77
trans-1,2-Dichloroethylene	< 0.01
rans-1,3-Dichloropropylene	< 0.04
trans-2-Butene	0.21
trans-2-Pentene	< 0.02
Trichloroethylene	< 0.04
Vinyl acetate	< 0.4
Vinyl chloride	< 0.02

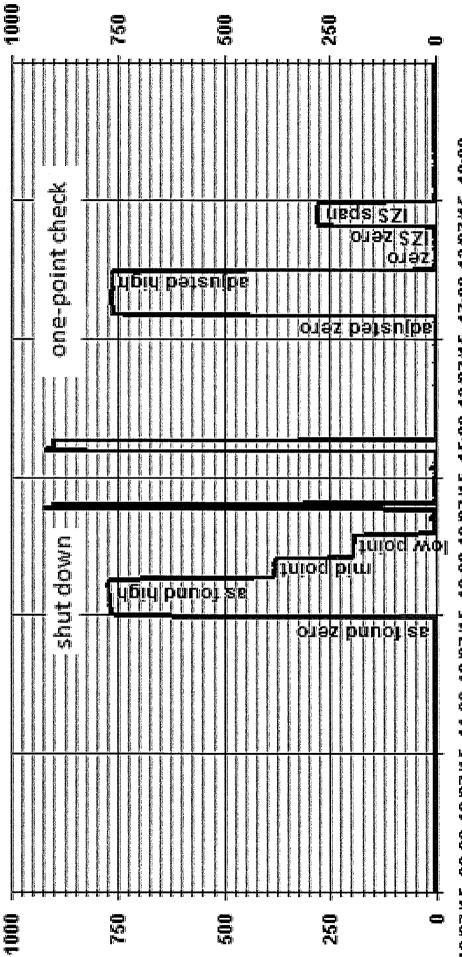
APPENDIX III ANALYZER CALIBRATION RESULTS



Date:	December 7, 2	2015		88	rometric Pressure:	0,915 atm
Company/Airshed:	LICA		-		on Temperature °C:	21
cation/Station Name:	Elk Poi nt		_		eather Conditions:	Mainly sunny
Parameter:	Sulphur Diox	ide	_		alibration Purpose:	shut down
itart Time 24 hr. (mst): _ End Time 24 hr. (mst): _	12:07 14:17		-		med By/Reviewer: al Gas Expiry Date:	Alex Yakupov Trina Whitsit March 12, 2019
Calibration Method:	Gas Dilutio	n	-	Converter Model &		n/a
_			_		· · · · · · · · · · · · · · · · · · ·	
lyzer: Serial Number:	467			Range ppb:	1000	
Last Calibration Date:	November 10,	2015	-	As Found C.F.:		
Previous C.F.:	1.000		-	New C.F.: _	n/a	_
brator:				Standard Cal	ibration Points for Rang	es
Flow Meter ID's:	n/a		_ [Point	Sulphur Dioxide Standar	d Calibration Points
Make & Model:	SABIO 2010		- ⊢	High	780	
Serial #:	11900613 BLM00207		- ⊢	Mid	380 190	
Cal Gas Cylinder I.D. # : Cal Gas Conc. (ppm):	49.5	<u>.</u>	- L	Low	190	
	***		ARE 15 MINU	JTES OF STABILITY AS OF SEP	TEMBER 23, 2015	
	tor Flow Rates (cc/min				Indicated Concentration	n: Correction Factors (C.F.):
Point as found zero	Diluent 5013	Cal Gas 0.00	Total 5013	(ppb) 0.0	(dpd) 3.0	N/A
as found zero	4938	77.20	5015	762.0	770.0	0.993
mld	4976	37.70	5014	372.2	380.0	0.987
low	4994	18,90	5013	186.6	194.0	0.977
					Average C.	F.= 0.986
		Lir	ear Regressi	on/Calibration Results:		
	0			4 000	LIMITS	
	Col	rrelation Coe	_	0.995	> or = 0.995 0.90-1.10	
	h (Intore	ept as % of f	Slope =	-0.47%	± 3% F.S.	
		e In C.F. fror		0.66%	± 10%	
			API 100E SUI	phur Dioxide Analyzer Calibr	ation	
			And the children is a substitute of second otherwise and			
900						
800 -						770.0
800 - 700 -						770.0
800 - 700 -						770.0
Jean House Big 19 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9				→ 380,0		770.0
800 - 700 - 9 500 - 9 500 - 1 400 -						770.0
200 -	194	.0				770.0
800 - 700 - 8 600 - 700				→ 380.0		
800 - 700 - 900 -	194		300			770.0 00 800 900
800 - 700 - 8 600 - 700		:		▶ 380,0	600 7	
800 - 700 - 9 600 - 9 500 - 9	100 200		nd:	400 500 calculated ppb	600 7 As left:	
800 - 700 - 8 600 - 700		As fou 1.05 119	n d: 9	▶ 380,0	600 7	
800 - 700 - 9 600 - 9 500 - 9	SLOPE: OFFSET: HVPS:	As fou 1.05 119 512	nd: 9 0	400 500 calculated ppb SLOPE: OFFSET: HVPS:	600 7 As left: n/a n/a n/a	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HVPS: RCELL TEMP:	As fou 1.05 119, 512 50.	nd: 9 0	400 500 calculated ppb SLOPE: OFFSET: HVPS: RCELL TEMP:	As left: n/a n/a n/a n/a	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HVPS:	As fou 1.05 119 512	nd: 9 0 !	400 500 calculated ppb SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP:	As left: n/a n/a n/a n/a n/a n/a	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP:	As fou 1.05 119 512 50.0 34.4 8.2	nd: 9 0 !	400 500 calculated ppb SLOPE: OFFSET: HVPS: RCELL TEMP:	As left:	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES:	As fou 1.05 119 512 50.0 34 8.2 45.0 24	nd: 9 0 ! 0 1	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: 1ZS TEMP: PRES:	As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL:	As four 1.05 1199 512 50.0 34.4 8.2 45.1 24.4 606	nd: 9 0 !	400 500 calculated ppb SLOPE: OFFSET: HVPS: RCELL TEMP: PMT TEMP: PMT TEMP: PRES: SAMP FL:	As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES:	As fou 1.05 119 512 50.0 34 8.2 45.0 24	nd: 9 0 2 0 1 1 1 0 1 1 0 2 0 0 1 1 0 0 0 0 0	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: 1ZS TEMP: PRES:	As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO:	As fou 1.055 119; 512; 503; 344; 453; 445; 600; 114; 3079; 102;	nd: 9 0 2 0 1 1 0 6 6 7 2 0 0 5	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO:	As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HYPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT	As fou 1.05 119, 51, 50, 34, 45, 24, 600 114, 3079 1020 63,	nd: 9 9 0	SLOPE: OFFSET: HVPS: RCELL TEMP: PMT TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT	As left: n/a n/a n/a n/a n/a n/a n/a n/	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	As four 1.055 1199 512 512 50.0 50.0 50.0 50.0 50.0 50.0 50.0 50.	nd: 9 0 ! 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: VV LAMP: LAMP RATIO: STR. LGT DRK PMT:	As left: n/a n/a n/a n/a n/a n/a n/a n/	
800 - 700 - 8 600 - 700	SLOPE: OFFSET: HYPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT	As fou 1.05 119, 51, 50, 34, 45, 24, 600 114, 3079 1020 63,	nd: 9 0 : : : : : : : : : : : : : : : : :	SLOPE: OFFSET: HVPS: RCELL TEMP: PMT TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT	As left: n/a n/a n/a n/a n/a n/a n/a n/	
800 - 700 - 9 600 - 9 500 - 9	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FLI. NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRK PMT: DRK LMP:	As fou 1.05 119; 51; 50. 344. 45. 44. 606 114. 307/52 102. 63. 15.	nd: 9 0 : : : : : : : : : : : : : : : : :	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: IZS TEMP: VVLAMP: LAMP RATIO: STR. LGT DRK PMT: DRK LMP:	As left:	

Date:	December 7,	2015	_	В	arometric Pressure:	0.915 atm
Company/Airshed:	LICA		_	Statl	on Temperature °C:	21
Location/Station Name:	Elk Point		_		Veather Conditions:	Mainly sunny
Parameter:	Sulphur Dio	xíde	_		alibration Purpose:	post repair
Start Time 24 hr. (mst): End Time 24 hr. (mst):	17:09 19:03		-		rmed By/Reviewer:/ Cal Gas Expiry Date:	March 12, 2019
Calibration Method:		on	-		k s/n (if applicable):	n/a
malyzer:				····		
Serial Number:	467			Range ppb:	1000	
		November 10, 2015		As Found C.F.:		_
Previous C.F.:	n/a			New C.F.:	1.000	-
alibrator:				Standard Ca	libration Points for Ranges	
Flow Meter ID's:	n/a		. [Point	Sulphur Dioxide Standard	Calibration Points
Make & Model:	SABIO 2010		. [High	780	
Serial #:				Mid	380	
Cal Gas Cylinder I.D. #:		73	_ [Low	190	
Cal Gas Conc. (ppm):	49.5	ALL BOINTS	ADE 15 AA'A''	TEC OF STABILITY AS OF SEC	TEARER 22, 2045	
Calibr	ator Flow Rates (cc/ml			TES OF STABILITY AS OF SEP Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
	Diluent	Cal Gas	Total	(ppb)	(ppb)	
Point						
adjusted zero	5013	0.00	5013	0.0	0,0	n/a
		0.00 77.20	5013 5015	0.0 762.0	762.0	n/a 1.000
adjusted zero	5013	77.20 0.00	5015 5013		762.0 0.0 Average C.F.:	1.000 n/a
adjusted zero adjusted high	5013 4938 5013	77.20 0.00	5015 5013 ear Regressi	762.0 0.0 on/Calibration Results: n/a	762.0 0.0 Average C.F.: LIMITS > or = 0.995	1.000 n/a
adjusted zero adjusted high	5013 4938 5013	77.20 0.00 Lin	5015 5013 ear Regressi ffecient = Slope =	762.0 0.0 on/Calibration Results: n/a n/a	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Ca	77.20 0.00 Lin orrelation Coe	5015 5013 ear Regressi ffecient = Slope = ull scale)=	762.0 0.0 on/Calibration Results: n/a n/a n/a	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S.	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Ca	77.20 0.00 Lin	5015 5013 ear Regressi ffecient = Slope = ull scale)=	762.0 0.0 on/Calibration Results: n/a n/a	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere	77.20 0,00 Lin prrelation Coe cept as % of fu ge in C.F. from	sols 5013 ear Regressleffecient = Slope = sill scale)= n last cal= nd:	762.0 0.0 on/Calibration Results: n/a n/a n/a	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left:	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % changes	77.20 0.00 Lin orrelation Coe cept as % of fi ge in C.F. from As four	ear Regressi ffecient = Slope = ull scale)= n last cal=	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Inter % chan	77.20 0.00 Lin prrelation Coe cept as % of fige in C.F. from As four	sols 5013 ear Regressi ffecient = Slope = Ill scale)= n last cal= nd:	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % change of the control of the contro	77.20 0.00 Lin prrelation Coe cept as % of for ge in C.F. from As four n/a n/a n/a	ear Regressleffecient = Slope = ull scale) = n last cale = nnd:	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Inter % chan	77.20 0.00 Lin prrelation Coe cept as % of fige in C.F. from As four	sols sols sols sols sols ffecient = Slope = Ill scale)= n last cal= nd:	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % change) SLOPE: OFFSET: HVPS: RCELL TEMP:	77.20 0.00 Lin orrelation Coe cept as % of fi ge in C.F. from As four n/a n/a n/a	sols 5015 5013 ear Regressi ffecient = Slope = sill scale)= n last cal=	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intereduce with the content of the content o	77.20 0.00 Lin Derrelation Coe cept as % of for ge in C.F. from As four n/a n/a n/a n/a n/a n/a	solts so	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % change) SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES:	77.20 0.00 Lin orrelation Coe cept as % of fi ge in C.F. from n/a n/a n/a n/a n/a n/a n/a n/a	solis 5013 ear Regressi ffecient = Slope = ill scale)= n last cal=	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: 1ZS TEMP: PRES:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0 24.0	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % change of FSET: HVPS: RCELL TEMP: BOX TEMP: IZS TEMP: PRES: SAMP FL: SAMP FL:	77.20 0.00 Lin briefation Coe cept as % of fi ge in C.F. from As four n/a n/a n/a n/a n/a n/a n/a n/	sols 5015 5013 ear Regressl ffecient = Slope = sill scale = n last cal=	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: PRES: SAMP FL:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0 24.0 608	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Interegration of the content	77.20 0.00 Lin Derrelation Coe Coept as % of fige in C.F. from As four n/a n/a n/a n/a n/a n/a n/a n/	sols sols	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: 1ZS TEMP: PRES: SAMP FL: NORM PMT:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0 24.0 608 118.4	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % change) SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP:	77.20 0.00 Lin orrelation Coe cept as % of fice from 1/2 n/2 n/2 n/3 n/4 n/4 n/4 n/4 n/4 n/4 n/4 n/4 n/4 n/4	solis 5013 ear Regressl ffecient = Slope = sll scale)= n last cal= nd:	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a slope: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .995-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0 24.0 608 118.4 3082.1	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % change of the control of the contro	77.20 0.00 Lin orrelation Coe cept as % of fit ge in C.F. from As four n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	solis 5013 ear Regressi ffecient = Slope = ill scale)= n last cal=	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP; LAMP RATIO:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0 24.0 608 118.4 3082.1 102.6	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % change) SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP:	77.20 0.00 Lin orrelation Coe cept as % of fice from 1/2 n/2 n/2 n/3 n/4 n/4 n/4 n/4 n/4 n/4 n/4 n/4 n/4 n/4	solis 5013 ear Regressi ffecient = Slope = ill scale)= n last cal= nnd:	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a slope: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .995-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0 24.0 608 118.4 3082.1	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Intere % change of the second	77.20 0.00 Lin prelation Coe cept as % of fi ge in C.F. from As foun n/a n/a n/a n/a n/a n/a n/a n/a n/a n/	5015 5013 ear Regressl ffecient = Slope = Ill scale)= n last cal= and:	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0 24.0 608 118.4 3082.1 102.6 61.9	1.000 n/a
adjusted zero adjusted high	5013 4938 5013 Co b (Interement of the second of the seco	77.20 0.00 Lin brielation Coe cept as % of fice ge in C.F. from As four n/a n/a n/a n/a n/a n/a n/a n/	solis 5013 ear Regressi ffecient = Slope = ill scale)= n last cal= nd:	762.0 0.0 on/Calibration Results: n/a n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	762.0 0.0 Average C.F.: LIMITS > or = 0.995 .95-1.05 ± 3% F.S. ± 10% As left: 1.051 117.8 512 50.0 32.7 8.1 45.0 24.0 608 118.4 3082.1 102.6 61.9 15.5	1.000 n/a

Of Minute Averages

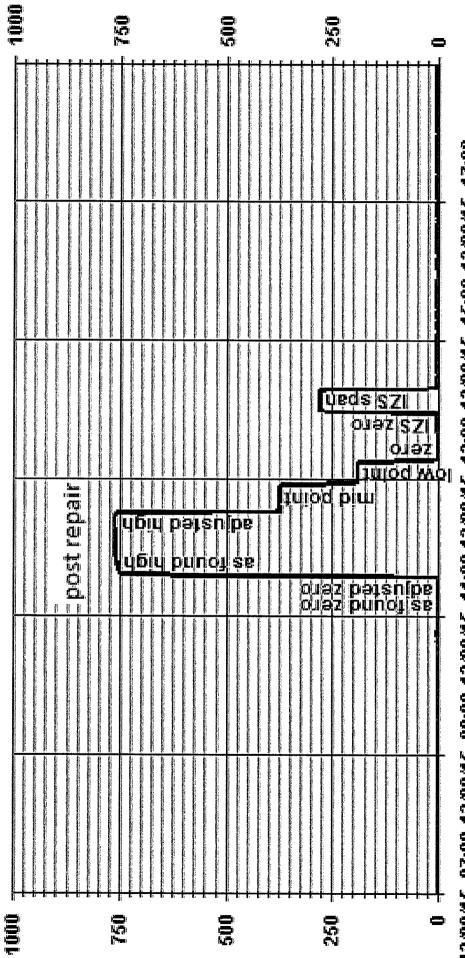


12/07/15 09:00 12/07/15 11:00 12/07/15 13:00 12/07/15 15:00 12/07/15 17:00 12/07/15 19:00

- LICA35 SO2_ PPB

Company Alerheutr Carlo		December 8,	2015			Barometric Pressure:		0,921 atm	
Seal For Seal	Company/Airshed:			_					
Test		Elk Poin		_					
End Time 2 Ahr. (mstd):			xide	_					
Vistant				_	Peri		Alex Yaku		
Name			on		Converter Model				
Serial Number: 467					Converte: Model	a syn (n appheasie).		.,, ,,	
Last Colliforation Deltes December 7, 2015 New CF. 1.003		467			Range onb:	1000			
Description Description			2015	_	As Found C.F.:	1,003			
Point Sulphur Dioxide Standard Calibration Points Nation Serial R; 11900613 Mild 380 Mild	Previous C.F.:	1.000		_	New C.F.:	1,000			
Make & Model: SABIO 2010 High 750	brator:				Standard C	Calibration Points for Ra	nges		
Mid 380	Flow Meter ID's:			_	Point	Sulphur Dioxide Stand	lard Calibratio	on Points	
As Second Secon				_	High				
Calibrator Flow Rates (cc/min)				_					
Calibrator Flow Rates (c/mln)			/3	_	Low	19	0		
Calibrator Flow Rates (ct/min)	Cal Gas Conc. (ppm):	49,5	ALL POINTS	ARE 15 MII	NUTES OF STABILITY AS OF SE	PTFMBFR 23, 2015			
Second Second			n)	,	Calculated Concentration:	Indicated Concentrat	ion:	Correction Facto	ors (C.F.):
as found high 4938 77.20 5015 762.0 760.0 1.003									
Solid Soli									
							_		
Mind 4976 37.70 5014 372.2 374.0 0.995 low									
Calibrator zero S013 0.00 S013 0.0 0.0 0.0 0.0 0.75									
Linear Regression/Calibration Results: LIMITS				5013	186.6			0.987	
Correlation Coeffecient = 1.000 Sor = 0.995	calibrator zero	5013	0.00	5013	0.0				
Correlation Coeffecient						Average	C.F.=	0,994	
900 800 762.0 800 700 800 900 800 900 800 900 800 900 800 900 800 900 800 900 800 900 800 900 800 900 800 900 800 900 800 900 800 8			ge in C.F. froi	n last cal≖	-0.26%	± 10%			
As found: As left:	800 - 700 -				• 3 74.0			→ 762.0	
0 100 200 400 500 600 700 800 900 As found: As left: SLOPE: 1.053 OFFSET: 117.8 OFFSET: 117.8 HVPS: 512 RCELI TEMP: 50.0 RELITIONS RCELI TEMP: 50.0 RELITIONS 33.2 BOX TEMP: 33.2 PMT TEMP: 8.1 PMT TEMP: 8.1 PMT TEMP: 8.1 IZS TEMP: 45.0 PRES: 24.1 SAMP FEI: 610 PRES: 24.1 SAMP FEI: 610 NORM PMT: 117.5 UV LAMP: 3081.2 LAMP RATIO: 102.5									

Of Minute Averages

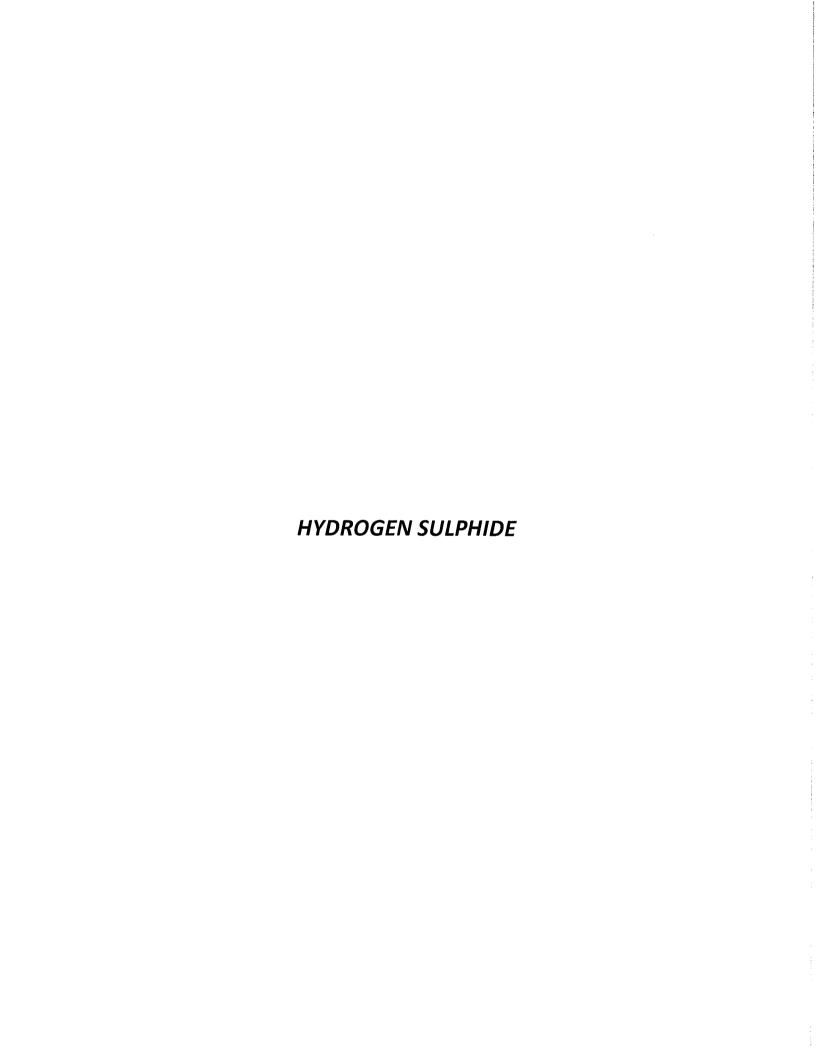


12/08/15 07:00 12/08/15 09:00 12/08/15 11:00 12/08/15 13:00 12/08/15 15:00 12/08/15 17:00

PPB

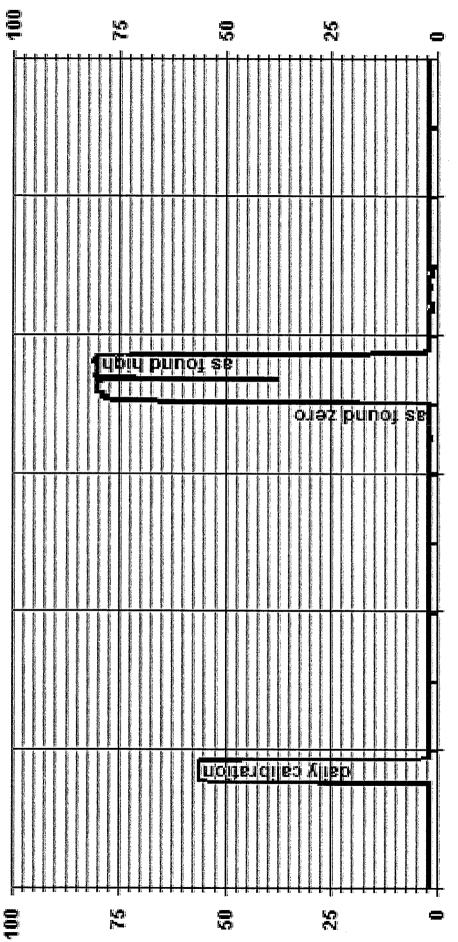
S02__

- LICA35



	December 4,	2015			Barometric Pressure:	102,1 kPa
Company/Airshed	LICA		_	Sta	tion Temperature °C:	22
Location/Station Name			_		Weather Conditions:	Mainly sunny
Parameter:		lphide	_		Calibration Purpose:	as found
Start Time 24 hr. (mst): End Time 24 hr. (mst):		_	-	Perf	ormed By/Reviewer: Cal Gas Expiry Date:	Raja Abid Trina Whitsiti July 8, 2016
Calibration Method		on	_	Converter Model	& s/n (if applicable):	n/a
Analyzer:				<u> </u>		
Serial Number			_	Range ppb:	100	
Last Calibration Date:		, 2015	_	As Found C.F.:		_
Previous C.F.:	1.000		-	New C.F.:	n/a	•
Calibrator:	****			Standard C	alibration Points for Ranges	
Flow Meter ID's:			_	Point	Hydrogen Sulphide Standard	Calibration Points
Make & Model:		100	_	High	78	
Serial #			_	Mld	38	
Cal Gas Cylinder I.D. # :		34	_	Low	19	
Cal Gas Conc. (ppm):	10.3	All POINTS	ARE 15 M	NUTES OF STABILITY AS OF SE	DTEMBER 22 2015	
Calib	rator Flow Rates (cc/m		43 WI	Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	correction ractors (c.r.):
as found zero	7479	0.00	7479	0,0	1.7	N/A
as found high	7429	56.40	7485	77.8	79.9	0.994
					Average C.F.=	n/a
	Co	rrelation Coe	= ffecient: = Slope	n/a n/a	> or = 0.995 .95-1.05	
	h (Inter	cept as % of f			± 3% F.S.	
		ge in C.F. fron			± 10%	
	SLODE	As fou		SLODE	As left:	
	SLOPE: OFFSET:	As fou 1.13 26,2	0	SLOPE: OFFSET:	n/a	-
	SLOPE: OFFSET: HVPS:	1.13 26.2 526	0	SLOPE: OFFSET: HVPS:		-
1-3-4	OFFSET: HVPS: DCPS:	1.13 26.2 526 50	0	OFFSET: HVPS: DCPS:	n/a n/a n/a n/a	
	OFFSET: HVPS: DCPS: RCELL TEMP:	1.13 26.2 526 50 35.9	0	OFFSET: HVPS: DCPS: RCELL TEMP:	n/a n/a n/a n/a n/a	·
	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP:	1.13 26.2 526 50 35.9	0	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP:	n/a n/a n/a n/a n/a n/a	
1 2 7	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP:	1.13 26.2 526 50 35.9	0	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP:	n/a n/a n/a n/a n/a n/a n/a	· · · · · · · · · · · · · · · · · · ·
7 7 7	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP:	1.13 26.2 526 50 35.9 35.9	0 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP:	n/a n/a n/a n/a n/a n/a	
	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP. Converter Temp: PRES:	1.13 26,2 526 50 35,5 35,5 8,3 45 314,0	0 2 3 3 3 3 4 4 4 4	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP:	n/a n/a n/a n/a n/a n/a n/a n/a	
	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL:	1.13 26.2 526 50 35.5 8.3 45 314. 21.4	0 2 3 3 3 3 3 4 4 4 4 4 4	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL:	n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP:	1.13 26.2 526 50 35.9 35.9 8.3 45 314, 21,4 556	0 2 3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP:	n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO:	1.13 26.2 526 50 35.5 35.9 8.3 45 314. 21.4 556 2819	0 2 3 3 3 3 3 4 4 4 4 4 5 6 5 5 6 5 6 5 6 6 5 6 6 6 6	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP; LAMP RATIO:	n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP:	1.13 26.2 526 50 35.9 35.9 8.3 45 314, 21,4 556	0 2 2 3 3 3 3 4 4 4 4 4 5 5 6 6 5 3 5 5 6 5 6 5 6 5 6 6 6 6 6 6	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP; LAMP RATIO: STR. LGT	n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT	1.13 26.2 526 50 35.5 35.9 33.4 45 314.2 21.4 5566 2819 88.8 14.8 36.3 36.3	0 2 3 4 4 4 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP; LAMP RATIO:	n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	1.13 26.2 526 50 35.5 35.5 8.3 45 314, 21,4 556 2819 88.8 14.8	0 2 3 4 4 4 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. GGT DRK PMT:	n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
Comments:	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT IEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK LMP: DRK LMP:	1.13 26.2 526 50 35.5 35.9 33.4 45 314.2 21.4 5566 2819 88.8 14.8 36.3 36.3	0 2 3 4 4 4 4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	OFFSET: HVPS: DCPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT: DRK LMP:	n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	

of Minute Averages

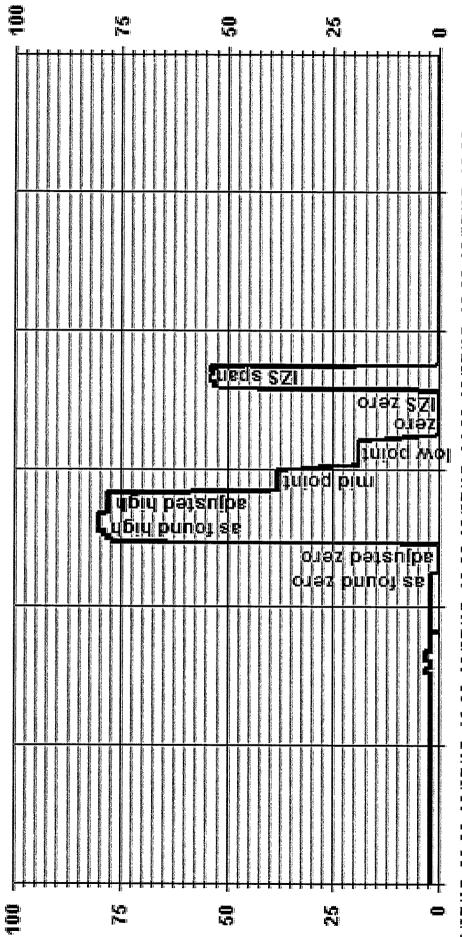


12/04/15 09:00 12/04/15 11:00 12/04/15 13:00 12/04/15 15:00 12/04/15 17:00 12/04/15 19:00

- LICA35 H2S_ PPB

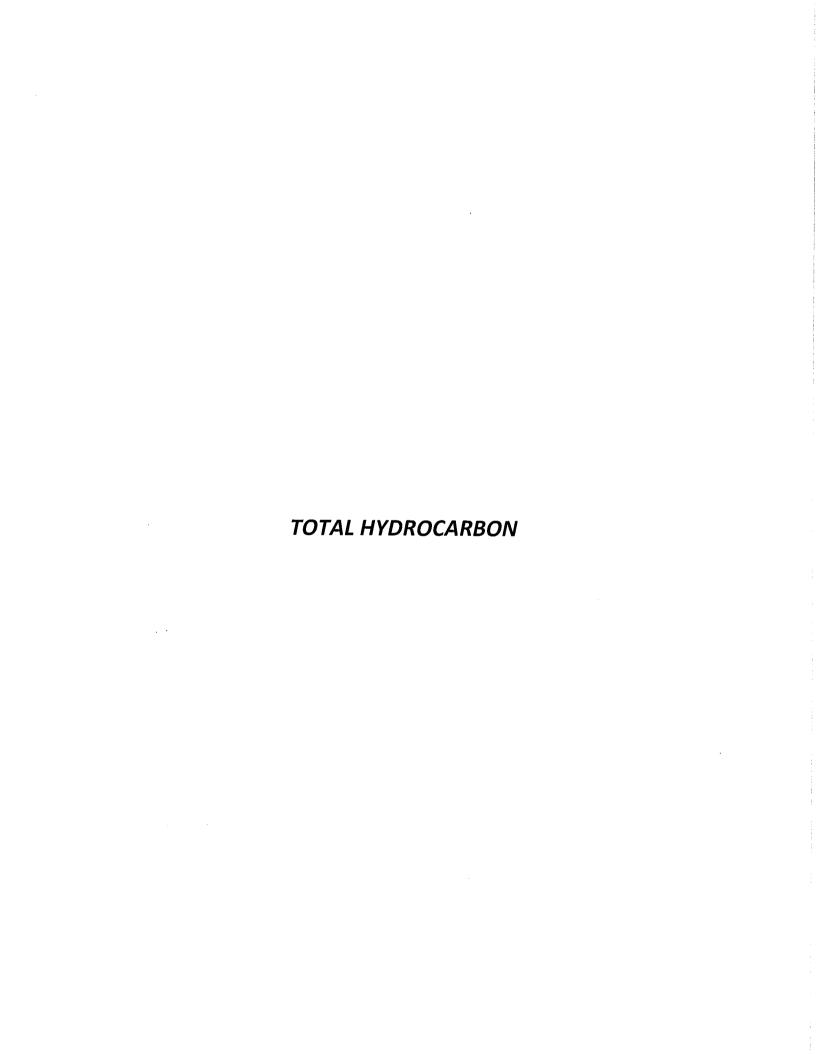
Date:	December 7,	2015		В	arometric Pressure:	0.915 atm
Company/Airshed:	LICA		_		on Temperature °C:	21
ocation/Station Name:	Elk Poin		_	V	Veather Conditions:	Mainly sunny
Parameter:	Hydrogen Su	Iphide			alibration Purpose:	routine monthly
Start Time 24 hr. (mst): End Time 24 hr. (mst):	12:07 15:54		_			x Yakupov Trina Whitsitt
Calibration Method:	Gas Diluti	on	_		Cal Gas Expiry Date: k s/n (if applicable):	July 15, 2017 n/a
alyzer:						
Serial Number: Last Calibration Date:	510 November 10	. 2015	_	Range ppb: As Found C.F.:	100 0,999	
Previous C.F.:	1.000	,	-	New C.F.:	1.000	
Ibrator:				Standard Ca	libration Points for Ranges	
Flow Meter ID's:	n/a		_	Point	Hydrogen Sulphide Standard Ca	ilibration Points
Make & Model:	API 700			High	78	
Serial #:	830		_	Mid	38	
Cal Gas Cylinder I.D. #:	LL36837		_	Low	19	
Cal Gas Conc. (ppm):	10.0	ALL POINTS	ARE 15 MINUT	ES OF STABILITY AS OF SEP	TEMBER 23, 2015	
	or Flow Rates (cc/m	ln)	Ca	Iculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point as found zero	Diluent 7496	Cal Gas 0.00	7496	(ppb) 0.0	(ppb) 1.9	N/A
as found high	7441	58.50	7500	78.0	80.0	0.999
adjusted zero	7496	0.00	7496	0.0	0.0	n/a
adjusted high	7441	58.50	7500	78,0	78.0	1.000
mid	7472	28.50	7501	38.0	38.0	1.000
low calibrator zero	7486 7496	0.00	7500 7496	19.1	18,8	1.014
Campiator 2010	7450	0.00	7496	0.0	0.0 Average C.F.≔	n/a 1.005
90 -		A	Pl 101E Hydro	gen Sulphide Analyzer Calli	pration	
indicated by 20 dg						78.0
95 40 ipu 30				38.0		
20 10	18.	8				
0 0.0	100 200	3	100	400 500	600 700	800 900
~~~				calculated ppb		The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
		As fou			As left:	
	SLOPE:	1.16		SLOPE: _	1.131	
	OFFSET:	30.2 526		OFFSET: HVP5:	30.2 526	
	HVDC			RCELL TEMP:	50.0	
	HVPS: _ RCELL TEMP:	50.0			35.6	
	RCELL TEMP: BOX TEMP:	36.0	)	BOX TEMP:		
	RCELL TEMP: BOX TEMP: PMT TEMP:	36.0 8.3		PMT TEMP:	8,3	
	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP:	36.0 8.3 45.0	)	PMT TEMP: _ IZS TEMP: _	45 <b>.0</b>	
	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp:	36.0 8.3 45,0 315.	1	PMT TEMP: IZ5 TEMP: _ Converter Temp: _	45. <b>0</b> 314.9	
	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRE5:	36.0 8.3 45.0	1	PMT TEMP:	45.0 314.9 21.2	
	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp:	36.0 8.3 45.0 315.: 21.2	1	PMT TEMP: IZ5 TEMP: _ Converter Temp: _	45. <b>0</b> 314.9	
	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO:	36.0 8.3 45.0 315. 21.2 552 2815.	1	PMT TEMP: IZ5 TEMP: Converter Temp: PRES: 5AMP FL:	45.0 314.9 21.2 553 2815.0 88.7	
	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRE5: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT	36.0 8.3 45.0 315. 21.2 552 2815. 88.7 17.6	1	PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT	45.0 314.9 21.2 553 2815.0 88.7 17.7	
	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	36.0 8.3 45.0 315. 21.2 552 2815. 88.7 17.6	1	PMT TEMP: IZS TEMP: Converter Temp: PRES: 5AMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	45.0 314.9 21.2 553 2815.0 88.7 17.7 36.1	
	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP. Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT: DRK LMP:	36.0 8.3 45.0 315. 21.2 552 2815. 88.7 17.6 35.9	11	PMT TEMP: IZS TEMP: Converter Temp: PRES: 5AMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT: DRK LMP:	45.0 314.9 21.2 553 2815.0 88.7 17.7 36.1	
nments:	RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	36.0 8.3 45.0 315. 21.2 552 2815. 88.7 17.6	11	PMT TEMP: IZS TEMP: Converter Temp: PRES: 5AMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	45.0 314.9 21.2 553 2815.0 88.7 17.7 36.1	

Of Winde Averages

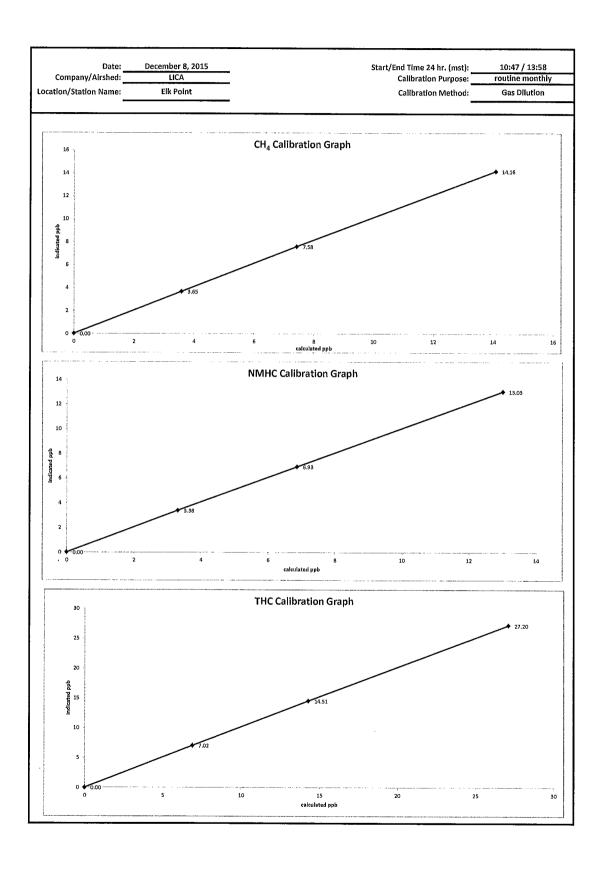


12/07/15 08:20 12/07/15 10:20 12/07/15 12:20 12/07/15 14:20 12/07/15 16:20 12/07/15 18:20

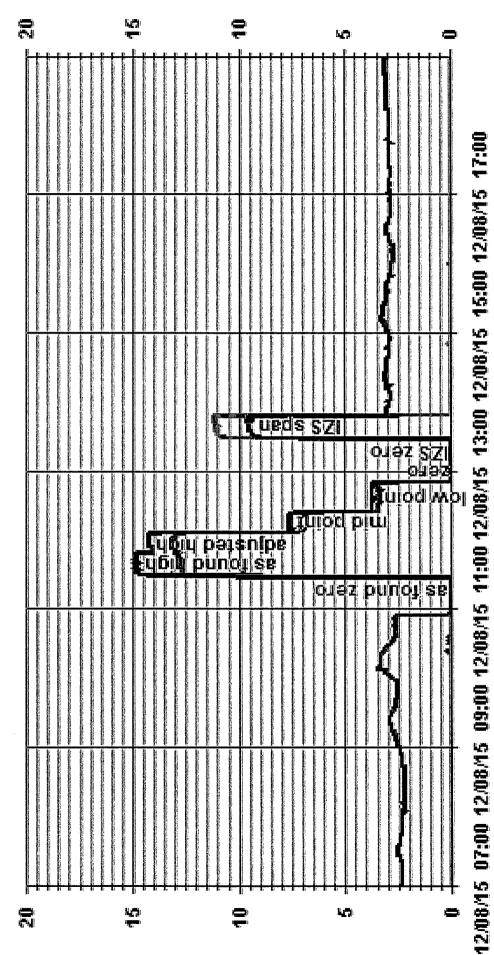
- LICA35 H2S_ PPB



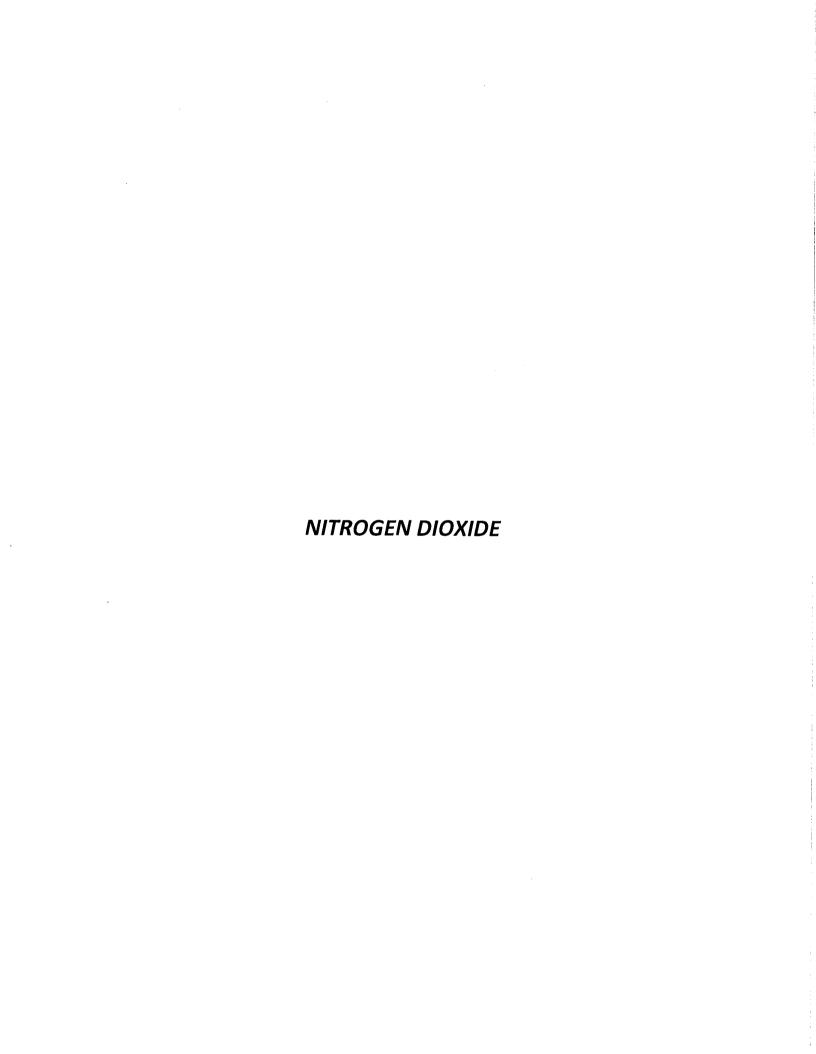
Date:			er 8, 2015		-		Baron	etric Pressure:		0,92	1 atm	
Company/Airshed:			ICA Delicat		-			emperature °C:			20	
Location/Station Name: Parameter:			Point MHC / THC		-			her Conditions: ration Purpose:			ear monthly	
Start/End Time 24 hr. (mst):			/ 13:58		-			d By/Reviewer:				Whitsitt
Calibration Method:		Gas I	Dilution		-		Cal G	as Expiry Date:		March	26, 2017	
nahrow									Cana			<u> </u>
analyzer:								Previous C.F.:		ection Fact d C.F.:		w C.F.:
Serial Number:	1	23665610	7	_			CH ₄ =	0.997	0.9	56		,995
Last Calibration Date:		ember 10, 2					NMHC =	0,999	1,0			,999
Range ppm:	20 CH4/	/20 NMHC/	40 THC				THC≃	0.997	0,9	89	0	.997
Calibrator:												
Flow Meter ID's:							Standard Calib		<del>,                                    </del>			1
Make & Model:								int	CH4	NMHC	THC	1
Serial #; Cal Gas Cylinder I.D. # ;		_	•				N N	gh Ild	13.00 7.00	13.00 7.00	26,00 14.00	1
CH4 Cylinder Conc.=	601.4	202.0	=C₃H _{&amp;} Cylln	der Conc.			Lo		3.00	3.00	6,00	1
CH ₄ as C ₃ H ₈ =	555.5	1156.9	=total CH ₄									4
Calibrator El	ow Rates (cc/	(min)	ALL POINT	r	Calculated	ABILITY AS OF	SEPTEMBER 23	, <u>2015</u>	1	Co	rrection Fa	etores
			Total Class	Calculated CH ₄ (ppm)	Calculated NMHC	Calculated THC (ppm)	Indicated CH ₄	Indicated	Indicated THC (ppm)			I
Point	Diluent	Cal Gas	Total Flow		(ppm)		(ppm)	NMHC (ppm)		CH₄	NMHC	THC
as found zero as found high	2000	0,00	2000	0.00 14.10	0.00 13.02	0.00 27.11	0,00 14.75	0.00 12.67	0.00 27.43	n/a 0.956	n/a 1.028	n/a 0.98
adjusted high	2000	48.00	2048	14.10	13.02	27.11	14.75	13.03	27,43	0,995	0.999	0.98
mid	2000	25,00	2025	7,42	6,86	14.28	7.58	6,93	14.51	0.980	0.990	0.98
low	2000	12.00	2012	3,59	3,31	6.90	3.65	3,38	7,02	0.983	0.980	0.98
calibrator zero	2000	0,00	2000	0,00	0.00	0.00	0.00	0.00	0.00 verage C.F.≃	n/a 0.986	n/a 0.990	n/a 0.98
				Linear	Regression/0	Calibration Re	sults:		verage C.F.~	0.560	0.990	0.98
				CH₄	NMHC	THC	LIMITS					
	Cor	rrelation C	oeffecient =	1.000	1.000	1,000	> or = 0,995					
			5lope =	1.005	1.000	1.003	.95-1,05					
			f full scale)= om last cal=	0.21% 4.15%	0.19% -2.86%	0.18% 0.85%	± 3% F.S.					
	70 Citalig	e iii C.F. III		ound:	-2.80%	0,8376	± 10%			As	eft:	
nterface Board Voltages:	Bi	ias Supply:		93.0	_		Calibration Hist	ory cnt'd: NN	ብ Peak Area:	84	028	
Cemperatures:	Detec	ctor Oven:		75.0			Crucial Settings		thane Start:		/a	-
	Colu	Filter: umn Oven:		75.0 5.0	-			М	lethane End: Backflush:		/a /a	-
	0010	Internal:		3.0				1	NMHV Start:		/a	-
Cylinder Pressures/reg.:		Carrier:	2500	50					NMHC End:	n	/a	-
		Fuel:	800	50			Run History>1:		Date:	Decembe		
		Span Gas: Generator:	2000	22 5/34	-				Time: CH ₄ PK HT:		:13	-
nternal Pressures:	Zero Ali C	Carrier:		1.1	•				CH ₄ RT:		.0	•
		Fuel:	4	0.3	•			(	CH ₄ Baseline:	22	43	•
		Air:		2.4					CH ₄ LOD:	6	4	
ID Status:		Status:		LIT 6490					CH ₄ SD:		1	
		Counts: Flame:		78.1	-				CH ₄ CONC: NM PK HT:		00	-
		Det Base:		75.0				NN	/I Peak Area:		)	•
lame and Power Stats:	Last F	Power On:	May !	5, 2015					NM CONC:	0.	00	
		lameouts:		40					A Base Start:		32	•
		en at Start:		70.1 4.5				N	M Base End:		.45	
	corove	n at Start: Time:		4.5 er 10, 2015				M	NM LOD: IM Start IDX:		4	•
alibration History:		Туре:		PAN					NM End IDX:		6	•
alibration History:		Status:	G	OOD				NM	Max Slope:	6.4	-0.1	
alibration History:		ck/Adjust:		JUST					Min Slope:		e-0,1	
alibration History:		-	1/	1.10			Daily Zero/Spar		M PT Count:		58	-
alibration History:	CH ₄ S	pan Conc:		10792			Pana Y61017091	i values: Pl	revious CH4:	9,	Ju	
alibration History:	CH ₄ S	Span Conc: 4 SP Ratio: CH ₄ RT:	0.00	00792 2.2	-		,,	Pre	vious NMHC	11	.16	•
alibration History:	CH ₄ S,	4 SP Ratio:	0.00				,,		vious NMHC revious THC:		.16 .76	-
alibration History:	CH₄ S; CH₂ C	SP Ratio: CH ₄ RT: CH ₄ PK IDX: CH ₄ PK HT:	0.00	2.2 21 804			,,		revious THC: New CH4:	20 9.	.76 54	- - -
alibration History:	CH ₄ S, CH, C C NM S	I ₄ SP Ratio: CH ₄ RT: CH ₄ PK IDX:	0.00 1 17	2.2	• • •		,		revious THC:	20 9. 11	.76	• • • •



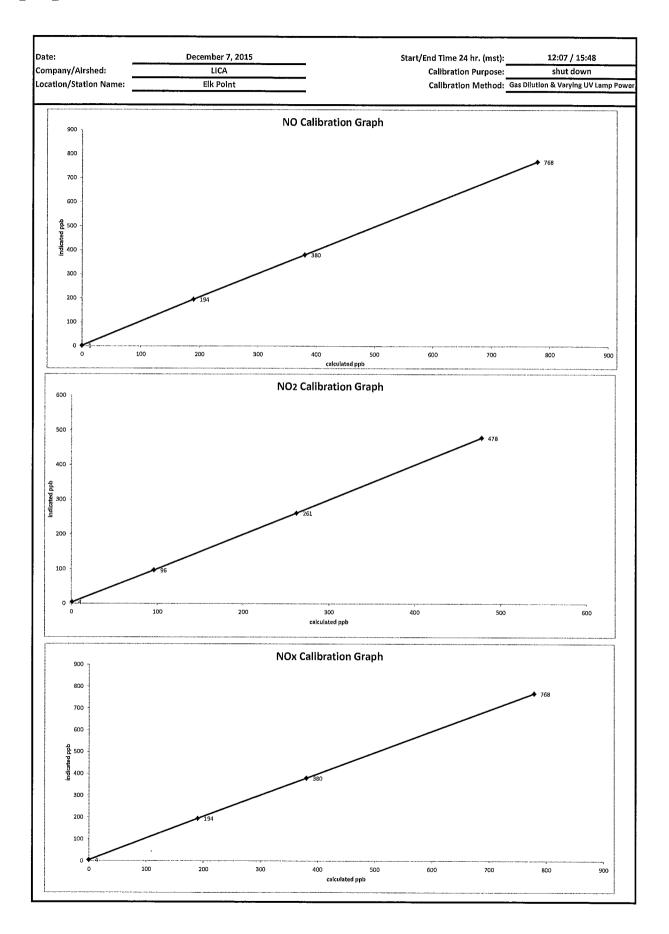
Of Minute Averages



PPM HEHE E RETHATE - LICA35

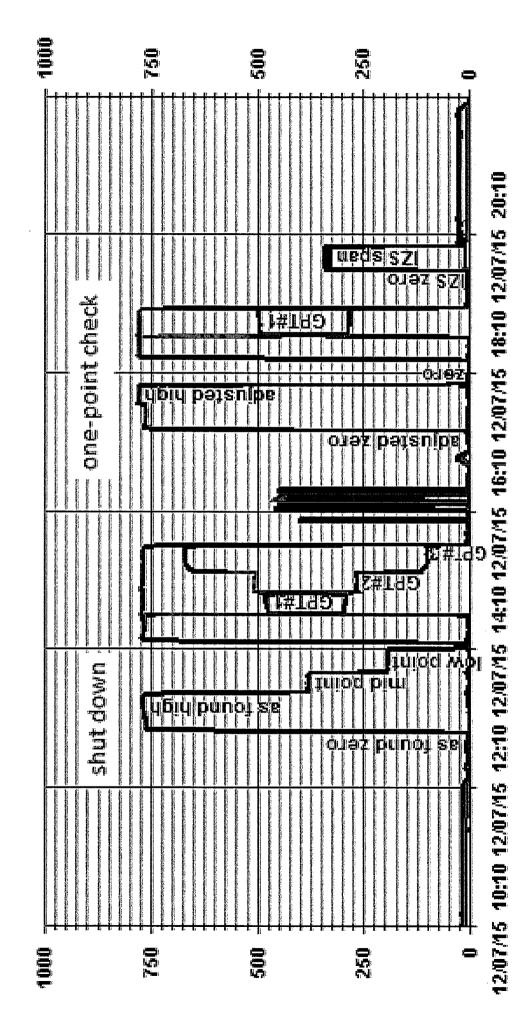


Date	-	cember 7,	2015	-	· · · · · · · · · · · · · · · · · · ·		Barometric Pressure:		0,915	atm
Company/Airshed		LICA		_		Sta	ation Temperature °C:		21	
Location/Station Name		Elk Point		_			Weather Conditions:		Mainly	
tart/End Time 24 hr. (mst) .P.T. to be used for Ozone		12:07 / 15: No	48	-		_	Calibration Purpose:		shut d	
Calibration Method			V Lamp Power	-		Per	formed By/Reviewer: Cal Gas Expiry Date:		Yakupov March 12	Trina Whit
alyzer:			·	· 		Con			Widicit 12	2, 2019
•						Previous C.F.:	rection Factors: As Found C.F.:		v C.F.:	
Serial Number		592	2015		NO =	0.999	1.016		1/a	
Last Calibration Date Range ppb		vember 10, 1000	2015		NO ₂ :	0,996	1.000		1/a	
					NOx:	0,999	1.019		1/a	
librator: Flow Meter ID's:	n	/a			SI	andard Calibration Po	ints for a Range of:	1000 ppb		
Make & Model	SABIO	2010 D	-			olnt	Target NO (ppb)		NO ₂ (ppb)	Cc Ozone
Serial #	1190	00613	-		i	llgh	780		500	n/a
Cal Gas Cylinder I.D. # :		02073	-			Λid	380	- 2	275	n/a
NO/NOx Gas Conc. (ppm):	50.6	50.6	-			.ow	190	•	100	n/a
						Point #1	n/a	-	n/a	n/a
<del></del>			All f	OINTS ARE 15 AMAILS		Point #2	n/a		n/a	n/a
Calibrator Flo	w Rates (cr	/min)	ALL	Calculated NO	Calculated NOx	OF SEPTEMBER 23, 2 Indicated NO		NOCE	Nover	
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	Indicated NOx (ppb)	NO C.F.	NOx C.F.	
as found zero	5013	0.0	5013	0	0	1.0	4,0	n/a	n/a	
as found high	4938	77.2	S015	778.9	778.9	768.0	768.0	1.016	1.019	
mid	4976	37.70	5014	380.5	380.5	380.0	380.0	1,004	1,012	
low	4994	18.80	5013	189.8	189.8	194.0	194.0	0.983	0,999	
-				-			Average C.F.=	1.001	1.010	
Calibrator Flo	Datas (se	Laster	ALLE			S OF SEPTEMBER 23, 2				
		_	Tatal Flam	Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ gain	NO₂ C.F
Point NOx reference	Diluent 4938	77.20	Total Flow 5015	volts or ppb 0,0	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
as found high NO2	4938	77.20	5015	520.0	766.0 288.0	768.0 769.0	4.0 482.0	1.0	4.0	
gpt mid	4938	77.20	5015	275.0	504.0	768.0	265.0	478.0 262.0	478.0 261.0	1.000
gpt low	4938	77,20	5015	100.0	670.0	768.0	100.0	96.0	96.0	1.000
					·	<u> </u>			e NO₂ C.F.≔	1.001
			1		ression/Calibratio					
	0			NO	NOx	NO ₂	LIMITS			
	COI	rrelation Co	Slope =	1.000	1,000	1.000	> or = 0.995			
	h (Interc	ent as % of	full scale)=	1.018 0.43%	1.021 0.61%	1.005	0.90-1.10			
		e in C.F. fro		-1.65%	-0.40%	0.16% -2.05%	± 3% F.S. ± 10%			
			reffeciency	2.05%	0.40/0	1.00	0.96 to 1.04			
		As fo	ound:		<del></del>		As left:			
1	NOx SLOPE:		396			NOx SLOPE;	n/a			
	NOx OFFS:	-	3.4			NOx OFFS:	n/a			
	NO SLOPE:		391			NO SLOPE:	n/a			
	NO OFFS:		75			NO OFFS:	n/a			
•	Samp flw: Ozone fl:		73			SAMP FLW: _ OZONE FL:	n/a			
	PMT:		6.4			OZONE FL: _ PMT:	n/a n/a			
	ORM PMT:		.8			NORM PMT:	n/a			
N	AZERO:		6.7			AZERO:	n/a			
N	HVPS:		37			HVPS:	n/a			
	CELL TEMP:		0.0			RCELL TEMP:	n/a			
Re			3.9 i.9			BOX TEMP;	n/a			
Re	BOX TEMP:		0.3			PMT TEMP:	n/a			
Re	PMT TEMP:	Δt				IZS TEMP: _ MOLY TEMP:	n/a n/a			
Re	PMT TEMP: IZS TEMP:		3,7			RCEL:	n/a n/a			
Re	PMT TEMP:	31	3.7 .3				174			
Re	PMT TEMP: IZS TEMP: OLY TEMP:	31 5				SAMP:	n/a			
Re M Interna	PMT TEMP: IZS TEMP: OLY TEMP: RCEL: SAMP:	31 5 27	.3 7.3			_	n/a n/a			
Ri M Interna Internal	PMT TEMP: IZS TEMP: OLY TEMP: RCEL: SAMP: Il Span NO: Span NO2:	31 5 27 1 3:	.3 7.3 .0 24			SAMP:	<del></del>			
Ri M Interna Internal	PMT TEMP: IZS TEMP: OLY TEMP: RCEL: SAMP:	31 5 27	.3 7.3 .0 24			SAMP: _ Internal Span NO: _	n/a			



0	De	ecember 7,	2015				Barometric Pressure:		0,915	atm
Company/Airshed:		LICA		- -		St	ation Temperature °C:		21	
Location/Station Name:		Elk Point		_			Weather Conditions:		Mainly s	
Start/End Time 24 hr. (mst): 3.P.T. to be used for Ozone?		17:09 / 20: No	:05	-		0-	Calibration Purpose:		post re	<u>'                                    </u>
Calibration Method:			V Lamp Power	-		Pe	rformed By/Reviewer: Cal Gas Expiry Date:		Yakupov March 12	Trina Whits
nalyzer:				-						
lalyzer:						Previous C.F.:	rection Factors: As Found C.F.:	Nev	w C.F.:	
Serial Number:		S92			NO=	n/a	n/a		.001	
Last Calibration Date:	Nov	vember 10,	2015	-	NO₂ =	n/a	n/a		,000	
Range ppb:	****	1000		-	NOx =	n/a	n/a	1	.002	
librator:				*****						
Flow Meter ID's:		/a	_			andard Calibration Po		1000 ppb		
Make & Model:		2010 D 00613	_			olnt	Target NO (ppb)		NO ₂ (ppb)	Cc Ozone i
Serial #: Cal Gas Cylinder I.D. # :		02073	<u>-</u>			igh	780		500	n/a
NO/NOx Gas Conc. (ppm):		50.6	-			1ld ow	380 190	_	275 100	n/a
	55,0	33,0	-			Point #1	n/a		n√a	n/a n/a
						Point #2	n/a		n/a	n/a n/a
			ALLI	POINTS ARE 15 MINU					I	/ u
Calibrator Flo				Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.	
Point	Diluent	Cal Gas	•	11-1-1	(ppb)	(ppb)	(ppb)	$\geq \leq$	$\geq \leq$	
adjusted zero adjusted high	5013 4938	77.2	5013 5015	770.0	0 770 0	0.0	1.0	n/a	n/a	
calibrator zero	5013	0.00	5013	778,9 0.0	778.9 0.0	778.0 0.0	778.0 1.0	1,001 n/a	1.002	
		0,00	3015		0.0	0,0	Average C.F.=	n/a	n/a n/a	
			<u>ALL F</u>	OINTS ARE 15 MINU	TES OF STABILITY AS	OF SEPTEMBER 23, 2		11/ 5	11/4	
Calibrator Flo	w Rates (cc	:/min)		Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ gain	NO ₂ C.F.
Point	Diluent	Cal Gas	<b>Total Flow</b>	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4938	77,20	5015	0.0	777.0	776.0	1.0	0.0	1.0	
adjusted high NO2	4938	77.20	5015	530.0	284.0	778.0	494.0	493.0	493.0	1.000
				Linear Re	gression/Calibration	Reculter		Averag	e NO ₂ C.F.=	1,000
				NO	NOx	NO ₂	LIMITS			
	Cor	rrelation C	oeffecient =	n/a	n/a	n/a	> or = 0.995			
			Slope =	n/a	n/a	n/a	.95-1.05			
	b (Interc	ept as % of	f full scale)=	n/a	n/a	n/a	± 3% F.S.			
	-		om last cal≃	n/a	n/a	n/a	± 10%			
	NO	2 converte	r effeciency			1.00	0.96 to 1.04			
	-		ound:	·	····		As left:			
1	NOx SLOPE:		n/a			NOx SLOPE;	1.424			
	NOx OFFS: NO SLOPE:		n/a n/a			NOx OFFS:	1.8			
	NO OFFS:		n/a			NO SLOPE: NO OFFS:	1.419			
9	SAMP FLW:		n/a			SAMP FLW:	466			
	OZONE FL:	- 1	1/a			OZONE FL:	73			
	PMT:	r	n/a			PMT:	22.2			
N	ORM PMT:		n/a			NORM PMT:	3.6			
	AZERO:		1/a			AZERO:	17.3			
n.	HVPS: . CELL TEMP:		1/a 1/a			HVPS: RCELL TEMP:	637			
HI HI	BOX TEMP:		1/a 1/a			BOX TEMP:	50.0 31.2			
	PMT TEMP:		n/a			PMT TEMP:	6.9			
	IZS TEMP:		n/a			IZS TEMP:	40.2			
j	OLV TEMP.		1/a			MOLY TEMP:	315.1			
j	OLY TEMP:	r	1/a			RCEL;	5.3			
j	RCEL:					SAMP:	26.2			
M	RCEL: SAMP:		n/a n/a							
j M Interna	RCEL: SAMP: of Span NO:	n	n/a			Internal Span NO:	9 331.4			
M Interna Internal	RCEL: SAMP:	n				Internal Span NO: Internal Span NO2: Internal Span NOx:	331,4 340			

Of Minute Averages



PPB

H02_

- LICA35

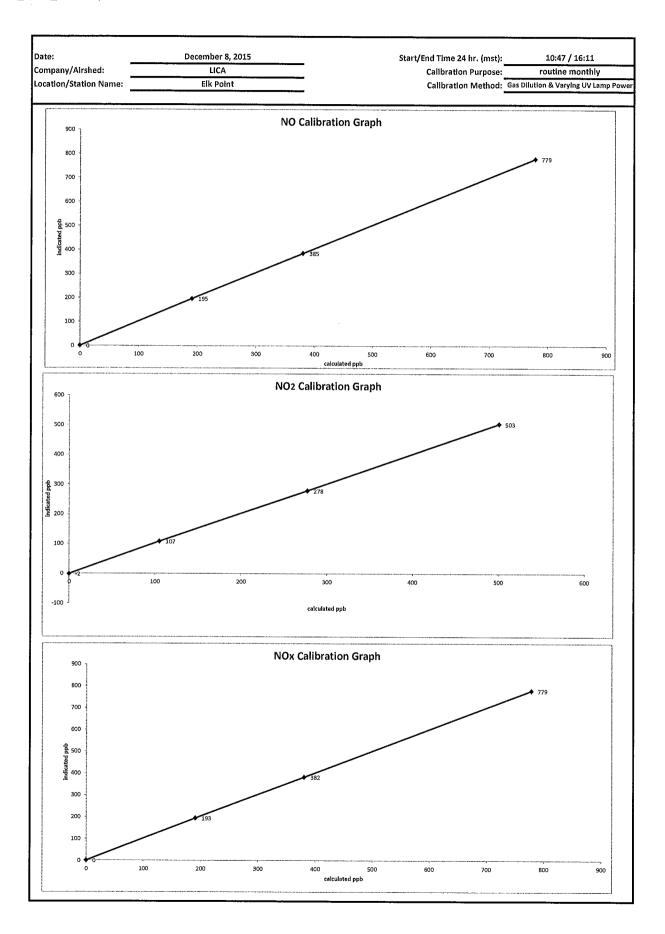
2

-- LICA35

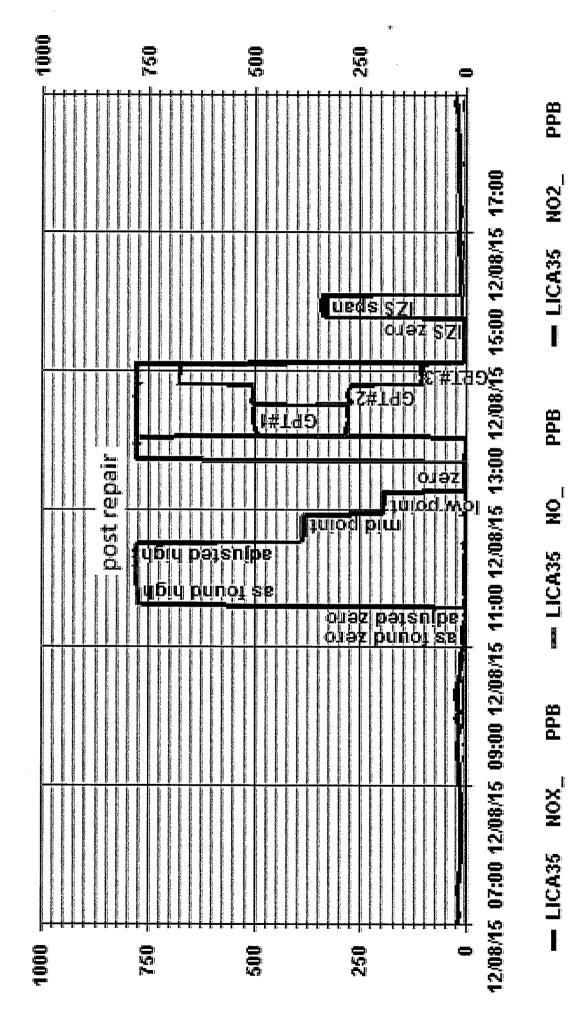
PPB

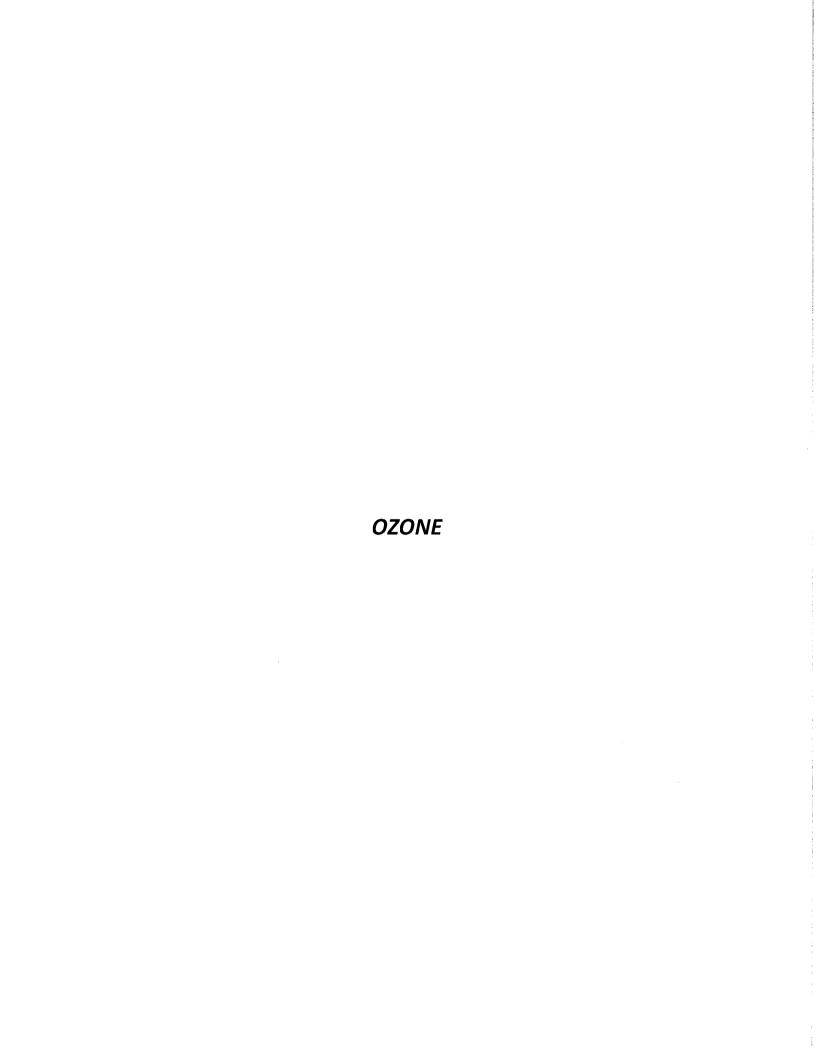
- LICA35 NOX_

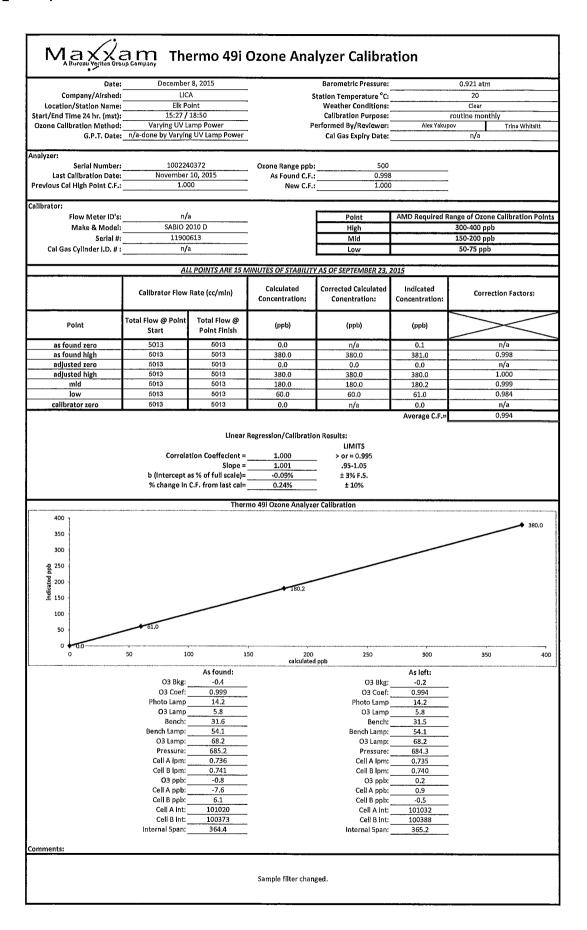
Date:	De	cember 8,	2015	-			Barometric Pressure:		0.921	
Company/Airshed: Location/Station Name:		LICA Elk Point		<del>-</del>		St	ation Temperature °C: Weather Conditions:		20 Clea	
tart/End Time 24 hr. (mst):	-	10:47 / 16:		-			Calibration Purpose:		routine m	
P.T. to be used for Ozone?		No		<del>-</del> -		Pe	rformed By/Reviewer:	Alex Y	akupov	Trina Whits
Calibration Method:	Gas Dilution	ı & Varying U	V Lamp Power	_			Cal Gas Explry Date:		March 12	2, 2019
ılyzer:						Cor Previous C.F.:	rection Factors: As Found C.F.:	Nau	/ C.F.:	
Serial Number:		592			NO =	1.001	1,001		000	
Last Calibration Date:		cember 7,	2015	-	NO ₂ =	1,000	0.996	0.	996	
Range ppb:		1000		-	NOx ≃	1.002	1.009	1.	000	
brator: Flow Meter ID's:	n	/a			Str	ndard Calibration Po	olats for a Range of	1000 ppb		
Make & Model:		2010 D	-			oint	Target NO (ppb)		NO ₂ (ppb)	Cc Ozone
Serial #:	1190	00613	_		Н	igh	780		00	n/a
Cal Gas Cylinder I.D. #:		02073	_			1id	380		75	n/a
NO/NOx Gas Conc. (ppm):	50.6	50,6	-			DW	190		00	n/a
						Point #1 Point #2	n/a n/a		√a √a	n/a n/a
			<u>ALL I</u>	POINTS ARE 15 MINU						
Calibrator Flo		Cal Gas	Total Flow	Calculated NO	Calculated NOx	Indicated NO	Indicated NOx	NO C.F.	NOx C.F.	
Point as found zero	Diluent 5013	0,0	5013	(ppb) 0	(ppb)	(ppb) -1.0	(ppb) 5,0	n/a	n/a	
as found high	4938	77.2	5015	778,9	778.9	777.0	777.0	1,001	1.009	
adjusted zero	5013	0.00	5013	0.0	0.0	0.0	0.0	n/a	n/a	
adjusted high	4938	77.20	5015	778.9	778.9	779.0	779.0	1,000	1.000	
mid low	4976 4994	37.70 18.90	5014 5013	380.5 190.8	380.5 190.8	385.0 195.0	382.0 193.0	0.988	0.996	
calibrator zero	5013	0.00	5013	0	0	0.0	1,0	0.978 n/a	0.988 n/a	
				•			Average C.F.=	0.989	0.995	
0.111	D 1 /		ALLI	POINTS ARE 15 MINU						
Calibrator Flo	w Rates (co Diluent		Total Flau	Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ gain	NO₂ C.F.
NOx reference	4938	77,20	Total Flow 5015	volts or ppb 0.0	(ppb) 779.0	(ppb) 776.0	(ppb) -2,0	(ppb) 0.0	(ppb) -2.0	(ppb)
as found high NO2	4938	77.20	5015	535.0	278.0	779.0	501.0	501.0	503.0	0.996
gpt mld	4938	77.20	5015	290.0	502.0	777.0	276.0	277.0	278.0	0.996
gpt low	4938	77.20	5015	100.0	674.0	778.0	105.0	105.0	107.0 NO ₂ C.F.≔	0.981
				Linear Re	gression/Calibration	Results:		Average	3 14O ₂ C.F.	0.991
				NO	NOx	NO ₂	LIMITS			
	Cor	relation C	oeffecient =	1.000	1.000	1.000	> or = 0.995			
	h //		Slope ≃	1.001	1.001	0.994	.95-1.05			
			f full scale)= om last cal≂		-0.12% -0.69%	-0.05% 0.40%	± 3% F.S. ± 10%			
			r effeciency		-0,09%	0.40%	0.96 to 1.04			
		As f	ound:				As left:			
١	Ox 5LOPE:	1.	424	_		NOx 5LOPE:	1.421			
	NOx OFFS:		1.8	-		NOx OFFS:	2.0			
	NO SLOPE: NO OFFS:		419 1.1	-		NO SLOPE: NO OFFS:	1.423			
5	SAMP FLW:		179	-		SAMP FLW:	1.2 477			
	OZONE FL:		74	-		OZONE FL:	73			
	PMT:		7.7	-		PMT:	15.3			
N	ORM PMT:		9.S 6.8	-		NORM PMT:	1.9			
	AZERO; HVPS:		37	•		AZERO; HVPS;	17.2 637			
RO	CELL TEMP:	S	0.0	•		RCELL TEMP:	50,0			
	BOX TEMP:		0.2			BOX TEMP:	31,1			
ſ	MT TEMP:		0.0			PMT TEMP:	6,9			
M	IZS TEMP: OLY TEMP:		14.6	-		IZS TEMP: MOLY TEMP:	40.2 315.2			
IVI	RCEL:		5.3	• -		RCEL:	5,3			
	SAMP:		7.0	•		SAMP:	27.4			
	l Span NO:		9			Internal Span NO:	8,9			
		33	31.4			Internal Span NO2:	330.2			
internal			40	•		Internal Chan MO				
internal	Span NO2: Span NOx:	3	140	•		Internal Span NOx:	338.9			

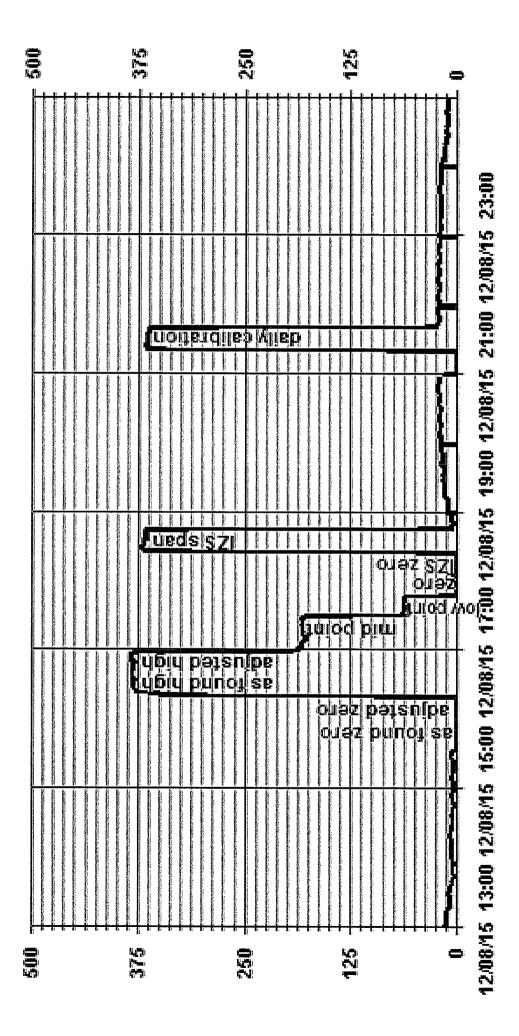


Of Winute Averages









- LICA35 03_ PPB



Maxxam F	R & P 140	5F TEOM	1 PM 2.5	Analyzer (	Calibration	า	
Date:	Decembe	er 9, 2015		Perfor	med By/Reviewer:	Alex Yakupov	Trina Whitsi
Company:	LIC		<del>_</del>		Start Time (mst):		:32
Station Name/Location:	Elk F	Point	<del></del>		End Time (mst):	14	:17
Previous Audit Date:	Novembe	r 23, 2015		Ca	libration Purpose:	Bi-mor	thly #1
Parameter:	PM	2.5	<u> </u>	W	eather Conditions:	Fe	og
400A Information and Status:							
Serial Number:	1405A20	7691003	As Found I	Filter Loading %:	30.0	2	
Ko Factor:	156	***		ilter Loading %:	30.4		
Ambient Temperature °C:		.4		As Found Noise:	0.00		
Ambient Pressure atm:		011		As Left Noise:	0,00		
Main Flow Reading lpm:		00		Pump Vacuum:	0,33		
Aux Flow Reading Ipm:		.68	<del>_</del>	Warnings:	Non		
eference Standards:				***************************************			
		w:	1	sure:	Tempera		
Make:		yer	_	her	Fishe		
Model:		lark III		.291	FB 12		
Serial Number:	n,			68457	130168		
Calibration Date:	n,	/a	18-10	lar-15	18-Ma	r-15	
s tourid leak check,		Base	Zero	Reference	Zero		
PM 2.5 Flow	actual	0.01	0.53	0.01	0.53		
	limit	0.15	$\sim$	0.15	$>\!<$		
Bypass Flow	actual	0.00	-0.72	0.00	-0,72		
-,,	limit	0.60		0.60			
s left leak check (same as above if as	found passes):						
		Base	Zero	Reference	Zero		
PM 2.5 Flow	actual	0.01	0.53	0.01	0.53		
	limit	0.15		0.15	$\geq \leq$		
Bypass Flow	actual	0.00	-0.72	0.00	-0.72		
	limit	0,60	$\geq \leq$	0.60	$\geq \leq$		
s found temperature and pressure:	( = =0=						
tolerance	•		4.00		+/- 0.01 atm		
1405F temperature °C:	-0.4 -0.2			F pressure atm:	0.911		
reference temperature °C: difference °C:	0.2		rere	erence pressure: difference :	0.000		
s left temperature and pressure (sar		ound adequate):		uniterence :	0,000		
tolerance	_			tolerance -	+/- 0.01 atm		
1405F temperature °C:	-0.2		1409	F pressure atm:	0.911		
reference temperature °C:	-0.2		refe	erence pressure:	0.911		
difference °C:	0.0			difference :	0.000		
s found flows:							
main flow tolerance 3.00 lpm +	7- <b>0.20 lpm</b> 3.00				k flow tolerance 16.67 otal/aux flow lpm: _	16.68 16.68	lpm/+/- 7%
1405F main flow lpm: reference main flow lpm:	2.91				otal/aux flow lpm: _	16.10	-
difference lpm:	-0.09			10101011001	difference lpm:	-0.58	
s left flows (same as above if as four	nd adequate):				•		,
main flow tolerance 3.00 lpm +	•				k flow tolerance 16.67		lpm/+/- 7%
1405F main flow lpm:	3.00				otal/aux flow lpm:	16.68	
reference main flow lpm: difference lpm:	0.04			reterence t	otal/aux flow lpm: _ difference lpm:	16.40 -0.28	
	0.04	·			unresence ipm:	-0,20	
。Audit: Last K。 audit date:	16-Jul-15						
1405F K _o factor:	15635						
Measured K _o factor:	15757.7000						
% difference:	0.79						

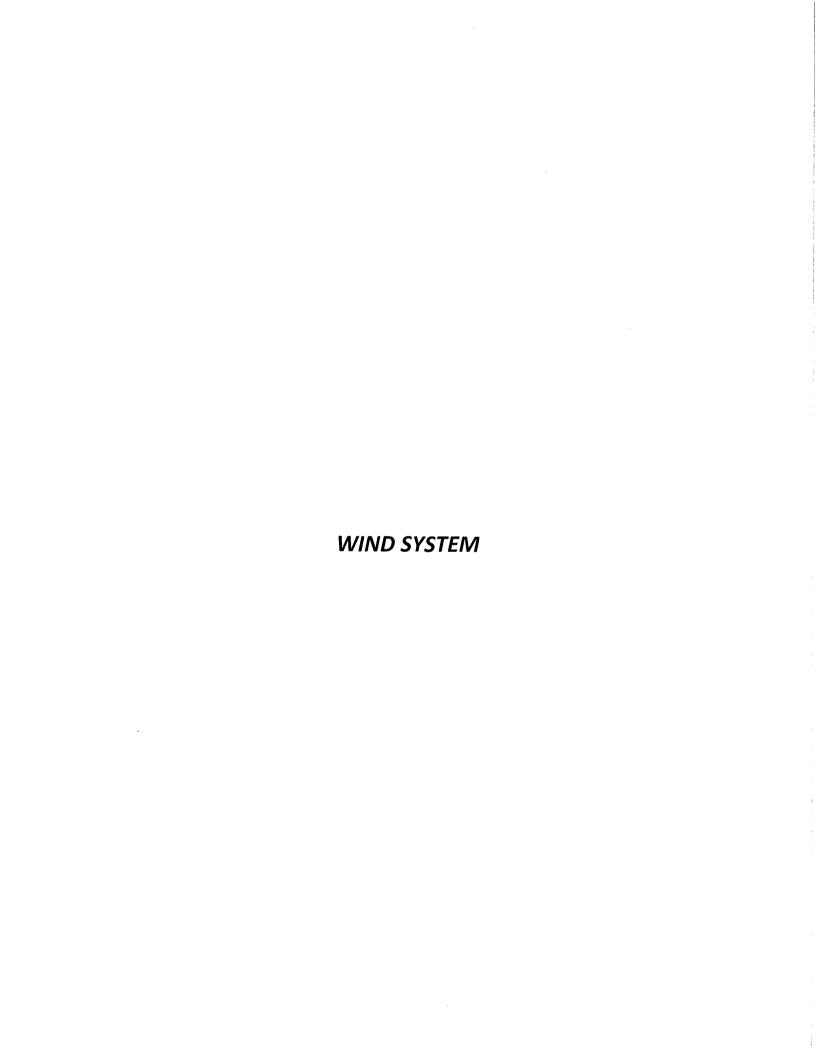
Comments:

47 mm FDMS filter changed.

% difference:

0.79

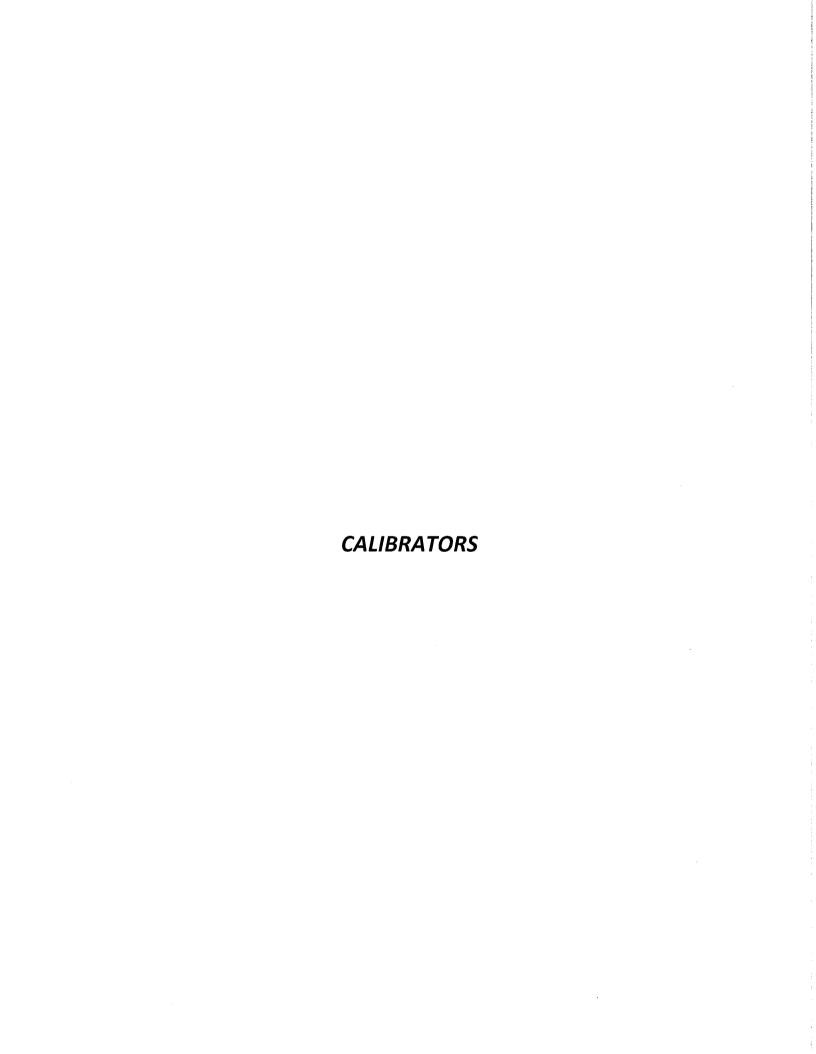
Date:	December	24, 2015		Doute	rmed By/Reviewer:	Alex Yakupov Trina Whitsit
Company:	LIC		<del>-</del>	Репо	Start Time (mst):	11:23
Station Name/Location:	Elk P				End Time (mst):	12:03
Previous Audit Date:	Decembe	r 9, 2015	<del></del>	С	alibration Purpose:	Bi-monthly #2
Parameter:	PM	2.5	<del>_</del>		/eather Conditions:	Mainly cloudy with snow
400A Information and Status:						
Serial Number:	1405A20		<del>_</del>	ilter Loading %:	35.3	
Ko Factor:	156 -18.			ilter Loading %:	35.9	
Ambient Temperature °C: Ambient Pressure atm:	0.9		- '	As Found Noise: _ As Left Noise:	0.00	
Main Flow Reading Ipm:	3.0		<del></del>	Pump Vacuum:	0.3	
Aux Flow Reading ipm:	13.		_	Warnings:	Nor	
Reference Standards:						
	Flo	w:	Pres	sure:	Temper	ature:
Make:	Dwy		Fisl	her	Fish	er
Model:	475 M		FB1		FB 12	· · · · · · · · · · · · · · · · · · ·
Serial Number:	n/		13016		13016	
Calibration Date:	n/	a	18-M	ar-15	18-Ma	r-15
As found leak check:	Г	Page	7-4-	Deference	7	
PM 2.5 Flow	actual	0,01	<b>Zero</b> 0.54	Reference 0.01	<b>Zero</b> 0.54	
PIVI 2.3 FIOW	limit	0,15	5.57	0.15	0.54	
Bypass Flow	actual	0.00	-0.72	0.00	-0.72	
-/	limit	0.60	><	0.60		
As left leak check (same as above if a	s found passes):					
		Base	Zero	Reference	Zero	
PM 2.5 Flow	actual	0,01	0.54	0.01	0.54	
	limit	0,15		0.15	$\geq \leq$	
Bypass Flow	actual limit	0.00	-0.72	0.00	-0.72	
	minc	0,60		0.60		
As found temperature and pressure: tolerance	+/- 2.0°C			tolerance	+/- 0.01 atm	
1405F temperature °C:	-18.6		1405	F pressure atm:	0.916	
reference temperature °C:	-20.1			rence pressure:	0.917	
difference °C:	-1,5			difference :	-0.001	
As left temperature and pressure (sar		ound adequate):				
tolerance					+/- 0.01 atm	
1405F temperature °C: reference temperature °C:	-20.1 -20. <b>1</b>			F pressure atm: _	0.917	
difference °C:	0.0		rere	rence pressure: _ difference :	0.000	
As found flows:			***************************************	uniterente i	0,000	
main flow tolerance 3.00 lpm +				·		7/13.67 lpm +/- 1.00 lpm/+/- 7%
1405F main flow lpm: reference main flow lpm:	3.00 2.96				total/aux flow lpm: _ total/aux flow lpm:	16.68
difference lpm:	-0.04			reference	difference lpm:	15.89 -0.79
As left flows (same as above if as four						
main flow tolerance 3.00 lpm +	•					7/13.67 lpm +/- 1.00 lpm/+/- 7%
1405F main flow lpm: reference main flow lpm:	3.00 2.96				total/aux flow lpm: _ total/aux flow lpm: _	16.68 15.89
difference lpm:	-0.04			reference	difference lpm:	-0.79
。Audit:	-				•	
Last K _o audi <b>t</b> date:	16-Jul-15					
1405F K _o factor:	15635					
Measured K _o factor:	15757.7000					
% difference:	0.79					





4/					
		Station	n Information		
Company:	Maxxam/LICA		Performed	d By: △	ngie Noonan
Location:	Edmonton/Elk Po	int	Reason:	Pi	re-Installation
Audit Date:	23-Nov-15		Start Time	(mst):	14:45
Previous Audit Date:	n/a		End Time	(mst):	15:30
		Wi	nd Speed		
Sensor make:	R. M. Young		Sensor hei	ight:	n/a
Sensor model:	5103VK		Serial Nun		110980
Callbrator:	Young 18802		Variable s	peed motor:	CA 03309
Voltage range:	0-1		Output sig	nal range:	200
,					
		Wind Sp	eed Audit Data		
RPM	Wind Spe	ed Actual	indicated WS - CW	Indicated WS-CCW	Correction Factor
0		.0	0.04747	0.04747	1
1000	17	7.6	17.67	17.65	1.00
2000	35	.28	35.3	35.3	1.00
3000	52	.92	52.93	52.91	1.00
4000	70	.56	70.53	70.54	1.00
5000	88	3.2	88,18	88.18	1.00
6000	105	.84	105.8	105.8	1.00
7000	123	3.48	123.4	123.4	1.00
8000	14:	L.12	141.1	141.1	1.00
9000	158	3.76	158.7	158.7	1.00
10000	17	6.4	176.3	176.3	1.00
			Av	erage Correction Factor:	1.00
		Win	d Direction		
Sensor make:	R. M. Young		Sensor hei	ght:	n/a
Sensor model:	5103VK		Serial Num	nber:	110980
Calibrator:	Young 18802		Variable s	peed motor:	CA 03309
/oltage range:	0-1		Output sig	nal range:	200
		Wind Dire	ction Audit Data		
Wind I	Direction		Indicated	Correction	Factor
	0		0.2	NA	
	45		44.9	1.00	0
	90		89.4	1.0	1
	.35		134.3	1.03	1
	180		179.5	1.00	)
	225		224.3	1.00	
	270		269.6	1.00	)
	315		315.1	1.00	)
	360		354.8	1.0:	1
	was .				
* ***********					
	W., 1				
······································					
			Ave	erage Correction Factor:	1.00
Remarks:	Pre-installation calibration				

Audit Performed by: Angie Noonan





#### Calibrator Performance Audit OZONE

File No. 2015-030A

Company: Ma	xxam		Operator	: Limi	n Li	
Calibrato	10		Flow N	Ieasurement 1	Dovino	
Make/Model		2010D		e/Model	Device: N/	/Δ
Serial Number	P-1	00613	•	Number	N/	
Oven Temperature		V/A	<b>-</b>	ature (°C)	<u></u> N/	
Last Verification Date		N/A		ric Pressure	N/	
Flow Measure						
riow Measure	Hents					
Pt. No. 1 5000	Pt. No. 2	5000	Pt. No. 3	5000		
Calibrator Flow	Calc	ulated	Ind	icated	% Dif	ference
(sccm)		ation (ppm)	1	ation (ppm)		% Diff. Limit
5013		000	F-71	001	VB TIUGIC OUS	70 Dill. Liniu
5013		400	0.407		1%	± 100/
5013		200 ·		204	1%	± 10% ± 10%
5014		100	<u> </u>	101	0%	± 10%
	0.			ent Difference		± 10%
O ₃ Correlation= m (Slope)= b (Intercept % of FS)=	1.0000 1.0163 0.0800	EAR REGRE y=/ <u>LIMITS</u> ≥ 0.995 0.90-1.10 ± 3% F.S.		ioulated concentral	tion, y=indicated	concentration)
AENV	Standards			Ozone Ar	nalyzer	
<b>Audit Calibrator</b>			Make	/Model	Teco	49i
Make/Model		49i PS		⁄IU Number	AMU	1843
Serial/AMU Number	· · · · · · · · · · · · · · · · · · ·	1 1808		oration Date	May 21	
Ozone Standard	Prli	mary	Full Sc	ale (ppm)	0.	5
COMMENTS:						
Auditor: Operator Signature:	al Calanda	Olark Ambor		May 21 MoIntyre Cent		



#### Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2014-260A

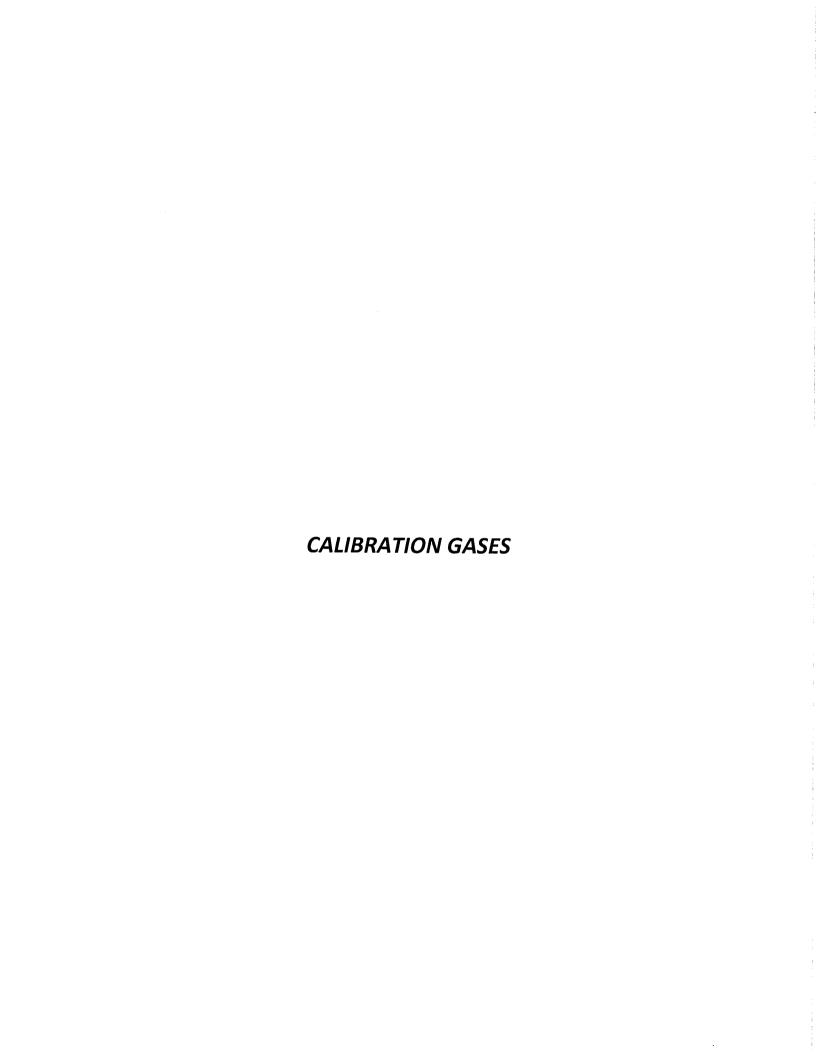
				dest				
Company	Max	xam	•		Operator:	Limi	n Li	_
	Calibrator	1			Flow N	Ieasurement l	Devices	
Make	:/Model		ics 6100			/Model		V/A
1	Number .		60	`		Number		V/A
	ication Date			•		ature (°C)		V/A
		LL4			, ,	ic Pressure		√/A
NO/NOX C		48.5		•	Baromon	10 1 1035010	, in the second	W. C.
Dil	ution Flow (s	ccm)						
1	5000		5000	Pt. #3	5000			
	as Flow (scc		1-1/1-1	,		-		
	80	•	40	Pt. #3	20	Gas flows not av	vailable from o	display.
Calibrator I	Flow (seem)	Calculated	Conc.(ppm)	Indi	cated Conc.(	opm)	% Difference	e vs Audit Gas
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4980	0.0	0.000	0.000	0.000	0.000	0.000		± 10%
4993	0.0	0.799			-0.001	0.839	5%	5%
	<del> </del>		0.799	0.840		0.639	5%	5%
4994	0.0	0.399	0.399	0.420	-0.001		5%	5%
4991	0.0	0.200	0,200	0.211	0.000	0.211 ent Difference	5%	5%
				Absolute A	verage refee	at Director	370	370
LINEAR	REGRESSIC	ON ANALY	SIS	у-	-mx+b (where x	calculated concent	ration, y=indica	ted concentration)
	NO		LIN	<u>IITS</u>		<u>NOx</u>		
(	Correlation=	1,0000		.990		Correlation=	1.0000	
	m (Slope)=	1.0511		-1.10		m (Slope)=	1.0496	
b (Interc	ept % of FS)=	0.0400		6 F.S.	b (Inter	cept % of FS)=	0.0400	
<u> </u>						,		
Flow	O ₃ Conc	NO D	ecrease	NO	NO2	NOX	% Diff. V	s Audit gas
4993	0,000		000	0.823	-0.001	0.822	NO ₂	% Diff. Limi
4993	0.480		530	0.293	0.530	0.823	0	± 10%
4993	0.240		269	0.554	0.269	0.823	0	± 10%
4993	0.090		96	0.727	0,097	0.824	0	± 10%
						ent Difference	0	± 10%
LINEAR	REGRESSIO	ON ANALY	SIS			-calculated concent	ration, y=indioa	
	$NO_2$		T.TA	<u>AITS</u>				
	Correlation≔	1.0000		.995				
· ·	m (Slope)=	1.0006		-1.10				-
h (Interc	ept % of FS)=	-0.0132		6 F.S.				
D (IIICICI		-0,0102		U A 1651				
	AENV S	standards	i oca	12111		NO _x An	ıalvzer	
	Audit Ca					Make/Model	-	co 42i
	Make/Model		146i		Serial.	AMU Number		
Serial/A	AMU Number			-		alibration Date		er 15, 2014
		·	S ATTORNEY SHE THE THE	•		ull Scale (ppm)		1.0
C	OMMENTS:							
	Auditor:		Clark		Date	December	r 17, 2014	
O !	or Signature;			•				
Operate	or Signature;	John Stranger	Level		Location	: Mointyre Cente	ar Eamonton	



## Calibrator Performance Audit Sulphur Dioxide (by Cylinder Dilution)

File No. 2014-258A

Company: Max	xam		Operator:	Limi	n Li	
Calibrator	<b>1</b>		Flow Meas	surement l	Device:	
Make/Model	AF	700 וי	Make/Mo	odel	N	/A
Serial Number	{	330	Serial Nu	nber	N.	/A
Last Verification Date	Oct	: 2013	Temperatur	e (°C)	N.	/A
SO ₂ Cylinder Conc.	5	0.3	Barometric F	ressure	N/	/A
SO ₂ Cylinder S/N	LL4	12475				
Flow Measuren		00.0	D/ N- 2	40.0	, , , , , , , , , , , , , , , , , , ,	- Section
Pt. No. 1 79.5	Pt. No. 2	39.8	Pt. No. 3	19.9		
Calibrator Flow	Calc	culated	Indicate	ed	% Dif	ference
(sccm)	Concentr	ation (ppm)	Concentration	n (ppm)	vs Audit Gas	
Zero Air		000	0.000			
4918	0.800		0.798		0%	± 10%
4960	0.	400	0.398		-1%	± 10%
4977	0.	200	0.200		0%	± 10%
		Absolute A	Average Percent	Difference	0%	± 10%
	LIN	EAR REGRES	SSION ANALYS	SIS	ation vaindleated	I concentration)
$\underline{SO}_2$		LIMITS	inx ib   whole x=calcul	atou comocinii	alon, y-maioaloa	r ooneentration)
Correlation=	1.0000	≥ 0.995				
m (Slope)=	0.9971	0.90-1.10				
b (Intercept % of FS)=	0.0000	$\pm 3\%$ F.S.				
AFNV	Standards			SO ₂ An	alswan	
Audit Calibrator	Junium us		Make/Mo		Teco	/43C
Make/Model	R&R N	/IFC 201	Serial/AMU		AMU	andre,
Serial/AMU Number		1690	Last Calibrati			15/14
_			Full Scale (			.0
		slow to move th	rough the calibrate th quickly.	r. Check fo	or contamnatio	on inside
Auditor:	Al	Clark	Date:	December	16, 2014	
Operator Signature:			Location: Mo			



Form No. Version No. F-GAS-002 1.1



company:	Max	xam	Operator's Name: Limin Li				
Cylinder#:	BLM002073	Concentration PPM:	49.5	Tolerance(%) 2	Certified By: Air Liquide		
Reference	Calibrator a	nd Gas:		Flow Measurement	Device:		
Make/Model:		R&R MFC 201	_	Make/Model:	Bios DC2		
Serial Number:		AMU 1690	•	i	AMU 1659		
Last Verification Date:			•		22.5 C		
		SO2 Conc.	- 98,57	1	690 mmhg		
Cylin	-	CAL016720	-		ooo mining		
Reference A	lake/Model: _	Teco 43C	Serial/A	AMU Number: 1623			
Instrument Settings:		Zero: 7.9	Span:	1.028 Range:	1.0		
ast Calibra	ntion:	Date: Mar 31/15	C.F.	1.000 Done By:	Al Clark		
Calibrator Flo	ows (seem) Gas	Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration		
5000	0.0	0,000	Dittion Tow	Tactor	Concentration		
4976	82.6	0.801	0.01660	60.242	48.3		
4993	41.0	0.396	0.00821	121.780	48.2		
4977	20.2	0,193		246.386	47.6		
			Avera	ge Cylinder Concentration:	48.0		
Previous S	Stated Concent	ration PPM: 49.5					
Per	rcent variance	from Stated: 3.0					
		nce. Use manufacturers stated		COMMENTS:			
	a Manufacturar	Tolerance. Use manufacturer:	s concentration X				
:=5% Outsid							
:=5% Outsid		turer Tolerance, <u>DO NOT US</u>	E this cylinder		· · · · · · · · · · · · · · · · · · ·		
<=5% Outsid		turer Tolerance, <u>DO NOT US</u> Al Clark	E this cylinder	Date; March	31, 2015		

Form No. Version No.

F-GAS-002 1.3



T111		am	Oher	Operator's Name: Limin Li			
Cylinder #: BLM001434		Concentration PPM:	10.32	Tolerance(%) 2	Certified By: Air Liquid		
Reference C	alibrator ar	ıd Gas:	· · · · · · · · · · · · · · · · · · ·	Flow Measurement	Device:		
Make/Model:		R&R MFC 201		Make/Model;	Bloe DC2		
_		AMU 1690		Serial Number:	AMU 1659		
Last Verification Date:				Temp,°C;	22,5 C		
-		H2S Cone,	20,43	l e	711 mmhg		
Cylind		CAL015106	A4-A6 Annual		, , , , , , , , , , , , , , , , , , , ,		
Reference A	_	A STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STA					
Make/Model:		Teco 45C		AMU Numbor: 1624	<del>-</del>		
Instrument S	ettings;		_	And and desired the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second sec	0.1		
Last Calibrat	ion;	Date:Dec 4/13	C.F.	1,000 Done By	Al Clark		
Calibrator Flows (scom)  Dilution Gas		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration		
5000	0.0	0,000					
5083	38.4	6080,0	0.00755	132,370	10,63		
6076	17.9	0,0359	0,00353	283,575	10,18		
6050	9.2	0.0177	0.00182	548.913 nge Cylinder Concentration	9,72 ; 10,18		
Pet Meets Man <=5% Outsid	cent variance ufucturer Tolor e Manufacturer	tration PPM; 10,32 from Stated: 1.4 ance, Use manufacturers state r Tolerance. Use manufacturer	d concentration X	_	, 10.10		
> 5% O	utsido Manufa	oturer Tolerance, <u>DO NOT US</u>	SIE this cylindor	1	16 à 18		
	Auditor:	Al Clark	_	Date: Decem	ber 4, 2013		

Form No. Version No. F-GAS-002

Alberta.

			gle Compone		File No. 2014-251CG2		
Company:	Max	cxam	Operator's Name: Limin Li				
Cylinder#:	LL36837	Concentration PPM:	10.0	Tolerance(%) 2	Certified By: Air Liquide		
Reference (	Calibrator a	and Gas:		Flow Measurement	Device:		
Make/Model: R&R MFC 201		_	Make/Model;	Bios DC2			
Serial Number: AMU 1690				AMU 1659			
Last Verification Date:			<b>-</b>		23.0 C		
-		H2S Conc.	- 20,43		702 mmhg		
Cylir		CAL015106	_				
	fake/Model:	Teco 45C		MU Number: 1624			
Instrument Settings:		Zero: 6.4	Span:	1.160 Range:	0.1		
Last Calibration:		Date:	C.F.	1.000 Done By:	Al Clark		
Calibrator Flows (seem)  Dilution Gas		Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration		
50.00	0.0	0,0000					
5099	38,5	0.0754	0.00755	132,442	10.0		
					,,,,,		
5092	18.0	0.0349	0,00353	282,889	9.9		
5092 5066	18.0 9.2	0.0349 0.0178	0,00182	550.652	9.9 9.8		
5066	9.2		0,00182		9.9 9.8		
5066 Previous 8	9.2	0.0178 tration PPM: 10.0	0,00182	550.652	9.9 9.8		
5066  Previous S	9.2 Stated Concen	0.0178  tration PPM: 10.0  from Stated: 1.1	0,00182 Averaş	550.652 ge Cylinder Concentration;	9.9 9.8		
5066  Previous S  Per  Meets Man	9.2 Stated Concen reent variance	tration PPM: 10.0 from Stated: 1.1 ance. Use manufacturers stated	0,00182 Averaged deconcentration	550.652	9.9 9.8		
Frevious S  Pe  Meets Man  <=5% Outside	9.2 Stated Concen reent variance nufacturer Toler de Manufacturer	tration PPM: 10.0 from Stated: 1.1 ance, Use manufacturers state	0,00182  Averaged deconcentration X  s concentration	550.652 ge Cylinder Concentration;	9.9 9.8		
Frevious S  Pe  Meets Man  <=5% Outside	9.2 Stated Concent reent variance tufacturer Toler de Manufacturer Dutside Manufac	tration PPM: 10.0 from Stated: 1.1 ance. Use manufacturers stated	0,00182  Averaged deconcentration X  s concentration	550.652 ge Cylinder Concentration;	9.9 9.8		
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Company:	Max	xxam		Operators na	me: Li	mìn Li		
					2 Certified By		quide	
Reference	Calibrator a	and Gas:			Flow Measure	ment Device:		
Make/Model Teco		Teco 1	146i		Make/Model	Bios I	Bios DC2	
·		AMU 1809		_	Serial Number	AMU	AMU 1659	
Last Verif	cation Date	March 31	, 2015		Temp.°C	22.5	22,5 C	
Gas	Туре	NO Conc.		48.79	B.P.			
Cylinder	r Number	CAL018024			~			
	/Model	Teco 4				ЛU Number:	1868	
•		Zero:			oan: 1.008			
Last Calibr	ation:	Date: _	Mar 31/15		C.F. 1.000	_ Done By:	Al Clark	
Calibrator Fl Dilution	ows (sccm) Gas	Indicated Cor	nc. (ppm) NOX	Gas Flow/ Dilution Flow	Concentration	Cylinder Co		
5000	0.0	0,000	0,000	Ditution Flow	Factor	NO	NOX	
4976	82.6	0.855	0.848	0.01660	60.242	51.5	51.1	
4993	41.0	0.427	0.421	0.00821	121.780	52.0	51.3	
4977	20.2	0.213	0.209	0.00406	246.386	52.5	51.5	
				Average Cyline	der Concentration	1: <b>52.0</b>	51.3	
			<u>NO</u>		<u>NOx</u>			
Previous	Stated Concer	ntration PPM:_	50,6		50.6			
Pe	ercent variance	from Stated:_	2.8		1.4	<del></del>		
_	_	olerances bas		only ed concentration	COMMENTS	S:		
<=5% Outsi	de Manufacture	r Tolerance. Usc	manufacture	ers concentration	X Contains 49,5 p	pm SO2 in cylinder		
> 5% (	Outside Manufa	cturer Tolerance	. <u>DO NOT I</u>	JSE this cylinder				
	Auditor:	Al Clar	rk	Da	ate: March	31, 2015		
	r Signature:/	4 7						



Proces Canada, Inc. 9501-34th Streat Editorian AB TEB ZX5 Tel: 780-449-0771 Fax 789-440-5302

03/27/2014

MAXXAM ANALYTICS INC 'NA' 9372 49TH ST EDMONTON, AB TBB 2L7

> Work Order No. 20248656 Customer Reference No.

Product Lov Batch No. Z582 4 085 02 Product Part No. NI ME600P2P-AQ

#### CERTIFICATE OF ANALYSIS Primary Standard

<u>Component</u> Methana Propane Nitrogen

Requested Concertration 600.0ppm 200.0ppm Balance

Certified Concentration 601.4ppm 202ppm Balance

Analytical Principle

Analytical <u>Accuracy</u> ±1% rol ±1% rel

Analytical Instruments:

Mettler-Toledo Analytical Balance-ID2sx/USA---

Hewlott-Peckard (Agilent)-6890-GC-FID

Cylinder Style. Gylinder Pressure @70F:

2200 psig 82.0 ft3 Cylinder Volume: **CGA-350** 

Valve Outlet Connection LL33874 Cylinder No(s).

Filling Method: Date of Fill.

Expiration Date:

Gravimetric 03/28/2014 03/26/2017

Analys).

Todd Hrynlw

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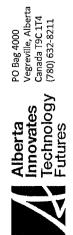
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# APPENDIX IV ANALYTICAL RESULTS





**TEST REPORT** 

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CLIENT S	CLIENT SAMPLE ID CANISTER ID	R ID Matrix	ırix	DATE SAMPLED	TPLED		
LICA/VOC/EL	LICA/VOC/ELK/Dec 2, 2015 1532	2 Ambient Air	nt Air	02-Dec-15	00:00		
DESCRIPTION:	Elk Point Airport						
REPORT NUMBER:	<b>R:</b> 15120089	REPORT CREATED:	08-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120089-003	1,1,1-Trichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1,1,2,2-Tetrachloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1,1,2-Trichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1,1-Dichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1,1-Dichloroethylene		K, T, U	< 0.04 ppbv	0.04	AC-058	10-Dec-15
15120089-003	1,2,3-Trimethylbenzene		K, T, U	< 0.05 ppbv	0.05	AC-058	10-Dec-15
15120089-003	1,2,4-Trichlorobenzene		K, T, U	< 0.8 ppbv	0.8	AC-058	10-Dec-15
15120089-003	1,2,4-Trimethylbenzene		_	0.05 ppbv	0.03	AC-058	10-Dec-15
15120089-003	1,2-Dibromoethane		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1,2-Dichlorobenzene		K, T, U	< 0.03 ppbv	0.03	AC-058	10-Dec-15
15120089-003	1,2-Dichloroethane		_	0.02 ppbv	0.01	AC-058	10-Dec-15
15120089-003	1,2-Dichloropropane		K, T, U	< 0.01 ppbv	0.01	AC-058	10-Dec-15
15120089-003	1,3,5-Trimethylbenzene		_	0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1,3-Butadiene		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1,3-Dichlorobenzene		K, T, U	< 0.3 ppbv	0.3	AC-058	10-Dec-15
15120089-003	1,4-Dichlorobenzene		K, T, U	< 0.4 ppbv	0.4	AC-058	10-Dec-15
15120089-003	1,4-Dioxane		K, T, U	< 0.4 ppbv	0.4	AC-058	10-Dec-15
15120089-003	1-Butene		_	0.17 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1-Hexene		_	0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-003	1-Pentene		K, T, U	< 0.01 ppbv	0.01	AC-058	10-Dec-15
15120089-003	2,2,4-Trimethylpentane		K, T, U	< 0.01 ppbv	0.01	AC-058	10-Dec-15
15120089-003	2,2-Dimethylbutane		-	0.11 ppbv	0.01	AC-058	10-Dec-15
15120089-003	2,3,4-Trimethylpentane		_	0.04 ppbv	0.01	AC-058	10-Dec-15
15120089-003	2,3-Dimethylbutane			0.32 ppbv	0.02	AC-058	10-Dec-15
15120089-003	2,3-Dimethylpentane			0.17 ppbv	0.02	AC-058	10-Dec-15
Report certified by:	Graham Knox, Team Lead	On behalf of: PJ	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	ysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Date: Friday, January 08, 2016

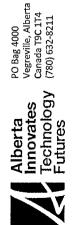


TEST REPORT

**ENVIRONMENTAL ANALYTICAL SERVICES** 

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**Analysis Date** 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 0-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: AC-058 AC-058 Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.4 0.3 0.4 0.01 0.01 0.01 0.02 0.02 0.01 0.01 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.01 0.04 0.02 0.02 0.02 Inquiries: (780) 632 8455 00:00 DATE SAMPLED 02-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv vddd Result Units ppbv ppbv ppbv ppbv vddd ppbv ppbv ppbv < 0.4 ppbv < 0.3 ppbv < 0.02 ppbv 0.10 ppbv < 0.02 ppbv : 0.02 ppbv 0.60 ppbv ppbv < 0.04 ppbv ppbv .0.02 ppbv < 0.4 ppbv : 0.02 ppbv 0.43 ppbv 0.13 0.10 0.61 0.06 0.35 0.24 0.22 0.35 0.01 0.44 0.02 < 0.01 0.05 08-Jan-16 Qualifier K, T, U K, T, U K, 1, ∪ Κ, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U Κ, Τ, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** 1532 **Bromodichloromethane** cis-1,3-Dichloropropene cis-1,2-Dichloroethene Graham Knox, Team Lead 2,4-Dimethylpentane Carbon tetrachloride Elk Point Airport 2-Methylheptane 2-Methylpentane 3-Methylheptane 3-Methylpentane 2-Methylhexane 3-Methylhexane Carbon disulfide **Bromomethane** Chloromethane Benzyl chloride Chlorobenzene 15120089 Chloroethane cis-2-Pentene LICA/VOC/ELK/Dec 2, 2015 cis-2-Butene Cyclohexane Chloroform Bromoform Parameter **CLIENT SAMPLE ID** Benzene Acetone **Acrolein** Date: Friday, January 08, 2016 REPORT NUMBER: Report certified by: DESCRIPTION: 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 Lab ID



**TEST REPORT** 

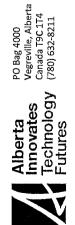
Page 17 of 30

**Analysis Date** 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.02 0.02 0.50 0.03 0.01 0.4 0.03 0.04 0.08 0.50 0.4 0.01 0.01 0.02 0.01 0.02 0.01 0.07 0.03 0.01 0.3 0.01 0.02 90:00 DATE SAMPLED 02-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units vddd vddd ppbv ppbv ppbv ppbv < 0.04 ppbv vdqq yddd 0.15 ppbv : 0.01 ppbv < 0.02 ppbv 0.60 ppbv : 0.50 ppbv 2.54 ppbv < 0.01 ppbv : 0.01 ppbv 0.18 ppbv < 0.08 ppbv < 0.50 ppbv ppbv 0.07 ppbv 0.7 ppbv : 0.07 ppbv 0.66 ppbv < 0.4 0.32 2.09 < 0.4 < 0.4 0.03 0.07 0.37 08-Jan-16 K, T, U K, T, U K, T, U K, T, U Qualifier K, T, U K, T, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U Κ, Τ, U Κ, T, U ___ **Ambient Air** Matrix REPORT CREATED: **CANISTER ID** 1532 lexachloro-1,3-butadiene **Dibromochloromethane** Methyl isobutyl ketone Methyl tert butyl ether Graham Knox, Team Lead Methyl methacrylate Methyl butyl ketone Methylcyclopentane Methyl ethyl ketone Elk Point Airport Methylcyclohexane n-Diethylbenzene sopropylbenzene sopropyl alcohol n-Ethyltoluene 15120089 Cyclopentane Ethylbenzene Ethyl acetate LICA/VOC/ELK/Dec 2, 2015 n,p-Xylene sopentane Parameter -reon-113 -reon-114 sobutane Freon-11 Freon-12 **CLIENT SAMPLE ID** soprene Ethanol REPORT NUMBER: Report certified by: **DESCRIPTION:** 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Friday, January 08, 2016



**TEST REPORT** 

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Analysis Date 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.5 0.03 90.0 0.4 0.01 0.01 0.02 0.1 0.05 0.5 0.01 0.01 0.01 0.04 0.07 0.04 0.04 0.4 0.01 0.01 0.04 0.01 0.02 0.04 00:00 DATE SAMPLED 02-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv ppbv ppbv ppbv vddd ppbv Result Units ppbv ppbv ppbv ppbv ppbv ppbv < 0.3 ppbv 4.31 ppbv < 0.06 ppbv < 0.1 ppbv < 0.05 ppbv < 0.5 ppbv 1.5 ppbv 0.02 ppbv ppbv ppbv : 0.02 ppbv < 0.04 ppbv 0.04 99.0 0.13 0.07 < 0.04 < 0.04 < 0.4 0.41 < 0.01 < 0.04 : 0.01 0.27 < 0.07 < 0.04 38-Jan-16 Qualifier K, T, U Κ, Τ, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** rans-1,3-Dichloropropylene 1532 trans-1,2-Dichloroethylene Graham Knox, Team Lead Elk Point Airport etrachloroethylene Methylene chloride o-Diethylbenzene **Trichloroethylene** 1-Propylbenzene etrahydrofuran trans-2-Pentene rans-2-Butene o-Ethyltoluene o-Ethyltoluene 15120089 LICA/VOC/ELK/Dec 2, 2015 Vaphthalene 1-Dodecane 1-Undecane 1-Pentane 1-Heptane Parameter 1-Decane 1-Hexane n-Nonane n-Octane n-Butane o-Xylene **CLIENT SAMPLE ID** oluene_ styrene REPORT NUMBER: Report certified by: **DESCRIPTION:** 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 15120089-003 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Friday, January 08, 2016



PO Bag 4000 Vegreville, Alberta Canada T9C 114 (780) 632-8211

# **ENVIRONMENTAL ANALYTICAL SERVICES**

**TEST REPORT** 

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E-mail: EAS.Results@albertainnovates.ca

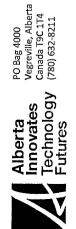
Inquiries: (780) 632 8455

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Graham Knox, Team Lead

Report certified by:

Date: Friday, January 08, 2016



TEST REPORT

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**Analysis Date** 14-Dec-15 14-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 14-Dec-15 [4-Dec-15] .4-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 [4-Dec-15] .4-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 14-Dec-15 [4-Dec-15 14-Dec-15 [4-Dec-15] 14-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.02 0.02 0.02 0.04 0.05 0.03 0.02 0.03 0.3 0.4 0.8 0.01 0.01 0.02 0.02 0.02 0.02 0.4 0.01 0.01 0.01 0.01 0.02 0.02 0:00 DATE SAMPLED 08-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units vddd vddd ppbv vdqq ppbv ppbv ppbv ppbv ppbv ppbv ppbv vdqq ppbv ppbv < 0.02 ppbv < 0.3 ppbv < 0.4 ppbv ppbv ppbv 0.02 ppbv < 0.4 ppbv .0.01 ppbv vddd vddd ppbv < 0.02 < 0.8 : 0.02 : 0.02 < 0.02 < 0.04 < 0.05 0.03 < 0.02 < 0.03 < 0.01 c 0.02 : 0.01 < 0.02 0.08 0.04 0.13 0.03 0.07 15-Jan-16 K, T, U K, T, U K, T, U Qualifier K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U _ Ambient Air Matrix REPORT CREATED: CANISTER ID \$5593 1,1,2,2-Tetrachloroethane .,2,3-Trimethylbenzene L, 2, 4-Trimethylbenzene ,3,5-Trimethylbenzene 1,2,4-Trichlorobenzene 2,2,4-Trimethylpentane 2,3,4-Trimethylpentane 1,1,1-Trichloroethane I,1,2-Trichloroethane Graham Knox, Team Lead ,1-Dichloroethylene ,2-Dichlorobenzene .,2-Dichloropropane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 2,3-Dimethylpentane Elk Point Airport 2,2-Dimethylbutane ,1-Dichloroethane 1,2-Dibromoethane 2,3-Dimethylbutane 1,2-Dichloroethane 15120124 1,3-Butadiene LICA/VOC/ELK/Dec 8, 2015 1,4-Dioxane 1-Pentene Parameter I-Hexene 1-Butene **CLIENT SAMPLE ID** REPORT NUMBER: Report certified by: **DESCRIPTION:** 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 Lab ID

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Inquiries: (780) 632 8455

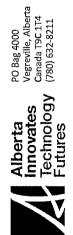
January-15-16



TEST REPORT

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**Analysis Date** 14-Dec-15 14-Dec-15 [4-Dec-15] 14-Dec-15 14-Dec-15 [4-Dec-15] [4-Dec-15] 14-Dec-15 4-Dec-15 14-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 .4-Dec-15 14-Dec-15 14-Dec-15 [4-Dec-15] 4-Dec-15 14-Dec-15 [4-Dec-15] 14-Dec-15 14-Dec-15 14-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: AC-058 AC-058 AC-058 Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.4 0.01 0.01 0.01 0.02 0.02 0.01 0.3 0.01 0.4 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.01 0.04 0.02 0.02 0.02 Inquiries: (780) 632 8455 0:0 DATE SAMPLED 08-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv Result Units ppbv ppbv ppbv ppbv ppbv 0.05 ppbv 3.5 ppbv < 0.3 ppbv 0.20 ppbv : 0.02 ppbv : 0.02 ppbv ppbv ppbv < 0.02 ppbv ppbv ppbv < 0.01 ppbv ppbv < 0.4 ppbv 0.56 ppbv : 0.04 ppbv c 0.02 ppbv 0.02 ppbv 0.04 0.09 0.03 0.11 0.13 < 0.01 0.05 0.11 < 0.02 0.02 0.20 15-Jan-16 Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U **Ambient Air** Matrix REPORT CREATED: **CANISTER ID S**5593 **Bromodichloromethane** cis-1,3-Dichloropropene cis-1,2-Dichloroethene Graham Knox, Team Lead 2,4-Dimethylpentane Carbon tetrachloride Elk Point Airport 2-Methylheptane 2-Methylpentane 3-Methylpentane 3-Methylheptane 2-Methylhexane 3-Methylhexane Carbon disulfide **Bromomethane** Chloromethane Benzyl chloride Chlorobenzene 15120124 LICA/VOC/ELK/Dec 8, 2015 Chloroethane cis-2-Pentene cis-2-Butene Cyclohexane Bromoform Chloroform Parameter **CLIENT SAMPLE ID 3enzene** Acetone Acrolein REPORT NUMBER: January-15-16 Report certified by: DESCRIPTION: 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 15120124-001 Lab ID Date:



**TEST REPORT** 

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CLIENT S,	CLIENT SAMPLE ID	CANISTER ID	Matrix	rix	DATE SAMPLED	(ED		
LICA/VOC/EL	LICA/VOC/ELK/Dec 8, 2015	S5593	Ambient Air	nt Air	08-Dec-15	0:00		
DESCRIPTION:	Elk Point Airport	port						
REPORT NUMBER:	R: 15120124	REP	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
15120124-001	Cyclopentane			-	0.05 ppbv	0.01	AC-058	14-Dec-15
15120124-001	Dibromochloromethane	nethane		K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-001	Ethanol				1.8 ppbv	0.3	AC-058	14-Dec-15
15120124-001	Ethyl acetate			K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-001	Ethylbenzene			_	0.04 ppbv	0.01	AC-058	14-Dec-15
15120124-001	Freon-11				0.41 ppbv	0.02	AC-058	14-Dec-15
15120124-001	Freon-113			_	0.07 ppbv	0.01	AC-058	14-Dec-15
15120124-001	Freon-114	·		K, T, U	< 0.02 ppbv	0.02	AC-058	14-Dec-15
15120124-001	Freon-12				0.56 ppbv	0.02	AC-058	14-Dec-15
15120124-001	Hexachloro-1,3-butadiene	butadiene		K, T, U	< 0.50 ppbv	0.50	AC-058	14-Dec-15
15120124-001	Isobutane				0.93 ppbv	0.02	AC-058	14-Dec-15
15120124-001	Isopentane				0.80 ppbv	0.03	AC-058	14-Dec-15
15120124-001	Isoprene			_	0.23 ppbv	0.01	AC-058	14-Dec-15
15120124-001	Isopropyl alcohol	_		K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-001	Isopropylbenzene	ē		K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-001	m,p-Xylene				0.08 ppbv	0.03	AC-058	14-Dec-15
15120124-001	m-Diethylbenzene	э		K, T, U	< 0.04 ppbv	0.04	AC-058	14-Dec-15
15120124-001	m-Ethyltoluene			K, T, U	< 0.08 ppbv	0.08	AC-058	14-Dec-15
15120124-001	Methyl butyl ketone	one		K, T, U	< 0.50 ppbv	0.50	AC-058	14-Dec-15
15120124-001	Methyl ethyl ketone	one		K, T, U	< 0.3 ppbv	0.3	AC-058	14-Dec-15
15120124-001	Methyl isobutyl ketone	ketone		K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-001	Methyl methacrylate	ylate		K, T, U	< 0.07 ppbv	0.07	AC-058	14-Dec-15
15120124-001	Methyl tert butyl ether	l ether		K, T, U	< 0.03 ppbv	0.03	AC-058	14-Dec-15
15120124-001	Methylcyclohexane	ıne		_	0.29 vddq 0.29	0.01	AC-058	14-Dec-15
15120124-001	Methylcyclopentane	ane		_	0.15 ppbv	0.02	AC-058	14-Dec-15
Report certified by:	Graham Knox, Team Lead	ım Lead	On behalf of: PJ F	retorius, Manager, Anal	of: PJ Pretorius, Manager, Analysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



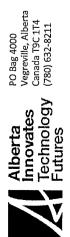
**TEST REPORT** 

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CLIENTS	CLIENT SAMPLE ID CANIS	CANISTER ID Matrix	trix	DATE SAMPLED	PLED	, make	
LICA/VOC/EI	LICA/VOC/ELK/Dec 8, 2015 S5593	*	Ambient Air	08-Dec-15	00:0		
DESCRIPTION:	Elk Point Airport						
REPORT NUMBER:	ER: 15120124	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter	1991	Qualifier	Result Units	RDL	Method	Analysis Date
15120124-001	Methylene chloride		K, T, U	< 0.3 ppbv	0.3	AC-058	14-Dec-15
15120124-001	n-Butane			1.60 ppbv	0.03	AC-058	14-Dec-15
15120124-001	n-Decane		K, T, U	< 0.06 ppbv	90.0	AC-058	14-Dec-15
15120124-001	n-Dodecane			0.8 ppbv	0.4	AC-058	14-Dec-15
15120124-001	n-Heptane		_	0.12 ppbv	0.01	AC-058	14-Dec-15
15120124-001	n-Hexane		_	0.26 ppbv	0.01	AC-058	14-Dec-15
15120124-001	n-Octane			0.06 ppbv	0.02	AC-058	14-Dec-15
15120124-001	n-Pentane			0.7 ppbv	0.1	AC-058	14-Dec-15
15120124-001	n-Propylbenzene		K, T, U	< 0.05 ppbv	0.05	AC-058	14-Dec-15
15120124-001	n-Undecane		K, T, U	< 0.5 ppbv	0.5	AC-058	14-Dec-15
15120124-001	Naphthalene			3.0 ppbv	0.5	AC-058	14-Dec-15
15120124-001	n-Nonane		_	0.02 ppbv	0.01	AC-058	14-Dec-15
15120124-001	o-Ethyltoluene		*******	0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-001	o-Xylene		_	0.03 ppbv	0.01	AC-058	14-Dec-15
15120124-001	p-Diethylbenzene		K, T, U	< 0.04 ppbv	0.04	AC-058	14-Dec-15
15120124-001	p-Ethyltoluene		K, T, U	< 0.07 ppbv	0.07	AC-058	14-Dec-15
15120124-001	Styrene		K, T, U	< 0.04 ppbv	0.04	AC-058	14-Dec-15
15120124-001	Tetrachloroethylene		_	0.05 ppbv	0.04	AC-058	14-Dec-15
15120124-001	Tetrahydrofuran		K, T, U	< 0.4 ppbv	0.4	AC-058	14-Dec-15
15120124-001	Toluene		_	0.23 ppbv	0.01	AC-058	14-Dec-15
15120124-001	trans-1,2-Dichloroethylene	Je.	K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-001	trans-1,3-Dichloropropylene	ane	K, T, U	< 0.04 ppbv	0.04	AC-058	14-Dec-15
15120124-001	trans-2-Butene		K, T, U	< 0.01 ppbv	0.01	AC-058	14-Dec-15
15120124-001	trans-2-Pentene		K, T, U	< 0.02 ppbv	0.02	AC-058	14-Dec-15
15120124-001	Trichloroethylene		K, T, U	< 0.04 ppbv	0.04	AC-058	14-Dec-15
Report certified by:	Graham Knox, Team Lead	On behalf of: PJ	of: PJ Pretorius, Manager, Analysis and Testing Services	rsis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



**TEST REPORT** 

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				<b>-</b>			
			Version 01	Analysis Date	14-Dec-15	14-Dec-15	
			VERSION:	Method	AC-058	AC-058	
				RDL	0.4	0.02	
<b>APLED</b>	0:00						
DATE SAMPLED	08-Dec-15			Result Units	< 0.4 ppbv	< 0.02 ppbv	
Xi	nt Air		15-Jan-16	Qualifier	K, T, U	K, T, U	
Matrix	Ambient Air		REPORT CREATED:				
CANISTER ID	55593	ж	REP(				
	Dec 8, 2015		15120124	Parameter	Vinyl acetate	Vinyl chloride	
CLIENT SAIVIPLE IU	LICA/VOC/ELK/Dec 8, 2015	<b>DESCRIPTION:</b>	REPORT NUMBER:			15120124-001 V	

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Graham Knox, Team Lead

Report certified by:

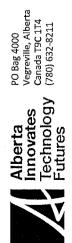
Date: January-15-16



TEST REPORT

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**Analysis Date** 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 0-Dec-15 30-Dec-15 0-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: Method AC-058 AC-058 AC-058 AC-058 4C-058 AC-058 0.02 0.02 0.02 0.04 0.05 0.8 0.03 0.02 0.03 0.01 0.02 0.02 0.3 0.4 0.4 0.02 0.01 0.02 0.01 0.01 0.01 0.01 0.02 0.02 Inquiries: (780) 632 8455 0:0 DATE SAMPLED 14-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units ppbv ppbv ppbv ppbv < 0.02 ppbv : 0.02 ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv : 0.02 ppbv ppbv < 0.3 ppbv < 0.4 ppbv < 0.4 ppbv ppbv < 0.01 ppbv ppbv 0.02 ppbv : 0.01 ppbv 0.07 ppbv < 0.02 ppbv < 0.02 < 0.02 < 0.05 < 0.03 0.02 < 0.03 < 0.8 < 0.02 < 0.04 0.01 < 0.02 0.08 0.04 0.02 15-Jan-16 K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** 2535 1,1,2,2-Tetrachloroethane L,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene .,2,3-Trimethylbenzene 2,2,4-Trimethylpentane 2,3,4-Trimethylpentane 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Graham Knox, Team Lead 1,1-Dichloroethylene I,2-Dichloropropane 2,3-Dimethylpentane L,2-Dichlorobenzene ,3-Dichlorobenzene 1,4-Dichlorobenzene Elk Point Airport 1,2-Dibromoethane 2,2-Dimethylbutane 2,3-Dimethylbutane L,1-Dichloroethane L,2-Dichloroethane 15120215 L,3-Butadiene LICA/VOC/ELK/Dec 14, 2015 .,4-Dioxane 1-Pentene Parameter 1-Hexene 1-Butene **CLIENT SAMPLE ID** REPORT NUMBER: January-15-16 Report certified by: DESCRIPTION: 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 Date: Lab ID



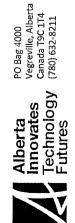
TEST REPORT

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**Analysis Date** 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 0-Dec-15 30-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.01 0.4 0.3 0.4 0.02 0.01 0.01 0.01 0.01 0.02 0.02 0.01 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.01 0.04 0.02 0.02 0.02 0:00 DATE SAMPLED 14-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services **Result Units** vddd yddd ppbv pbbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv < 0.01 ppbv 0.03 ppbv : 0.02 ppbv 0.03 ppbv < 0.02 ppbv ppbv 0.10 ppbv < 0.4 ppbv < 0.02 ppbv ppbv : 0.02 ppbv 0.16 < 0.01 < 0.04 0.05 1.0 < 0.3 60.0 < 0.02 0.02 0.84 0.04 0.02 0.15 0.01 < 0.02 0.11 K, T, U 15-Jan-16 K, T, U K, T, U K, T, U Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Ambient Air Matrix REPORT CREATED: CANISTER ID 2535 **3romodichloromethane** cis-1,3-Dichloropropene cis-1,2-Dichloroethene Graham Knox, Team Lead 2,4-Dimethylpentane Carbon tetrachloride Elk Point Airport 2-Methylheptane 2-Methylpentane 3-Methylheptane 3-Methylpentane 2-Methylhexane 3-Methylhexane Carbon disulfide Chloromethane **3romomethane** Benzyl chloride Chlorobenzene 15120215 LICA/VOC/ELK/Dec 14, 2015 Chloroethane cis-2-Pentene cis-2-Butene Cyclohexane **3romoform** Chloroform Parameter **CLIENT SAMPLE ID 3enzene** Acetone Acrolein REPORT NUMBER: Report certified by: DESCRIPTION: 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



TEST REPORT

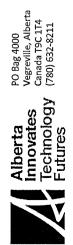
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**Analysis Date** 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 0-Dec-15 30-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.01 0.4 0.01 0.02 0.01 0.02 0.02 0.50 0.03 0.4 0.02 0.01 0.01 0.03 0.04 0.08 0.50 0.3 0.4 0.07 0.03 0.01 0.02 00:0 DATE SAMPLED 14-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv **Result Units** vddd 0.05 ppbv < 0.01 ppbv ppbv ppbv ppbv ppbv ppbv vddd ppbv ppbv ppbv ppbv < 0.4 ppbv 0.08 ppbv ppbv ppbv ppbv < 0.3 ppbv < 0.07 ppbv < 0.4 ppbv < 0.03 ppbv 0.14 ppbv 0.10 ppbv 0.3 0.62 0.03 0.28 0.03 < 0.50 0.84 0.51 0.01 < 0.4 0.01 0.05 < 0.04 < 0.08 < 0.50 15-Jan-16 Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U **Ambient Air** Matrix REPORT CREATED: CANISTER ID 2535 lexachloro-1,3-butadiene **Dibromochloromethane** Methyl isobutyl ketone Methyl tert butyl ether Graham Knox, Team Lead Methyl methacrylate Elk Point Airport Methyl ethyl ketone Methylcyclopentane Methyl butyl ketone Methylcyclohexane m-Diethylbenzene sopropylbenzene sopropyl alcohol m-Ethyltoluene 15120215 LICA/VOC/ELK/Dec 14, 2015 Cyclopentane thylbenzene thyl acetate m,p-Xylene sopentane Parameter -reon-113 reon-114 sobutane **CLIENT SAMPLE ID** reon-11 Freon-12 soprene thanol REPORT NUMBER: Report certified by: DESCRIPTION: 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

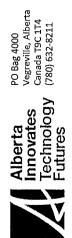
January-15-16



**TEST REPORT** 

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**Analysis Date** 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.03 90.0 0.4 0.05 0.5 0.5 0.01 0.01 0.02 0.1 0.01 0.01 0.01 0.04 0.07 0.04 0.04 0.4 0.01 0.01 0.04 0.01 0.02 Inquiries: (780) 632 8455 0:00 DATE SAMPLED 14-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv vddd vddd ppbv ppbv vada ppbv Result Units < 0.3 ppbv 1.82 ppbv ppbv vddd ppbv vddd : 0.06 ppbv < 0.05 ppbv : 0.07 ppbv < 0.04 ppbv < 0.04 ppbv < 0.4 ppbv 0.10 ppbv vadd < 0.04 ppbv ppbv < 0.02 ppbv < 0.04 ppbv < 0.4 < 0.5 < 0.5 < 0.04 < 0.01 0.18 0.05 9.0 0.01 0.03 0.03 < 0.01 < 0.01 15-Jan-16 K, T, U Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U Λ, T, U <, Τ, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** trans-1,3-Dichloropropylene 2535 trans-1,2-Dichloroethylene Graham Knox, Team Lead **Tetrachloroethylene** Elk Point Airport **Methylene** chloride p-Diethylbenzene Trichloroethylene n-Propylbenzene etrahydrofuran rans-2-Pentene trans-2-Butene o-Ethyltoluene o-Ethyltoluene 15120215 LICA/VOC/ELK/Dec 14, 2015 Vaphthalene n-Undecane 1-Dodecane **Parameter** n-Heptane n-Pentane n-Decane 1-Nonane n-Hexane 1-Octane 1-Butane o-Xylene **CLIENT SAMPLE ID** oluene Styrene REPORT NUMBER: Date: January-15-16 Report certified by: DESCRIPTION: 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 15120215-002 Lab ID



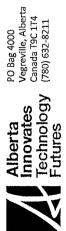
**TEST REPORT** 

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**Analysis Date** 30-Dec-15 30-Dec-15 VERSION: Version 01 Method AC-058 AC-058 0.4 0.02 RDL 0:00 DATE SAMPLED 14-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units < 0.4 ppbv < 0.02 ppbv K, T, U K, T, U 15-Jan-16 Qualifier Ambient Air Matrix REPORT CREATED: CANISTER ID 2535 Graham Knox, Team Lead Elk Point Airport 15120215 LICA/VOC/ELK/Dec 14, 2015 Vinyl chloride Vinyl acetate Parameter **CLIENT SAMPLE ID** REPORT NUMBER: Report certified by: **DESCRIPTION:** 15120215-002 15120215-002 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



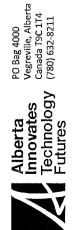
TEST REPORT

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LICA/VOC/ELK/Dec 20, 2015           DESCRIPTION:         Elk Point Airport           REPORT NUMBER:         16010003           Lab ID         Parameter           16010003-001         1,1,1-Trichloroethane           16010003-001         1,1,2-Trichloroethane           16010003-001         1,1-Dichloroethylene           16010003-001         1,1-Dichloroethylene	2530 Virport	Ambient Air	ınt Air	20-Dec-15	00:00		
BER							
BER							
		REPORT CREATED:	15-Jan-16			VERSION:	Version 01
			Qualifier	Result Units	RDL	Method	Analysis Date
	oroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1,1,2,2-Tetrachloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	oroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	oethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	oethylene		K, T, U	< 0.04 ppbv	0.04	AC-058	06-Jan-16
	1,2,3-Trimethylbenzene		K, T, U	< 0.05 ppbv	0.02	AC-058	06-Jan-16
16010003-001 1,2,4-Trichlo	1,2,4-Trichlorobenzene		K, T, U	< 0.8 ppbv	0.8	AC-058	06-Jan-16
16010003-001 1,2,4-Trimet	1,2,4-Trimethylbenzene		K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-16
16010003-001 1,2-Dibromoethane	oethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
16010003-001 1,2-Dichlorobenzene	obenzene		K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-16
16010003-001 1,2-Dichloroethane	oethane		_	0.02 ppbv	0.01	AC-058	06-Jan-16
16010003-001 1,2-Dichloropropane	opropane		K, T, U	< 0.01 ppbv	0.01	AC-058	06-Jan-16
16010003-001 1,3,5-Trimet	1,3,5-Trimethylbenzene		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
16010003-001 1,3-Butadiene	ne		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
16010003-001 1,3-Dichlorobenzene	obenzene		K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-16
16010003-001 1,4-Dichlorobenzene	obenzene		K, T, U	< 0.4 ppbv	0.4	AC-058	06-Jan-16
16010003-001 1,4-Dioxane	a:		K, T, U	< 0.4 ppbv	0.4	AC-058	06-Jan-16
16010003-001 1-Butene				0.10 ppbv	0.02	AC-058	06-Jan-16
16010003-001 1-Hexene			K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
16010003-001 1-Pentene			_	0.02 ppbv	0.01	AC-058	06-Jan-16
16010003-001 2,2,4-Trimet	2,2,4-Trimethylpentane		_	0.07 ppbv	0.01	AC-058	06-Jan-16
16010003-001 2,2-Dimethylbutane	ylbutane		_	0.02 ppbv	0.01	AC-058	06-Jan-16
16010003-001 2,3,4-Trimet	2,3,4-Trimethylpentane		_	0.02 ppbv	0.01	AC-058	06-Jan-16
16010003-001 2,3-Dimethylbutane	ylbutane		_	0.07 ppbv	0.02	AC-058	06-Jan-16
16010003-001 2,3-Dimethylpentane	ylpentane		_	0.07 ppbv	0.02	AC-058	06-Jan-16

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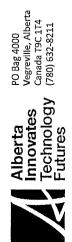
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**Analysis Date** 06-Jan-16 36-Jan-16 )6-Jan-16 06-Jan-16 )6-Jan-16 )6-Jan-16 )6-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 06-Jan-16 **36-Jan-16 36-Jan-16** )6-Jan-16 36-Jan-16 )6-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.4 0.3 0.4 0.01 0.01 0.01 0.01 0.02 0.02 0.01 0.01 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.02 0.01 0.04 0.02 0.02 0.02 0:00 DATE SAMPLED 20-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv < 0.01 ppbv < 0.3 ppbv : 0.01 ppbv < 0.02 ppbv 0.02 ppbv < 0.02 ppbv 0.10 ppbv : 0.02 ppbv : 0.01 ppbv ppbv 0.02 ppbv 0.02 ppbv 0.05 0.19 0.07 0.11 6.0 0.24 < 0.4 < 0.02 0.75 0.04 < 0.02 0.01 0.03 90.0 Κ, Τ, U 15-Jan-16 Κ, Τ, U K, T, U Κ, Τ, U Κ, Τ, U K, T, U K, T, ∪ K, T, U K, T, U Qualifier Κ, Τ, U K, T, U K, T, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** 2530 **3romodichloromethane** cis-1,3-Dichloropropene cis-1,2-Dichloroethene Graham Knox, Team Lead 2,4-Dimethylpentane Carbon tetrachloride Elk Point Airport 2-Methylheptane 2-Methylpentane 3-Methylheptane 3-Methylpentane 2-Methylhexane 3-Methylhexane Carbon disulfide **3romomethane** Chloromethane Benzyl chloride Chlorobenzene LICA/VOC/ELK/Dec 20, 2015 16010003 Chloroethane cis-2-Pentene cis-2-Butene Cyclohexane Chloroform **3romoform** Parameter **CLIENT SAMPLE ID** Senzene Acetone Acrolein REPORT NUMBER: Report certified by: DESCRIPTION: 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 Lab ID

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Inquiries: (780) 632 8455



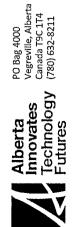
TEST REPORT

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**Analysis Date** 06-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 06-Jan-16 )6-Jan-16 6-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 )6-Jan-16 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 4C-058 AC-058 AC-058 AC-058 0.02 0.50 0.50 0.4 0.01 0.01 0.01 0.02 0.01 0.02 0.02 0.03 0.01 0.4 0.01 0.03 0.04 0.08 0.3 0.07 0.03 0.4 0.01 0.02 0:0 DATE SAMPLED 20-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv vdqq ppbv **Result Units** ppbv ppbv ppbv ppbv vddd ppbv ppbv vddd ppbv vddd : 0.01 ppbv : 0.01 ppbv < 0.04 ppbv vddd 0.04 ppbv : 0.50 ppbv 1.48 ppbv 0.10 ppbv : 0.50 ppbv < 0.07 ppbv vdqq 0.10 ppbv 0.31 0.08 < 0.4 1.4 < 0.4 0.03 0.73 0.79 0.01 < 0.4 < 0.08 < 0.3 0.03 < 0.03 0.09 15-Jan-16 K, T, U Κ, Τ, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U Qualifier K, T, U K, T, U K, T, U K, T, U _ Ambient Air Matrix REPORT CREATED: **CANISTER ID** 2530 Hexachloro-1,3-butadiene **Dibromochloromethane** Methyl isobutyl ketone Methyl tert butyl ether Graham Knox, Team Lead Methyl methacrylate Methyl butyl ketone Methyl ethyl ketone Elk Point Airport Methylcyclopentane Methylcyclohexane n-Diethylbenzene sopropylbenzene sopropyl alcohol m-Ethyltoluene 16010003 LICA/VOC/ELK/Dec 20, 2015 Cyclopentane Ethylbenzene Ethyl acetate sopentane n,p-Xylene Parameter Freon-113 Freon-114 sobutane reon-11 Freon-12 **CLIENT SAMPLE ID** soprene Ethanol REPORT NUMBER: Report certified by: DESCRIPTION: 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 Lab ID

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Inquiries: (780) 632 8455



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**Analysis Date** 06-Jan-16 06-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 )6-Jan-16 J6-Jan-16 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.03 90.0 0.4 0.1 0.05 0.5 0.5 0.01 0.04 0.01 0.01 0.02 0.01 0.01 0.07 0.04 0.04 0.01 0.04 0.4 0.01 0.01 0.02 0.04 00:0 DATE SAMPLED 20-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services vddd Result Units ppbv ppbv ppbv vddd ppbv ppbv < 0.3 ppbv 2.44 ppbv < 0.06 ppbv 0.15 ppbv ppbv ppbv < 0.5 ppbv ppbv < 0.01 ppbv ppbv < 0.04 ppbv ppbv ppbv 0.20 ppbv : 0.01 ppbv : 0.04 ppbv 0.03 ppbv < 0.4 0.06 0.02 0.5 < 0.05 < 0.5 0.02 < 0.07 < 0.04 0.05 < 0.4 0.01 0.04 15-Jan-16 Qualifier Κ, Τ, U K, T, U K, T, U Κ, T, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U Κ, Τ, U Κ, T, U __ _ **4mbient** Air Matrix REPORT CREATED: **CANISTER ID** trans-1,3-Dichloropropylene 2530 trans-1,2-Dichloroethylene Graham Knox, Team Lead Elk Point Airport etrachloroethylene Methylene chloride o-Diethylbenzene Trichloroethylene 1-Propylbenzene etrahydrofuran trans-2-Pentene o-Ethyltoluene o-Ethyltoluene trans-2-Butene 16010003 LICA/VOC/ELK/Dec 20, 2015 **Naphthalene** n-Dodecane า-Undecane n-Heptane n-Pentane Parameter n-Nonane n-Butane n-Decane n-Hexane 1-Octane o-Xylene **CLIENT SAMPLE ID** oluene tyrene REPORT NUMBER: Report certified by: DESCRIPTION: 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 16010003-001 Lab ID

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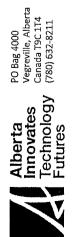
**Analysis Date** 06-Jan-16 06-Jan-16 VERSION: Version 01 AC-058 Method AC-058 0.4 0.02 RDL 0:00 DATE SAMPLED 20-Dec-15 Result Units < 0.4 ppbv < 0.02 ppbv K, T, U Κ, Τ, U 15-Jan-16 Qualifier Ambient Air Matrix REPORT CREATED: **CANISTER ID** 2530 Elk Point Airport 16010003 LICA/VOC/ELK/Dec 20, 2015 Vinyl chloride Vinyl acetate Parameter **CLIENT SAMPLE ID** REPORT NUMBER: Report certified by: DESCRIPTION: 16010003-001 16010003-001 Lab ID

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**Inquiries:** (780) 632 8455

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

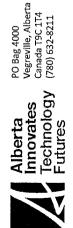
Graham Knox, Team Lead



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CLIENT SAMPLE ID	IPLE ID CANISTER ID		Matrix	DATE SAMPLED	FD		
LICA/VOC/ELK/Dec. 26, 2015			Ambient Air	26-Dec-15 C	00:0		
DESCRIPTION:	Elk Point Airport						
REPORT NUMBER:	16010004	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID Pa	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
	1,1,1-Trichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1,1,2,2-Tetrachloroethane	a:	K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1,1,2-Trichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1,1-Dichloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1,1-Dichloroethylene		K, T, U	< 0.04 ppbv	0.04	AC-058	06-Jan-16
	1,2,3-Trimethylbenzene		K, T, U	< 0.05 ppbv	0.05	AC-058	06-Jan-16
	1,2,4-Trichlorobenzene		K, T, U	< 0.8 ppbv	0.8	AC-058	06-Jan-16
	1,2,4-Trimethylbenzene		K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-16
	1,2-Dibromoethane		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1,2-Dichlorobenzene		K, T, U	< 0.03 ppbv	0.03	AC-058	06-Jan-16
16010004-003 1,	1,2-Dichloroethane			0.02 ppbv	0.01	AC-058	06-Jan-16
	1,2-Dichloropropane		K, T, U	< 0.01 ppbv	0.01	AC-058	06-Jan-16
	1,3,5-Trimethylbenzene		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1,3-Butadiene		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1,3-Dichlorobenzene		K, T, U	< 0.3 ppbv	0.3	AC-058	06-Jan-16
16010004-003 1,	1,4-Dichlorobenzene		K, T, U	< 0.4 ppbv	0.4	AC-058	06-Jan-16
	1,4-Dioxane		K, T, U	< 0.4 ppbv	0.4	AC-058	06-Jan-16
	1-Butene		_	0.21 ppbv	0.02	AC-058	06-Jan-16
	1-Hexene		K, T, U	< 0.02 ppbv	0.02	AC-058	06-Jan-16
	1-Pentene			0.02 ppbv	0.01	AC-058	06-Jan-16
16010004-003 2,	2,2,4-Trimethylpentane		K, T, U	< 0.01 ppbv	0.01	AC-058	06-Jan-16
16010004-003 2,	2,2-Dimethylbutane		_	0.08 ppbv	0.01	AC-058	06-Jan-16
	2,3,4-Trimethylpentane			0.02 ppbv	0.01	AC-058	06-Jan-16
16010004-003 2,3	2,3-Dimethylbutane		_	0.21 ppbv	0.02	AC-058	06-Jan-16
16010004-003 2,3	2,3-Dimethylpentane		_	0.11 ppbv	0.02	AC-058	06-Jan-16
Report certified by:	Graham Knox, Team Lead	On behalf of: P	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	ysis and Testing Services			
Date: January-15-16				Inquiries: (	Inquiries: (780) 632 8455 E-mail	E-mail: EAS.Results@albertainnovates.ca	innovates.ca



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**Analysis Date** 06-Jan-16 36-Jan-16 06-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 **J6-Jan-16** 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 J6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.01 0.01 0.01 0.01 0.02 0.02 0.01 0.4 0.3 0.4 0.02 0.02 0.01 0.01 0.01 0.02 0.02 0.02 0.01 0.02 0.01 0.04 0.02 0.02 0.02 0:00 DATE SAMPLED 26-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units ppbv ppbv ppbv ppbv ppbv ppbv vddd ppbv ppbv ppbv ppbv vddd < 0.01 ppbv < 0.02 ppbv ppbv ppbv 0.05 ppbv < 0.4 ppbv < 0.02 ppbv : 0.02 ppbv 0.20 ppbv 0.10 ppbv 0.03 ppbv 0.02 ppbv 0.23 ppbv 0.01 0.08 0.32 0.11 0.29 0.03 < 0.3 0.02 0.04 0.17 < 0.02 0.83 < 0.01 K, T, U 15-Jan-16 K,T,U Qualifier K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** 2659 **3romodichloromethane** cis-1,3-Dichloropropene cis-1,2-Dichloroethene Graham Knox, Team Lead 2,4-Dimethylpentane Carbon tetrachloride Elk Point Airport 2-Methylheptane 2-Methylpentane 3-Methylheptane 3-Methylpentane 2-Methylhexane 3-Methylhexane Carbon disulfide **3romomethane** Chloromethane Benzyl chloride Chlorobenzene 16010004 LICA/VOC/ELK/Dec. 26, 2015 Chloroethane cis-2-Pentene cis-2-Butene Cyclohexane **3romoform** Chloroform Parameter **CLIENT SAMPLE ID 3enzene** Acrolein Acetone REPORT NUMBER: Report certified by: DESCRIPTION: 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

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**Analysis Date** 36-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 06-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 06-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 )6-Jan-16 )6-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 Version 01 VERSION: AC-058 AC-058 AC-058 Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 4C-058 0.4 0.01 0.01 0.02 0.01 0.02 0.02 0.50 0.02 0.03 0.01 0.4 0.03 0.04 0.08 0.50 0.3 0.4 0.01 0.01 0.07 0.03 0.01 0.02 0:00 DATE SAMPLED 26-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services vdqq ppbv Result Units vddd vddd ppbv ppbv vddd ppbv ppbv vddd ppbv ppbv ppbv ppbv ppbv ppbv 0.08 ppbv : 0.01 ppbv < 0.3 ppbv < 0.4 ppbv < 0.01 ppbv vdqq < 0.07 ppbv 0.38 ppbv ppbv 0.78 < 0.50 0.35 0.02 1.87 1.36 < 0.01 0.06 < 0.04 < 0.08 < 0.50 < 0.3 < 0.4 0.02 0.08 < 0.4 < 0.03 0.21 15-Jan-16 K, T, U K, T, U K, T, U K, T, U Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U _ Ambient Air Matrix REPORT CREATED: CANISTER ID 2659 Hexachloro-1,3-butadiene **Dibromochloromethane** Methyl isobutyl ketone Methyl tert butyl ether Graham Knox, Team Lead Methyl methacrylate Elk Point Airport Methyl butyl ketone **Methyl ethyl ketone** Methylcyclopentane Methylcyclohexane m-Diethylbenzene sopropylbenzene sopropyl alcohol n-Ethyltoluene LICA/VOC/ELK/Dec. 26, 2015 16010004 Cyclopentane Ethyl acetate Ethylbenzene m,p-Xylene sopentane Parameter -reon-113 -reon-114 sobutane Freon-11 Freon-12 **CLIENT SAMPLE ID** soprene Ethanol REPORT NUMBER: Report certified by: **DESCRIPTION:** 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 Lab ID

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Inquiries: (780) 632 8455



*TEST REPORT* 

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**Analysis Date** 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 06-Jan-16 )6-Jan-16 36-Jan-16 36-Jan-16 )6-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 06-Jan-16 )6-Jan-16 )6-Jan-16 36-Jan-16 )6-Jan-16 )6-Jan-16 06-Jan-16 Version 01 E-mail: EAS.Results@albertainnovates.ca VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.03 90.0 0.05 0.01 0.04 0.04 0.04 0.4 0.4 0.01 0.01 0.02 0.1 0.5 0.5 0.01 0.01 0.07 0.01 0.04 0.01 0.01 0.02 0.04 Inquiries: (780) 632 8455 0:00 DATE SAMPLED 26-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services 3.03 ppbv vddd vddd vddd ppbv ppbv : 0.04 ppbv vddd vdqd ppbv Result Units < 0.3 ppbv c 0.06 ppbv 0.08 ppbv < 0.05 ppbv < 0.5 ppbv < 0.5 ppbv 0.02 ppbv < 0.01 ppbv : 0.04 ppbv : 0.07 ppbv vddd ppbv 0.21 ppbv < 0.04 ppbv < 0.02 ppbv 0.02 < 0.4 0.15 1.5 0.31 0.04 < 0.4 < 0.04 < 0.01 < 0.01 Qualifier Κ, Τ, U 15-Jan-16 K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, Τ, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U **Ambient Air** Matrix REPORT CREATED: CANISTER ID trans-1,3-Dichloropropylene 2659 trans-1,2-Dichloroethylene Graham Knox, Team Lead **Tetrachloroethylene** Elk Point Airport Methylene chloride p-Diethylbenzene **Trichloroethylene** n-Propylbenzene **etrahydrofuran** trans-2-Pentene trans-2-Butene o-Ethyltoluene o-Ethyltoluene LICA/VOC/ELK/Dec. 26, 2015 16010004 **Naphthalene** n-Dodecane 1-Undecane າ-Heptane n-Pentane Parameter n-Decane n-Nonane n-Hexane 1-Octane 1-Butane o-Xylene **CLIENT SAMPLE ID** Foluene Styrene REPORT NUMBER: Date: January-15-16 Report certified by: DESCRIPTION: 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 16010004-003 Lab ID



TEST REPORT

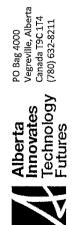
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		VERSION:	Method	AC-058	AC-058	
			RDL	0.4	0.02	
MPLED	0:00					
DATE SAMPLED	26-Dec-15		Result Units	< 0.4 ppbv	< 0.02 ppbv	cic and Tecting Continue
Matrix	Ambient Air	15-Jan-16	Qualifier	K, T, U	K, T, U	On hebalf of Di Pretorins Manager Analysis and Taction Services
	Ambie	REPORT CREATED:				On babalf of: Di
CANISTER ID	2659					m Lead
MPLE ID	'Dec. 26, 2015	Elk Point Airport 8: 16010004	Parameter	Vinyl acetate	Vinyl chloride	Graham Knox Team Lead
CLIENT SAMPLE ID	LICA/VOC/ELK/Dec. 26, 2015	DESCRIPTION: REPORT NUMBER:	Lab ID	16010004-003	16010004-003	Renort certified hv.

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455





**TEST REPORT** 

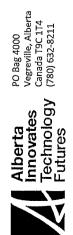
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TE-05   Air Filter   02-Dec-15   00:00     It book   REPORT CREATED   08-Jan-16   0.25 ug/Filter   0.01   NA-017     It halene	CLIENI SAMPLE ID		CANISTER ID	Matrix	DATE SAMPLED			
Parameter         Overlan-16         Overlan-16         Overlan-16         VERSIONS:           Parameter         Parameter         Qualifier         Result Units         RDL         Method           1-1-Methylnaphthalene         0.23 ug/Filter         0.01         NA-017         NA-017           2-Methylnaphthalene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           3-Methylcholanthracene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Acenaphthylene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Acenaphthylene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Acenaphthylene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Benzo(a)pyrene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Benzo(c)pyrene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Benzo(c)pyrene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Dibenzo(c)pyrene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Dibenzo(c)pyrene         K, T, U         < 0.01 ug/Filter         0.01         <	LICA/PUF/ELK	√/Dec 2, 2015	TE-05	Air Filter				
REP. IS 120089         REPORT CREATED:         03-Jan-16         Aresist Units         RDL         Method           1-Methylnaphthalene         0.25 ug/Filter         0.01         NA-017           2-Methylnaphthalene         0.25 ug/Filter         0.01         NA-017           3-Methylcholanthrene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Acenaphthylene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Acenaphthylene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Acenaphthylene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Acenaphthylene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Acenaphthylene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Benzo(a) Jantracene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Benzo(a) Jantracene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Benzo(a) Jantracene         K, T, U         < 0.01 ug/Filter         0.01         NA-017           Benzo(a) Jantracene         K, T, U         < 0.01 ug/Filter         0.01         NA-017	DESCRIPTION:	Elk Point Airpo	Ţ					
Parameter         Qualifier         Result Units         RDL           1-Methylnaphthalene         0.25 ug/Filter         0.01           2-Methylnaphthalene         0.38 ug/Filter         0.01           3-Methylchalanthracene         k. T, U         < 0.01 ug/Filter         0.01           7,12-Dimethylbenz(a)anthracene         0.13 ug/Filter         0.01           Acenaphthylene         k. T, U         < 0.01 ug/Filter         0.01           Acenaphthylene         k. T, U         < 0.01 ug/Filter         0.01           Acenaphthylene         k. T, U         < 0.01 ug/Filter         0.01           Anthracene         Benzo(a)anthracene         0.03 ug/Filter         0.01           Benzo(b)i/Filtoranthene         k. T, U         < 0.01 ug/Filter         0.01           Benzo(c)phrenanthene         k. T, U         < 0.01 ug/Filter         0.01           Chrysene         0.04 ug/Filter         0.01           Dibenzo(a)phyrene         k. T, U         < 0.01 ug/Filter         0.01           Dibenzo(a)phyrene         k. T, U         < 0.01 ug/Filter         0.01           Dibenzo(a)phyrene         k. T, U         < 0.01 ug/Filter         0.01           Dibenzo(a)phyrene         k. T, U         < 0.01 ug/Filter         0.01 <th>REPORT NUMBE</th> <th>- 1</th> <th>REPORT CREATED:</th> <th>08-Jan-16</th> <th></th> <th></th> <th>VERSION:</th> <th>Version 01</th>	REPORT NUMBE	- 1	REPORT CREATED:	08-Jan-16			VERSION:	Version 01
1-Methylnaphthalene         0.25 ug/Filter         0.01           2-Methylnaphthalene         8, T, U         < 0.01 ug/Filter         0.01           3-Methylnaphthalene         8, T, U         < 0.01 ug/Filter         0.01           7,12-Dimethylbenz(a)anthracene         K, T, U         < 0.01 ug/Filter         0.01           Acraphthylene         K, T, U         < 0.01 ug/Filter         0.01           Acridine         K, T, U         < 0.01 ug/Filter         0.01           Anthracene         K, T, U         < 0.01 ug/Filter         0.01           Benzo(a)anthracene         K, T, U         < 0.01 ug/Filter         0.01           Benzo(a)pyrene         K, T, U         < 0.01 ug/Filter         0.01           Benzo(a)pyrene         K, T, U         < 0.01 ug/Filter         0.01           Benzo(a)pyrene         K, T, U         < 0.01 ug/Filter         0.01           Chrysene         0.04 ug/Filter         0.01           Dibenzo(a)pyrene         K, T, U         < 0.01 ug/Filter         0.01           Dibenzo(a)pyrene         K, T, U         < 0.01 ug/Filter         0.01           Dibenzo(a)pyrene         K, T, U         < 0.01 ug/Filter         0.01           Dibenzo(a)pyrene         K, T, U         < 0.01 ug/Filt	Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
2-Methylnaphthalene         0.38 ug/Filter         0.01           3-Methylnaphthalene         3-Methylnaphthalene         0.01           3-Methylcholanthrene         K, T, U         < 0.01 ug/Filter	15120089-004	1-Methylnaphthal∈	ene		0.25 ug/Filter	0.01	NA-017	19-Dec-15
3-Methylcholanthrene         K, T, U         < 0.01 ug/Filter         0.01           7,12-Dimethylcholanthracene         K, T, U         < 0.01 ug/Filter	15120089-004	2-Methylnaphthale	ene		0.38 ug/Filter	0.01	NA-017	19-Dec-15
7,12-Dimethylbenz(a)anthracene         K, T, U         < 0.01 ug/Filter	15120089-004	3-Methylcholanthr	rene	K, T, U		0.01	NA-017	19-Dec-15
Acenaphthene         0.13 ug/Filter         0.01           Acenaphthylene         0.03 ug/Filter         0.01           Actidine         0.01 ug/Filter         0.01           Anthracene         0.03 ug/Filter         0.01           Benzo(a)pyrene         0.02 ug/Filter         0.01           Benzo(b)pyrene         0.02 ug/Filter         0.01           Benzo(b)pyrene         0.02 ug/Filter         0.01           Benzo(c)phenanthrene         K, T, U         < 0.01 ug/Filter	15120089-004	7,12-Dimethylben2	z(a)anthracene	K, T, U		0.01	NA-017	19-Dec-15
Acenaphthylene         0.03 ug/Filter         0.01           Acridine         K, T, U         < 0.01 ug/Filter	15120089-004	Acenaphthene				0.01	NA-017	19-Dec-15
Acridine         K, T, U         < 0.01 ug/Filter         0.01           Benzo(a)anthracene         0.03 ug/Filter         0.01           Benzo(a)pyrene         0.02 ug/Filter         0.01           Benzo(b)jk)fluoranthene         K, T, U         < 0.01 ug/Filter	15120089-004	Acenaphthylene				0.01	NA-017	19-Dec-15
Anthracene         0.03 ug/Filter         0.01           Benzo(a)anthracene         0.01 ug/Filter         0.01           Benzo(a)pyrene         0.02 ug/Filter         0.01           Benzo(b,j,k)fluoranthene         0.02 ug/Filter         0.01           Benzo(c)phenanthrene         0.02 ug/Filter         0.01           Benzo(c)pyrene         0.04 ug/Filter         0.01           Chrysene         0.04 ug/Filter         0.01           Dibenzo(a,l)pyrene         0.04 ug/Filter         0.01           Dibenzo(a,l)pyrene         0.02 ug/Filter         0.01           Dibenzo(a,l)pyrene         0.02 ug/Filter         0.01           Dibenzo(a,l)pyrene         0.02 ug/Filter         0.01           Dibenzo(a,l)pyrene         0.02 ug/Filter         0.01           Fluoranthene         0.03 ug/Filter         0.01           Fluoranthene         0.03 ug/Filter         0.01           Naphthalene         0.03 ug/Filter         0.01           Perylene         0.05 ug/Filter         0.01           Phenanthrene         0.03 ug/Filter         0.01           O.03 ug/Filter         0.01           O.04 ug/Filter         0.01           O.05 ug/Filter         0.01           O.05	15120089-004	Acridine		K, T, U		0.01	NA-017	19-Dec-15
Benzo(a)anthracene         0.01 ug/Filter         0.01 ug/Filter           Benzo(b,j,k)fluoranthene         0.02 ug/Filter         0.01 ug/Filter           Benzo(b,j,k)fluoranthene         K, T, U         < 0.01 ug/Filter	15120089-004	Anthracene				0.01	NA-017	19-Dec-15
Benzo(a)pyrene         0.02 ug/Filter         0.01           Benzo(bj,k)fluoranthene         0.08 ug/Filter         0.01           Benzo(c)phenanthrene         0.02 ug/Filter         0.01           Benzo(ghi)perylene         0.04 ug/Filter         0.01           Chrysene         0.04 ug/Filter         0.01           Chrysene         0.04 ug/Filter         0.01           Dibenzo(a,i)pyrene         0.04 ug/Filter         0.01           Dibenzo(a,j)pyrene         0.01 ug/Filter         0.01           Dibenzo(a,j)pyrene         0.02 ug/Filter         0.01           Dibenzo(a,j)pyrene         0.02 ug/Filter         0.01           Dibenzo(a,j)pyrene         0.04 ug/Filter         0.01           Dibenzo(a,j)pyrene         0.03 ug/Filter         0.01           Fluoranthene         0.03 ug/Filter         0.01           Fluoranthene         0.03 ug/Filter         0.01           Perylene         0.53 ug/Filter         0.01           Phenanthrene         0.53 ug/Filter         0.01           Dibenzolanthrene         0.01 ug/Filter         0.01	15120089-004	Benzo(a)anthracen	Je			0.01	NA-017	19-Dec-15
Benzo(bj,k)fluoranthene         0.08 ug/Filter         0.01           Benzo(c)phenanthrene         K, T, U         < 0.01 ug/Filter	15120089-004	Benzo(a)pyrene				0.01	NA-017	19-Dec-15
Benzo(c)phenanthrene         K, T, U         < 0.01 ug/Filter         0.01           Benzo(e)pyrene         0.02 ug/Filter         0.01           Benzo(ghi)perylene         0.04 ug/Filter         0.01           Chrysene         0.04 ug/Filter         0.01           Dibenzo(a,h)pyrene         K, T, U         < 0.01 ug/Filter	15120089-004	Benzo(b,j,k)fluoran	ıthene			0.01	NA-017	19-Dec-15
Benzo(e)pyrene         0.02 ug/Filter         0.01           Benzo(ghi)perylene         0.04 ug/Filter         0.01           Chrysene         0.04 ug/Filter         0.01           Dibenzo(a,i)pyrene         K, T, U         < 0.01 ug/Filter	15120089-004	Benzo(c)phenanthı	rene	K, T, U		0.01	NA-017	19-Dec-15
Benzo(ghi)perylene         0.04 ug/Filter         0.01           Chrysene         0.04 ug/Filter         0.01           Dibenzo(a,h)pyrene         K, T, U         < 0.01 ug/Filter	15120089-004	Benzo(e)pyrene				0.01	NA-017	19-Dec-15
Chrysene         0.04 ug/Filter         0.01           Dibenzo(a,h)pyrene         K, T, U         < 0.01 ug/Filter	15120089-004	Benzo(ghi)perylene	a			0.01	NA-017	19-Dec-15
Dibenzo(a,h)pyrene         K, T, U         < 0.01 ug/Filter         0.01           Dibenzo(a,i)pyrene         0.02 ug/Filter         0.01           Dibenzo(ah)anthracene         K, T, U         < 0.01 ug/Filter	15120089-004	Chrysene				0.01	NA-017	19-Dec-15
Dibenzo(a,i)pyrene       K, T, U       < 0.01 ug/Filter	15120089-004	Dibenzo(a,h)pyren	Ð	K, T, U		0.01	NA-017	19-Dec-15
Dibenzo(a,J)pyrene       0.02 ug/Filter       0.01         Dibenzo(ah)anthracene       K, T, U       < 0.01 ug/Filter	15120089-004	Dibenzo(a,i)pyrene		K, T, U		0.01	NA-017	19-Dec-15
Dibenzo(ah)anthracene       K, T, U       < 0.01 ug/Filter	15120089-004	Dibenzo(a,I)pyrene	<b>a</b> :			0.01	NA-017	19-Dec-15
Fluoranthene       0.16 ug/Filter       0.01         Fluorene       0.48 ug/Filter       0.01         Indeno(1,2,3-cd)pyrene       0.03 ug/Filter       0.01         Naphthalene       K, T, U       < 0.01 ug/Filter	15120089-004	Dibenzo(ah)anthra	cene	K, T, U		0.01	NA-017	19-Dec-15
Fluorene       0.48 ug/Filter       0.01         Indeno(1,2,3-cd)pyrene       0.03 ug/Filter       0.01         Naphthalene       K, T, U       < 0.01 ug/Filter	15120089-004	Fluoranthene				0.01	NA-017	19-Dec-15
Indeno(1,2,3-cd)pyrene       0.03 ug/Filter       0.01         Naphthalene       0.30 ug/Filter       0.01         Perylene       K, T, U       < 0.01 ug/Filter	15120089-004	Fluorene				0.01	NA-017	19-Dec-15
Naphthalene 0.30 ug/Filter 0.01 Perylene K, T, U < 0.01 ug/Filter 0.01 Phenanthrene 0.53 ug/Filter 0.01	15120089-004	Indeno(1,2,3-cd)py	rene			0.01	NA-017	19-Dec-15
Perylene K, T, U < 0.01 ug/Filter 0.01 Phenanthrene 0.53 ug/Filter 0.01	15120089-004	Naphthalene			0.30 ug/Filter	0.01	NA-017	19-Dec-15
Phenanthrene 0.53 ug/Filter 0.01	15120089-004	Perylene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	19-Dec-15
5	15120089-004	Phenanthrene			0.53 ug/Filter	0.01	NA-017	19-Dec-15

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Date: Friday, January 08, 2016



**TEST REPORT** 

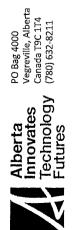
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CLIENT SAMPLE ID	AMPLE ID	CANISTER ID	Matrix	rix	DATE SAMPLED			
LICA/PUF/ELK	LICA/PUF/ELK/Dec 2, 2015	TE-05	Air Filter	lter	02-Dec-15 00:00	C	÷	
DESCRIPTION:	Elk Point Airport							
REPORT NUMBER:	<b>R:</b> 15120089	REPORT	REPORT CREATED:	08-Jan-16			VERSION:	Version 01
Lab ID	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
	Pyrene				0.09 ug/Filter	0.01	NA-017	19-Dec-15
15120089-004	Retene				0.22 ug/Filter	0.01	NA-017	19-Dec-15
Report certified by:	Julius Pretorius, Portfolio Manager	ortfolio Manager	On behalf of: PJ P	of: PJ Pretorius, Manager, Analysis and Testing Services	sis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Date: Friday, January 08, 2016



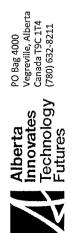
**TEST REPORT** 

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CLIENT S	CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED			
LICA/PUF/EL	LICA/PUF/ELK/Dec 8, 2015	A13-02	Air Filter	08-Dec-15 0:00			
DESCRIPTION:	Elk Point Airport	oort					
REPORT NUMBER:	:R: 15120124	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120124-002	1-Methylnaphthalene	alene		0.13 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	2-Methylnaphthalene	alene		0.19 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	3-Methylcholanthrene	hrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	7,12-Dimethylbe	7,12-Dimethylbenz(a)anthracene		0.05 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Acenaphthene			0.07 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Acenaphthylene			0.04 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Acridine		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Anthracene			0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Benzo(a)anthracene	ene		0.03 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Benzo(a)pyrene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Benzo(b,j,k)fluoranthene	anthene		0.12 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Benzo(c)phenanthrene	threne	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Benzo(e)pyrene			0.04 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Benzo(ghi)perylene	ine	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Chrysene			0.03 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Dibenzo(a,h)pyrene	ane	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Dibenzo(a,i)pyrene	ne	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Dibenzo(a,I)pyrene	ne	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Dibenzo(ah)anthracene	racene		0.02 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Fluoranthene			0.09 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Fluorene			0.21 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Indeno(1,2,3-cd)pyrene	pyrene		0.02 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Naphthalene			0.13 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Perylene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120124-002	Phenanthrene			0.22 ug/Filter	0.01	NA-017	14-Jan-16
Report certified by:	Graham Knox, Team Lead	On behalf	of: PJ Pretorius, Manager, Analysis and Testing Services	ysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



**TEST REPORT** 

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**Analysis Date** 14-Jan-16 14-Jan-16 VERSION: Version 01 Method NA-017 NA-017 0.01 0.01 RDL 0:00 DATE SAMPLED 0.08 ug/Filter 0.07 ug/Filter 08-Dec-15 Result Units 15-Jan-16 Qualifier Air Filter Matrix REPORT CREATED: **CANISTER ID** A13-02 Elk Point Airport 15120124 LICA/PUF/ELK/Dec 8, 2015 Parameter **CLIENT SAMPLE ID** Pyrene Retene REPORT NUMBER: **DESCRIPTION:** 15120124-002 15120124-002 Lab ID

E-mail: EAS.Results@albertainnovates.ca

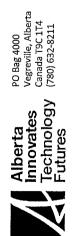
Inquiries: (780) 632 8455

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Graham Knox, Team Lead

Report certified by:

Date: January-15-16



**TEST REPORT** 

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CLIENT S	CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED			
LICA/PUF/EL	LICA/PUF/ELK/Dec 14, 2015	TE-08	Air Filter	14-Dec-15 0:00			
DESCRIPTION:	Elk Point Airport	port					
REPORT NUMBER:	ER: 15120215	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120215-003	1-Methylnaphthalene	nalene		0.18 ug/Filter	0.01	NA-017	14-lan-16
15120215-003	2-Methylnaphthalene	alene		0.26 ug/Filter	0.01	NA-017	14-lan-16
15120215-003	3-Methylcholanthrene	threne	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-lan-16
15120215-003	7,12-Dimethylb	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Acenaphthene			0.06 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Acenaphthylene			0.05 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Acridine		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Anthracene			0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Benzo(a)anthracene	cene		0.03 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Benzo(a)pyrene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Benzo(b,j,k)fluoranthene	ranthene		0.10 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Benzo(c)phenanthrene	threne	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Benzo(e)pyrene			0.03 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Benzo(ghi)perylene	ene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Chrysene			0.02 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Dibenzo(a,h)pyrene	ene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Dibenzo(a,i)pyrene	ine	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Dibenzo(a,l)pyrene	ine	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Dibenzo(ah)anthracene	ıracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Fluoranthene			0.07 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Fluorene			0.14 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Indeno(1,2,3-cd)pyrene	pyrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Naphthalene			0.31 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Perylene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
15120215-003	Phenanthrene			0.21 ug/Filter	0.01	NA-017	14-Jan-16
Report certified by:	Graham Knox, Team Lead	am Lead On behalf	of: PJ Pretorius, Manager, Analysis and Testing Services	ysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Alberta PO Bag 4000 vegreville, Alberta Canada T9C 174 (780) 632-8211 Futures

# **ENVIRONMENTAL ANALYTICAL SERVICES**

TEST REPORT

Page 4 of 25

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Graham Knox, Team Lead

Report certified by: Date: January-15-16



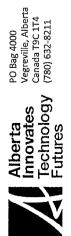
TEST REPORT

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CLIENTS	CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED			
LICA/PUF/ELI	LICA/PUF/ELK/Dec 20, 2015	9801	Air Filter	20-Dec-15 0:00			
DESCRIPTION:	Elk Point Airport	ort					
REPORT NUMBER:	ER: 16010003	REPORT CREATED:	): 15-Jan-16			VERSION:	Version 01
Lab ID	Parameter	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	Qualifier	Result Units	RDL	Method	Analysis Date
16010003-002	1-Methylnaphthalene	lene		0.40 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	2-Methylnaphthalene	ilene		0.57 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	3-Methylcholanthrene	hrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	7,12-Dimethylbenz(a)anthracene	nz(a)anthracene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Acenaphthene			0.08 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Acenaphthylene			0.04 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Acridine		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Anthracene			0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Benzo(a)anthracene	ene		0.03 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Benzo(a)pyrene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Benzo(b,j,k)fluoranthene	anthene		0.11 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Benzo(c)phenanthrene	hrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Benzo(e)pyrene			0.03 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Benzo(ghi)perylene	ne	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Chrysene			0.02 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Dibenzo(a,h)pyrene	ne	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Dibenzo(a,i)pyrene	ie	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Dibenzo(a,I)pyrene	je.	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Dibenzo(ah)anthracene	acene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Fluoranthene			0.08 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Fluorene			0.14 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Indeno(1,2,3-cd)pyrene	yrene	K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Naphthalene			0.35 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Perylene		K, T, U	< 0.01 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002	Phenanthrene			0.20 ug/Filter	0.01	NA-017	14-Jan-16
Report certified by:	Graham Knox, Team Lead	n Lead On behalf	fof: PI Pretorius, Manager, Analysis and Testing Services	ysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



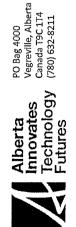
TEST REPORT

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CLIENT SAMPLE ID	APLE ID	CANISTER ID		Matrix	DATE SAMPLED	ing		
LICA/PUF/ELK/Dec 20, 2015	ec 20, 2015	9801		Air Filter	20-Dec-15 0:00			
DESCRIPTION:	Elk Point Airport	oort	REDORT CREATED.	15 120				
	- 11		וובן סוון כוונים ובס	OT-JUIL-CT			VERSION:	version U.
Lab ID P	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
16010003-002 P	Pyrene				0.08 ug/Filter	0.01	NA-017	14-Jan-16
16010003-002 R	Retene				0.03 ug/Filter	0.01	NA-017	14-Jan-16
Report certified by:	Graham Knox, Team Lead	ım Lead	On behalf o	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	ysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



**TEST REPORT** 

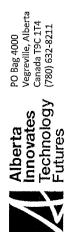
Page 3 of 20

**Analysis Date** 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 [4-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 [4-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 14-Jan-16 Version 01 VERSION: Method NA-017 NA-017 NA-017 NA-017 NA-017 NA-017 **VA-017** NA-017 **VA-017** NA-017 **NA-017** NA-017 NA-017 NA-017 NA-017 **NA-017** NA-017 **NA-017 VA-017 VA-017 IA-017** NA-017 NA-017 **IA-017 IA-017** 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0:00 DATE SAMPLED 0.94 ug/Filter 1.31 ug/Filter < 0.01 ug/Filter 0.05 ug/Filter 0.10 ug/Filter 0.03 ug/Filter 0.01 ug/Filter 0.12 ug/Filter 0.04 ug/Filter < 0.01 ug/Filter 0.04 ug/Filter 0.10 ug/Filter :0.01 ug/Filter 0.02 ug/Filter : 0.01 ug/Filter 0.01 ug/Filter < 0.01 ug/Filter : 0.01 ug/Filter < 0.01 ug/Filter 0.09 ug/Filter 0.02 ug/Filter 0.19 ug/Filter 1.01 ug/Filter < 0.01 ug/Filter 0.28 ug/Filter 26-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units 15-Jan-16 Qualifier K, T, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U K, T, U Κ, Τ, U K, T, U Air Filter Matrix REPORT CREATED: 7,12-Dimethylbenz(a)anthracene **CANISTER ID** P13-01 3enzo(b,j,k)fluoranthene Oibenzo(ah)anthracene ndeno(1,2,3-cd)pyrene 3-Methylcholanthrene Benzo(c)phenanthrene 1-Methylnaphthalene 2-Methylnaphthalene Graham Knox, Team Lead Elk Point Airport 3enzo(a)anthracene Dibenzo(a,h)pyrene Benzo(ghi)perylene Dibenzo(a,i)pyrene Dibenzo(a,I)pyrene Acenaphthylene 3enzo(a)pyrene Benzo(e)pyrene Acenaphthene 16010004 LICA/PUF/ELK/Dec. 26, 2015 Phenanthrene -luoranthene Naphthalene Anthracene Parameter Chrysene **CLIENT SAMPLE ID** Acridine -Inorene Perylene REPORT NUMBER: Report certified by: DESCRIPTION: 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 16010004-004 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

January-15-16



**TEST REPORT** 

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			7		
		Version 01	Analysis Date	14-Jan-16	14-Jan-16
		VERSION:	Method	NA-017	NA-017
			RDL	0.01	0.01
26-Dec-15 0:00			Result Units	0.09 ug/Filter	0.10 ug/Filter
lter		15-Jan-16	Qualifier		
P13-01 Air Filter		REPORT CREATED:			
	irport	16010004	Parameter	Pyrene	Retene
LICA/PUF/ELK/Dec. 26, 2015	DESCRIPTION:	REPORT NUMBER:			16010004-004 Rei

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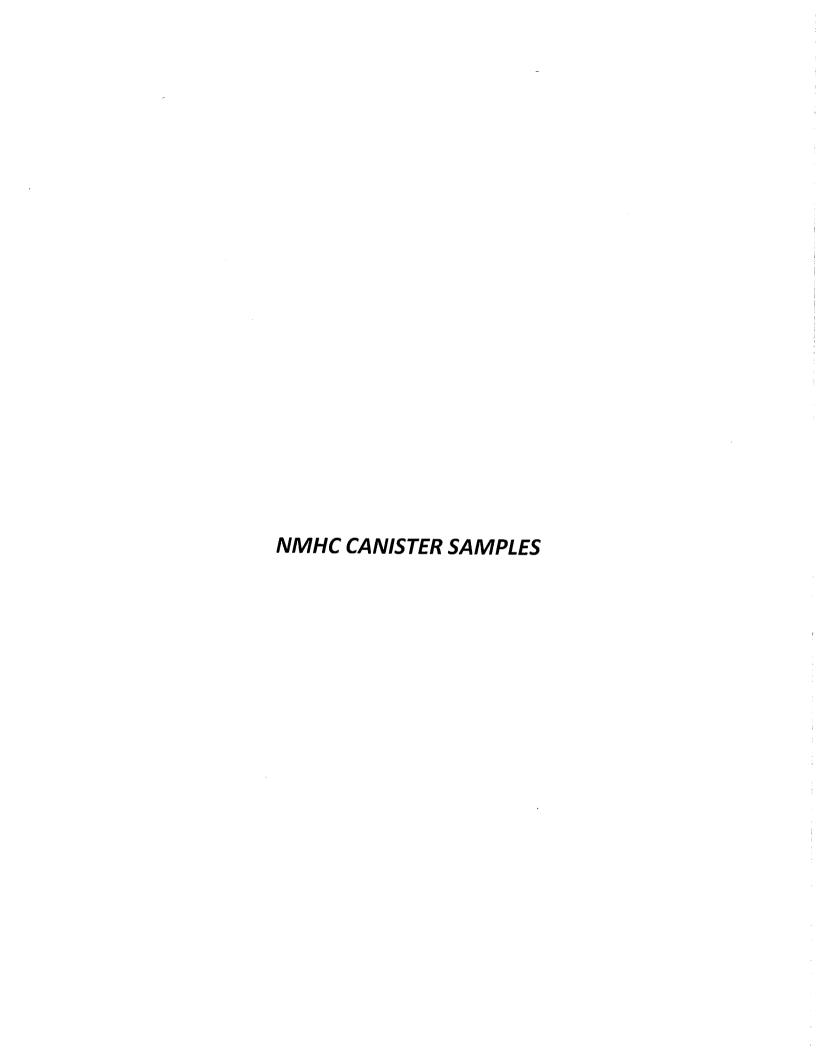
Inquiries: (780) 632 8455

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Graham Knox, Team Lead

Report certified by:

Date: January-15-16





TEST REPORT

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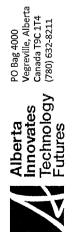
**Analysis Date** 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 .0-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 4C-058 0.05 90.0 1.0 0.04 0.4 0.5 0.5 0.02 0.02 0.02 0.02 0.02 0.04 0.01 0.01 0.02 0.02 0.02 0.02 0.01 0.01 0.01 0.01 0.02 17:00 DATE SAMPLED 01-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units ppbv ppbv ppbv ppbv ppbv ppbv : 0.02 ppbv 0.12 ppbv 0.06 ppbv < 0.5 ppbv < 0.02 ppbv : 0.06 ppbv < 0.02 ppbv : 0.04 ppbv 0.03 ppbv < 0.4 ppbv < 0.5 ppbv 0.05 ppbv : 0.01 ppbv < 0.01 ppbv 0.56 ppbv ppbv < 1.0 ppbv 0.21 ppbv 1.67 ppbv < 0.02 0.02 < 0.01 < 0.05 < 0.02 1.18 69.0 K, T, U Κ, Τ, U 08-Jan-16 Κ, Τ, U K, T, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U K, T, U Qualifier _ _ Ambient Air Matrix REPORT CREATED: CANISTER ID 1,1,2,2-Tetrachloroethane L,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene L,2,3-Trimethylbenzene 2,2,4-Trimethylpentane 2,3,4-Trimethylpentane 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Graham Knox, Team Lead 1,1-Dichloroethylene 1,2-Dichloropropane 2,3-Dimethylpentane .,2-Dichlorobenzene L,3-Dichlorobenzene 1,4-Dichlorobenzene Elk Point Airport 1,2-Dibromoethane 2,2-Dimethylbutane 2,3-Dimethylbutane I,1-Dichloroethane 1,2-Dichloroethane 1,3-Butadiene 15120089 LICA/VOC/ELK/Dec 1, 2015 L,4-Dioxane 1-Pentene Parameter L-Hexene 1-Butene **CLIENT SAMPLE ID** REPORT NUMBER: Report certified by: DESCRIPTION: 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

Friday, January 08, 2016

Date:



**TEST REPORT** 

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CLIENT S.	CLIENT SAMPLE ID	CANISTER ID	Ma	Matrix	DATE SAMPLED	PLED		
LICA/VOC/EL	LICA/VOC/ELK/Dec 1, 2015	2660	Ambie	Ambient Air	01-Dec-15	17:00		
DESCRIPTION:	Elk Point Airport	port						
REPORT NUMBER:	R: 15120089	REPO	REPORT CREATED:	08-Jan-16			VERSION:	Version 01
Lab ID	Parameter			Qualifier	Result Units	RDL	Method	Analysis Date
15120089-005	2,4-Dimethylpentane	ıtane			0.55 ppbv	0.01	AC-058	10-Dec-15
15120089-005	2-Methylheptane	ь		_	0.31 ppbv	0.01	AC-058	10-Dec-15
15120089-005	2-Methylhexane				0.61 ppbv	0.01	AC-058	10-Dec-15
15120089-005	2-Methylpentane	Ð			2.12 ppbv	0.01	AC-058	10-Dec-15
15120089-005	3-Methylheptane	ь		_	0.20 ppbv	0.02	AC-058	10-Dec-15
15120089-005	3-Methylhexane				0.72 ppbv	0.02	AC-058	10-Dec-15
15120089-005	3-Methylpentane	e			1.21 ppbv	0.01	AC-058	10-Dec-15
15120089-005	Acetone			K, T, U	< 0.5 ppbv	0.5	AC-058	10-Dec-15
15120089-005	Acrolein			K, T, U	< 0.4 ppbv	0.4	AC-058	10-Dec-15
15120089-005	Benzene				0.91 ppbv	0.01	AC-058	10-Dec-15
15120089-005	Benzyl chloride			K, T, U	< 0.5 ppbv	0.5	AC-058	10-Dec-15
15120089-005	Bromodichloromethane	nethane		K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-005	Bromoform			K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-005	Bromomethane			K, T, U	< 0.01 ppbv	0.01	AC-058	10-Dec-15
15120089-005	Carbon disulfide			_	0.06 ppbv	0.01	AC-058	10-Dec-15
15120089-005	Carbon tetrachloride	oride			0.13 ppbv	0.01	AC-058	10-Dec-15
15120089-005	Chlorobenzene			K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-005	Chloroethane			K, T, U	< 0.02 ppbv	0.02	AC-058	10-Dec-15
15120089-005	Chloroform			_	0.03 ppbv	0.02	AC-058	10-Dec-15
15120089-005	Chloromethane				0.74 ppbv	0.02	AC-058	10-Dec-15
15120089-005	cis-1,2-Dichloroethene	thene		K, T, U	< 0.01 ppbv	0.01	AC-058	10-Dec-15
15120089-005	cis-1,3-Dichloropropene	oropene		K, T, U	< 0.05 ppbv	0.05	AC-058	10-Dec-15
15120089-005	cis-2-Butene				0.07 ppbv	0.05	AC-058	10-Dec-15
15120089-005	cis-2-Pentene			K, T, U	< 0.02 ppbv	0.05	AC-058	10-Dec-15
15120089-005	Cyclohexane				1.60 ppbv	0.02	AC-058	10-Dec-15
Report certified by:	Graham Knox, Team Lead	an Lead	On behalf of: PJ	Pretorius, Manager, Anal	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



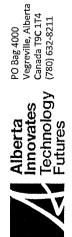
**TEST REPORT** 

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**Analysis Date** 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 .0-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 0.02 0.02 0.5 0.4 0.01 0.5 0.01 0.02 0.01 0.60 0.02 0.04 0.04 0.05 0.10 0.60 0.5 0.01 0.01 0.01 0.08 0.04 0.01 0.02 17:00 DATE SAMPLED 01-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services Result Units ppbv ppbv ppbv **p**bbv ppbv ppbv ppbv 0.51 ppbv < 0.01 ppbv 3.0 ppbv < 0.5 ppbv 0.16 ppbv : 0.02 ppbv 0.55 ppbv < 0.60 ppbv 0.02 ppbv 0.41 ppbv < 0.05 ppbv < 0.10 ppbv 0.54 ppbv 0.10 ppbv 9.99 yddd < 0.5 ppbv < 0.08 ppbv 2.63 ppbv 6.56 < 0.5 < 0.60 < 0.04 0.03 1.41 08-Jan-16 Κ, Τ, U Qualifier K, T, U K, T, U K, T, U K, T, U Κ, Τ, U K, T, U Κ, Τ, U K, T, U Κ, Τ, U Κ, Τ, U Ambient Air Matrix REPORT CREATED: CANISTER ID 2660 Hexachloro-1,3-butadiene **Dibromochloromethane** Methyl isobutyl ketone Methyl tert butyl ether Graham Knox, Team Lead Methyl methacrylate Methyl butyl ketone Wethyl ethyl ketone Elk Point Airport Methylcyclopentane Methylcyclohexane m-Diethylbenzene sopropylbenzene sopropyl alcohol m-Ethyltoluene 15120089 Cyclopentane Ethylbenzene LICA/VOC/ELK/Dec 1, 2015 thyl acetate m,p-Xylene sopentane Parameter -reon-114 Freon-113 sobutane Freon-11 Freon-12 **CLIENT SAMPLE ID** soprene Ethanol REPORT NUMBER: Report certified by: **DESCRIPTION:** 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



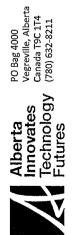
**TEST REPORT** 

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**Analysis Date** 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 .0-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 10-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 4C-058 AC-058 AC-058 AC-058 4C-058 AC-058 9.0 9.0 0.5 0.1 90.0 0.04 0.07 0.01 0.01 0.02 0.01 0.01 0.01 0.05 0.08 0.05 0.05 0.5 0.01 0.05 0.01 0.01 0.02 17:00 DATE SAMPLED 01-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv ppbv Result Units ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv < 0.4 ppbv 13.1 ppbv < 0.06 ppbv < 0.6 ppbv < 0.05 ppbv < 0.1 ppbv < 0.05 ppbv < 0.5 ppbv < 0.01 ppbv : 0.01 ppbv : 0.05 ppbv 0.04 ppbv < 0.05 ppbv 0.15 1.06 0.09 2.13 0.13 0.04 < 0.05 0.85 0.37 < 0.08 Κ, Τ, U 08-Jan-16 Qualifier K, T, U K, T, U K, T, U K, T, U K, T, U K, T, ∪ K, T, U K, T, U K, T, U Κ, Τ, U Ambient Air Matrix REPORT CREATED: **CANISTER ID** trans-1,3-Dichloropropylene 2660 trans-1,2-Dichloroethylene Graham Knox, Team Lead Tetrachloroethylene Elk Point Airport Methylene chloride o-Diethylbenzene Trichloroethylene n-Propylbenzene etrahydrofuran trans-2-Pentene o-Ethyltoluene trans-2-Butene o-Ethyltoluene 15120089 LICA/VOC/ELK/Dec 1, 2015 **Naphthalene** n-Dodecane 1-Undecane 1-Pentane n-Heptane Parameter n-Butane n-Nonane n-Decane n-Hexane n-Octane o-Xylene **CLIENT SAMPLE ID** Coluene tyrene REPORT NUMBER: Report certified by: DESCRIPTION: 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 15120089-005 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



**TEST REPORT** 

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	Version 01	Analysis Date	10-Dec-15	10-Dec-15						
	VERSION:	Method	AC-058	AC-058						
		RDL	0.5	0.02						
<b>IPLED</b> 17:00										
<b>DATE SAMPLED</b> 01-Dec-15 17:0		Result Units	0.5 ppbv	< 0.02 ppbv						
r <b>ix</b> nt Air	08-Jan-16	Qualifier		K, T, U						
<b>Matrix</b> Ambient Air	REPORT CREATED:									
CANISTER ID 2660										
<b>MPLE ID</b> /Dec 1, 2015	Elk Point Airport: 15120089	Parameter	Vinyl acetate	Vinyl chloride						
CLIENT SAMPLE ID LICA/VOC/ELK/Dec 1, 2015	DESCRIPTION: REPORT NUMBER:	Lab ID F		15120089-005 \						

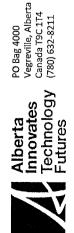
E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

On behalf of: PJ Pretorius, Manager, Analysis and Testing Services

Graham Knox, Team Lead

Report certified by:



TEST REPORT

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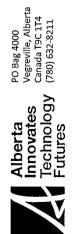
**Analysis Date** 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 30-Dec-15 0-Dec-15 0-Dec-15 30-Dec-15 Version 01 VERSION: Method AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 AC-058 4C-058 AC-058 AC-058 0.02 0.02 0.02 0.04 0.05 0.03 0.02 0.03 0.02 0.02 0.3 0.4 0.4 0.9 0.01 0.01 0.02 0.02 0.01 0.01 0.01 0.01 0.02 0.02 10:10 DATE SAMPLED 12-Dec-15 On behalf of: PJ Pretorius, Manager, Analysis and Testing Services ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv ppbv Result Units pbbv ppbv ppbv ppbv < 0.02 ppbv 0.02 ppbv 0.06 ppbv < 0.02 ppbv < 0.4 ppbv ppbv ppbv < 0.9 vdqq 0.01 ppbv : 0.01 ppbv 0.41 ppbv < 0.02 : 0.02 < 0.02 < 0.04 < 0.05 0.19 < 0.3 < 0.4 < 0.03 0.01 0.03 0.33 1.51 1.09 0.89 K, T, U K, T, U 15-Jan-16 Qualifier K, T, U K, T, U Κ, Τ, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U K, T, U Κ, T, U K, T, U _ Ambient Air Matrix REPORT CREATED: CANISTER ID Elk Point Airport - NMHC H3302 1,1,2,2-Tetrachloroethane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene 1,2,3-Trimethylbenzene 1,2,4-Trichlorobenzene 2,2,4-Trimethylpentane 2,3,4-Trimethylpentane 1,1,1-Trichloroethane L, 1, 2-Trichloroethane Graham Knox, Team Lead 1,1-Dichloroethylene 1,2-Dichlorobenzene 1,2-Dichloropropane 2,3-Dimethylpentane ,3-Dichlorobenzene L,4-Dichlorobenzene 1,2-Dibromoethane 2,2-Dimethylbutane 2,3-Dimethylbutane L,1-Dichloroethane .,2-Dichloroethane 15120215 1,3-Butadiene LICA/VOC/ELK/Dec 12, 2015 L,4-Dioxane Parameter 1-Pentene I-Hexene 1-Butene **CLIENT SAMPLE ID** REPORT NUMBER: Report certified by: **DESCRIPTION:** 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 15120215-001 Lab ID

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

January-15-16

Date:



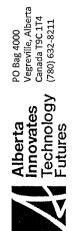
**TEST REPORT** 

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CLIENTS	CLIENT SAMPLE ID	CANISTER ID ME	Matrix	DATE SAMPLED	(PLED		
LICA/VOC/ELI	LICA/VOC/ELK/Dec 12, 2015		Ambient Air	12-Dec-15	10:10		
DESCRIPTION:	Elk Point Airport - NMHC	oort - NMHC					
REPORT NUMBER:	ER: 15120215	REPORT CREATED:	15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120215-001	2,4-Dimethylpentane	tane	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-001	2-Methylheptane	υ.	_	0.24 ppbv	0.01	AC-058	30-Dec-15
15120215-001	2-Methylhexane			0.34 ppbv	0.01	AC-058	30-Dec-15
15120215-001	2-Methylpentane	Ø)		1.21 ppbv	0.01	AC-058	30-Dec-15
15120215-001	3-Methylheptane	đ)		0.15 ppbv	0.02	AC-058	30-Dec-15
15120215-001	3-Methylhexane			0.39 ppbv	0.02	AC-058	30-Dec-15
15120215-001	3-Methylpentane	đ)		0.68 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Acetone			10.7 ppbv	0.4	AC-058	30-Dec-15
15120215-001	Acrolein		K, T, U	< 0.3 ppbv	0.3	AC-058	30-Dec-15
15120215-001	Benzene			1.72 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Benzyl chloride		K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-001	Bromodichloromethane	ethane	K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Bromoform		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Bromomethane		K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Carbon disulfide		_	0.04 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Carbon tetrachloride	ride	_	0.10 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Chlorobenzene		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Chloroethane		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Chloroform		_	0.03 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Chloromethane			1.08 ppbv	0.02	AC-058	30-Dec-15
15120215-001	cis-1,2-Dichloroethene	thene	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-001	cis-1,3-Dichloropropene	ropene	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Dec-15
15120215-001	cis-2-Butene		_	0.12 ppbv	0.02	AC-058	30-Dec-15
15120215-001	cis-2-Pentene		_	0.03 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Cyclohexane		_	0.24 ppbv	0.02	AC-058	30-Dec-15
Report certified by:	Graham Knox, Team Lead	On behalf	of: PJ Pretorius, Manager, Analysis and Testing Services	ysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



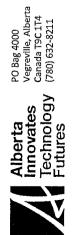
**TEST REPORT** 

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CLIENT 5	CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED	ED		
LICA/VOC/EL	LICA/VOC/ELK/Dec 12, 2015	H3302	Ambient Air	12-Dec-15	10:10		
DESCRIPTION:	Elk Point Air	Elk Point Airport - NMHC					
REPORT NUMBER:	ER: 15120215	REPORT CREATE	ED: 15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120215-001	Cyclopentane		_	0.20 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Dibromochloromethane	methane	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Ethanol			1.5 ppbv	0.3	AC-058	30-Dec-15
15120215-001	Ethyl acetate		K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-001	Ethylbenzene			0.11 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Freon-11			0.32 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Freon-113			vdqq 60.0	0.01	AC-058	30-Dec-15
15120215-001	Freon-114		_	0.03 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Freon-12			0.63 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Hexachloro-1,3-butadiene	-butadiene	K, T, U	< 0.54 ppbv	0.54	AC-058	30-Dec-15
15120215-001	Isobutane			2.23 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Isopentane			3.20 ppbv	0.03	AC-058	30-Dec-15
15120215-001	Isoprene			1.28 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Isopropyl alcohol	lo	K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-001	Isopropylbenzene	ne	_	0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-001	m,p-Xylene			0.44 ppbv	0.03	AC-058	30-Dec-15
15120215-001	m-Diethylbenzene	ine	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Dec-15
15120215-001	m-Ethyltoluene		_	0.10 ppbv	0.09	AC-058	30-Dec-15
15120215-001	Methyl butyl ketone	tone	K, T, U	< 0.54 ppbv	0.54	AC-058	30-Dec-15
15120215-001	Methyl ethyl ketone	tone	K, T, U	< 0.3 ppbv	0.3	AC-058	30-Dec-15
15120215-001	Methyl isobutyl ketone	ketone	K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-001	Methyl methacrylate	ylate	K, T, U	< 0.08 ppbv	0.08	AC-058	30-Dec-15
15120215-001	Methyl tert butyl ether	yl ether	K, T, U	< 0.03 ppbv	0.03	AC-058	30-Dec-15
15120215-001	Methylcyclohexane	ane		0.63 ppbv	0.01	AC-058	30-Dec-15
15120215-001	Methylcyclopentane	ıtane		0.73 ppbv	0.02	AC-058	30-Dec-15
Report certified by:	Graham Knox, Team Lead		On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	lysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



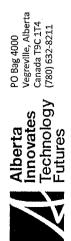
**TEST REPORT** 

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CLIENTS	CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED	PLED		
LICA/VOC/ELI	LICA/VOC/ELK/Dec 12, 2015	H3302	Ambient Air	12-Dec-15	10:10		
DESCRIPTION:	Elk Point Air	Elk Point Airport - NMHC					
REPORT NUMBER:	R: 15120215	REPORT CREATED	TED: 15-Jan-16			VERSION:	Version 01
Lab ID	Parameter		Qualifier	Result Units	RDL	Method	Analysis Date
15120215-001	Methylene chloride	ride	K, T, U	< 0.3 ppbv	0.3	AC-058	30-Dec-15
15120215-001	n-Butane			6.18 ppbv	0.03	AC-058	30-Dec-15
15120215-001	n-Decane		Κ, Τ, U	< 0.06 ppbv	0.06	AC-058	30-Dec-15
15120215-001	n-Dodecane		K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-001	n-Heptane			0.40 ppbv	0.01	AC-058	30-Dec-15
15120215-001	n-Hexane			0.80 ppbv	0.01	AC-058	30-Dec-15
15120215-001	n-Octane		_	0.30 ppbv	0.02	AC-058	30-Dec-15
15120215-001	n-Pentane			1.8 ppbv	0.1	AC-058	30-Dec-15
15120215-001	n-Propylbenzene	a)	K, T, U	< 0.05 ppbv	0.02	AC-058	30-Dec-15
15120215-001	n-Undecane		K, T, U	< 0.5 ppbv	0.5	AC-058	30-Dec-15
15120215-001	Naphthalene			2.0 ppbv	0.5	AC-058	30-Dec-15
15120215-001	n-Nonane		_	0.18 ppbv	0.01	AC-058	30-Dec-15
15120215-001	o-Ethyltoluene		_	0.04 ppbv	0.01	AC-058	30-Dec-15
15120215-001	o-Xylene			0.17 ppbv	0.01	AC-058	30-Dec-15
15120215-001	p-Diethylbenzene	ē	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Dec-15
15120215-001	p-Ethyltoluene		K, T, U	< 0.08 ppbv	0.08	AC-058	30-Dec-15.
15120215-001	Styrene		K, T, U	< 0.04 ppbv	0.04	AC-058	30-Dec-15
15120215-001	Tetrachloroethylene	lene	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Dec-15
15120215-001	Tetrahydrofuran		K, T, U	< 0.4 ppbv	0.4	AC-058	30-Dec-15
15120215-001	Toluene			0.77 ppbv	0.01	AC-058	30-Dec-15
15120215-001	trans-1,2-Dichloroethylene	roethylene	K, T, U	< 0.01 ppbv	0.01	AC-058	30-Dec-15
15120215-001	trans-1,3-Dichloropropylene	ropropylene	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Dec-15
15120215-001	trans-2-Butene		_	0.21 ppbv	0.01	AC-058	30-Dec-15
15120215-001	trans-2-Pentene		K, T, U	< 0.02 ppbv	0.02	AC-058	30-Dec-15
15120215-001	Trichloroethylene	e	K, T, U	< 0.04 ppbv	0.04	AC-058	30-Dec-15
Report certified by:	Graham Knox, Team Lead		On behalf of: PJ Pretorius, Manager, Analysis and Testing Services	alysis and Testing Services			

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455



**TEST REPORT** 

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_							
			Version 01	Analysis Date	30-Dec-15	30-Dec-15	
			VERSION:	Method	AC-058	AC-058	
	10:10			RDL	0.4	0.05	
DATE SAMPLED	12-Dec-15 10			Result Units	< 0.4 ppbv	< 0.02 ppbv	sis and Testing Services
trix	ent Air	7	T2-Jan-Tp	Qualifier	K, T, U	K, T, U	On behalf of: PJ Pretorius, Manager, Analysis and Testing Services
ER ID Matrix	Ą	HC BEDODT CDEATED.	REPURI CREAIED:				On behalf of: PJ
LE ID CANISTER ID		Elk Point Airport - NMHC	13120213	Parameter	Vinyl acetate	Vinyl chloride	Graham Knox, Team Lead
CLIENT SAMPLE ID	LICA/VOC/ELK/Dec 12, 2015	DESCRIPTION:	NI NOINIBER.	Lab ID Para		15120215-001 Viny	Report certified by: G

E-mail: EAS.Results@albertainnovates.ca

Inquiries: (780) 632 8455

### APPENDIX V CHAIN OF CUSTODY

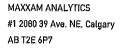


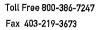
Client: Lakeland Industry & Community Association

### Maxxam Analytics - Air Services Group Project Chain of Custody

Project #: 2833-2015-12-35- C

Site: Elk Poi	nt Airport Site	Contact: Mike Bis	aga
QA Check Complete	madmha	Date	18-Jan-2016
QA Check Review	morelinha	Date _	18-Jan-2016
Report Complete	inslahe	Date _	18-Jan-2016
Report Reviewed	heljlo	Date	19-Jan-16
Report Shipped		Date _	
Notes			







### AMBIENT AIR MONITORING MONTHLY DATA REPORT LAKELAND INDUSTRY & COMMUNITY ASSOCIATION MASKWA SITE

JOB #:2833-2015-12-30- C

**DECEMBER 2015** 

Prepared for:

### **LAKELAND INDUSTRY & COMMUNITY ASSOCIATION**

BOX 8237, 5107W - 50 STREET BONNYVILLE, ALBERTA T9N 2J5

**Attention: MIKE BISAGA** 

DATE:

January 20, 2016

Prepared by:

Ernestine Tangang, Ph.D.

Team Leader, Source Testing, Maxxam Analytics

Reviewed by:

Lily Lin, B.Sc.

Senior Project Manager, Air Services, Maxxam Analytics



### **SUMMARY**

In DECEMBER 2015, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the Maskwa Site at Lakeland Industry & Community Association, near Bonnyville, Alberta. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the Project Coordinator.

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

SO2: The Maxxam-supplied API 100A, S/N: 1124 analyzer was replaced by the LICA-owned API 100E, S/N: 508 which had been repaired on December 2.

H2S: Thirty six hours of data were invalidated due to sample pump failure.

THC: Thirty five hours of data were invalidated due to zero air generator failure this month.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0 Discussion. On this basis, Maxxam is issuing this completed report to Lakeland Industry & Community Association, Maskwa Site.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3689 or toll-free at 1-800-386-7247.



### **Monthly Continuous Data Summary**

Lakeland Indus	stry & C	ommun	ity Ass	ociation				N	1AXIMUM V	ALUES			ODEDATIONAL
Maskwa Site								1-HOUR			24-H	OUR	OPERATIONAL TIME
PARAMETER	OBJE	CTIVES	EXCEE	DENCES	MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED	WIND DIRECTION	READING	DAY	(%)
	1-HR	24-HR	1-HR	24-HR	AVERAGE				(KPH)	(DEGREES)			
SO2 (PPB)	172	48	0	0	0	14	30	10	4.7	NW	2.6	31	100.0
H2S (PPB)	10	3	0	0	0	1	VAR	VAR	VAR	VAR	0.6	3, 7	95.2
THC (PPM)	-	-	-	-	2.3	4.2	1	17	4.4	sw	3.3	1	95.2
NO2 (PPB)	159	-	0	-	5.4	31.1	1	19	5.1	sw	21.9	1	100.0
NO (PPB)	-	-	-	-	2.0	36.0	22	12	0.9	wnw	20.5	22	100.0
NOX (PPB)	-	-	-	-	7.4	53	1	18	4.7	sw	33.1	22	100.0
RELATIVE HUMIDITY (%)	-	-	-	-	77.2	90	9	VAR	VAR	VAR	89.1	9	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-	ı	-	934	955	26	9	0.8	SSW	952	26	100.0
AMBIENT TEMPERATURE (DEG C)	-	-	·	-	-10.1	4.5	4	13	8.6	NW	-1.6	9	100.0
PRECIPITATION (MM)	-	-	-	-	0.0	0.8	8	23	6	E	0.1	9, 23	100.0
VECTOR WS (KPH)	-	-	-	-	4.0	9.3	5	12	-	WNW	6.5	31	100.0
VECTOR WD (DEG)	-	-	-	-	SSE	-	-	-	-	-	-	-	100.0

NA-NOT AVAILABLE VAR-VARIOUS



### **Exceedence Summary Report**

**SO₂** 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

H₂S. 1- Hour Exceedences No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month



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,	Total Hydrocarbon
	Oxides of Nitrogen
	Nitric Oxides
	Nitrogen Dioxide
	Wind Speed
	Wind Direction
	Standard Deviation Wind Direction
	Relative Humidity
	Barometric Pressure
	Ambient Temperature
A P . H	Precipitation
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	Hydrogen Sulphide Total Hydrocarbon
	Nitrogen Dioxide
	Wind System
	Calibrators
	Calibration Gases
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### 1.0 Discussion

This monthly report consists of data for parameters SO2, H2S, THC, NOx, NO, NO2, WS, WD, RH, BP, STDWD, Precipitation and Ambient Temperature.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) is used for zero checks and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibration is done a minimum of once a month for each continuous air monitor. In addition calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor (greater than 15%).

Hourly data is corrected using daily zero information.



### **SULPHUR DIOXIDE (SO2)**

The analyzer was working well throughout the month.

A shutdown calibration was performed on the Maxxam supplied API 100A, S/N: 1124, on December 2. Following the shutdown calibration, the Maxxam-supplied API 100A analyzer was replaced by the LICA-owned API 100E, S/N: 508 analyzer which had been repaired at the Maxxam shop. The installation calibration was performed on the API 100E analyzer on the same day.

### **HYDROGEN SULPHIDE (H2S)**

A monthly calibration was performed on December 3. The analyzer spanned high on December 17. Upon arrival at the station on December 17, it was found that the sample pump had failed. The sample pump was rebuilt following a post-repair calibration on December 18. Data was invalidated back to the last good calibration, which was December 16. Thirty six hours of data were discarded due to this event.

### **TOTAL HYDROCARBONS (THC)**

The analyzer, Thermo 51i, S/N: 436609738, failed due to zero air generator failure on December 2 during hour 1. As the Thermo 51i, S/N: 436609738 analyzer required maintenance on the internal pump, it was removed on December 2 following a removal calibration. The Thermo 51C S/N: 436609739 analyzer was installed on December 2. Twenty four hours of data were discarded. The Thermo 51i analyzer was brought back to the Maxxam shop for repair. An as found points check was performed on December 10 in order to comfirm the analyzer's functionality. The check result passed the calibration requirements. The zero air generator failed again on December 13 during hour 1. A temporary fix was performed on the zero air generator while the new parts were ordered. A post repair calibration was performed on December 13. Eleven hours of data were invalidated due to this event.

### **NITROGEN DIOXIDE (NO2)**

The analyzer was working well throughout the month.

The routine monthly calibration was performed on December 3.

### WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.

The wind system was working well throughout the month.



### **RELATIVE HUMIDITY (RH)**

The humidity sensor was working well throughout the month.

### **BAROMETRIC PRESSURE (BP)**

The pressure sensor was working well throughout the month.

### **PRECIPITATION**

Both the rain gauge system and heating system were working well throughout the month.

### **AMBIENT TEMPERATURE (TPX)**

The temperature sensor was working well throughout the month.



### 2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling team consisted of Alexander Yakupov and Raja Ashraf.

### 3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

### 4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, and 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006).



### 5.0 Methods and Procedures

The following methods and procedures were used to complete the test program:

Maxxam AIR SOP-00208: RM Young Monitor Calibration

Maxxam AIR SOP-00209: Ambient H2S Monitoring

Maxxam AIR SOP-00211: Ambient SO2 Monitoring

Maxxam AIR SOP-00213: Ambient NO/NO2/NOx Monitoring

Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring

Maxxam AIR SOP-00242: Precipitation Collector Installation / Maintenance

There were no deviations from the prescribed methods.

The following instruments were used to perform the test program:

Sulphur Dioxide - API 100A and API 100E UV Flourescent Analyzer
Hydrogen Sulphide - API 101E UV Flourescent Analyzer
Total Hydrocarbons - Thermo 51C and Thermo 51i FID Analyzer
Oxides of Nitrogen - API 200E Chemiluminescent Analyzer
Wind System - Met One Unit
Relative Humidity - Met One Unit
Barometric Pressure - Met One Unit
Ambient Temperature - Met One Unit
Precipitation - Met One Unit
Datalogger - ESC 8832

### APPENDIX I CONTINUOUS MONITORING DATA RESULTS



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

SULPHUR DIOXIDE (SO2) hourly averages in ppb

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24 HOUR AVERAGES FOR DECEMBER 2015	P. POWERFAILURE O - OPERATOR ERROR G OUTFOR REPAIR K COLLECTION ERROR
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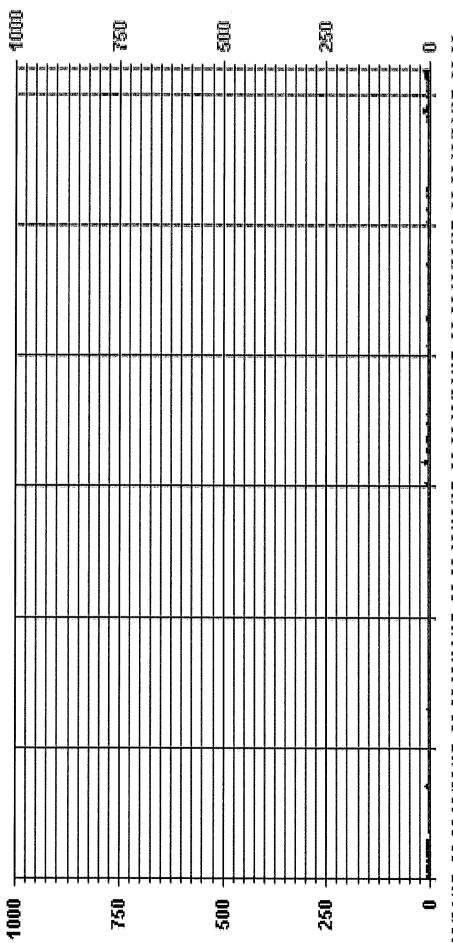
### OBJECTIVE LIMIT:

ALBERTA ENVIRONMENT: THE TAZE PER 124-HR 148 PER

### MONTHLY SUMMARY

NUMBER OF 24-HR EXCEEDENCES			0					
NUMBER OF NON-ZERO READINGS:	ċ;		130					
MAXIMUM 1-HR AVERAGE:		14	PPB	PPB @ HOUR(S)	10	ON DAY(S)	8	
MAXIMUM 24-HR AVERAGE:		2.6	PP8			ON DAY(S) VAR-VARIOUS	31	
IZS CALIBRATION TIME: MONTHLY CALBRATION TIME:	32	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	E: IPTIME:		744 100.0	HRS %
	,							000

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/21/15

- LICA30 SO2_ PPB



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

. RDGS.			24																													
AVG.	1.9	17	0.7	2.1	0.2	0.0	9.0	0.2	0.1	0.1	0.0	0.1	1.1	0.0	0.2	3.6	4.0	1.2	0.1	9.0	1.0	1.5	0.0	0.5	0.3	2.3	2.7	0.7	0.9	4.9	5.5	
MAX	4	7	7	17	П	П	7	m	1	Н	Н	-1	2	0	Н	21	17	m	7	1	9	7	0	4	m	2	ω	7	7	56	20	
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17.00	2	U	Н	Н	Н	0	H	0	0	0	s	0	0	0	0	0	0	1	s	H	0	Н	0	Н	0	4	m	0	7	7	σ	თ
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CALIBEATION

RECOVERY

PONITYZENO/SPANICHEC

TO "OUTLECTION ERROR

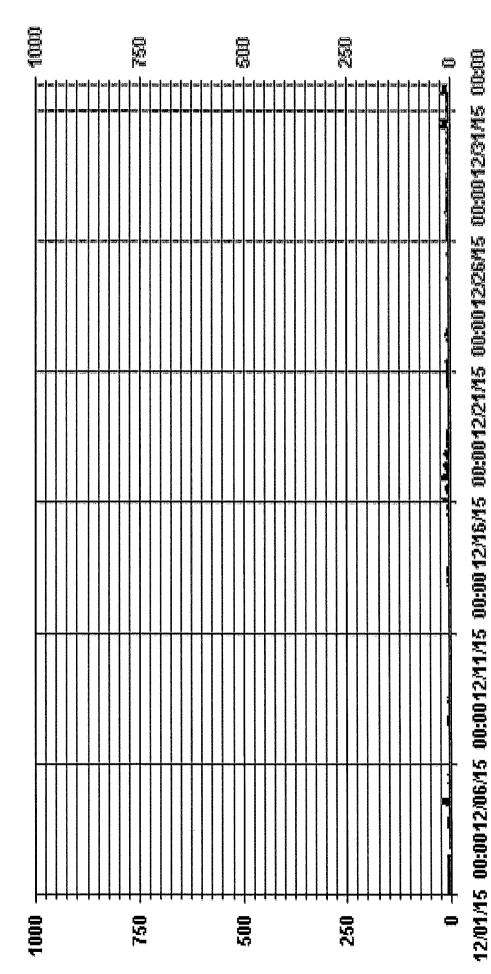
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K "COLLECTION ERROR

### **MONTHLY SUMMARY**

NUMBER OF NON-ZERO READINGS:			328								
MAXIMUM INSTANTANEOUS VALUE:			56	ьрв	@ HOUR(S)	6	10	ON DAY(S)		***	30
							VAR-VARIOUS	snoi			
IZS CALIBRATION TIME:	32	HRS		OPERATIC	OPERATIONAL TIME:				744	HRS	
MONTHLY CALIBRATION TIME:	σ	HRS									
STANDARD DEVIATION:	2.67										_

of Hour Averages



SOZNIAX 

LICA30 SO2_ / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

Logger Id : 30 Site Name : LICA30 Parameter : SO2_ Units : PPB

Freq

3.12 100.00 NNW

% 00. 00. 00. 00.

00. 00. 00. 00. 00. 3.12

3.83 M 3.83 00 8. 00. 0, 00. 4.26 WNW 4.26 00. 00, 00. 00. 00. 2.41 2.41 Wind Parameter : WDR Instrument Height : 10 Meters 00. 00 00. 00. × 00. 4.68 % 00 00. % 00. 4.68 3.12 12.50 14.48 3.69 3.12 12.50 14.48 SW 00. 00. 00. 00. 0. SSW 0. 0. 80. 00 00. 00. 00. 00. 00. 00. S 3.69 SSE 00. 00. 00. 00. 0. 7.67 12.21 % Direction SE 7.67 12.21 % 8 00 00. ESE 00 00. 00. 00. 00 4.11 4.11 00 00. 8, % % ы 8.80 8.80 ENE % 00. 00. 00. 00, 6.81 6.81 Ħ 00. 00. % 00. 00. NA 4.82 00-4.82 8 00. 00. 8. Totals 3.40 3.40 00. % 00. % 00. z Limit 110 170 340 20 9

Calm : .00 %

Total # Operational Hours : 704

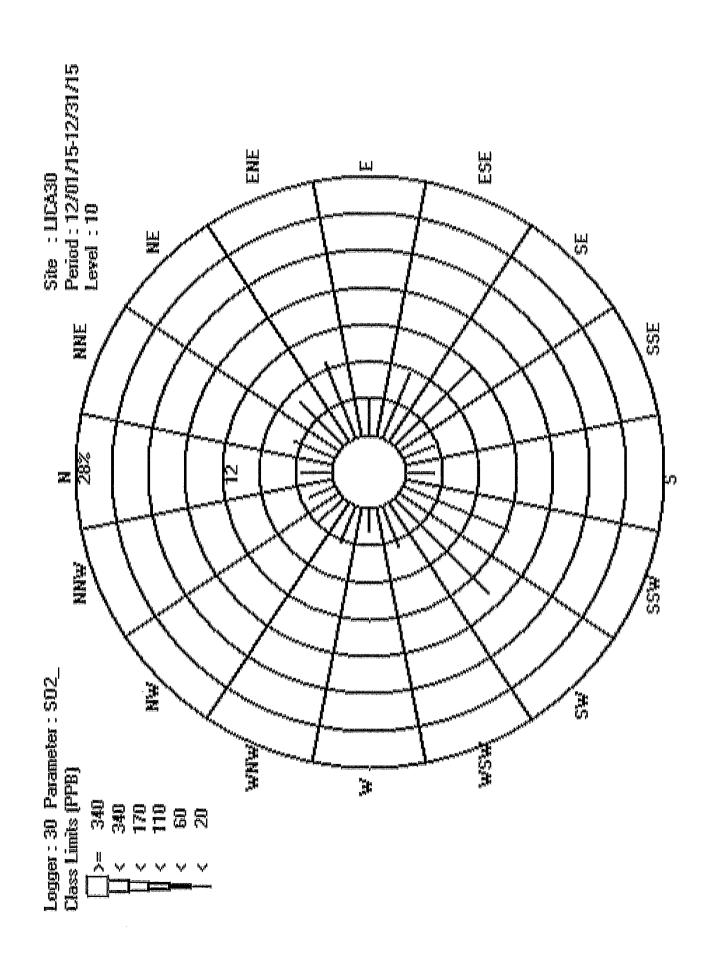
Distribution By Samples

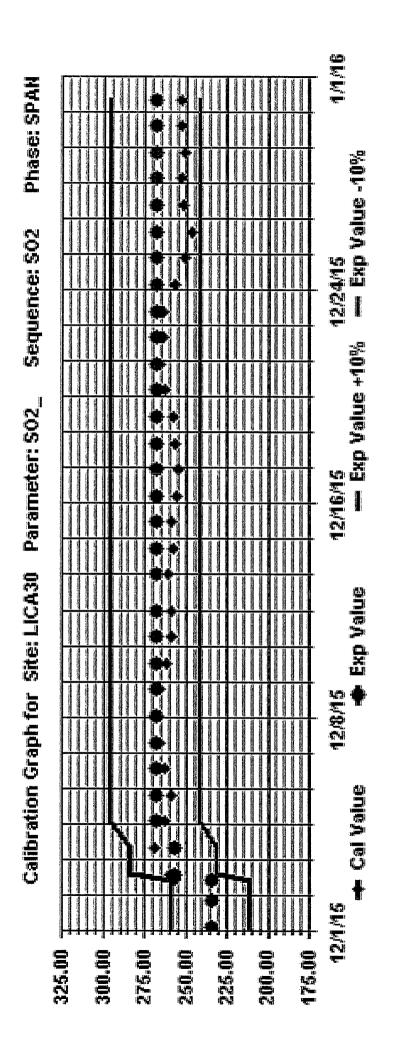
Direction

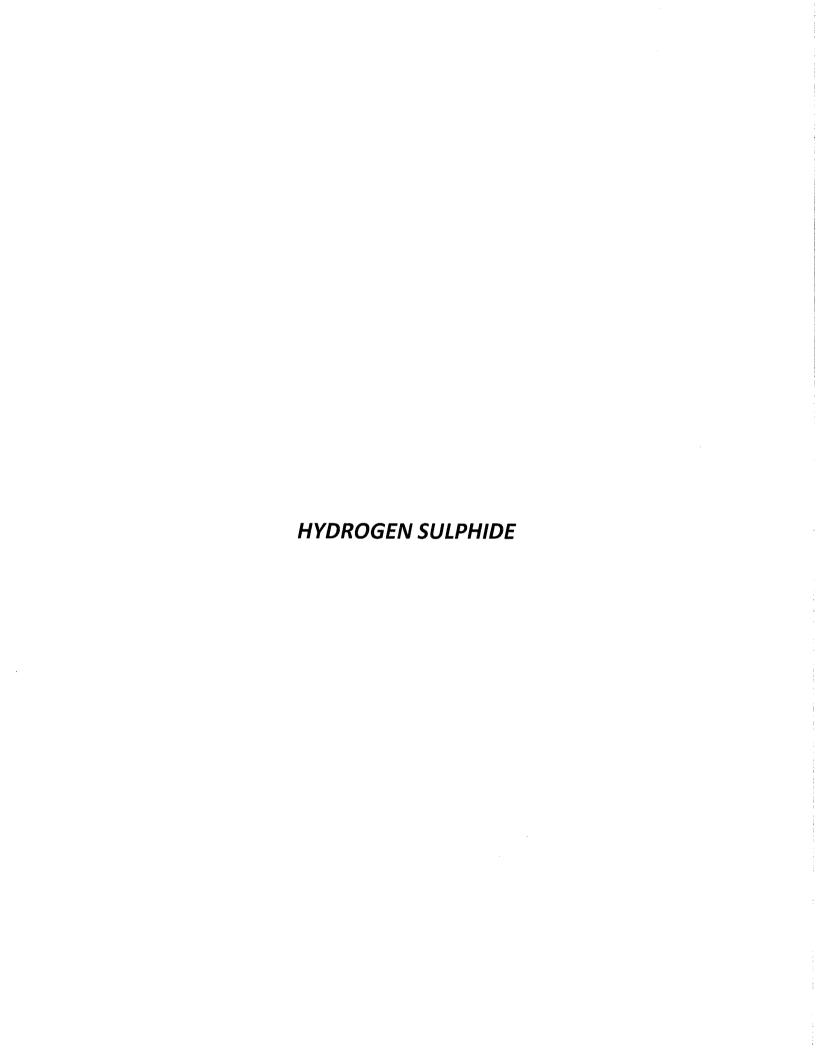
Freq	704						
NNW	22						22
NW	27						27
WINW	30						30
×	17						17
WSW	33						33
SW	102						102
SSW	88						88
w	22						22
SSE	56						26
SE	98						98
ESE	54						54
м	29						29
ENE	62						62
Ħ	48						48
NNE	34						34
z	24						24
Limit	20	09	110	170	340	340	Totals
3	<b>v</b>	<b>v</b>	<b>v</b>	<b>v</b>	<b>v</b>	X	ĭ

Calm : .00 %

Total # Operational Hours : 704







### LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

## HYDROGEN SULPHIDE (H2S) hourly averages in ppb

24-HOUR 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.1 0.0 0.0 HOURETARY 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 12:00 13:00 14:00 15:00 6:00 17:00 18:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 15:00 1 1.0 다 당 1 0.0 HOURLY AVG 

### STATUS FLAG CODES

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O CUALITY ASSURANCE  R. FECOVERN  X MACHINE MALFUNCTION  O - OPERATOR ERROR  K COLLECTION ERROR	EMBER 2015				17 18 19 20 21 22 28 24 28 26 77 28 28
CALBRATION MAINTENANCE DAILY ZERO/SPAN CHECK POWER FAILURE OUT FOR REPAIR	24 HOUR AVERAGES FOR DECEMBER 2015				7 8 9 10 11 12 13 14 15 16
C. CALIBIANION Y MAINTENANCE S PAILY ZEROSPAN P POWER FAILURE G OUT FOR REPAIR		0.0	7.0	5.0	10 00 1 2 3 4 5 6

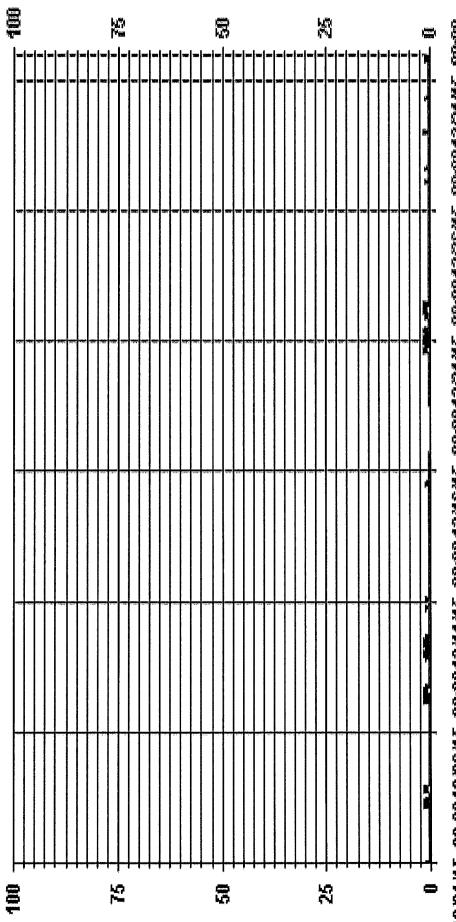
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ALBERTA ENVIRONMENT:
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### MONTHLY SUMMARY

NUMBER OF 1.HR EXCEEDENCES: NUMBER OF 24 HR EXCEEDENCES:			0 0						550000000000000000000000000000000000000
NUMBER OF NON-ZERO READINGS:			8						
MAXIMUM 1-HR AVERAGE:		Н	PPB	PPB @ HOUR(S)	VAR	ON DAY(S)	VAR	œ	
MAXIMUM 24-HR AVERAGE:		0.6	PPB			ON DAY(S) VAR-VARIOUS	m	3,7	
IZS CALIBRATION TIME: MONTHLY CALBRATION TIME:	31 10	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	AE: UPTIME:		708 95.2	HRS	
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Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/36/15 00:0012/31/15 00:00

- LICA30 H2S_ PPB



### LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Maskwa Site - DECEMBER 2015

JOB # 2833-2015-12-30- C

## HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

2.00         3.00         4.00         5.00         10.00         11.00         12.00         13.00         14.00         13.00         16.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.00         15.	1													:				1 1	ı							
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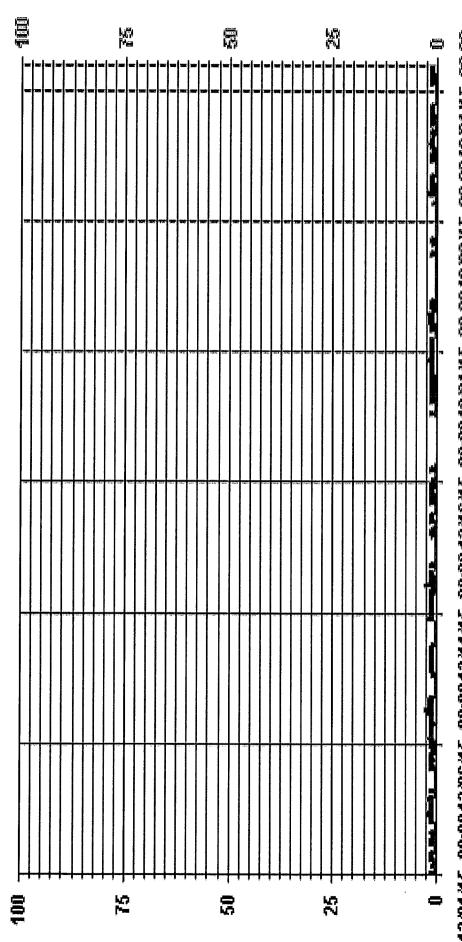
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### MONTHLY SUMMARY

NUMBER OF NON-ZERO READINGS:			325							
MAXIMUM INSTANTANEOUS VALUE:			m	844	@ HOUR(S)	2,8	2,8 ON DAY(S)		12,7	
						VAR-V/	VAR-VARIOUS			
 IZS CALIBRATION TIME:	31	HRS		OPERATIC	OPERATIONAL TIME:			708	HRS	
MONTHLY CALIBRATION TIME:	10	HRS								
STANDARD DEVIATION: 0	0.57									

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/36/15 00:0012/31/15 00:00

- LICASO RESEMBLY PPB

LICA30 LICA30 Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 30 Site Name : LICA30 Parameter : H2S Units : PPB

8. % 00. NNW Freq 2.09 100.00 00. 00. 2.09 00. ž 1.94 00. 1.94 00. 00. 4.04 4.04 MNH 00. 8. 00. Wind Parameter : WDR Instrument Height : 10 Meters 2.39 80. 00. 2.39 00. 5.09 5.09 00. 00. 00. 3.29 13.64 15.89 0. 0. 80. 3.29 13.64 15.89 SSW 00. 00, 00. 00. 0. ഗ 3.59 3.59 0. 90. 00. Direction SE 7.94 12.14 00. 7.94 12.14 8 00. ESE 00. 00. 00. 3.89 3.89 00-00. 00. M 9.29 9.29 ENE 00. 00. 00. 6.89 6.83 뛿 0. 00. 8. 4.79 4.79 Ä 00 00. 00. 2.99 2.99 00. 00. 00. z Limit 20 20

Total # Operational Hours : 667

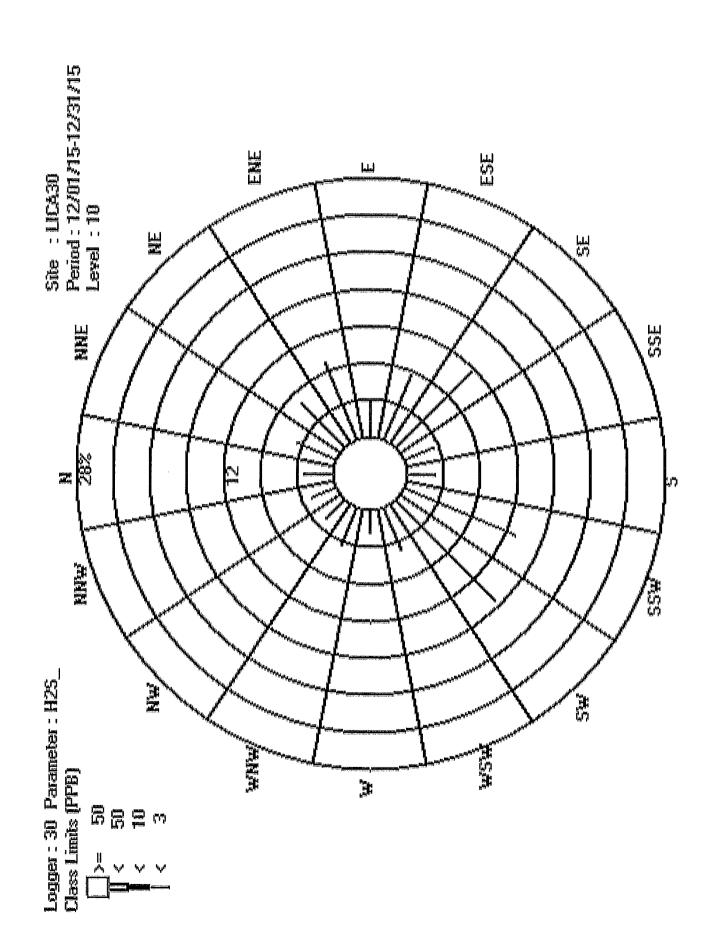
Calm : .00 %

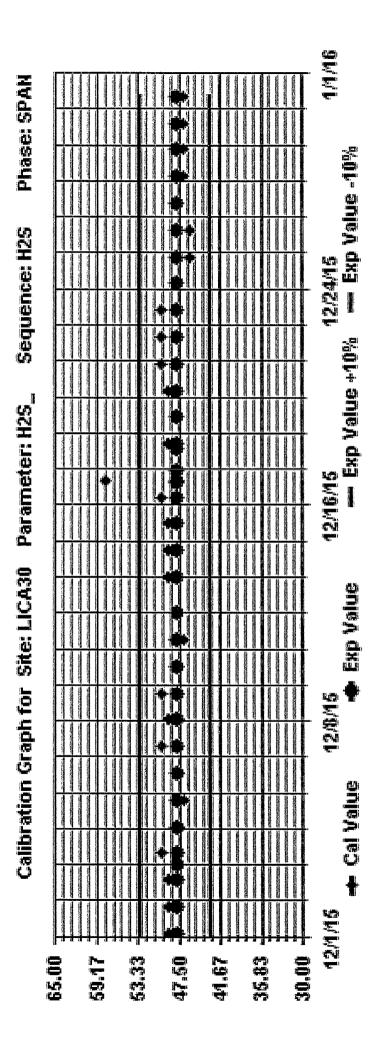
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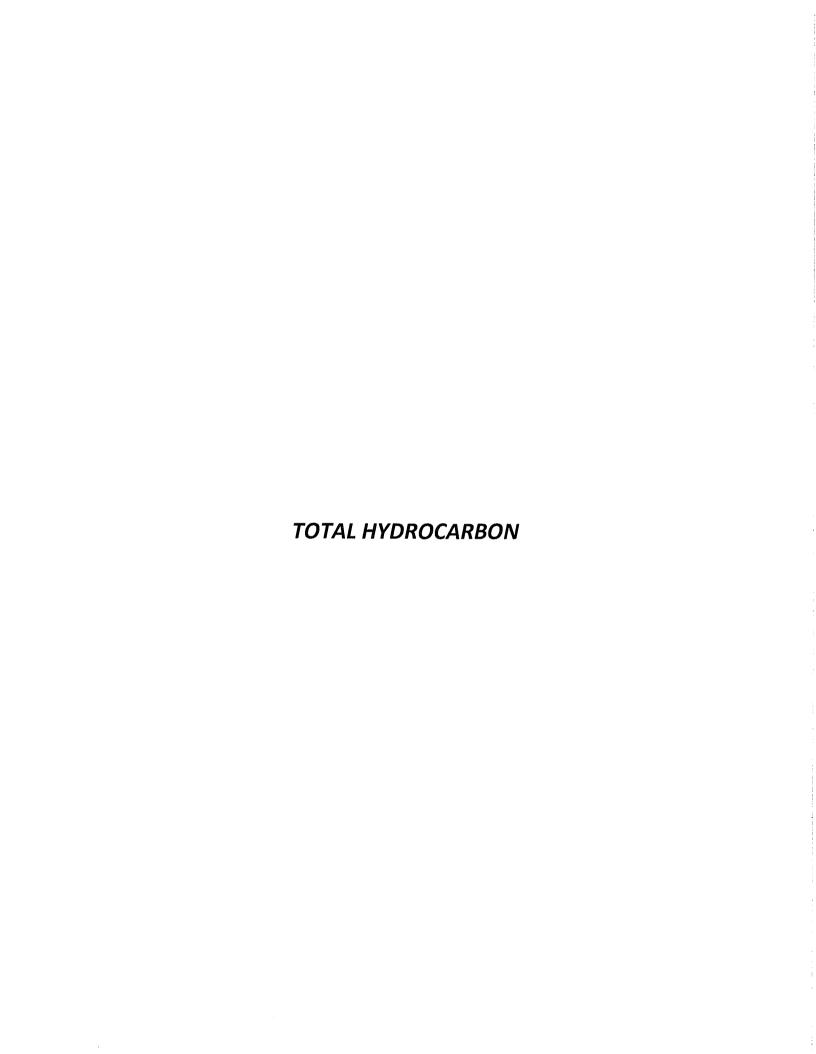
Distribution By Samples

667 14 13 ě 27 16 16 34 106 SW 16 22 Ø 22 SSE 24 Direction SE 81 23 ESE 26 62 ENE 62 46 띭 32 Calm : .00 % 20 z 20 Totals Limit 10 20 20 Ķ

Total # Operational Hours : 667









Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

# TOTAL HYDROCARBONS (THC) hourly averages in ppm

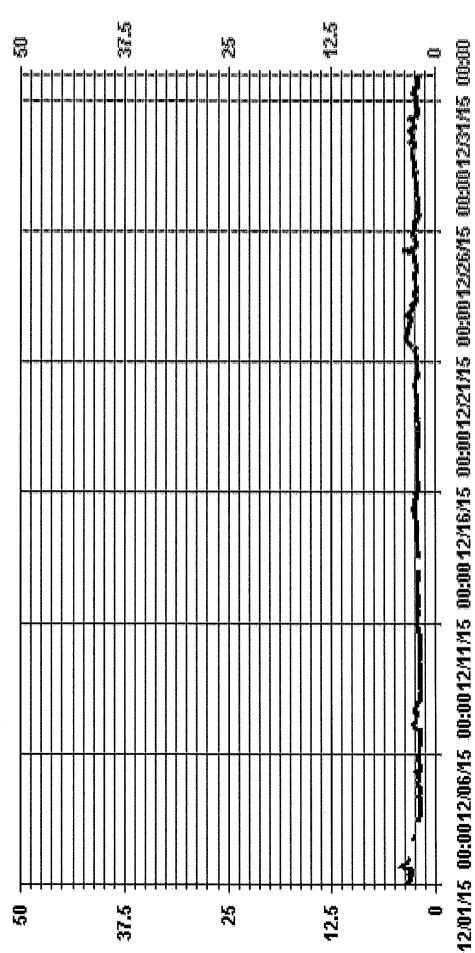
17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00         17.00 <th< th=""><th>63</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>100</th><th></th><th></th><th>etilensii kan stand</th><th></th><th>3</th><th></th><th>(C)(C)(C)</th><th></th><th></th><th>2000</th><th>Section States</th><th>f.</th><th></th><th></th><th></th></th<>	63								100			etilensii kan stand		3		(C)(C)(C)			2000	Section States	f.			
	6. 15 E	) <b>)</b>	2:00 3:00 3:00 4:	00 4:0	0.9 6:0	). 6:00. ) 7:00		100		20.00	11:00				.00 17 .00 18	<b>35.8888</b>			1000000	100	23:00	DAILY MAX.	24-HOUR AVG.	RDGS.
X                 X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                X                 X                 X                 X                 X                 X                 X                X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X	س	7	3.2	S 3.:		(1)			3.2	2.9	2.7	2.7	2.7		`	ľ		3.4	3.4	3.4	3.3	4.2	3.3	24
X                 X                 X                 X                Y                 Y                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                 X                X                 X		×							×	×	×	U	U					2.7	2.6	×	×	3.2	2.8	11
14. 18. 18. 18. 18. 18. 18. 19. 19. 20. 20. 19. 18. 17. 18. 18. 18. 19. 19. 19. 20. 20. 20. 20. 19. 19. 19. 19. 19. 19. 20. 20. 20. 20. 20. 20. 20. 20. 20. 20	•	~							×	×	>	2.0	2.0				, -	1.8	1.8	1.8	1.8	2.0	1.9	17
20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20             20<		oj.					•		2.0	2.0	1.9	1.8	1.7					2.1	2.1	2.1	s	2.1	1.9	24
		ഉ				7	2.1		2.1	1.8	7,8	1.8	1.8					2.0	2.0	s	1.9	2.3	2.0	24
2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2              2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2             2		ഉ				7			1.9	1.8	1.8	1.8	17				•	1.8	s	1.9	2.2	2.2	1.8	24
13         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14<									2.3	2.3	2.3	2.3	2.2				.,	s	2.3	1.9	2.3	5.6	2.4	54
17         17         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         2         2         20         20         20 <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>17</td> <td>1.8</td> <td>1.7</td> <td>1.7</td> <td>1.7</td> <td></td> <td></td> <td>•</td> <td></td> <td>1.7</td> <td>1.7</td> <td>1.7</td> <td>1.7</td> <td>2.2</td> <td>1.8</td> <td>24</td>									17	1.8	1.7	1.7	1.7			•		1.7	1.7	1.7	1.7	2.2	1.8	24
14         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         18         19         10         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20<									1.9	1.8	1.9	1.9	1.9					1.8	1.8	1.8	1.8	1.9	1.8	54
21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21<										1.9	1.8	1.8	1.8					2.1	2.1	2.2	2.1	2.2	1.9	54
2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1 <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>20</td> <td>2.0</td> <td>2.0</td> <td>2.1</td> <td></td> <td></td> <td></td> <td></td> <td>2.0</td> <td>2.0</td> <td>2.0</td> <td>70</td> <td>2.1</td> <td>2.1</td> <td>24</td>										20	2.0	2.0	2.1					2.0	2.0	2.0	70	2.1	2.1	24
X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X										2.1	2.1	2.1	2.1						2.0	2.0	2.0	2.1	2.1	24
21         21         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22<										×	×	U	v						2.1	s	2.1	2.1	2.1	13
24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         24         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25         25<										2.2	2.2	2.2	2.2						S	2.3	2.4	2.4	2.2	77
2.1         2.0         2.0         2.0         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1 <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.7</td> <td>2.5</td> <td>2.4</td> <td>2.5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.2</td> <td>2.2</td> <td>2.4</td> <td>2.8</td> <td>2.5</td> <td>54</td>										2.7	2.5	2.4	2.5						2.2	2.2	2.4	2.8	2.5	54
2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1         2.1 <th></th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2.1</td> <td>2.1</td> <td>2.1</td> <td>2.3</td> <td>2.1</td> <td>54</td>										2.1	2.1	2.1	2.1						2.1	2.1	2.1	2.3	2.1	54
20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20<										2.1	2.1	2.1	2.1						2.0	2.0	2.0	2.2	2.1	24
22         21         21         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22<	, 4								20	2.0	2.0	2.0	2.0						2.1	2.2	2.2	2.2	2.0	77
24         24         23         23         23         23         23         22         22         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22         22<									2.1	2.1	2.1	2.1	2.1						2.3	2.3	2.3	2.3	2.2	54
14. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.									2.3	2.2	2.2	2.1	2.0						2.1	2.1	2.1	2.4	2.2	24
34         32         33         33         34         32         34         34         34         34         34         33         31         32         31         32         31         32         31         32         31         32         31         32         31         32         31         32         31         32         31         32         31         32         31         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32         32<									2.3	2.5	2.5	2.4	2.3						3.3	3.4	3.5	3.5	5.6	24
27         26         25         29         28         24         25         26         25         23         22         25         26         25         23         22         25         26         25         23         22         25         26         25         23         22         25         26         25         26         25         23         22         25         26         25         26         25         26         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27<									3.2	3.1	3.2	3.1	s					3,4	3.3	3.1	2.8	3.5	3.2	24
23         23         24         24         24         24         21         21         22         22         22         22         23         23         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24         24<						7	2.4		2.2	2.3	2.2	s	2.4					2.2	2.3	2.3	2.3	2.9	2.4	24
25 25 25 26 33 38 31 27 5 22 22 22 22 22 23 23 24 24 24 23 23 24 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 27 28 28 28 28 28 28 28 28 28 28 28 28 28	. 4					7	2.4		2.4	2.4	s	21	2.1					2.4	2.4	2.4	2.4	2.4	2.3	24
26         25         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         26         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27<						m	3.8		27	s	2.3	2.2	2.2					2.4	2.7	2.8	2.7	3.8	5.6	54
21 2.0 2.0 2.0 19 19 5 22 22 22 21 21 21 21 21 22 22 22 22 22	. 4								S	2.2	2.2	2.1	2.0					2.0	2.0	2.0	2.0	5.6	2.2	54
23         24         24         24         24         24         24         25         25         25         25         25         24         24         24         25         25         25         25         24         24         25         25         25         26         27         25         25         27         27         26         27         27         26         27         27         27         28         27         27         27         27         28         27         27         27         27         28         27         27         27         27         28         27         27         27         27         28         27         27         27         27         27         27         28         27         28         27         27         27         27         27         27         28         27         28         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27<	٠,٧								2.2	2.2	2.2	2.1	2.1					2.2	2.3	2.3	2.3	2.3	2.1	54
27 27 27 27 27 28 28 28 24 24 26 30 29 27 27 28 27 26 27 27 29 30 30 29 28 30 27 27 27 29 30 30 29 28 30 27 27 27 28 28 28 29 28 30 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	• 4	2.3				7	s		2.5	2.5	2.5	2.5	2.4					2.6	5.6	2.7	2.7	2.7	2.5	24
25 25 26 5 28 30 30 25 22 21 21 21 20 20 20 20 20 21 21 22 22 22 22 32 32 33 33 33 33 33 33 33						s	2.4		2.6	3.0	2.9	2.7	2.7					3.0	3.0	5.9	5.8	3.0	2.7	77
22 22 5 5 24 25 27 25 25 24 25 21 19 19 20 20 20 21 21 20 20 20 21 19 27 22 33 34 34 34 34 35 38 32 33 38 32 32 32 33 38 32 22 22 22 22 22 22 22 22 22 23 23 23		2.4							2.5	2.2	2.1	2.1	2.0		.0 2	0 2.3		2.2	2.2	2.2	2.2	3.0	2.3	24
34 3.2 3.2 3.3 3.3 3.8 3.2 3.2 3.1 3.2 3.1 2.7 2.9 3.3 3.8 4.2 4.1 3.8 3.4 3.4 3.4 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3 2.3		2.4							2.5	2.4	2.5	2.1	1.9				1 2.1	2.0	2.0	2.1	1.9	2.7	2.2	54
23 22 23 23 23 23 23 23 23 22 22 22 21 21 22 22 23 23 23 23 23 23 23 23	***	3.5							3.2	3.1	3.2	3.1	2.7					3.4	3.4	3.4	3.5			
	* 4	23							2.3	2.2	2.2	2.2	2.1					2.3	2.3	2.3	2.3			

CODES
FLAG
STATUS
•1

S - WAINTENANCE X - RECOVERY.  S - DAILY ZERO/SPANICHECK X - WAICHINE MALIEUNCHION  P - POWIEK-FAILURE 0 - OPERATOR ERROR  G - OUT FOR REPAIR K - COLLECTION ERROR	24 HOUR AVERAGES FOR DECEMBER 2015	4.5	25 20 20 15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 25 24 25 28 27 28 29 30 31
/ч.хож		5.0 4.5 4.0 3.5	20 20 20 15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

NUMBER OF NON-ZERO READINGS:	VGS:		999					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		4.2 3.3	PPM PPM	PPM @ HOUR(S) PPM	17	ON DAY(S) ON DAY(S) VAR-VARIOUS		4 4
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	30	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	IE: UPTIME:		708 95.2	HRS
STANDARD DEVIATION:	0.41			MONTHLY AVERAGE:	Ë.		2.3	PPM

of Hour Averages



■ LICA30



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

JOB # 2833-2015-12-30- C

Maskwa Site - DECEMBER 2015

#### MST

### instantaneous maximum in ppm TOTAL HYDROCARBONS MAX

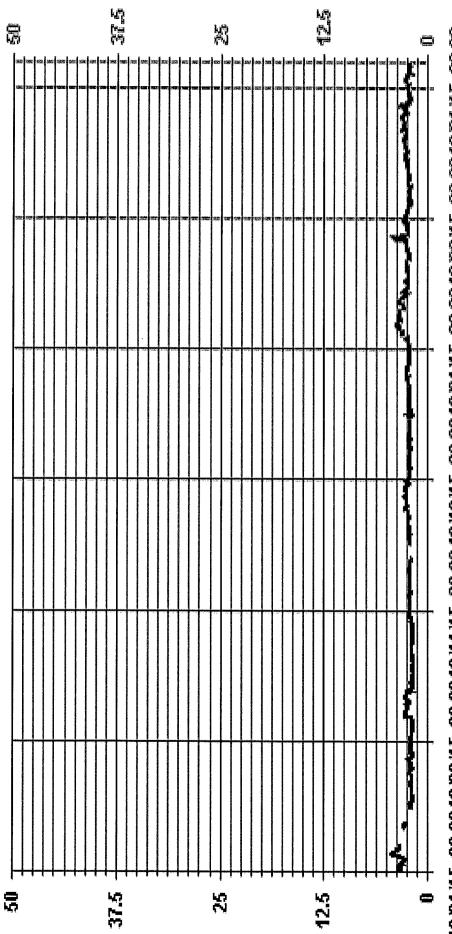
i G	74	: #	11	24	24	24	74	74	24	74	24	24	13	24	24	54	54	54	54	24	24	24	24	74	54	74	54	24	24	24	24		
24-HOUR	3.4	2.9	1.9	2.0	2.0	1.9	2.5	1.8	1.8	1.9	2.1	2.1	2.1	2.3	2.6	2.2	2.2	2.1	2.3	2.3	2.7	33	2.5	2.4	2.7	2.3	2.2	5.6	2.9	2.4	2.3		
DAILY	4.2	3.3	2.2	2.2	2.4	2.6	2.7	2.3	2.0	2.2	2.2	2.2	2.2	2.6	2.9	2.4	2.4	2.4	2.4	2.5	3.6	3.6	3.0	2.5	4.0	2.7	2.4	2.8	3.1	3.2	2.8		
23:00		×	1.8	s	1.9	2.6	2.4	1.7	1.9	2.2	2.1	2.1	2.1	5.6	5.6	2.2	2.1	2.3	2.4	2.2	3.6	5.9	2.4	2.5	2.8	2.1	2.4	2.8	3.0	2.3	2.1	3.6	2.4
19:00	9 8	×	1.9	2.1	s	2.0	2.1	1.7	1.8	2.2	2.1	2.1	s	5.6	2.4	2.2	2.1	2.3	2.4	2.2	3.6	3.3	23	2.5	2.9	2.1	2.3	2.7	3.0	23	2.2	3.6	2.4
21.00	3.5	2.7	1.9	2.2	2.1	s	2.5	1.7	1.8	2.2	2.1	21	2.2	s	2.3	2.1	2.1	2.2	2.4	2.2	3.4	3.4	2.3	2.5	2.8	2.1	2.3	2.7	3.1	2.3	2.2	3.5	24
19:00 20:00	3.6	2.8	1.9	2.2	2.0	1.8	s	1.7	1.8	2.2	2.1	2.1	2.2	2.3	s	2.1	2.1	2.2	2.4	2.2	3.4	3.5	2.3	2.4	5.6	2.1	2.3	2.7	3.1	2.2	2.1	3.6	2.4
2000000	97	2.9	1.8	2.2	2.0	1.8	5.6	s.	1.8	2.1	2.1	2.1	2.2	2.3	5.6	s	2.1	2.2	2.3	2.2	3.4	3.4	2.3	2.4	2.4	2.2	2.3	2.7	3.0	2.3	2.2	4.0	2.4
18:00		U	1.8	2.0	2.0	1.8	2.7	1.7	s	2.0	2.1	2.1	2.1	2.3	2.7	2.2	s	2.2	23	2.2	3.2	3.4	2.3	2.4	2.4	2.2	2.3	5.6	2.8	2.2	2.3	4.2	2.4
17:00	42	ن إ	2.1	1.9	2.0	1.8	5.6	1.7	1.9	s	2.0	2.1	2.1	2.3	2.6	2.2	2.4	s	2.3	2.2	3.1	2.9	2.5	2.3	5.6	2.1	2.3	5.6	2.7	2.1	2.3	4.2	2.4
15.00 16.00	4.1	U	2.2	1.9	2.0	1.8	2.5	1.7	1.9	U	s	2.1	2.1	2.3	2.7	2.2	2.2	2.0	s	2.2	3.0	2.9	2.6	2.3	2.5	2.0	2.2	2.5	2.7	2.1	2.1	4.1	2.3
100 m	<b>∂:1</b>	U	2.0	1.9	2.0	1.8	2.4	1.8	1.9	ပ	2.2	s	2.1	2.3	2.7	2.2	2.2	2.0	2.3	S	3.0	2.8	2.6	2.2	2.4	2.0	2.2	2.5	2.8	2.0	2.1	3.5	2.3
14:00	ŝ.	U	2.0	1.9	1.9	1.8	2.3	1.7	1.9	2.0	2.2	2.2	U	2.2	2.5	2.2	2.1	2.1	2.2	2.1	s	2.8	2.7	2.2	2.4	2.1	2.2	2.4	5.9	2.1	2.0	3.2	2.2
13:00	9	U	2.0	2.0	2.0	1.8	2.2	1.7	2.0	1.9	2.1	2.2	U	23	2.5	2.2	2.2	2.1	2.2	2.1	2.4	s	2.4	2.2	2.3	2.1	2.2	2.5	2.9	2.1	1.9	2.9	2.2
12:00	8	U	>	2.0	1.8	1.8	2.4	1.7	1.9	1.8	2.1	2.2	U	2.3	2.5	2.2	2.2	2.4	2.2	2.2	2.5	33	s	2.2	2.3	2.3	2.2	2.6	2.8	2.1	2.5	3.3	2.3
11.00	8	×	>	2.0	1.8	1.8	2.3	1.7	1.9	1.9	2.1	2.1	×	2.3	5.6	2.1	2.2	2.0	2.2	2.3	5.6	3.3	2.3	s	2.4	2.3	2.3	2.6	3.0	2.2	26	3.3	2.3
10:00	8	×	×	2.1	2.0	1.9	2.5	1.9	1.9	1.9	2.1	2.1	×	2.3	2.8	2.2	2.2	2.1	2.2	2.3	2.6	3.3	2.3	2.5	s	2.3	2.3	5.6	3.1	2.4	2.5	3.3	2.4
9:00	33	×	×	2.0	2.2	1.9	2.3	1.8	1.9	1.9	2.1	2.1	×	2.3	2.9	2.1	2.3	2.1	2.2	2.4	2.5	3.3	2.3	2.5	2.8	s	2.3	2.6	3.1	2.8	2.6	3.3	2.4
8:00	3.3	×	×	2.0	2.4	2.0	2.3	1.9	1.9	1.9	2.2	2.2	×	2.3	2.8	2.1	2.2	2.1	2.2	2.4	2.3	3.4	2.3	2.5	3,5	2.5	s	5.6	25	3.2	2.7	3.5	2.4
7.00	3.1	×	×	1.9	2.2	1.9	2.4	2.1	1.8	1.8	2.1	2.1	×	2.3	2.6	2.1	2.2	2.1	2.2	2.3	2.3	3.4	2.7	2.5	4.0	2.4	20	s	2.5	3.2	2.8	4.0	2.4
6:00	3.4	×	×	1.9	2.1	1.9	2.5	2.0	1.8	1.8	2.1	2.1	×	2.2	2.5	2.1	2.1	2.1	2.2	2.3	2.3	3.4	2.9	2.5	3.8	2.5	5.0	2.4	s	2.9	2.6	3.8	2.4
5:00	3.4	×	×	1.9	2.1	2.0	2.6	1.9	1.8	1.8	2.1	2.1	×	2.2	2.5	2.1	2.2	2.1	2.2	2.4	23	3.5	3.0	2.5	2.7	2.5	2.1	2.5	2.8	s	2.5	35	2.4
4.00	3.2	×	×	1.9	2.0	2.0	2.6	1.8	1.8	1.8	2.1	2.2	×	2.2	2.5	2.1	2.1	2.1	2.2	2.5	2.2	3.3	2.5	2.4	5.6	5.6	2.1	2.5	2.7	5.6	s	3.3	2.3
3.00	s	×	×	1.9	2.0	2.0	5.6	1.8	17	1.8	2.2	2.1	×	2.2	2.5	2.1	2.2	2.1	2.2	2.5	2.2	3.4	2.7	2.4	2.6	5.6	2.1	2.5	5.8	5.6	2.3	3.4	2.3
2.00	3.2	×	×	1.9	2.0	2.0	2.6	1.9	1.7	1.8	2.1	2.1	×	2.2	2.5	2.2	2.1	2.1	2.2	2.5	2.2	3.5	2.8	2.4	2.6	2.6	22	2.4	2.8	2.6	2.4	3.5	2.3
1:00	3.4	×	×	1.9	2.0	2.0	2.6	2.1	1.8	1.8	2.1	2.1	×	2.2	2.4	2.3	2.1	2.1	2.2	2.4	2.2	3.6	2.9	2.4	2.5	2.6	2.2	2.4	2.8	2.5	2.5	3.6	2.4
0:00	3.5	3.3	×	s	19	1.9	5.6	2.3	17	178	2.1	2.1	5.0	2.2	5.4	2.4	2.2	2.1	2.2	2.3	22	3.6	5.9	2.4	52	27	2.1	2.4	2.8	2.6	2.5	3.6	2.4
MIS    HOURSTART 6:00	DAY 1	2	3	4	2	9	2	8	Ö,	10	T	12	T)	41	13	19	17	18	13	8	77	22	23	24	25	79	27	28	53	30	31	HOURLY MAX	HOURLY AVG

#### STATUS FLAG CODES

Q - QUAJITY ASSURANCE
R - RECONERY
X - MACHINE MALFUNCTION
O - OPERATOR ERROR
K - COLLECTION ERROR C; ::CALIBRATION;
Y; :3MATUTENANCE;
S; -DAILY (ERG) SPANCHECK
P; -POWER FAILURE
G -OUT FOR REPAIR

NUMBER OF NON-ZERO READINGS:			999						
MAXIMUM INSTANTANEOUS VALUE:	üi		4.2	PPM	@ HOUR(S)	17, 18	ON DAY(S)		1,1
						VAR-VARIOUS	RIOUS		
IZS CALIBRATION TIME:	8	HRS		OPERATIC	OPERATIONAL TIME:			707	HRS
MONTHLY CALIBRATION TIME:	17	HRS							
STANDARD DEVIATION:	0.43								

of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/31/15 00:00

- LICA30 THCMAX PPM

LICA30 THC / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

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

Wind Parameter : WDR Instrument Height : 10 Meters

4.05 M 4.05 00. 00. 00. WNW 4.35 4.50 00. .15 00. 2.55 2.55 00. 00. 00. × 4.05 .75 4.80 WSW 00. 00, 3.00 13.06 14.56 00. SH 2.40 00. 2.40 11.11 12.16 1.95 00. 00. . 60 00. 00. Ø 3.75 3.75 SSE 00. 00. 00. Direction .30 % 00. ESE SE 7.20 12.31 6.60 12.01 . 60 00. 00. 2.55 .45 00. % 3.00 Þ 7.80 8.10 ENE .30 00. 00. 7.20 7.20 00. 00 걸 00. ENN 4.95 .15 00. 00. 5.10 3.30 3,45 00. 00. 3.0 Totals Limit 10.0 >= 50.0 < 50.0

7.80

00. 00.

00. 00. 3.30

Fred

MNN 3.30 00.

92.19

Calm : .00 %

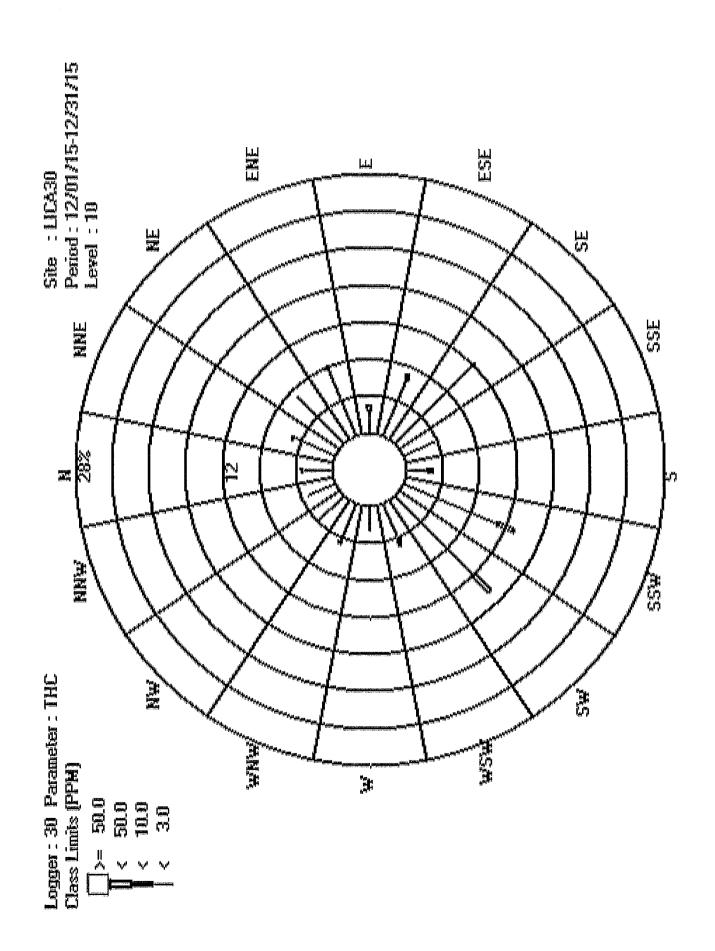
Total # Operational Hours : 666

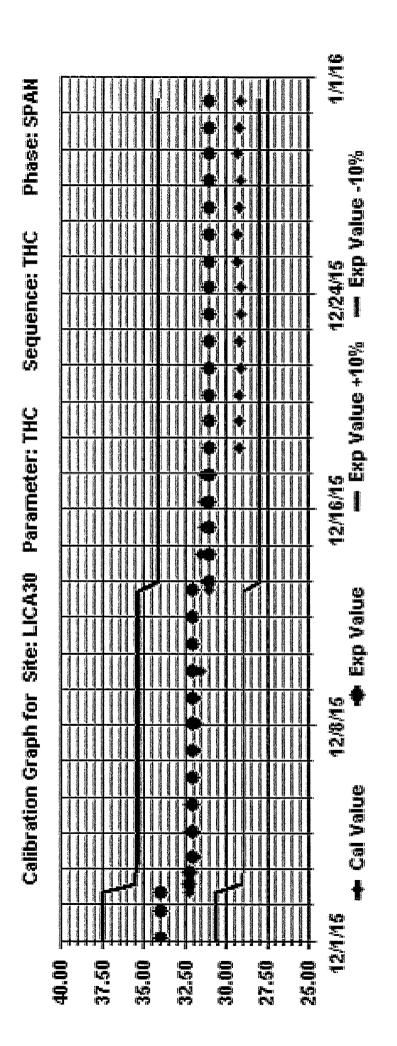
Distribution By Samples

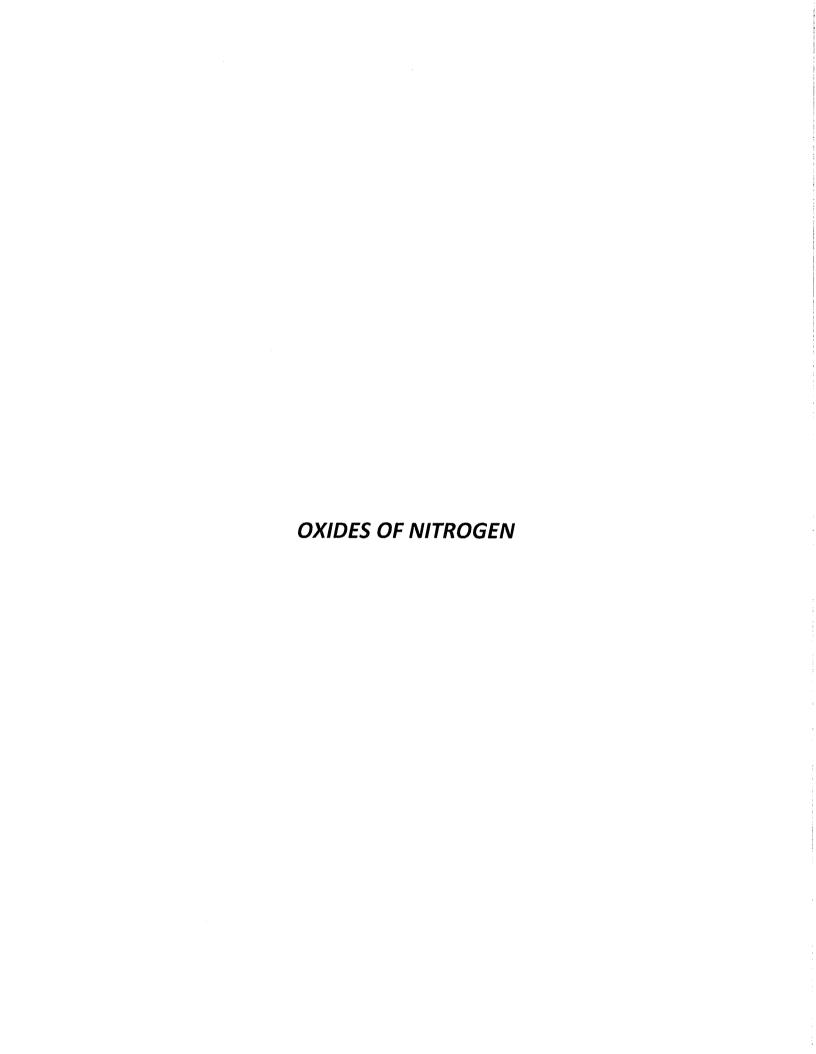
	Freq	614	52			
	NNW	22				22
	M	27				27
	WNW	29	1			30
	¥	17				17
	WSW	27	ហ			32
	SW	81	16			76
	SSW	74	13			87
	Ø	16	4			20
	SSE	25				25
Direction	SE	80	8			82
Dire	ESE	44	4			48
	国	17	m			20
	ENE	52	8			54
	Ä	48				48
	NNE	33	н			34
	z	22	Т			23
	Limit	3.0	10.0	50.0	50.0	Totals
	н	3.0	٧	٧	X	

Calm : .00 %

Total # Operational Hours: 666









Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

# OXIDES OF NITROGEN (NOx) hourly averages in ppb

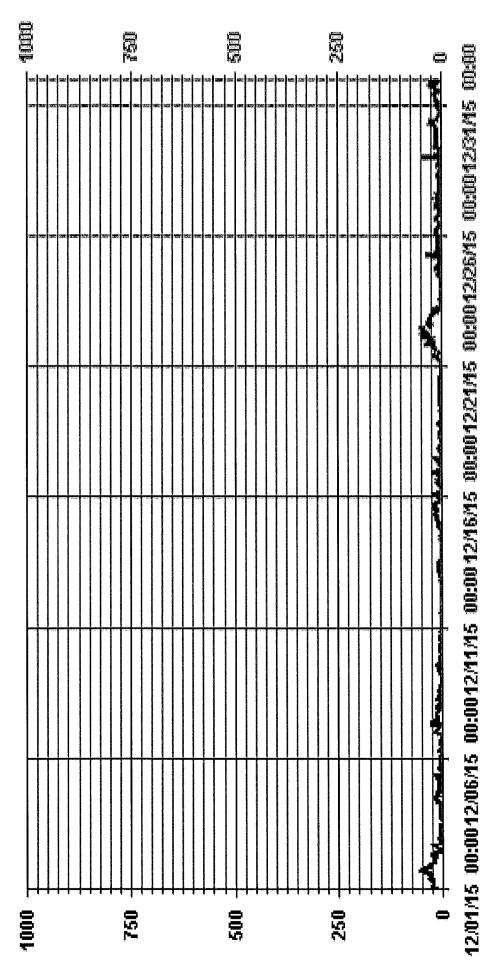
	RDGS	75	54	54	54	54	77	54	24	54	54	54	54	24	24	74	74	54	74	74	24	54	74	74	74	74	74	74	54	54	24	24		
	24-HOUR	31.7	13.0	3.0	7.4	5.6	3.1	11.6	4.3	3.3	1.4	9.0	6.0	3.6	1.5	11.6	4.7	3.4	2.0	1.8	1.2	11.3	33.1	5.5	2.4	8.7	7.8	4.7	4.0	12.5	11.2	11.4		
	DAILY	53	29.4	4.8	18.3	15.7	9.4	26.4	15.4	11.1	3.5	4.8	5.2	8.5	8.2	17.6	25.3	15.2	6.8	7.1	m	35.6	51.3	23.7	16.8	34.9	14	13.7	10	43.4	30.2	28		
	23:00	29.6	1.5	11	s	4.7	8.9	12.8	0.7	1.1	0.3	0.1	1.8	9.0	7	6.9	25.3	2.2	0	2.8	0	25.8	26.2	0	2.2	9.5	2.3	2.4	4.1	11.7	8.1	m	39.62	8.9
	22.00	31.2	9.9	1.5	6.7	s	2.1	3.7	6.0	9.0	0.7	0.2	0.9	s	8.2	2.7	10.1	2.1	0	2.5	0	34.3	78	0	3.3	Ħ	4.3	7	2.9	12.4	5.1	28	34.3	7.3
	21.00	33	4.1	2.2	7.5	2.3	s	10	1.3	1.5	ч	0.3	2.1	0	s	5.4	1.4	7.1	m	2.4	0	35.6	26.8	0	4.5	9.7	3.9	1.6	3.7	13.2	1.8	6.7	35.6	9.9
	20:00	40.5	4.4	3.4	8.9	5.6	0.7	s	7	2.7	1	0.4	5.2	0	1,9	s	8.0	3.5	8.3	33	0.1	18.4	25.9	0	8.9	6.7	4.5	Н	4.6	12.8	2.3	10.8	40.5	6.3
	19:00	47.3	4.7	2.3	7.1	2.3	6.0	13.2	s	2.2	0.8	0.4	0.8	0	1.8	13.4	s	4.8	8.9	4.1	0	17.6	27.3	0	16.8	5.4	9	1.1	2.6	11.8	3.4	13.3	47.3	7.7
	18:00	53	5.5	1.9	4.7	3.2	2.1	15.3	1.9	s	1.7	0.7	9.0	0.1	1.1	16.7	1.1	s	9	7.1	0	16.3	27.7	0	6.0	9	8.4	3.8	10	10.3	0	22.7	53.0	7.9
2	18:00	52.5	12.4	3.2	3.5	4	1.4	12.3	m	m	s	1.1	0.8	0.1	0.7	15.3	2.9	0.3	s	5.7	0	15.9	28.4	0	0.9	9.4	12.3	0.2	7.8	10	0.2	19	52.5	7.8
CALLES OF THE COLIN (NOA) HOURS AVEINGES III PUR	15:00	43.4	20.4	U	14.1	8.7	1.4	12.3	4.1	2.5	1,4	s	1.3	0.2	0.9	17.6	9.4	0.3	0.7	S	0.5	15.1	35.6	1.1	1.8	7.7	12.3	2.2	2.9	8.6	23	12.9	43.4	8.7
	15.00	35.8	15.9	U	13.4	5.3	1.3	10.9	5.7	9.3	1.6	172	S	2.3	0.9	14.7	5.4	0.2	1.2	2.6	s	14.1	27.1	5.6	3.7	7.6	14	8.1	0.8	11.2	4.6	12.9	35.8	8.4
y out	14:00		11.4																															
= {	13.00		00																															
	0 12:00	200	9.3																															
	0 11:0		7.1																															
5	0 10.0		14.7																															
AIC L	0.600		4 15																															
)	0.8		.8 29.4																															
	00 7.00		.7 18.8																														ľ	
	5:00: 6:0		14.6 13.7																															
	90 5:		18.7 14																															
	90.00		18.9																														ľ	
	2:00 3:00 3:00 4:00	5.9	S 1																													1		
		]	18.2																															
	0:00 ±00 1:00 2:00	1	23																											•				
۲			4.1 14.8 1.4						i i				Č.		 (%)				20 A							100	7.5	180	*1.5 \$1.3			66.5 (91)		_
MST	HOUR START	DA	7	m	4	ιΩ	Ó	Α.	00	O	8	Ħ.	17		77	ង	19	17	18	2	8	27	2	ຊ	24	22	26	27	78	5	æ	31	HOURLY	HOURLY AVG

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S

RECOVERY  -WACHINE MALEUNCTION  - OPENATOR ERROR  - COLLECTION ERROR	5					20 21 22 23 24 25 26 27 28 29 30 31
LOHECK R. K. C. X. K. C. C. X. K. C. C. C. X. K. C. C. C. C. C. C. C. C. C. C. C. C. C.	24 HOUR AVERAGES FOR DECEMBER 2015					7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 29
7 MAINTENANCE S DAILY ZERO/SPAN P POWER FAILURE G OUTFOR REPAIR		40.0	30.0	20.0	1000	123456

				:				
NUMBER OF NON-ZERO READINGS:	35		652					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		53.0 33.1	998 998	@ HOUR(S)	18	ON DAY(S) ON DAY(S) VAR-VARIOUS		7 2 2 2
IZS CALIBRATION TIME: MONTHLY CAUBRATION TIME:	35	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	PTIME:		744 100.0	%
STANDARD DEVIATION:	9.27			MONTHLY AVERAGE:	43		7.4	PPB

Of Hour Averages





## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

# OXIDES OF NITROGEN MAX instantaneous maximum in ppb

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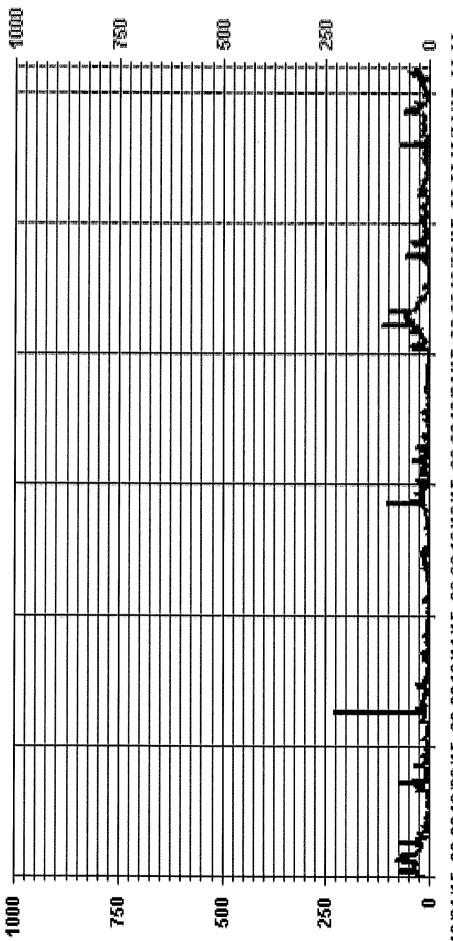
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29.7 113.4		20											43.1	98.5	36.4	34.5	28.8	27.6	31.5				45.8	24
17.9 14.9		12											9.7	17	0.7	0	0	0	0				7.4	24
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6.5 23.4		2											14.9	12.3	1.8	6.8	5.6	1.8	2.5				6.6	24
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12.2 14.3		17						·	•			•	11.2	9.1	2.3	4	4.1	3.7	5.5				18.4	24
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### STATUS FLAG CODES QUALITY ASSURANCE

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WAWTENANGE DAULTZERO/SPANCHECKROWER JAULURE OUTFOR REPAIR	
-INGIVIENANCE -DAIP/ZERO/SPANCHECK -POWERSALLÜRE -OUTFORREPAIR	
MANNTENANCE DAINZERO/SPANCHECK POWER/SALURE COUTFORREPAIR	

NUMBER OF NON-ZERO READINGS:			675							
MAXIMUM INSTANTANEOUS VALUE:			228.8	PPB	@ HOUR(S)	∞	ON DAY(S)		7	
						VAR-V/	VAR-VARIOUS			
IZS CALIBRATION TIME: 36	36	HRS	J	OPERATIC	OPERATIONAL TIME:			744	HRS	
MONTHLY CAUBRATION TIME: 6	9	HRS								
STANDARD DEVIATION: 16.71	77									

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/21/15 00:0012/26/15 00:0012/31/15 00:00

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LICA30 NOX_ / WDR Joint Frequency Distribution (Percent)

December 2015 Distribution By % Of Samples

> Logger Id : 30 Site Name : LICA30 Parameter : NOX_ Units : PPB_

Wind Parameter : WDR Instrument Height : 10 Meters Freg

99.57

.00

NNW 3.12 00-00. 00. 3.83 3.83 ž 00. 00. 00. WNW 4.11 4.26 .14 00. 00. 2.41 2.41 00, 00. 00. 4.82 4.82 00. 00. 00. 3.12 12.92 15.05 00. SW 3.12 12.92 14.77 .28 00. 00. 00. 00 00 00. 00. 7.52 11.64 3.55 3.55 SSE 00. 00. 00. Direction SE 00 00. 7.52 11.64 00. ESE 00 00. 00. 4.11 4.11 00. 00. 00. 8.80 8.80 00. 00. 00. 6.81 6.81 뜅 00. 00. 00. NE 4.82 00. 4.82 00. 00. Totals 3.12 3.12 00. 00. 00. z Limit 50.0 < 110.0 < 210.0 >= 210.0

Calm : .00 %

Total # Operational Hours : 704

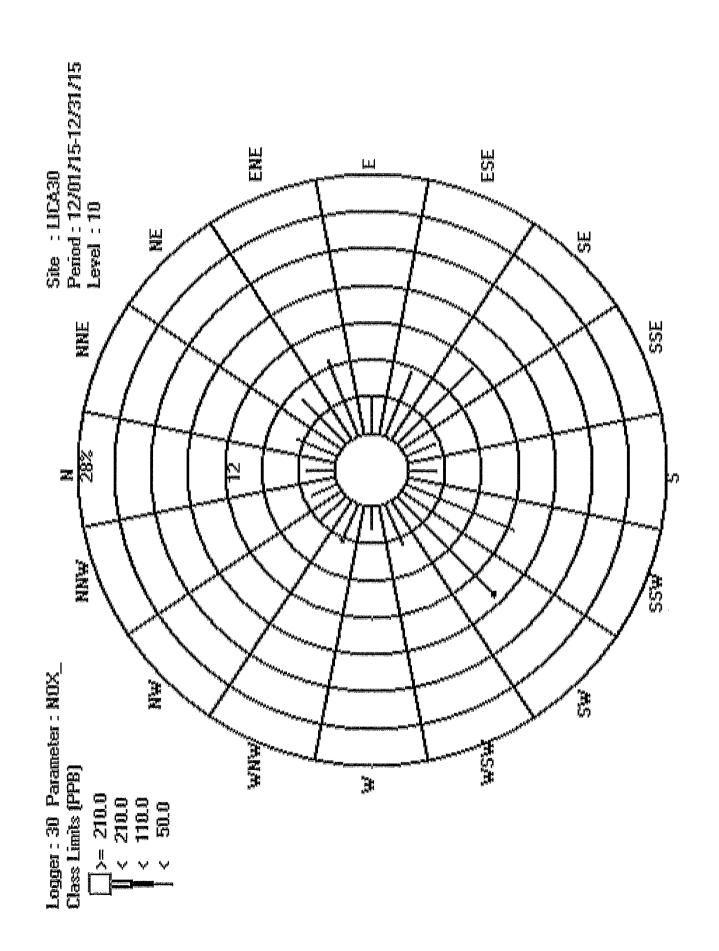
Distribution By Samples

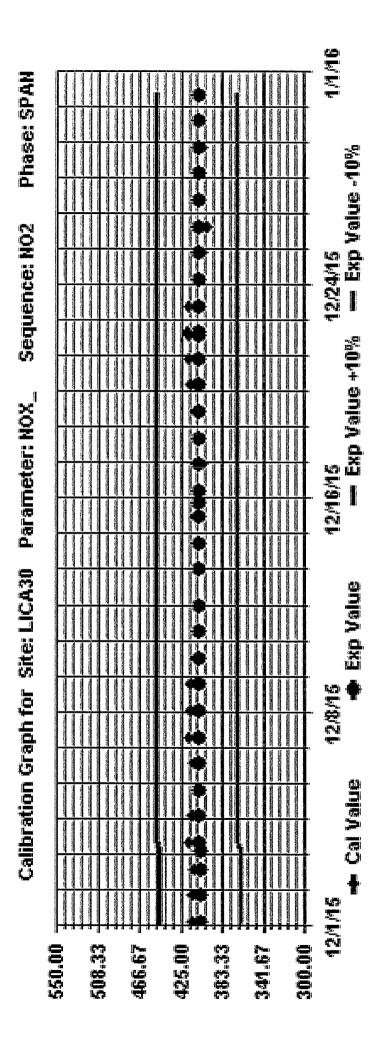
Direction

Freq	101	m			
NNW	22				22
MN	27				27
WNW	29	н			30
×	17				17
WSW	34				34
SW	104	8			106
SSW	16				91
Ø	22				22
SSE	25				25
SE	82				82
ESE	53				53
M	59				29
ENE	62				62
Ä	48				48
NNE	34				34
z ·	22				22
Limit	50.0	110.0	210.0	210.0	Totals

Calm : .00 %

Total # Operational Hours : 704







INDUSTRY & COMMUNITY ASSOCIATION
Maskwa Site - DECEMBER 2015
JOB # 2833-2015-12-30- C

### NITRIC OXIDE (NO) hourly averages in ppb

MST

Maxxam

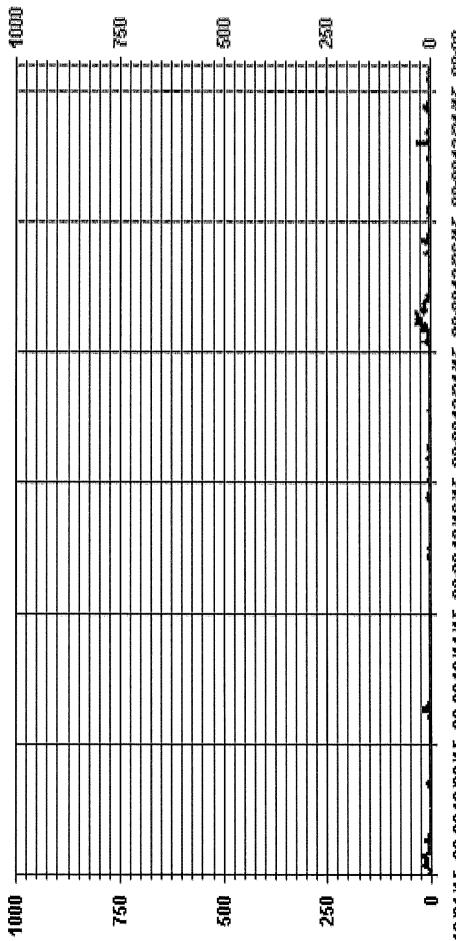
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13.8 13.5 35.9 29.5 26.1 19 31 27.9	13.5 35.9 29.5 26.1 19 31 27.9	35.9 29.5 26.1 19 31 27.9	29.5 26.1 19 31 27.9	26.1 19 31 27.9	31 27.9	27.9		31.4							18.2	14.3	14	13.8	13.2	14.7			•	
5.7 2.8 1.1 0.2 4.8 0.8 0 0	2.8 1.1 0.2 4.8 0.8 0 0	1.1 0.2 4.8 0.8 0 0	0.2 4.8 0.8 0 0	4.8 0.8 0 0	0	0		0							0	0	0	0	0	0				
0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0	0 0 0 0	0 0 0 0	0	0		0							0	0	0	6.1	0.3	0				
0 0 0 0 12.2 19 5	0 0 0 0 12.2 19 5	0 0 0 12.2 19 5	0 0 12.2 19 5	0 12.2 19 5	19 5	Ŋ		1.4							0	0	0	0	0	0				
0 0.6 2 1.3 1.4 2.9 0.1 0.3	0.6 2 1.3 1.4 2.9 0.1 0.3	2 1.3 1.4 2.9 0.1 0.3	1.3 1.4 2.9 0.1 0.3	1.4 2.9 0.1 0.3	0.1 0.3	0.3		s							0.7	6.0	0.1	0	0	0				
0 0 3.2 3.4 1.4 1.5 0 <b>S</b> 2	0 3.2 3.4 1.4 1.5 0 <b>S</b> 2	3.2 3.4 1.4 1.5 0 <b>S</b> 2	3.4 1.4 1.5 0 <b>S</b> 2	1.4 1.5 0 <b>S</b> 2	0 <b>S</b> 2	<b>S</b> 2	2								0.1	0	0	0	0	0				
0 0 0 0 0 0 8 0 2	0 0 0 0 0 8 0 2	0 0 0 0 8 0 2	0 0 0 8 0 2	0 0 \$ 0 2	<b>S</b> 0 2	0 2	2								0	0.1	0.4	0	0	0				
31.2 13.2 0.9 0 0.7 \$ 0 0	13.2 0.9 0 0.7 \$ 0 0	0.9 0 0.7 \$ 0 0	0 0.7 \$ 0 0	0.7 \$ 0 0	0 0	0		2.3		6.9					0	0	0	0	0	0				
0 0 0 0 8 3.3 9 8.6	0 0 0 8 3.3 9 8.6	0 0 5 3.3 9 8.6	0 \$ 3.3 9 8.6	<b>S</b> 3.3 9 8.6	9 8.6	8.6		7.8	-						0.3	0	0	0	0	0				
0 0 0 0 0 0 0 0.1 1.9	0 0 8 0 0 0 0.1	0 S 0 0 0 0.1	S 0 0 0 0.1	0 0 0 0.1	0 0.1	0.1		1.9	•		5.7 2	0	0	1	0.4	2.5	2.6	0.8	0.4	0	1.2	0 5.		
31.2 13.5 35.9 29.5 26.1 19 31 27.9	13.5 35.9 29.5 26.1 19 31 27.9	35.9 29.5 26.1 19 31 27.9	29.5 26.1 19 31 27.9	26.1 19 31 27.9	31 27.9	27.9		31.4	1	15.4 3					18.2	21.8	77	16.2	13.2	20.2		13		
1.9 1.3 1.8 1.5 1.3 1.7 2.7 3.4 3.2	1.3 1.8 1.5 1.3 1.7 2.7 3.4 3.2	1.8 1.5 1.3 1.7 2.7 3.4 3.2	1.5 1.3 1.7 2.7 3.4 3.2	1.3 1.7 2.7 3.4 3.2	2.7 3.4 3.2	3.4 3.2	3.2		(1)						1.5	1.5	1.5	1.5	1.1	1.5		<u>m</u>		

#### STATUS FLAG CODES

		8 8 8
R RECOVERY X MACHINE MALEUNCTION O - OPERATOR ERROR K - COLLECTION ERROR		0 11 12 13 14 15 15 17 18 19 20 21 22 23 24 25 26 27 28 29 39 31
R - WA	24 HOUR AVERAGES FOR DECEMBER 2015	15 16 17 18 13 20 21
EE PANCHECK RRE AIR	24 HOUR AVERAGES F	8 9 10 H 12 I3 I4
- MAINTENANCE - DAILY ZERO/SPAN-CHECK - POWER FAILURE - OUT FOR REPAIR		2 3 4 5 6 7
) > N & O		200 200 100 100 100 100 100 100 100 100

NUMBER OF NON-ZERO READINGS:	iS:		306					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		36.0	8 8 8 8 8 8	@ HOUR(S)	12	ON DAY(S) ON DAY(S) VAR-VARIOUS	2, 23	73 5
12S CALIBRATION TIME: MONTHLY CALBRATION TIME:	55 2	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	TIME		744	% HRS
STANDARD DEVIATION:	4.89			MONTHLY AVERAGE:			2.0	PPB

of Hour Averages



12/01/115 00:0012/06/15 00:0012/11/115 00:0012/16/15 00:0012/21/115 00:0012/21/115 00:0012/21/115 00:00



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

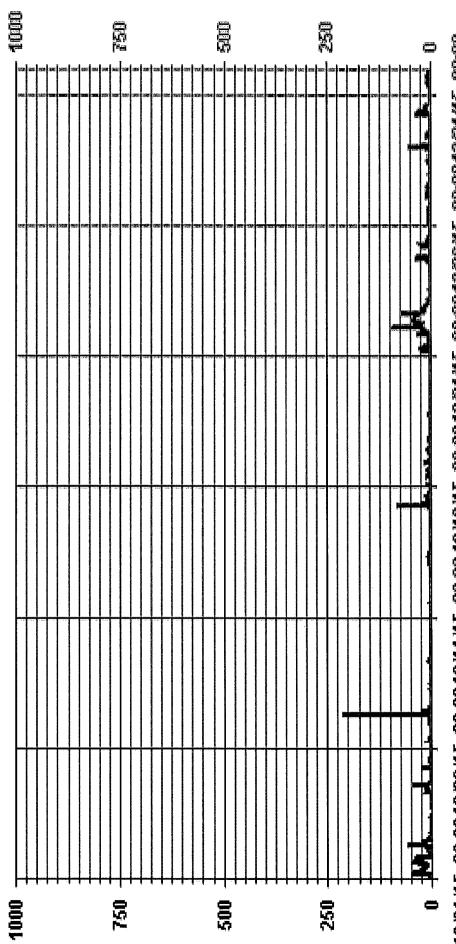
# NITRIC OXIDE MAX instantaneous maximum in ppb

RDGS.	24	24	24	54	24	74	54	54	24	24	24	54	54	24	24	24	24	24	24	24	75	74	74	54	24	24	74	74	75	24	24		
24-HOUR AVG.	19.4	7.8	0.7	6.1	2.6	1.2	12.9	0.7	0.8	9.0	9.0	0.4	2.1	0.5	7.9	3.3	2.7	6.0	0.4	0.4	8.6	31.2	2.1	2.4	3.4	2.5	3.3	2.1	8.3	6.9	3.0		
DAILY MAX.	49.1	56.1	2.4	46.6	17.7	7.2	212.5	2.7	5.6	2.2	4.6	1.8	2.8	5.6	83.9	15.3	13.3	4.6	17	0.7	33.3	94.8	10.8	36.3	23.4	6.3	8.3	11.8	53.3	38	12.9		
23:00	6.2	0.3	0	s	0.7	4.1	0.3	0	0.4	0.3	0.1	8.0	0.3	0.5	0.3	15.3	2.7	0.1	0.1	0.5	16.3	14.5	0.1	0	0.4	0.3	1.7	11.8	0.2	0.5	6.0	16.3	2.7
22.00	9.2	0.5	0.1	0.3	s	7	0.2	0	0.2	9.0	0.2	0.2	s	9.0	0.3	1.1	1.7	0.1	0.1	0.4	28.5	17.5	0.1	0	9.0	0.2	0.2	0.1	0.3	0.4	2	28.5	2.3
21:00 22:00	7.6	0.3	0.1	0.3	0.3	s	0.8	0.3	0.3	0.5	0.4	9.0	0.3	s	2.7	0.4	4.5	1.5	0.2	0.5	33.3	19.3	0.1	0.3	0.5	0.3	0.3	0.2	0.3	0.2	2.8	33.3	2.7
20.00	40.9	113	0	0.2	0.4	0	s	9.0	0.3	0.4	0.5	178	0.1	0.3	s	0.4	1.7	3.4	0.2	0.5	5.5	14.2	0.1	3.5	0.3	0.4	0.3	0	0.1	0.2	1.4	40.9	2.7
19:00	19.3	1.3	0.2	0.3	4.0	0.1	8.0	s	0.5	0.4	0.2	0.3	0	0.5	1.6	s	1.7	4.6	0.2	9.0	Ŋ	14.6	0.1	36.3	0.3	0.4	0.3	0.2	0.3	0.1	2.9	36.3	3.2
18:00	24	0.4	0.3	0.1	0.4	0	1.6	0.1	s	0.5	0.5	0.4	0	0.5	1.7	0.5	s	2.3	6.0	0.4	3.3	20.2	0.1	0.1	0.3	6.0	6.0	1.3	0.5	0.1	8.5	74	2.4
17:00	27.5	9.0	U	9.0	0.8	0	6.0	0.1	0.3	s	0.7	0.3	0.1	0.3	ч	9.0	0.5	s	0.5	0.4	3.7	21.6	0.2	0	0.5	4.1	0.4	1.2	8.0	8.0	9.6	27.5	2.8
16:00	48.9	3.5	U	11.4	4.8	0.1	3.9	0.1	0.2	0.4	s	0.4	0.3	0.2	9.7	6.7	0.4	0.3	s	0.4	5.6	69.1	0.3	0.5	0.5	2.2	m	0.5	0.7	3.2	2.9	69.1	6.3
15:00 16:00	33.9	3.7	U	46.6	1.8	0.1	2.9	0.3	H	0.2	1.2	s	8.0	0.3	7.1	4	1.1	9.0	0.7	s	5.8	26.5	2.7	9	1.4	3.1	4.8	0.7	3.9	1.7	2.3	46.6	5.9
14.00	11.9	7.3	U	10.3	3.9	1.1	9	0.8	1.6	0.5	4.6	0.4	5.6	0.3	5.6	3.8	0.9	0.7	0.7	0.4	s	38.1	2.5	1.9	2.5	3.5	4.1	1.9	7.6	11.2	2	38.1	4.8
13:00	11.8	m	U	14.4	2.4	0.7	4.4	2.1	Н	0.4	6.0	0.4	5.6	0.5	5.9	5.8	1.2	0.8	٦	0.7	5.2	s	1.5	3.6	2.8	3.7	4.5	3.6	6.3	10.4	9.0	14.4	3.5
12:00	12.2	3.5	U	13.3	0.4	2.8	8.4	2.3	1.5	0.4	0.4	0.4	3.7	1.2	5.8	m	2.3	1.2	1.7	0.5	3.3	39.3	v	5.6	3.3	3.7	8.3	9.9	7.2	10.9	12.9	39.3	5.6
11:00	16.5	23.3	1.1	5.3	0.5	2.3	24.6	9.0	2.2	0.3	0.3	0.4	9.0	6.0	9.9	0.9	13.3	0.7	0.7	0.7	9.9	43	0.7	s	7.2	7	00	2.4	7.9	11.3	6.7	43	9.9
10:00	17.1	17.8	1.9	7.8	H	2	6.5	2.7	0.7	0.3	0.5	0.4	3.1	2.6	9.7	7.7	5.4	0.4	0.4	0.5	16.2	s	0.7	0.3	s	2.7	S	5.8	7.9	28.5	4.7	28.5	5.5
9:00			1.5																														
8:00	26.6	56.1	6.0	13.2	1.8	2	212.5	2.2	5.6	0.3	0.3	0.3	0.1	0.3	83.9	s	4.3	0.3	0.2	0	27.1	33.2	0	0.2	11.1	٦	s	0.5	0.7	18.5	1.1	212.5	17.4
7.00			0.1																													ľ	
6.00 7.00	49.1	3.1	0.8	0	17.7	0.5	1.2	0.2	0.4	11	0.5	0.4	3.1	0	7	0.2	0.4	0.8	0	0.1	23.6	25.6	3.6	0	20.1	6.3	6.4	0.8	s	6.4	0.8	49.1	5.8
5.00	4.1		0.1																														
4:00			0.2																														
3.00	S	7.6	0.4	0.1	0.5	0.1	2.1	0	0.2	0.4	0.3	0.5	4.2	0.2	0.4	7.7	9.0	0.4	0.2	0.2	0.4	94.8	2.5	0	0.1	6.1	8.1	0.2	4.4	0.3	0.2	94.8	4,8
3.00	4.6	s	2.4																														
1.00	3.6	1.1							0.1																							l	
0:00	5.2	3.6	-	S	1.2	0.3	4.2	0.2	0	0.4	<u>ි</u>	0.4	9.0	0.3	0.2	0.4	6.1	0.4	0.1	0.5	0.4	H	10.8	0.1	0.1	0.3	0.4	81 3.42	48.3	0.1	0.3	48.3	3.3
HOURSTART 0:00 HOUREND 1:00	DAY 1	2	'n	4	Ġ	ů	2	8	<b>o</b>	10	Ħ	77	133	7.	15	16	19.27 M	18	13	20	22	22	23	24	25	26:	72	28	82	30	31	HOURLY MAX	HOURLY AVG

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NUMBER OF NON-ZERO READINGS:		672						
MAXIMUM INSTANTANEOUS VALUE:		212.5	212.5 PPB	@ HOUR(S)	œ	ON DAY(S)		7
					VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME: 36	HRS		OPERATIO	OPERATIONAL TIME:			744	HRS
MONTHLY CALIBRATION TIME: 6	HRS							
STANDARD DEVIATION: 12.51	1							

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/26/15 00:00

LICA30 NO_ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 30 Site Name : LICA30 Parameter : NO Units : PPB

Wind Parameter : WDR Instrument Height : 10 Meters

Fred

3.12 100.00 00. 00. 00. 3.12

00. 00. 00.

00. 3.83 Æ 3.83 00. 00. 4.26 4.26 00. 00. 00. 2.41 2.41 % 00. 00. 4.82 4.82 00. 00. 00. 3.12 12.92 15.05 00. 00. 00. SH 3.12 12.92 15.05 SSW 00. 00. 00. 00. 00. 00. Ø 3.55 3,55 00. 00. 00. 7.52 11.64 Direction 7.52 11.64 00. 00. 00. SE ESE 00. 00. 00. 4.11 4.11 00. 00. 00. 8.80 8.80 .00 00. 00. 6.81 6.81 Ħ 00. % 00. 4.82 4.82 00 00. 00. Ŕ 3.12 00. 3.12 00. 00. z Totals 50.0 Limit < 110.0 < 210.0 → 210.0 **v** 

Calm : .00 %

Total # Operational Hours : 704

Distribution By Samples

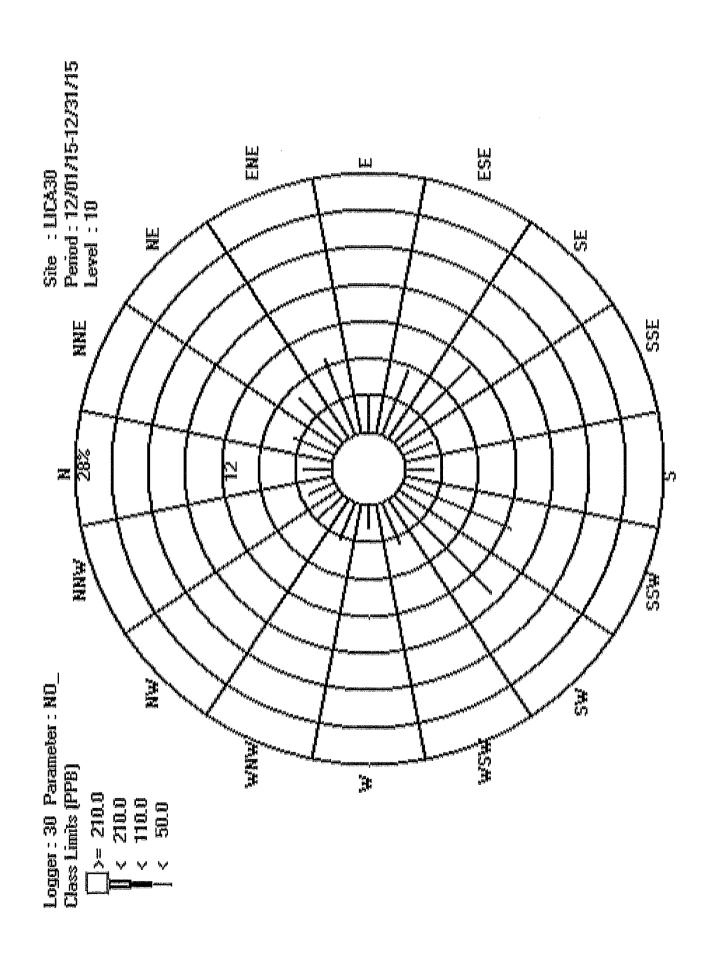
Direction

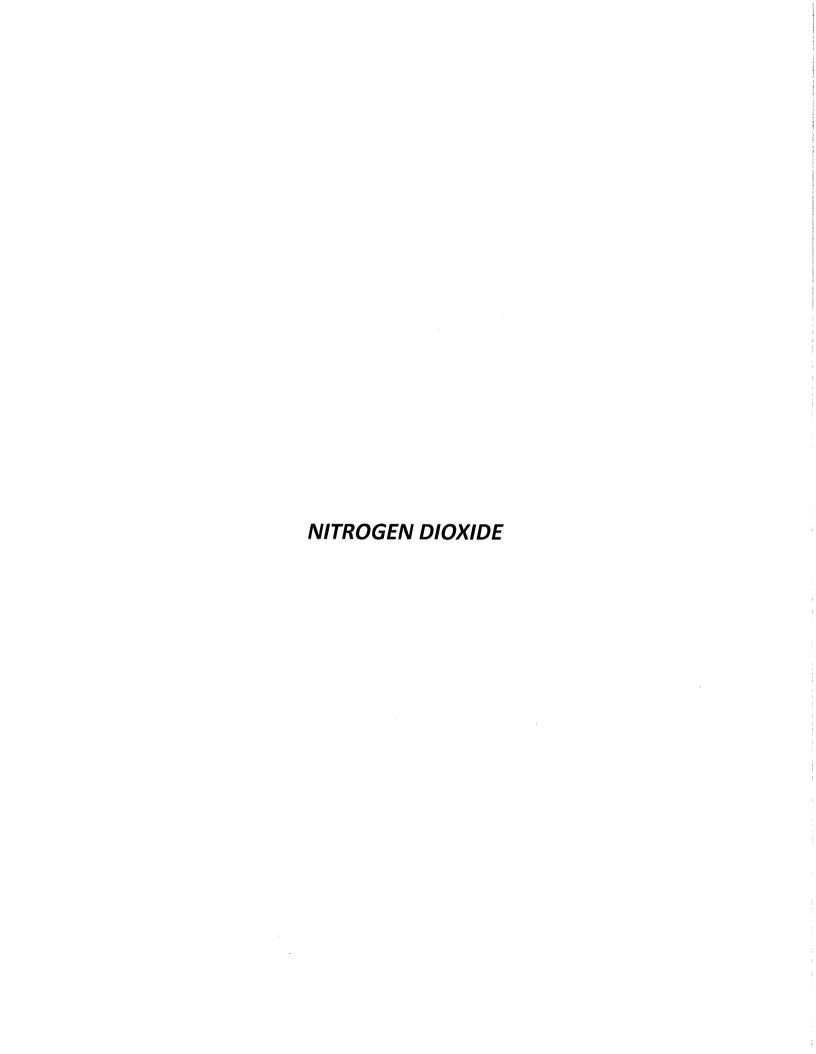
z	NNE	R	ENE	ы	ESE	SE	SSE	Ø	SSW	SW	WSW	×	WNW	MM	NNW	Freq
22	34	48	62	53	53	82	25	22	91	106	34	17	30	27	22	704
	22 34	48	62	29	53	82	25	22	16	106	34	17	30	27	22	

Calm : .00 %

v |

Total # Operational Hours : 704





JOB # 2833-2015-12-30- C



NITROGEN DIOXIDE (NO2) hourly averages in ppb

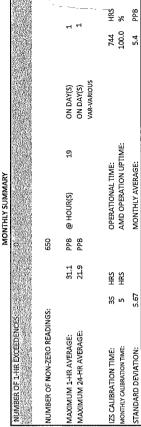
	RDGS.	24	54	54	54	54	77	74	77	24	24	24	54	24	54	54	74	54	74	74	24	24	54	24	74	77	54	54	24	54	54	74		
	24-HOUR AVG.	21.9	10.2	2.9	5.9	5.4	28	9.0	4.1	3.1	1.4	9.0	0.9	2.9	1.4	10.0	3.8	2.7	1.8	1.8	1.2	7.1	12.6	4.4	1.9	9.9	6.9	3.5	3.5	8.4	8.5	10.4		
	DAILY MAX.	31.1	23.0	4.6	13.0	14.8	7.7	14.6	14.6	10.4	3.5	3,9	4.7	6.7	8.2	16.4	18.9	12.8	7.1	7.1	3.0	15.7	17.4	15.0	10.7	15.9	11.8	10.3	9.6	13.2	19.8	26.8		
	23:00	25.2	1.5	1:1	s	4.7	7.7	12.8	0.7	1.1	0.3	0.1	1.8	9.0	7.0	6.9	18.9	2.1	0.0	2.8	0.0	13.2	13.2	0.0	2.2	9.5	2.3	2.4	3.6	11.7	8.1	3.0	25.2	5.5
	22:00	25.1	9.9	1.5	6.7	s	1.9	3.7	6.0	9.0	0.7	0.2	6.0	s	8.2	2.7	6.6	13	0.0	2.5	0.0	15.7	12.3	0.0	3,3	11.0	4.3	2.0	2.9	12.4	5.1	26.8	26.8	5,9
	CONTRACT	26.4	4.1	2.2	7.5	2.3	s	10.0	1.3	15	1.0	0.3	2.1	0.0	s	5.1	1.4	5.4	5.9	2.4	0.0	15.4	12.1	0.0	4.5	9.7	3.9	1.6	3.7	13.2	1.8	6.7	26.4	5.1
	19:00 20:00 21:00 20:00 21:00 22:00	29.3	4.4	3.4	8.9	5.6	0.7	s	2.0	27	1.0	0.4	4.7	0.0	1.9	S	0.8	2.9	6.8	3.3	0.0	14.5	12.7	0.0	8.6	6.7	4.5	1.0	4.6	12.8	23	10.4	29.3	5.2
	19:00	31.1	4.7	2.3	7.1	2.3	6.0	13.1	s	2.2	0.8	0.4	0.8	0.0	1.8	13.4	s	4.1	7.1	4.1	0.0	14.4	13.5	0.0	10.7	5.4	6.0	1.1	5.6	11.8	3.4	12.5	31.1	6.2
	18:00	31.0	5.5	1.9	4.7	3.2	2.1	14.6	1.9	s	1.7	0.7	9.0	0.1	1.1	16.4	1.1	s	5.1	7.1	0.0	14.3	13.7	0.0	6.0	6.0	8.3	3.8	9.6	10.3	0.0	20.1	31.0	6.4
	17:00	30.7	124	3.0	3.5	4.0	1.4	12.1	3.0	3.0	s	1.1	0.8	0.1	0.7	15.0	2.9	0.3	s	5.7	0.0	14.1	14.1	0.0	6.0	9.4	11.4	0.2	7:7	10.0	0.2	16.5	30.7	6.4
	16:00	29.9	19.5	U	13.0	7.8	1.4	11.2	4.1	2.5	1.4	s	1.3	0.2	6.0	15.4	7.9	0.3	0.7	s	0.5	13.5	17.4	1.1	1.8	7.7	11.6	2.1	2.9	8.6	70	12.5	29.9	7.2
	15:00 16:00	25.9	13.9	v	10.8	5.1	1.3	9.7	5.7	9.5	1.6	1.4	s	2.3	6.0	12.4	4.3	0.2	1.2	5.6	s	10.3	14.3	2.3	3.0	6,9	11.5	5.9	8.0	9.4	4.1	11.9	25.9	6.7
	14.00	20.2	8.5	J	7.9	1.4	1.8	7.9	5.6	10.4	1.6	3.9	1.1	6.1	1.0	11.1	1.7	0.3	6.0	1.5	1.7	s	13.5	2,4	2.1	6.1	6.2	2.2	0.7	8.3	2.0	4.1	20.2	2.0
	13:00	17.6	5.9	U	10.8	1.1	2.1	6.5	6.5	6.0	1.1	6.0	0.8	4.6	1.5	10.6	5.8	0.0	1.3	1.5	1.8	2.8	s	1.2	4.3	4.5	4.4	13	1.2	6.3	4.0	0.0	17.6	4.0
)	12:00 13:00 13:00 14:00	17.3	7.3	v	12.2	0.3	2.5	6.5	4.2	6.1	0.7	0.2	8.0	5.3	1.8	7.4	2.9	0.7	2.1	1.6	1.5	1.9	15.3	s	2.1	4.2	2.4	3.7	1.2	5.2	9.9	3.7	17.3	4.4
	12:00	18.1	5.2	2.2	9.4	9.0	15	9.9	2.2	7.4	0.7	0.0	8.0	9.0	1.0	7.4	0.0	7.7	2.0	9.0	15	4.3	12.9	0.0	s	6.3	5.6	6.1	9.0	6.1	6.7	10.9	18.1	4.4
	10:00	18.0	7.4	2.3	8.1	1.6	2.8	4.7	6.4	3.3	1.2	0.1	0.7	6.7	1.0	8.2	1.8	6.5	1.8	6.0	1.9	9.6	s	0.4	0.0	s	3.7	5.6	2.5	7.4	14.8	12.4	18.0	4.7
	9:00 10:00	12.4	8.2	5.9	7.3	7.4	3.8	5.4	1.8	3.5	2.1	0.5	9.0	4.9	1.9	10.9	s	3.3	1.7	1,4	2.3	5.5	11.4	6.0	0.0	7.0	s	5.3	4.7	4.4	15.1	12.2	15.1	5.1
		15.5	13.7	4.0	4.2	14.8	7.7	7.5	6.3	5.2	3.5	0.5	0.4	0.5	0.5	12.3	s	5.0	1.6	1.2	1.7	5.9	10.7	0.2	0.0	13.6	5.9	S	9.9	4.2	18.5	123	18.5	6.4
	7:00 8:00 8:00 9:00	15.7	13.8	3.7	1.1	12.8	7.6	6.2	14.6	1.9	3.1	0.4	0.2	6.2	0.2	11.1	0.0	4.2	1,4	0.0	1.6	3.5	11.8	5.9	0.0	15.9	5.6	17	S	5.2	19.8	12.6	19.8	6.3
	6:00 °	17.2	11.9	3.6	1.0	7.9	2.8	6.1	5.0	5.0	1.3	0.2	0.3	4.6	0.1	10.9	0.0	0.0	6.0	0.0	1.2	2.4	9.5	11.5	0.0	13.3	8.7	5.5	5.9	S	18.4	11.1	18.4	5.3
	3:00 4:00 5:00 6 4:00 5:00 6:00 7	18.5	13.1	2.8	1.0	9.0	1.4	7.4	4.6	9.0	1.4	0.4	0.3	4.9	0.0	14.0	0.0	0.0	0.3	0.0	1.2	9.4	10.0	11.9	0.0	1:1	8.0	6.5	3.8	5.4	s	10.6	18.5	4.6
	4:00 5:00	19.6	12.8	2.5	1.1	6.9	1.6	6.8	1.1	0.3	1.1	0.5	0.2	4.4	0.5	11.9	0.0	9.5	0.3	0.0	1.9	9.0	11.4	9.5	0.0	1.1	9.4	10.3	3,3	4.3	14.9	s	19.6	4.7
	3:00	s	13.9	3.7	1.4	6.9	5.0	10.2	0.3	0.3	1.6	9.0	0.3	3.9	0.2	10.2	9.5	0.3	0.3	1.1	1.9	0.4	13.5	11.5	0.0	1.2	11.1	9.4	3.1	3.6	12.7	6.4	13.9	4.7
	2:00 3:00	23.4	s	4.6	1.8	7.6	2.6	11.8	1.0	0.4	1.4	0.5	0.2	5.4	0.0	8.3	6.5	0.0	0.2	8.0	1.7	0.0	10.4	13.3	0.0	17	11.8	3.0	2.4	8.8	11.3	4.1	23.4	4.8
	1:00 2:00 2:00: 3:00	16.7	17.7	s	2.1	7.4	3.5	11.5	3.8	9.0	5.9	0.3	0.1	4.5	0.1	4.0	1.6	5.9	6.0	0.0	1.7	0.0	11.7	14.6	0.0	1.4	6.6	1.9	2.5	12.2	10,5	10.0	17.7	5.1
	0:00	18.4	23.0	3.9	s	6.5	4.4	13.3	11.1	9.0	1.0	0.2	0.1	1.6	0.2	3.6	3.0	12.8	1.4	0.0	3.0	0.0	12.2	15.0	0.0	1.9	7.5	1.8	3.2	11.1	10.8	6.8	23.0	6.0
MST	HOUR START 0:00 1:00 2:00 HOUR END 1:00 2:00 3:00	DAY 1	2	'n	4	S	φ	7	<b>∞</b>	Ø	8	7	12	13	14	13	16	17	18	Ð.	20	77	22	23	24	52	56	27	78	53	R	31	HOURLY MAX	HOURLY AVG



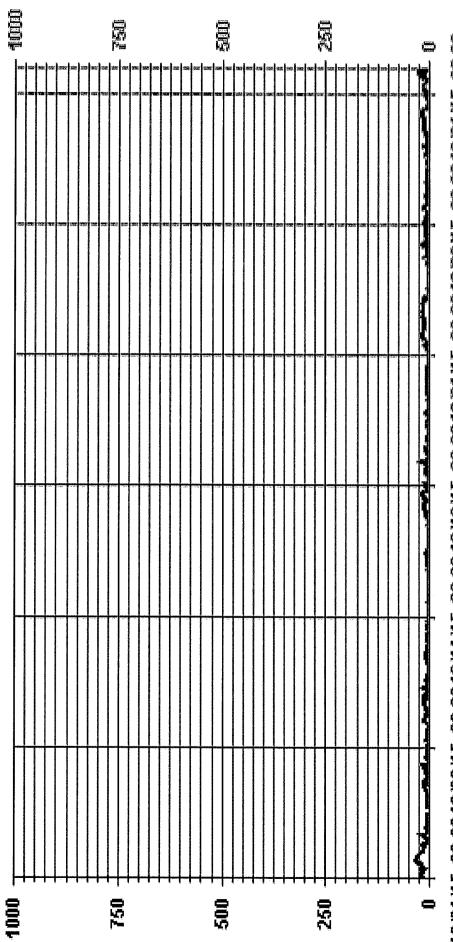
15.0

10.0

### ALBERTA ENVIRONMENT: 1.44R 159 2 PEB



Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/26/15

ZON



## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Maskwa Site - DECEMBER 2015

JOB # 2833-2015-12-30- C

# NITROGEN DIOXIDE MAX instantaneous maximum in ppb

MST

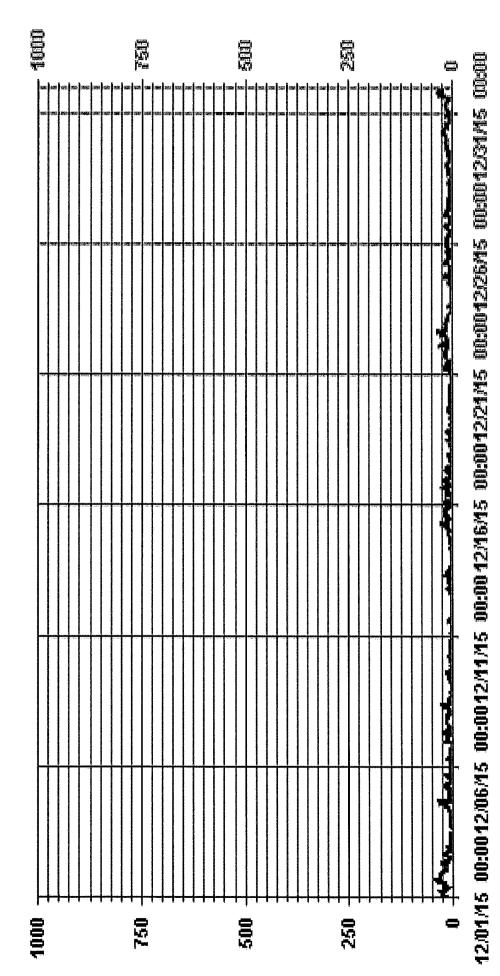
RDGS.	24	74	24	54	24	24	24	24	54	54	24	54	54	24	54	54	54	54	54	54	24	24	24	24	77	24	24	24	24	24	24		
24-HOUR AVG.	24.5	12.8	4.4	9.4	7.5	4.3	10.9	6.8	4.4	5.6	1.5	1.3	5.2	2.2	12.8	8.6	5.6	3.0	5.9	1.4	9.4	15.8	5.4	3.1	7.8	8.4	6.5	2.0	9.6	11.4	16.3		
DAILY MAX.	38.7	26.2	œ	31.9	17.3	14	23.1	24.6	13.9	6.8	17	8.1	13.1	10.1	29.1	25.7	17.4	10.5	9.3	3.6	19.3	36.4	13	19.9	16.2	14.9	14.7	11	15.5	22.2	33.1		
23.00	26.2	2.6	2.8	s	5.1	14	14.5	6.0	3.4	9.0	0.3	3.7	1.2	10.1	9.2	25.7	9.6	0.1	3.9	0	13.4	14.2	0	2.7	10.1	5.9	4.4	10.8	12.4	10.8	25.7	26.2	8.0
22:00	26.1	10	3.2	7.3	s	2.3	5.6	1.4	Н	Н	0.3	1.1	s	9.5	7	17.1	6.5	0.3	2.9	0	17	12.3	0	4.5	11.2	4.9	5.6	3.4	13.4	10.4	28.4	28.4	7.3
21.00	1	5.9	3.9	8.2	3.7	s	12.9	17	2.5	1.3	0.3	4.5	0.2	s	15.5	5.7	9.4	5.7	2.6	0	16.8	12.3	0	5.2	10.6	4.1	2.4	4.6	13.5	2.2	23.3	27.7	7.1
20:00	29.7	9	5.1	8.4	m	13	s	2.5	3.9	1.3	0.3	8.1	0.1	2.4	s	2.3	6.2	10.1	3.8	0	15.8	13.3	0	15.4	8.5	4.7	1.8	5.4	13.2	3.3	22	29.7	6.8
19:00.	31.1	5.8	5.8	8.5	5.6	15	14	s	2.5	1.2	9.0	0.8	0.2	2.1	16.4	s	5.7	10.5	5.4	0	15.5	13,9	0	19.9	5.6	6.5	2.7	8.4	12.6	3.8	23.2	31.1	7.8
18:00	30.7	7.3	3.2	6.2	4	5.9	14.9	2.9	s	3.3	0.7	0.7	0.3	1.6	16.7	3.8	s	7.7	9.3	0	15.1	14.6	0	7	6.4	10.6	9	11	11.3	3.5	33.1	33.1	7.9
17:00	30.5	16.9	U	4.8	5.4	2.6	13.7	3.9	4.2	s	13	1.2	0.3	1.1	15.1	6	8.0	s	8.2	0.4	14.7	15.2	0.4	1.5	11.3	14.9	1.6	9.3	10.7	1.2	31.4	31.4	8.3
16.00	38.7	20.7	U	31.9	13.1	2.3	17	4.5	4.1	1.8	s	1.8	0.3	1.3	17	16.9	0.7	1.4	s	11	14.7	36.4	1.6	m	9.4	14.4	9.1	თ	10.1	5.4	19.2	38.7	10.8
15:00	35.8	18.6	Ų	30.5	10	2.1	11.5	8.2	12.1	1.9	5.2	s	4.4	13	15.6	10.6	9.0	2.8	4.3	s	12.1	15.9	6.7	4.5	7.2	13.5	10.6	8.0	9.5	6	19.4	35.8	10.2
14:00	21.9	9.6	Ų	17.9	3.4	3.1	10.1	9	13.9	1.9	17	1.1	8.2	1.2	12.4	10.6	1.6	1.2	1.9	7	s	24.4	7	3.5	7.6	7.6	6.8	0.7	8.9	13.9	10.4	24.4	8.0
13:00	17.9	9.9	Ų	17.7	3.8	2.6	7	7.6	7.1	7,	3.8	8.0	7.8	1.8	12.9	11.8	0.5	7	1.5	1.6	6.2	s	2.2	6.5	4.8	9.9	3.8	8	6.8	10.1	11	17.9	5.7
12:00	17.1	7.5	Ų	16.3	0.4	3.6	6.3	8.2	8.2	1.3	0.8	1.1	8.6	2.3	7.6	8.6	3.1	7.4	2.3	1.3	2.4	16	s	3.5	4.8	3.8	7.2	3.6	2.8	10.5	თ	17.1	6.2
11.00	19.6	12.8	2.6	11	6.0	2.6	10.2	4.6	8.8	1.3	0.2	0.9	1.9	1.2	7.8	0.5	17.4	2.3	11	1.6	5.6	15	0.1	s	8.6	5.9	7.6	0.7	6.8	11.6	11.3	19.6	6.0
10:00	20.2	9.4	2.7	თ	3.9	5.3	5.3	9.3	5.1	1.8	0.5	0.8	9.5	2.9	11.4	13.1	8.6	2.3	1.2	2.1	11.5	s	0.8	0	s	4.7	œ	5.2	00	13	13.3	20.2	6.8
9:00 10:00	13.3	6.6	3.6	8.6	11.6	9	6.7	5.1	5.9	3.6	0.8	6.0	13.1	4.4	18.8	s	ιn	2.8	4	2.7	8.1	13.6	1.5	0	9.6	s	10.8	5.4	7.8	17.7	13.6	18.8	7.4
8:00	16.9	26.2	S	9.7	17.3	10.2	23.1	24.6	7.6	4.8	1.1	0.7	1.1	1.9	29.1	s	12	7	4	2.3	19.3	12.4	0.9	0	15.8	6.8	s	7.6	4.9	20.6	13.6	29.1	10.4
7:00	''	15.1	4.9	7	17.3	6.6	7.2	22.4	2.6	6.8	6.0	0.4	11.9	0.7	11.5	s	8.4	1.9	0.7	1.9	6.7	12	Ħ	0	16.2	7.2	3.5	s	6.3	22.2	13.6	22.4	8.5
6:00	7.72	14	6.1	1.4	15.6	5.9	6.9	9.5	2.3	2.6	9.0	0.3	6.9	1.1	11.2	0	0.1	1.9	0.1	1.6	18.2	9.7	12.7	0	15.2	10.9	11.9	3,4	s	20.2	12.9	27.7	7.7
5:00	22.9	14.7	4.4	1.1	12.5	1.9	7.7	60	1.7	5.6	0.8	0.3	6.7	0.5	12	0	0.1	9.0	0.2	1.7	0.9	10.8	12.2	0	5.2	11.4	10.2	4.8	6.4	s	12.6	22.9	6.0
4:00 5:00	23.6	13.4	3.1	13	7	2.1	10.8	1.9	9.0	1.4	1.1	0.3	7.3	Н	12.8	0.8	1.6	0.5	0.2	2.3	1.4	12.6	10.3	0	1.9	10.3	14.3	3.9	4.4	16.8	s	23.6	5.6
3:00	s	15.3	4.3	1.6	7	5.6	11.3	1.2	0.7	4.3	1.1	0.3	8.2	6.0	11.6	15.1	1.5	9.0	4.3	2.3	11	32.2	12.4	0	7	12.6	14.7	3.8	5.4	13.7	9.8	32.2	6.7
1:00 2:00 3:00 2:00 2:00	26.6	s	6.2	7	8.9	3.4	12.8	1.7	П	3.8	0.8	0.5	6	0.2	8.8	14.4	0.1	0.5	4.5	7	0.1	11.2	13.6	0	1.8	14.2	5.1	m	12.1	12.1	7.9	26.6	6.3
	19.6	20.6	s	2.4	œ	4.5	17	6.9	0.9	6.1	0.7	0.5	8.2	0.5	6.2	2.7	13.8	1.5	0	7	0	12.3	14.8	0	2.1	8.7	2.1	m	15.5	12.1	10.4	20.6	9.9
0:00	22.6	25.4	œ	S	7	5.2	14.2	13.7	6.0	1.6	9.0	0.1	2.5	9.0	6.4	4.2	14.8	3.1	0	3.6	0	13.5	12	0	5.9	6.8	1.9	5.2	14.1	11.7	9.5	25.4	7.2
JR START JUR END	DAY 1	7	m	4	Ŋ	φ	7	∞	O	ព	ដ	12	ቧ	14	<del>,</del>	16	17	18	Ð	20	17	22	23	24	52	. 26	27	28	53	30	31	HOURLY MAX	HOURLY AVG

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MAINTENANCE: -DAILY ZERO/SPAI -POWER:FAIKURE -OUT FOR REPAIR	
ACCESSED TO	
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						-	7.04	STANDARD DEVIATION:
					HRS	Ī	Q	MONTHLY CALIBRATION TIME:
744 HRS			OPERATIONAL TIME:	OPERA	HRS	Ī	36	IZS CALIBRATION TIME:
	VAR-VARIOUS	,						
ON DAY(S) 1		16	@ HOUR(S)	PPB	38.7		SOUS VALUE:	MAXIMUM INSTANTANEOUS VALUE:
					673		READINGS:	NUMBER OF NON-ZERO READINGS:

Of Hour Averages



- LICA30 NOZMAX PPE

LICA30 NO2_ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 30 Site Name : LICA30 Parameter : NO2 Units : PPB

Wind Parameter : WDR Instrument Height : 10 Meters

3.12 100.00 3.12 Ē 3.83 00. 00. 3.83 00. 4.26 4.26 00. 00. 00. 2.41 2.41 00. % 00. × 4.82 4.82 00. 00. 00 00. SW 3.12 12.92 15.05 00. 00. 3.12 12.92 15.05 00. 00. 00. 00. 00. 00. ß 3.55 3.55 00. SSE 00. 00. Direction SE 7.52 11.64 00. 00. 00. 7.52 11.64 00. ESE 00. 00. 4.11 4.11 0. 00. 00-8.80 8.80 00. 00. 00. 6.81 Ä 6.81 00. 00. 00. 4.82 00. 4.82 E E 00. 00. 3.12 3.12 00. 00. 0. z Totals 50.0 Limit < 110.0 < 210.0 >= 210.0 v

00. 00. 00.

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Calm : .00 %

Total # Operational Hours: 704

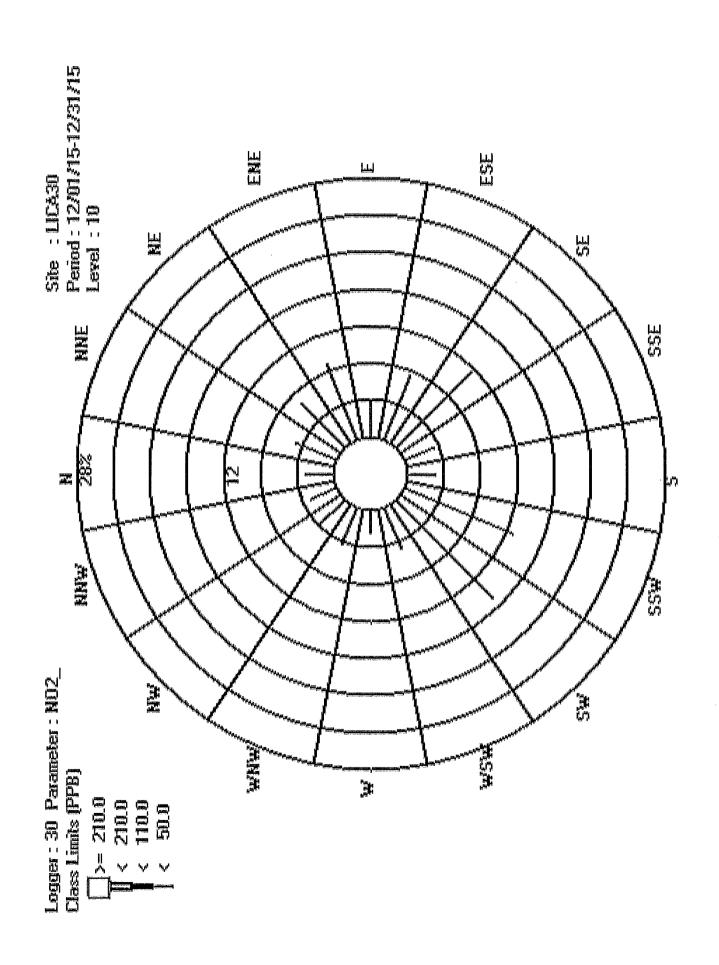
Distribution By Samples

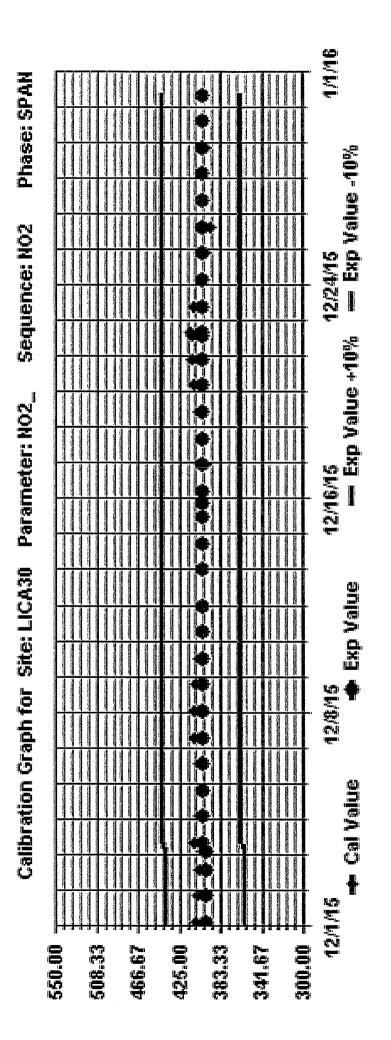
Direction

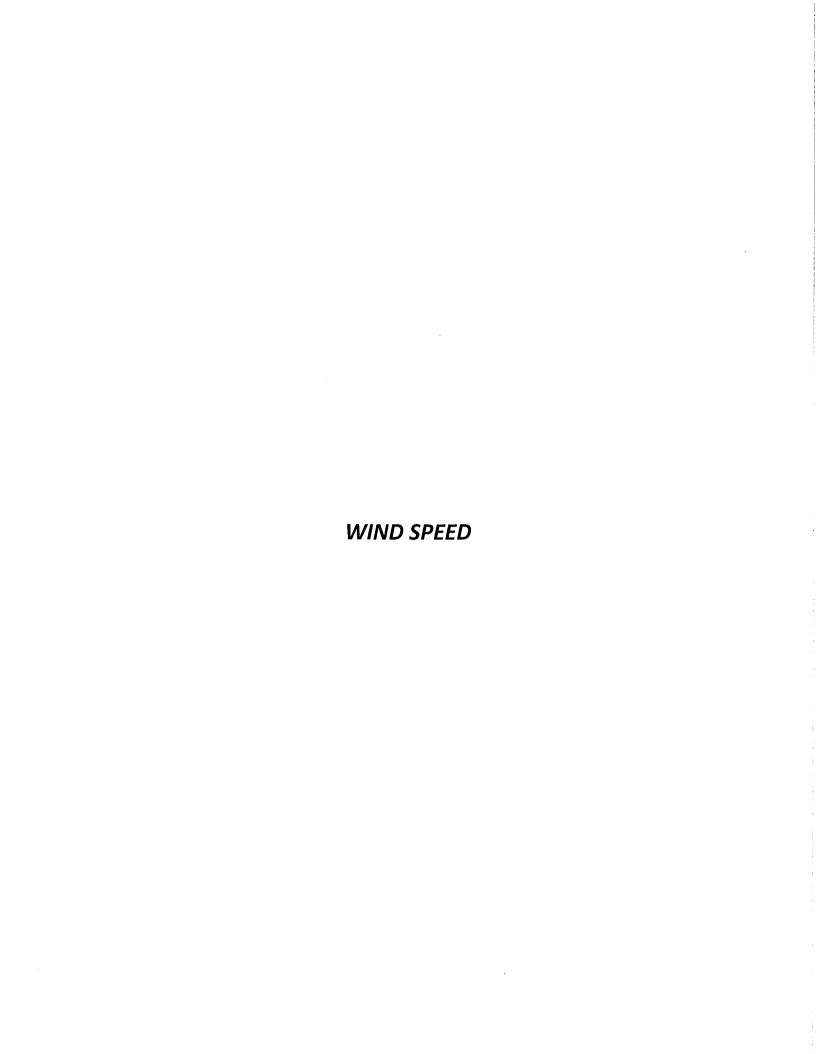
Fred	704				
NNW	22				22
N.	27				27
WNW	30				30
¥	17				17
WSW	34				34
SW	106				106
SSW	16				16
S	22				22
SSE	25				25
SE	82				85
ESE	53				53
ы	59				29
ENE	62				62
Ħ	48				48
NNE	34				34
z	22				22
Limit	50.0	110.0	210.0	210.0	Totals

Calm : .00 %

Total # Operational Hours: 704







Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION



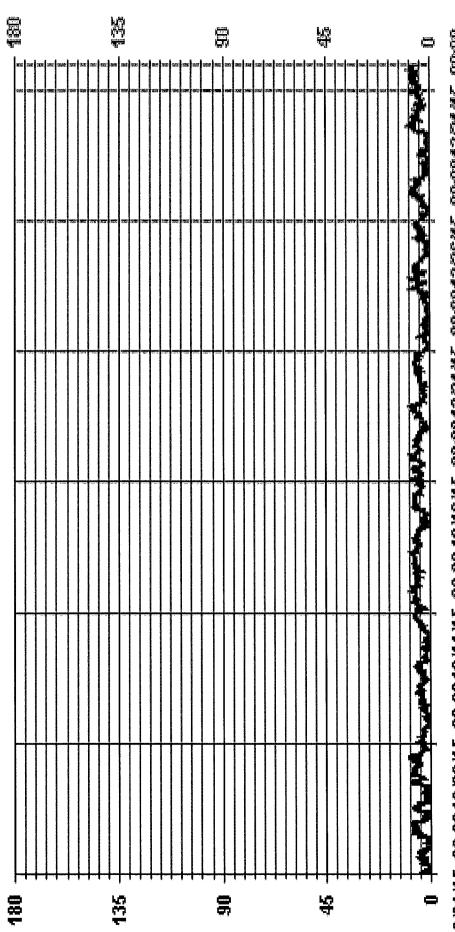
### WIND SPEED (WS) hourly averages in km/hr

TOM									•	,	CAN OF LLE (VA)	(2)	1	iodily dveidges iii niii	E 29											
HOURSTART. 0:00 1:00: 2:00 3:00 4:00 5:00 6:	0.00	1:00	2:00	3:00	4-00	5:00	00:9	7:00		9:00	10:00	1.00	2:00 13	13.00 14:00	0 15:00				19:00	20-00	21:00	22:00	23:00	DAILY	24-HOUR	
HOUR END	65:0	1.59%	759	3.59	4:59	5:59	6.59	7.59 %	8.59		8	11:59 4	259 13	59 T4		9 T6:59	17.59	9 18:59	19.59	20-59	21-59	22-59	23:59	MAX	AVG.	RDGS.
1	1.6	1.2	3.5	5.9	1.7	0.8	6.0	1.1	9.0	1.7							4.4	4.7	5.1	4.1	2.8	3.5	2.1	5.4	5.9	24
2.	1.7	1.2	1.6	1.2	0.7	1.9	0.5	1.2	1.1	0.3		5.7	4.3 4.	4.3 7.3			6.8		6.0	6.2	7.0	7.5	8.2	8.3	4.0	54
œ	7.4	4.9	3.5	1.7	5.6	1.8	0.3	2.2	17	1.0	4.3				5.4	4.4	6.1	3.9	1.4	1.2	1.1	2.1	5.6	7.4	3.6	54
7	2.3	2.5	9:1	3.2	2.4	1.5	2.6	0.2	1.7	1.2	3.2			.6 6.2			3.6		5.3	7.9	8.0	7.9	7.5	8.6	4.3	24
5	7.0	7.6	7.4	6.4	5.2	3.2	4.5	6.2	7.9	6.4	4.1			1 4.3	3 4.7	4.3	3.2	3.3	1.2	1.8	3.0	3.1	3.7	93	2.0	24
9	3.6	3.1	4.6	3.6	3.5	2.3	3.9	2.9	5.6	2.4	3.0		2.9 3.	3.6 3.0	1 2.5	9.0	0.0	0.8	1.0	0.5	0.7	1.8	2.8	9.4	2.4	24
2	0.3	1.7	8.0	1.6	1.2	2.0	2.5	3.2	0.7	2.7	2.3		1.9 3.	3.3 4.3	3 4.6	3.1	3.4	3.8	3.8	4.3	3.8	4.3	6.4	6.4	2.8	54
ø	2.0	3.5	4.2	4.6	5.1	4.2	4.7	4.0	2.9	1.9	2.2		3.1 2.	4 3.1	3.1	4.1	3.4	3.2	5.3	5.6	5,4	4.9	6.0	6.0	3.9	24
1 6	5.3	4.8	5.7	5.6	1.9	1.2	2.7	3.5	2.6	2.3	2.3	1.6	1.6 1.	1.9 0.9	2.7	4.4	2.1	0.4	1.2	2.0	1.3	2.8	2.4	5.7	2.5	54
10	5.6	1.8	6.0	0.7	9.0	0.5	0.5	1.6	2.5	2.7		4.3	3.3 4.4	4 4.1	1.4.8	4.5	6.0	4.5	0.9	6.5	5.3	6.9	7.1	7.1	3.6	24
H	6.2	4.9	5.5	2.7	5.9	3.6	2.0	5.6	6.4	6.1	7.5	9.9	5.7 6.	6.6 7.1	1 6.7	6.2	6.0	6.2	6.1	7.8	8.9	7.1	6.4	7.8	6.0	54
12	7.2	5.3	6.1	6.0	5.7	5.7	6.2	6.0	6.4	5.8	6.1		6.7 5.7	7 3.7	4.2	5.9	6.5	5.8	6.7	6.8	7.2	7.1	6.7	7.2	6.0	54
13	6.9	6.7	6.4	6.4	9.9	6.7	7.7	8.2	6.8	5.1	6.2		5.9 5.8	8 4.5	4.2		6.5	5.9	7.3	5.5	9.9	5.4	5.3	8.2	6.1	54
14	5.8	5.4	5.0	5.2	4.4	4.0	5.3	2.4	0.4	2.7	9.0		3.6 2.1	1 1.6	5 2.7	1.9	1.9	2.0	1.1	2.4	3.7	3.3	4.3	5.8	3.1	75
15	6.3	6.9	5.8	6.5	6.2	6.9	6.8	6.8	7.0	9.9	6.3			.5 5.0	4.9		4.1	4.2	4.0	3.0	3.3	5.1	4.4	7.0	5,5	75
16	4.0	3.7	6.9	9.6	7.5	2.0	4.5	3.5	3.8	4.4	6.3		5.7 7.3	7.9 5.0	4.3	1.8	3.2	3.9	4.4	4.5	6.8	7.3	7.2	8.9	5.4	74
17	6.8	7.7	6.3	5.6	5.5	5.1	9. 6.	4.5	4.8	6.5	6.4			.1 5.8	3 6.6			4.4	4.2	5.1	4.7	4.4	3.4	7.7	5.4	54
18	1.8	2.7	2.2	0.7	2.2	1.6	1.7	2.2	3.0	3.7				.8 4.3	4.4		6.8		7.6	6.7	9.9	7.7	6.3	8.0	4.4	54
19	4.4	4.1	5.6	3.1	3.7	3.7	2.4	2.3	1.8	2.2	3.5		2.5 3.5	5 3.9			2.4	1.2	4.5	3.0	4.4	4.4	4.3	4.5	3.2	24
. 20	4.3	4.1	4.4	4.7	5.5	4.2	5.3	5.6	5.8	4.6	5.2			.3 6.7			4.8	5.6	5.5	4.6	5.6	6.0	4.0	6.7	5.3	54
Ŋ	3,4	2.4	0.3	1.8	13	0.4	9.0	1.0	6.0	2.4	2.0		2.6 2.3	3 4.1			2.7	6.0	1.6	1.1	1.5	1.7	1.8	4.1	1.8	54
. 22	0.4	2.5	1.6	1.4	1.0	0.1	2.0	2.1	1.3	0.7	0.2 (			1 1.6	6.0		1.7	1.4	1:1	9.0	2.2	1.8	2.5	2.5	1.3	24
	3.3	2.7	1.9	3.6	1.1	0.1	2.8	4.0	3.6	4.7	7.3		5.8 5.4	4 3.1	2.1	3.6	5.9	7.6	8.2	7.0	5.6	4.7	5.5	8.2	4.4	24
24	2.5	2.2	5.6	5.4	7.3	5.3	6.3	6.4	5.8	3.8	5.2		3.6 3.7	.7 3.5	2.3		1.4	0.9	1.5	8.0	5.0	1.4	1.1	7.3	3,5	74
. 25	1.2	0.4	1.5	1.0	1.9	1.3	3.9	3.5	5.4	4.5	4.3	2.6	3.4 3.0	0. 4.9	3.8	4.7	4.0	5.5	5.6	5.8	6.3	6.4	5.7	6.4	3.8	24
	4.7	2.8	2.5	2.8	1.9	2.7	3.3	1.0	1.6	8.0	1.0	).7.0	0.8 3.	2 2.6	, 1.5	2.0	3.4	1.5	3.4	4.6	4.6	3.8	5.6	5.6	5.6	24
27	7.0	6.5	8.0	8.0	7.5	7.4	6.3	6.9	5.6	5.8	4.5		4.9	.6 6.0	4.8	2.8	2.5	1.2	0.2	1.4	3.0	0.5	2.0	8.0	4.7	74
28	2.3	1.1	1.1	1.4	2.5	3.2	2.2	1.4	1.1	6.0	0.6		2.3 4.9	9 3.7	2.4	3.2	2.6	0.5	6.0	9.0	0.3	9.0	1.2	4.9	1.8	24
. 29	0.0	9.0	1.1	1.1	9.0	9.0	1.5	1.3	0.7	1.6	4.8	6.2 (	6.8 5.9	6.5	9 6.5	9.0	8,5	7.5	6.3	4.1	4.4	5.2	7.1	0.6	4.1	24
30	8.1	2.5	2.0	5.2	5.5	6.0	4.6	4.2	2.8	2.5	4.7		3.8 4.4	3.9	3.1	3.8	4.2	4.4	5.9	4.7	5.6	8.0	8.2	8.2	2.0	54
.31	8.2	4.9	3.4	5.4	5.1	5.9	6.9	6.0	5.7	6.9	6.9	7.1 (	5.6 8.	.7 6.6			5.5	7.0	8.5	7.4	7.3	7.7	5.1	8.7	6.5	54
HOURLY MAX	8.2	7.7	8.0	8.6	7.5	7.4	7.7	8.2	7.9	6.9	7.5	7.8	9.3 8.7	7 7.3	1 6.7	9.0	8.5		8.5	7.9	8.9	8.0	8.2			
HOURLY AVG	4.2	3.7	3.8	3.8	3.6	3.2	3.6	3.6	3.3	3.4			1.5 4.	7 4.5			4.1	4.0	4.2	4.1	4.5	4.7	4.7			

March 4, 2014	MAGNETIC DECLINATION 19 DEGREE EAST	
LAST CALIBRATION:	DECLINATION:	

LAST CAI DECLINA	NUMBEF MAXIMU MAXIMU	MONTHLY (
STATUS FLAG CODES  C -CALIBRATION O -COLAITY ASSURANCE  N - MAINTELANCE  S - DAILYZERO/SPAN CHECK  X - MACHINE MALEUNCTON  P - POWER FAILURE  G - COLIF FOR REPAIR  K - COLLECTION FRROR	24 HOUR AVERAGES FOR DECEMBER 2015  50  40	10001 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

NUMBER OF NON-ZERO READINGS:	.;;		742					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		9.3 6.5	7 G H	@ HOUR(5)	12	ON DAY(S) ON DAY(S) VAR-VARIOUS	27 (1)	31
MONTHLY CALIBRATION TIME:	0	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	E: JPTIME:		744	HRS %
STANDARD DEVIATION:	2.17			MONTHLY AVERAGE:	نن		4.0	KPH



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/36/15 00:00



### LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

## VECTOR WIND SPEED MAX instantaneous maximum in km/hr

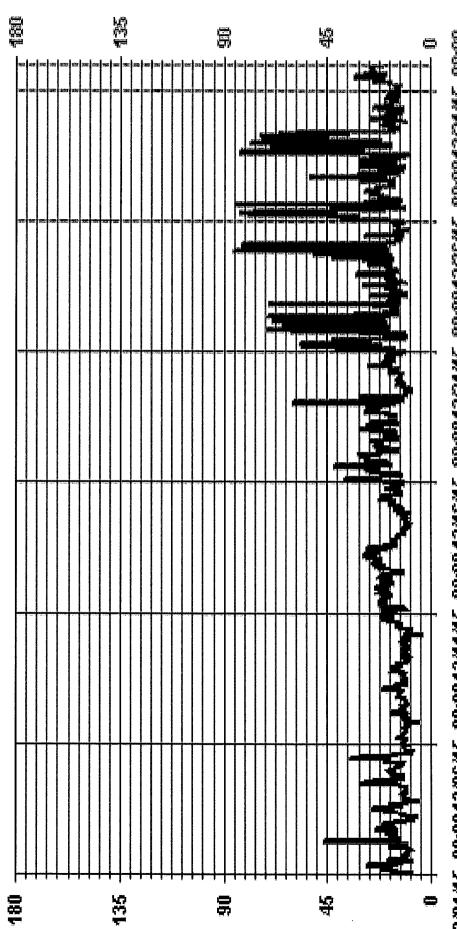
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):00 1:00 2:00 3:00 4:00	2:00 3:00 4:00	3:00 4:00	4:00		5:00	7 00	30 8:00	0.6	10:00	11.00	.12:00	13.00	14:00 1	5.00 16	16:00 17:00	00 - 18:00	00-61 _00	20:00	21.90	22:00	23.00	DAILY 2	24-HOUR	
HOUR END 1:00 2:00 3:00 4:90 5:00 6:00 7:00 8:00 19:00 10:00	7:00 8:00 9:00	7:00 8:00 9:00	7:00 8:00 9:00	7:00 8:00 9:00	8:00 3:00			잃	11:00	12:00	13:00	14:00	15:00: 16	16:00 17	17:00 18:00	.00 19:00	00 20:00	. 21.00	22:00	23:00	0:00	MAX.	AVG.	RDGS.
15.1 17.7 7.2 17.3 15.5 16.4 21.9 17.7 18.0 28.5	17.3 15.5 16.4 21.9 17.7 18.0	15.5 16.4 21.9 17.7 18.0	16.4 21.9 17.7 18.0	21.9 17.7 18.0	17.7 18.0	18.0	.,		15.1	12.7	12.6	7.8	19.2 1	16.4 13	13.7 11	11.0 10.7	7 11.8	10.5	10.0	10.2	8.5	28.5	14.4	24
13.3 18.6 13.1 9.8 14.6 12.4 46.5 26.5	13.1 9.8 14.6 12.4 46.5 26.5	9.8 14.6 12.4 46.5 26.5	14.6 12.4 46.5 26.5	12.4 46.5 26.5	46.5 26.5	26.5			14.4	16.6	17.9	16.8	•	•	• •	.,	•	16.2	19.9	18.4	21.2	46.5	17.7	74
17.1 11.6 7.1 9.4 9.1 5.4 12.4 12.0	7.1 9.4 9.1 5.4 12.4 12.0	9.4 9.1 5.4 12.4 12.0	9.1 5.4 12.4 12.0	5.4 12.4 12.0	12.4 12.0	12.0				20.5	21.4	25.8	•	15.9 12	•		•	4.4	9.6	10.7	12.2	25.8	13.8	74
12.0 11.6 12.9 12.2 11.4 12.0 11.6 9.8	12.9 12.2 11.4 12.0 11.6 9.8	12.2 11.4 12.0 11.6 9.8	11.4 12.0 11.6 9.8	12.0 11.6 9.8	11.6 9.8	8.6		10		14.4	31.1	29.5	•				9 11.6	16.2	17.2	17.9	18.4	31.1	15.5	74
18.4 16.9 15.7 14.6 13.3 14.2 13.5 18.6	15.7 14.6 13.3 14.2 13.5 18.6	14.6 13.3 14.2 13.5 18.6	13.3 14.2 13.5 18.6	14.2 13.5 18.6	13.5 18.6	18.6	•	20.3		35.3	32.0	19.9	•			•	2 10.9	11.1	11.4	12.7	11.3	35.3	15.9	74
12.9 12.7 12.2 11.6 10.2 15.4 12.0 12.9	12.2 11.6 10.2 15.4 12.0 12.9	11.6 10.2 15.4 12.0 12.9	10.2 15.4 12.0 12.9	15.4 12.0 12.9	12.0 12.9	12.9		12.2	12.4	11.8	10.9	11.1	11.2 1	11.8 10	10.5 10	10.7 10.0	0 11.6	4.3	10.7	11.4	12.2	15.4	11.5	24
12.0 10.2 13.1 10.9 17.7 11.6 12.2 13.5	13.1 10.9 17.7 11.6 12.2 13.5	10.9 17.7 11.6 12.2 13.5	17.7 11.6 12.2 13.5	11.6 12.2 13.5	12.2 13.5	13.5	•	12.0	11.3	12.2	10.9	10.5	11.4	11.6 9.	9.8 10	10.9 12.4	4 12.0	14.6	14.8	14.4	14.3	17.7	12.2	54
13.1 16.4 21.4 19.4 15.3 12.7 16.2 10.2	21.4 19.4 15.3 12.7 16.2 10.2	19.4 15.3 12.7 16.2 10.2	15.3 12.7 16.2 10.2	12.7 16.2 10.2	16.2 10.2	10.2	, .	ď		12.6	8.6	12.2	•	12.2 12		12.9 12.1	1 13.3	17.0	16.4	13.9	17.5	21.4	14.0	74
8.9 11.3 10.2 11.8	12.7 10.8 8.9 11.3 10.2 11.8	10.8 8.9 11.3 10.2 11.8	8.9 11.3 10.2 11.8	11.3 10.2 11.8	10.2 11.8	11.8		ß	10.0	10.7	11.8	111	11.6 1	10.5 13	13.5 9.	9.1 10.4	4 12.2	10.9	11.3	12.4	11.3	15.5	11.6	24
11.3 9.6 3.4 11.6 8.0 9.6	11.3 9.6 3.4 11.6 8.0 9.6	9.6 3.4 11.6 8.0 9.6	3.4 11.6 8.0 9.6	11.6 8.0 9.6	8.0 9.6	9.6		m	11.3	13.6	12.2	15.5	12.0 1	13.5 15	15.3 16	16.2 19.2	2 21.0	18.6	15.8	20.5	22.3	22.3	13.5	54
14.0 20.3 20.3 11.3 11.8 14.7 21.2 19.9	20.3 11.3 11.8 14.7 21.2 19.9	11.3 11.8 14.7 21.2 19.9	11.8 14.7 21.2 19.9	14.7 21.2 19.9	21.2 19.9	19.9		ø		21.4	20.6	21.8	19.9	18.4 21				21.4	19.2	23.2	18.2	23.2	19.0	24
19.0 22.3 20.1 15.5 17.5 17.9 22.3 16.4	20.1 15.5 17.5 17.9 22.3 16.4	15.5 17.5 17.9 22.3 16.4	17.5 17.9 22.3 16.4	17.9 22.3 16.4	22.3 16.4	16.4		-	22.5	22.1	18.2	17.6	11.8 1	12.9 17	17.3 21	21.4 20.8	8 20.6	23.9	24.5	21.9	24.1	24.5	19.7	24
21.4 23.0 27.8 23.5 28.5	27.8 23.5 28.5 29.8 26.7 23.4	23.5 28.5 29.8 26.7 23.4	28.5 29.8 26.7 23.4	29.8 26.7 23.4	26.7 23.4	23.4		н	27.5	18.4	28.2	18.9	19.4	14.2 17	17.3 16	16.8 16.4	4 16.8	14.6	15.6	15.1	12.9	29.8	20.9	24
15.7 13.3 10.7 12.6 12.0 11.0 13.0 10.9 9.4 10.7	12.6 12.0 11.0 13.0 10.9 9.4	12.0 11.0 13.0 10.9 9.4	11.0 13.0 10.9 9.4	13.0 10.9 9.4	10.9 9.4	9.4		^	10.0	12.0	10.2	10.8	11.2 1	11.8 10	10.9 11	11.6 10.9	9 11.3	10.7	14.5	11.1	12.9	15.7	11.6	74
15.1 13.7 14.6 17.5 18.4	14.6 17.5 18.4 15.7 15.7 17.3	17.5 18.4 15.7 15.7 17.3	18.4 15.7 15.7 17.3	15.7 15.7 17.3	15.7 17.3	17.3		7	16.9	19.5	21.9	17.0	13.5 1	13.3 13	13.5 15	15.3 12.9	9 20.1	14.4	15.5	14.6	13.5	72.7	16.2	74
20.8 23.2 37.7 31.3 21.9 21.4 12.2 12.9	37.7 31.3 21.9 21.4 12.2 12.9	31.3 21.9 21.4 12.2 12.9	21.9 21.4 12.2 12.9	21.4 12.2 12.9	12.2 12.9	12.9		0	23.8	25.6	27.8			33.1 42	42.1 16	16.4 19.7	7 18.4	22.3	26.5	28.5	25.8	42.1	23.7	24
30.7 23.0 21.0 23.8 21.4	21.0 23.8 21.4 13.4 21.9 18.2	23.8 21.4 13.4 21.9 18.2	21.4 13.4 21.9 18.2	13.4 21.9 18.2	21.9 18.2	18.2		2	24.1	23.3	23.0	24.3	20.1 2	26.5 20		13.3 15.9	9 16.2	20.6	15.8	16.6	15.5	30.7	20.9	24
26.5 31.3 20.4 22.5 28.2 13.5 26.7 15.5	20.4 22.5 28.2 13.5 26.7 15.5	22.5 28.2 13.5 26.7 15.5	28.2 13.5 26.7 15.5	13.5 26.7 15.5	26.7 15.5	15.5		œ		15.3	16.0		•				•	22.5	27.8	27.6	21.4	31.3	21.3	74
15.3 59.9 14.2 11.4 15.9 22.3 16.4 31.5	14.2 11.4 15.9 22.3 16.4 31.5	11.4 15.9 22.3 16.4 31.5	15.9 22.3 16.4 31.5	22.3 16.4 31.5	16.4 31.5	31.5		0		10.7	10.7		•					12.4	13.3	13.7	15.5	59.9	16.0	74
13.7 13.7 13.5 12.9 14.0 18.2 15.3 14.9	13.5 12.9 14.0 18.2 15.3 14.9	12.9 14.0 18.2 15.3 14.9	14.0 18.2 15.3 14.9	18.2 15.3 14.9	15.3 14.9	14.9		13.7		18.8	27.1		•					14.9	20.0	17.7	13.3	27.1	16.6	74
41.3 15.1 56.3 37.5 21.1 57.2	41.3 15.1 56.3 37.5 21.1 57.2	15.1 56.3 37.5 21.1 57.2	56.3 37.5 21.1 57.2	37.5 21.1 57.2	21.1 57.2	57.2		25.4		26.3	43.2		11.6 1	10.2 20	20.6 10	10.5 30.3	_	17.5	71.1	21.9	34.2	71.1	29.8	74
21.9 26.6 19.0 68.2 68.3 28.7 20.8	26.6 19.0 68.2 68.3 28.7 20.8	19.0 68.2 68.3 28.7 20.8	68.2 68.3 28.7 20.8	68.3 28.7 20.8	28.7 20.8	20.8	•	71.3	17.3	34.2	13.3		•				.,	43.2	70.7	16.4	14.6	71.3	30.9	74
17.3 16.7 14.0 26.5 9.8 12.9 12.9 14.3	14.0 26.5 9.8 12.9 12.9 14.3	26.5 9.8 12.9 12.9 14.3	9.8 12.9 12.9 14.3	12.9 12.9 14.3	12.9 14.3	14.3	•	14.2	17.9	19.7	16.2		•			•		18.6	19.9	17.9	15.1	29.6	16.4	74
19.7 16.4	13.7 17.1 16.4 18.7 19.7 16.4	17.1 16.4 18.7 19.7 16.4	16.4 18.7 19.7 16.4	18.7 19.7 16.4	19.7 16.4	16.4		26.7		18.2	25.8	3.6		43.0 16		31.5 25.0	0 51.5	40.1	82.8	18.2	43.4	85.8	27.6	24
82.3 21.2 20.1	82.3 21.2 20.1 15.7 13.1	21.2 20.1 15.7 13.1	20.1 15.7 13.1	15.7 13.1	13.1			13.3	12.9	28.9	17.7	11.8	12.7 1	16.2 9.		13.3 14.0		14.2	16.4	14.6	12.2	82.3	20.0	74
69.5 83.1	39.0 30.2 44.4 79.6 69.5 83.1	30.2 44.4 79.6 69.5 83.1	44.4 79.6 69.5 83.1	79.6 69.5 83.1	69.5 83.1	83.1		77.9	39.9	4.7	20.1	10.3	12.4 4	42.1 85	85.1 29	29.1 27.4	4 13.5	13.3	14.0	17.1	19.9	85.1	36.4	24
24.4 21.9	25.7 28.5 25.0 22.5 24.4 21.9	28.5 25.0 22.5 24.4 21.9	25.0 22.5 24.4 21.9	22.5 24.4 21.9	24.4 21.9	21.9		18.2	15.3	17.5	17.9	15.1	30.2	18.6 25	25.0 52	52.4 19.3	3 27.1	32.0	13.1	23.2	14.4	52.4	23.3	77
15.8 10.2 31.5 30.0 14.4 30.7 19.5 19.1	31.5 30.0 14.4 30.7 19.5 19.1	30.0 14.4 30.7 19.5 19.1	14.4 30.7 19.5 19.1	30.7 19.5 19.1	19.5 19.1	19.1		31.1	26.7	14.4	11.6	8.7	12.4 5	53.9 83	83.4 57	57.7 32.7	7 28.0	60.5	69.5	16.4	19.9	83.4	29.6	77
78.6 41.7 20.6 64.1 44.1 73.7 58.3 74.2 66.5 34.6	64.1 44.1 73.7 58.3 74.2 66.5	44.1 73.7 58.3 74.2 66.5	73.7 58.3 74.2 66.5	58.3 74.2 66.5	74.2 66.5	66.5	•••	ω	58.5	15.3	17.5	18.6	12.7 1	15.5 20	20.6 21	21.1 18.8	8 15.5	11.8	12.4	14.2	25.6	78.6	34.8	74
23.0 14.9 14.9 19.7 12.2 14.9 16.0 11.1 22.6 2	19.7 12.2 14.9 16.0 11.1 22.6	12.2 14.9 16.0 11.1 22.6	14.9 16.0 11.1 22.6	16.0 11.1 22.6	11.1 22.6	22.6		25.4	17.3	20.6	17.0	17.0	16.4	13.5 17	17.9	17.1	1 13.7	14.6	13.3	17.5	16.8	25.4	17.0	24
18.4 16.4	14.0 14.1 13.7 16.4 18.4 16.4	14.1 13.7 16.4 18.4 16.4	13.7 16.4 18.4 16.4	16.4 18.4 16.4	18.4 16.4	4 16.4		19.5		19.7	31.3	33.7	26.7 2	29.7 18	18.8 23	23.0 24.8	8 25.4	25.6	23.8	26.2	21.0	33.7	21.4	74
82.3 44.1 73.7 79.6 74.2 83.1	82.3 44.1 73.7 79.6 74.2 83.1	44.1 73.7 79.6 74.2 83.1	73.7 79.6 74.2 83.1	79.6 74.2 83.1	74.2 83.1	83.1		77.9	58.5	44.7	43.2	33.7	30.2 5	3.9 85		57.7 32.7	ľ	60.5	82.8	28.5	43.4			
19.5 19.2 22.9 18.2 21.5 22.1 21.4 21.8	22.9 18.2 21.5 22.1 21.4 21.8	18.2 21.5 22.1 21.4 21.8	21.5 22.1 21.4 21.8	22.1 21.4 21.8	21.4 21.8	21.8		78		19.6	19.5	17.5	16.7	19.2 20	20.7 18.	3.6 18.0	0 19.5	19.1	23.9	17.3	18.0			

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24		744 HRS
		744
ON DAY(S)	VAR-VARIOUS	
21	VAR	
85.8 KPH @ HOUR(S)		OPERATIONAL TIME:
КРН		OPERAT
85.8		
MAXIMUM INSTANTANEOUS VALUE:		

Of Hour Averages



12/01/115 00:0012/06/15 00:0012/11/115 00:00/12/16/15 00:0012/21/115 00:0012/26/15 00:0012/36/15 00:00

E.

计例则

LICA30 WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

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

Wind Parameter : WDR Instrument Height : 10 Meters

Direction

Ď,	82	7	00.	00.	00.	00.	
Freq	76.88	22.84	Ģ		٠		
MNIN	2.55	.53	00.	00.	00.	.0	3.09
WN	2.41	1.47	00.	00.	00.	00.	3.89
WNW	2.55	1.61	00.	00.	00.	00.	4.16
ĸ	2.01	.53	0.	00.	00.	00.	2.55
WSW	4.70	0.	00.	00.	00.	00.	4.70
SW	11.82	3.09	00.	00.	00.	00.	14.91
SSW	8.73	4.16	00.	00.	%	%	12.90
w	3.09	.00	00.	00.	0.	%	3.09
SSE	2.95	.40	00.	00.	00.	.00	3.36
SE	6.85	5.24	00.	00.	00.	00.	12.09
ESE	4.56	2.82	00.	00.	00.	00.	7.39
м	3.22	.80	00.	00.	00.	00.	4.03
ENE	8.46	.26	00.	00.	00.	00.	8.73
Ä	16.3	.94	00.	00.	00.	%	6.85
NNE	4.16	.40	00.	00.	00.	0.	4.56
z	2.82	.53	00.	00.	00.	00.	3.36
Limit	6.0	12.0	20.0	29.0	39.0	39.0	Totals
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Calm : .26 %

Total # Operational Hours : 744

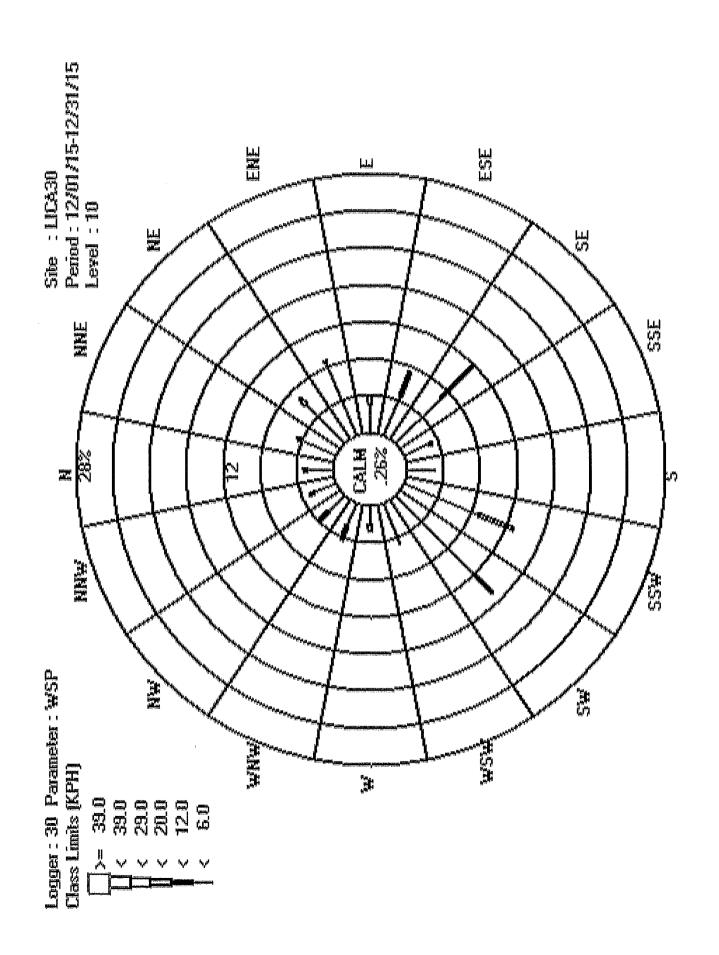
Distribution By Samples

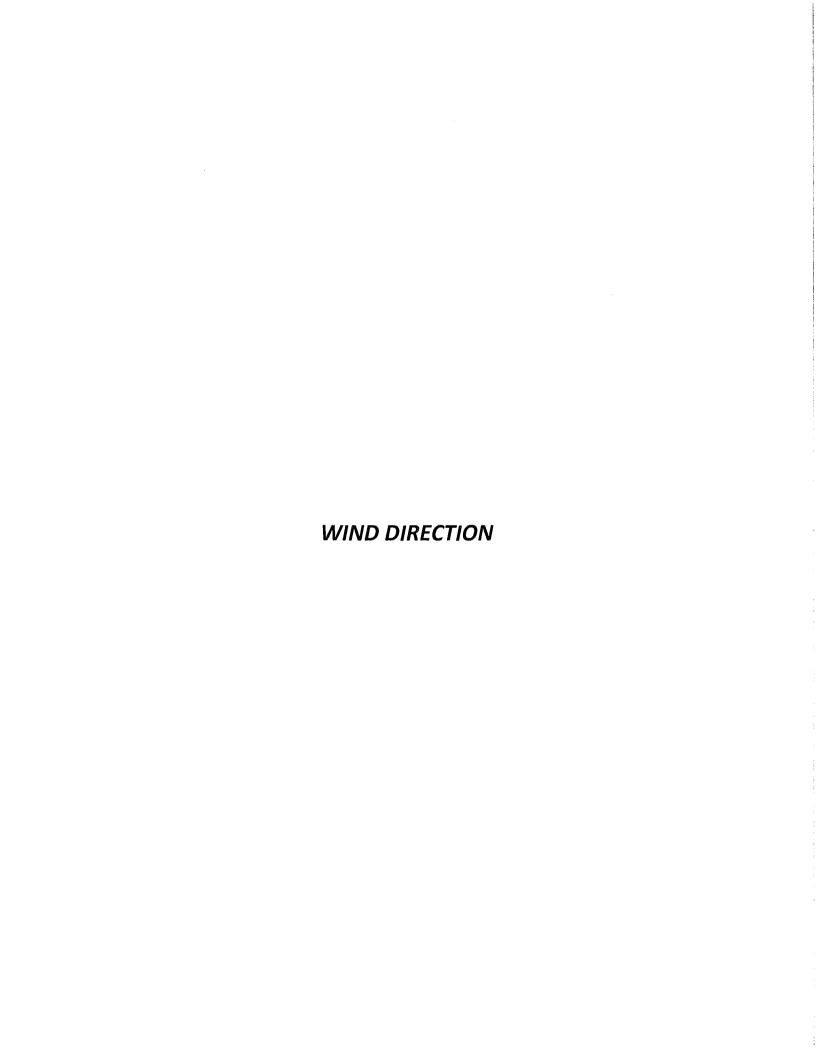
Direction

Freq	572	170					
NNW	19	4					23
W	18	11					62
WINW	19	12					31
<b> </b> ≤	15	4					6
WSW	35						35
SW	88	23					111
SSW	65	31					96
w	23						23
SSE	22	m					25
SE	51	39					06
ESE	34	21					55
ы	24	9					30
ENE	63	0					65
Ä	44	7					51
NAE	31	m					34
z	21	4					25
Limit	0.9	12.0	20.0	29.0	39.0	39.0	Totals
н	٧	٧	٧	٧	٧	X	H

Calm : .26 %

Total # Operational Hours : 744







### LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Maskwa Site - DECEMBER 2015 10B # 2833-2015-12-30- C

### WIND DIRECTION (WD) hourly averages

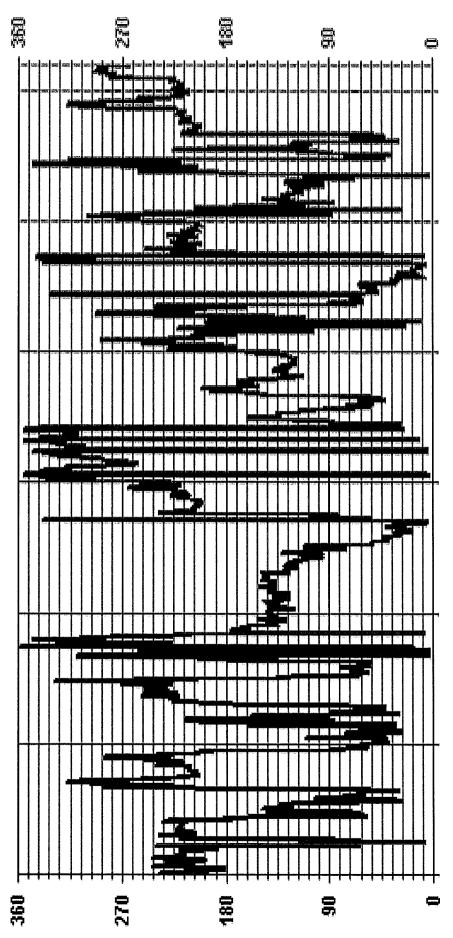
MST									•	1			_		Q I	3								
HOUR START	0:00	1:00 2:00	2:00	00 4:0	0 5.0	0. 6.00	00 7:0	00-8-00	9:00	10:00	11-00	12:00	13:00	14:00	5.00 .1	5:00 T	00 18	00 19:0	0 20:0	0 21:00	22:00	23:00	24-HOUR AVG QUADRANT	RDGS.
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. 16	SW									NNN	NNN	ΝM	Ν	_			_	_			_	ΝN	NW	24
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#### STATUS FLAG CODES

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	CALIBRATION -MAINTENANCE DAILY ZERO/SPAN - POWER FAILURE - OUT FOR REPAIR
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March 4, 2014	MAGNETIC DECLINATION 19 DEGREE EAST	
ASI CALIBRATION:	SECLINATION:	

0 HRS OPERATIONAL TIME: 744 HRS	89.30 AMD OPERATION UPTIME: 100.0 %	MONTHLY AVERAGE: SSE	
0 HRS OPE		MO	
MONTHLY CALIBRATION TIME:	STANDARD DEVIATION:		



12,01/M5 00:0012,06M5 00:0012/M1/M5 00:0012/M6/M5 00:0012/21/M5 00:0012/26M5 00:0012/31/M5 00:00





MST

### LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Maskwa Site - DECEMBER 2015

JOB # 2833-2015-12-30- C

# MD) hourly averages in degrees

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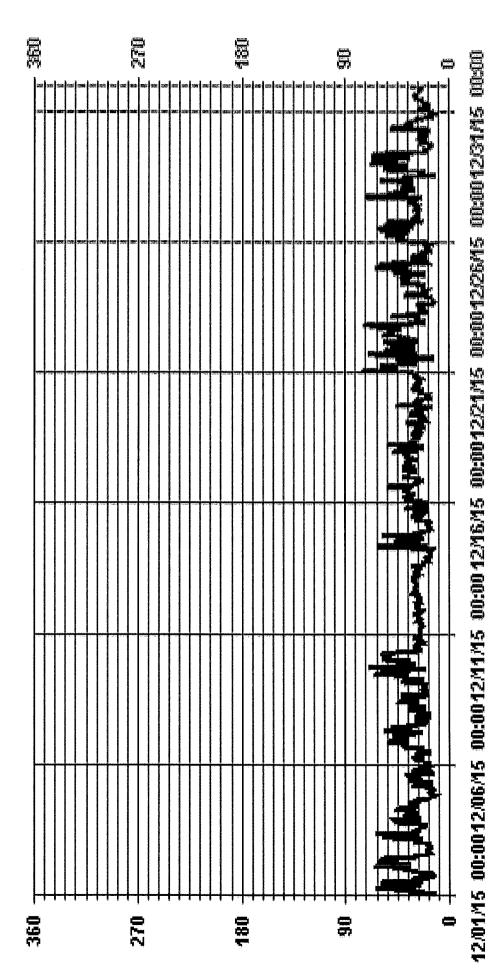
23:00	33	17	56	17	16	33	16	74	36	23	22	88	51	ᅿ	30	53	33	23	78	31	28	20	18	6	16	54	33	8	18	14	31
22:00	78	17	56	51	18	34	25	77	32	28	23	27	20	22	18	77	35	20	78	30	41	36	21	4	14	33	48	41	21	12	25
22:00	26	16	48	27	16	54	30	23	4	33	54	27	18	31	28	23	37	24	27	22	33	30	13	32	17	27	32	46	77	17	24
20:00	21	17	47	12	28	4	77	77	78	S3	54	27	19	78	38	56	32	27	32	27	22	74	13	47	13	54	23	26	52	18	25
19:00 -	14	17	4	14	32	41	18	17	47	54	53	82	18	28	30	28	38	56	77	52	22	89	14	19	17	53	99	32	ឡ	13	25
18:00	15	77	31	17	17	38	13	52	20	22	53	53	74	23	17	56	33	25	46	78	69	62	13	41	17	23	72	24	17	22	26
17:00	83	ឡ	19	51	<del>1</del> 5	33	53	41	36	74	27	78	77	53	56	32	33	30	13	27	27	46	17	33	77	82	23	77	11	30	27
16:00	32	17	22	53	17	88	56	91	19	26	56	27	77	77	31	24	25	30	53	22	2	41	14	88	13	45	න	9	16	52	29
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14.00 15.00	88	18	24	32	35	22	77	30	23	27	52	31	33	47	23	37	36	56	23	56	13	23	24	37	18	31	27	74	17	36	59
13:00	77	27	56	36	8	77	53	31	34	53	27	32	82	41	33	37	36	7.7	23	53	33	47	73	8	25	8	32	11	20	37	28
12:00	09	33	77	30	53	16	38	56	29	33	78	22	30	22	22	93	37	27	32	නු	30	51	56	93	52	29	33	38	19	36	28
11:00	8	78	32	31	33	22	20	45	65	56	54	28	56	32	74	32	40	33	32	31	43	28	54	41	33	28	31	30	17	34	21
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9:00	31	19	2	41	23	56	32	32	37	ĸ	23	77	31	18	23	78	59	8	8	93	27	41	70	8	32	37	78	23	26	20	22
8:00 9:00	20	73	4	43	16	72	26	30	36	82	77	27	78	61	138	33	37	27	22	21	46	33	77	77	8	38	27	*	99	ଚ୍ଚ	17
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6:00	84	63	28	36	52	33	23	19	83	29	52	52	53	13	13	33	77	23	70	23	9	52	53	77	19	33	띥	32	83	91	17
5:00	78	33	49	59	32	53	8	27	45	3	56	78	31	16	13	38	33	34	2	24	4	26	33	22	51	33	78	32	26	18	17
4:00.	*	23	23	33	21	54	49	33	32	22	52	56	8	13	13	37	33	21	91	13	84	52	51	18	31	46	27	32	98	18	17
3:00-4:00		65	30	56	14	22	4	32	33	24	52	53	27	17	17	31	32	32	37	19	45	43	24	13	61	38	56	30	49	27	17
2:00	10	49	56	38	13	16	49	56	21	28	56	22	32	16	18	27	36	45	33	16	76	31	78	13	8	41	56	45	43	22	56
1:00 2:00	31	42	31	38	14	20	32	52	77	25	25	78	8	17	17	78	33	26	21	17	30	32	28	33	8	32	28	33	8	54	13
	78	4	8	83	16	17	4	8	ឡ	33	56	78	8	17	16	17	98	49	23	23	8	22	77	33	45	17	82	8	88	23	14
HOUR START 0:00 HOUR END: 1:00	DAY.	7	m	4	ю	9	1	<b>∞</b>	o	10		. 77	13	14	15	16	17	18	19	2	77	. 22	23	24	25	26	- 22	. 82	. 67	30	31
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STATUS FLAG CODES	C CALERATION R C COLATITA ASSURANCE  S TAKANDERANCE  S TOMBATZENO SPANICHECO  P POWER FAILURE  G COLT FOR REPAIR  K COLLECTION RROR

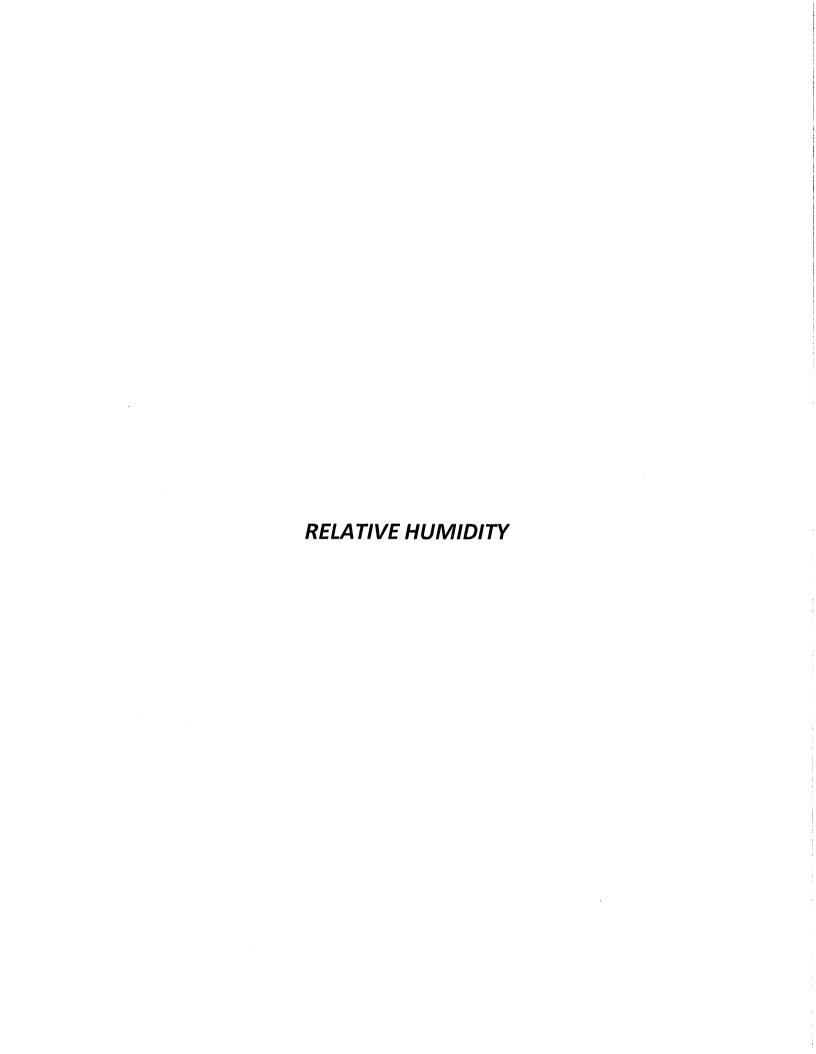
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OPERATIONAL TIME: 744 HRS
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M Hour Averages



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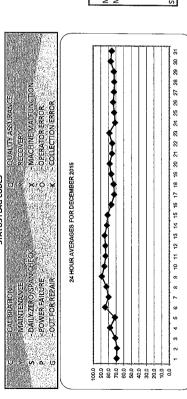
### LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

### RELATIVE HUMIDITY (RH) hourly averages in %

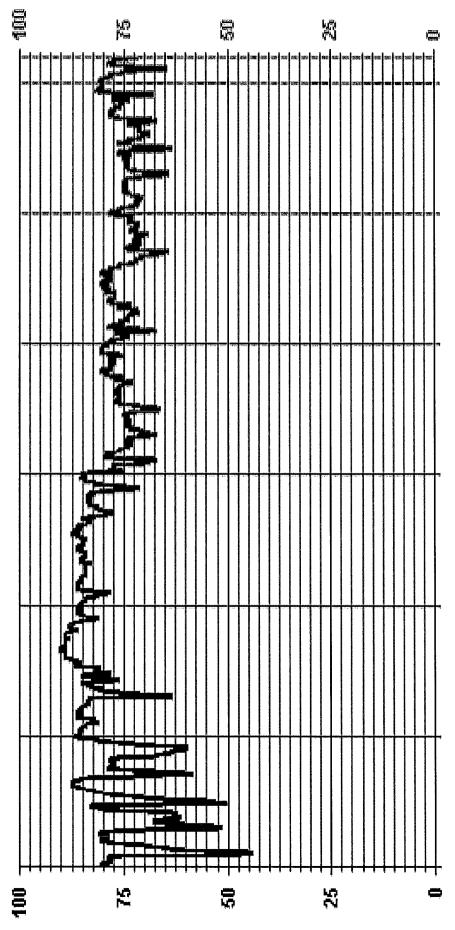
MST

RDGS.	24	74	24	24	24	74	24	24	24	54	54	24	74	7₹	74	24	24	24	54	54	54	24	24	24	24	24	74	74	54	24	24		
24-HOUR AVG.	9.69	0.69	71.3	78.1	7.1.7	84.7	80.1	83.0	89.1	85.7	84.0	84.2	85.3	82.3	81.3	76.5	72.5	73.3	76.4	78.4	75.4	75.1	78.8	71.3	72.5	73.8	72.7	72.4	72.9	76.8	75.7		
DAILY MAX.	80	81	84	87	98	87	88	88	90	88	98	82	87	98	82	88	75	1	80	8	73	79	80	76	1	78	73	76	78	82	81		
23:00	67	63	25	11	98	98	82	88	88	98	<b>\$</b> 2	8	82	83	22	76	74	76	8	73	74	11	76	73	1	75	75	2	11	80	72	88	7
22:00	1	61	82	1	28	98	83	87	68	98	82	8	98	83	82	76	74	76	73	79	75	11	78	77	76	73	74	7	78	80	74	88	0
21:00 22:00	£	62	82	28	82	82	82	98	68	82	98	8	87	83	82	11	74	76	79	80	76	11	78	71	74	75	74	72	82	80	78	88	0
20:00	70	99	80	78	8	82	80	82	88	82	98	82	98	83	8	79	74	1	79	8	72	11	78	77	73	75	74	73	78	81	71	8	1
19:00	89	89	78	79	78	86	80	98	88	98	86	8	87	82	84	79	73	11	78	8	9/	11	78	73	73	74	74	74	%	80	71	83	000
18:00 19:00	99	67	75	76	76	86	8	98	8	98	98	8	87	81	84	23	73	76	72	8	1	78	8	74	73	74	72	74	78	8	79	88	100
17:00	2	89	73	73	72	98	8	87	88	98	98	82	86	82	82	8	71	73	76	8	78	%	80	£	74	73	74	9/	11	82	78	88	1
16:00	8	65	2	67	67	83	2/2	82	88	82	86	82	86	81	82	1	2	73	11	80	79	79	80	74	73	72	73	2/9	76	81	75	88	1
15.00	54	8	89	63	63	82	71	82	88	82	86	83	8	80	8	Z,	69	7	76	79	11	78	79	Z,	72	ľ	72	73	74	78	72	88	1,4 7
14:00	45	53	82	8	8	82	2	81	88	8	8	83	83	1	1	6	69	67	73	76	71	11	79	67	77	20	89	99	88	89	65	8	7
13:00	4	51	22	28	9	81	83	81	88	82	82	8	84	78	74	89	67	99	73	75	67	74	78	2	77	77	2	65	67	89	65	8	6
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#### STATUS FLAG CODES

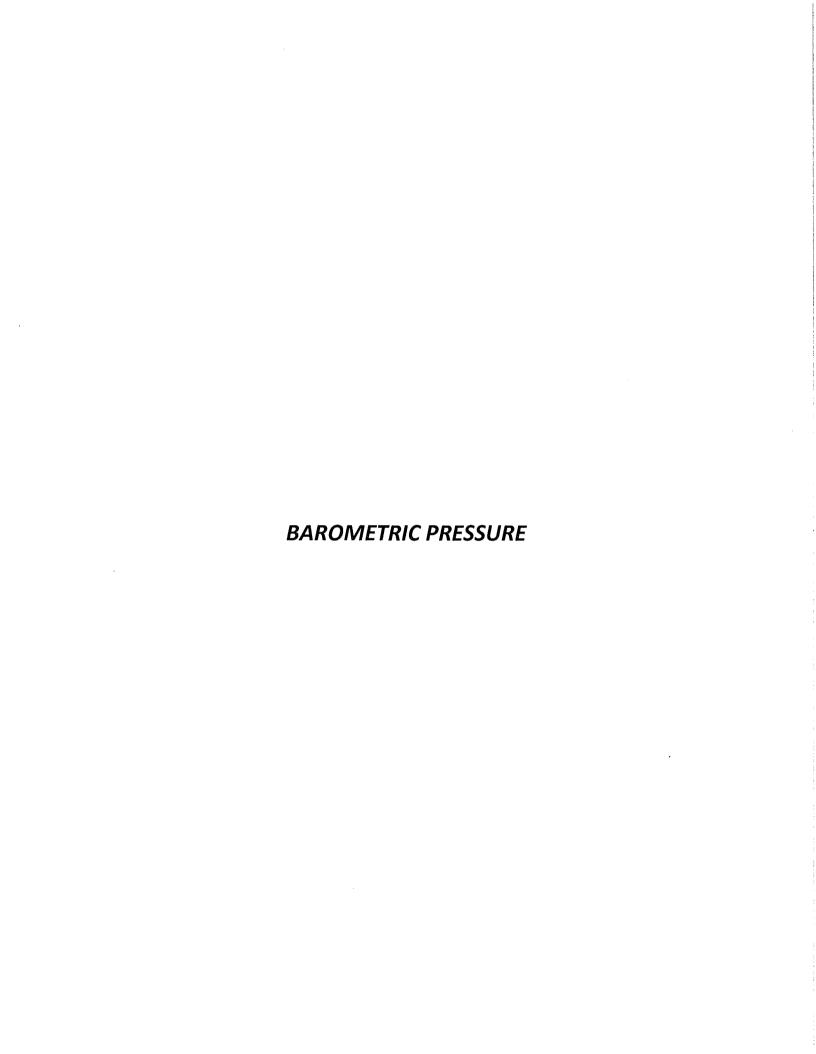


MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:	90 89.1	% %	@ HOUR(5)	VAR	ON DAY(S) ON DAY(S) VAR-VARIOUS	o,	<b></b> 0
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### Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

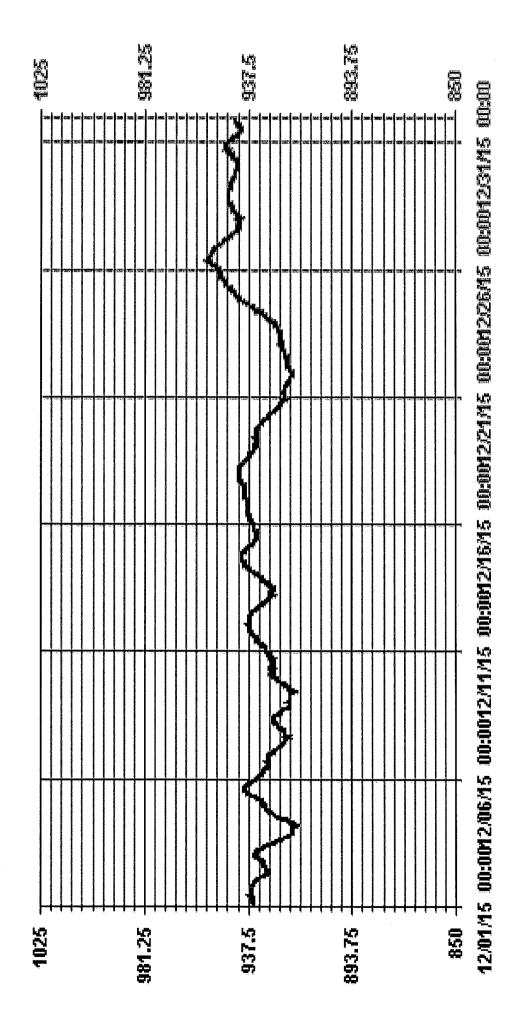
### BAROMETRIC PRESSURE (BP) hourly averages in millibar

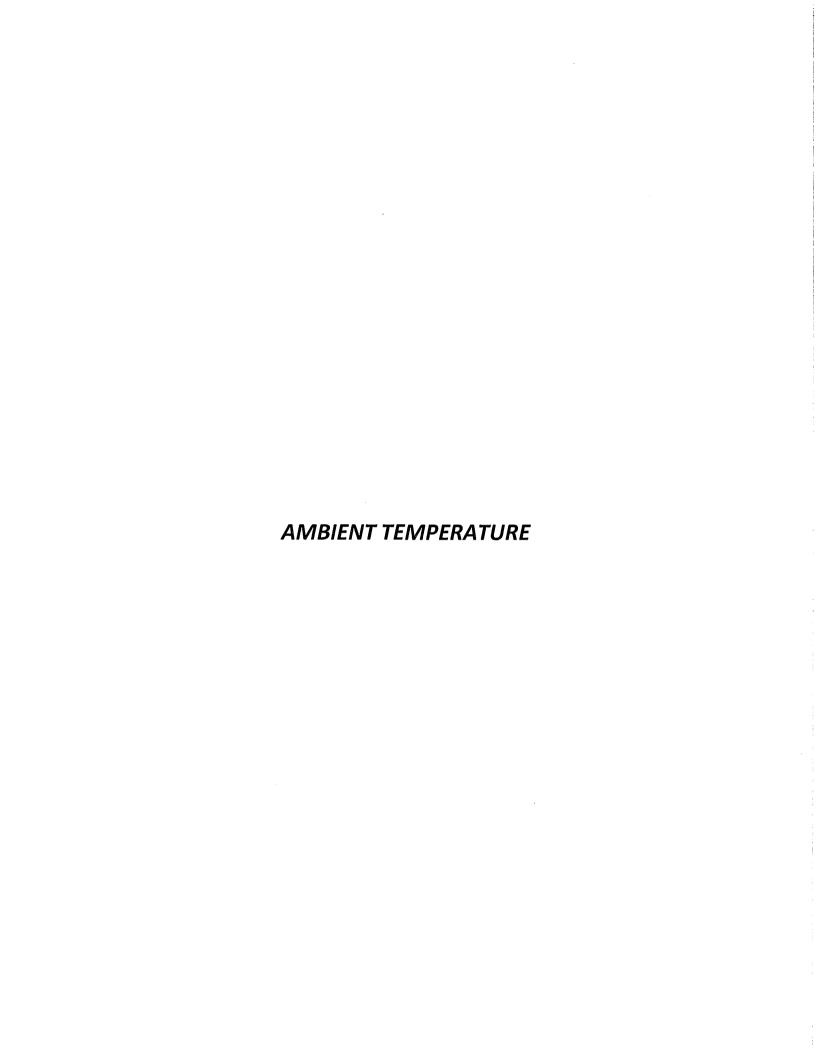
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91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2         91.2 <th< td=""><th>_</th><td>921</td><td>920</td><td></td><td></td><td>920</td><td>20</td><td></td><td></td><td></td><td></td><td></td><td></td><td>920</td><td>920</td><td>921</td><td>922</td><td></td><td></td><td></td><td></td><td></td><td>925</td><td>921</td><td>24</td></th<>	_	921	920			920	20							920	920	921	922						925	921	24
936         937         938         938         938         939         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934 <th></th> <td>927</td> <td>927</td> <td></td> <td></td> <td>927</td> <td>27</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>927</td> <td>927</td> <td>527</td> <td>928</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>929</td> <td>928</td> <td>24</td>		927	927			927	27							927	927	527	928						929	928	24
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432         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532         532 <th>_</th> <td>937</td> <td>937</td> <td></td> <td></td> <td></td> <td>37</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>936</td> <td>935</td> <td>935</td> <td>934</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>938</td> <td>935</td> <td>24</td>	_	937	937				37							936	935	935	934						938	935	24
934         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936         936 <th>_</th> <td>930</td> <td>926</td> <td></td> <td></td> <td></td> <td>27</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>878</td> <td>826</td> <td>929</td> <td>929</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>933</td> <td>929</td> <td>24</td>	_	930	926				27							878	826	929	929						933	929	24
938         938         938         939         939         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934         934 <th>_</th> <td>934</td> <td>934</td> <td></td> <td></td> <td></td> <td>37</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>940</td> <td>940</td> <td>940</td> <td>940</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>940</td> <td>856</td> <td>24</td>	_	934	934				37							940	940	940	940						940	856	24
355         366         367         377         378         388         988         988         988         988         988         988         988         988         988         989         999         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990         990 <th>_</th> <td>939</td> <td>938</td> <td></td> <td></td> <td></td> <td>38</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>934</td> <td>934</td> <td>934</td> <td>934</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>939</td> <td>935</td> <td>24</td>	_	939	938				38							934	934	934	934						939	935	24
334         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335         335 <th></th> <td>935</td> <td>936</td> <td></td> <td></td> <td>937</td> <td>37</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>826</td> <td>938</td> <td>938</td> <td>828</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>826</td> <td>937</td> <td>24</td>		935	936			937	37							826	938	938	828						826	937	24
941         941         941         941         941         941         941         941         941         941         941         941         941         941         941         941         941         941         941         942         943         943         943         943         943         943         943         943         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944 <th></th> <td>938</td> <td>939</td> <td></td> <td></td> <td>939</td> <td>33</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>940</td> <td>940</td> <td>940</td> <td>940</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>941</td> <td>940</td> <td>54</td>		938	939			939	33							940	940	940	940						941	940	54
935         944         945         945         944         945         944         944         945         944         944         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945         945 <th>_</th> <td>941</td> <td>941</td> <td></td> <td></td> <td>941</td> <td>41</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>938</td> <td>938</td> <td>826</td> <td>937</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>941</td> <td>939</td> <td>24</td>	_	941	941			941	41							938	938	826	937						941	939	24
922         923         924         924         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         925         926         926         926         926         926         926         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927         927 <th></th> <td>935</td> <td>934</td> <td></td> <td></td> <td></td> <td>젊</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>934</td> <td>934</td> <td>934</td> <td>934</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>935</td> <td>934</td> <td>24</td>		935	934				젊							934	934	934	934						935	934	24
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920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         920         930         930         930         930         930         930         930         930         930         930         930         930         930         930         940         941         941         942         942         942         942         942         942         942         942         942         942         943         943         943         943         943         943         943         943         943         943         943         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944         944 <th></th> <td>922</td> <td>922</td> <td></td> <td></td> <td></td> <td>73</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>921</td> <td>921</td> <td>920</td> <td>920</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>923</td> <td>921</td> <td>24</td>		922	922				73							921	921	920	920						923	921	24
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928         929         929         929         939         934         934         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935         935 <th>m</th> <td>923</td> <td>924</td> <td></td> <td></td> <td></td> <td>54</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>924</td> <td>925</td> <td>925</td> <td>925</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>927</td> <td>925</td> <td>54</td>	m	923	924				54							924	925	925	925						927	925	54
943         944         945         945         946         947         947         947         947         947         947         948         948         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         949         948         941         941         941         942         941         941         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942         942 <th>00</th> <td>928</td> <td>929</td> <td></td> <td></td> <td></td> <td>31</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>936</td> <td>937</td> <td>938</td> <td>826</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>942</td> <td>935</td> <td>24</td>	00	928	929				31							936	937	938	826						942	935	24
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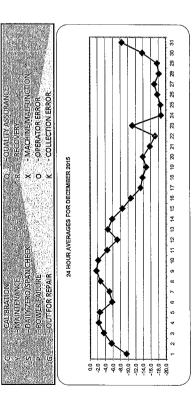


AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

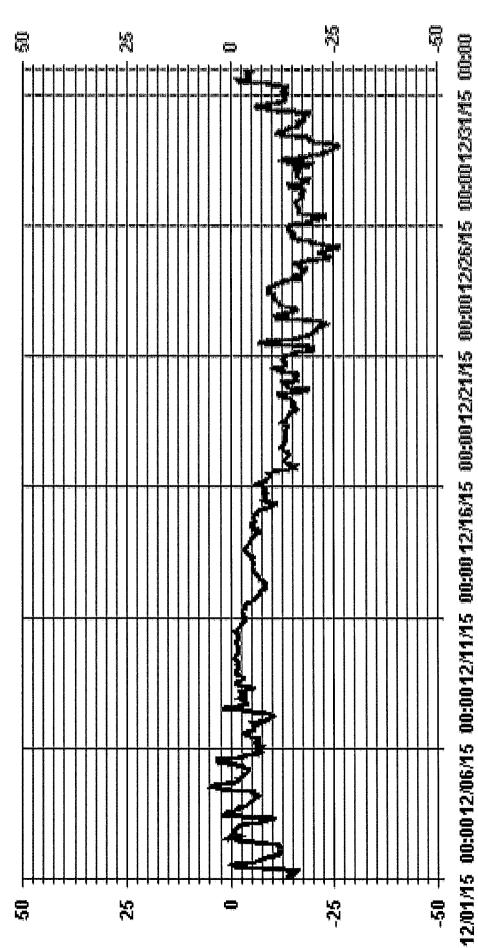
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DAY 1	-13.7	-14.4	-14.0	-13.4	-14.5	-15.2	-15.3	-15.5	-15.8	-13.2	-7.5	-3.2	-1.1	-0.2	-0.6	3.8	5.7	6.6	7- 0.7-	-7.5	8.4 -1(	10.1	10.4 -11.3	3 -0.2	5.6-	24
2	-11.9	-12.2	-12.2	-11.5	-11.4	-12.1	-12.2	-11.9	-11.0	6. 6.	-5.9	-1.9	-1.1		0.8		-22	-1.7	-0.8	·	-1.3		-1.1 -1.5		5.6	54
m	-1.7	4.8	-2.5	4.2	-6.5	-7.6	8.8 8.8	-10.0	-10.3	-9.5	-5.8	2.4	1.6		- 8.0	- 0.7	-1.9	-1.9	-1.9	-2.9	-3.7 -4	4.2	4.2 4.7		-3.6	24
Ą	-5.0	-5.4	5.8	5.9	9	φ. φ	-6.2	9.0	5.9	4.9	-0.7	2.1	3.3	4.5	4.0	3.3	1.3	- 8.0	-1.6	-2.0 -1	-1.6 -2	-2.12	-2.4 -2.6		-2.2	24
2	-3.0	-3.2	-3.6	4.2	4.2	4.9	-3.4	-3.4	-3.1	-1.6	9.0	2.9	3.1	3.1	3.2	0.5	-1.4	-2.8	-3.9	4.9	-6.4 -7	-7.1 -6	-6.7 -6.4	1 3.2	-2.5	54
9	-6.7	-7.3	-7.7	-7.2	-6.0	-6.8	-5.5	-6.4	-7.1	-7.1	-6.2	4. 8.	-3.7	-3.3	-3.3	-3.7	4.4	-5.6	-5.8 -5	5.8 -5	-5.5 -5	-5.6 -6	-6.4 -5.9	3.3	-5.7	24
7	-5.4	-6.3	-8.2	-9.2	-9.5	-9.5	-10.1	9.6-	9.6-	-8.7	-5.5	3.2	0.3	1.6	0.7	-1.6	-3.1	6.0	3.9	-3.6	-3.6	-3.5 -2	-2.3 -2.8	3 1.6	-5.0	24
60	-3.4	-3.6	-3.1	-2.4	-2.2	-3.1	-3.7	-5.1	-5.4	4.5	-1.9	-1.4	-1.5	-1.3	-1.9	-2.5	-2.9	-3.1	-2.8	-2.5 -1	-1.8 -1	-1.5 -1	-1.5 -1.3	3 -1.3	-2.7	24
o	-1.5	-1.9	-5.0	-5.0	-1.7	-1.6	-1.6	-1.8	-1.7	-1.4	-1.1	-1.0	-1.2	-1.4	15	-1.6	-1.8	-1.6	-1.8	-1.8 -1	-1.9 -1	-1.8	-1.9 -1.7	7 -1.0	-16	24
a	-1.5	-1.6	-1.6	-1.6	-1.9	-5.0	-2.0	-2.0	-2.1	-2.0	-1.6	-1.4	-1.1	-1.4	-1.6	-2.1	-2.3	-2.5	-2.6 -2	-2.8	-3.0	-3.1	-3.5 -3.8	3 -1.1	-2.1	54
H	-3.7	-3.4	-3.3	-3.3	-3.2	-3.1	-3.0	-3.0	-3.2	-3.4	-3.6	-3.5	-3.5	-3.7	4.3	-5.0	-5.4	-5.7	-6.0 -6	-6.1 −6	-6.5 -6	-6.8 -6	-6.9 -7.1	-3.0	4.4	<b>5</b> 4
12	-7.3	-7.4	-7.6	-8.1	4.8	8,6	-8.6	8.6	-8.4	φ. 9.3	-8.0	-7.6	-7.3	-7.1	. 8.9	8.9	-6.5	-6.1	5.9	-5.7 -5	5.6	-5.6	-5.5 -5.4	1 -5.4	-7.1	54
13	-5.5	-5.5	-5.6	-5.6	-5.4	-5.3	-5.2	-5.3	-5.5	-5.2	4.6	4.5	-3.7	-3.6	-3.5	-3.5	-3.6	- 3.9	4.0	4.2	4.4	4.6	4.7 4.9	-3.5	4.6	24
14	-5.0	-5.2	-5.3	-5.5	-5.8	-5.9	-6.2	-7.0	-7.9	6.6	-5.8	-5.4	-5.6	-5.1	- 6.4	-5.4	-5.6	- 5.9	-5.8	5.9	5.9 -5	-5.8 -5.	-5.8 -5.9	6.4.9	5.8	24
15	-6.3	-6.6	-6.7	6.8	-7.6	-8.8	7.6	-10.2	-11.0	-11.0	-10.1	-8.7	-8.0	-8.6	-8.6	-8.6	-8.5	-8.2	-8.5 -7	-7.8 -7	-7.9 -8	-8.5	-8.6 -8.6	5 -6.3	-8.5	54
16	-8.1	-7.7	-6.1	-6.5	-7.8	9.0	-8.4	-8.5	8.8	-9.1	-9.5	9.6	-9.2	8.6-	10.1	-11.6	-13.9	-15.3	-14.9 -1	15.5 -1	-15.8 -1	-14.5 -1	-14.1 -13.5	5 -6.1	-10.7	24
17	-13.1	-13.1	-13.3	-13.3	-13.6	-13.9	-14.2	-14.0	-13.9	-13.7	-13.2	-12.8	-12.4	-12.4	- 12.7	-12.9 -1	-13.1	-12.9	-13.2 -1	-13.2 -1	-13.4 -13	-13.4 -13	-13.5 -13.6	6 -12.4	-13.3	54
18	-13.4	-13.5	-13.6	-13.5	-13.6	-13.5	-13.6	-13.7	-13.8	-13.6	-13.6	-13.2	-12.5	-12.9	-13.3	-13.6 -1	-13.8	-14.0	-14.2 -1		-14.2 -14	-14.5 -12	-15.7 -16.0	0 -12.5	-13.8	24
13	-16.2	-16.0	-15.1	-14.5	-15.5	-15.5	-15.4	-15.2	-15.0	-14.6	-13.9	-13.2	-12.9	-12.0 -:	-11.4	-14.0 -1		-18.4	-19.3 -1	-15.1 -1	Ċ		-13.6 -13.0	Ċ		54
20	-12.8	-15.1	-16.3	-16.2	-16.0	-15.9	-16.0	-16.4	-16.3	-15.1	-13.5	-12.4	-11.6	-10.8	-11.4	- 1.21-	-13.5	-13.6 -1	-13.6 -1	-13.3 -T	-13.2 -12	12.8 -1	-12.4 -12.7	•		24
21	-13.0	-13.6	-14.4	-15.2	-16.2	-18.0	-19.3	-20.1	-20.2	-19.3	-15.2	-10.8			•		-15.1		Ċ		Ċ				·	77
22	-20.9	-20.8	-21.4	-21.4	-22.1	-22.5	-23.1	-22.3	-21.8	-20.0	-17.5	-14.7	-11.2	-10.9	-11.3	-12.1	-14.1	15.2	15.2 -1	-16.0 -1	Ċ		-13.3 -12.3		•	74
ឧ	-11.9	-11.7	-11.8	-11.5	-10.9	-11.0	-10.6	-10.7	-10.6	-10.6	-10.3	-9.5	-9.5			-9.4	10.0	•				•			•	24
24	-17.9	-16.8	-15.6	-16.0	-16.7	-17.2	-17.5	-17.9	-18.4	-18.4	-17.6	-16.8	-16.2	•	8.21		•		-23.0 -2	•	24.5 -23	,	-22.4 -21.1	•		24
25	-21.9	-22.1	-23.1	-24.2	-26.1	-26.7	-23.1	-22.0	-20.9	-19.8	-19.2	-17.8	-16.3	-15.3	-14.9	15.2	15.6	15.5	-14.8 -1.	14.4 -1	-14.3 -14	-14.2 -1	-14.2 -14.1	1 -14.1		24
26	-14.3	-14.7	-16.9	-18.0	-19.5	-20.1	-20.0	-21.3	-22.9	-22.9	-19.4	-17.4	-16.8	-16.8 -:	-16.6	-16.4 -1	•	16.8 -:	-16.6 -1		-16.1 -16	-16.0 -1	-16.0 -16.4	4 -14.3		54
27	-16.6	-17.2	-17.4	-17.3	-17.5	-17.3	-17.3	-17.5	-18.1	-18.0	-17.2	-15.3	-14.4	-14.2	-15.6	-16.9 -1	-17.7	.18.7	-18.9 -1	17.7 -1	-16.8 -16	-16.4 -10	-16.4 -16.5	5 -14.2	-17.0	73
- 28	-16.3	-16.2	-16.7	-16.5	-15.8	-15.6	-15.8	-17.3	-18.9	-19.3	-18.1	-13.8	-12.7	-13.2	-13.2	-16.1 -1	-18.6	.19.8	-21.7 -2	22.7 -2:	23.5 -24	24.2 -2.	-24.5 -25.0	0 -12.7		77
29	-25.4	-26.0	-26.5	-25.1	-22.3	-20.6	-19.5	-19.5	-19.4	-18.8	-16.0	-13.3	-12.2	-11.3	11.5	13.1 -1	13.3	13.8	-14.5 -1	15.4 -1	16.4 -16	-16.8 -10	-16.7 -17.2	2 -11.3		24
R	-16.7	-17.5	-18.1	-18.1	-17.9	-18.1	-18.2	-19.0	-19.6	-16.0	-11.4	-10.1	-9.0	-6.6	-6.1	-8.5		11.1	-11.8 -1	13.3 -1.	13.4 -13	13.6 -13	-13.5 -13.1	1 -6.1	-13.8	24
31	-13.3	-13.9	-13.7	-12.9	-13.3	-13.3	-13.3	-13.9	-13.8	-12.3	-10.4	-8.7	4.6	-23	-1.9	-3.7	4.4	-4.8	4.7 4	4.1 4	4.4 4	4.9	4.2 4.5	-1.9	-8.4	54
HOURLY MAX	-1.5	-1.6	-1.6	-1.6	-1.7	-1.6	-1.6	-1.8	-1.7	-1.4	9.0	2.9	3.3		4.0	3.3	1.3			-1.3 -1	-1.3 -0	- 60	-1.1 -1.3	۱,,		
HOURLY AVG	-10.8	-110	-11.3	-11.3	-11.6	-11.9	-11.8	-12.1	-12.3	-11.6	-9.7	-8.0	-7.1	- 9.9-	- 8.9	-8.0	- 0.6-	- 9.6	-9.9	10.0 -1	-10.1	-10.2 -1(	-10.2 -10.3	e		

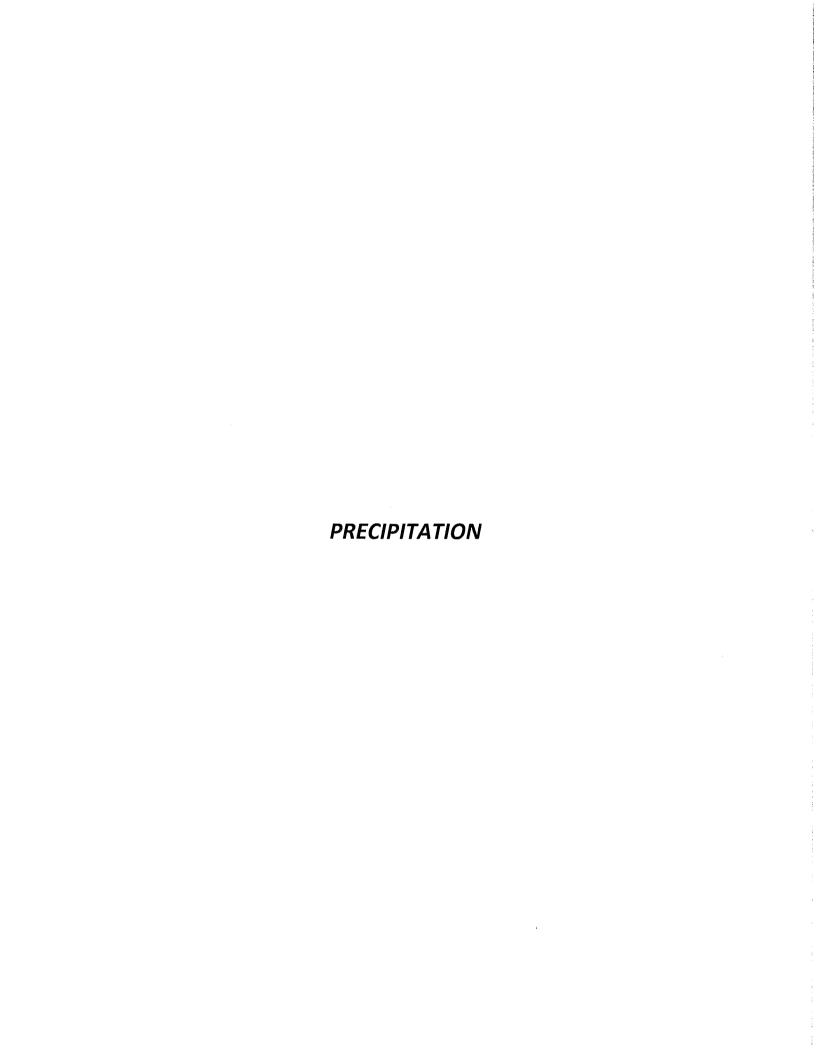
#### MONTHLY SUMMARY

MINIMUM 1-HR AVERAGE:	•	-26.7	ပ္	°C @ HOUR(S)	Ŋ	ON DAY(S)	52	
MAXIMUM 1-HR AVERAGE:		4.5	ပ္	@ HOUR(S)	ជ	ON DAY(S)	7	_
MAXIMUM 24-HR AVERAGE:		-1.6	ပ္			ON DAY(S) VAR-VARIOUS	•	6
				OPERATIONAL TIME: AMD OPERATION UPTIME:	AE: UPTIME:		744	HRS
STANDARD DEVIATION:	6.49			MONTHLY AVERAGE:	ĞĒ		-10.1 °C	ပု



STATUS FLAG CODES





MaxXam A Bureau Vericas Group Company

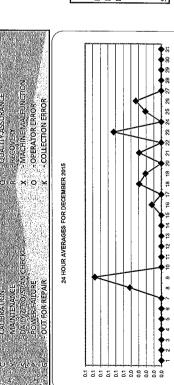
### LAKELAND INDUSTRY & COMMUNITY ASSOCIATION Maskwa Site - DECEMBER 2015 JOB # 2833-2015-12-30- C

### PRECIPITATION hourly averages (mm)

PRECIPIT

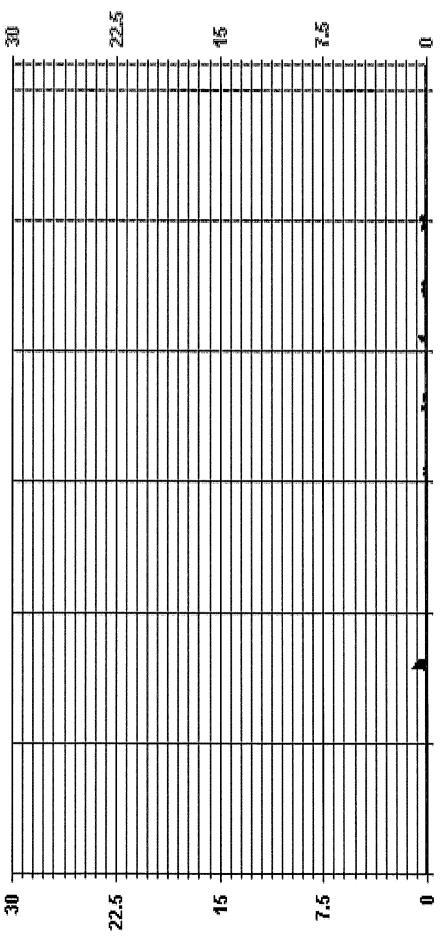
3.50 4.50 5.00 6.00 7.500 8.00 6.00 1.3 3.55 4.59 5.50 6.59 7.59 8.59 5.59 1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	59 7:59 8:59 9:59 1 .0 0.0 0.0 0.0	59 7:59 8:59 9:59 1 .0 0.0 0.0 0.0	0.0 0.0	0.0		ŭ o	0.0		6	14-59	15:59	T6:59 0.0	17:59	6	2	[2]	2		MAX.	AVG.	RDGS.
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0.0 0.0 0.0 0.0	0.0 0.0	0.0	_	0.0						0.0	0.0	0.0	0:0						0.0	0.0	24
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0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0	_	0.0	- '					0.0	0.0	0.0	0:0				0.0	0.0	0.0	0.0	24
0.0	0.0 0.0 0.0	0.0		0.0			0.0 0.0			8 8	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0	7 7
0.7 0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0	_	0.0	_		0.0 0.0	0.0		0.0	0.0	0.0	0.0						0.7	0.1	24
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0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0							0.0	0.0	0.0	0.0						0.0	0.0	24
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0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0		~					0.0	0.0	0.0	0.0						0.0	0.0	54
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0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0		္က					0.0	0.0	0.0	0.0						0.0	0.0	54
0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0		ž.		0.0			0.0	0.0	0.0	0.0						0.4	0.0	54
0.1 0.0 0.1 0.0 0.1 0.0	0.1 0.0 0.1 0.0	0.0 0.1 0.0	0.0		റ					0.0	0.0	0.0	0.0						0.1	0.0	54
0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0							0.0	0.0	0.0	0.0						0.0	0.0	5 5
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0.0 0.1 0.0 0.1 0.1 0.1	0.0 0.1 0.1 0.1	0.1 0.1 0.1	0.1							0.2	0.2	0.1	0.0						0.2	0.1	54
0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0		J					0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0	24
0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0		0.0	J	0.0				0.0	0.0	0.0	0.0	0.3			0.1	0.1	0.3	0.0	24
0.1 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0				0.0 0.0				0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.5	0.0	24
0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0				0.0				0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	24
0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0				0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0 0.0	0.0	0.0	0.0	0.0	24
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0.2 0.7 0.1 0.1 0.1 0.1 0.1	0.1 0.1 0.1	0.1 0.1		0.1		0.2 0.1	1 0.1	0.3	0.4	0.2	0.2	0.1	0.0	0.3	0.0	0.4 0.2	_				
0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0		0.0	_		_			0.0	0.0	0.0	0.0				0.0	0.0			

#### STATUS FLAG CODES



MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE: MONTHLY TOTAL	MM	0.8	M M M	@ HOUR(S)	23	ON DAY(S) ON DAY(S) VAR-VARIOUS	3 6	8 9, 23
				OPERATIONAL TIME: AMD OPERATION UPTIME:	?: PTIME:		744 100.0	HRS
STANDARD DEVIATION:	0.07			MONTHLY AVERAGE:			0.0	Σ

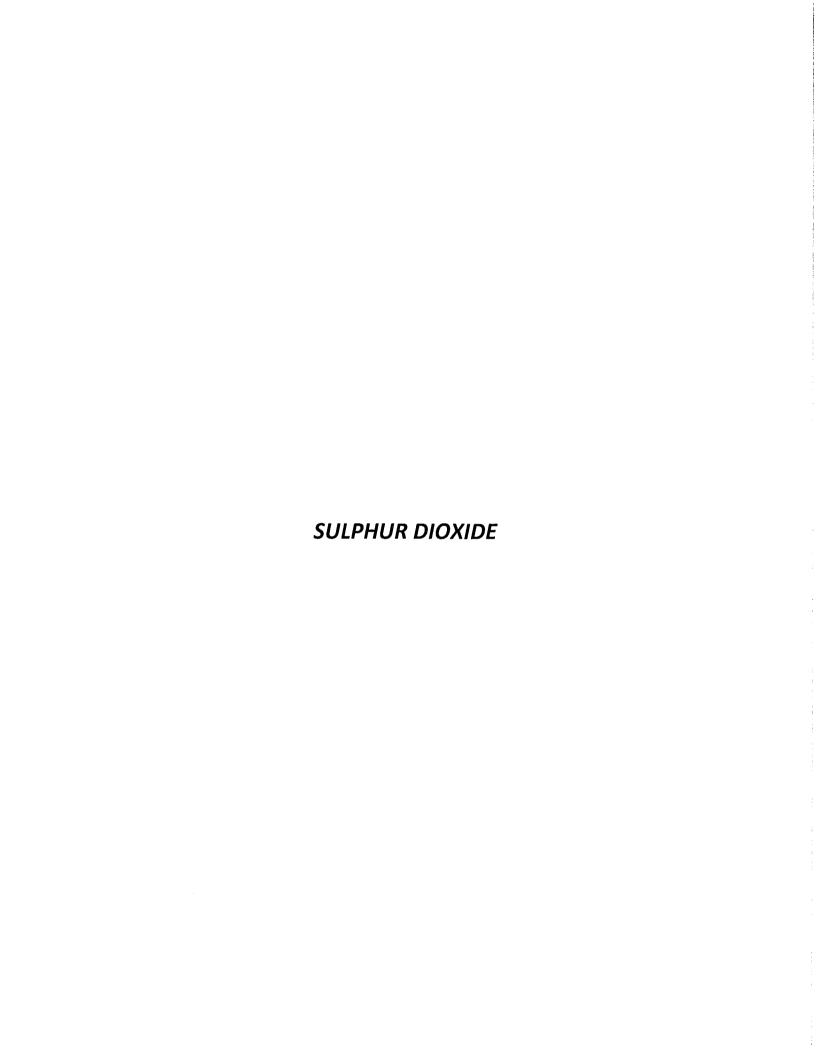
of Hour Averages



12/01/145 00:0012/06/15 00:0012/11/145 00:0012/16/15 00:0012/21/145 00:0012/26/15 00:0012/31/145 00:00

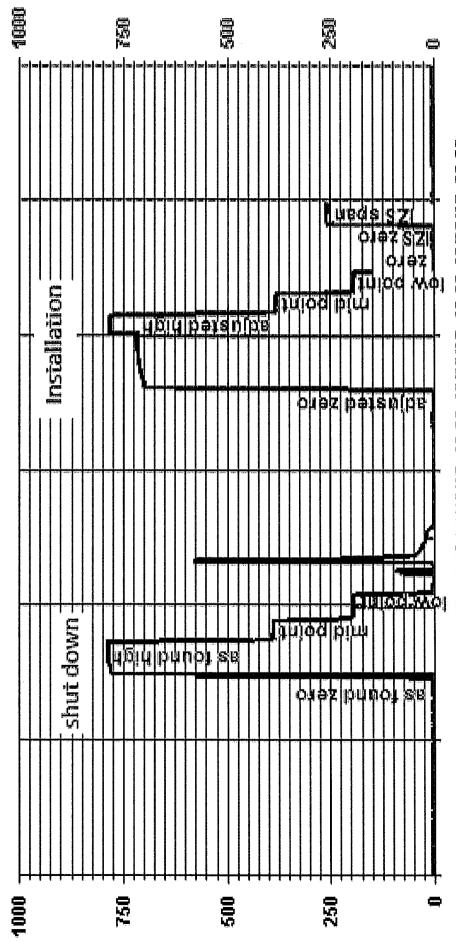
### - LICA30 PRECIP MM

#### APPENDIX II ANALYZER CALIBRATION RESULTS



C	Date:	December 2,	2015			Barometric Pressure:	0.916 atm
Company/Airs		LICA		_	Stat	ion Temperature °C:	20
cation/Station Na		Maskwa		_	•	Weather Conditions:	A few clouds
Param		Sulphur Dio:	xide	_		Calibration Purpose:	shut down
itart Time 24 hr. (r		12:23 14:17		_	Perf	· · · · · · · · · · · · · · · · · · ·	x Yakupov Trina Whitsitt March 12, 2019
End Time 24 hr. (r Calibration Met		Gas Dilutio	on .	_	Converter Model	Cal Gas Expiry Date: & s/n (if applicable):	n/a
···					Contact Model	C. 57 11 (11 application)	
ilyzer: Serial Num	ber:	1124			Range ppb:	1000	
Last Calibration D		November 12,	2015	_	As Found C.F.;	0.994	
Previous	C.F.:	1.000		_	New C.F.:	n/a	
brator:					Standard C	alibration Points for Ranges	
Flow Meter	-	n/a		_	Point	Sulphur Dioxide Standard Cal	ibration Points
Make & Mo		SABIO 2010		_	High	780	
	ial #:	11900613			Mid	380 190	<del></del>
al Gas Cylinder ۱.۱ Cal Gas Conc، (p		8LM00207 49,5	'3	_	Low	190	
car das cont. (p	P:1171	-10,0	ALL POINTS	ARE 15 MI	NUTES OF STABILITY AS OF SE		
		w Rates (cc/ml		1 =	Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	-	Diluent 5013	Cal Gas 0,00	Tota! 5013	(ppb) 0.0	(ppb) 0.7	N/A
as found zero as found high		4936	79.00	5015	779.8	785.0	0,994
mid		4976	38,50	5015	380.0	388,0	0.981
low		4994	19.30	5013	190.6	196.0	0.976
						Average C.F.=	0.984
			Lir	ear Regre	ssion/Calibration Results:		
						LIMITS	-
		Co	rrelation Co	effecient =	1.000	> or = 0.995	
				Slope =	0.995	0.90-1.10	
			ept as % of f		-0.32%	± 3% F.S.	
		% chan	ge in C.F. fro	n last cal=	0.58%	± 10%	
900 -				API 100A S	ulphur Dioxide Analyzer Calil	oration	
800 - 700 -				API 100A S	iulphur Dioxide Analyzer Calil	oration	→ 785.0
800 - 700 - 2 600 -		15	6.0	API 100A S	iulphur Dioxide Analyzer Calib	oration	→ 785.0
800 - 700 - 9 600 - 9 500 - 200 - 200 -	100	200	6.0	API 100A 3		600 700	785.0 800 900
800 - 700	100		6.0	300	358.0 400 500		
800 - 700	100	200 SLOPE:	As for 0.95	, 300 ind:	400 500 calculated ppb	600 700  As left:  n/a	
800 - 700 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 - 200 -	100	200 SLOPE: OFFSET:	As for 0.95	-, 300 Ind: 57	400 500 calculated ppb  SLOPE: OFFSET:	600 700  As left: n/a n/a	
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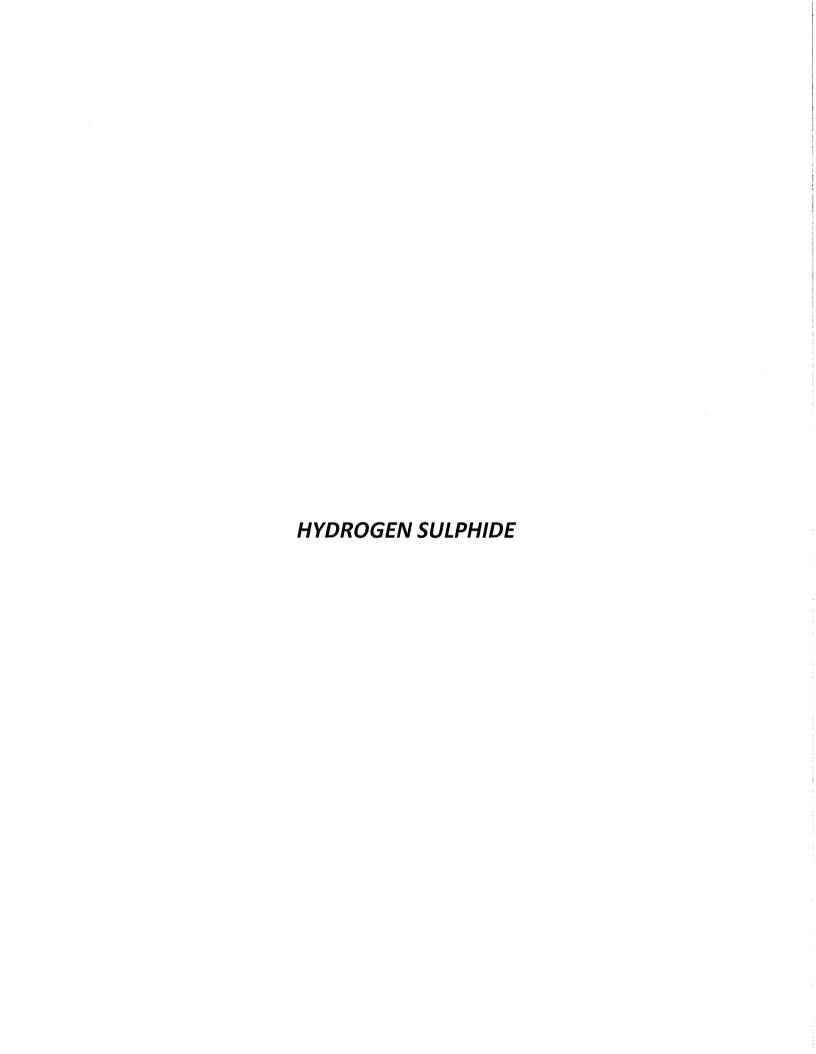
Company   Allamber   Subject   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Disable   Dis	Date:	December 2, 2	2015	_		Barometric Pressure:		6 atm
Supplier   Disorder   Sulphier   Disorder   Callbration Purpose   Callbration Purpose   Marx Nations   Trins Whitest   End of time 24 hr. (next):   2012   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration   Callbration	Company/Airshed:	LICA		-				
Start Time 24 hr. [must]   16:34			lde	-				
Earl Time 24 hr. (mats):   20:12   Conventor Model & 4 n (if applicability)   n/s	-			-				y
Section   Number   508				-		Cal Gas Expiry Date:	March	
Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Sect	Calibration Method:	Gas Dilutio	n	-	Converter Model	& s/n (if applicable):	n	/a
Last Califoration Date		508	******		Range pob:	1000		· · · · · · · · · · · · · · · · · · ·
Birstor:   Stendard Calibration Points for Ranges   Flow Metier ID's:   n/a   Point   Sulphur Dioxide Standard Calibration Points   Sulphur Dioxide Standard Calibration Points   Sulphur Dioxide Standard Calibration Points   High   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   780   7				-				
Point Meter ID %   1300613				_				
Maile & Model: SABIO-2010   High   780	brator:				Standard C	allibration Points for Ranges		
Serial R;   11900613   Mild   380   Cal Gas Colin (Jenn)   49.5	Flow Meter ID's:	n/a		_	Point	Sulphur Dioxide Standard Ca	libration Points	]
Calibrator Fow Rates (cc/min)   49.5   Calibrator Fow Rates (cc/min)   49.5	Make & Model:			_	High			1
Calibrator Flow Rates (cc/min)	Serial #:			_	Mid			
Calibrator Flow Rates (cc/min)   Calculated Concentration:			3	_	Low	190		<u> </u>
Collibrator Flow Rates (ct/mlin)	Cal Gas Conc. (ppm):		ALL POINTS	ARE 15 MI	NUTES OF STABILITY AS OF SE	PTEMBER 23, 2015		
As	Calibra						Correcti	on Factors (C.F.):
As	Point	Diluent	Cal Gas	Total	(ppb)			
Mild					<del></del>			<del></del>
Solution   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   193.0   1								
Calibrator rero   S013   0.00   S013   0.0   0.0   Average C.F.								
Linear Regression/Calibration Results:   LIMITS								
Correlation Coeffecient =   1.000   5 or 0.995				, ,		Average C.F.=		0.995
Correlation Coeffecient =   1.000			He	oar Boaro	relan/Calibration Results			
Slope   1.001   .95-1.05   .3%			Liii	ear Negre	ssion/ Cambration Results.	LIMITS		
b (Intercept as % of full scale)= % change in C.F. from last cale n/a  API 100E Sulphur Dioxide Analyzer Calibration  API 100E Sulphur Dioxide Analyzer Calibration  API 100E Sulphur Dioxide Analyzer Calibration  780.0  000 000 1000 2000 3000 4000 5000 6000 7000 8000 9000  calkulated ppb  As left: SLOPE: n/a SLOPE: n/a SLOPE: 1.115 OFFSET: n/a HVPS: n/a HVPS: n/a HVPS: N/a HVPS: N/a RCELL TEMP: BOX TEMP: N/a BOX TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL TEMP: 1/a RCELL		Co	rrelation Coe	ffeclent =	1.000	> or = 0.995		
Schange in C.F. from last cal=   n/a				Slope ≈	1,001	.95-1.05		
API 100E Sulphur Dioxide Analyzer Calibration  7800  800  900  100  100  200  300  400  581.0  As found:  SLOPE: n/a  OFFSET: n/a  OFFSET: n/a  OFFSET: n/a  HVPS: n/a  HVPS: n/a  HVPS: n/a  BOX TEMP: n/a  BOX TEMP: n/a  BOX TEMP: n/a  BOX TEMP: n/a  PMT TEMP: 7,7  IZS TEMP: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  PRES: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NORM PMT: n/a  NOR		b (Interd	ept as % of fo	uli scale)=	-0.11%	± 3% F.S.		
As found:   As left:   SLOPE:   n/a   SLOPE:   1.115   OFFSET:   n/a   OFFSET:   83.4   HVPS:   n/a   BOX TEMP:   n/a   BOX TEMP:   n/a   BOX TEMP:   n/a   BOX TEMP:   1.25 TEMP:   n/a   PMT TEMP:   45.0   PRES:   n/a   PRES:   24.4   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP FL:   1.6   SAMP		% chang	e in C.F. fron	n last cal=	n/a	± 10%		
Test				API 100F S	ulnhur Dioxide Analyzer Calil	eration		
As   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb   Feb					alphar bloxide Analyzer Cana			
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PRES:         n/a         PRES:         24.4           SAMP FL:         n/a         SAMP FL:         589           NORM PMT:         n/a         NORM PMT:         83.4           UV LAMP:         n/a         UV LAMP:         4191.0           LAMP RATIO:         n/a         LAMP RATIO:         119.6           STR. LGT         n/a         STR. LGT         46.5           DRK PMT:         n/a         DRK PMT:         38.9           DRK LMP:         n/a         DRK LMP:         -0.8	600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP:	As fou n/a n/a n/a n/a	nd:	400 500 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP:	As left: 1.115 83.4 479 50.0 30.6	800	900
SAMP FL:         n/a         SAMP FL:         589           NORM PMT:         n/a         NORM PMT:         83.4           UV LAMP:         n/a         UV LAMP:         4191.0           LAMP RATIO:         n/a         LAMP RATIO:         1119.6           STR. LGT         n/a         STR. LGT         46.5           DRK PMT:         n/a         DRK PMT:         38.9           DRK LMP:         n/a         DRK LMP:         -0.8	600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 - 600 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP:	As fou n/a n/a n/a n/a n/a	nd:	400 500 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP:	As left: 1.115 83.4 479 50.0 30.6 7.7	800	900
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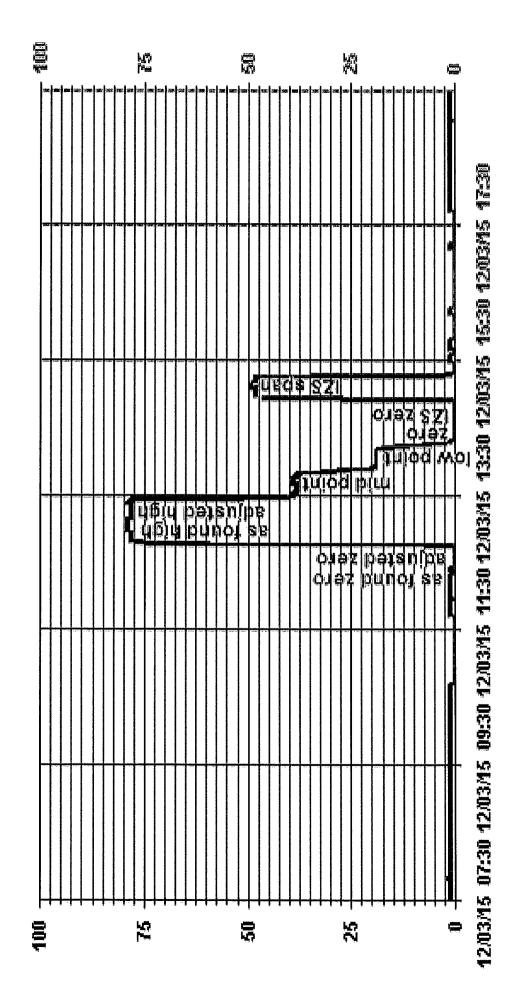
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**—** LICA30

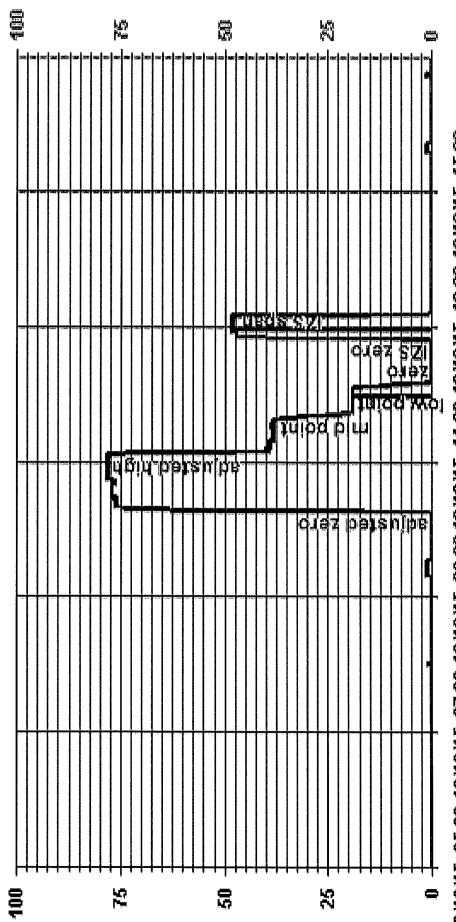


Company Africated   LICA   Permaneter   LICA   Permaneter   LICA   Permaneter   LICA   Permaneter   LICA   LICA   Performental   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LICA   LIC	Date:	December 3	3, 2015			Barometric Pressure:	0.9	16 atm
Serial Florage   Parameter   Plydrogen Suphible   Parameter   Plydrogen Suphible   Parameter   Plydrogen Suphible   Parameter   Performed Sylvelever   Anst Yalugoo   Paris Whitest   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sat Dilution   Sa	Company/Airshed:	LICA		_	Sta	tion Temperature °C:	104.44.4	20
Performent by/Reviews   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex Yalayson   Alex	ocation/Station Name:	Maskw	/a	_		Weather Conditions:	Mair	ly sunny
See				_				
Calibration Methods   Gas Diluston   Converter Model & Lyfn (If applicable)   I/o				_	Perf			
Appendix   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   Serial Number   S				_	Converter Model			
Last collivation betwood   November 12, 2015   A Found C.F.   1,009								
Previous CF.1   1.000   New CF.2   1.000	Serial Number:		2 2015	_				
Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Protection   Pro								
Point   Trystrogen Sulphide Stundard calibration Points   Migh   Marke & Monde: API 700   Migh   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Migh   38   Mig				_				
High   78   18   18   18   18   18   18   18		n/a						s
Mild   38			0	-				Ä
Low   19   19   19   19   19   19   19   1				-				-
Call Gas Conc. (ppm):   10.0			7	-				1
Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Point   Poin		<del></del>		-	1000			4
Point				ARE 15 MI				
as found zero 7497 0.00 7497 0.0 0.6 N/A as found the third the third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third third t	<del></del>			Total			on: Correct	ion Factors (C.F.):
as found high 7442 58.50 7501 78.0 77.9 1.009 adjusted revo 7497 0.00 7497 0.00 0.0 1.009 adjusted high 7442 58.50 7501 78.0 78.0 1.000 mid 7472 28.50 7501 78.0 78.0 1.000 mid 7472 28.50 7501 38.0 38.3 0.992 low 7486 14.30 7500 19.1 19.1 0.099  adjusted revo 7497 0.00 7497 0.0 0.0 0.0 n/s  Linear Regression/Calibration Results:    Correlation Coeffecient = 1.000								N/A
Adjusted   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   March   M			<del></del>				1	
Adjusted high   7442   \$8.50   7501   78.0   78.0   78.0   38.3   0.992								
Converted   14.30   7500   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   19.1   1	adjusted high				78.0			1.000
Calibrator zero   7497   0.00   7497   0.0   0.0   Average C.F.=   0.997								
Linear Regression/Calibration Results:   LIMITS								
Linear Regression/Calibration Results:   LIMITS   Sor = 0.995	calibrator zero	7497	0.00	7497	0.0			
As found:   As left:	80 - 70 -						78.0	)
As found:  As found:  As left:  SLOPE: 0.837 SLOPE: 0.826  OFFSET: 51.6 OFFSET: 52.4  HVPS: 616 HVPS: 616  RCELL TEMP: 50.0 RCELL TEMP: 50.0  BOX TEMP: 32.2 BOX TEMP: 32.3  PMT TEMP: 7.9 PMT TEMP: 7.9  IZS TEMP: 45.0 IZS TEMP: 45.0  Converter Temp: 314.4 Converter Temp: 315.1  PRES: 28.4 PRES: 28.3  SAMP FL: 637 SAMP FL: 636  UV LAMP: 2540.8 UV LAMP: 2539.1  LAMP RATIO: 81.9  STR. LGT 22.1 STR. LGT 21.6  DRK PMT: 33.3 DRK PMT: 33.8  DRK LMP: 5.5 DRK LMP: 5.5					→ 38.3			
As found:   As left:	20 -		9.1					
5LOPE:         0.837         SLOPE:         0.826           OFFSET:         51.6         OFFSET:         52.4           HVPS:         616         HVPS:         616           RCELL TEMP:         50.0         RCELL TEMP:         50.0           BOX TEMP:         32.2         BOX TEMP:         32.3           PMT TEMP:         7.9         PMT TEMP:         7.9           IZS TEMP:         45.0         IZS TEMP:         45.0           Converter Temp:         314.4         Converter Temp:         315.1           PRES:         28.4         PRES:         28.3           SAMP FL:         637         5AMP FL:         636           UV LAMP:         2540.8         UV LAMP:         2539.1           LAMP RATIO:         81.9         LAMP RATIO:         81.9           5TR. LGT         22.1         STR. LGT         21.6           DRK PMT:         33.3         DRK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -			30	40 50	50	70 90	
OFFSET:         51.6         OFFSET:         52.4           HVPS:         616         HVPS:         616           RCELL TEMP:         50.0         RCELL TEMP:         50.0           BOX TEMP:         32.2         BOX TEMP:         32.3           PMT TEMP:         7.9         PMT TEMP:         7.9           IZS TEMP:         45.0         IZS TEMP:         45.0           Converter Temp:         314.4         Converter Temp:         315.1           PRES:         28.4         PRES:         28.3           SAMP FL:         636         UV LAMP:         2539.1           UV LAMP:         2540.8         UV LAMP:         2539.1           LAMP RATIO:         81.9         LAMP RATIO:         81.9           51R. LGT         22.1         STR. LGT         21.6           DRK PMT:         33.3         DRK LMP:         5.5	10 -			30		60	70 80	90
HVPS:     616     HVPS:     616       RCELL TEMP:     50.0     RCELL TEMP:     50.0       BOX TEMP:     32.2     BOX TEMP:     32.3       PMT TEMP:     7.9     PMT TEMP:     7.9       IZS TEMP:     45.0     IZS TEMP:     45.0       Converter Temp:     314.4     Converter Temp:     315.1       PRES:     28.4     PRES:     28.3       SAMP FL:     637     SAMP FL:     636       UV LAMP:     2540.8     UV LAMP:     2539.1       LAMP RATIO:     81.9     LAMP RATIO:     81.9       STR. LGT     22.1     STR. LGT     21.6       DRK PMT:     33.3     DRK PMT:     33.8       DRK LMP:     5.5     DRK LMP:     5.5	10 -	10 20	As fou	nd:	calculated ppb	As left:	70 80	90
RCELL TEMP:     50.0     RCELL TEMP:     50.0       BOX TEMP:     32.2     BOX TEMP:     32.3       PMT TEMP:     7.9     PMT TEMP:     7.9       IZS TEMP:     45.0     IZS TEMP:     45.0       Converter Temp:     314.4     Converter Temp:     315.1       PRES:     28.4     PRES:     28.3       SAMP FL:     637     SAMP FL:     636       UV LAMP:     2540.8     UV LAMP:     2539.1       LAMP RATIO:     81.9     LAMP RATIO:     81.9       5TR. LGT     22.1     STR. LGT     21.6       DRK PMT:     33.3     DRK PMT:     33.8       DRK LMP:     5.5     DRK LMP:     5.5	10 -	10 20 5LOPE:	As fou : 0.83	nd:	calculated ppb	As left: 0.826	70 80	90
BOX TEMP: 32.2 BOX TEMP: 32.3  PMT TEMP: 7.9 PMT TEMP: 7.9  IZS TEMP: 45.0 IZS TEMP: 45.0  Converter Temp: 314.4 Converter Temp: 315.1  PRES: 28.4 PRES: 28.3  SAMP FL: 637 SAMP FL: 636  UV LAMP: 2540.8 UV LAMP: 2539.1  LAMP RATIO: 81.9 LAMP RATIO: 81.9  5TR. LGT 22.1 STR. LGT 21.6  DRK PMT: 33.3 DRK PMT: 33.8  DRK LMP: 5.5 DRK LMP: 5.5	10 -	10 20  SLOPE: OFFSET:	As fou : 0.83 : 51.6	nd: 7	calculated ppb  SLOPE: OFFSET:	As left: 0.826 52.4	70 80	90
PMT TEMP:         7.9         PMT TEMP:         7.9           IZS TEMP:         45.0         IZS TEMP:         45.0           Converter Temp:         314.4         Converter Temp:         315.1           PRES:         28.4         PRES:         28.3           SAMP FL:         637         5AMP FL:         636           UV LAMP:         2540.8         UV LAMP:         2539.1           LAMP RATIO:         81.9         LAMP RATIO:         81.9           STR. LGT         22.1         STR. LGT         21.6           DRK PMT:         33.3         DRK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -	10 20 SLOPE: OFFSET: HVPS:	As fou : 0.83 : 51.6 : 616	nd: 7	calculated ppb  SLOPE: OFFSET: HVPS:	As left: 0.826 52.4 616	70 80	90
Converter Temp:         314.4         Converter Temp:         315.1           PRES:         28.4         PRES:         28.3           SAMP FL:         637         5AMP FL:         636           UV LAMP:         2540.8         UV LAMP:         2539.1           LAMP RATIO:         81.9         LAMP RATIO:         81.9           5TR. LGT         22.1         STR. LGT         21.6           DRK PMT:         33.3         DRK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -	10 20  SLOPE: OFFSET: HVPS: RCELL TEMP:	As fou : 0.83 : 51.6 : 616 : 50.0	nd: 7	calculated ppb  SLOPE: OFFSET: HVPS; RCELL TEMP:	As left: 0.826 52.4 616 50.0	70 80	90
PRES:         28.4         PRES:         28.3           SAMP FL:         637         5AMP FL:         636           UV LAMP:         2540.8         UV LAMP:         2539.1           LAMP RATIO:         81.9         LAMP RATIO:         81.9           5TR. LGT         22.1         STR, LGT         21.6           DRK PMT:         33.3         DRK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP:	As fou 0.83 51.6 616 50.0 32.2 7,9	nd: 7	calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP:	As left: 0.826 52.4 616 50.0 32.3 7.9	70 80	90
SAMP FL:         637         5AMP FL:         636           UV LAMP:         2540.8         UV LAMP:         2539.1           LAMP RATIO:         81.9         LAMP RATIO:         81.9           5TR. LGT         22.1         STR. LGT         21.6           DRK PMT:         33.3         DRK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -	5LOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP:	As fou 0.83 51.6 616 50.0 32.2 7.9 45.0	nd: 7 5	calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP:	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0	70 80	90
UV LAMP:         2540.8         UV LAMP:         2539.1           LAMP RATIO:         81.9         LAMP RATIO:         81.9           STR. LGT         22.1         STR. LGT         21.6           DKK PMT:         33.3         DK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -	5LOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp:	As fou 0.83 51.6 616 50.0 32.2 7.9 45.0	nd: 7 5	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp:	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0 315.1	70 80	90
LAMP RATIO:         81.9         LAMP RATIO:         81.9           5TR. LGT         22.1         STR. LGT         21.6           DRK PMT:         33.3         DRK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -	SLOPE OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temps	As fou 0.83 51.6 616 50.0 32.2 7.9 45.0 314.	nd: 7 3 5 1	SLOPE: OFFSET: HVPS; RCELL TEMP: BOX TEMP: PMT TEMP: IZZ TEMP: Converter Temp:	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0 315.1 28.3	70 80	90
5TR. LGT         22.1         STR. LGT         21.6           DRK PMT:         33.3         DRK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -	SLOPE: OFFSET: HVPS: RCELL TEMP; BOX TEMP; PMT TEMP; IZS TEMP; Converter Temp; PRES;	As fou 0.83 51.6 616 50.0 32.2 7.9 45.0 314 28.4	nd: 7 3	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: 5AMP FL:	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0 315.1 28.3 636	70 80	90
DRK PMT:         33.3         DRK PMT:         33.8           DRK LMP:         5.5         DRK LMP:         5.5	10 -	SLOPE: OFFSET: HVPS: RCELL TEMP; BOX TEMP; PMT TEMP; IZS TEMP; Converter Temp; PRES: SAMP FL: UV LAMP;	As fou 0.83 51.6 616 50.0 32.2 7.9 45.0 314. 28.4 637 2540	nd: 7 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: 5AMP FL; UV LAMP:	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0 315.1 28.3 636 2539.1	70 80	90
DRK LMP: 5.5 DRK LMP: 5.5	10 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FLE: UV LAMP; LAMP RATIO:	As fou 0.83 51.6 616 50.0 32.2 7.9 45.0 314. 28.4 637 2540 81.5	nd: 7 5 6 9 9 9 4	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP; LAMP RATIO:	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0 315.1 28.3 636 2539.1 81.9	70 80	90
Internal Span: 47.85 Internal Span: 48.2	10 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: 5TR. LGT	As fou 0.83 51.6 616 50.0 32.7 7.9 45.0 314. 28.4 637 2540 81.5	nd: 7 5 6 9 9 9	SLOPE: OFFSET: HVPS; RCELL TEMP: BOX TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0 315.1 28.3 636 2539.1 81.9 21.6	70 80	90
	10 -	SLOPE: OFFSET: HVPS: RCELL TEMP; BOX TEMP; PMT TEMP; IZS TEMP; Converter Temp; PRES: SAMP FL: UV LAMP; LAMP ATIO. STR. LGT	As fou 0.83 51.6 616 50.0 32.2 7.9 45.0 314. 28.4 637 2540 81.5 22.1 33.3,3 5.5	nd: 7 5 9 9 9 1	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: IZS TEMP: Converter Temp: PRES: 5AMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT.	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0 315.1 28.3 636 2539.1 81.9 21.6 33.8 5.5	70 80	90
ments:	10 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FI: UV LAMP: LAMP RATIO: 5TR. LGT DRK PMT: DRK LMP:	As fou 0.83 51.6 616 50.0 32.2 7.9 45.0 314. 28.4 637 2540 81.5 22.1 33.3,3 5.5	nd: 7 5 9 9 9 1	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: 5AMP FLI. UV LAMP: LAMP RATIO: STR. LGT DRK PMT: DRK LMP:	As left: 0.826 52.4 616 50.0 32.3 7.9 45.0 315.1 28.3 636 2539.1 81.9 21.6 33.8 5.5	70 80	90



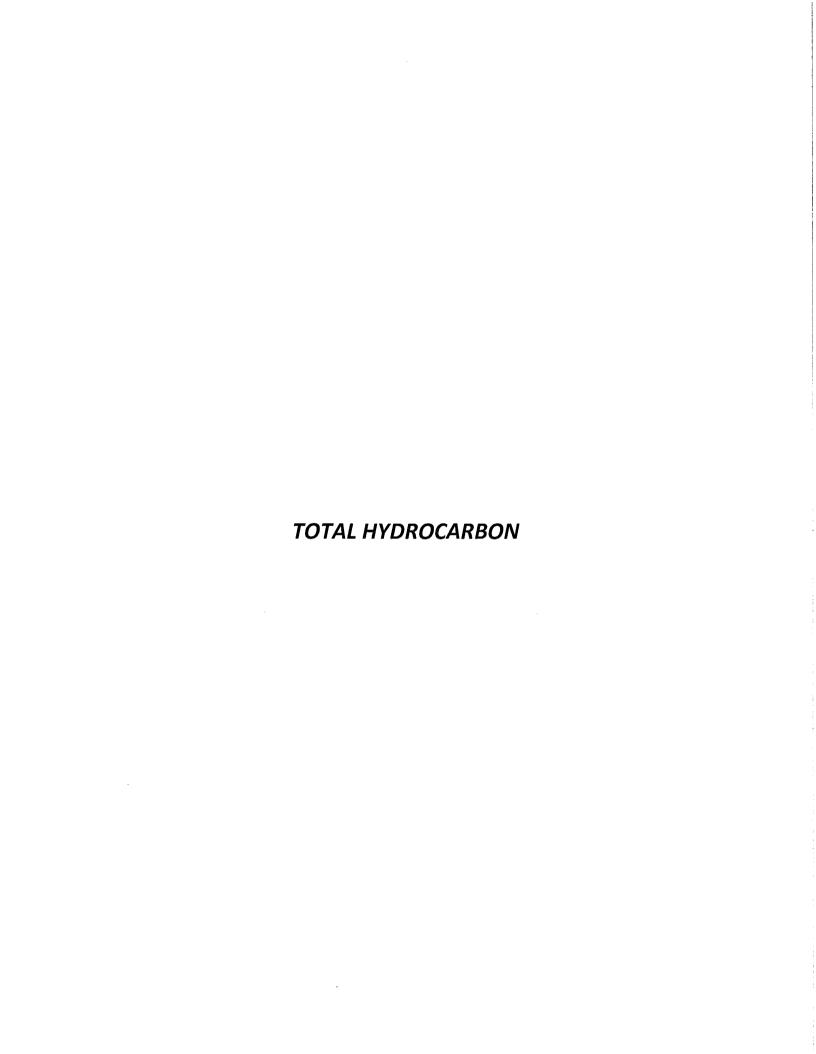
- LICA30 H2S_ PPB

	December 18,	2015			Barometric Pressure:	0,920 atm
Date: _ Company/Airshed:	LICA		-	Stat	ion Temperature °C:	20
cation/Station Name:	Maskwa		-		Weather Conditions:	Mainly cloudy with snow
Parameter:	Hydrogen 5ul	phide	-		Calibration Purpose:	post repair
start Time 24 hr. (mst):_	9:46		-	Perf		Yakupov Trina Whitsitt
End Time 24 hr. (mst):	13:15 Gas Dilutio	un.	-	Canuartar Madal	Cal Gas Expiry Date: & s/n (if applicable):	July 15, 2017 n/a
Calibration Method:	Cas Dilutio	"1"	- 	Converter Moder	& s/ ii (ii applicable);	174
llyzer: Serial Number: _			_	Range ppb:	100	
Last Calibration Date:			-	As Found C.F.:		
Previous C.F.;	n/a		-	New C.F.:	0.999	
brator:				Standard C	alibration Points for Ranges	
Flow Meter ID's:	n/a		_	Point	Hydrogen Sulphide Standard Ca	ibration Points
Make & Model:	SABIO 2010		_	High	78	
Serial #:	11900613	3	-	Mid	38 19	
Cal Gas Cylinder I.D. #:_	LL36837 10,0		-	Low	19	
Cal Gas Conc. (ppm):	10,0	ALL POINTS	ARE 15 MI	NUTES OF STABILITY AS OF SE	PTEMBER 23, 2015	
Calibra	ator Flow Rates (cc/ml	n)		Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ddd)	
adjusted zero	7515	0,00	7515	0.0	0.0	N/A
adjusted high mid	7459 7490	58.60 28.60	7518 7519	78.0 38.0	78.0 38.2	0,999 0,996
low	7504	14,40	7518	19.2	19.0	1.008
calibrator zero	7515	0.00	7515	0.0	0,0	n/a
•					Average C.F.=	1.001
	b (Interd	rrelation Coe cept as % of fi ge in C.F. fron	Slope = =(Il scale = last cal	0,998 0,04%	> or = 0.995 .95-1.05 ± 3% F.S. ± 10%	
90 n						
90 7 80 7 70 9 80 9 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	<b>→</b> 15	.0		→ 38.2		78,0
80 - 70 - 46 60 - 85 50 - 85 50 - 20 -	10 20		30	38,2 40 50 calculated ppb	60 70	78.0 80 90
80 - 70 - 46 60 - 46 50 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -				40 50	As left:	
80 - 70 - 46 60 - 46 50 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -	10 20 SLOPE:	As fou n/a	nd:	40 50 calculated ppb	As left: 0.839	
80 - 70 - 46 60 - 46 50 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -	10 20  SLOPE: OFFSET:	As fou n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET:	As left: 0.839 52.8	
80 - 70 - 46 60 - 46 50 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -	SLOPE: OFFSET: HVPS:	As fou n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS:	As left: 0.839 52.8 616	
80 - 70 - 46 60 - 46 50 - 40 - 40 - 40 - 40 - 40 - 40 - 40 -	SLOPE: OFFSET: HVPS: RCELL TEMP:	As fou n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET:	As left: 0.839 52.8	
80 - 70 - 46 60 - 40 60 - 40 60 - 40 60 - 40 60 - 40 60 - 40 60 60 60 60 60 60 60 60 60 60 60 60 60	SLOPE: OFFSET: HVPS:	As fou n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP:	As left: 0.839 52.8 616 50.0 32.0 7.9	
80 - 70 - 46 60 - 40 60 - 40 60 - 40 60 - 40 60 - 40 60 - 40 60 60 60 60 60 60 60 60 60 60 60 60 60	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP:	As fou n/a n/a n/a n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0	
80 - 70 - 66 - 65 - 65 - 65 - 65 - 65 - 65 - 6	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZ5 TEMP: Converter Temp:	As fou n/a n/a n/a n/a n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0 315.0	
80 - 70 - 66 - 65 - 65 - 65 - 65 - 65 - 65 - 6	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZ5 TEMP: Converter Temp: PRES:	As fou n/a n/a n/a n/a n/a n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0 315.0 28.8	
80 - 70 - 66 - 65 - 65 - 65 - 65 - 65 - 65 - 6	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZ5 TEMP: Converter Temp: PRES: SAMP FL:	As fou n/a n/a n/a n/a n/a n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0 315.0 28.8 644	
80 - 70 - 66 - 65 - 65 - 65 - 65 - 65 - 65 - 6	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZ5 TEMP: Converter Temp: PRES: SAMP FL: UV LAMP:	As fou n/a n/a n/a n/a n/a n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FLI. UV LAMP:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0 315.0 28.8	
80 - 70 - 66 - 65 - 65 - 65 - 65 - 65 - 65 - 6	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZ5 TEMP: Converter Temp: PRES: SAMP FL:	As fou n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0 315.0 28.8 644 2528.1	
80 - 70 - 86 60 - 86 50 - 87 50 - 97 50 - 10 - 10 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	As fou n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	nd:	JO 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP PL: UV LAMP; LAMP RATIO:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0 315.0 28.8 644 2528.1 81.3 22.2 34.2	
80 - 70 - 86 60 - 86 50 - 87 50 - 97 50 - 10 - 10 -	SLOPE: OFFSET: H-MYPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZ5 TEMP: Converter Temp: PRES: SAMP FL: UV LAMP; LAMP RATIO: STR. LGT DRK LMP: DRK LMP:	As fou n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FLI: UV LAMP: LAMP RATIO: STR. LGT DRK PMF. DRK LMP:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0 315.0 28.8 644 2528.1 81.3 22.2 34.2 5.5	
80 - 70 - 86 60 - 86 50 - 87 50 - 97 50 - 10 - 10 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	As fou n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	nd:	40 50 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: Converter Temp: PRES: SAMP FL: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	As left: 0.839 52.8 616 50.0 32.0 7.9 45.0 315.0 28.8 644 2528.1 81.3 22.2 34.2	



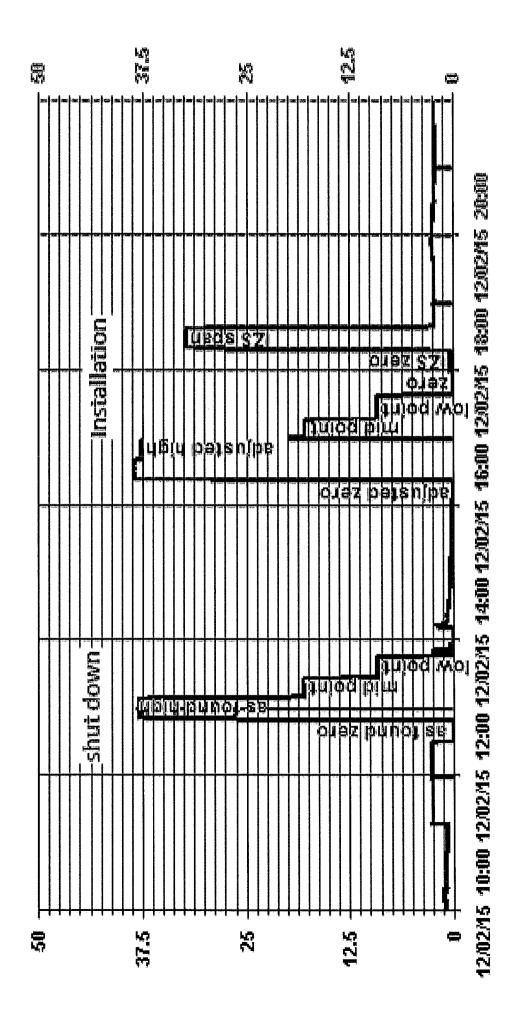
12/18/15 05:00 12/18/15 07:00 12/18/15 09:00 12/18/15 14:00 12/18/15 13:00 12/18/15 15:00

- LICA30 H2S_ PPB



Date:	December 2,	2015	-		netric Pressure:	0.9	16 atm
Company/Airshed:	LICA Maskwa				emperature °C:	A fou	20
Location/Station Name: _ Parameter:	Total Hydroc		-		her Conditions: ration Purpose:		v clouds t down
Start/End Time 24 hr. (mst):	12:23 / 14					Alex Yakupov	Trina Whits
Callbration Method:	Gas Diluti	on	•	Cal C	ias Explry Date:	March	26, 2017
zeri							
Serial Number:	43660973 November 12		-	Range ppm:	50 0,994		
Last Calibration Date: _ Previous Cal High Point C.F.:	0,999	., 2015	•	As Found C.F.; _ New C.F.;		_	
			-			_	
ator: Flow Meter ID's: _	n/a		_				
Make & Model:	API 700 830	)		Standard Calibration Poli			
Serial #: _ Cal Gas Cylinder I.D. # :	LL33674	1	-	Hig		Target ppm 38	
4/C3H8 Cylinder Conc. (ppm):	601,4	202,0		Mic		18	
CH ₄ as propane/total CH ₄ equivilants (ppm):	555.5	1156.9		Lov	v	9	
equivilants (ppin):	ALL POINTS ARE	E 15 MINUTES O	F STABILIT	TY AS OF SEPTEMBL	FR 23, 2015		
Calibrato	r Flow Rates (cc/min)	,		Calculated	Indicated Concentration:	Corre	ction Factors:
Point	Diluent	Cal Gas	Total	Concentration: (ppm)	(ppm)		
as found zero	1999	0.00	1999	0.0	-0.07		n/a
as found high	1932	65.00	1997	37.66	37.80	-	0.994
mid	1969 1984	31,00 16,00	2000	17.93	18,00 9,21	+	0.992
low	1984	16,00	2000	9,26	Average C.F.	<del>_</del>	0.995
	b (Inte	Correlation Coef ercept as % of fu inge in C.F. from	Slope =  -   scale:	1.000 0.994 0.15% 0.47%	LIMITS > or = 0.995 .9S-1.05 ± 3% F.S. ± 10%		
30 - 25 - E 20 -			18.00				
25 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 20 - 40 20 20 20 20 20 20 20 20 20 20 20 20 20	9,21	15	18.00	25	30	35	40
25 - 4 20 - 7 20 15 - 10 - 5 5 - 0 0.07		, , , , , , , , , , , , , , , , , , , ,			30	35	40
25 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 20 - 40 20 20 20 20 20 20 20 20 20 20 20 20 20	10	, 15	20		30 As left		40
25 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 - 40 20 20 - 40 20 20 20 20 20 20 20 20 20 20 20 20 20	10	oundi	20		As left H2 cylinder		40
25 - 4 20 - 24 20 - 24 20 - 24 20 20 - 25 20 20 20 20 20 20 20 20 20 20 20 20 20	10 As f H2 cylinder (psi):	ound: 750	20		As left H2 cylinder (psi): H2 cylinder reg	t: n/a	40
25 - 4 20 - 24 20 - 24 20 - 24 20 20 - 25 20 20 20 20 20 20 20 20 20 20 20 20 20	As f H2 cylinder (psi):	ound: 750	20		As left H2 cylinder (psi): H2 cylinder reg set (psi):	t: n/a n/a	40
25 - 40 - 20 - 20 - 20 - 20 - 20 - 20 - 20	As f H2 cylinder (psi); cylinder reg set (psi); Span Cylinder (psi);	750 25	20		As left H2 cylinder (psi): H2 cylinder reg set (psi): Span Cylinder (psi):	t: n/a	40
25 - 40 - 20 - 20 - 20 - 20 - 20 - 20 - 20	10  As f  H2 cylinder (psi);  cylinder reg set (psi);  Span Cylinder (psi);  Span Cylinder Reg Set	750 25	20		As left H2 cylinder (psi): H2 cylinder reg set (psi): Span Cylinder (psi): Span Cylinder	t: n/a n/a	40
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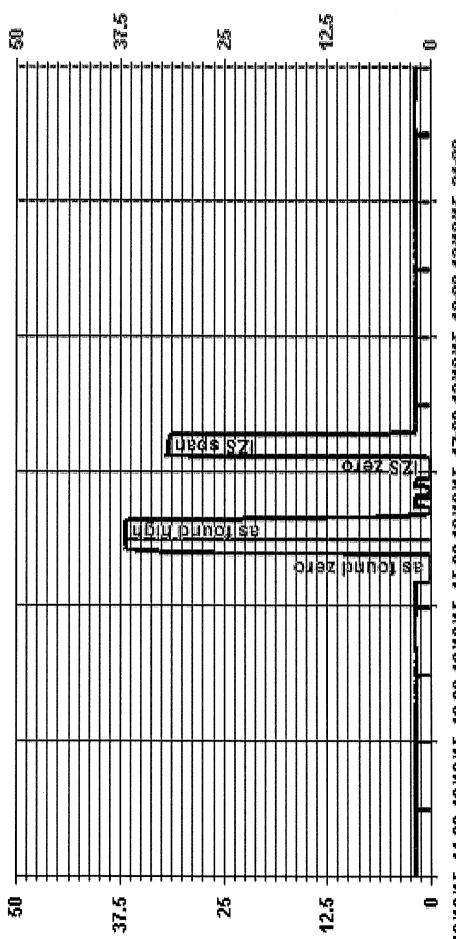
Location/Station Name:         Maskwa         Weather Conditions:         A few           Parameter:         Total Hydrocarbon         Calibration Purpose:         Instat/Line 24 hr. (mst):         15:06 / 18:44         Performed By/Reviewer:         Alex Yakupov	20 v clouds
Parameter: Total Hydrocarbon Calibration Purpose: Insta 15:06 / 18:44 Performed By/Reviewer: Alex Yakupov Calibration Method: Gas Dilution Cal Gas Expiry Date: March  Serial Number: 436609739 Range ppm: 50  Last Calibration Date: n/a As Found C.F.: n/a loius Cal High Point C.F.: n/a New C.F.: 1.000	
t/End Time 24 hr. (mst):         15:06 / 18:44         Performed By/Reviewer:         Alex Yakupov           Calibration Method:         Gas Dilution         Cal Gas Expiry Date:         March           Serial Number:         436609739         Range ppm:         50           Last Calibration Date:         n/a         As Found C.F.:         n/a           ious Cal High Point C.F.:         n/a         New C.F.:         1.000	allation
Serial Number:         436609739         Range ppm: 50           Last Callbration Date:         n/a         As Found C.F.: n/a           lous Cal High Point C.F.:         n/a         New C.F.: 1.000	Trina Whits
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ious Cal High Point C.F.: n/a New C.F.: 1.000	
Flow Meter ID's: n/a	
Make & Model:         API 700         Standard Callbration Points for a Range of:         50 ppm           Serial #:         830         Point         Target ppm	
Cal Gas Cylinder I.D. #: LL33674 High 38	
1 ₈ Cylinder Conc. (ppm): 601.4 202.0 Mid 18	
H ₄ as propane/total CH ₄ 555.5 1156.9 Low 9	
ALL POINTS ARE 15 MINUTES OF STABILITY AS OF SEPTEMBER 23, 2015	
Calibrator Flow Rates (cc/min) Calculated Indicated Correct	tlon Factors:
adjusted zero 1999 0.00 1999 0.0 0.00	n/a
adjusted high 1932 65.00 1997 37.66 37.67	1,000
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Linear Regression/Calibration Results:	
LIMITS  Correlation Coeffecient = $1.000$ > or = $0.995$	
Correlation Coeffecient = 1.000 > or = 0.995 Stopa = 0.999 .95-1.05	
b (Intercept as % of full scale)= 0.03% ± 3% F.S.	
% change in C.F. from last cal= n/a ± 10%	
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5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
5 9.23	
0 5 10 15 20 25 30 35	40
calculated ppm	
As found: As left:	
H2 cylinder	
H2 cylinder (psi): n/a H2 cylinder (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 750 (psi): 75	
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H2 cylinder (psi): n/a	
H2 cylinder (psi): n/a	



- LICASO THC PPM

Serial Number:   436699739   Range ppm:   50	Date:	December 10	, 2015		Baro	metric Pressure:	100.4 kPa	
Parameter   Total	Company/Airshed:	LICA		_				20
Standard Calibration Method:   15:21-16:13   Cal Gas Expiry Date:   March 26, 2017				_				
Calibration Method:   Gas Dilution   Cal Gas Expiry Date:   March 25, 2017								~~~~
Sarfal Number:   436699739   Range ppmt:   50				-				
Serial Number:   436699739	Calibration Method:	Gas Dilat		_	Cai	Gas expiry Date:	IVIGI	011 20, 2017
Last Calibration Date:   December 2, 2015   As Found C.F.   1.017   New C.F.								
Previous Cal High Point C.F.;   1.000   New C.F.;   r/s				-				
### A found reput to be a found high   1992   1.017   1.017    ### A found reput to be a found high   1992   1.017   1.017    ### A found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to be a found reput to				-			<del></del>	
Flow Make R Models   Environments 5100   Standard Calibration Points for a Range of Se ppm   Standard Calibration Points for a Range of Se ppm   Standard Calibration Points for a Range of Se ppm   Standard Calibration Points for a Range of Se ppm   Standard Calibration Points for a Range of Se ppm   Standard Calibration Points for a Range of Se ppm   Standard Calibration Points for a Range of Se ppm   Standard Calibration Points for a Range of Se ppm   Standard Calibration Point   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibration   Standard Calibrat	Trevious curright one cirri			-	Hear car a			
Make & Model: Environics 5100   Standard Calibration Points for a Range of Sep pun	alibrator:	2/2						
Cal Gas Cylinder LD, #:   L133674   High   38	-		5100		Standard Calibrati	on Pointe for a Rane	e of 50 nnm	
Cal Gas Cylinder LD, 4    L138674   High   38   Chi./Cyli, Cylinder Conc. (ppm)  601.4   202.0   Llow   9	-			- r				7
Chylichy Cylinder Conc. (ppm):   601.4   202.0			1	- t				1
Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage   Separage		601,4	202.0	- T			18	7
Calibrator Flow Retes (ec/min)		555.5	1156.9	] <b>[</b>	Lo	w	9	1
Calibrator Flow Rates (cc/min)   Cal Gas   Concentration: Concentration:   Concentration: Concentration:   Concentration: Concentration:   Concentration: Concentration:   Concentration: Concentration:   Concentration: Concentration:   Concentration: Concentration:   Concentration:   Concentration: Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentration:   Concentrati	equivilants (ppm):	ALL POINTS ARI	E 15 MINUTES C	I F STABILIT	Y AS OF SEPTEM	BER 23, 2015		
Point   Diluent   Cal Gas   Total   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)   (ppm)	Calibrato	<del></del>		1	Calculated	Indicated	Corr	rection Factors:
Service   1996			0.1.5				:	
Linear Regression/Calibration Results:   Correlation Coeffecient =   n/a				_				n/a
Linear Regression/Calibration Results:   Correlation Coeffecient =   n/a								
Correlation Coeffecient						Average C	.F.=	
H2 cylinder (psi): 750		b (Inte	ercept as % of fu	_= Stope _=(all scale	n/a n/a	> or = 0.995 .95-1.05 ± 3% F.S.		
H2 cylinder (psi): 750		Λα.	ounds			An I	· · · · ·	
H2 cylinder (psi): 750   (psi): 1/4     H2 cylinder reg set (psi): 25   H2 cylinder reg set (psi):								
Span Cylinder (ps): 500   Span Cylinder (ps): 500   Span Cylinder (ps): 500   Span Cylinder (ps): 522   Span Cylinder (ps): 722   Span Cylinder (ps): 724   Span Cylinder (ps): 725   Span Cylinder (ps): 725   Span Cylinder (ps): 726   Span Cylinder (ps): 726   Span Cylinder (ps): 727   Span Cylinder (ps): 727   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (ps): 728   Span Cylinder (p		H2 cylinder (psi):	/50 	_		(psl):	n/a	<del></del>
Span Cylinder (ps);   Sub	H2	cylinder reg set (psi);	25	_			n/a	<b></b>
Span Cylinder Reg Set (psf):   22   Reg Set (psf):   24   Reg Set (psf):   25   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Set (psf):   27   Reg Se		5pan Cylinder (psi):	500				n/a	
(psf)		Span Cylinder Reg Set		-				-
Pressure:   Pressure:		(nell)		_			n/a	_
Pressure:   Pressure:		Zero Alr Gen	35				n/a	
Service alarms: None   Service alarms:   None   Service alarms:   None   Service alarms:   None   Service alarms:   None   Service alarms:   None   None   None   Service alarms:   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   None   No		Pressure:_		-		_		-
cnt: 3552 cnt: n/a rng: 1 rng: n/a try: 0 try: n/a flm: 207.9 flm: n/a det: 125.5 det: n/a Flame: 208 Flame: n/a Filter: 125 Filter: n/a Base: 125 Base: n/a Sample psi: 6.81 Sample psi: n/a Internal Air Pressure: 22 Internal Air Internal Fuel Pressure: 11 Pressure Internal Pressure: 28 Internal Pressure Internal Pressure: 28 Internal Pressure Internal Span: n/a Internal Span: n/a Internal Span: n/a Internal Span: n/a Internal Span: n/a Internal Span: n/a Internal Span: n/a		measurement alarms:	None				n/a	
rng: 1 rng: n/a try: 0 try: n/a flm: 207.9 film: n/a det: 125.5 det: n/a Flame: 208 Flame: n/a Fliter: 125 Filter: n/a Base: 125 Base: n/a Sample psi: 6.81 Sample psi: n/a Internal Air Pressure: 22 Internal Air Internal Fuel Pressure: 11 Pressure: n/a Internal Pressure: 28 Internal Pressure Internal Pressure: 28 Internal Pressure Gauge psi: 10 Internal Pressure Internal Span: n/a Internal Span: n/a Internal Span: n/a Internal Span: n/a Internal Span: n/a		service alarms:	None	_		service alarms:	n/a	<del></del>
rng: 1 rng: n/a try: 0 try: n/a flm: 207.9 film: n/a det: 125.5 det: n/a Flame: 208 Flame: n/a Fliter: 125 Filter: n/a Base: 125 Base: n/a Sample psi: 6.81 Sample psi: n/a Internal Air Pressure: 22 Internal Air Internal Fuel Pressure: 11 Pressure: n/a Internal Pressure: 28 Internal Pressure Internal Pressure: 28 Internal Pressure Gauge psi: 10 Internal Pressure Internal Span: n/a Internal Span: n/a Internal Span: n/a Internal Span: n/a Internal Span: n/a		cnt:	355 <b>2</b>	-		cnt:	n/a	
fim: 207.9 fim: n/a det: 125.5 det: n/a Flame: 208 Flame: n/a Fliter: 125 Fliter: n/a Base: 125 Base: n/a Sample psi: 6.81 Sample psi: n/a Internal Air Pressure: 22 Internal Air n/a Internal Fuel Pressure: 11 Pressure: n/a Internal Pressure: 12 Internal Fuel pressure: n/a Internal Pressure: 11 Internal Fuel pressure: n/a Internal Pressure: 18 Gauge psi: n/a Internal Pressure: n/a Internal Pressure: n/a				-		-	n/a	_
det:       125.5       det:       n/a         Flame:       208       Flame:       n/a         Filter:       125       Fliter:       n/a         Base:       125       Base:       n/a         Sample psi:       6.81       Sample psi:       n/a         Internal Air Pressure:       22       Internal Air       n/a         Internal Fuel Pressure:       11       Pressure:       n/a         Intenal Pressure Gauge psi:       28       Intenal Pressure       n/a         Gauge psi:       Internal Span:       n/a       Internal Span:       n/a		try:	0	_		try:		
Flame:   208   Flame:   n/a								_
Filter: 125 Filter: n/a Base: 125 Base: n/a  Sample psi: 6.81 Sample psi: n/a  Internal Alr Pressure: 22 Internal Alr n/a  Internal Fuel Pressure: 11 Pressure: n/a  Internal Pressure: 28 Internal Pressure: n/a  Internal Pressure: n/a  Internal Pressure: n/a  Gauge psi: n/a  Internal Span: n/a		-	<del></del>	-		-		_
Base: 125 Base: n/a  Sample psi: 6.81 Sample psi: n/a  Internal Air Pressure: 22 Internal Air  Internal Fuel Pressure: 11 Pressure: n/a  Internal Pressure: 28 Internal Pressure: n/a  Internal Pressure: n/a  Internal Pressure Gauge psi: 28 Gauge psi: n/a  Internal Span: n/a Internal Span: n/a				-		-		_
Sample psi: 6.81 Sample psi: n/a Internal Air Pressure: 22 Internal Air n/a  Internal Fuel Pressure: 11 Pressure: n/a  Intenal Pressure Gauge psi: 28 Intenal Pressure  Gauge psi: Internal Span: n/a  Internal Span: n/a  Internal Span: n/a				-				_
Internal Fuel Pressure: 11 Internal Fuel Pressure: n/a  Intenal Pressure Gauge psi: 28 Intenal Pressure Gauge psi: n/a  Internal Span: n/a Internal Span: n/a		5ample psi:	5.81	-		Sample psi:	n/a	_
Internal Pressure: 174  Pressure: 174  Intenal Pressure Gauge psi: 28  Intenal Pressure n/a  Gauge psi: 174  Internal Span: n/a  Internal Span: n/a		Internal Air Pressure:	22	-			n/a	_
Intenal Pressure Gauge psi: 28  Gauge psi:  Internal Span: n/a  Internal Span: n/a	li	nternal Fuel Pressure:	11				n/a	
Internal Span: n/a Internal Span: n/a	Intens	- : Pressure Gauge psi: :	28	-		Intenal Pressure	n/a	_
<del></del>		Internal Span:	n/a	<b>-</b>			n/a	-
omments:		_		•				_
	omments:							

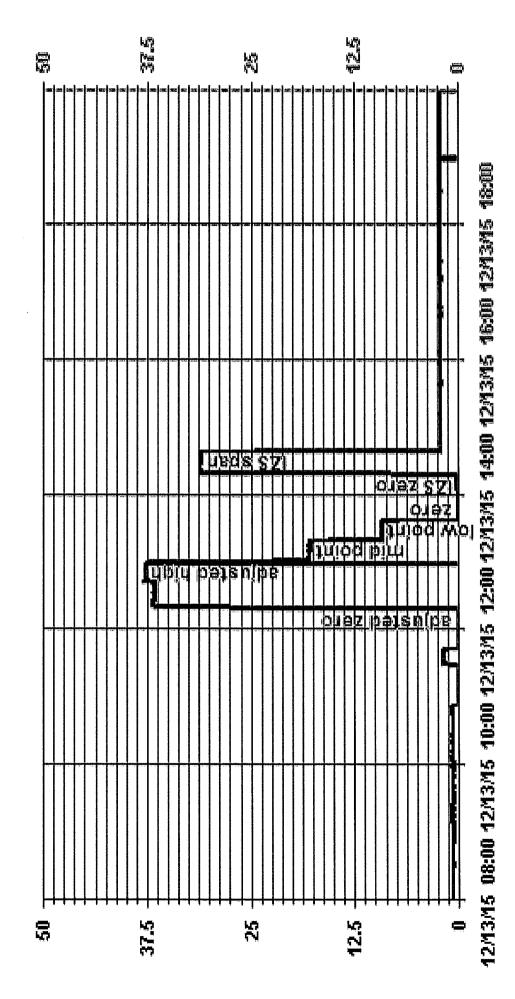
Of Minute Averages



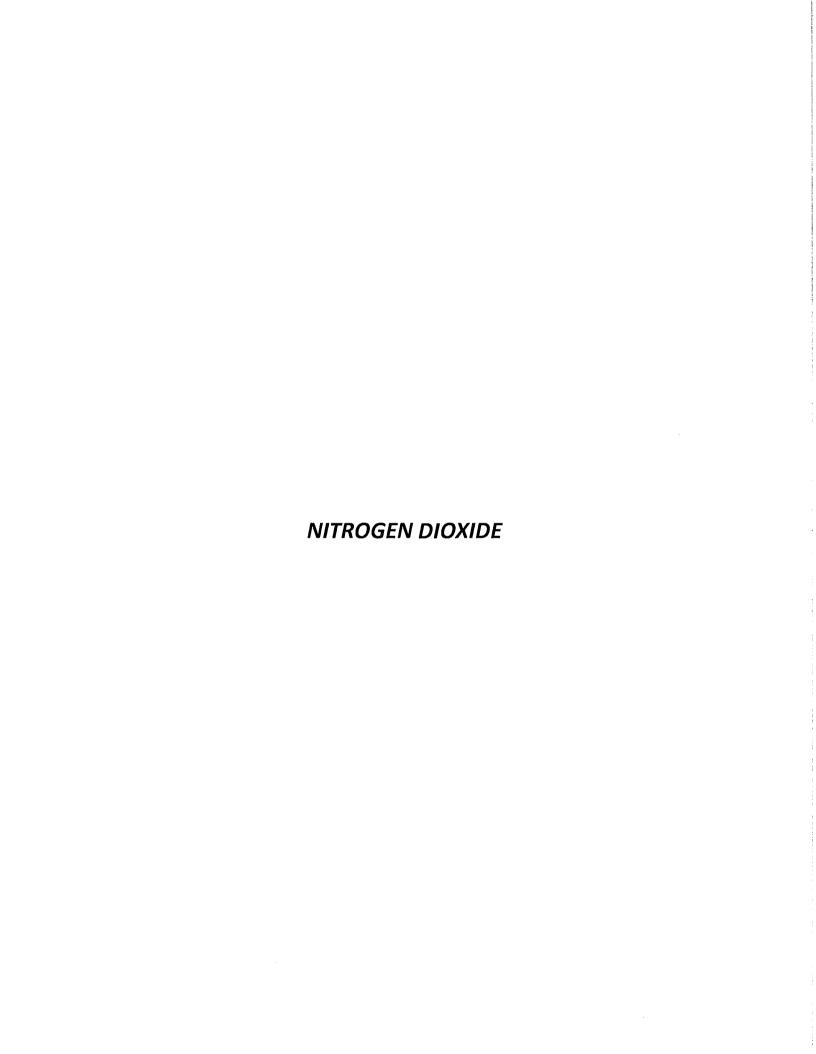
12M0M5 11:00 12M0M5 13:00 12M0M5 15:00 12M0M5 17:00 12M0M5 19:00 12M0M5 21:00

- LICA30 THC FPM

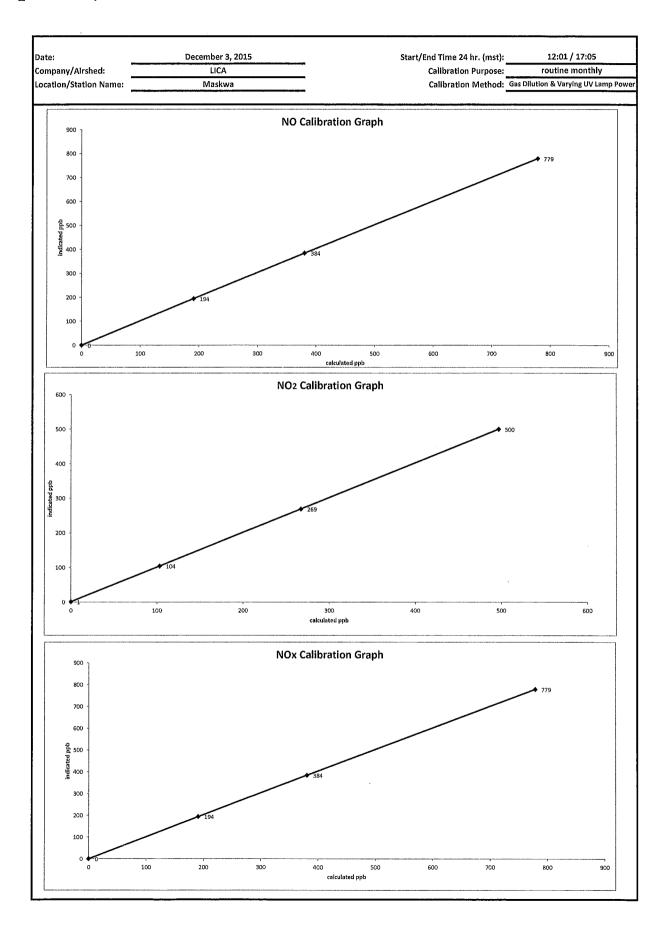
Date:	December 1	3, 2015	_	Baro	metric Pressure:	0,9	17 atm
Company/Airshed:	LICA				Temperature °C;		20
Location/Station Name: Parameter:			_		ther Conditions: bration Purpose:		with freezing i t repair
Start/End Time 24 hr. (mst):	11:44/14		Performed By/Reviewer:		Alex Yakupov	Trina Whits	
Calibration Method:	Gas Dilut	lon	_	Cal	Gas Expiry Date:	Marc	h 26, 2017
zer: Serial Number:	4366097	730		Panga nnmi	50		
Last Calibration Date:		-33	_	Range ppm: As Found C.F.:		_	
Previous Cal High Point C.F.;	n/a			New C.F.:	1.000	_	
ator;							
Flow Meter ID's: _ Make & Model:	n/a API 700	0		Standard Calibratio	n Points for a Range o	of: 60 ppm	
Serial #:	830		_	Po		Target ppm	I
Cal Gas Cylinder I.D. #:	LL3367		_	HI		38	
/C₃H₅ Cylinder Conc. (ppm): CH₄ as propane/total CH₄[	601.4	202,0	_	M		18 9	
equivilants (ppm):	555.5	1156.9		Lo	<u> </u>	9	l
		E 15 MINUTES	OF STABILI	TY AS OF SEPTEME Calculated	BER 23, 2015 Indicated	1	
Callbrato	r Flow Rates (cc/min)			Concentration:	Concentration:	Corre	ection Factors:
Point	Diluent	Cal Gas	Total	(ppm)	(ppm) 0.00		n/a
adjusted zero adjusted high	1999 1932	0.00 65.00	1999 1997	0.0 37,66	37,66	+	n/a 1,000
mid mid	1969	31,00	2000	17.93	17,93		1,000
low	1984	16,00	2000	9.26	9,26		0.999
calibrator zero	1999	0.00	1999	0.00	0.00		n/a
					Average C.F.	=	1.000
		Linear Regr	ession/Calib	ration Results:			
					LIMITS		
		Correlation Co	oeffecient =	1.000	> or = 0,995		
			Slope =	1.000	.95-1.05		
		ercept as % of			± 3% F.S.		
	% cha	ange in C.F. fro	om last cal=	n/a	± 10%		
35							1
35 - 30 -							
30 -				_			maximum and a second
30 -							
30 -							
30 - m dd 25 - pa 20 -		_	17.93				
30 - E 25 -	_		17,93	/			
30 - m dd 25 - pa 20 -	9,26	/	17.93				
30 - W 25 - 20 - 20 - 20 - 11 - 10 -	9.26		17.93				
30 - E 25 - D 20 - D 20 - 10 - 5 -	9.26		17.93				
30 - 8 25 - 9 20 - 15 - 10 -	9.26	15	20	25	30	35	40
30 - E 25 - D 20 - D 20 - D 10 - 5 -	10						40
30 - E 25 - D 20 - D 20 - D 10 - 5 -	10 As t	found:	20		30 As left H2 cylinder		40
30 - E 25 - D 20 - D 20 - D 10 - 5 -	10	found:	20		As left H2 cylinder (psl):		AO
30 - 25 - 20 - 20 - 20 - 20 - 20 - 20 - 2	10 As t	found: n/a	20		As left H2 cylinder (psl): H2 cylinder reg		40
30 - E 25 - P 20 - P 20 - 10 - 5 - 0 0.00 5	10 As ( H2 cylinder (psi):	found: n/a n/a	20		As left H2 cylinder (psi): H2 cylinder reg set (psi):	700 25	40
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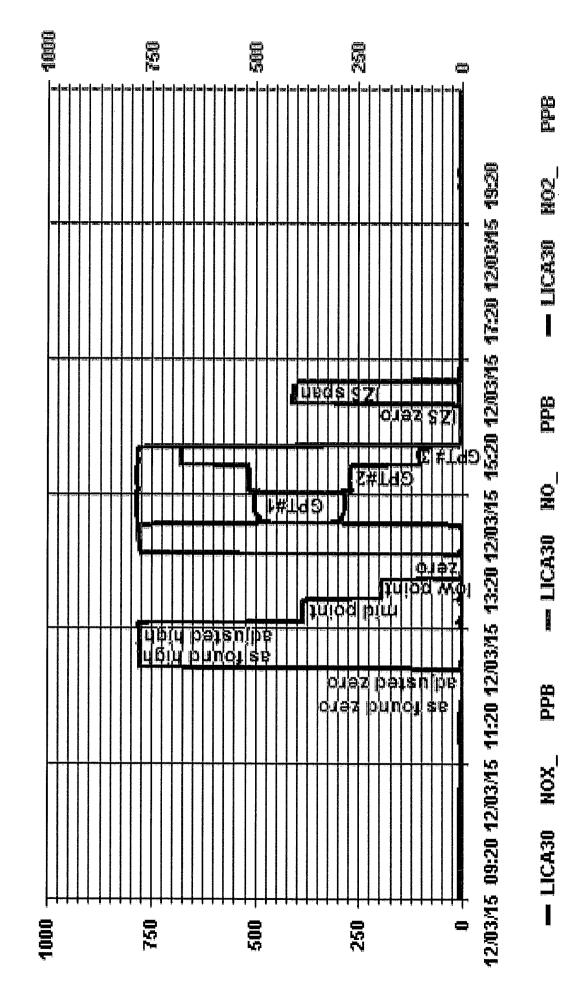


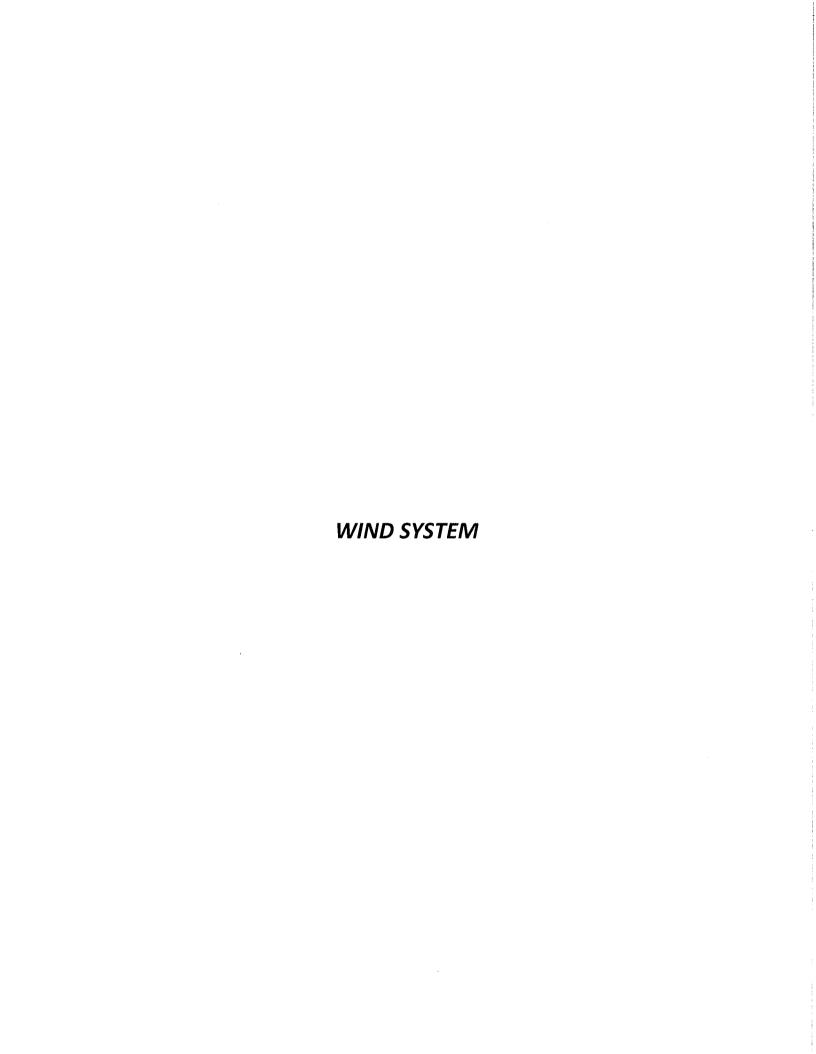
- LICA30 THC PPM



Date:	De	cember 3, 2	2015				Barometric Pressure:		0.916	itm
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P.T. to be used for Ozone?		No		<u>.</u>		Per	formed By/Reviewer:	Alex Y	akupov	Trina Whitsi
Calibration Method:	Gas Dilution	& Varying U\	/ Lamp Power	-			Cal Gas Expiry Date:		March 12	, 2019
ilyzer:						Cor	rection Factors:			
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Serial Number:	Na	593	2016				1,005		000 994	
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brator: Flow Meter ID's:	n,	<b>/</b> a	_		Sta	ndard Calibration Po	lints for a Range of:	1000 ppb		
Make & Model:	SABIO	2010 D			Po	int	Target NO (ppb)	Target l	VO₂ (ppb)	Cc Ozone ?
Serial #:	1190					gh	780		00	n/a
Cal Gas Cylinder I.D. #: NO/NOx Gas Conc. (ppm):	50,6	02073 50,6				id	380 190		75 00	n/a
MO/MOX das conc. (ppin).	30,0	30.0	•			oint #1	n/a		√a	n/a n/a
					Extra P	oint #2	n/a		า/a	n/a
Calibrator Flo	w Rates for	/min1	ALLE	Calculated NO	TES OF STABILITY AS Calculated NOx	OF SEPTEMBER 23, 2 Indicated NO	015 Indicated NOx	NO C.F.	NOx C.F.	
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)	NO C.F.	NOX C.F.	
as found zero	5013	0.0	5013	0	0	0.0	1.0	n/a	n/a	
as found high	4938	77.2	5015	778.9	778.9	775.0	775.0	1.005	1.006	
adjusted zero	5013	0.00	5013	0.0	0.0	0,0	0.0	n/a	n/a	
adjusted high mid	4938 4976	77.20 37.70	5015 5014	778.9 380.5	778.9 380,5	779,0 384,0	779.0 384.0	1,000 0,991	1,000 0,991	
low	4994	18.90	5013	190.8	190,8	194.0	194.0	0.983	0.983	
calibrator zero	5013	0.00	5013	0	0	0.0	0.0	n/a	n/a	
			ALLF	OINTS ARE 15 MINU	TES OF STABILITY AS	OF SEPTEMBER 23. 2	Average C.F.=	0.991	0,991	
Calibrator Flo	w Rates (co	/min)		Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO₂ gain	NO ₂ C.F.
Point	Diluent	Cal Gas	<b>Total Flow</b>	volts or ppb	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4938	77.20 77.20	5015	0.0 525.0	780.0	781.0	1.0	0.0	1,0	
as found high NO2 gpt mid	4938 4938	77.20	5015 5015	280.0	283.0 513.0	784.0 784.0	50 <b>1</b> .0 270.0	497.0 267.0	500.0 269.0	0.994
gpt low	4938	77.20	5015	100.0	677.0	783,0	105.0	103.0	104.0	0.990
				Linear Re	gression/Calibration	Results:		Average	B NO ₂ C.F.¤	0,992
				NO	NOx	NO ₂	LIMITS			
	Cor	rrelation Co	oeffecient =	1.000	1.000	1.000	> or = 0.995			
			Slope =	1.001	1.001	0.996	<b>.9</b> 5 <b>-1.0</b> 5			
		-	fuli scale)=	0.20%	0.20%	0.08%	± 3% F.S.			
	_		om last cal≈ r effeclency	-0.50%	-0.63%	0.20%	± 10% 0.96 to 1,04			
	Ox SLOPE:		ound: 980			NOx SLOPE:	As left: 0.982			
r	NOx OFFS:		),0			NOX SLOPE:	0.982			
	NO SLOPE:	0.	987			NO SLOPE:	0,986			
	NO OFFS:		0.3			NO OFFS:	-0.2			
	OZONE FL:		73 77			SAMP FLW: OZONE FL:	473 77			
	PMT:		7,9			PMT:	10.5			
N	ORM PMT:		),2			NORM PMT:	1.4			
	AZERO:		62			AZERO:	7.9	•		
RO	HVPS: CELL TEMP:		0.0			HVPS: RCELL TEMP:	50.0			
	BOX TEMP:	3	0.5			BOX TEMP:	30.9			
F	MT TEMP:		5.7			PMT TEMP:	6.7			
N.A.	IZS TEMP: OLY TEMP:		8.6 .5.3			IZS TEMP: MOLY TEMP:	38.5 315.1	•		
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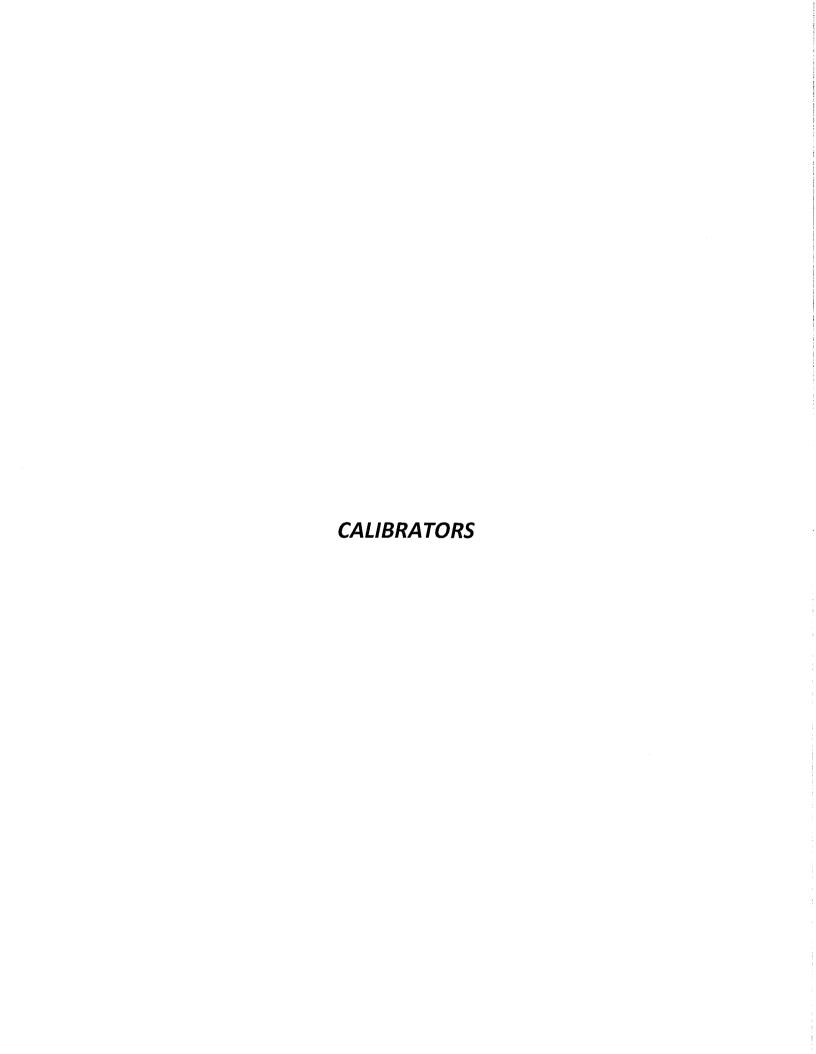






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otellaraniania //Sallick			y/m//4	





## Calibrator Performance Audit OZONE

File No. 2015-030A

Company Max	xam	_	Operator: Lin	nin Li			
Calibrator			Flow Measurement				
Make/Model	Sabio	2010D	Make/Model	N/	<u>'A</u>		
Serial Number	119	00613	Serial Number	N/	<u>'A</u>		
Oven Temperature	N/A		Temperature (°C)	N/	Ά		
Last Verification Date		V/A	Barometric Pressure	N/	Ά.		
Flow Measurer	nents						
Pt. No. 1	Pt. No. 2	5000	Pt. No. 3 5000				
Calibrator Flow	Calo	culated	Indicated	% Dif	ference		
(sccm)	Concentr	ation (ppm)	Concentration (ppm)		% Diff. Limit		
5013	<del></del>	.000	0.001	TERRORE THREE TO			
5013		.400	0,407	1%	± 10%		
5013		.200	0.204	1%	± 10%		
5014		.100	0.101	0%	± 10%		
3014			Average Percent Difference		± 10%		
O ₃ Correlation= m (Slope)= b (Intercept % of FS)=	1.0000 1.0163 0.0800	LIMITS $\geq 0.995$ 0.90-1.10 $\pm 3\%$ F.S.	nx+b (where x=calculated concent	ration, y=indicated	concentration)		
AENV	Standards	77.20	Ozone Analyzer				
Audit Calibrator			Make/Model ·	Tec	o 49i		
Make/Model	Tecc	49i PS	Serial/AMU Number	AMU	1843		
Serial/AMU Number	AMU	J 1808	Last Calibration Date	May 21	1, 2015		
Ozone Standard	Pri	mary	Full Scale (ppm)	0	.5		
COMMENTS:							
Auditor:	Al	Clark		21, 2015			
Operator Signature:	(island	Khilin	Location: McIntyre Ce	nter Edmonton	-		



## Calibrator Performance Audit

Sulphur Dioxide (by Cylinder Dilution)

File No. 2014-258A

Company: Ma	ixxam		Operator: _	Limir	ı Ll		
Calibrato	r:		Flow Me	asurement I	Device:		
Make/Model		700	Make/N	⁄Iodel	N/	Α	
Serial Number		30	Serial Number		N/A		
Last Verification Date	Oct	Oct 2013		ure (°C)	N/	Α	
SO ₂ Cylinder Conc.	O ₂ Cylinder Conc. 50.3		Barometric	Pressure	N/	Ά	
SO ₂ Cylinder S/N				·			
Flow Measure	ements					dia dia dia dia dia dia dia dia dia dia	
Pt. No. 1 79.5	_Pt. No. 2	39.8	Pt. No. 3	19.9			
	Calibrator Flow Calculated			1	0/ T\if	ference	
	•	Calculated Concentration (ppm)		ated	vs Audit Gas	· · · · · · · · · · · · · · · · · · ·	
(sccm)	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon		Concentrat		ys Audit Gas	76 Diff, Effill	
Zero Air		000	0.00			"	
4918		0.800		98	0%	± 10%	
4960	<del></del>	0.400		98	-1%	± 10%	
4977			Average Percer		0% 0%	± 10% ± 10%	
SO ₂ Correlation m (Slope) b (Intercept % of FS)	= 0.9971	<u>LIMITS</u> $\geq 0.995$ 0.90-1.10 $\pm 3\%$ F.S.	·				
AEN	V Standards			SO ₂ An	alyzer		
Audit Calibrator			Make/	Model	Tec	43C	
Make/Model	1 A&R	MFC 201	Serial/AM	U Number		1623	
Serial/AMU Number	AMI	J 1690 .	Last Calibr	ation Date	Dec	15/14	
			Full Sca	le (ppm)	1	0.1	
COMMENTS:		s slow to move to Solow to move through	through the calibrugh quickly.	ator. Check for	or contamnat	ion inside	
Audito	r: Al	Clark	Date:	Decembe	r 16, 2014		
Operator Signature			Location:	McIntyre Cen	ter Edmontor	<u>1</u>	
- <b>,</b>	<del></del>	THE TAX DISTRICT					

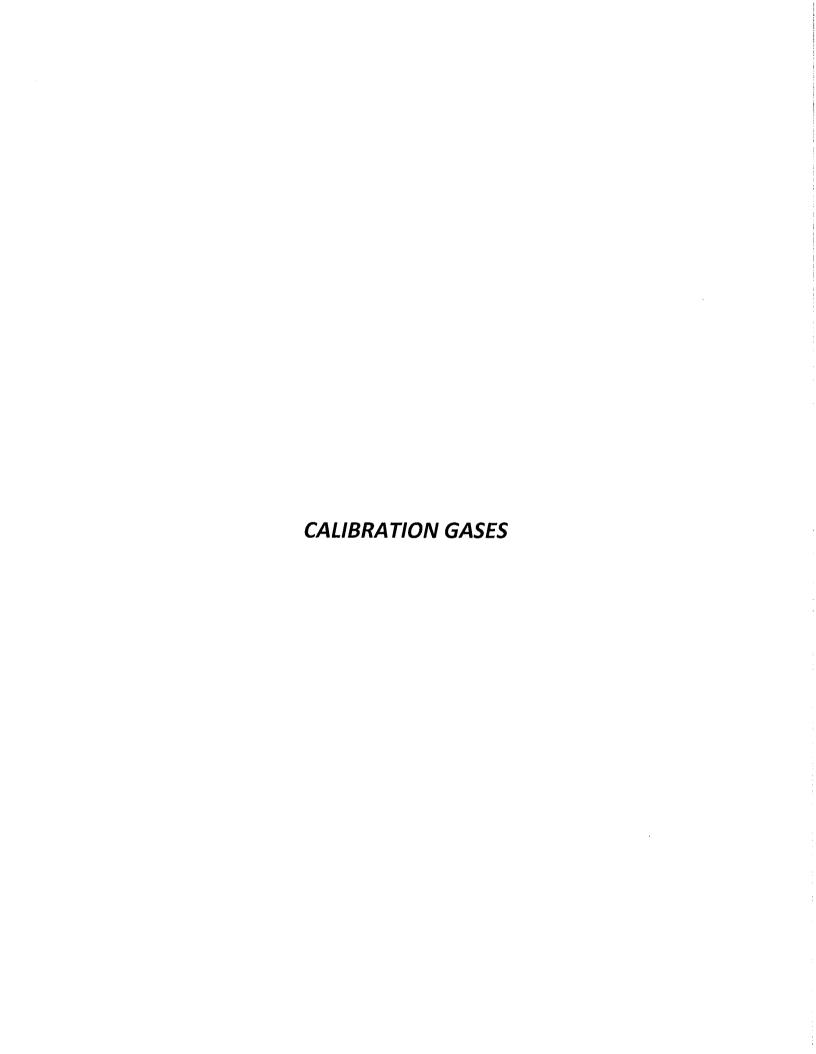
## Albertan

## Calibrator Performance Audit

Oxides Of Nitrogen

File No. 2014-260A

Company	Max	xam			Operator:	Limi	n Li	_
	Calibrator	MANAGE AND ADDRESS OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY			Flow M	easurement	Device:	
Make	Model	Environi	cs 6100		Make/			I/A
	Number .	47			Serial N			I/A
	ast Verification Date December 2013		•	Tempera		N/A		
	NO Cylinder S/N LL42475		•	Barometri	, ,		I/A	
NO/NOX Co		48.5/						
` Dil	ution Flow (s	,	*****		1			
Pt. #1		Pt. #2	5000	Pt. #3	5000			
	3as Flow (scc	•						
Pt. #1	08	Pt. #2	40	Pt. #3	20	Gas flows not a	vailable from o	lisplay.
Calibrator I	Flow (seem)	Calculated (	Conc.(ppm)	Ind	icated Conc.(p	pm)	% Difference	e vs Audit Gas
Dilution	Gas	NO	NOx	NO	NO ₂	NOx	NO	NOx
4980	0,0	0.000	0.000	0.000	0.000	0.000		± 10%
4993	0.0	0.799	0.799	0.840	-0.001	0.839	5%	5%
4994	0.0	0.399	0.399	0,420	-0.001	0.419	5%	5%
4991	0.0	0.200	0.200	0.211	0,000	0.211	5%	5%
1001		0.200			Average Percer		5%	5%
	NO Correlation= m (Slope)=	1.0000 1.0 <del>5</del> 11	≥ 0 0.90	<u>/HTS</u> ).990 )-1.10		NOx Correlation= m (Slope)=	1.0000	
b (Interce	ept % of FS)=	0.0400	± 3%	% F.S.	b (Interc	ept % of FS)=	0.0400	· .
Flow	O ₃ Conc	NO De	crease	NO	NO2	NOX	% Diff. V	's Audit gas
4993	0.000	0.0	00	0.823	-0.001	0,822	$NO_2$	% Diff. Limi
4993	0.480	0,5	30	0,293	0.530	0.823	0	± 10%
4993	0.240	0.2	69	0.554	0.269	0.823	0	± 10%
4993	0.090	0.0	96	0.727	0.097	0.824	0	± 10%
				Absolute A	Average Perce	nt Difference	0	± 10%
LINEAR	REGRESSIO	ON ANALY	SIS	у	r=mx+b (where x=	calculated concen	tration, y=indica	ted concentration;
	$NO_2$		LIN	<u>AITS</u>				
. (	Correlation=	1.0000	≥ 0	.995				
	m (Slope)=	1.0006	0.90	1.10				
b (Interc	ept % of FS)=	-0.0132	± 3%	% F.S.				
	AENV S	Standards				NO _x A	nalyzer	
	Audit Ca	alibrator				Make/Model	Te	co 42i
	Make/Model	Teco	1 <b>4</b> 6i		Serial/	AMU Number		J 1868
Serial/A	AMU Number			_		ılibration Date	***************************************	er 15, 2014
					Fu	il Scale (ppm)		1.0
C	OMMENTS:				A A LABORATA			
	Auditor:	Al C	lark		Date:	Decembe	r 17, 2014	
Operate	or Signature:	12,00	000	-		Mointyre Cent		<del></del>
Sporan	or premiumo.	El De La Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Constitución de la Cons	- Kent - a	-	Doomon.	Montgre Cent	, La, (O)(O)	



Form No. Version No.

F-GAS-002



# Calibration Gas Audit Single Component Cylinder Gas

File No. 2015-344CGA

_	Max	xam	Oper	ator's Name:	Lim	in Li	
Cylinder#:_	BLM002073	Concentration PPM:	49.5	Tolerance(%)	2	Certified By:	Air Liquide
Reference C	Calibrator a	nd Gas:		Flow Measu	rement	Device:	
M	Make/Model: R&R MFC 201			Make,	/Model:	Blos (	DC2
Seri	Serial Number: AMU 1690			Serial N	Tumber:	AMU ·	1659
Last Verific	cation Date:	March 31, 2015		Те	mp.°C:	22.5	С
	Gas Type:	SO2 Conc.	98.57		B.P.	690 m	mhg
Cylin	der Number:	CAL016720					
Reference A	Analyzer:			1			
M	lake/Model:	Teco 43C	. Serial/A	MU Number:	1623		
Instrument S	lettings:	Zero: 7.9	Span:	1.028 Range: 1.0		1.0	
Last Calibra	t Calibration: Date: Mar 31/15		C.F.	1.000 D	one By:	Al Ci	ark
Calibraton Dia	ws (scem)	Indicated	Gas Flow/	Concentration	on	Cylin	der
Dilution	Gas	Concentration (PPM)	Dilution Flow	Factor		Concen	tration
	Gas 0.0	0.000	Dilution Flow	Factor		Concen	tration
Dilution 5000 4976	0.0 82.6	0.000 0.801	0.01660	60.242		48	.3
5000 4976 4993	0.0 82.6 41.0	0.000 0.801 0.396	0.01660 0.00821	60.242 121.780		48.	3 2
Dilution 5000 4976	0.0 82.6	0.000 0.801	0.01660 0.00821 0.00406	60.242	ntration:	48. 48. 47.	3 2 6
Dilution 5000 4976 4993 4977  Previous S Per Meets Man <=5% Outside	0.0 82.6 41.0 20.2  Stated Concentreent variance ufacturer Tolor	0.000 0.801 0.396	0.01660 0.00821 0.00406 Avera	60.242 121.780 246.386	ntration:	48. 48. 47.	3 2 6
Dilution 5000 4976 4993 4977  Previous S Per Meets Man <=5% Outside	0.0 82.6 41.0 20.2  Stated Concentreent variance ufacturer Tolor	0.000 0.801 0.396 0.193  tration PPM: 49.5 from Stated: 3.0 ance. Use manufacturers state r Tolerance. Use manufacturer	0.01660 0.00821 0.00406 Avera	60.242 121.780 246.386 ge Cylinder Concer		48. 48. 47.	3 2 6

Form No. Version No. F-GAS-002 1.1



# Calibration Gas Audit Single Component Cylinder Gas

File No. 2014-251CGA

Company: _	Max	xam	Oper	ator's Name: Li	min Li
Cylinder#:	LL36837	Concentration PPM:	10.0	Tolerance(%) 2	Certified By: Alr Liquide
Reference C	Calibrator a	nd Gas:		Flow Measuremen	t Device:
M	ake/Model:	R&R MFC 201		Make/Model	Bios DC2
Seri	al Number:	AMU 1690		Serial Number	:AMU 1659
Last Verific	ation Date:	December 15, 2014	`	Temp,°C	:23.0 C
	-	H2S Conc.	20.43		. 702 mmhg
Cylin		CAL015106	•		
Reference A	_				
M	ake/Model:	Teco 45C	Serial/A	MU Number: 1624	_
Instrument S	ettings:	Zero: 6.4	Span:	1.160 Range	: 0.1
Last Calibra	tion:	Date:	C,F.	1.000 Done By	: Al Clark
Calibrator Flo	ows (seem) Gas	Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
5000	0.0	0,000			
5099	38.5	0.0754	0.00755	132,442	10,0
5092	18.0	0.0349	0,00353	282,889	9.9
5066	9.2	0.0178	0,00182 Avera	550.652 ge Cylinder Concentration	9,8
Per Meets Man <=5% Outsid	reent variance ufacturer Toler e Manufacture	atration PPM: 10.0  from Stated: 1.1  ance, Use manufacturers state r Tolerance, Use manufacturer oturer Tolerance, DO NOT Use	s concentration		
	Auditor:	Al Clark		Date: Decemb	per 16, 2014

Alberta.

## Calibration Gas Audit

Company	: Max	xxam		Operators na	me:	Limir	n Li	
Cylinder #:	:_BLM002073	Conc (PPM)	50.6/50.6	Tolerance (%)	2	Certified By:	Air Liq	uide
Reference	Calibrator a	and Gas:			Fle	ow Measurem	ent Device:	
Make	Model	Teco 1	1461		N	fake/Model	Bios E	)C2
Serial	Number	AMU 1	809		Se	rial Number	AMU 1	659
Last Verif		March 31		`		Temp.°C	22.5	
		NO		48,79		•	690 mi	
		CAL018					900 1111	9
	Analyzer: /Model	Teco -	<b>42</b> i			Serial/AMU	J Number:	1868
Instrument	Settings	Zero:	4.2	Sr	oan;	1.008	Range:	1.0
Last Calibr	ation:	Date:	Mar 31/15		C.F.	1.000	Done By:	Al Clark
Dilution	lows (sccm) Gas	Indicated Cor	NOX	Gas Flow/ Dilution Flow	C	Concentration Factor	Cylinder Cor NO	ncentration NOX
5000	0.0	0.000	0.000				$\geq \leq$	$\geq$
4976 4993	82.6 41.0	0.855	0.848	0.01660		60.242	51.5	51.1
4977	20.2	0.427 0.213	0,421 0,209	0.00821 0.00406		121.780 246.386	52.0 52.5	51,3
-1011	20.2	0.210	0.200	Average Cylin	der (		52.5 52.0	51,5 <b>51,3</b>
			<u>NO</u>			<u>NOx</u>		
Previous	Stated Concer	ntration PPM;	50.6			50.6		
P	ercent variance	e from Stated: _	2.8		_	1.4		
		olerances bas		only ted concentration		COMMENTS:		
•	! d - X # C	r Tolerance, Use	manufactur	ers concentration	X	- Contains 49,5 ppn	n SO2 in cylinder	
Meets Ma	ide Manufacture			Jan.				
Meets Ma		cturer Tolerance	. <u>DO NOT I</u>	JSE this cylinder	- 1			
Meets Ma		cturer Tolerance Al Cla		- L	ate:	March 31	1, 2015	<del></del>



Antolianas irt 0501-34th Sheet Edmonton AB T68 2K5 Tel 783-449-0776 

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> Marko dario (2124885)

Product Levench No. Product Bort für

7582 4 OBS 02 NTDN=::(1):24:25X#1

### CERTIFICATE OF ANALYSIS Primari Standard

Metiliet. Concentration 601.4ppm 202ppm Ballinge

Angrytical *Arialytica* Agguillia Franciple i i si ret etta rei

Analyikai Insilumente

Mettler-Toledo Analytical Balance-ID2sxIUSA---Hewlett-Packard (Agilent)-5890---GC-FID

Cylinder Style Cylinder Practure @70F Cylinder Volume. Valve Outlet Connection

Let', in the land of the

8200 celo 2200 celo 220 fis

CCAJU 11.33874

Elling Melliga Date of File Expiration Date

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# APPENDIX III CHAIN OF CUSTODY



Client: Lakeland Industry & Community Association

## Maxxam Analytics - Air Services Group Project Chain of Custody

Project #: 2833-2015-12-30- C

Site: Maskwa	a Site	Contact: Mike Bisaga				
QA Check Complete	_h/6_	Date	19-Jan-16			
QA Check Review		Date				
Report Complete	E. Tangang	Date	20-Jan-16			
Report Reviewed	Miles	Date	19-Jan-16			
Report Shipped		Date				
Notes						



#### AMBIENT AIR MONITORING MONTHLY DATA REPORT

## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION ST. LINA SITE

JOB #:2833-2015-12-31- C

**DECEMBER 2015** 

Prepared for:

#### **LAKELAND INDUSTRY & COMMUNITY ASSOCIATION**

BOX 8237, 5107W - 50 STREET BONNYVILLE, ALBERTA T9N 2J5

**Attention: MIKE BISAGA** 

DATE:

January 21, 2016

Prepared by:

Ernestine Tangang, Ph.D.

Team Leader, Source Testing, Maxxam Analytics

Reviewed by:

Lily Lin, B.Sc.

Senior Project Manager, Air Services, Maxxam Analytics



#### **SUMMARY**

In DECEMBER 2015, the Air Services Group of Maxxam Analytics conducted an ambient air monitoring program on the St. Lina Site at Lakeland Industry & Community Association, near Bonnyville, Alberta. Sampling was carried out to determine the concentrations of non-compliance parameters as requested by the Project Coordinator.

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

H2S: The Maxxam-supplied API 100A, S/N 375 analyzer was replaced by the LICA-owned API 101E, S/N: 509, analyzer which had been repaired at the Maxxam shop on December 11.

The summary of results is presented on the following pages.

Any deviations or modifications made to the sampling or analytical methods are outlined in Section 1.0 Discussion. On this basis, Maxxam is issuing this completed report to Lakeland Industry & Community Association, St. Lina Site.

Should you have any questions concerning the results or if we can be of further assistance, please contact us at 403-219-3689 or toll-free at 1-800-386-7247.



## **Monthly Continuous Data Summary**

Lakeland Indus	stry & C	ommun	ity Asso	ociation				N	IAXIMUM V	ALUES			
St. Lina Site								1-HOUR			24-H0	OUR	OPERATIONAL
PARAMETER	OBJEC	CTIVES 24-HR	EXCEE!	DENCES 24-HR	MONTHLY AVERAGE	READING	DAY	HOUR	WIND SPEED (KPH)	WIND DIRECTION (DEGREES)	READING	DAY	(%)
SO2 (PPB)	172	48	0	0	0	3	1	0	10.8	WSW	1.0	2	100.0
H2S (PPB)	10	3	0	0	0	1	VAR	VAR	VAR	VAR	0.7	9, 23	100.0
THC (PPM)	-		-	-	2.2	4.5	23	VAR	VAR	VAR	3.7	23	100.0
NO2 (PPB)	159	-	0	-	5.3	39	1	0	10.8	wsw	21.9	1	100.0
NO (PPB)	-	-	-	-	1.1	28.5	23	11	0.7	NNE	14.4	23	100.0
NOX (PPB)	-	-	-	-	6.4	50.5	1	0	10.8	wsw	29.3	23	100.0
O3 (PPB)	82	-	0	-	19	40	31	VAR	VAR	VAR	33.2	16	100.0
PM2.5 (UG/M3)	-	30	-	0	8.6	33.0	22	10	4.5	SW	24.7	22	99.9
RELATIVE HUMIDITY (%)	-	-	-	-	75.2	88	9, 10	VAR	VAR	VAR	87.2	9	100.0
BAROMETRIC PRESSURE (MILIBAR)	-	-		-	920	939	26	11	3.6	S	937	26	100.0
AMBIENT TEMPERATURE (DEG C)	-			: -	-9.1	4.6	4	14	8.9	WNW	0.8	4	100.0
PRECIPITATION (MM)	-	-	-	-	0,0	0.8	18	20	16.9	ENE	0.1	18	99.9
VECTOR WS (KPH)	-	-	_	-	8.9	24.4	31	13	-	wsw	16.4	31	100.0
VECTOR WD (DEG)	-	-	-	-	S	-	-	-	-	-	-	-	100.0

NA-NOT AVAILABLE VAR-VARIOUS



## **Exceedence Summary Report**

SO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month

SO₂ 24- Hour Exceedences

No Exceedences Recorded During the Month

 $\mbox{H}_2\mbox{S}\ \ \mbox{1- Hour Exceedences}$  No Exceedences Recorded During the Month

H₂S 24- Hour Exceedences No Exceedences Recorded During the Month

NO₂ 1- Hour Exceedences

No Exceedences Recorded During the Month



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	Total Hydrocarbon
	Oxides of Nitrogen
	Nitric Oxides
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	Particulate Matter 2.5
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	Meteorological System Check Calibrators
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#### 1.0 Discussion

This monthly report consists of data for parameters SO2, H2S, THC, NOx, NO, NO2, O3, PM2.5, WS, WD, STDWD, RH, BP, Precipitation and Ambient Temperature.

Sample filters for all continuous air monitors are changed before the calibration is started. The sample manifold is cleaned during the site visit on a monthly basis.

Control checks, consisting of zero and span of the analyzer are conducted on a daily basis on all continuous air monitors. In place of the air sample, zero air (from scrubbed air or gas cylinder) is used for zero checks and a known concentration of the pollutant being analyzed is used for span checks. These checks are controlled by automatic timers and valves. The total zero span cycle is completed within an hour, the commencement of the zero span cycle is at the beginning of the hour.

Multipoint calibration is done a minimum of once a month for each continuous air monitor. In addition calibration is required under the following conditions: 1) within three days after the initial start-up and stabilization of a newly installed instrument, 2) prior to shut-down or moving of an instrument which has been working to specification, and 3) when major repair has been done on the instrument.

The AMD requires each instrument and accompanying data recording system to be operational 90% of the time (minimum), on a monthly basis.

All sampling, analysis, and QA/QC for this project was performed by Maxxam Analytics and complies with the Alberta Air Monitoring Directive.

Hourly/minute data have been reviewed based on daily zero/span results and multi-points calibration results. Data may be considered as invalid if a zero-corrected span check in excess of +/- 10% of the span concentration (established by the previous multi-point calibration) is encountered and/or significant differences in the calibration factor (greater than 15%).

Hourly data is corrected using daily zero information.



#### **SULPHUR DIOXIDE (SO2)**

The analyzer was working well throughout the month.

A shutdown calibration was performed prior to calibrating the UV lamp of the analyzer and completing a factory calibration on December 10. One point check was performed on December 10 after the UV lamp and factory calibrations were performed. The full post-repair calibration was performed on December 11.

#### **HYDROGEN SULPHIDE (H2S)**

A shutdown calibration was performed on Maxxam supplied API 100A, S/N: 375, on December 10. Following the shutdown calibration, the Maxxam-supplied API 100A, analyzer was replaced by the LICA-owned API 101E, S/N: 509, analyzer which had been repaired at the Maxxam shop. The installation calibration was performed on the API 100E analyzer on the same day. The analyzer spanned low on December 24. An as found points check was performed on December 30 to ensure the analyzer's functionality, and the result was good. No data was discarded due to this issue.

#### TOTAL HYDROCARBONS (THC), METHANE (CH4), and NON-METHANE HYDROCARBONS (NMHC)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on December 11.

#### **NITROGEN DIOXIDE (NO2)**

The analyzer was working well throughout the month.

The routine monthly calibration was performed on December 10. The calibration was repeated on December 11, in order to correct the zero drift.

#### OZONE (O3)

The analyzer was working well throughout the month.

The routine monthly calibration was performed on December 17.

#### PARTICULATE MATTER 2.5 (LESS THAN 2.5 MICRONS) (PM2.5)

Two routine audits were performed this month: one was completed on December 11, and the other audit was performed on December 24. The flows were calibrated on December 24. The FDMS filter was replaced during the audits. One hour of data was invalidated as the data were below –3 ug/m3 this month.

#### WIND SPEED (WS), WIND DIRECTION (WD) and STANDARD DEVIATION WIND DIRECTION (STDWD)

The wind system is reported as vector wind speed and vector wind direction. The wind direction data included in this report represents where the wind was coming from.

The wind system was working well throughout the month.



#### **RELATIVE HUMIDITY (RH)**

The humidity sensor was working well throughout the month.

#### **BAROMETRIC PRESSURE (BP)**

The pressure sensor was working well throughout the month.

#### **PRECIPITATION**

Both the rain gauge system and heating system were working well throughout the month. Both the rain gauge system and heating system were checked on December 11. The check result is included in this report.

#### **AMBIENT TEMPERATURE (TPX)**

The temperature sensor was working well throughout the month.



#### 2.0 Project Personnel

Mike Bisaga was the contact for Lakeland Industry & Community Association, and the Maxxam field sampling personnel was Alexander Yakupov.

#### 3.0 Plant Monthly Required AMD Summary

All data collected this month were within the objectives outlined in the AMD1989 and AMD2006.

The operational uptime for all analyzers and meteorological system were above the 90% requirement.

#### 4.0 Calculations and Results

All calculations and reporting of results follow the method described in the Air Monitoring Directive, 1989, and 2006 Amendments to the Air Monitoring Directive, 1989 (AMD 2006).



#### 5.0 Methods and Procedures

The following methods and procedures were used to complete the test program:

Maxxam AIR SOP-00209: Ambient H2S Monitoring

Maxxam AIR SOP-00211: Ambient SO2 Monitoring

Maxxam AIR SOP-00212: Ambient O3 Monitoring

Maxxam AIR SOP-00213: Ambient NO/NO2/NOx Monitoring

Maxxam AIR SOP-00214: Ambient Hydrocarbon (THC) Monitoring

Maxxam AIR SOP-00215: Teom Operation

Maxxam AIR SOP-00242: Precipitation Collector Installation / Maintenance

There were no deviations from the prescribed methods.

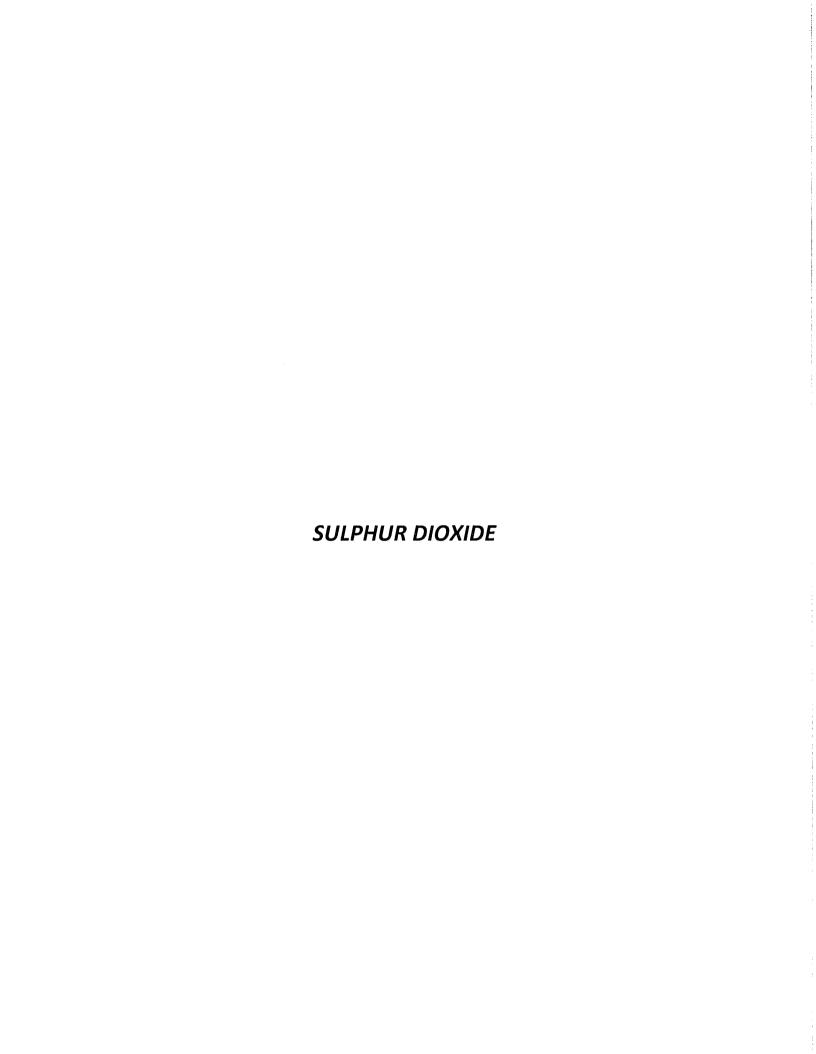
The following instruments were used to perform the test program:

Precipitation - Met One Unit

Datalogger - ESC 8832

Sulphur Dioxide - API 100E UV Flourescent Analyzer
Hydrogen Sulphide - API 100A and API 101E UV Flourescent Analyzers
Total Hydrocarbons - Thermo 51C FID Analyzer
Oxides of Nitrogen - API 200E Chemiluminescent Analyzer
Ozone - Thermo 49i Photometric Analyzer
Particulate Matter (PM2.5) - R&P 1405F Teom Unit
Wind System - Met One Unit
Relative Humidity - Met One Unit
Barometric Pressure - Met One Unit
Ambient Temperature - Met One Unit

# APPENDIX I CONTINUOUS MONITORING DATA RESULTS



JOB # 2833-2015-12-31- C



# SULPHUR DIOXIDE (SO2) hourly averages in ppb

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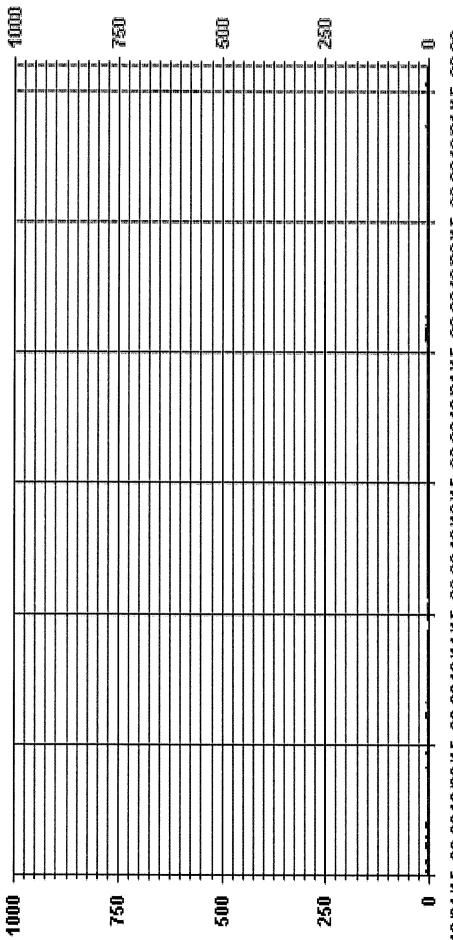
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			Σ	MONTHLY SUMMARY				
NUMBER OF 1"HR EXCEEDENCES. NUMBER OF 24"HR EXCEEDENCES.			0.0					
NUMBER OF NON-ZERO READINGS:			74					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		3 1.0	PPB PPB	PPB @ HOUR(S) PPB	0	ON DAY(S) ON DAY(S) VAR-VARIOUS	4 77	
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	SS 51	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	PTIME		744 100.0	HRS

PPB

STANDARD DEVIATION:

Of Hour Averages



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502



St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

SULPHUR DIOXIDE MAX instantaneous maximum in ppb

MST

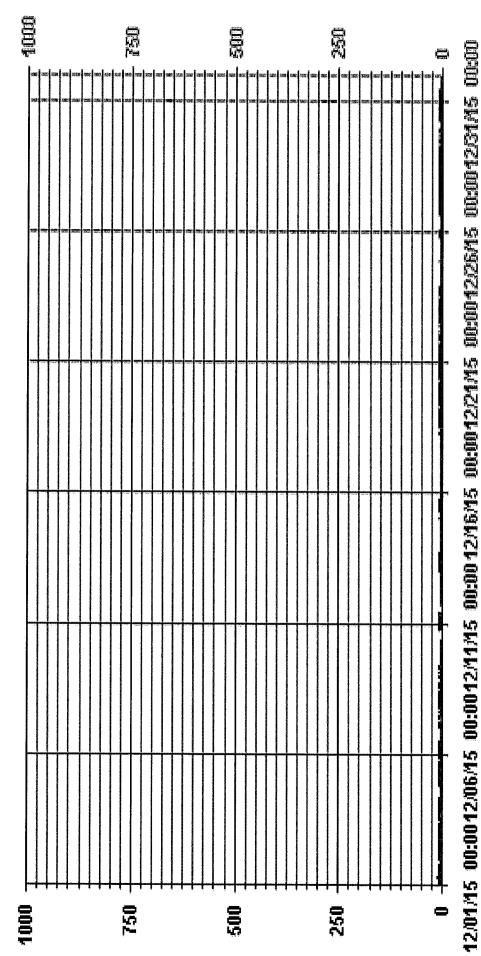
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NUMBER OF NON-ZERO READINGS:			472							
MAXIMUM INSTANTANEOUS VALUE:			7	PPB	@ HOUR(S)	_	7	ON DAY(S)		
•							VAR-VARIOUS	snots		
IZS CALIBRATION TIME: MONTHLY CALBRATION TIME: STANDARD DEVIATION:	36 16 0.79	HRS		OPERATIC	OPERATIONAL TIME:				743 HRS	HRS

Of Hour Averages



11 1.

 ${\tt LICA31}$  SO2_ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : SO2 Units : PPB

Wind Parameter : WDR Instrument Height : 10 Meters

cs: PPB

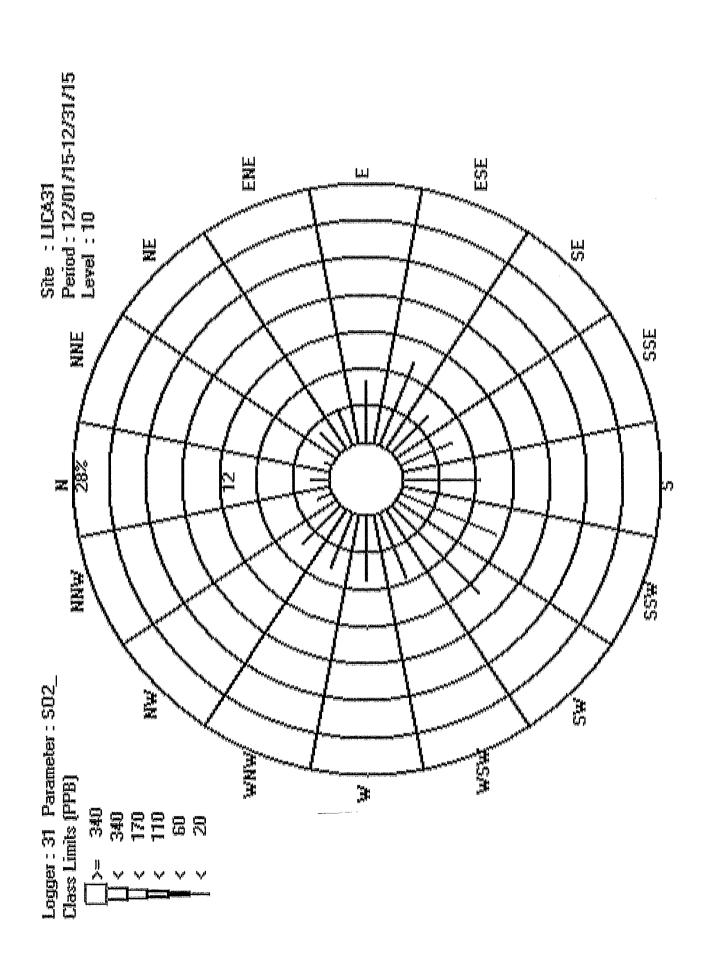
Freq	00.001	00.	00.	00.	00.	00.	
NNN	1.72	00.	00.	00.	00.	00.	1.72
WM	5.90	00.	00.	00.	00.	00.	5.90
WNW	6.34	00.	00.	00.	00.	00.	6.34
Œ	6.91	00.	00.	00.	00.	00.	6.91
WSW	7.49	00.	00.	00.	00.	00.	7.49
SW	13.40	00.	00.	00.	00.	00.	13.40
SSW	11.38	00.	.00	00.	00.	00.	11,38
S	8.50	00.	00.	00.	00.	00.	8.50
SSE	6.19	00.	00.	00.	00.	00.	6.19
SE	5.76	00.	00-	00.	00-	00.	5.76
ESE	9.62	00.	00.	00.	00.	00.	9.65
ы	6.62	00.	.00	00.	00.	0,	6.62
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NNE	.86	00,	00.	00.	00.	00.	.86
×	2.01	00.	00.	00.	00.	00.	2.01
Limit	20	9	110	170	340	340	Totals
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	N NNE NE ENE E ESE SE SSE S SSW THSW W NNW NNW	N NNE NE ENE E ESE SE SSE S SSW SW WSW W NNW NW 2.01 .86 3.02 4.17 6.62 9.65 5.76 6.19 8.50 11.38 13.40 7.49 6.91 6.34 5.90 1.72 10	N NNE NNE ENE E ESE SE SE SE SE SE NNE NN	N   NNE   NE   ENE   ENE   SE   SSE   SSF   SSF   NF   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW   NFW	N         NNE         EXE         EXE         SSE         SSE         SSE         SSE         SSE         NNF         NNF	N. N. N. N. N. N. N. N. N. N. N. N. N. N	Limit         N         NM         EN         EN         EN         SSF         SSF         SSF         SSF         NM         <

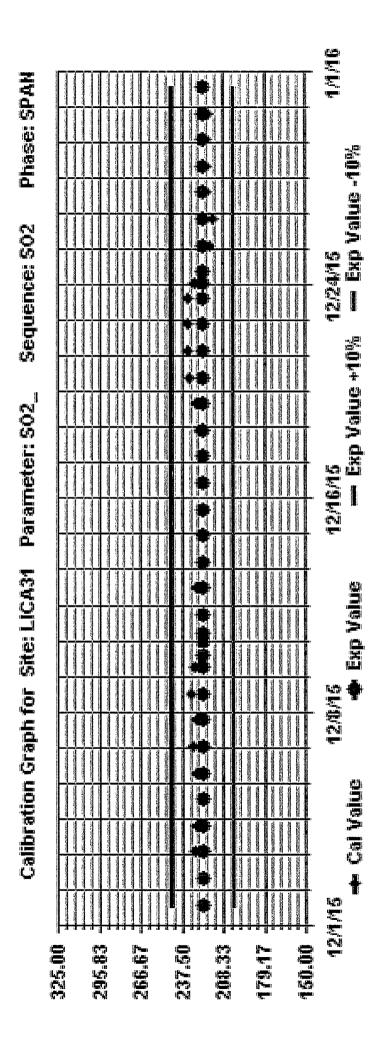
Calm : .00 % Total # Operational Hours : 694 Distribution By Samples

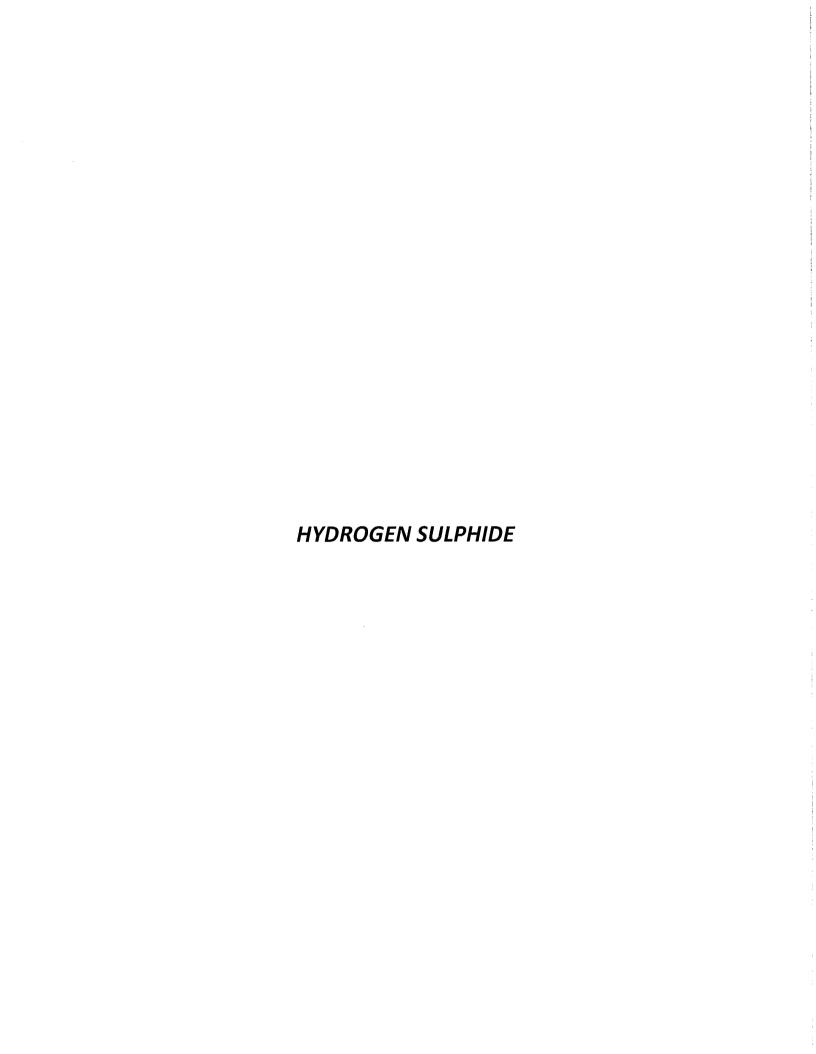
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NW	41						41
WNW	44						44
Œ	48						48
WSW	52						52
SW	93						66
SSW	42						79
w	59						59
SSE	43						43
SE	40						40
ESE	29						29
Þ	46						46
ENE	29						58
Ä	21						21
NNE	ω						9
z	14						14
Limit	20	09	110	170	340	340	Totals
	٧	٧	٧	٧	٧	X	

Calm : .00 %







### St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

## HYDROGEN SULPHIDE (H2S) hourly averages in ppb

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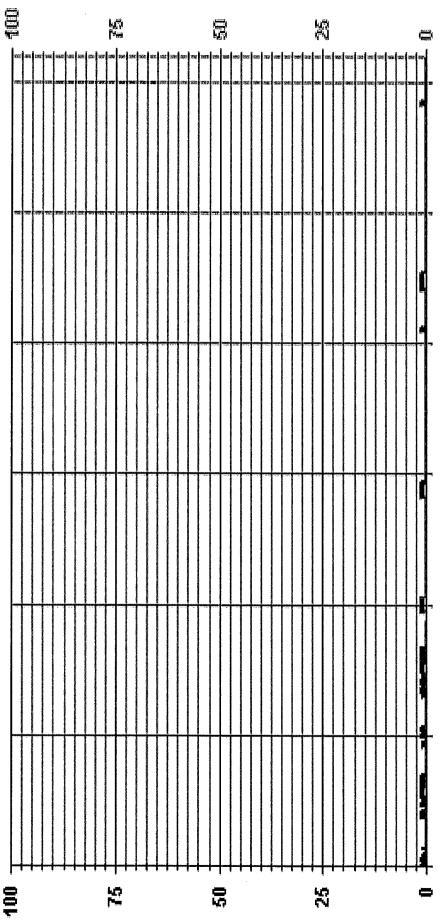
HOUR AVERAGES FOR DECEMBER 2015	HOUR AVERAGES FOR DECEMBER.	V.CHECK X. "MACHINE MALFUNCTION O. "OPERATOR ERROR X. "COLLECTION ERROR I HOUR AVERAGES FOR DECEMBER 2015
24 HOUR AVERAGES FOR DECEMBER	- OUI FOR REPAIR 24 HOUR AVERAGES FOR DECEMBER	DAINZERO/SPANICHECK X POWER PAILURE O - OUT FOR REPAIR X.
24 HOUR AY	24 HOUR AN	P. DAINZEROSPANCHECK - POWER FAILURE - OUT FOR REPAIR 24 HOUR A

### OBJECTIVE LIMIT:

3 PPB	
24-HR	
ALBERTA ENVIRONMENT: C.HR	
ALBERTA E	

NUMBER OF 24-HR EXCEEDENCES: NUMBER OF 24-HR EXCEEDENCES	S: ES:		0,0					
NUMBER OF NON-ZERO READINGS:	igs:		116					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		1 0.7	PPB PPB	PPB @ HOUR(S) PPB	VAR	ON DAY(S) ON DAY(S) VAR-VARIOUS	VAR 9, 2	AR 9, 23
IZS CALIBRATION TIME: MONTHLY CAUBRATION TIME:	36 9	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	IME: v uptime:		744 100.0	HRS %
STANDARD DEVIATION:	0.37			MONTH! Y AVERAGE:	AGE:		o	PPB

of Hour Averages



12/01/115 00:0012/06/15 00:0012/11/115 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/31/15 00:00

- LICASI H2S_ PPB



St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

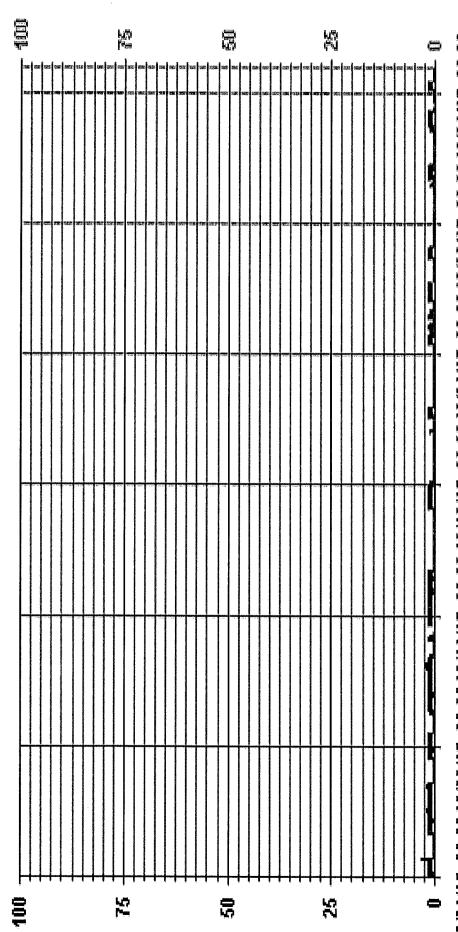
# HYDROGEN SULPHIDE MAX instantaneous maximum in ppb

œ	AVG. RDGS.		0.3 24					0.6 24			0.6 24			0.0 24											0.2 24				0.2 24			0.3 24	
	MAX	•	1	2	2	-	-	н	ч	7	7			0											_	_	0	_	_	_	_	_	
	0:00 W						, ,	,,,																	•	•	Ū	•	•		•	•	l
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1999	20:00 21				0		0			0				0									0		1		0			1			_
	19:00 20	s			0	1	0							0																0			,
0.00	18:00 19	~	S	1	-	1	_	-	-					0																			7
1988	17:00: 18	Π,	0	S	0	1	0	. ⊢																									<b>+</b>
200	15:00 IV			-		1		1																						7			
12273	5:00 36		0	2	1	s	0	1	1	0				0																			,
	14:007: 15	1	0		1	0	S	4	4	0																				s			
100	13:00 24							s																									
1:00-1	200							₽																									
2.00	1.00	₽	0	1	1	0	7	1						0																			۰
3:00 I	TOO	1	0	<b>+</b>	1	0	1	0	1	1	s	7	1	0	0	7	0	0	0	0	0	0	0	7	0	0	s	0	0	0	0	1	
	00.6	ч	0	7		0	1	1	1	1				0																			l
8 00	3	₽	0	1	1	0	1	0	1	1	0			0																			l
000	2007	T.	0	1	1	0	1	0	1	1	0	7	1	s	0	7	0	0	0	0	0	0	0	<b>+</b>	0	0	0	0	0	0	1	1	,
3:00 4:00 5:00 6	0.000	₽	0	1	1	0	1	0	7	7	0	<b>-</b>	7	0	S	Н	0	0	0	0	0	0	0	<b>.</b>	0	0	0	0	7	0	1	1	,
1.00	200	Н	0	0	1	0	1	0	1	7	1	1	7	0	0	S	0	0	0	0	0	0	0	1	0	0	0	0	7	0	7	1	2
3:00	00.4	0	0	1	1	0	7	0	7	7	7		7	0	0	0	S	0	0	0	0	0	1	7	0	0	0	0	₽	0	7	0	2
2:00	2.00	1	0	1	1	0	1	0	1	1	0	7	7	0	0	0	1	S	<b>-</b>	0	0	0	7	7	0	<b>.</b>	0	0	0	0	7	0	,
1:00	2.00	1	0	<b>~</b> 1	7	0	-	0	7	2	0	7	0	0	0	0	0	0	S	0	0	0	0	0	0	-	0	0	7	0	7	0	2
		1	0	T	1	0	Т	0	0	7	0	1	1	0	0	0	1	0	0	s	0	0	0	0	0	-	0	0	₽	0	7	0	,
HOUR START 0:00	4 🗔	4	7	m	4	S	9	2	œ	o.	9	H	7	ግ	41	13	16	17	18	19	50	21	22	23	24	25	26	22	28	59	30	31	HOLIRIY MAX

† 5	
t S	ICE.
t o	ASSURAN MALFUN R ERROR ON ERRO
† 5	QUALITY AS RECOVERY MACHINE N OPERATOR I
STATUS FLAG CODES	owxox
E. S. FLAG	
STATUS	
3	N CHEC
Š	UBRATION MNTENANCE ILYZERÓSPA WER FAILURE IT FOR REPAIR
<u></u>	CALIBB MAINT DAILY POWER
T COURT AND I	C Y S P G

NUMBER OF NON-ZERO READINGS:			275								
MAXIMUM INSTANTANEOUS VALUE:			m	РРВ	@ HOUR(S)	(S)	17	ON DAY(S)		H	
							VAR-VARIOUS	rions			
IZS CALIBRATION TIME:	38	HRS SH		OPERATIONAL TIME:	NALTIM	ü			743	HRS	
MONTHLY CALIBRATION TIME:	10	HS.									_
STANDARD DEVIATION:	0.52										
									l		

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/31/15 00:00

HZSMRK

LICA31 H2S / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : H2S Units : PPB

Wind Parameter : WDR Instrument Height : 10 Meters

Direction

Ŋ'	00	00.	00.	00	
Freq	100.00	Ÿ.	Ÿ,	Ÿ.	
NNW	1.71	.00	.00	00.	1.71
NW	6.00	00.	.00	00.	6.00
WNW	6.29	00.	00.	00.	6.29
м	6.58	00.	00.	00.	6.58
WSW	7.43	00.	00.	00.	7.43
SW	13.30	00.	00.	00.	13.30
SSW	11.15	00.	00.	00.	11.15
w	8.15	00.	00.	00.	8.15
SSE	6.15	00.	00.	.00	6.15
SE	5.72	00.	00.	00.	5.72
ESE	10.58	00.	00.	.00	10.58
ĽÌ	6.72	00.	00.	00.	6.72
ENE	4.14	00.	00.	00.	4.14
Ħ	3.00	00.	00	00.	3.00
NNE	.85	00.	00.	00.	.85
z	2.14	00.	00.	00.	2.14
Limit	m	10	20	20	Totals

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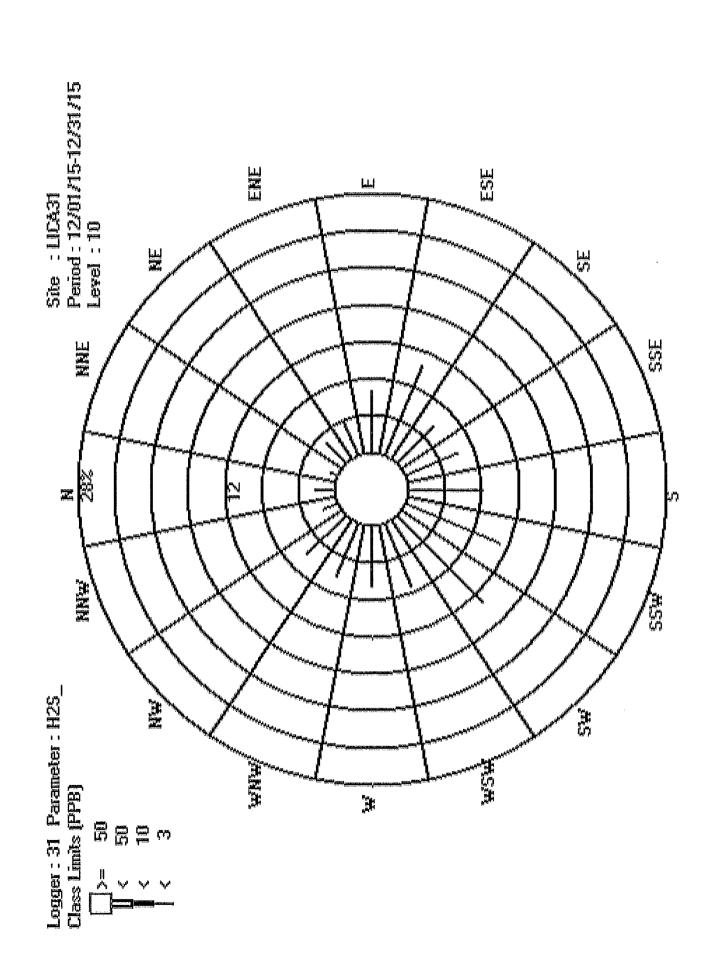
٧

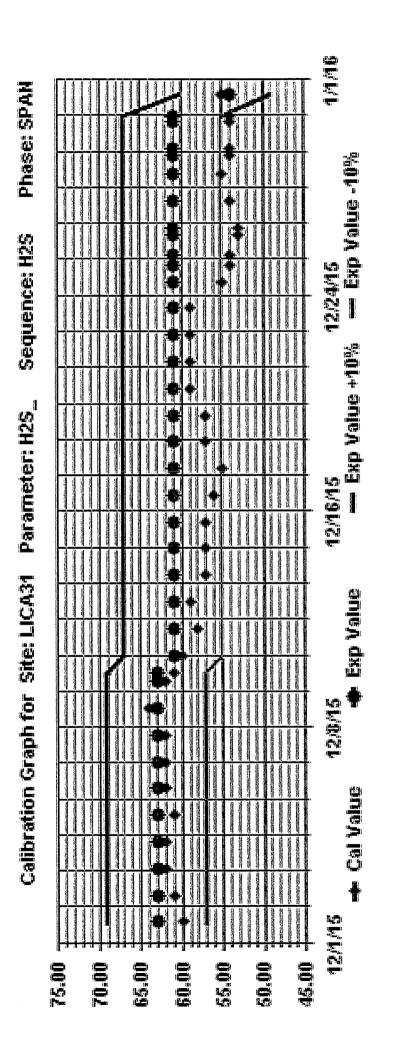
Total # Operational Hours : 699 Calm : .00 %

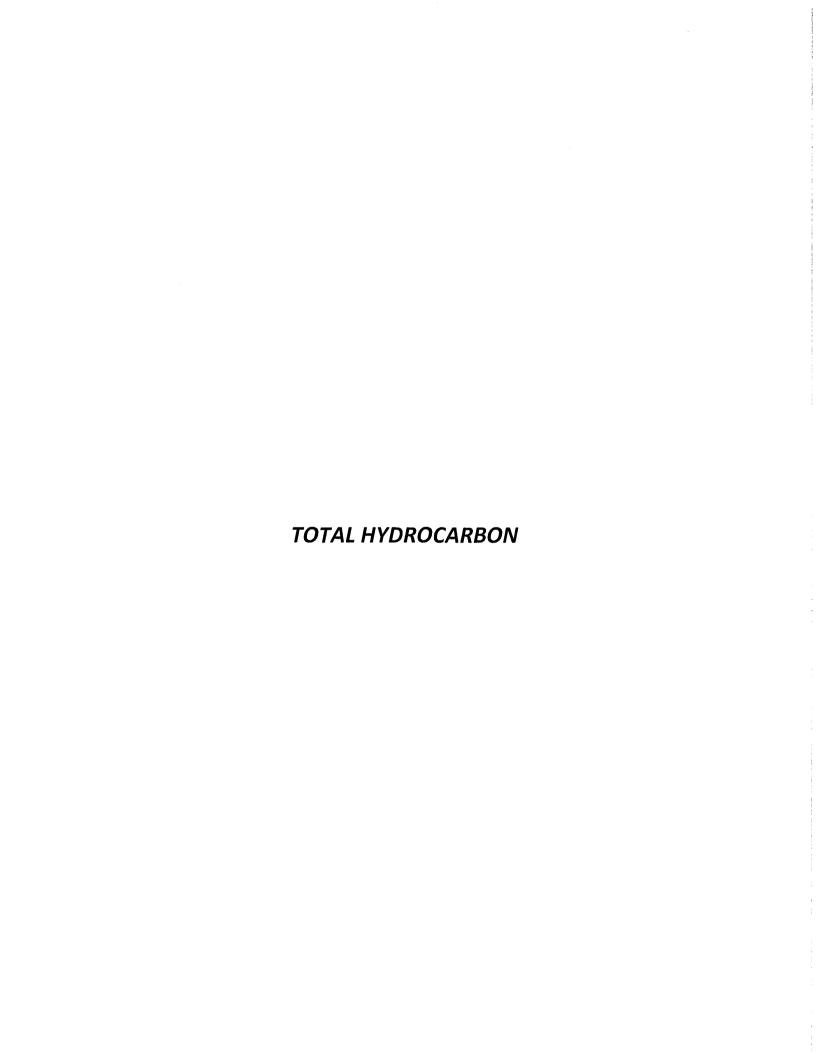
Distribution By Samples

Freq 669

Calm : .00 %









MST

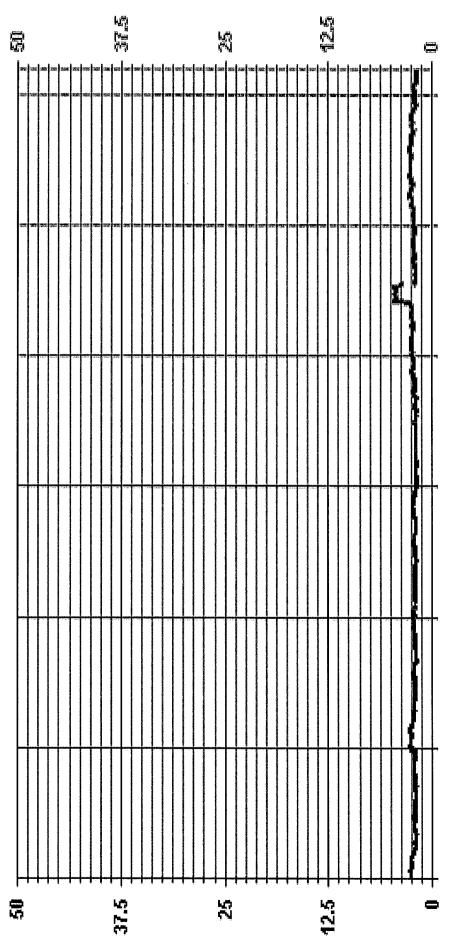
## TOTAL HYDROCARBONS (THC) hourly averages in ppm

#OUREND 1:00 2:00 3:00 4:00 5:00 HOUREND 5:00 6:00 DAY				00 - 3:00		0.0	12:00	数额	14:00 15:00 15:00 16:00	크린	17:00:	19:00	20:00-2	20:00 22	22:00 22	2, 2	_ [	24-HOUR AVG.	RDGS.
2.5 2.5 2.5 2.6 2.6	2.6 2.6	5.6			2.5	2.4	2.4		•		2.6	s	2.6	•			2.6	2.5	24
2.0 1.9 1.9	1.9 2.0	2.0	0 2.2		2.1	2.0	1.9	1.9 2.	2.0 1.9		S	1.9	20			2.1 2.1	23	20	24
2.1 2.1 2.1		.0 2.1 2.3	1 2.3		2.3	2.2	2.1	•	•		2.0	2.1	2.1	2.1 2			2.3	2.1	24
		.9 1.9 2.0	9 2.0		2.1	2.0	2.0	1.9 2.	_	1.9	1.9	2.0	2.1	2.1 2	2.0	2.0 2.0	2.1	2.0	24
2.1 2.1	2.1 2.1 2.1 2.1	.1 2.1 2.1	1 2.1		2.1	2.1	2.1		2.0	2.0	2.0	2.0	1.9	1.9			2.4	2.1	54
2.6 2.6 2.5 2.5 2.5 2.5 2.6	2.5 2.5	2.5	5 2.6		2.5	2.5	2.4	<b>S</b> 2.	2.5 2.6	5.6	2.7	5.6	2.6	2.6 2	2.5	2.3 2.3	2.7	2.5	54
2.2 2.2 2.1 2.1 2.2 2.3 2.3	2.2 2.3	2.3	3 2.3		2.3	2.1	s	2.1 2.1	1 2.1	2.1	2.1	2.1	2.1	2.1 2	2.1	2.0 2.0	2.3	2.2	24
2.0 2.0	2.0 2.0	2.0	0 2.0		2.1	s	2.0			2.0	2.2	2.2	2.2	2.3 2			2.3	2.1	54
2.1 2.1 2.1 2.0 1.9 1.8 1.8	1.9	1.8	3 1.8		s	1,9	1.9		1.9 1.9	1.9	1.9	1.9	1.9	2.0 2	2.0		2.1	2.0	54
2.0 2.0 2.0 2.0 2.0 5	2.0	2.0	S C		2.1	2.1	2.1	_	1 2.2	2.2	2.1	2.1	2.2	2.2 2.2	2.1 2	2.1 2.2	2.2	2.1	24
2.2 2.2 2.2	S	S			2.1	U	J			1.9	2.1	2.0	2.0	2.0 2	2.0	2.0 2.0	2.2	2.1	24
2.0 2.0	\$ 2.0	2.0			2.0	2.0	2.0			2.1	2.1	2.1	2.0	2.0 2			2.1	2.0	24
1.9 1.9 1.8 <b>S</b> 2.0 2.1 2.1	2.0 2.1	2.1	1 2.1		2.1	2.0	2.0	2.0 2.0		2.0	2.0	2.1	2.1	2.2 2.2			2.3	2.0	24
2.2	1.9 1.9	1.9	9 1.9		1.9	1.9	1.9			1.9	1.9	1.9	2.0	2.0 2			2.2	2.0	54
2.2 \$ 2.3 2.3 2.3 2.3 2.3	2.3 2.3	2.3	3 2.3		2.2	2.2	2.2	2.2 2.2		2.2	2.0	2.0	2.0	2.0 1			2.3	2.2	54
	1.8 1.8	1.8	3 1.8		1.9	1.9	1.9	1.9 1.	1.9 1.9	1.9	1.9	1.9	1.9	1.8		1.9 1.9	1.9	13	24
1.9 1.9 1.9 1.9 1.9 1.9	1.9 1.9	1.9	9 1.9		1.9	1.9	13	1.9		179	13	1.9	1.9	1.9	1.9		1.9	1.9	24
	1.9	1.9	9 1.9		2.0	2.0	2.0				1.9	2.0	1.9	1.9		1.8 1.8	2.0	1.9	54
2.0 2.0 2.0 1.9 1.9 1.9 2.0	61	61	9 2.0		1.9	2.0	2.0	2.1 2.1		2.2	2.0	5.0	2.0	2.0			2.2	2.0	74
2.0 2.1 2.3 2.2 2.2 2.3 2.3	2.2	2.2	2 2.3		2.5	2.4	2.4	2.2 2.2	2 2.2	2.1	2.1	2.1	2.1		2.1		2.5	2.2	74
2.4 2.3 2.4 2.4 2.5 2.5 2.5	2.5 2.5	2.5	5 2.5		2.4	2.5	2.4	2.4 2.4	4 2.4	2.4	2.4	2.4	2.3	2.3		2.3 2.3	2.5	2.4	54
2.3 2.5 2.4 2.3 2.2 2.3 2.3	2.2 2.3	2.3	3 2.3	~~	2.3	2.4	2.4	2.4 2.4	4 2.4	2.5	2.5	2.5	2.4	<b>S</b> 2	2.5	2.4 2.5	2.5	2.4	24
4.4 4.4 4.2 4.2 4.3 4.4	4.2 4.3	4.3	3 4.4		4.4	4.5	4.4	4.3 4.5	Ī	4.5	4.1	3.7	s	2.1 2	2.0 2	2.0 2.0	4.5	3.7	24
	1.9 1.9	1.9	9 2.0		2.0	2.0	2.0				2.2	S	2.0	2.0 2	2.0 2	2.0 2.1	2.2	2.0	24
2.1 2.1 2.2 2.2 2.2 2.2 2.2	2.2 2.2	2.2	2 2.2		2.2	2.2	2.2			.,	s	2.0	2.0				2.2	2.1	74
2.1 2.1 2.1 2.1 2.1	2.1 2.1	2.1	1 2.1		2.2	2.2	2.2		2.1 2.2		2.2	2.3	2.4				2.5	2.2	24
2.5 2.5	2.5 2.5	2.5	5 2.5		2.4	2.4	2.4	2.3 2.		2.4	2.4	2.5	2.6	2.5 2	2.6 2	2.6 2.6	2.8	2.5	74
	2.5 2.5	2.5	5 2.5		2.5	2.5	2.5			2.5	2.4	2.4	2.5	2.6 2	9.	2.6 2.6	5.6	2.5	24
25 2.4 2.4 2.4 2.4 2.4 2.4	2.4 2.4	2.4	1 2.4		2.5	2.4	2.3	<b>S</b> 2.2	2 2.2	2.1	2.2	2.3	2.3	2.4 2	.4	2.4 2.3	2.6	2.4	24
2.4 2.4	2.4 2.3	2.3	3 2.2		2.1	2.1	s	2.0 2.		2.0	2.0	2.0	2.0	2.0 2	-0	.,	2.4	2.2	54
2.0 2.1 2.1 2.1 2.1 2.2 3		1 2.2	2	7.7	2.1	S	1.9		1.8 1.8	1.8	1.8	1.8	1.8	1.8 1			2.2	1.9	74
4.4 4.2 4.2 4.3	4.2 4.3	4.3		l et	4.4	4.5	4.4	4.3 4.5	5 4.5	4.5	4.1	3.7	2.6	2.6 2	2.6 2	2.6 2.6			
2.2 2.2 2.2 2.2	2.2 2.2	2.2			2.3	2.2	2.2				2.2	2.2	2.1	2.1 2	.1	.1 2.1			

INTERVALLE  DATE ZERO SPANCHECK  X : MACHINE MALFUNCTION  POUMER FAILURE  O - OPERATOR FRROR  K : COLLECTION ERROR	24 HOUR AVERAGES FOR DECEMBER 2015			3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 29 31
) >1 ov 6+ 6		4.0	8 2 2 2	0.0

			MO	MONTHLY SUMMARY	<u> </u>			
NUMBER OF NON-ZERO READINGS:			707					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		3.7	M M M	@ HOUR(S)	VAR	ON DAY(S) ON DAY(S) VAR-VARIOUS	8.,	33 33
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	33	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	IME: N UPTIME:		744 100.0	HRS
STANDARD DEVIATION:	0.39			MONTHLY AVERAGE:	AGE:		2.2	2.2 PPM

if Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/31/15 00:00

- CC3 IIC FE



St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

in ppm

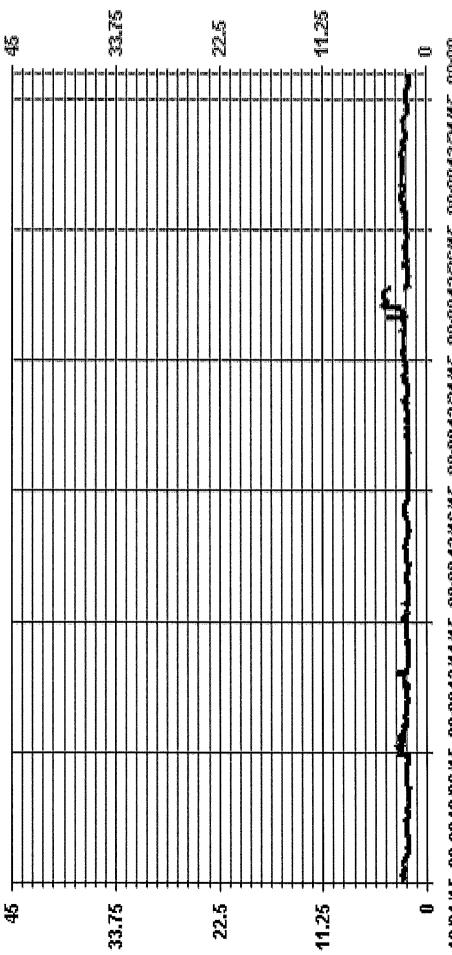
MST								2	AND CHICANOCANDOINS IN THE COLOR	֓֓֓֓֟֝֟֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓		Š	Ĭ	mstantangous maximum in ppin	E Spor	damin		Ī.								
HOURSTART 0:00 1:00 2:00 3:00 4:00 5:00	0:00	1.00	2:00	3:00	1-00	5.00	6:00	7.00	8:00	100.00	10:00 II	0.000	F(778/6)	187763	200	9893535	3666	240	19:00	20:00	260,300	22:00 23:00			24-HOUR	
DAY	1.00	2.00	00.0	# 00°	00.00	2 2	7000		T.	2	羅	5			<u> </u>		-	1	70:02	7.1.00	20	73:00		MAX.	AVG.	RDGS.
, t	, r , r	0 r.0			27	5.0	7.7	2.0	5.5							97 6	7.6	'n	7.7	2.6	3 ;	2.4	23	2.8	2.6	4 2
1 M	2.1	2.1	2.1	2.1	17	1 7	77	2.1		24 24	2.3	2.3	21 21	5 7	2.1	s S	2.0	2 7	2.1	77	77	2.1	2.0	3 2	7 7	4 7
4	2.0	2.0			1.9	1.9	1.9	2.0								1.9	2.0	2.1	21	2.1	2.1	2.1	2.1	2.1	50	1 72
ŋ	2.1	2.1			2.1	2.1	2.1	2.1								2.0	2.1	2.0	2.0	2.0	2.4	3.0	2.9	3.0	2.2	54
φ,	2.7	2.7			2.9	2.8	3.1	2.8								2.7	2.7	2.7	5.6	2.7	5.6	2.5	2.4	3.1	2.7	77
7	2.3	2.5			2.3	2.2	2.2	2.3								2.1	2.1	2.2	2.2	2.2	2.2	2.1	2.1	2.5	2.2	77
œ	2.0	2.0			2.1	2.1	2.1	2.1								2.2	2.4	2.4	5.4	5.4	2.4	2.5	2.7	2.7	2.2	75
6	2.6	3.3			2.2	2.1	2.1	5.0								1.9	1.9	1.9	2.0	2.0	5.0	2.0	2.0	3.3	2.1	54
10	2.0	5.0	5.0		2.1	2.2	2.0	2.0		S			.2 2.1		2.2	2.2	2.3	2.2	2.3	2.2	2.2	2.2	2.2	2.3	2.1	7
Ę	2.2	2.2			2.5	2.5	2.4	s	s							2.0	2.3	2.0	2.0	2.0	5.0	2.0	2.0	2.5	2.2	77
12	5.0	2.0			2.0	2.0	2.0	s								2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0	2.1	2.0	7
13	2.0	2.0			2.0	1.8	s	2.1								2.2	2.1	2.2	2.2	2.3	23	2.3	2.3	2.3	2.2	54
14	2.2	2.2			2.2	s	2.0	2.0								2.0	2.0	2.0	2.0	5.0	2.1	2.2	2.2	2.2	2.1	54
15	2.2	2.3			s	2.3	2.4	2.3							2.2	2.2	2.1	2.0	2.0	2.0	5.0	2.0	2.0	2.4	2.2	8
16	1.9	1.9			1.9	1.9	1.9					1.9			1.9	1.9	1.9	1.9	1.9	17	1.9	1.9	1.9	1.9	1.9	75
17	1.9	1.9			1.9	1.9	1.9									1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	179	23
138	1.9	s			2.1	2.2	2.1	2.0								2.1	2.1	2.1	2.1	2.0	2.0	1.9	13	2.4	2.0	24
19	s	5.0			2.2	23	2.2								2.2	2.2	2.1	2.0	2.0	2.0	2.0	2.0	s	2.4	2.1	75
70	2.0	5.0			2.2	2.3	2.3	2.2							2.2	2.2	2.2	2.2	2.2	2.4	2.3	s	2.2	2.5	2.2	54
17	2.4	2.4	2.4		2.3	2.4	2.5	2.5					2.4 2.5		2.4	2.4	2.4	2.5	2.4	2.4	s	2.4	2.4	2.5	2.4	54
2	2.4	2.4			2.6	2.4	2.4	2.3	2.4						2.4	4.2	2.6	2.6	2.4	S	2.5	2.5	3.0	4.2	2.5	24
73	3.0	2.7			4.5	4.5	4.3					•				4.6	4.4	4.1	s	2.3	2.0	2.2	2.1	4.7	3.9	54
24	2.0	2.0			2.0	2.0	1.9	2.0						2.4		2.3	2.3	s	2.1	2.0	2.0	2.1	2.1	2.4	2.1	74
25	2.2	2.1			2.2	2.2	2.2	2.2		2.3						2.1	s	5.0	5.0	2.0	2.1	2.1	2.1	2.3	2.2	54
56	2.1	2.2		2.2	2.2	2.2	2.1	2.1								s	2.3	2.4	5.6	5.6	2.6	2.4	2.3	5.6	2.3	54
27	2.3	2.3			2.8	2.8	2.8	2.7								2.7	2.5	2.7	5.6	5.6	5.6	2.7	5.6	2.8	5.6	54
28	2.6	2.6		2.6	2.6	2.5	2.5	2.5					2.5 2.5		2.5	2.5	2.5	2.5	5.6	2.7	2.7	2.7	2.7	2.7	5.6	24
29	5.6	5.6	5.6		2.4	2.5	2.5	2.5		2.5	2.5 2					2.2	2.2	2.3	2.4	2.4	2.4	2.4	2.4	5.6	2.4	54
ဓ	2.4	2.4			2.5	2.5	2.5	2.4				2.1	<b>S</b> 2.0			2.1	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.5	2.2	54
31	2.1	2.1			2.1	2.1	2.1							Ì		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	2.2	2.0	54
HOURLY MAX	3.0	3.3	4.5	4.7	4.5	4.5	4.3	4.2		4.5	4.5 4	4.6 4.	4.7 4.6	4.6	4.6	4.6	4.4	4.1	2.7	2.7	2.7	3.0	3.0			
HOURLY AVG	2.2	2.3	2.3		2.3	2.3	2.3		2.3							2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2			

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NUMBER OF NON-ZERO READINGS:			706							
MAXIMUM INSTANTANEOUS VALUE:			4.7	PPM	@ HOUR(S)	R(S)	3, 12	ON DAY(S)		23, 23
							VAR-VARIOUS	tious		
IZS CALIBRATION TIME: 33		HRS		OPERATIONAL TIME:	NAL TIM	úi			743	HRS
монтнеу сацвяатіон тіме:	_	HRS								
STANDARD DEVIATION: 0.44	4									

of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/31/15 00:00

■ LICA31

LICA31 THC / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : THC Units : PPM

Wind Parameter : WDR Instrument Height : 10 Meters

NNW 1.55 . 14 00. 00. 1.69 Æ 5.51 5.94 .42 00. 00. 6.08 WNW 00. 6.22 .14 00. 6.78 6.64 .14 00. 00. ß 00. 7.21 00. 7.35 WSW .14 00. S 8.34 11.17 13.15 00. 00. 13.15 00. 11.17 SSW 00. 00. c) 00. 00. 8.34 % 6.08 00. % 6.08 SSE 00. Direction 5.94 S 5.94 00. % 00. ESE 10.46 0. 00. % 10.46 6.78 6.78 00. 00. 00. ы ENE 3.81 00. 4.10 .28 % 2.12 00. 2.97 Ä 00. .84 .56 ME .28 00. 0. .84 2.12 00. 00. 2.12 00. z Totals Limit 10.0 3.0 50.0 50.0 X ٧ ٧

00.

%

Freq 97.59 2.40

Total # Operational Hours : 707

Calm : .00 %

Distribution By Samples

M m 33 43 47 21 SW SSW 4 Ø 29 SSE 43 Direction SE ESE 74 48 ENE 27 8 벌 15 z 15 Limit 3.0 10.0 50.0 50.0

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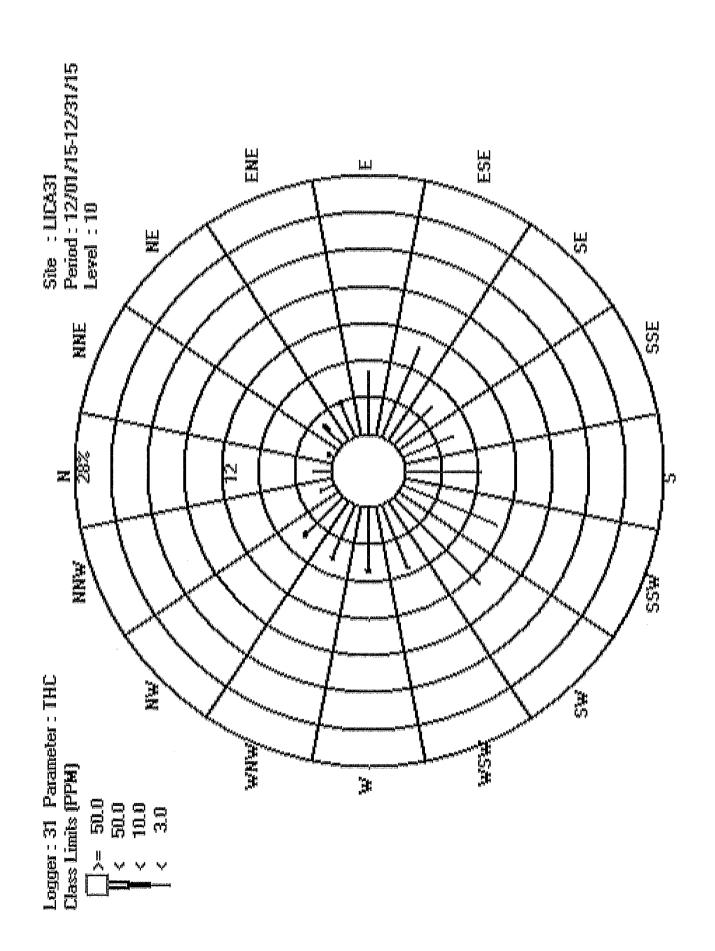
Totals

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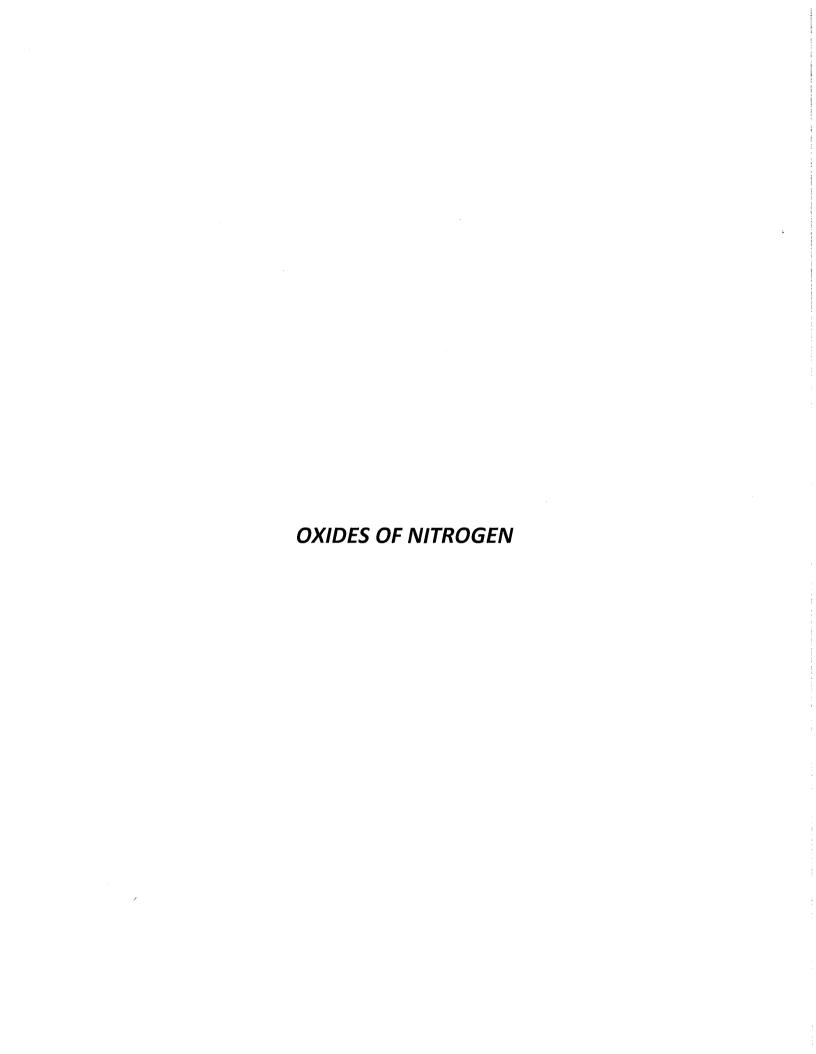
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Calm : .00 %



Phase: SPAN 122415 = Exp Valus -10% Sequence: THC 12/16/15 = Exp Value +10% Parameter: THC Calibration Graph for Site: LICA31 30.00 27.08 141



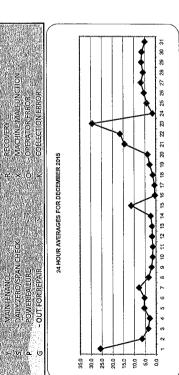
JOB # 2833-2015-12-31- C



## OXIDES OF NITROGEN (NOx) hourly averages in ppb

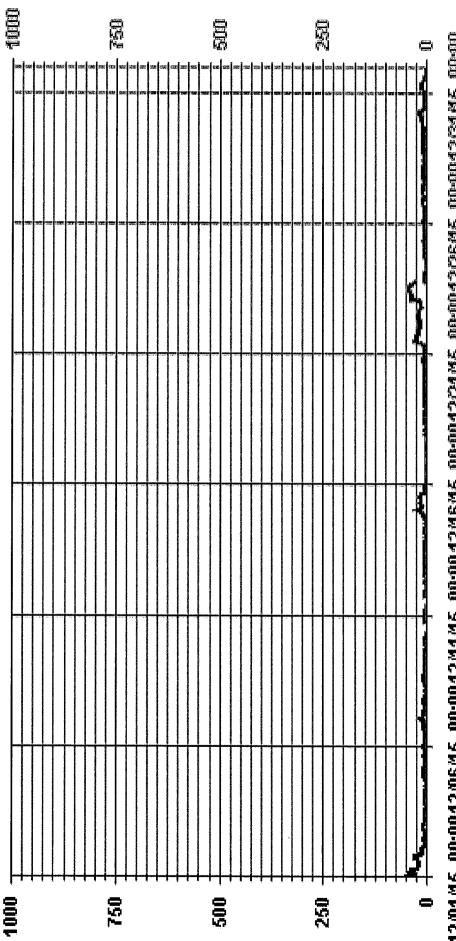
	24-HOUR AVG. RDGS.			3.7 24				7.9 24					1.8 24		2.4 24							14.4 24												
	D DAILY	"		7.5																		3 28.7											~	
	00 23:00 00 0:00			2.3					3.3													1 16.8											1 16.8	
	00 - 22:00 00 - 23:00																																3 20.1	
	00 21:00 00 22:00	, ,		7 2.2		9 5.1	2 5.8	3 5.9						3 4																		8 0.8		3 4.9
	9:00 20:00 21:00 0:00 21:00 22:00			3 2.7				6 6.3		2 2.2				4 3.3																			29.6 24.3	
	18:00 19:00 19:00 20:00			3.5 3									1 2.8		4 1.7																	ı	30.1 29	
				2.7 3.																	5.3 5.												35 30	
_	4 6 5 4 5 2		3.1										2.7			12.9			1.8 1														40.8	
	15:00-16:00 16:00-17:00	.,		2.7						1.6																							40.9	
		.,		2.8												13.9 1																	41.6 4	
	13:00 1/ 14:00 1			2.9						1.7						14.5 1																		
	12:00 1 13:00 1	19.4 2	5.9	3.1	1.2	3.8	_		4.1					1.1				0.5	1.8		4.7			41.6 4									41.6 4	
	11:00 12:00 13:00 14:00 12:00 12:00			4.1	1.8			5.9	s	2.9	ပ											18.7											43.1 4	
	10.00 11.00		5.7	5	3.7					s	1.9				1.4	14.6				2.9	4.1		17.9				3.7						41.2	
; }	9:00:	22.2	6.2	9.9	2.9	3.4	4.2	8.5	1.7	1.5	s	1.7	7	1.3	1.1	13.6	0.3	8.0	1.3	2.7	3.4	5.5	18.5	39.2	0.3	5.3	2.8	6.5	4.9	6.2	8.9	12.6	39.2	6.4
	8:00	75	4.5	3.4	1.8	4.1	3.8	8.1	1.3	2	8.0	s	7	1.2	н	13.5	0.2	0.3	6.0	2.7	3.3	4.8	16.6	36.2	0	5.4	2.7	6.3	5.2	5.9	8.8	12.9	36.2	6.1
	7:00	39.8	3.9	2.6	1.8	5.5	3.8	7.7	0.5	3.1	6.0	s	s	1.4	7	13.7	0.4	0.3	9.0	1.6	3.5	4.9	15	34.7	0	4.5	m	6.7	5.8	5.3	15.1	17	39.8	6.9
	6:00	32.7	4.1	2.9	1.7	7.4	4.6	7.6	8.0	3.7	1.1	1.3	Н	s	18	12.7	0.2	0.2	0.7	1.6	3.3	5.6	14.9	33.2	0	3.8	4	7.9	5.7	6.1	16.6	13.1	33.2	6.7
	5:00	24.7	4	2.8	1.6	7	2	7.6	1.1	2.8	1.1	1.1	8.0	1.1	s	11.2	0.4	0.2	0.5	1.7	3.8	4.9	14.5	33.9	2.2	4.2	5.2	6	2.8	5.4	14.8	13.2	33.9	6.4
	5.00	38.6	6.4	4	1.6	5.8	4.9	10.3	1.6	2.7	1.4	1.4	8.0	1.5	1.9	s	0.3	0.3	1.7	1.7	2.4	4.6	15.5	35.9	m	4.1	9	8.9	6.4	5.3	12.7	11.4	38.6	6.8
	3:00	34.5	10.8	4.3	1.8	6.2	5.4	12.9	1.2	5.6	1.2	1.2	6.0	1.6	1.4	13.3	s	0.5	0.4	1.6	1.7	4.6	18	37.1	ч	4.5	6.2	9.6	8.9	5.6	10.8	6.1	37.1	7.1
	2.00	29.5	12.2	5.4	2.3	7.8	6.4	16	6.0	5.6	1.3	1.3	7	2.1	6.0	19.7	0.3	s	3.9	1.9	1.4	5.2	15.5	23.9	1.2	4.8	6.3	6.3	7	9	10.4	4.1	29.5	6.9
	2.00	32.2	14.7	6.4	2.9	7.3	6.7	13.6	8.0	2.7	1.4	1.8	1.6	5.6	1.1	23.4	6.0	0.2	s	7	1.2	4.3	16.5	15.4	1.7	4.8	5.3	5.4	7.2	9.9	6.6	2.3	32.2	6.8
	0.00	50.5	12.8	7.5	2.5	8.9	5.6	6.3	6.0	5.9	15	1.7	1.6	5.6	13	15.5	1.7	8.0	0.8	S	113	4.2	16.6	13.7	1.5	4.2	4.3	5.8	7.3	2.8	8.6	2.3	20.5	6.7
MST	HOURSTAND 0:00 ±100 2:00 5:00 4:00 5:00 HOUREND 1:00 2:00 3:00 4:00 5:00 6:00	DAY: 1	2	£	4	5	9	7	œ	ō	10	4	12	Ð	7.	<b>.</b>	16	77	18	9	20	Ŋ	22	23	24	25	26	27	.28	52	90	31	HOURLY MAX	HOURLY AVG

STATUS FLAG CODES



NUMBER OF NON-ZERO READINGS:	VGS:		069					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		50.5 29.3	PPB PPB	PPB @ HOUR(S) PPB	0	ON DAY(S) ON DAY(5) VAR-VARIOUS	41 (N	1 23
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	33	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	TIME		744 100.0	HRS %
STANDARD DEVIATION:	7.86			MONTHLY AVERAGE:			6.4	PPB

of Hour Averages



12/01/1/5 00:0012/06/1/5 00:0012/11/1/5 00:0012/16/1/5 00:0012/21/1/5 00:0012/26/1/5 00:0012/26/1/5 00:0012/31/1/5 00:00

- LICA31 NOX_ PPB



### St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

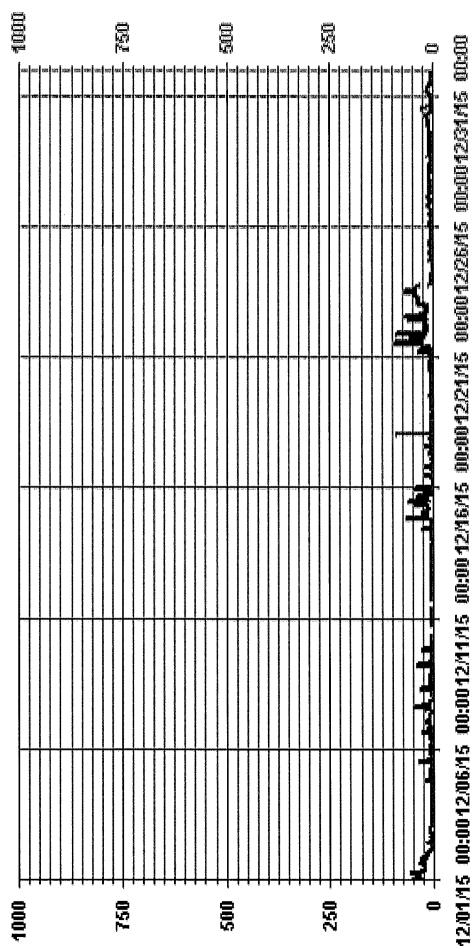
# OXIDES OF NITROGEN MAX instantaneous maximum in ppb

	RDGS.	24	24	24	74	24	74	24	24	24	24	24	24	24	24	74	24	23	24	54	74	74	54	54	54	74	54	74	74	54	54	24		
24-HOUR	AVG.	31.7	6.1	4.7	4.5	7.9	8.1	12.6	6.5	6.3	2.3	2.3	2.5	5.6	6.8	20.2	5.4	4.2	2.8	3.8	4.6	25.6	23.3	33,4	2.5	5.1	6.4	7.7	7.0	7.9	9.2	6.1		
DAILY	MAX	58	16.4	8.6	19.2	32.3	53	48.9	31.3	39.8	3.1	2.7	4	4.9	67.2	59.9	47	22.1	86.2	7.4	6.3	94.1	70.4	69.5	5.5	5.9	10.8	10.2	10.9	11	56	14.6		
23:00	0.00	15.5	8.8	3.1	6.8	7.7	7.8	4.2	4.2	1.8	2.9	2.1	3.7	2.1	14.6	4.5	13	6.9	72	s	5	19.3	15.5	5.6	5.5	4.7	6.4	7.9	6.9	Ħ	2.9	1.6	19.3	6.4
22:00	23:00	17.5	8.7	2.8	7.3	7.7	6.9	4	4.6	2.9	2,4	2.1	3.7	4.9	10.7	4.1	7	5.9	1.8	2.7	s	84.7	14.8	6.9	4	4.7	7.8	7.9	9.9	10.3	m	1.1	84.7	8.5
21:00	22:00	20	8.8	3.3	8.2	6.9	6.9	8.9	5.9	7	2.9	2.3	3.8	4.9	67.2	3.6	1.5	4.3	1.7	3.1	6.3	s	15.3	4.8	4.7	3.7	10.2	7.6	6.3	8.6	3.2	13	67.2	7.9
20:00	21:00	29.7	9.4	3.2	19.2	3.5	17.2	8.2	8.9	28.1	2.9	5.6	3.4	4.3	29.6	4.3	20.6	4.5	7	4.2	6.3	51.5	s	8.9	5.3	3.9	10.8	7.6	6.3	9.3	3.2	1.6	51.5	10.6
19:00	20:00	30.9	4.1	3.8	8.9	3.7	8.2	∞	9.9	7	3.1	2,3	3.5	m	3.8	4.5	1.2	4.5	7	4.2	6.3	23.6	15	s	5.3	3.6	10.8	8.4	7.7	8.6	m	1.2	30.9	6.7
18:00	19:00	s	m	4.4	2	3.5	8.8	10.1	7.4	2.4	U	2.7	4	2.9	3.1	26.2	7	4.8	2.1	3.1	6.1	24.8	18.5	34.3	s	5.5	8.5	00	7.8	7.9	2.1	1.6	34.3	7.8
17.00	18:00	24.6	s	3.4	3.3	5.5	6.9	12	∞	1.9	U	U	4	1.8	5.3	10.4	1.2	2.9	2.5	5.1	6.1	26.4	24.5	41.8	3.3	s	7	6.5	10.9	8.1	3.2	1.8	41.8	8.8
16:00	17.00	34.3	5.7	s	5.2	10.1	53	32.4	7.5	7	U	J	3.2	2.1	2.8	39.5	0.8	4.3	2.6	7.4	5.3	27.1	33.9	44.2	1.2	4	s	5.7	7.1	7.8	3.8	2.9	44.2	12.3
15:00	16:00	23	5.3	3,8	s	14.7	8.8	48.9	7.2	3.3	U	U	2.8	7	7	17.5	1.2	22.1	2.1	5.6	5.5	26.5	22	43.9	2.9	Ŋ	5.1	s	5.5	6.2	3.2	5.6	48.9	11.0
14:00	15:00	23	6.5	3.7	1.2	Ŋ	6.1	6.3	9.6	2	U	U	2.3	7	1.6	12	2.6	178	2.1	5.8	5.6	94.1	70.4	43.6	7	'n	4.8	6.1	s	9.7	19.3	1.9	94.1	13.1
13:00	14-00	21.4	6.1	3.9	1.2	32.3	s	18.3	8.5	2.5	U	U	2.3	1.6	3.9	45.1	2.8	2.4	2.2	5.3	5.2	50.4	21.3	69.5	1.4	4.8	5.3	6.3	6.5	s	56	2.7	69.5	13.3
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		MC	MONTHLY SUMMARY	IMMARY				
NUMBER OF NON-ZERO READINGS:		694						
MAXIMUM INSTANTANEOUS VALUE:		94.1		PPB @ HOUR(S)	14	ON DAY(5)		17
					VAR-V	VAR-VARIOUS		
IZS CALIBRATION TIME: 33 MONTHLY CALIBRATION TIME: 15 STANDARD DEVIATION: 12.20	33 HR5 15 HRS 2.20	න න	OPERATI	OPERATIONAL TIME:			743	HRS

Of Hour Averages



MOSINGS

LICA31 NOX_ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : NOX_ Units : PPB

Wind Parameter : WDR Instrument Height : 10 Meters

	hi	10	<b>C</b> #	0	0	
	Freq	99.85	.14	00.	00.	
	WNN	1.72	00.	00.	00.	1.72
	MM	6.03	00.	00.	00.	6.03
	WNW	6.32	00.	00.	00.	6.32
	¥	6.89	00.	00.	.00	68.9
	WSW	7.32	.14	00.	00.	7.47
	SW	13.36	00.	00'	00.	13.36
	SSW	11.35	00.	00.	00.	11.35
	Ø	8.47	00.	00.	00.	8.47
	SSE	6.17	00.	00.	00.	6.17
Direction	SE	5.74	00.	00.	00.	5.74
Di	ESE	9.62	00.	00.	00.	9.62
	ы	6.60	00.	00.	00.	6.60
	ENE	4.16	00.	00.	00.	4.16
	Ħ	3.01	00.	00.	00.	3.01
	NNE	98.	00.	00.	00.	. 86
	z	2.15	00.	00.	00.	2.15
	Limit	50.0	110.0	210.0	210.0	Totals
		٧	٧	٧	X	

Total # Operational Hours : 696 Calm : .00 %

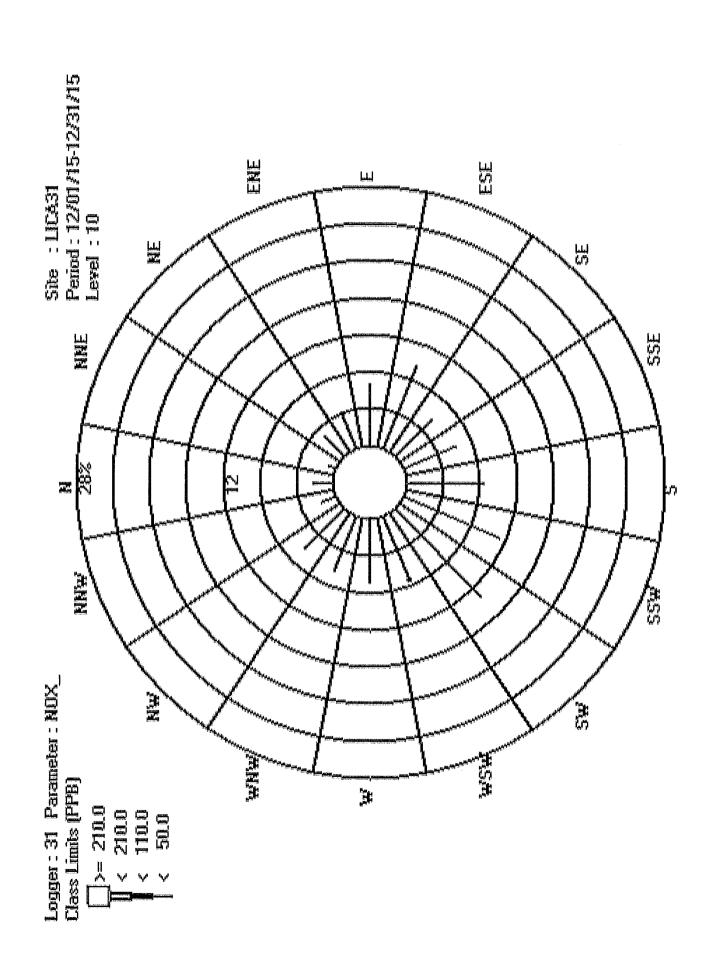
Distribution By Samples

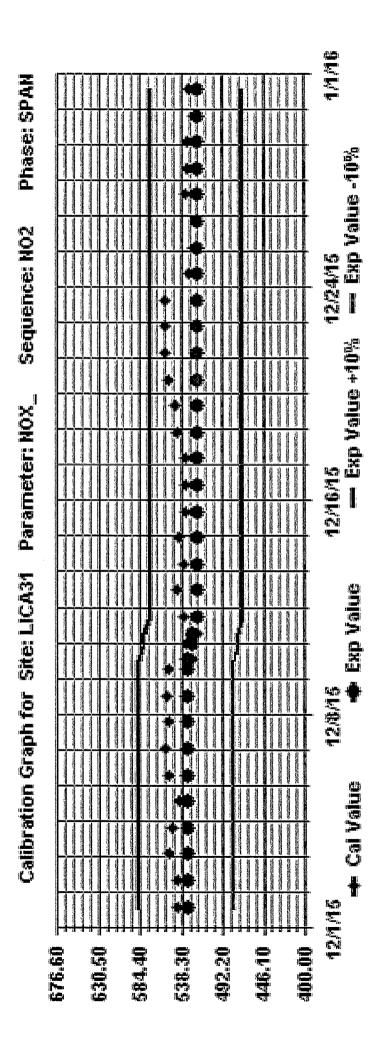
Direction

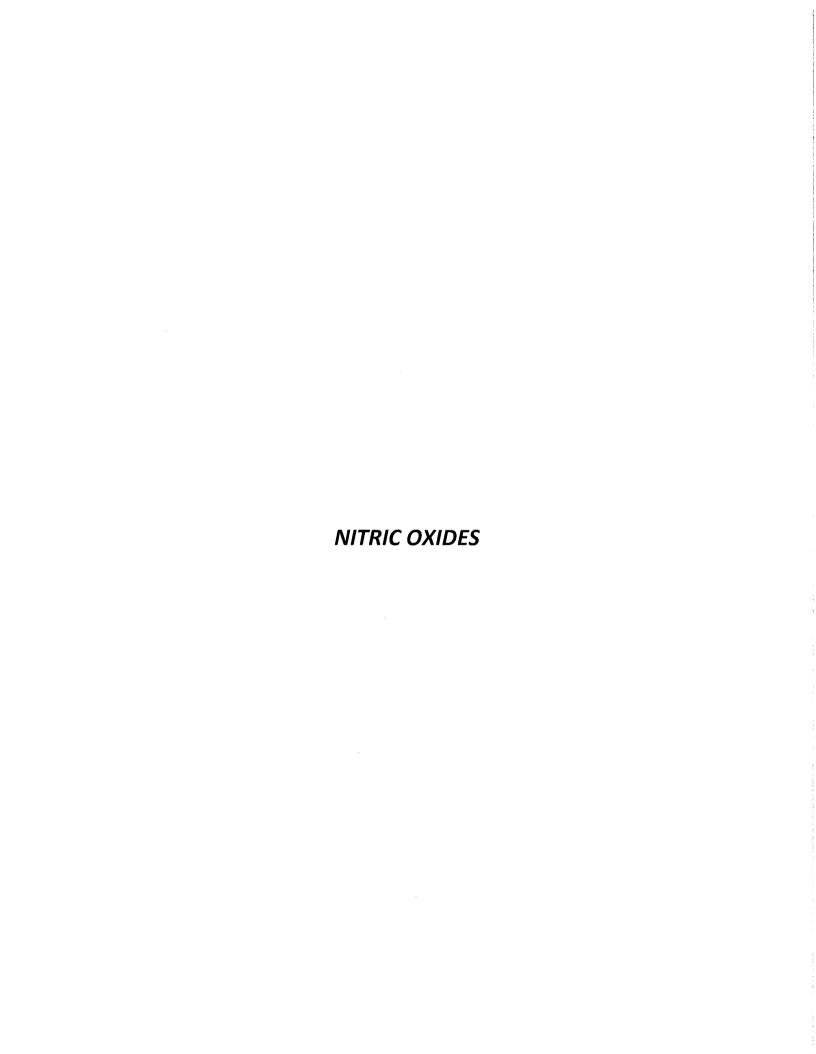
Freq 695

17 42 44 48 22 93 4 59 43 SSE 43 SE 40 29 46 29 ENE Ħ 21 21 9 NA EN 15 z Totals 50.0 Limit < 110.0 < 210.0 >= 210.0

Calm : .00 %









MST

NITRIC OXIDE (NO) hourly averages in ppb

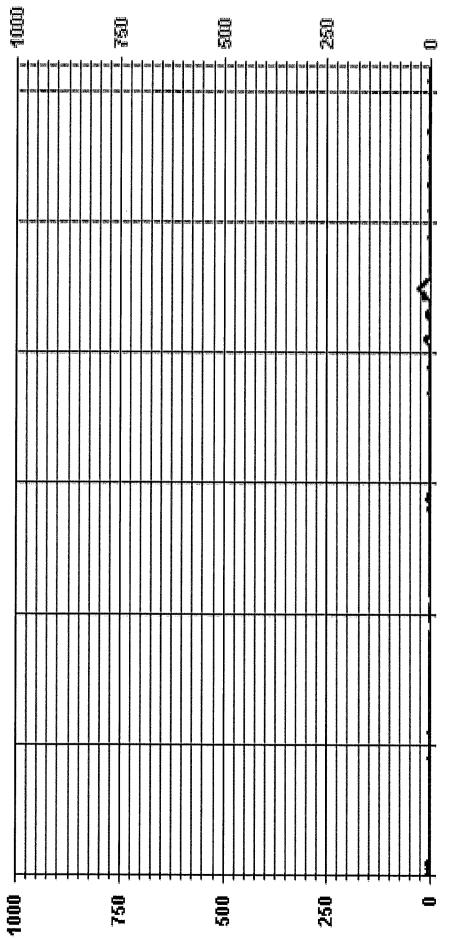
RDGS.	24	24	24	24	24	24	24	54	54	54	74	24	75	54	73	24	24	24	24	24	74	77	24	. 72	54	54	54	77	54	24	54		
24-HOUR AVG.	3.7	0.2	0.1	0.1	0.3	0.2	0.5	0.2	0.3	0.4	0.2	0.0	0.0	0.4	2.0	0.0	0.1	0.3	0.4	0.3	3.3	2.2	14.4	0.0	0.2	0.4	0.8	0.5	0.5	0.2	0.2		
DAILY MAX.	11.5	1.3	6.0	0.4	1.8	11	7	6.0	6.0	0.7	0.4	0	0	2.5	6.7	0.4	9.0	2.2	1.5	1.4	15.8	8.3	28.5	0.2	1.2	1.4	5.9	2.6	2.7	1.1	2.4		
23:00	0	0	0	0	0	0	0	0	0.4	0.4	0	0	0	0.4	0	0	0.2	0	s	0	0	0.2	0	0	0	0.3	0	0	0	0	0	0.4	0.1
22:00	۰	0	0	0.1	0	0	0	0	0.3	0.4	0	0	0	0.4	0	0	0	0.2	0.1	s	1.1	0.2	0	0	0	0.5	0.1	0	0	0.1	0	11	0.1
21:00	٥	0	0	0	0	0	0	0.2	0.3	0.4	0	0	0	2.5	0	0	0	0.1	0.1	0	s	0.5	0	0	0	0.5	0.1	0	0	0.2	0	2.5	0.2
20:00	0.2	0	0	0.2	0	0	0	0.2	6.0	0.4	0	0	0	9.0	0	0	0	0.2	0.1	0	0.5	s	0	0	0	0.7	0.1	0	0	0	0	6.0	0.1
19:00	1.2	0	0	0	0	0	0	0	0.4	0.7	0	0	0	0.2	0	0	0.3	0.2	0.1	0	0.1	0	s	0.2	0	9.0	0.1	0	0	0.1	0	1.2	0.1
18:00 19:00	s	0.1	0	0.2	0	0	0	0	0.4	U	0	0	0	0	0.1	0	0	0.2	0.1	0	6.0	0.1	11.8	S	0.2	9.0	0	0	0	0	0	11.8	0.5
17:00	0.3	s	0	0.3	0	0	0.3	0.1	0.3	U	U	0	0	0.5	0	0	0	0.3	0.5	0	1.5	9.0	15.9	0	s	0.7	0	0	0	0.2	0	15.9	0.8
16:00	1.1	0	S	0.4	0	0.3	6.0	0.1	0.4	U	ပ	0	0	0.3	9.0	0	0.2	0.2	0.3	0	3.7	m	21.1	0	0	S	0.2	0.3	0.1	0.1	0	21.1	1.2
15:00	3.5	0	0	s	Н	9.0	1.4	0.2	0.5	U	U	0	0	0.2	2.4	0	9.0	0.3	0.8	0.1	8.3	4	22.8	0.1	0	0.4	s	6.0	0.4	0.3	0	22.8	1.8
14:00	5.5	9.0	0.2	0	S	1	1	0.7	0.4	U	U	0	0	0.3	4.2	0	0	0.4	1.5	6.0	14.2	7	25.6	0	0.4	0.8	1.8	s	1.9	9.0	0	25.6	2.6
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CALIBATION  — MAINTENANCE  — R — PECOVER  — DAILY ZERG/SFAN CHECK  — YA CHINE MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERING MAJERI	24 HOUR AVERAGES FOR DECEMBER 2015	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 22 24 25 25 27 25 28 30 30 31
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NUMBER OF NON-ZERO READINGS:	GS:		340			•		
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		29 14.4	PPB PPB	PPB @ HOUR(S) PPB	11	ON DAY(S) ON DAY(S) VAR-VARIOUS	23	33
IZS CALIBRATION TIME: MONTHLY CALIBRATION TIME:	33	HRS H		OPERATIONAL TIME: AMD OPERATION UPTIME:	E: JPTIME:		744	HRS %
STANDARD DEVIATION:	3.48			MONTHLY AVERAGE:	نن		11	PPB

Of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/36/15 00:00

- LICA31 NO_ PPB



### St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

## eous maximum in ppb

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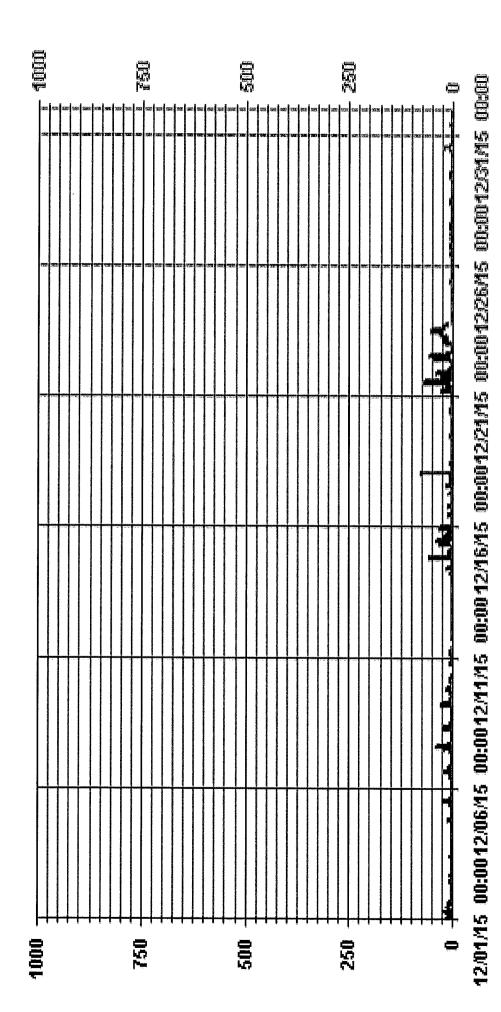
HOUR END 1:00 2			) ) )	200						10.00		10.00	15:00		0000	3		7		)	00.57	MAX	24-HOUR AVG.	6
	5:00		1	331	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s		000	OP OT	00.11		13:00	3		-000	20.7	8:00	J	7 00	7		20.0			RDGS.
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									1.4	1.5	4.1	s	1.7	2.7									7 5	7 7
									2.9	2.4	s	16.3	2.1	39.9									4.1	24
									6.0	s	1.5	1.5	1.2	6.0									2.0	24
									S	2.2	1.7	1.1	6.0	1.3									3.4	24
									0.8	U	U	U	U	v									1.0	24
									₽	U	U	v	U	v									9.0	24
									0.3	0.3	0.1	0.3	0.4	0.4									0.2	24
									0.5	0.3	0.4	0.3	8.0	0.5									0.4	24
									2.3	17.9	1.7	2.7	6.0	0.7									5.4	24
									33.3	6.9	39.1	30	5.3	4.6									8.9	54
									1.2	1.7	11.9	1.4	1.2	0.4									3.0	24
									1.6	Δ.	0.7	1.1	1.2	14.8									2.2	23
									ч	1.3	1.4	17	1	8.0									4.0	24
									1.4	1.7	1.9	2.2	2.2	1.5									1.1	24
									1.7	17	7	1.9	1.6	8.0									0.8	54
									<u>ნ</u>	15.4	17.8	31.9	68.1	11.4									11.4	24
									8.4	45	9.8	6.6	58.7	7.6									8.2	24
									28.3	29.4	30.3	51.3	27.6	24.3									17.6	24
									6.0	0.7	9.0	1.1	0.7	1.7									9.0	54
									1.8	1.8	2.5	1.2	6.0	6.0									6.0	54
									1.6	7	2.2	1.7	1.2	6.0									1.0	54
									2.7	3.5	3.7	5.9	2.7	s									1.4	54
									2.6	3.2	5	3.5	s	1.6									1.2	54
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C -CALIBRATION 0QUALIFY ASSURANCE S - DAILYZERO/SPAN CHECK X - MACHINE MALFUNCTION P - POWER FAILURE G - OUT FOR REPAIR K - COLLECTION ERROR

NUMBER OF NON-ZERO READINGS:			673						
MAXIMUM INSTANTANEOUS VALUE:			72.2	72.2 PPB	@ HOUR(S)	7	ON DAY(S)		18
						VAR-V	VAR-VARIOUS		
IZS CAUBRATION TIME:  MONTHY CAUBRATION TIME:  STANDARD DEVIATION:  7.	33 HRS 15 HRS 7.82	HRS HRS		OPERATIC	OPERATIONAL TIME:	:		743 HRS	HRS

Of Hour Averages



- LICA31 NOMAX PPB

LICA31 NO_ / WDR Joint Frequency Distribution (Percent)

December 2015

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : NO Units : PPB

00. 1.72 100.00 00, 00. 0. 1.72 00 00. 6.03 ž 6.03 00. 0. 00. WNW 6.32 6.32 00. 9. 00, 68.9 00. 68.9 Wind Parameter : WDR Instrument Height : 10 Meters 00. 00. × 7.47 00. 7.47 WSW 00. % 8 13.36 ES. 8.47 11.35 13.36 8 00. 11.35 00. 00. SSW 00. 8.47 00. 00. 00. 6.17 6.17 00. 00. 00. SSE Direction 5.74 5.74 SE 00. 9 00. ESE 9.62 0. 00. 00. 9.62 6.60 6.60 00. 00. 00 ы 4.16 4.16 00. ENE 00. 8 3.01 3.01 艺 00. 00. 00. 98. 8. 80. 8 .86 2.15 00. 8 2.15 00. Totals Limit 50.0 110.0 >= 210.0 < 210.0

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Total # Operational Hours : 696

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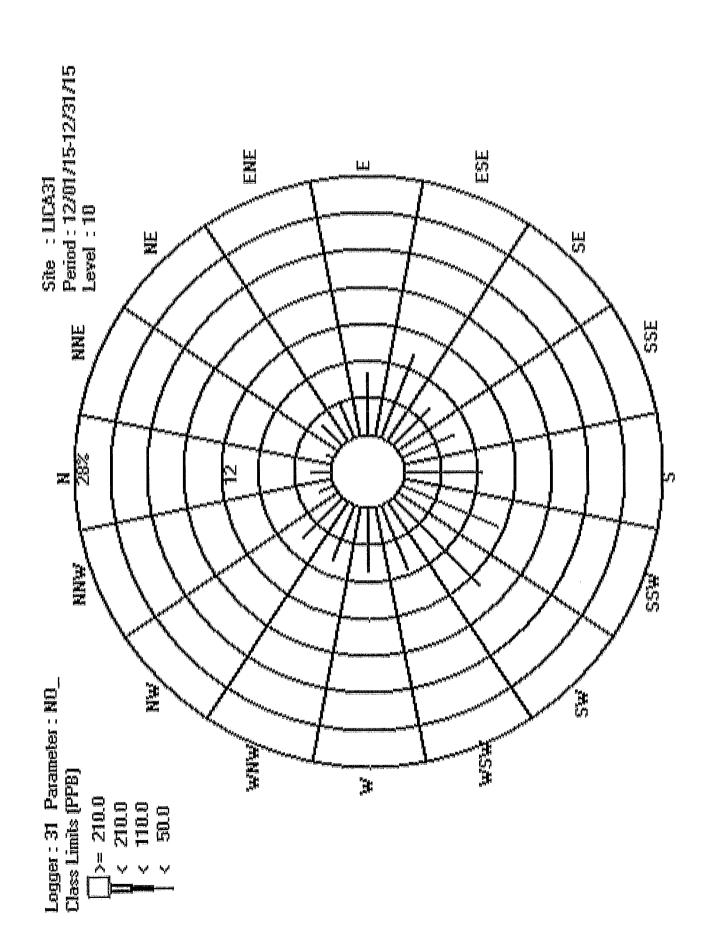
Calm :

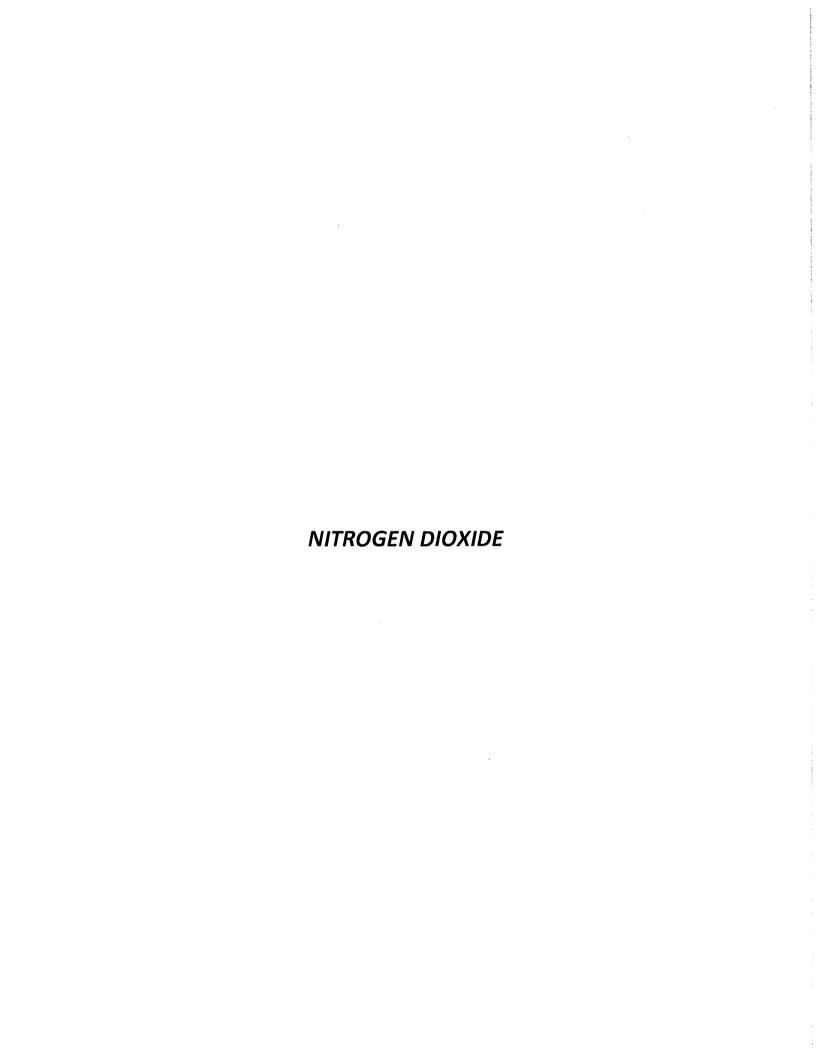
Distribution By Samples

Freq 969 NNN 12 12 42 E 42 MAM 44 44 48 48 22 WSW S 93 93 79 SSW 59 Ø 59 43 SSE 43 Direction 40 SE 40 ESE 67 67 46 ы 29 29 21 Ä 21 9 12 15 Totals Limit 50.0 110.0 210.0 210.0 ٧

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Total # Operational Hours : 696 Calm : .00 %



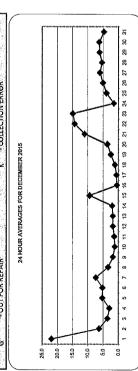


St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

### NITROGEN DIOXIDE (NO2) hourly averages in ppb

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7.8		럿	5.7	7.0	7.4	5.5	3.7	3.1	2.5						4.0	5.9	5.9	2.9	5.1				
6.4		4	4.9		4.6	3.8	3.8	4.1	4.2						6.0	8.9	6.5	6.2	5.8	5.4 5			
15.9		5.9	10.2	2 7.6	7.6	7.6	7.8	7.4	5.8			3.5 4.1			8.7	8.2	6.6	6.3	5.9	2.8 2			
		7	1.6		0.8	0.5	1.1	17	2.4						7.0	6.2	5.2	5.8	4.6	4.0 3			
5.6		ų.	2.7		3.3	2.9	1.9	1.5	s		1.9	1.2 1.0			1.0	1.1	0.8	13	6.0	0.8			
1.1 0.9 0.9		ō.	1.0	0.8	0.7	9.0	0.5	s	1.7			၁ ၁		U	U	U	1.6	1.9	1.7				
1.0		∞.	1.0		13	s	s	1.6							U	1.9	1.6	1.8	1.8	1.4			
10		<u>ق</u>	0.8	3 0.8	7.0	s	1.0	1.0							3.0	3.1	2.8	2.7					24
2.1		ဖု	1.5		s	1.4	1.2	1.3							1.2	2.1	2.4	3.3	4.0				24
6.0		4	13		1.2	1.5	0.7	0.7						0.8	11	1.4	1.5	2.1					24
16.5		3.1	S		12.6	13.5	12.9	9.7	7.9		8.6 9.	7. 9.7			7.0	5.0	3.8	3.5			.9 18.0	9.4	24
0.3		s	0.3			0.4	0.2	0.3							0.4	0.5	0.5	1.0	8.0				24
s		4.	0.3			0.3	0.3	0.5							0.7	6.0	1.2	8.0					24
		ωį	1.6	0.5	0.5	0.5	9.0	1.0						1.6	1.5	1.4	1.3	6.0					24
1.7		4	1.5			1.5	2.7	2.5							3.0	2.2	2.3	2.8					
1.4		۲.	2.4			3.5	3.3	3.1							5.3	5.4	5.4	5.5				3.6	
5.2		ω	4.6			4.9	8.4	4.6							21.2	21.9	19.8	18.9					
15.0		0.0	15.			15.0	16.3	14.3						16.4	17.3	15.9	13.8	s					
		9,8	5	3 19.6	19.5	18.7	18.3	16.1	14.5	14.6	14.2 15	15.3 16.0			19.1	18.3	s	5.5	3.2	3.3 2	.0 19.8	3 14.9	
1.2		o,	3.0			0.0	0.0	0.3						0.3	1.0	S	4.4	4.6					
		'n	4.1		3.8	4.5	5.4	4,8							S	3.2	2.8	5.6					
6.3		7	6.0	5.2	4.0	3.0	5.6	2.7							5.2	9.9	8.7	9.1					
		7	8.6		7.4	6.2	5.8	5.1						4.8	5.7	6.5	7.6	6.9					
		7	6.4		5.7	5.6	5.2	4.2							6.8	5.9	6.3	5.4	5.6				
6.0		φ	5.3	5.4	6.1	5.3	5.9	5.2							6.3	7.1	7.7	8.4					
	•	8.	12.7	7 14.8		15.1	8.8	6.2	3.8					2.1	1.9	16	1.7	2.4					
4.1		ӈ	11.5			12.0	12.5	10.9							1.0	0.9	9.0	8.0			.8 13.2		
30.0 28.3 30.8		8.	33.1	1 23.5		33.6	21.7	16.2	14.5			15.3 16.0	0 18.1	21.2	23.3	21.9	28.4	24.1	16.3	19.0 16	_∞		
6.5		4	6.0		0.9	6.1	5.3	4.8	4.2						6.0	5.2	5.3	5.2			o:		

# STATUS FLAG CODES C - CALIBRATION 0 - QUALITY ASSURANCE A RECOVERY S - DAILY ZERO/SPAN CHECK X - MACHINESMALEUS/CTION P - PROWER-FAILURE 0 - OPERATOR FRROR G --OUTFOR REPAIR K --COLLECTION ERROR

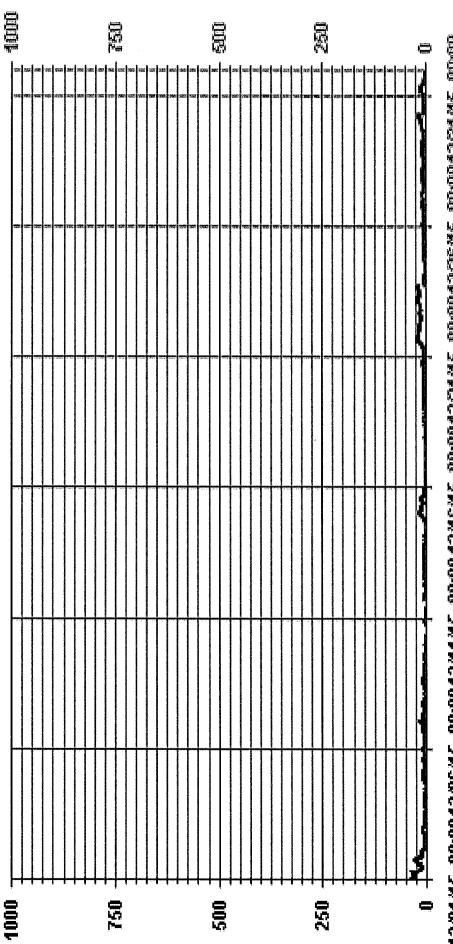


#### ALBERTA ENVIRONMENT: 1-HR. 1598 PPB

OBJECTIVE LIMIT:

			Σ	MONTHLY SUMMARY				
NUMBER OF 1.4R EXCEDENCES			0					
NUMBER OF NON-ZERO READINGS:			689					
MAXIMUM 1-HR AVERAGE:		39.0	PPB	PPB @ HOUR(S)	0	ON DAY(5)	-	•
MAXIMUM 24-HR AVERAGE:		21.9	PPB			ON DAY(S) VAR-VARIOUS	7-5	
IZS CALIBRATION TIME:	33	HRS H		OPERATIONAL TIME: AMD OPERATION UPTIME:	IE: UPTIME:		744	HRS %
STANDARD DEVIATION:	5.63			MONTHLY AVERAGE:	Ë		5.3 PPB	РРВ

of Hour Averages



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:0012/31/15 00:00



### St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

NITROGEN DIOXIDE MAX instantaneous maximum in ppb

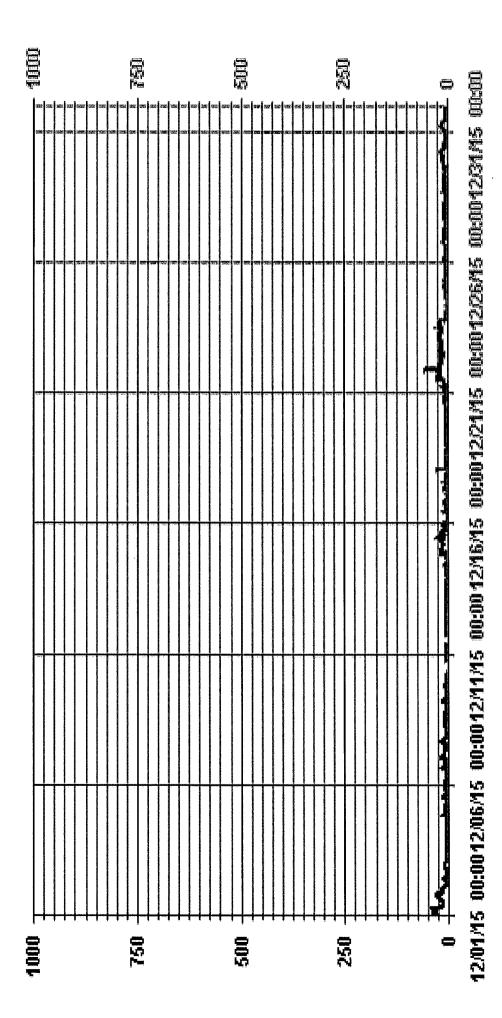
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RDGS.	24	1 7	. 42	. 4	77	7 7	24	1 78	74	24	54	24	77	54	24	24	23	54	54	24	24	24	54	54	74	74	54	77	24	24	24	
AVG.	7, 7,	) ×	4.5	4.0	7.9	6.7	7	5.1	3.5	2.0	2.5	2.9	2.4	4.2	12.3	2.7	2.5	2.8	3.1	4.2	15.2	16.1	16.6	2.3	4.5	5.8	6.7	6.3	7.0	7.7	5.8	
MAX	40.6	16.6	8.5	12.9	13.4	13.6	18	10.3	13.9	m	3.4	4	4.6	18.7	21	14.8	6.7	23.8	8.9	6.2	52.9	19.6	22.8	5.1	ø	10.2	9.5	10.7	10.4	17.1	14.5	
0.00	15.1	0	3.3	6.5	8.2	6,9	4.4	4	1.2	m	2.9	3.8	1.9	13.7	2.7	1.5	3.8	1.3	S	4.5	18.6	15	5.8	5.1	4.4	6.1	7.8	9.9	10.4	2.8	1.4	ç
23:00	17.4	σ	2.6	7.1	00	6.1	4.4	4.9	1.5	2,4	3.1	6. 6.	4.6	10.1	3.3	1.8	3.7	1.5	2.3	S	52.9	14.3	6.9	4.3	4.7	7.2	7.7	6.5	10	3.1	1.4	£
22-00	19.7	9.1	3.1	8.2	7.1		6.9	5.4	1.4	m	3,3	4	4.6	18.7	3.6	1.4	2.9	1.4	2.7	6.2	s	14.8	5.1	4.5	3.6	9.4	7.6	6.5	9.6	5.6	1.7	20
21.00	28.5	9.2	3.3	12.9	3.7	8.6	7.6	9.9	12.8	m	3.4	3.6	4	10.1	4	10.4	2.5	1.9	4.1	6.1	27.9	S	8.4	Ŋ	3.1	10.2	7.5	6,4	9.1	3.2	1.4	oc.
20:00	29.1	4.1	3.9	9.9	3.9	7.2	8.2	6.7	1.3	2.7	2.8	3.6	2.7	2.4	4.5	17	3.5	7	4.1	6.1	21.7	15.2	s	4.8	3.2	10.2	00	7.8	8.7	2.8	1.4	20
19:00	s	2.1	4.2	4.5	3.8	00	9.5	7.3	7	U	5.9	4	2.7	2.1	11.6	1.1	3.2	2.2	5.9	5.9	23.1	17.9	19.3	S	4	7.7	7.7	7.6	8.1	2.1	1.4	22
18:00	23.8	s	3.7	2.8	9	7	10.5	œ	1.4	ပ	ပ	4	2.1	2.5	10.6	1:1	2.1	2.3	4.6	6.1	22.1	18.6	20.4	2.5	s	6.1	6.1	10.7	7.4	2.6	1.8	,
17:00	25.5	5.2	s	m	10	13.6	18	7.3	1.7	ပ	U	3.7	1.7	2.4	20.7	1	2.5	2.4	6.8	5.2	21.2	18.3	20.8	1.4	3.8	s	5.3	5.3	6.9	5.9	2.3	26
16:00	19.6	4.7	3.8	Ŋ	11	7.4	15.7	6.8	2.2	U	U	3.1	1.6	0.8	14.2	Н	7.2	7	5.1	5.3	18.6	15.1	20	1.5	4.1	4.7	s	4.3	5.6	m	2.2	20
15:00	17.2	5.4	3.2	1.2	s	5.1	5.1	9.1	1.4	U	U	2.3	1.3	60	10.4	1.5	1.3	2	4.4	4.8	28.9	15.7	17.4	9.0	4	4	3.8	s	6.4	8.1	1.9	20
14:00	13.7	5.2	3.3	1.2	13.4	s	7.3	7.5	1.7	J	U	2.3	1.4	1.6	16.7	1.6	1.6	17	3.6	9.9	ឡ	11.6	22.8	0.3	3.7	4.2	3.4	3.6	s	8.8	2.1	22
13:00	12.3	Ŋ	3.6	17	3.2	5.2	s	4.4	2.5	U	U	2.3	1.6	1.4	21	7.7	1	1.9	3,4	3.9	11.9	12.9	15.3	0	3.7	4.2	3.7	3.5	4.7	s	3.6	2
12:00	12.4	5.6	3.8	2.7	5.6	4.7	5.1	s	3.4	U	U	1.7	1.6	11.8	7.9	2.7	۵	3.1	2.7	3.7	9.5	16.4	15.5	0	4.1	3.7	4	3.6	4.3	3.8	s	ď
11.00	13.5	11.1	S	4.2	2.8	4.8	6.8	2.9	s	2.2	1.7	1.9	1.4	1.4	15.3	2.1	0.8	5.6	2.4	3.7	8.7	13.1	15.3	1.2	4.1	3.5	5.1	4.1	5.6	5.1	9.6	7,
T0:00	18.3	7.4	7.1	3.6	3.6	4.8	8.7	2.2	3.2	s	7	1.8	1.6	1.8	14.1	Н	9.7	7	5.6	3.4	5.9	17.3	17.2	11	5.4	3.5	5.8	Ŋ	9	7.6	12.1	20
9:00	29.6	6.1	5.6	2.4	4.6	4.8	8,9	10.3	5.7	₽	s	1.8	1.6	1.3	13.7	8.0	8.0	13	5.9	3.9	6.1	17.3	19.1	0.7	2.7	3.1	6.3	5.9	7.1	10.6	13.4	8
8:00	40.6	4.8	3.5	2.5	7.3	5	8.5	9.5	3.8	13	Ŋ	s	1.9	2.2	14.5	1.3	5.6	1.2	2.5	9.0	5.9	16.3	19.1	0.5	5.6	3.9	7.1	6.4	6.5	16.6	12.9	41
7:00	38.5	Ŋ	4.2	2.6	7.9	5.8	8.4	14	13.9	1.4	1.9	2.7	s	2.4	13.5	0.8	0.8	1.1	1.8	4.1	12.4	15.7	20.2	0.9	4.5	4.9	8.7	6.4	9.9	17.1	14.5	ģ
9:00	33.7	9.6	3.5	2.5	8.2	ø	8.5	2.3	3.4	1.5	7	5.5	2.1	S	12.1	1.1	11	5.4	1.8	4.3	8.9	15.4	20.3	4	4.7	5.8	9.5	6,3	6.1	16.4	14.5	X
.5:00 6:00	35.5	9.1	4.9	2.2	6.4	5.8	11.6	2.4	3.4	1.5	2.2	5.4	5.6	5.5	s	ᆏ	ਜ	7.8	1.8	3.5	9	17.1	2	4.1	5.3	6.8	9.1	7.5	ဖ	13.9	12.6	39
4:00	35.6	12.7	6.4	5.6	9.9	6.3	15.5	2.1	3.3	1.5	2.2	2.5	2.7	7	15.3	s	0.8	6.0	1.9	2.2	œ	19.6	20.6	7.3	2.8	9.9	9.5	7.3	6.2	11.7	10.3	36
3:00	32.1	13.9	6.7	3.2	9.5	7.7	17.7	1.7	33	1.4	23	2.7	5.9	172	17.8	2.1	s ;	23.8	2.1	7	6.3	17.3	20.6	53	<b>છ</b> 1	7	თ	7.3	9 6	11.1	5.2	32
2:00	35.6	16.6	9.7	3.6	8.2	7.7	17.5	1.6	3.3	7	2.7	m	3.4	1.7	18.5	1.9	;	s ;	2.1	8	5.4	17.4	17.6	/-7	5.7	9.9	5.6	7.9	7.3	10.7	3.3	36
1:00	40.1	17	8.5	333	7.7	6.8	% ?2	1.9	3.5	1.5	2.7	m ¦	3.7	1.6	16.1	14.8	61	15	s ·	7	v	17.7	14.6	??	8.1	4.7	5.9	00	6.5	10.7	2.7	40
HOUR END	T Z	2	m	4	2	9	7	œ	on .	Ģ.	Ħ	12	13	Ħ.	IJ	16	17	8	Ð	8	77	22	ກ ;	7.7	52	26	27	28	ŠŠ	œ	23	HOURLY MAX

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NOWBER OF NON-ZERO READINGS:	<b></b>		663							
MAXIMUM INSTANTANEOUS VALUE:	ij		52.9	PPB	@ HOUR(S)	JR(S)	77	ON DAY(S)		-
							VAR-VARIOUS	RIOUS		
IZS CALIBRATION TIME:	33	HRS	Ī	OPERATIONAL TIME:	ONAL TIN	Ē			743	HRS
MONTHLY CALIBRATION TIME:	51	HRS								
STANDARD DEVIATION:	6.59									

Of Hour Averages



- LICA31 HOZMAX PPB

 ${\tt LICA31} \\ {\tt NO2}_ \ / \ {\tt WDR} \ {\tt Joint} \ {\tt Frequency} \ {\tt Distribution} \ ({\tt Percent})$ 

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : NO2_ Units : PPB_

Wind Parameter : WDR Instrument Height : 10 Meters

1.72 100.00 NNW 1.72 00. 00. 00. M. 6.03 6.03 00. 00. 00. WNW 6.32 6.32 00. 0. 00. 68.9 6.83 00. 00. % 7.47 7.47 00. 00. 0. łs, 13.36 13,36 00-% 8 11.35 11,35 SSW 00 00. 00. 8.47 8.47 00. 00 00. 6.17 6.17 SSE 0 00. 00. Direction 5.74 SE 5.74 00. 00. 00. 9.62 9.62 ESE 00. 00. % 09.9 6.60 00. 00. 00. ы 4.16 4.16 ENE 00. 00. 00. 3.01 00. 3.01 벋 00 00. 98. 00. 00. 98. 0. 2.15 2.15 00. 00. 00. z Totals Limit 50.0 110.0 < 210.0 >= 210.0 ٧

00. 00. 0

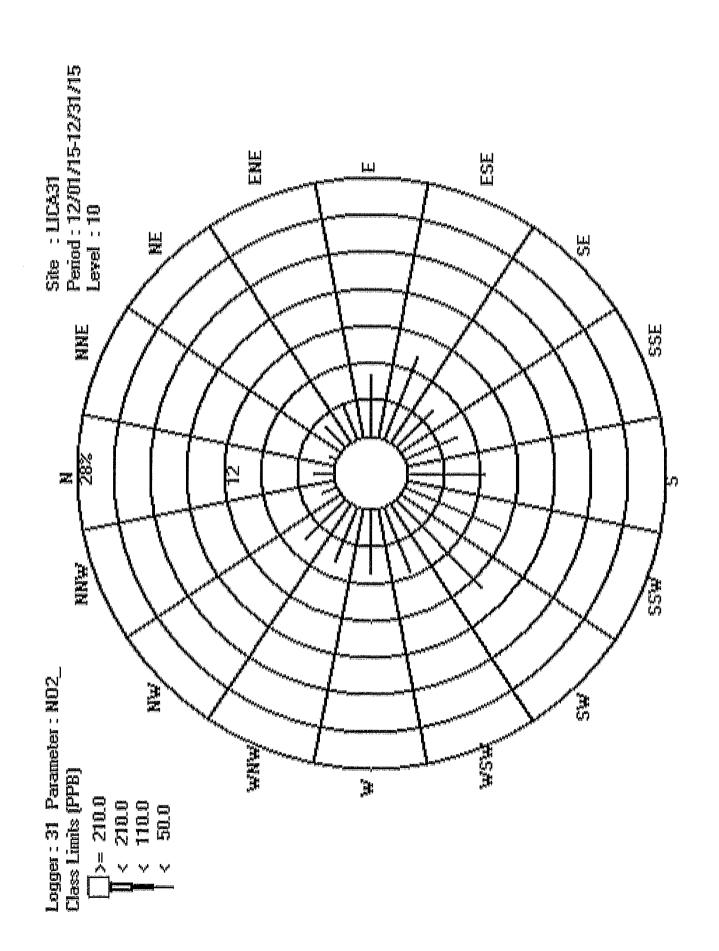
Total # Operational Hours : 696 Calm : .00 %

Distribution By Samples

Freq 969 NNN 12 12 NW 42 42 WINW 44 48 48 25 WSW 52 SW 93 93 SSW 79 79 59 Ø 29 43 SSE 43 Direction SE 40 40 67 ESE 67 46 ы 46 53 ENE 29 뜆 21 21 NA EN 15 z 15 Totals Limit 50.0 110.0 210.0 >= 210.0 ٧

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Total # Operational Hours: 696 Calm : .00 %



Phase: SPAH 12/24/16 == Exp Value -10% Sequence: NO2 - Exp value +10% Parameter: NO2_ Calibration Graph for Site: LICA31 🛨 Exp Value 664.20 100,00 620.17 52.40 

**OZONE** 



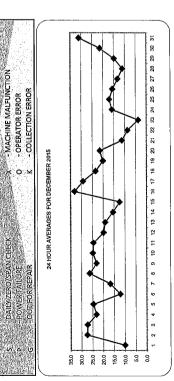
#### OZONE (O3) hourly averages in ppb

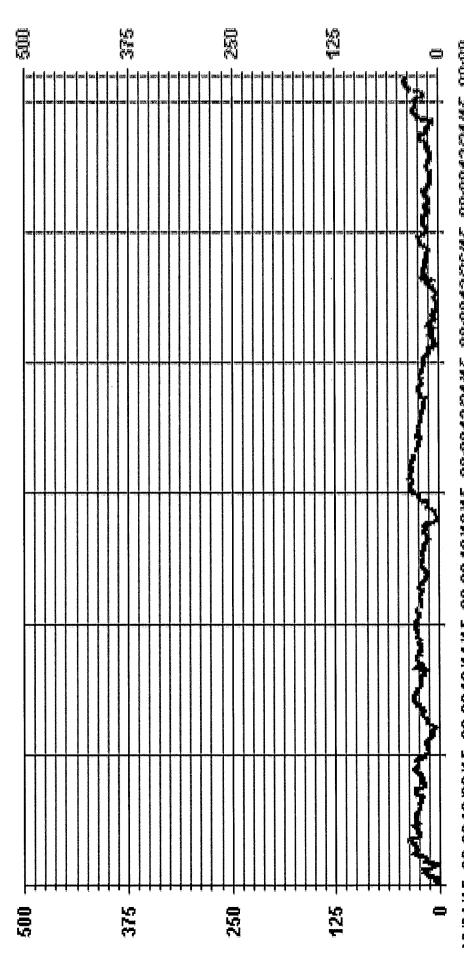
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MAXIMUM 24-HR AVERAGE:		33.2	PP3			ON DAY(S) VAR-VARIOUS	Ŧ	16
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St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

#### OZONE MAX instantaneous maximum in ppb

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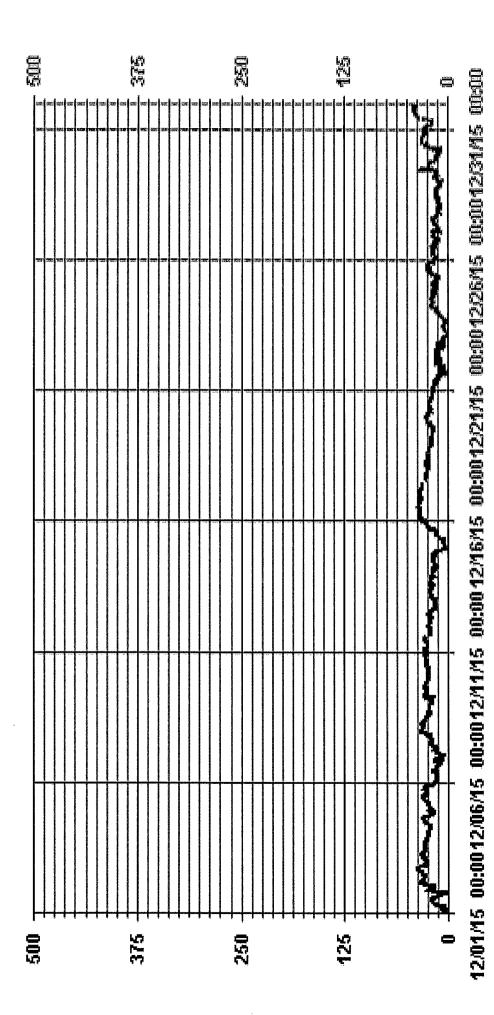
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NUMBER OF NON-ZERO READINGS:			701						
MAXIMUM INSTANTANEOUS VALUE:			40	PPB	@ HOUR(S)	VAR	ON DAY(S)		31
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Of Hour Averages



- LICA31 OSMAX PPB

LICA31 O3_ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : 03 Units : PPB

Wind Parameter : WDR Instrument Height : 10 Meters

1.70 100.00 NNW Freq 00. 00, 00. 1.70 5.27 5.27 ž 00. 00. 00. 6.26 6.26 00. 00. 0. 6.83 6.83 8. 00. 00. 00. 7.40 7.40 00. 00. S 8.40 11.25 13.24 0. 00. 0. 8.40 11.25 13.24 8. SSW 0. 00. 00. 00. 00. Ø 6.12 6.12 SSE 00. 00. 00. Direction 8. 5.98 S 90, 00. 6.83 10.68 5.98 ESE % 6.83 10.68 00. 00. 00. 00. 8 ы 4.13 4.13 % 90. 00. 2.99 2.99 ğ 00. 00. 00. .85 00. 80. 00 % 1.99 1.99 00. 00. z Totals Limit 20 110 210 X ٧ ٧

00. 00. 00.

Calm : .00 %

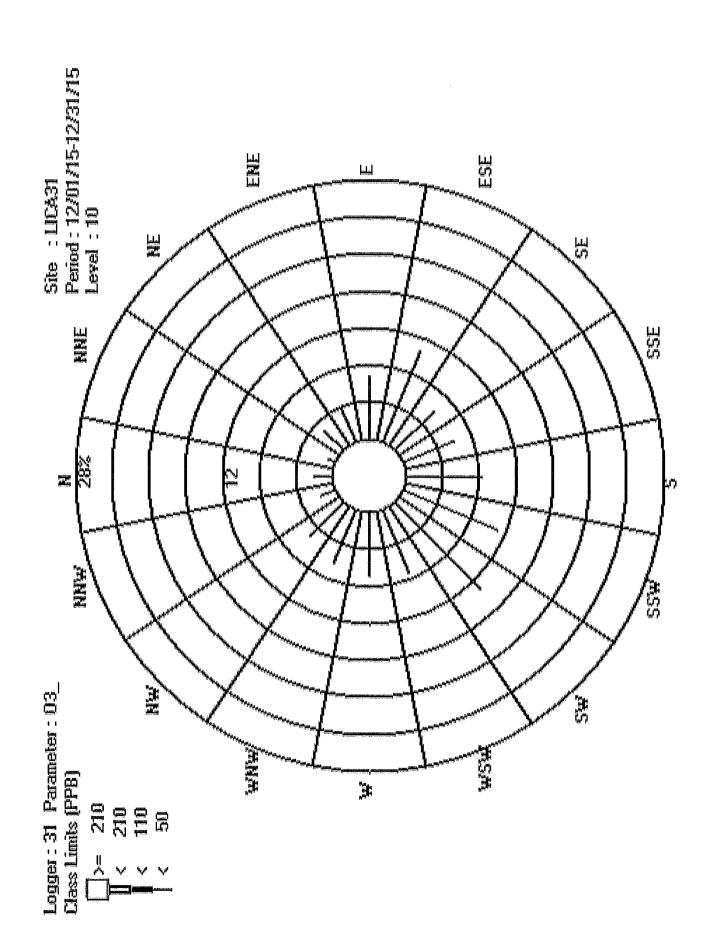
Total # Operational Hours : 702

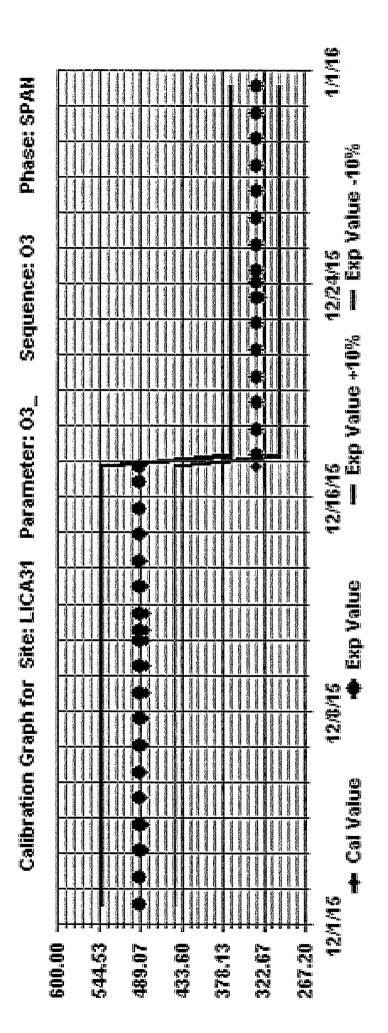
Distribution By Samples

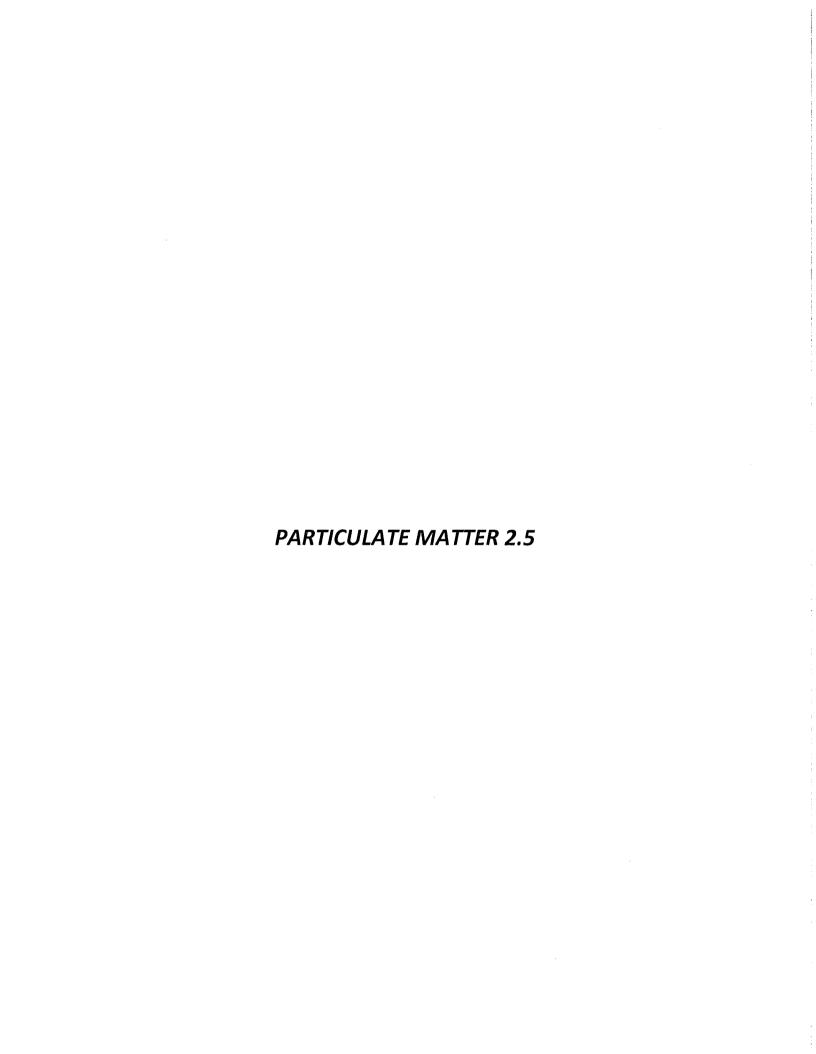
	Freq	702				
	NNW	12				12
	Ā	37				37
	WNW	44				44
	×	48				48
	WSW	52				52
	SW	93				66
	SSW	42				42
	Ø	9				59
	SSE	43				43
Ulrection	SS	42				42
DIFE	ESE	75				75
	įκί	48				48
	ENE	59				59
	Ħ	21				21
	NNE	9				9
	×	14				14
	Limit	20	110	210	210	Totals
	ä	٧	٧	٧	X.	ř

Calm : .00 %

Total # Operational Hours : 702









MST

JOB # 2833-2015-12-31- C St. Lina Site - DECEMBER 2015

# hourly averages in ug/m3

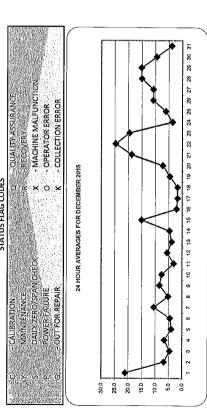
ᅩ
(PM2.5)
<b>ESS THAN 2.5 MICRONS)</b>
ARTICULATE MATTER 2.5 (
Δ.

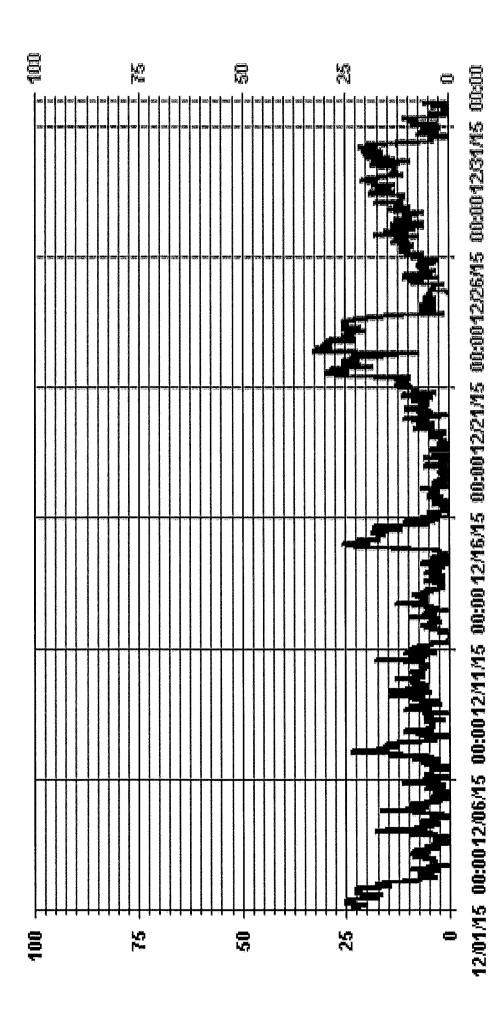
	RDGS.	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	23	24	24	24	24	24	24	24	54	24	24	54	24	24	24	24		
24-HOUR	AVG.	21.2	8.9	4.6	9.9	4.0	4.5	10.5	5.1	8,4	7.6	3.1	5,5	3.9	4.7	15.0	2.1	1.7	1.7	4.6	7.2	18.8	24.7	19.6	3.7	6.1	10.8	10.8	15.0	15.2	9.5	6		
DAILY	MAX.	25	18	10	18	11	15	24	11	15	18	თ	13	თ	23	26	7	7	9	11	11	30	33	56	7	11	18	15	21	20	22	11		
23:00	0:00	14	4	4	Ŋ	7	15	9	Ŋ	œ	10	S	7	7	22	4	7	н	н	0	7	23	54	9	7	9	15	13	21	20	7	4	24	8.5
22:00	.23:00	16	4	10	ø	11	9	4	m	9	S	7	Ŋ	9	23	4	Ŋ	0	0	7	თ	56	25	7	4	7	13	თ	21	20	m	9	26	8.9
21.00	22:00	17	S	m	11	11	Ŋ	11	7	13	m	m	9	Ŋ	14	11	Ŋ	0	7	S	œ	25	52	m	m	7	18	12	20	17	4	0	29	8.8
20:00	21:00	23	n	0	17	7	4	7	10	7	11	9	S	7	თ	Ŋ	Ŋ	0	m	11	m	21	23	П	4	4	10	12	18	20	7	П	23	8.3
19:00	20:00	22	4	0	თ	П	თ	œ	თ	œ	Ŋ	S	7	н	4	Ŋ	7	m	0	თ	œ	18	53	11	4	m	7	13	18	14	7	4	23	7.6
18:00	19:00	23	4	4	9	m	7	7	4	თ	φ	2	13	2	7	7	7	0	П	œ	11	56	30	16	Ŋ	4	10	10	13	16	Ŋ	Н	30	8.1
17:00	18:00	21	0	н	2	2	9	7	7	თ	10	0	თ	2	m	17	4	0	0	7	11	ଯ	28	20	П	00	13	φ	14	13	∞	0	53	8.2
) .16:00	017.00	23	m	7	2	9	7	0	11	9	σ	0	∞	Ŋ	0	18	0	7	m	00	9	24	29	20	0	Ŋ	12	∞	17	σ	Н	н	53	7.9
0 :15:0	0 16:0	16	9	0	5	7	9	9	φ	Ŋ	80	m	9	9	0	18	0	0	Ŋ	4	4	27	31	23	0	7	11	11	17	17	0	Н	31	7.9
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.00	00 12							3 7																									30	•••
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6 00	00 TO		4				4	15 1			2.										7													
8 00.	600	25	9	თ	7	0	2	16	1	9	Z.	1		m	7	17 1	0	0	7	π.	S	10	77			4	12	<u> </u>	11	13	20	9	25 2	7 7
5:00 6:00 7	2.00	24	m	œ	9	4	4	12	9	11	9	0	თ	9	0	17	7	0	7	н	9	9	12				 თ	14	15	14	17	7	76	3.6
9 00:5	6:00	20	7	7	4			15																										
200	2:00	22	œ					18																										
	4.00	24	12	Ŋ	თ	9	0	50	Ŋ	9	10	IJ	4	Ŋ	2	22	0	7	н	Ŋ	∞	13	22	22	m	9	9	12	#	12	19	3	25	9.5
2-00	装	22	15	თ	16	9	9	24	4	თ	9	œ	m	თ	Ŋ	19	0	Ŋ	0	7	4	თ	77	23	4	12	70	11	18	17	21	3	24	10.3
20:23	5:00	23	17	₉	18	9	ᆏ	13	4	7	თ	თ	7	œ	7	56	7	m	9	7	9	70	56	24	m	თ	유	œ	13	17	16	6	26	10.6
0:00 1:00	1:00	23	18	ø	7	œ	ø	11	Ŋ	7	9	თ	Ŋ	9	m	22	7	S	0	П	7	15	22	56	/	7	თ	12	12	20	17	e i	56	6.6
HOURSTART	HOUR END	<b>н</b>	2	8	4	<b>S</b>	Θ	7	œ	on.	<del>1</del> 0	न	12	13	44	15	16	17	18	<del>1</del>	20	21	22	23	24	52	26	27	28	ຄ	90	31	HOURLY MAX	HOURLY AVG

ALBERTA ENVIRONMENT: 24HR 30 ug/m3 OBJECTIVE LIMIT:

STATUS FLAG CODES

#### HRS % 22 743 8.6 ON DAY(5) ON DAY(S) VAR-VARIOUS OPERATIONAL TIME: AMD OPERATION UPTIME: 9 MONTHLY AVERAGE: MONTHLY SUMMARY ug/m3 @ HOUR(S) ug/m3 671 33 24.7 HRS NUMBER OF 24-HR EXCEEDENCES: 7.36 7 NUMBER OF NON-ZERO READINGS: MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE: MONTHLY CAUBRATION TIME: STANDARD DEVIATION:





- LICASI PM2 UGM3

LICA31
PMZ / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : PM2 Units : UG/M3

Wind Parameter : WDR Instrument Height : 10 Meters

	Freq	99.05	.94	00.	00.	00.	00.	
	NIMM	1.88	00.	00.	00-	%	00.	1.88
	MN	5.80	00.	00.	00.	00.	00.	5.80
	WNW	6.20	00.	00.	00.	00.	00.	6.20
	×	6.61	00.	00.	00.	00.	00.	6.61
	WSW	7.01	00.	00.	00.	00.	00.	7.01
	SW	12.55	.53	00.	00.	00.	00.	13.09
	SSW	11.47	9.	00.	.00	00.	00.	11.47
	Ø	8.09	.13	00.	%	0.	00.	8.23
	SSE	6.07	.13	0.	00.	00,	.00	6.20
Direction	SE	5.80	00.	0.	00.	00.	00.	5.80
Di	ESE	10.79	00.	00.	00.	00.	00.	10.79
	ы	7.01	00.	00.	00.	00.	00,	7.01
	ENE	4.04	00.	00.	00.	%	00.	4.04
		2.83	00.	%	8.	00.	00.	2.83
	NAME	.80	.13	00.	00.	00.	00.	. 94
	×	2.02	8.	%	0.	00.	00.	2.02
	Limit	30	9	80	120	240	240	Totals
		٧	٧	٧	٧	٧	X	

Total # Operational Hours : 741

Calm : .00 %

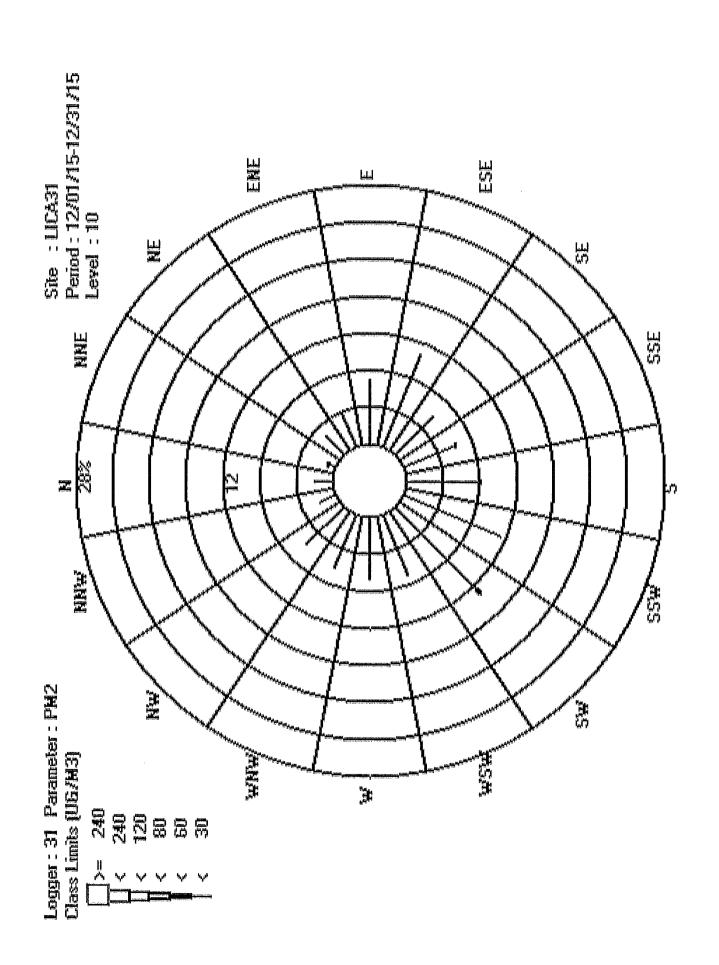
Distribution By Samples

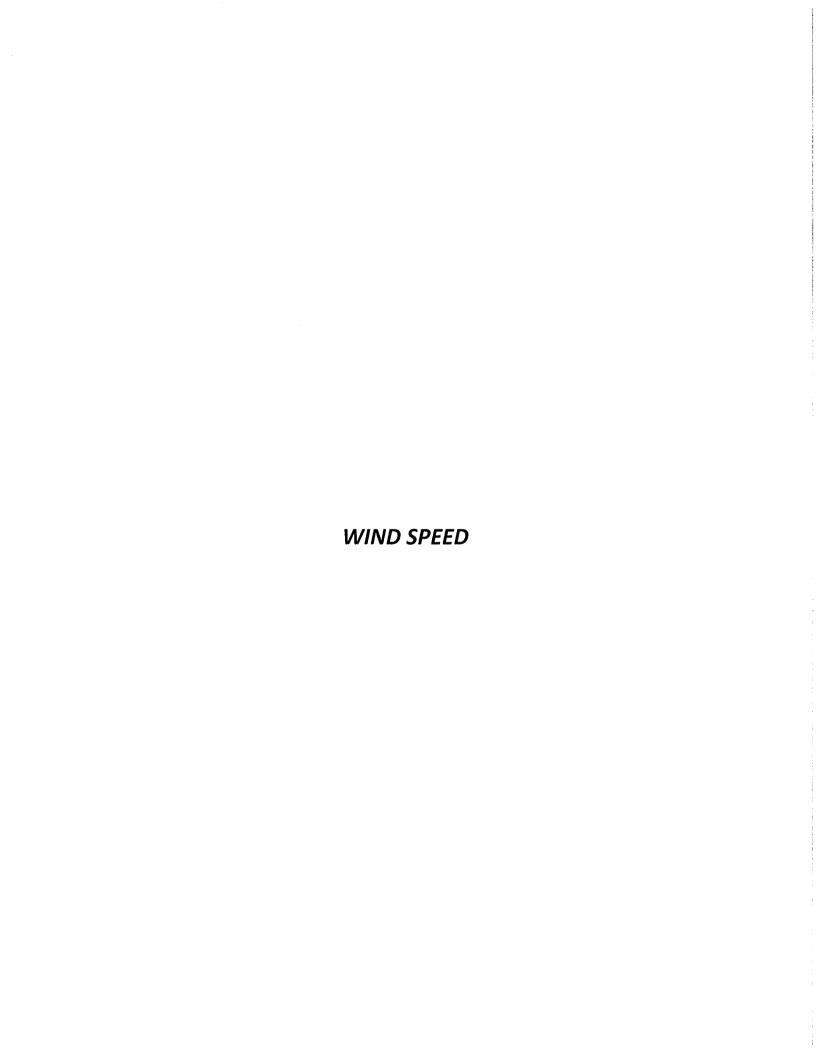
Direction

Freq	734	7					
MNW	14						14
N	43						43
WNW	46						46
×	49						49
WSW	52						52
SW	93	4					97
SSW	82						82
Ø	9	н					19
SSE	45	н					46
SE	43						43
ESE	80						80
ы	52						52
ENE	30						30
Ä	21						21
NNE	w	н					7
×	15						15
Limit	30	09	80	120	240	240	Totals
	٧	٧	٧	٧	٧	X	

Calm : .00 %

Total # Operational Hours : 741





## LAKELAND INDUSTRY & COMMUNITY ASSOCIATION St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

#### WIND SPEED (WS) hourly averages in km/hr

MST

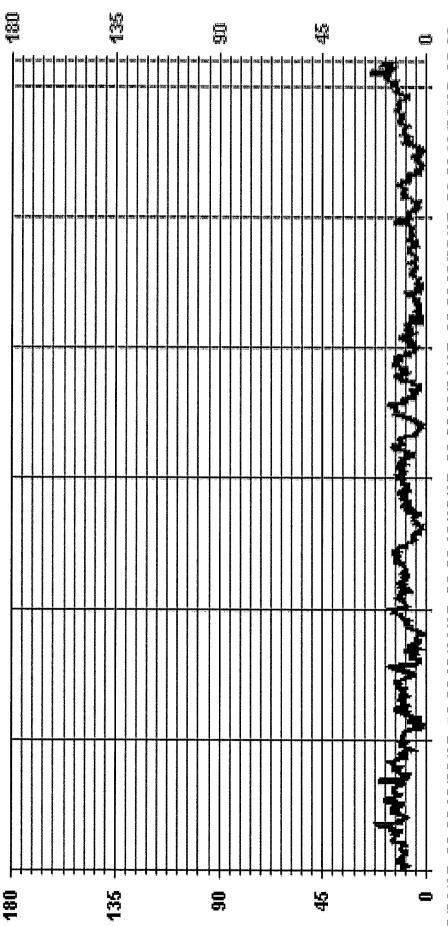
S. C.	24	54	24	24	24	24	24	54	24	74	24	54	54	54	24	54	24	24	24	24	24	24	24	24	54	54	54	54	54	54	24		
24-HOUR	10.3	13.6	12.9	12.8	11.0	6.7	10.2	10.5	4.9	8.0	10.4	10.4	9.1	8.4	9.4	10.2	8.8	9.3	6.8	10.2	7.4	3.9	4.5	5.5	7.4	8.9	7.3	4.1	6.6	11.4	16.4		
DAILY	12.7	21.3	18.6	20.5	15.8	11.2	14.4	15.8	6.6	14.0	14.9	13.8	14.3	5.7	12.5	12.8	14.6	16.9	13.9	14.8	12.0	7.6	8.3	7.5	13.9	10.9	12.0	9.5	11.9	13.5	24.4		
23:00	6 8	10.7	12.1	15.1	11.6	7.0	9.7	4.3	4.5	14.0	11.7	13.6	2.7	7.5	10.3	6.1	2.0	9.1	13.9	5.4	8.9	5,3	5.5	4.8	7.8	10.0	2.5	7.7	10.3	12.8	12.7	15.1	8.6
22:00	10.5	12.9	11.2	11.6	9.4	5.2	10.3	5.1	4.5	13.4	9.6	13.4	5.1	6.2	10.2	5.2	3.1	10.0	12.9	5.1	9.2	5.1	5.4	4.3	10.9	10.7	2.9	8.8	10.7	11.1	15.3	15.3	8.7
21:00	11.0	8.6	11.8	12.2	10.3	7.4	8.2	12.6	4.6	14.0	10.0	12.6	5.3	5.8	10.6	8.5	3.4	12.5	11.9	5.9	7.7	2.3	5.4	5.6	13.1	10.9	2.2	9.5	11.0	12.6	18.7	18.7	6,3
20:00	11.0	14.2	13.4	13.2	11.1	3.0	10.6	14.5	4.7	12.5	10.9	13.8	6.2	5.7	10.7	8.0	4.3	16.9	8.6	9.3	8.3	2.8	6.8	7.5	13.9	9.1	4.0	8.3	10.4	13.5	19.3	19.3	10.2
19:00	10.6	18.1	16.7	11.9	11.3	3.2	8.9	15.8	15	11.1	9.0	11.8	6.4	8.7	7.1	9.9	4.3	15.2	10.8	6.5	8.6	4.0	6.7	7.1	6.6	9.5	4.0	5.8	10.8	12.9	16.5	18.1	9.5
18:00	96	21.3	16.4	11.6	9.7	7.9	11.9	14.5	3.5	11.3	7.4	10.3	6.1	8.3	9.5	9.2	4.1	13.7	7.8	10.1	8.7	3.5	5.8	7.1	8.3	6. 6.	4.0	4.3	10.5	10.8	16.8	21.3	9.5
17:00	7.7	20.7	18.6	10.5	8.4	4.4	10.1	13.1	4.0	10.7	7.0	10.5	5.6	5.2	9.4	10.7	5.7	13.4	4.7	11.6	6.2	4.7	4.0	7.1	7.1	6.8	2.0	3.4	11.9	11.0	14.5	20.7	8.7
16:00	9.1	14.3	17.4	7.9	6.5	5.5	8.5	8.6	7.1	10.2	9.6	8.6	5.1	1.9	9.3	11.1	6.5	13.7	6.5	12.7	6.3	2.8	3.0	7.1	6.1	6,3	5.4	4.5	11.7	8.6	15.1	17.4	8.4
15:00	10.3	16.0	12.3	8.3	5.8	4.0	9.3	6.6	7.8	9.3	11.1	9.0	6.4	4.0	8.2	10.1	9.1	13.2	5.2	12.1	8.4	4.7	3.5	5.9	5.2	6.2	7.8	2.4	11.0	7.2	17.1	17.1	8.4
14:00	10.9	12.5	89 67	8,0	9.4	0.9	11.2	7.0	7.5	7.9	10.7	9.0	7.3	4.8	7.8	9.3	10.2	12.8	2.8	10.2	8.3	1.4	3.6	5.9	5.2	3.8	7.9	0.3	10.8	8.8	15.0	15.0	7.8
13:00	10.7	6.6	10.9	11.7	8.1	1.2	11.6	5.3																							Ť	24.4	
12:00	11.7	. , .	15.0	14.5	10.6																											21.8	
71.00	10.3		•	20.5				7.3																								20.5	
10:01			14.7		10.9																											19.5	
0.6	12.6				7.4									4.9						7 14.8												3 17.4	
0.8	7 12.7			•			8.2						5 12.4							5 11.7					5.5	4.0		5.8	٠.	2 12.6		3 17.8	
0.7.0	10.7					9.2		2 11.5			9.3									11.5						5.9						15.8	
0.9 0.0	0 0			7 12.8			4 9.5																			5.8			9.1	7 11.8		9 17.1	
0.5	4 11.0			.0 13.7	.8 14.6	.7 10.6	.0 14.4	.8 13.5						6 2.1								6 5.9						6 4.4	9.8	.2 11.7	4 13.7		3 9.2
00 4.0	6	.5 15.0		.8 15.0	.7 15.8	5 10.7	.7 13.0	11.9 12.8	7 6.4											5 10.3					1 8.4	9 8.0	4 10.1	1 3.	7	.4 12.2	.0 14.4	.7 15.8	
90	9.1	11.0 14.5		14.0 12.8	_	9.0 10.5		12.7 11												8.2 9.5			7.9 8.3		3.4 8.	6.8 6.		2.2 3.		13.3 12		15.6 14.7	
500	10.7		8.8			10.9		12.7 12																						12.6 13		14.5 15	
HOLINSTART G.00 1:00 2:00 3:00 4:00 S. HOURING G.50 1:00 3:00 4:00 S.	10.8		10.1			11.2 10		12.6 12																						11.3 12	•		8.9
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#### STATUS FLAG CODES

CTION		<u> </u>			25 26 27 28 29 30 31
R RECOYERY X - MACHINE MALFUNCTION O - OPERATOR ERROR K - COLLECTION ERROR	MBER 2015				17 18 19 20 21 22 23 24 25 2
CHECK	24 HOUR AVERAGES FOR DECEMBER 2015		*	<b>&gt;</b>	10 11 12 13 14 15 16 17
- MAINTENANCE DAILYZEROJSPAN - POWERFAILURE OUT-FOR-REPAIR	24 H	<b>.</b>	* <b>-</b>	<b>&gt;</b>	2 3 4 5 6 7 8 9

DECLINATION:	

NUMBER OF NON-ZERO READINGS:			744					
MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:		24.4 16.4	КРН КРН	КРН @ HOUR(S) КРН	13	ON DAY(S) ON DAY(S) VAR-VARIOUS	31 31	1
MONTHLY CAUBRATION TIME:	0	HRS		OPERATIONAL TIME: AMD OPERATION UPTIME:	: PTIME:		744 100.0	HRS
STANDARD DEVIATION:	3.92			MONTHLY AVERAGE:	.::		8.9 KPH	КРН



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/26/15 00:00



St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

## VECTOR WIND SPEED MAX instantaneous maximum in km/hr

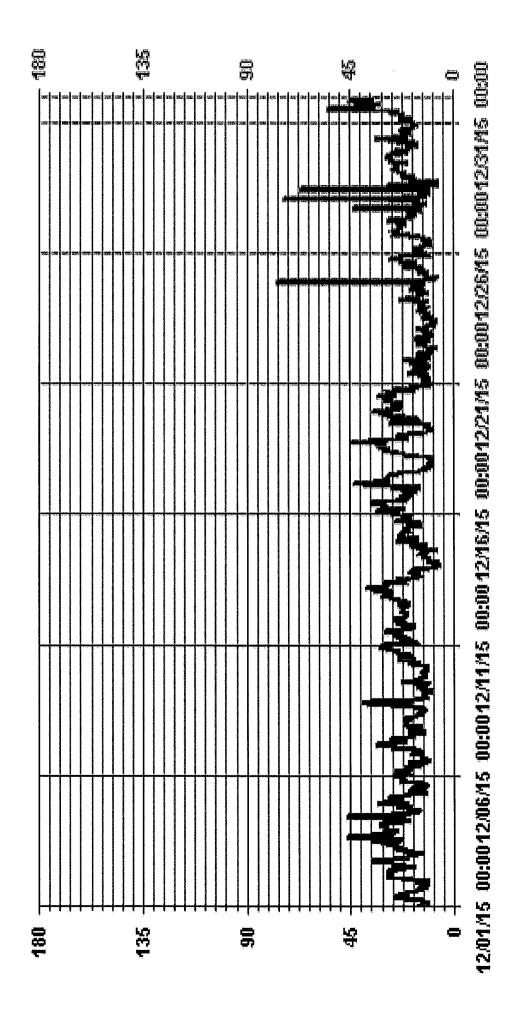
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14.2     14.2     11.6     10.5     13.8     13.9     20.9     21.4     26.4     20.5     24.9     20.8     21.0     16.4       17.9     23.1     28.7     28.5     28.7     28.9     28.7     25.4     21.7     18.1     16.6     20.7       12.4     17.5     21.0     24.7     24.5     25.0     26.7     26.8     31.5     29.7     34.2     29.7
13.8 13.9 20.9 21.4 26.4 20.5 24.9 20.8 21.0 16.4 15.7 16.8 14.2 12.3 12.0 13.4 28.0 29.7 28.2 28.9 28.7 25.4 21.7 18.1 16.6 20.7 27.6 26.2 33.9 35.9 34.5 27.1
13.8 13.9 20.9 21.4 26.4 20.5 24.9 20.8 21.0 16.4 15.7 16.8 14.2 12.3 12.0 28.0 29.7 28.2 28.9 28.7 25.4 21.7 18.1 16.6 20.7 27.6 26.2 33.9 35.9 34.5
138 13.9 20.9 21.4 26.4 20.5 24.9 20.8 21.0 16.4 15.7 16.8 14.2
14.2     14.2     11.6     10.5     13.8     13.9     20.9     21.4     26.4     20.5     24.9     20.8     21.0     16.4     15.7     16.8       17.9     23.1     28.7     28.9     28.7     25.4     21.7     18.1     16.6     20.7     27.6     26.2
17.9 23.1 28.7 28.5 28.0 29.7 28.2 28.9 28.7 25.4 21.7 18.1 16.6 20.7 3.12.4 17.5 21.0 21.0 24.7 26.5 25.0 26.0 29.5 31.5 29.7 36.3 23.7 21.9
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13.8 13.9 20.9 21.4 28.0 29.7 28.2 28.9 24.7 26.5 25.0 26.0
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16.0 14.2 14.2 12.2 17.9 23.1 16.5 12.4 17.5 30.0 28.7 32.6
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#### STATHSFLAGO

STATUS FLAG CODES	100N	
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	ن جين ۾ د	

24		HRS
		743 HRS
ON DAY(S)	VAR-VARIOUS	
22	VAR-V	
76.9 крн @ HOUR(S)		OPERATIONAL TIME:
КРН		OPERATI
76.9		
MAXIMUM INSTANTANEOUS VALUE:		



- LICA31 WSMAX RPH

LICA31 NSP / WDR Joint Frequency Distribution (Percent)

Distribution By % Of Samples

Logger Id : 31 Site Name : LICA31 Parameter : WSP Units : KPH

Wind Parameter : WDR Instrument Height : 10 Meters

Direction

Freq	26.47	51,88	20.43	.67	.00	00.	
NNW	1.61	.26	8.	00.	%	8.	1.88
MZ	2.55	2.55	.80	00.	00.	00.	5.91
WNW	2.83	2.68	.40	.13	%	00.	6.04
Ħ	1.47	2.95	1.88	.13	00-	00.	6.45
WSW	1.74	2.95	2.01	.26	00.	00.	6.98
SW	2.15	6.31	4.43	.13	00.	00.	13.03
SSW	1.74	00.6	.67	00-	00.	00.	11.42
w	2.28	4.16	1.74	0.	00.	00.	8.19
SSE	1.47	2.68	2.01	00.	00.	00-	6.18
SE	.67	4.30	.80	00.	00.	00.	5.77
ESE	.67	6.85	3.36	00.	00.	00.	10,88
ы	1.07	4.30	1.61	00.	00.	00.	6.98
ENE	1.74	1.61	.67	00.	00.	00.	4.03
E	2.41	.40	00.	00.	00.	00.	2.82
NNE	.53	.26	00.	00.	00.	00.	.80
z	1.47	.53	00-	00.	00.	00.	2.01
Limit	0.9	12.0	20.0	29.0	39.0	39.0	Totals
	٧	٧	٧	٧	٧	X	

Calm : .53 %

Total # Operational Hours : 744

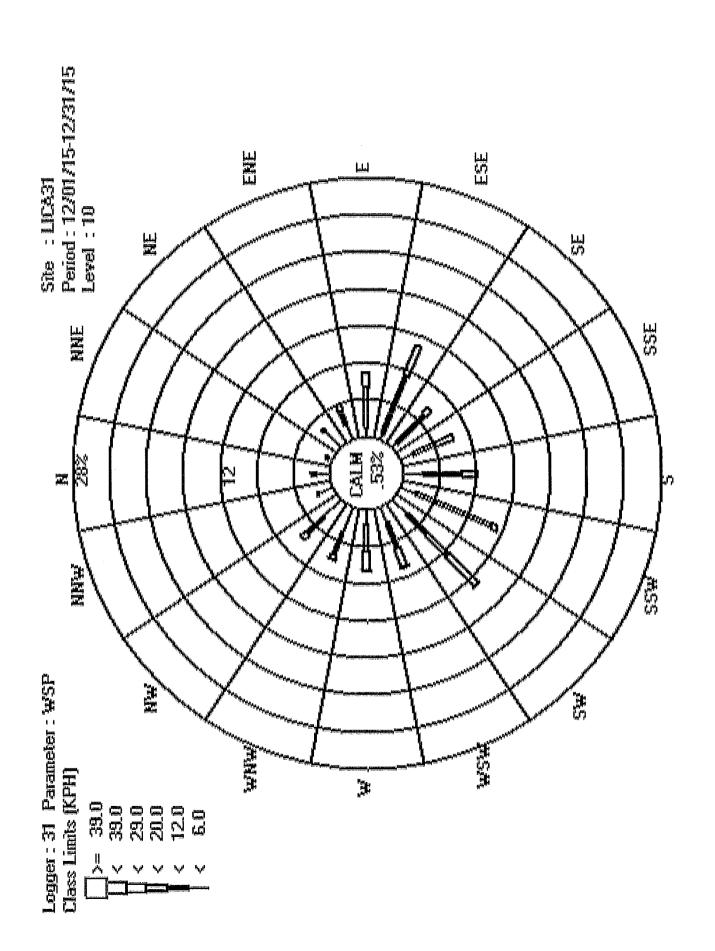
Distribution By Samples

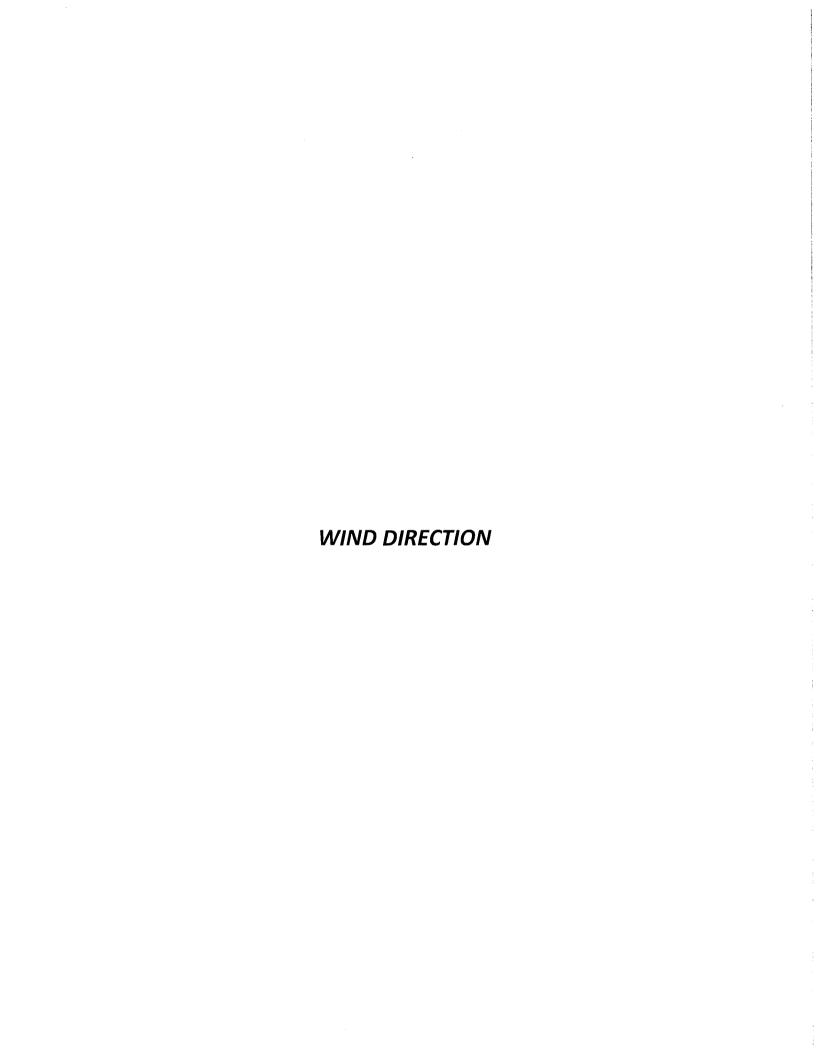
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	SSE	11	20	15				46	
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110	ESE	Ŋ	51	25				81	
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	Limit	6.0	12.0	20.0	29.0	39.0	39.0	Totals	
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Calm : .53 %

Total # Operational Hours : 744







### LAKELAND INDUSTRY & COMMUNITY ASSOCIATION St. Ling Site - DEFEMBER 2015

St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

#### WIND DIRECTION (WD) hourly averages

MST

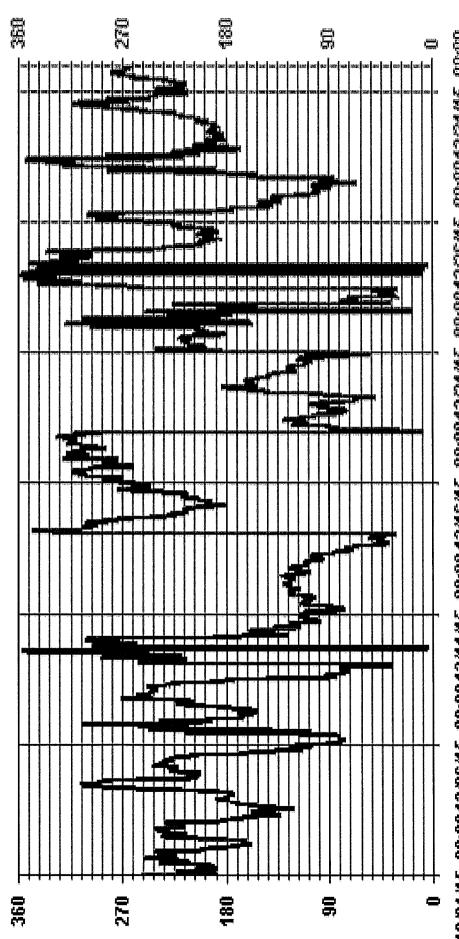
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HOUR END	1.00	2:00	3.00	1:00	5:00		7.00	.00	00 TE	.00	-00 12	-00 13:0	30 - 14.C	0 15:00	16:00	17:00	18:00	19.00	20:00	24.00	22:00	23:00	-0.00	QUADRANT	RDGS.
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3	SW															SSE	SSE	SSE	s	S	s	s	s	SSE	24
4	S								-	_	Ī		_			WSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	SW	24
S	SW															SSE	SSE	S	SE	ESE	SE	ESE	ES	SSW	24
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	August 28, 2014	MAGNETIC DECLINATION 19 DEGREE EAST	
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MONTHLY CALIBRATION TIME:	0 HRS	OPERATIONAL TIME:	744	HRS
STANDARD DEVIATION:	80.38	AMD OPERATION UPTIME:	100.0	%
		MONTHLY AVERAGE:	S	



12/01/15 00:0012/06/15 00:0012/11/15 00:0012/16/15 00:0012/21/15 00:0012/26/15 00:0012/36/15 00:00

中国民





St. Lina Site - DECEMBER 2015 JOB # 2833-2015-12-31- C

# STANDARD DEVIATION WIND DIRECTION (STDWD) hourly averages in degrees

MST

23:00	9	7	11	80	12	12	10	20	13	51	13	14	15	14	#	51	22	Ħ	14	12	32	4	18	თ	ιΛ	16	19	10	თ	4	-
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2:00	15	9	13	17	6	25	77	12	32	16	15	15	51	17	10	16	14	16	17	15	7	32	20	18	18	23	16	12	14	15	7
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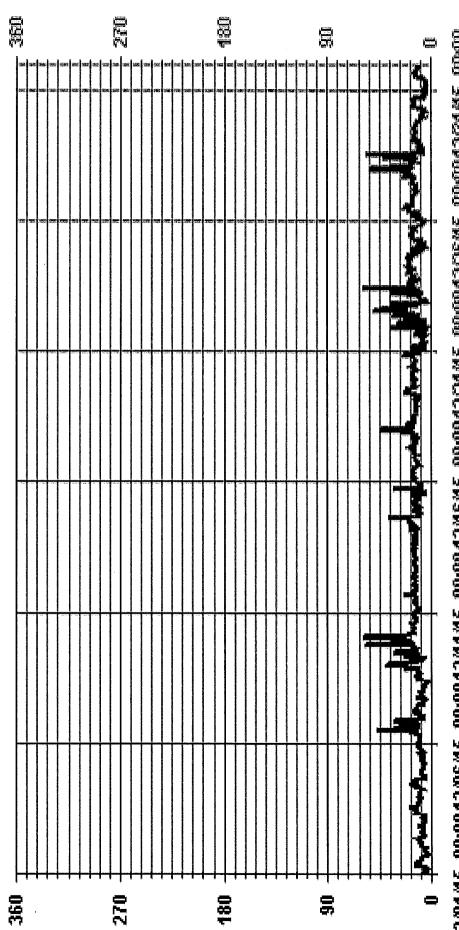
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LAST CALIBRATION:

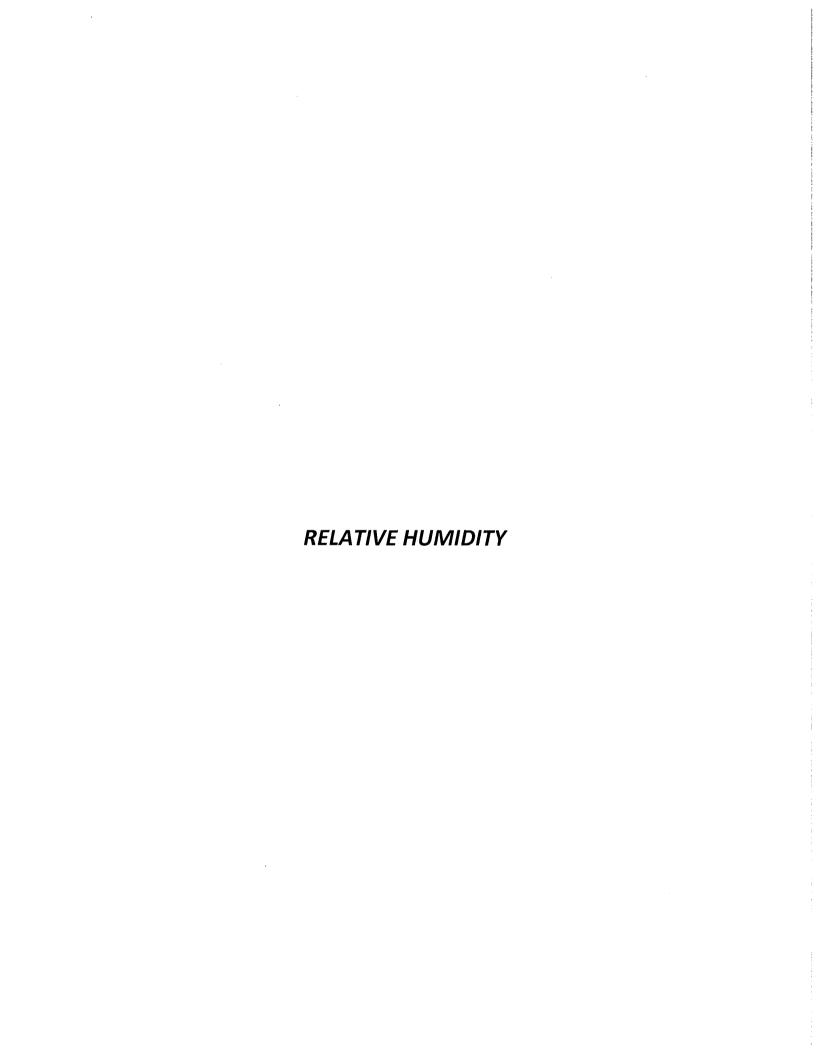
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Of Hour Averages



12/01/115 00:0012/06/115 00:0012/11/115 00:0012/16/115 00:0012/21/115 00:0012/26/115 00:0012/26/115 00:00

- LICASI STEMPTR DEG





MST

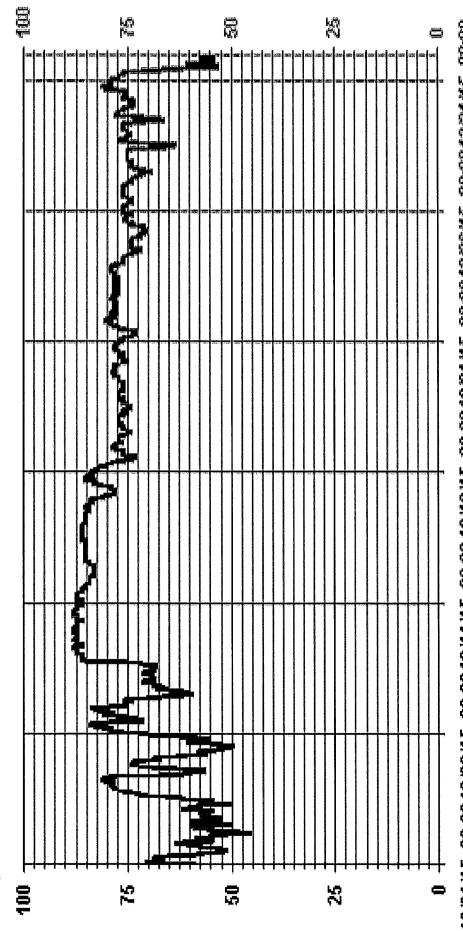
RDGS.	24	24	24	74	54	75	54	54	24	74	74	74	24	24	24	54	54	24	24	54	54	54	54	54	54	24	54	24	24	54	74		
24-HOUR AVG.	60.4	54.9	64.4	72.0	58.6	78.6	8.69	73.2	87.2	87.1	85.6	84.0	85.6	84.6	81.5	78.2	76.4	76.0	77.0	77.0	76.8	78.0	78.0	74.5	73.2	75.5	73.3	73.1	74.3	76.5	65.4		
DAILY	71	9	79	81	2	25	8	98	88	8	87	82	98	98	82	28	78	1	79	78	8	79	79	F	76	76	73	F	78	81	79		
23:00	57	28	79	71	70	83	71	98	88	98	Ħ	82	98	28	84	79	1	1	78	11	78	11	78	74	76	9/	ĸ	75	75	79	27	88	76.8
22:00	22	57	78	74	29	8	89	98	88	98	28	85	98	84	83	78	4	4	78	1	79	4	28	74	75	76	74	74	76	79	57	88	76.4
21.00	55	57	78	72	62	82	9	86	88	87	2	82	98	83	8	4	4	76	79	78	79	4	79	74	74	76	74	75	76	79	26	88	76.3
20:00	62	22	4	74	28	79	67	86	87	87	28	82	98	8	82	76	76	76	78	78	80	78	79	74	74	76	74	75	1	79	54	87	76.1
19:00	প্র	54	76	74	22	78	99	8	87	87	8	85	98	8	82	76	4	4	78	78	80	79	79	74	75	76	74	76	F	81	54	87	76.2
18-00	61	52	74	22	28	79	89	75	87	87	8	85	86	8	82	76	76	4	78	78	79	78	79	74	75	76	74	1	1	87	22	87	75.7
17:00	58	56	73	69	61	81	89	72	87	88	8	82	86	85	82	76	76	76	78	77	79	78	79	74	76	76	74	11	78	8	28	88	75.8
16:00	57	9	72	8	27	78	65	72	87	88	8	82	98	82	83	76	76	76	11	78	79	79	78	74	75	76	73	75	4	8	61	88	75.3
15.00	54	22	20	29	22	75	62	7	88	88	82	88	98	8	83	74	75	75	۲	1	78	79	78	74	75	76	73	72	74	1	28	88	73.9
14:00	52	54	99	26	52	73	62	88	88	88	85	8	88	8	83	73	75	75	1	1	78	78	78	73	75	76	71	99	71	75	54	88	72.7
-13:00 14:00	51	20	62	29	49	73	8	89	87	88	86	8	86	8	82	73	74	75	1	76	11	78	78	72	74	55	71	63	6	75	23	88	71.8
12.00	52	24	61	9	21	71	23	69	87	87	98	8	98	8	81	74	75	74	77	76	1	78	78	72	74	75	69	2	99	75	28	87	72.1
12:00	72	9	82	62	20	75	62	69	87	87	98	8	86	82	79	76	75	75	76	1	75	11	78	73	73	74	71	99	29	76	62	87	72.7
10:00	57	29	54	89	25	8	67	88	86	87	86	83	86	82	79	78	76	75	76	1	74	78	11	74	72	74	72	2	71	75	67	87	73.6
9:00	59	28	28	78	24	\$	71	2	86	87	87	88	82	85	79	79	4	76	76	76	73	78	4	74	71	74	72	74	74	76	72	87	74.9
8:00	99	26	72	8	28	84	75	71	88	98	87	83	85	85	78	79	11	76	76	76	73	11	78	75	71	74	73	75	76	76	75	88	75.6
7.00	<i>L</i> 9	54	20	81	28	8	76	71	8	86	87	83	85	85	78	80	1	75	76	75	73	78	78	75	71	75	73	75	76	75	76	88	75.5
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3.00	<i>L</i> 9	55	62	78	2	79	76	69	87	87	87	83	82	85	79	82	4	4	76	78	76	79	1	76	72	76	74	75	76	74	77	87	1 76.3
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#### STATUS FLAG CODES

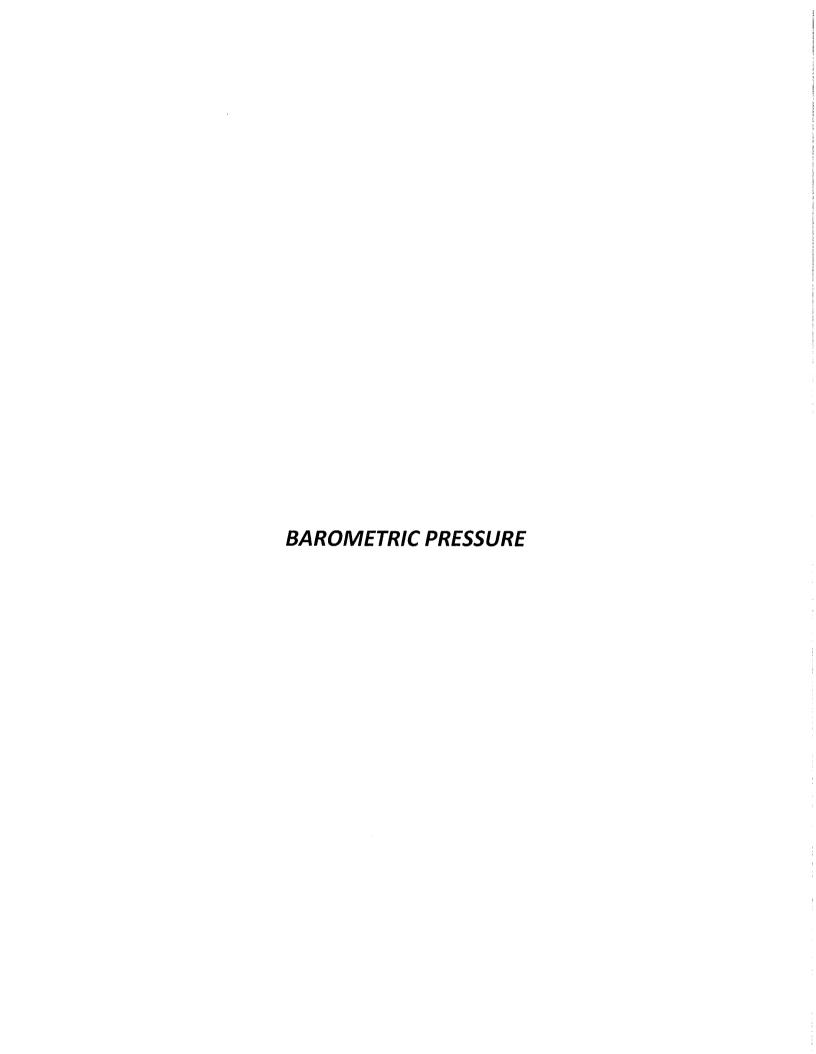
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### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:	~	88 87.2	% %	% @ HOUR(5) %	VAR	ON DAY(S) ON DAY(S)	<b>3.</b>	9,10
				OPERATIONAL TIME: AMD OPERATION UPTIME:	ME: ! UPTIME:	VAR-VARIOUS	744	HRS %
STANDARD DEVIATION:	8.86			MONTHLY AVERAGE:	GE:		75	%



12/01/M5 00:0012/06/M5 00:0012/M1/M5 00:0012/M6/M5 00:0012/21/M5 00:0012/26/M5 00:0012/31/M5 00:00



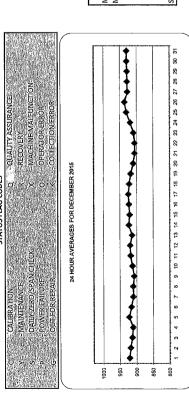


BAROMETRIC PRESSURE (BP) hourly averages in millibar

MST

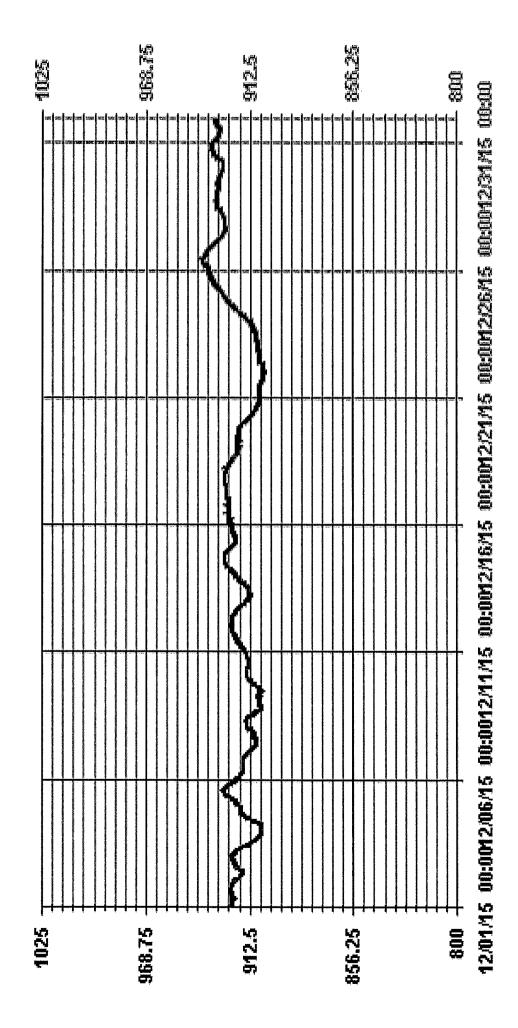
RDGS.	24	24	24	24	24	24	77	24	24	24	77	74	54	77	24	74	74	24	54	24	24	74	74	24	24	54	54	54	24	75	77		
24-HOUR AVG.	922	919	914	912	923	917	911	911	806	914	919	920	914	924	922	924	925	923	918	911	906	906	910	920	931	937	928	929	929	930	930		
DAJLY	923	922	923	918	927	920	915	915	913	914	922	923	919	926	925	925	926	926	919	916	907	806	912	976	935	939	933	931	930	934	933		
23:00	922	922	906	918	921	915	912	200	913	914	922	916	919	925	922	924	926	919	917	907	904	806	912	976	935	933	976	930	928	933	931	935	920
22:00 23:00	922	922	906	917	922	916	911	906	912	914	922	916	918	926	922	924	926	919	917	200	905	806	912	976	935	934	976	930	928	933	931	935	920
21.00	922	922	907	917	923	916	911	906	917	914	922	917	918	976	922	924	976	913	917	907	905	806	912	925	935	932	976	930	928	933	931	935	920
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18:00	923	921	808	917	925	916	910	806	910	913	921	919	916	976	922	924	976	920	918	806	902	206	911	924	934	936	976	931	928	933	930	936	920
17:00 :: 18:00	923	920	606	917	976	916	910	606	606	913	921	919	915	976	921	924	976	921	918	806	905	206	910	923	933	936	976	930	929	934	930	936	920
16:00 17:00 17:00: 18:00	923	920	910	916	976	916	910	910	806	913	921	920	915	926	921	924	976	921	918	606	906	206	910	922	933	937	925	930	929	933	930	937	920
14:00 15:00 15:00 16:00	923	920	911	916	976	916	910	910	206	913	920	920	914	926	921	924	926	922	918	606	906	206	910	922	933	937	925	930	929	932	929	937	920
14:00 15:00	922	919	912	915	927	916	606	911	206	913	920	920	913	926	920	924	925	922	918	606	906	200	910	921	932	937	976	930	929	932	929	937	920
12:00 13:00 13:00 14:00	922	919	912	914	926	916	606	912	206	913	920	921	913	976	920	924	925	922	919	606	200	200	606	921	932	826	927	930	929	932	928	938	020
12:00 13:00	922	918	913	913	926	916	606	913	906	913	919	921	913	976	920	925	925	923	919	910	206	200	606	920	932	938	927	930	930	931	928	938	020
12.00	922	917	914	912	976	916	606	914	200	913	919	922	913	925	920	924	925	924	919	911	206	206	606	920	931	939	927	930	930	930	929	626	000
11.00	922	916	915	911	925	916	606	914	206	914	919	922	913	925	920	924	925	924	919	911	200	907	606	919	931	938	928	929	930	930	929	938	000
9:00 10:00	922	916	917	606	924	916	606	915	206	914	918	922	913	925	920	924	925	924	919	911	907	906	606	918	930	938	928	928	929	929	929	938	010
8:00 9:00	921	916	918	806	923	916	910	915	806	914	918	922	913	924	920	924	925	924	918	912	907	905	606	917	930	938	928	928	929	928	929	938	010
7.00 8:00	922	917	918	200	922	916	910	915	806	914	917	922	913	923	920	924	925	925	919	912	200	905	606	917	926	938	928	928	929	927	929	938	5
5:00 7:00	922	917	920	906	922	917	911	914	206	914	917	922	912	923	921	923	925	926	919	913	206	905	606	916	929	937	929	928	926	927	930	937	0
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5:00	922	919	920	906	920	918	913	914	206	914	916	922	913	922	922	924	925	925	919	914	200	905	806	915	928	936	930	927	930	927	931	936	5
3:00	922	920	921	906	920	918	913	914	200	914	916	923	913	921	923	924	925	926	919	915	200	905	806	914	928	937	931	927	930	927	931	937	000
0 2:00 3:00 4:00 5:00 0 3:00 4:00 5:00 6:00	922	921	922	906	919	919	914	914	200	914	915	923	914	921	924	923	925	926	918	915	206	905	806	914	927	936	931	926	930	927	932	936	000
2,10	922	921	922	906	919	920	914	913	206	914	915	922	915	920	924	923	924	926	919	916	206	904	806	913	927	935	932	926	930	927	932	935	5
0.00		921	923	906	919	920	915	912	200	913	515	922	915	920	925	922	924	926	919	916	200	904	908	912	926	935	933	976	930	927	933	935	5
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### STATUS FLAG CODES

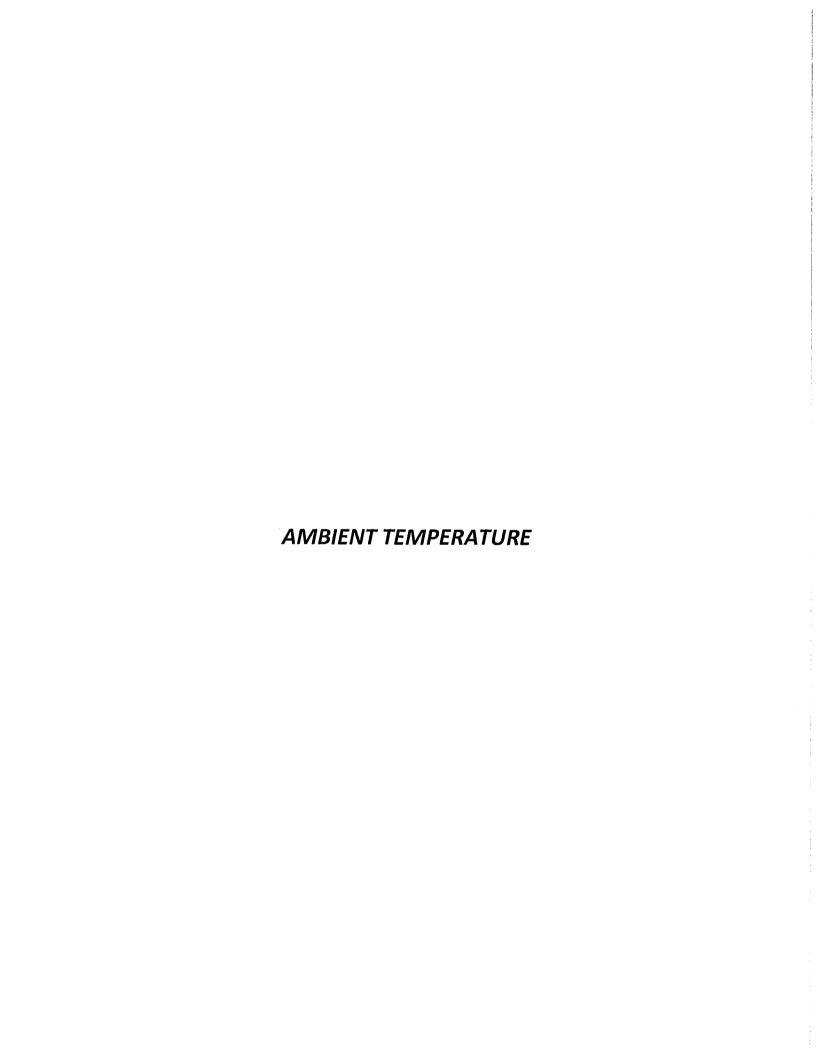


#### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE:	939	8 8 2 8	MB @ HOUR(S) 11 MB	ON DAY(S) ON DAY(S) VAR-VARIOUS	7 7	26 26	
			OPERATIONAL TIME: AMD OPERATION UPTIME:		744	HRS	
STANDARD DEVIATION: 8	8.29		MONTHLY AVERAGE:		920	MB	



- LICASA BP MB



JOB # 2833-2015-12-31- C



MST

AMBIENT TEMPERATURE (TPX) hourly averages in Degrees Celsius

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C.7.00         S.00         <	24-HOUR	j a	6.0	-7.0	0.8	-0.6	-5.0	6,4	-2.0	1.8	-3.4	4.9	-6.9	-5.0	-5.9	-9.5	-10.3	-13.8	-14.5	-14.3	-14.1	-14.4	-13.5	-12.9	-16.8	-17.8	-16.3	-17.7	-15.2	-14.9	-13.8	-7.1		
5.00         7.00         5.00         1.00         1.00         1.20         1.20         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50         1.50 <th< th=""><th>DAILY</th><th>-2.7</th><th>4.5</th><th>0.3</th><th>4.6</th><th>3.8</th><th>-2.8</th><th>2.3</th><th>-1.2</th><th>ļ.</th><th>-2.4</th><th>-3.4</th><th>-5.6</th><th><b>Α</b>.</th><th>4.4</th><th>-5.7</th><th>-7.4</th><th>-11.6</th><th>-13.8</th><th>-12.9</th><th>-11.9</th><th>-8.7</th><th>-9.1</th><th>-6 1.0</th><th>-14.9</th><th>-13.5</th><th>-14.3</th><th>-16.0</th><th>9.6-</th><th>-10.6</th><th>7.7-</th><th><b>ච</b></th><th></th><th></th></th<>	DAILY	-2.7	4.5	0.3	4.6	3.8	-2.8	2.3	-1.2	ļ.	-2.4	-3.4	-5.6	<b>Α</b> .	4.4	-5.7	-7.4	-11.6	-13.8	-12.9	-11.9	-8.7	-9.1	-6 1.0	-14.9	-13.5	-14.3	-16.0	9.6-	-10.6	7.7-	<b>ච</b>		
5.00         5.00         5.00         1.00         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20 <th< th=""><th>23:00</th><th>1 4</th><th>1.0</th><th>0.3</th><th>-2.3</th><th>-3.2</th><th>-6.1</th><th>-0.9</th><th>-1.7</th><th>-2.5</th><th>4</th><th>-7.1</th><th>5.8</th><th>4.7</th><th>-7.4</th><th>-7.5</th><th>-10.9</th><th>-14.3</th><th>-14.9</th><th>-13.2</th><th>-15.4</th><th>-13.8</th><th>-14.4</th><th>-14.5</th><th>-20.5</th><th>-16.1</th><th>-16.0</th><th>-16.9</th><th>-18.4</th><th>-18.0</th><th>-14.2</th><th>-3.3</th><th>0.3</th><th>-9.5</th></th<>	23:00	1 4	1.0	0.3	-2.3	-3.2	-6.1	-0.9	-1.7	-2.5	4	-7.1	5.8	4.7	-7.4	-7.5	-10.9	-14.3	-14.9	-13.2	-15.4	-13.8	-14.4	-14.5	-20.5	-16.1	-16.0	-16.9	-18.4	-18.0	-14.2	-3.3	0.3	-9.5
6.00         7.00         8.00         1.00         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20         1.20 <th< th=""><th></th><th>-5.2</th><th>0.5</th><th>-0.1</th><th>-26</th><th>-2.2</th><th>-5.4</th><th>-0.2</th><th>-1.9</th><th>-2.3</th><th>4.2</th><th>-7.0</th><th>-5.7</th><th>4.6</th><th>-7.4</th><th>-8.2</th><th>-11.1</th><th>-14.3</th><th>-14.9</th><th>-13.0</th><th>-14.1</th><th>-13.8</th><th>-14.5</th><th>-13.7</th><th>-19.8</th><th>-14.9</th><th>-15.5</th><th>-16.6</th><th>-18.6</th><th>-17.0</th><th>-13.8</th><th>-28</th><th><del>0</del>.1</th><th>-9.2</th></th<>		-5.2	0.5	-0.1	-26	-2.2	-5.4	-0.2	-1.9	-2.3	4.2	-7.0	-5.7	4.6	-7.4	-8.2	-11.1	-14.3	-14.9	-13.0	-14.1	-13.8	-14.5	-13.7	-19.8	-14.9	-15.5	-16.6	-18.6	-17.0	-13.8	-28	<del>0</del> .1	-9.2
6.00         7.00         8.00         9.00         11.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.00         12.	21:00	-5.3	0.1	-0.3	-1.8	-1.0	-5.5	8, P	-2.1	-2.2	κ. 9.	6.9	-5.7	4.3	-7.6	-7.0	-11.4	-14.3	-15.0	-12.9	-13.8	-12.9	-14.7	-12.8	-19.4	-14.0	-15.3	-16.5	-17.7	-16.7	-13.3	-2.1	0.1	8.9
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500         700         900         11.00         12.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00	19:00	-73	2.0	0.1	-1.9	0.0	4.5	0.0	-2.1	-1.7	-3.2	-6.6	-5.6	4.4	-6.5	-5.9	-12.4	-14.2	-14.7	-13.7	-13.6	-12.5	-13.9	-13.0	-18.6	-13.6	-15.4	-17.1	-16.0	-15.8	-11.7	-2.1	2.0	8.6
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500         700         9700         11.70         12.70         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.00         13.0	17-31895.5	ě	2.3	0.1	0.0	0.0	5.3	-0.1	-1.2	-1.8	-2.7	-6.3	-6.0	4.4	-5.7	-6.5	·	-14.2	-14.6	-13.6	-14.4	-12.8		-13.1	-17.5	-13.9	•	-18.4	-16.4	-13.5	9.6	-2.3	2.3	÷.4
600         700         800         6900         11:00         12:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00         13:00<	20022233	31	17	-0.7	13	1.0	4.8	6.0	-1.5	-17	-2.5	-5.7	-6.0	4.4	-5.8	-8.1				•		·	·	٠	-17.1	-14.0	-15.6	-18.7		-127	6.6-	-2.3	1.9	-8.2
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600         700         800         900         11.00         12.00         12.00           730         880         900         10.00         11.00         72.00         13.00           25         2.8         3.2         3.4         3.9         1.1         4.0           25         0.4         1.14         1.16         0.1         1.1         1.3           26         0.4         1.14         1.16         0.1         1.1         1.1         1.1           27         0.4         0.6         0.6         1.7         3.4         3.6         3.8         3.6         3.6         3.7         4.0         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1         1.1	14:00	-2.7		-	4.6			1.9			-2.5				-5.5									Ċ		•	Ċ	•		·	-7.7	-0.9	4.6	
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## MONTHLY SUMMARY

C - CUMUITY ASSURANCE

R - RECOVERY

X - MACHINE MALFUNCTION

O - OPERATOR ERROR

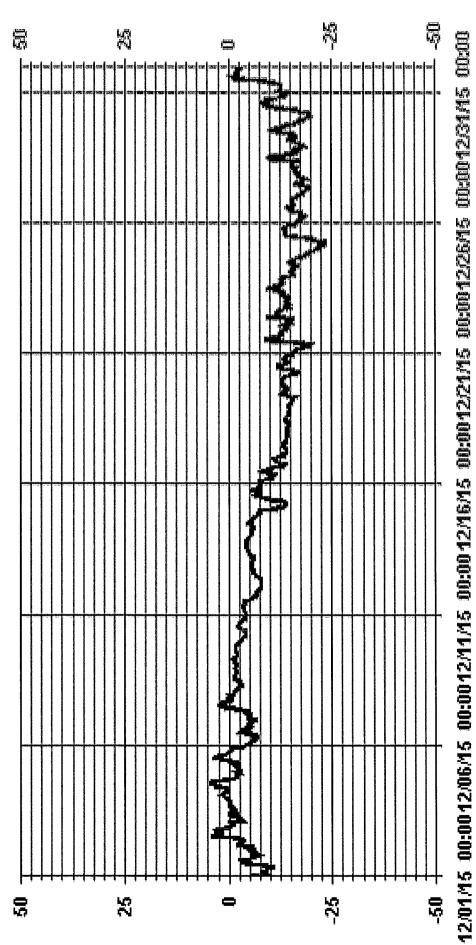
K - COLLECTION ERROR

C -- CALIERATIONI
Y -- MAINTENANCE
S -- DAILY ZEROJOPANCHECK
P -- POWER FAILURE
G -- OUT FOR REPAIR

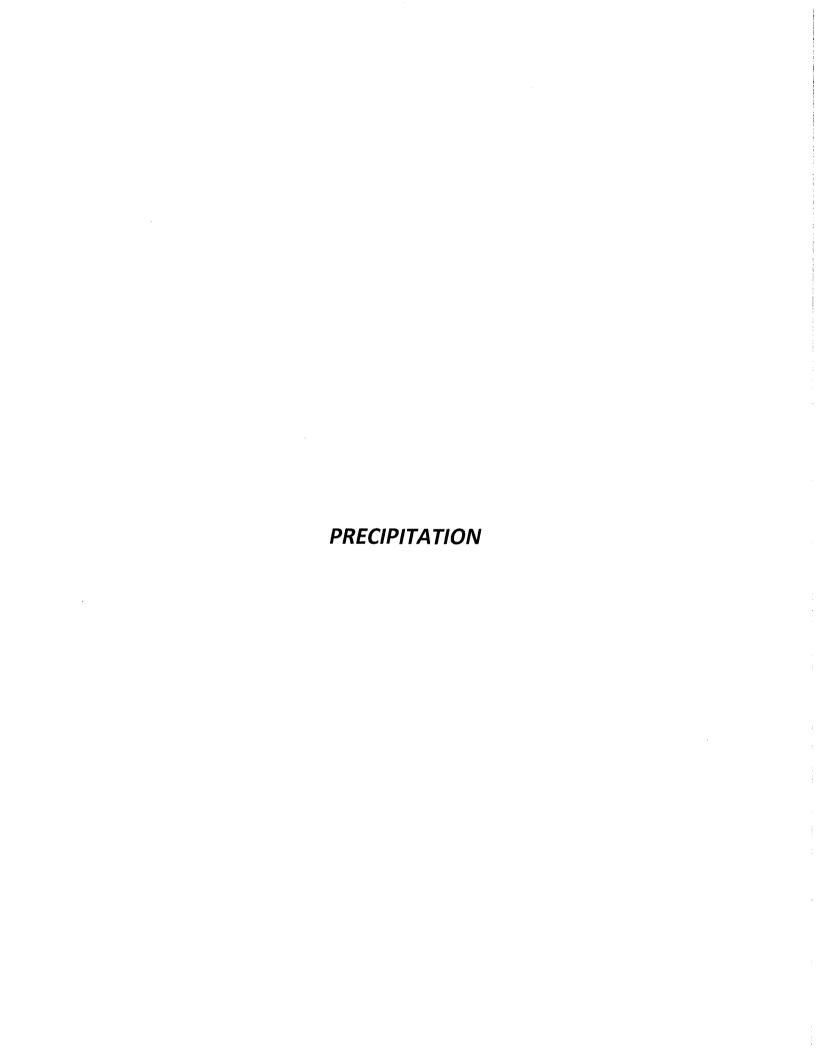
STATUS FLAG CODES

MINIMUM 1-HR AVERAGE:	-23.2		°C @ HOUR(S)	9	ON DAY(S)	25	
MAXIMUM 1-HR AVERAGE:	4.6	ပူ	@ HOUR(S)	14	ON DAY(S)	4	_
MAXIMUM 24-HR AVERAGE:	0.8	ပု			ON DAY(S) VAR-VARIOUS	•	4
			OPERATIONAL TIME: AMD OPERATION UPTIME:	ME: N UPTIME:		744 100.0	HRS %
STANDARD DEVIATION:	6.28		MONTHLY AVERAGE:	AGE:		-9.1 °C	ပ

SO 24 HOUR AVERAGES FOR DECEMBER 2015  50 0.00  6.00	160	-20.0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 28 30 31
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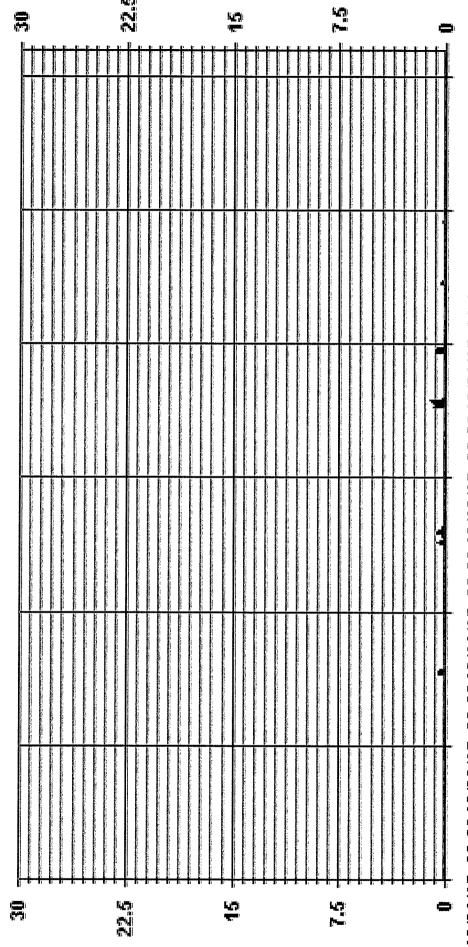
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#### MONTHLY SUMMARY

MAXIMUM 1-HR AVERAGE: MAXIMUM 24-HR AVERAGE: MONTHLY TOTAL 6.3	M	0.8	M M	@ HOUR(S)	20	ON DAY(S) ON DAY(S) VAR-VARIOUS	18	8 18
			·	OPERATIONAL TIME: AMD OPERATION UPTIME:	E: JPTIME:		743	%
STANDARD DEVIATION:	90.0			MONTHLY AVERAGE:	ij		0.0	0.0 MM

Of Hour Averages

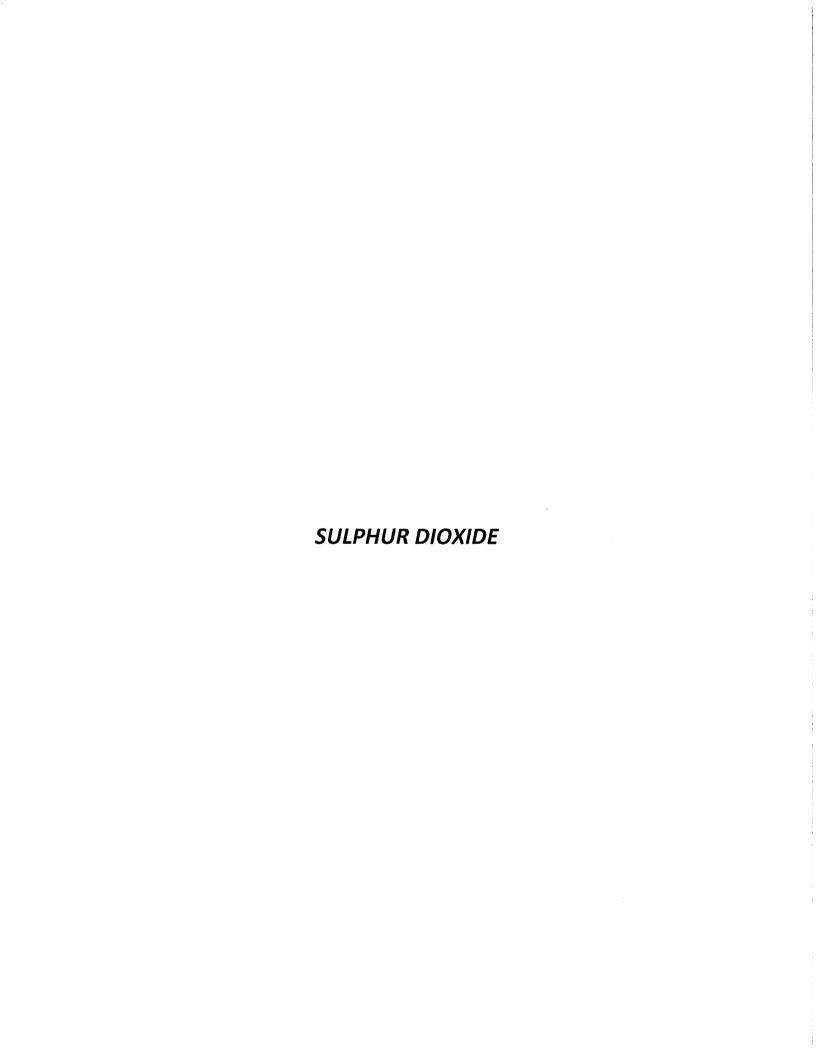


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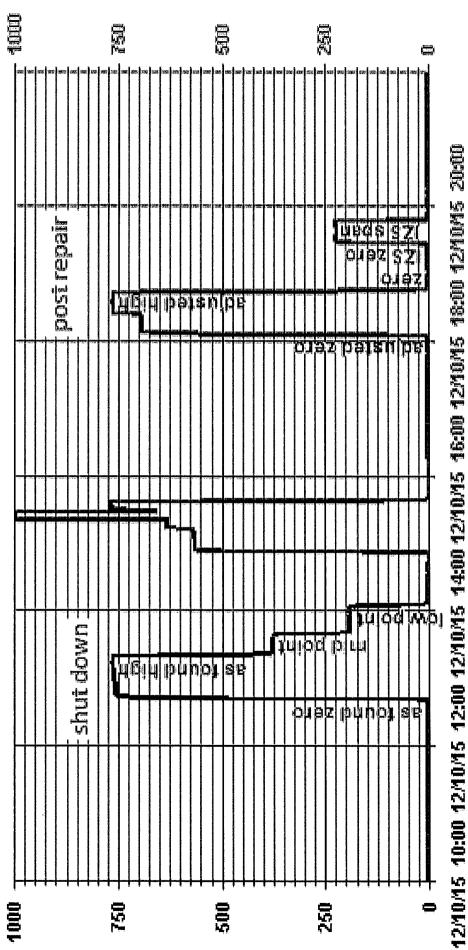
PRECIP

#### APPENDIX II ANALYZER CALIBRATION RESULTS



Date:	December 10,	2015	. "	Ba	rometric Pressure:	0.899 atm
Company/Airshed:	LICA		-		on Temperature °C:	21
ocation/Station Name:	St. Lina		_		eather Conditions:	Fog
Parameter:	Sulphur Dio:	xide	_		alibration Purpose:	shut down
Start Time 24 hr. (mst): End Time 24 hr. (mst):	11:27 14:02		-		rmed By/Reviewer: Ale al Gas Expiry Date:	x Yakupov Trina Whitsitt March 12, 2019
Calibration Method:		on	-		s/n (if applicable):	n/a
alyzer:						
Serial Number:			_	Range ppb:	1000	
Last Calibration Date: Previous C.F.:		2015	-	As Found C.F.: New C.F.:	1.005 n/a	
·			-			
ibrator: Flow Meter ID's:	n/a				ibration Points for Ranges Sulphur Dioxide Standard Ca	Ibration Points
Make & Model:	SABIO 2010	) D	-  -	High	780	
Serial #:	11900613	3		Mid	380	
Cal Gas Cylinder I.D. #:	BLM00207	73		Low	190	
Cal Gas Conc. (ppm):	49,5	ALL POINTS A	ARE 15 MINU	JTES OF STABILITY AS OF SEP	TEMBER 23. 2015	
Calibr	ator Flow Rates (cc/ml	n)		Calculated Concentration:	Indicated Concentration:	Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	
as found zero as found high	5012 4938	77.20	5012 5015	0.0 762.0	4.0 762.0	N/A 1.005
as round nigh mid	4938	37.70	5015	372.2	377.0	0.998
low	4994	18.90	5013	186.6	191,0	0,998
					Average C.F.=	1,000
		Lin	ear Regressi	on/Calibration Results:		
					LIMITS	
	Co	rrelation Coe	ffecient =	1.000	> or = 0.995	
			_			
			Slope =	1.005	0.90-1.10	
		cept as % of fu	Slope = .ill scale)=			
		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52%	0.90-1.10 ± 3% F.S. ± 10%	
		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51%	0.90-1.10 ± 3% F.S. ± 10%	
		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52%	0.90-1.10 ± 3% F.S. ± 10%	
900 ]		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52%	0.90-1.10 ± 3% F.S. ± 10%	
800 -		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52%	0.90-1.10 ± 3% F.S. ± 10%	762.0
800 - 700 -		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52%	0.90-1.10 ± 3% F.S. ± 10%	762.0
800 - 700 -		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52%	0.90-1.10 ± 3% F.S. ± 10%	762.0
800 - 700 -		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52% phur Dioxide Analyzer Calibr	0.90-1.10 ± 3% F.S. ± 10%	762.0
800 - 700 -		cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52%	0.90-1.10 ± 3% F.S. ± 10%	762.0
800 - 700 - 46 600 - 46 500 - 95 400 - 200 -	% chan	cept as % of fu ge in C.F. fron	Slope = 	1.005 -0.51% -0.52% phur Dioxide Analyzer Calibr	0.90-1.10 ± 3% F.S. ± 10%	762.0
800 - 700 - 9 600 - 9 500 - 14 400 - 15 300 -	% chan	cept as % of fu	Slope = 	1.005 -0.51% -0.52% phur Dioxide Analyzer Calibr	0.90-1.10 ± 3% F.S. ± 10%	762.0
800 - 700 - 9 600 - 9 500 - 9 500 - 9 500 - 9 500 - 100 -	% chan	cept as % of fu	Slope = 	1.005 -0.51% -0.52% phur Dioxide Analyzer Calibr	0.90-1.10 ± 3% F.S. ± 10%	762.0 800 900
800 - 700 - 9 600 - 9 500 - 9 400 - 10 300 - 100 - 100 -	% chan	cept as % of fu	Slope = Ill scale)= I last cal= API 100E Sul	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  377.0	0.90-1.10 ± 3% F.S. ± 10%	
800 - 700 - 9 600 - 9 500 - 9 400 - 10 300 - 100 - 100 -	% change 19: 100 200 SLOPE:	As four 0.89	Slope =	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  377.0  400 500 calculated ppb	0.90-1.10 ± 3% F.S. ± 10% ation  600 700  As left: n/a	
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800 - 700 - 9 600 - 9 500 - 9 400 - 10 300 - 100 - 100 -	% change 19: 100 200 SLOPE: OFFSET: HVPS:	As four 0.899 87.7 532	Slope =	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  377.0  400 500 calculated ppb  SLOPE: OFFSET: HVPS:	0.90-1.10 ± 3% F.S. ± 10% ation  600 700  As left: n/a n/a n/a	
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800 - 700 - 9 600 - 9 500 - 9 400 - 10 300 - 100 - 100 -	% change 19: 100 200 SLOPE: OFFSET: HVPS:	As four 0.896 87.7.5 532 50.0 27.8.8 7.8	Slope	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  377.0  400 500 calculated ppb  SLOPE: OFFSET: HVPS:	0.90-1.10 ± 3% F.S. ± 10% ation  600 700  As left: n/a n/a n/a n/a	
800 - 700 - 9 600 - 9 500 - 9 400 - 10 300 - 100 - 100 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP:	As four 0.89; 87.7, 532, 50.0, 27.8, 40.0	Slope	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  377.0  400 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: IZS TEMP:	0.90-1.10 ± 3% F.S. ± 10% ation  600 700  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 9 600 - 9 500 - 9 400 - 10 300 - 100 - 100 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES:	As four 0.89; 87.7, 532; 50.0, 27.8, 40.0, 23.6	Slope	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  377.0  400 500 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: PES: PRES: PRES:	0.90-1.10 ± 3% F.S. ± 10%  ation  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 9 600 - 9 500 - 9 400 - 10 300 - 100 - 100 -	% change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % change % c	As four 0.899 87.7 532 50.0 27.8 40.0 23.6 569	Slope	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  577.0  400 500 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: PMT TEMP: PMT TEMP: PRES: SAMP FL: SAMP FL:	0.90-1.10 ± 3% F.S. ± 10%  ation  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 9 600 - 9 500 - 9 400 - 100 - 100 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES:	As four 0.89; 87.7, 532; 50.0, 27.8, 40.0, 23.6	Slope =	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  377.0  400 500 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: PES: PRES: PRES:	0.90-1.10 ± 3% F.S. ± 10%  ation  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 9 600 - 9 500 - 9 400 - 100 - 100 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT:	As four 0.89: 87.7 532 50.0 23.6 569 95.0 1773 71.7	Slope	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  577.0  400 500 calculated ppb  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP PL: NORM PMT:	0.90-1.10 ± 3% F.S. ± 10%  ation  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 96 600 - 97 500 - 197 400 - 200 - 100 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FLE: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT	As four 0.89(87.7.8.7.8.95.6) 95.0.1773.39.4	Slope	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  Stope: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP PL: NORM PMT: UV LAMP: LAMP RATIO. STR. LGT	0.90-1.10 ± 3% F.S. ± 10%  ation  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 9 600 - 9 500 - 9 400 - 100 - 100 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	As four 0.89: 87.7.532 50.0 27.8 40.0 23.6 569 95.0 1773 71.7.39.4 15.8	Slope =	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: PKES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT STR. LGT DRK PMT:	0.90-1.10 ± 3% F.S. ± 10%  ation  600 700  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 9 600 - 9 500 - 9 400 - 100 - 100 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: VV LAMP; LAMP RATIO: STR. LGT DRK LMP: DRK LMP:	As four 0.89; 87.7 532 50.0 27.8 40.0 23.6 569 95.0 1773 71.7 39.4 15.8 3.5	Slope	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  377.0  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRK PMT: DRK LMP: DRK LMP: DRK LMP: DRK LMP:	0.90-1.10 ± 3% F.S. ± 10%  ation  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	
800 - 700 - 96 600 - 97 500 - 197 400 - 200 - 100 -	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	As four 0.89: 87.7.532 50.0 27.8 40.0 23.6 569 95.0 1773 71.7.39.4 15.8	Slope	1.005 -0.51% -0.52%  phur Dioxide Analyzer Calibr  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: PKES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT STR. LGT DRK PMT:	0.90-1.10 ± 3% F.S. ± 10%  ation  600 700  As left: n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	

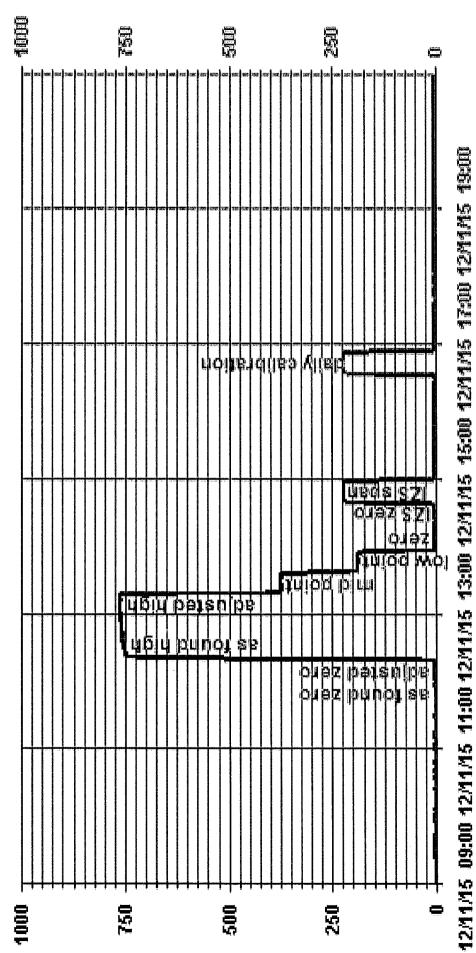
Date:	December 10,	2015		В	arometric Pressure:	0.899 atm
Company/Airshed:	LICA		-	Stati	lon Temperature °C:	21
Location/Station Name:	St. Lina		-		Veather Conditions:	Fog
Parameter:	Sulphur Dio	xide	_		Calibration Purpose:	post repair
Start Time 24 hr. (mst): _ End Time 24 hr. (mst):	17:36 19:50		-		ormed By/Reviewer: Cal Gas Expiry Date:	Alex Yakupov Trina Whitsi March 12, 2019
Calibration Method:		on	_		& s/n (if applicable):	n/a
nalyzer:						
Serial Number:	468		_	Range ppb:		
Last Calibration Date:			_	As Found C.F.;		
Previous C.F.:	n/a		-	New C.F.:	1,000	<del></del>
alibrator:					Ilbration Points for Rang	
Flow Meter ID's:	n/a		_	Point	Sulphur Dioxide Standar	
Make & Model:	SABIO 2010		-	High	780	
Serial #:	11900613 BLM00207		_	Mid	380 190	
Cal Gas Cylinder I.D. #: Cal Gas Conc. (ppm):	49,5	3	-	Low	190	
			ARE 15 MI	NUTES OF STABILITY AS OF SEF		
	ator Flow Rates (cc/mi		T =	Calculated Concentration:	Indicated Concentratio	n: Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(dqq)	2/4
adjusted zero	5012 4938	0.00 77.20	5012 5015	0,0 762.0	762,0	N/A 1.000
				/62.0	762,0	
adjusted high calibrator zero	5012	0.00	5012	0.0 ssion/Calibration Results:	0.0 Average C LIMITS	n/a
	5012	0.00	5012 ear Regre	0.0 ssion/Calibration Results: n/a n/a	Average C	n/a
	5012 Co b (Interc	0.00 Lin rrelation Coe cept as % of fu	5012 ear Regre ffecient = Slope = ull scale)=	0.0 ssion/Calibration Results: n/a n/a n/a	Average C LIMITS > or = 0.995	n/a
	5012 Co b (Interc	0.00 Lin	5012 ear Regre ffecient = Slope = ull scale)=	0.0 ssion/Calibration Results: n/a n/a n/a	Average C  LIMITS  > or = 0.995  .95-1.05	n/a
	5012 Co b (Interc	0.00 Lin rrelation Coe cept as % of fu	5012 ear Regre ffecient = Slope = ull scale)= n last cal=	0.0 ssion/Calibration Results: n/a n/a n/a	Average C  LIMITS  > or = 0.995  .95-1.05  ± 3% F.S.	n/a
	5012 Co b (Intere % chang	0.00 Lin crelation Coe cept as % of fu ge in C.F. from As four n/a	5012 ear Regre ffecient = Slope = ill scale)= n last cal= nd:	0.0 ssion/Calibration Results: n/a n/a n/a n/a n/a n/a SLOPE:	Average C  LIMITS  > or = 0.995  .95-1.05  ± 3% F.S.  ± 10%  As left:  0.983	n/a
	5012  Co b (Interc % chang  SLOPE: OFFSET:	0.00 Lin crelation Coe cept as % of fu ge in C.F. from As four n/a n/a	5012 ear Regre ffecient = Slope = sill scale)= n last cal=	0.0 ssion/Calibration Results: n/a n/a n/a n/a n/a SLOPE: OFFSET:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7	n/a
	5012  Co b (Interc % chang  SLOPE: OFFSET: HVPS:	0.00 Linerrelation Coe cept as % of fu ge in C.F. from As foun n/a n/a	5012 ear Regre ffecient = Slope = sil scale)= n last cal= nd:	0.0 ssion/Calibration Results: n/a n/a n/a n/a or/a SLOPE: OFFSET: HVPS:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647	n/a
	5012  Co b (Intero % chang  SLOPE: OFFSET: HVPS: RCELL TEMP:	0.00 Lin crelation Coe cept as % of fu ge in C.F. from As four n/a n/a n/a	5012 ear Regre ffecient = Slope = ill scale)= n last cal= nd:	0.0 ssion/Calibration Results: n/a n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0	n/a
	5012  Co b (Intere % change  SLOPE: OFFSET: HVP5: RCELL TEMP: BOX TEMP:	0.00 Lin crelation Coe cept as % of fu ge in C.F. from As foun n/a n/a	5012 ear Regre ffecient = Slope = sill scale)= n last cal= nd:	0.0 ssion/Calibration Results: n/a n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647	n/a
	5012  Co b (Intero % chang  SLOPE: OFFSET: HVPS: RCELL TEMP:	cept as % of fuse in C.F. from /a n/a n/a n/a n/a	5012 ear Regre ffecient = Slope = sli scale)= n last cal= nd:	0.0 ssion/Calibration Results: n/a n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0 27.1	n/a
	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP:	Lin crelation Coe cept as % of fu ge in C.F. from As four n/a n/a n/a n/a n/a	5012 ear Regre ffecient = Slope = sill scale)= n last cal= nd:	0.0 ssion/Callbration Results: n/a n/a n/a n/a slope: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0 27.1 7.8	n/a
	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL:	Linerrelation Coesept as % of fuse in C.F. from As four n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	ear Regre ffecient = Slope = Ill scale)= n last cal= nd:	0.0 ssion/Calibration Results: n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: IZS TEMP:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 55.0 27.1 7.8 40.0 23.6 570	n/a
	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT:	Lin crelation Coe cept as % of fu ge in C.F. from  As four n/a n/a n/a n/a n/a n/a n/a n/a n/a	ear Regre ffecient = Slope = slil scale)= n last cal=	0.0 ssion/Callbration Results: n/a n/a n/a n/a slope: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT:	Average C  LIMITS  > or = 0.995 .95-1.05 ±3% F.S. ±10%  As left: 0.983 89.7 647 50.0 27.1 7.8 40.0 23.6 570 88.9	n/a
	SLOPE: OFFSET: HVP5: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP:	Lin crelation Coe cept as % of fu ge in C.F. from As four n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	ear Regre ffecient = Slope = uill scale)= n last cal= nd:	0.0 ssion/Calibration Results:  n/a n/a n/a n/a  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMX TEMP: PRES: SAMP FLI. NORM PMT: UV LAMP:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0 27.1 7.8 40.0 23.6 570 88.9 3509.0	n/a
	SLOPE: OFFSET: HVP5: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO:	Linerrelation Coecept as % of fuse in C.F. from //a n//a n//a n//a n//a n//a n//a n//a	ear Regre ffecient = Slope = uil scale)= n last cal= nd:	o.o  ssion/Calibration Results:  n/a n/a n/a n/a n/a SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0 27.1 7.8 40.0 23.6 570 88.9 3509.0 100.2	n/a
	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: IZS TEMP: PMT TEMP: IZS TEMP: VAMP FLI: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT	Linerrelation Coecept as % of fuge in C.F. from  As four n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	ear Regre ffecient = Slope = slil scale)= n last cal=	o.o  ssion/Callbration Results:  n/a  n/a  n/a  n/a  n/a  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP; LAMP RATIO: STR. LGT	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0 27.1 7.8 40.0 23.6 570 88.9 3509.0 100.2 44.1	n/a
	SLOPE: OFFSET: HVP5: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRK PMT:	O.00  Lin  As four n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	ear Regre ffecient = Slope = Jill scale)= n last cal=	0.0  ssion/Calibration Results:  n/a n/a n/a n/a n/a  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FLI. NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRX PMT:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0 27.1 7.8 40.0 23.6 570 88.9 3509.0 100.2 44.1 5.9	n/a
	SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: IZS TEMP: PMT TEMP: IZS TEMP: VAMP FLI: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT	Linerrelation Coecept as % of fuge in C.F. from  As four n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	ear Regre ffecient = Slope = ull scale)= n last cal= nd:	o.o  ssion/Calibration Results:  n/a  n/a  n/a  n/a  n/a  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PMT TEMP: IZS TEMP: VV LAMP: LAMP RATIO: STR. LGT DRK PMT: DRK LMP:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0 27.1 7.8 40.0 23.6 570 88.9 3509.0 100.2 44.1	n/a
	SO12  Co b (Intere % change)  SLOPE: OFFSET: HVP5: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FL: NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRK PMT: DRK PMT:	cept as % of fuse in C.F. from n/a n/a n/a n/a n/a n/a n/a n/a n/a n/a	ear Regre ffecient = Slope = ull scale)= n last cal= nd:	0.0  ssion/Calibration Results:  n/a n/a n/a n/a n/a  SLOPE: OFFSET: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: PRES: SAMP FLI. NORM PMT: UV LAMP: LAMP RATIO: STR. LGT DRX PMT:	Average C  LIMITS  > or = 0.995 .95-1.05 ± 3% F.S. ± 10%  As left: 0.983 89.7 647 50.0 27.1 7.8 40.0 23.6 570 88.9 3509.0 100.2 44.1 5.9 6.9	n/a



305 307 - LICES

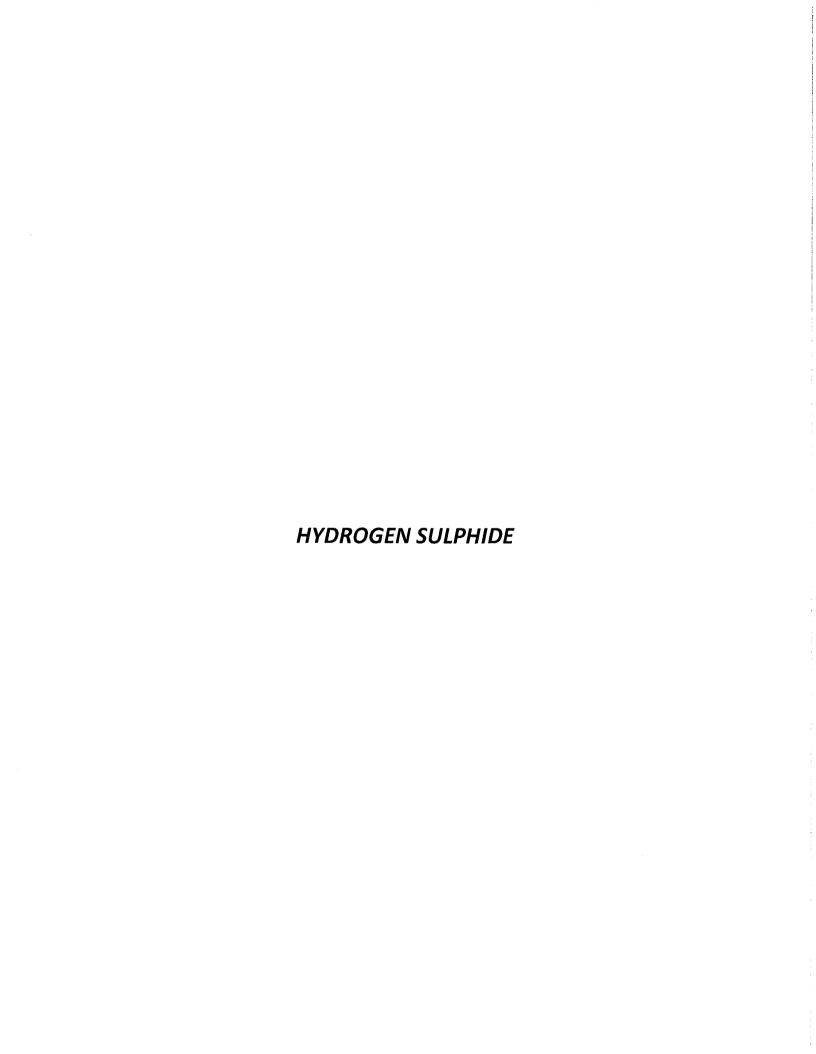
Date:	December 11	, 2015			Barometric Pressure:		0.904 atr	n
Company/Airshed:	LICA		-	Stat	tion Temperature °C:		21	
ocation/Station Name:	St. Lina		_		Weather Conditions:		Mainly cloudy with	
Parameter: Start Time 24 hr. (mst);	Sulphur Dio 11:18	xide	_		Calibration Purpose:		routine mon	<u>'</u>
End Time 24 hr. (mst):	15:04		_	Perr	ormed By/Reviewer: Cal Gas Expiry Date:		Yakupov March 12, 2	Trina Whitsit
Calibration Method:	Gas Diluti	on.	_	Converter Model	& s/n (if applicable):		n/a	
alyzer:	450							
Serial Number: Last Calibration Date:	468 December 10	, 2015	_	Range ppb: As Found C.F.:				
Previous C.F.:	1.000		_	New C.F.:				
brator:				Standard C	alibration Points for			
Flow Meter ID's:	n/a			Point	Sulphur Dioxide Sta		oration Points	
Make & Model:	SABIO 2010		_  _	High		780		
Serial #:	1190061 BLM00207		-  -	Mid		380		
Cal Gas Cylinder I.D. # : Cal Gas Conc. (ppm):	49.5	/3	L	Low	****	190		
	or Flow Rates (cc/mi	ALL POINTS		JTES OF STABILITY AS OF SE				
Point	Diluent	Cal Gas	Total	Calculated Concentration: (ppb)	Indicated Concent (ppb)	ativi):	Correction F	actors (C.F.):
as found zero	5012	0.00	5012	0.0	0.0		N,	
as found high	4938	77.20	5015	762.0	759.0		1.0	
adjusted zero adjusted high	5012 4938	77.20	5012 5015	0.0 762.0	762.0		1.0	
mid	4976	37.70	5013	372.2	375.0		0.9	
low	4994	18.90	5013	186.6	188.0		0.9	
calibrator zero	5012	0,00	5012	0.0	1.0		ny	/a
		11.			Avera	ge C.F.≔	0.9	95
		LIF	iear Kegressi	on/Calibration Results:	LIMITS			
	Co	rrelation Coe	_	1.000	> or = 0.99S			
			Slope = _	1.000	<b>.9</b> 5- <b>1.05</b>			
		cept as % of f ge in C.F. fror		-0.11% -0.39%	± 3% F.S. ± 10%			
<u></u>		-					···	
			API 100E SUI	phur Dioxide Analyzer Calib	pration		***************************************	······
900 J								
800 - 700 -							762,0	
- <b>6</b> 600 -								
ini 100 300 - 200 4 100 - 200 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100 4 100				375.0				
.≦ 300 - 200 -	188	3.0						
100								
	100 200	3	900	400 500 calculated ppb	600	700	800	900
		As fou			As left:			
	SLOPE:	0.98		SLOPE:	0.987			
	OFFSET:	89.7		OFFSET:	88.8			
	HVPS: _ RCELL TEMP:	647 \$0.0		HVPS:_ RCELL TEMP:	647 50.0			
	BOX TEMP:	27.4		RCELL TEMP: BOX TEMP:	26.7			
	PMT TEMP:	7.8		PMT TEMP:	7.8			
	IZS TEMP:	40.0		IZS TEMP:	40.0			
	PRES:	23.8		PRES:	23.8			
	SAMP FL:	574		SAMP FL:	575	<del></del>		
	NORM PMT: _ UV LAMP:	88.9 3499		NORM PMT; _ UV LAMP:	88,5 3496,8			
	LAMP RATIO:	100.		LAMP RATIO:	99.8			
	STR. LGT	44.1		STR. LGT	43.8			
	DRK PMT:	5.0		DRK PMT:	4.9			
	DRK LMP:	7.0		DRK LMP:	7.0			
	Internal Span: _	223		Internal Span:	223			
ıments:								

of Minute Averages

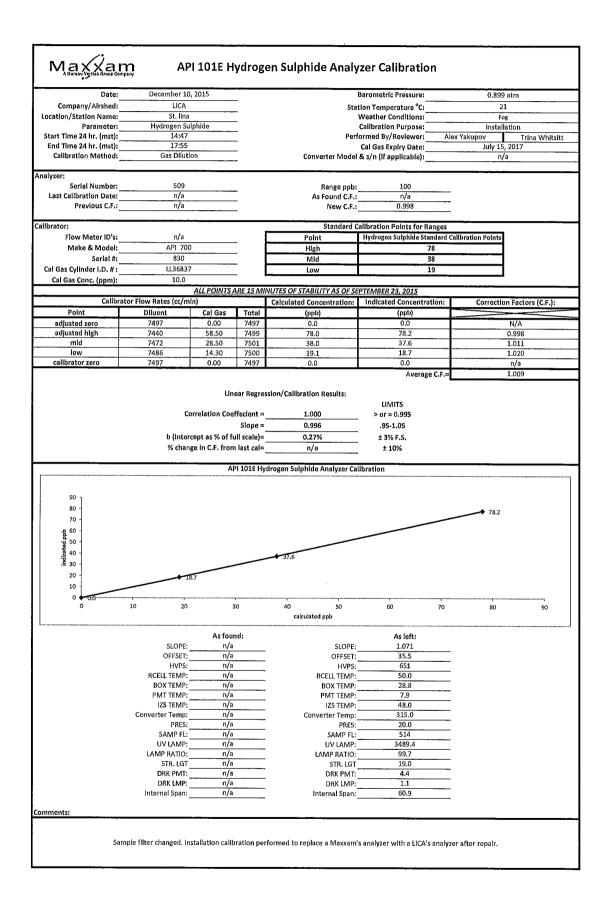


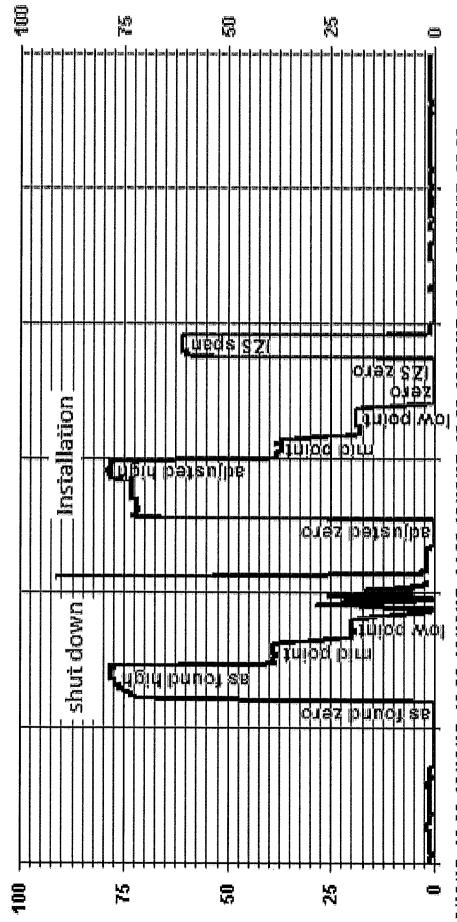
505

- LICASI



	: December	10, 2015			Barometric Pressure:	0,89	9 atm
Company/Airshed:	LICA	\	_	St	ation Temperature °C:	2	21
cation/Station Name			_		Weather Conditions:	F	og
Parameter:					Calibration Purpose:		down
itart Time 24 hr. (mst): End Time 24 hr. (mst):			_	Pe	rformed By/Reviewer: Cal Gas Explry Date:	Alex Yakupov	Trina Whitsi
Calibration Method:			_	Converter Mode	el & s/n (if applicable):		5, 2017 /a
lyzer:							
Serial Number Last Calibration Date:				Range ppb			
Previous C.F.:			_	As Found C.F. New C.F.		_	
brator:				Standard	Calibration Points for Range	00	<del></del> -
Flow Meter ID's:	n/a		ſ	Point	Hydrogen Sulphide Standa		1
Make & Model:	API 7	00	- I	High	78		1
Serial #:	830		_ [	MId	38		1
al Gas Cylinder I.D. #:				Low	19		
Cal Gas Conc. (ppm):	: 10.0		ARE 15 MIN	IUTES OF STABILITY AS OF S	EDTEMBED 22 2015		<u> </u>
	rator Flow Rates (cc/		ay (yiii)	Calculated Concentration:		: Correcti	on Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)		
as found zero	7497	0.00	7497	0.0	0.0		N/A
as found high mid	7440 7472	58.50 28.50	7499	78.0	77.8 39.0		1.003
low	7472	14,30	7501 7500	38.0 19.1	19.5		0.974 0.978
	1		7500	23.2	Average C.I	F.=	0.985
		16	agar Pagras	sion/Calibration Results:			
		Lii	icai negias	sion, canbration results.	LIMITS		
		Correlation Co	effecient = _	1.000	> or = 0.995		
			Slope =	1.003	0.90-1.10		
	b (Int	ercept as % of f	ull scale)= _	-0.42%	± 3% F.S.		
	% cha	inge in C.F. froi	n last cal≖_	-0,28%	± 10%		
						- <b>→</b> 77.0	
70 - 60 -						77.8	
				→ 39.0		77.8	
indicated pp 60 - 50 - 50 - 50 - 50 - 50 - 50 - 50 -		19.5		<b>→</b> 39,0		77.8	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		~~~~	30	***************************************	60 7		
10 0 - 20 - 20 - 20 - 20 - 20 - 20 - 20	10 2	~~~~	30	40 50 calculated ppb	60 7		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 2	) As fou	ınd:	40 SO calculated ppb	As left:		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 2	O As for: 1.05	ınd: i8	40 50 calculated ppb	As left: :n/a		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 2 SLOPE	As for 1.05	ind: 68	40 50 calculated ppb  SLOPE OFFSET	As left: :n/a :n/a		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	10 2	As for: 1.05 30.05 684	ind: 58 0	40 50 calculated ppb	As left: :		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPI OFFSE HVPS	As fou : 1.05 : 30,0 : 68,0 : 256 : 50,0	ind: :88 :0 :1 :S	40 50 calculated ppb  SLOPE OFFSET HVPS	As left: n/a : n/a : n/a : n/a		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPI OFFSE HVPS DCPS RCELL TEMI BOX TEMI	As for 1.05 30.0 68.0 2.56 50.0 50.0 50.0 50.0 50.0 50.0 50.0 5	sind: 188 0 4 5 0	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP	As left: n/a n/a n/a n/a n/a n/a n/a n/a		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPI OFFSE' HVPS DCP: RCELL THE BOX TEMI PMT TEMI	As for 1.05	sind: 58 0 4 5 0	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP	As left: n/a n/a n/a n/a n/a n/a n/a		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPP OFFSET HVPP DCPS RCELL TEMM BOX TEMF PMT TEMM IZS TEMF	As for 1.05	sind: 58 0 4 5 0 2 1	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP	As left:		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPI OFFSE HVP: DCP: RCELL TEMM BOX TEMF PMT TEMM IZS TEMS	As fou : 1.05 : 30. : 68. : 256 : 50. : 26. : 50.	und: 88 00 4 4 55 00 22 00 00 00 00 00 00 00 00 00 00 00	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp	As left:		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPI OFFSET HVPS DCP: RCELL TEME BOX TEME PMT TEME IZS TEME Converter Temp PRES	As foll: 1.05 30. 684 5256 50. 6. 6.5 6.5 6.5 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	nnd: 88 0 4 5 0 2 1 0 7 2	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp PRES	As left:		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPI OFFSE HVP: DCP: RCELL TEMM BOX TEMF PMT TEMM IZS TEMS	As four 1.05   : 30.0   : 684   : 256   : 50.0   : 6.5   : 50.0   : 31S   : 22.0   : 498	sind: 68 0 1 5 0 2 0 7 2 0 0 7 2	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp PRES SAMP FL	As left:		90
20 - 10 - 0,0	SLOPI OFFSE HVPS DCP: RCELL TEM BOX TEM PMT TEM IZS TEMI Converter Tem; PRES SAMP FI	As for 1.05	sind:  188 0 1 5 5 0 2 1 0 7 7 2 9 3 3	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp PRES	As left:		90
20 -	SLOPI OFFSE HVPY DCP: RCELL TEMI BOX TEMI PMT TEMI IZS TEMI Converter Tem; PRES SAMP FI	As for 1.05   30.0   684   5256   50.0   6.5   50.0   3155   6.2   499   80.0   3288   93.0	ind: :88 0 1 5 5 0 2 0 7 7 2 9 3 9 8	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp PRES SAMP FL	As left:		90
20 -	SLOPI OFFSET HVPP DCP: RCELL TEMI BOX TEMI PMT TEMI IZS TEMI Converter Temp PRES SAMP FI PMT UV LAMI LAMP RATIC	As for 1.05	ind: :88 0 1 5 5 0 2 1 0 0 7 7 2 9 3 3 -9 8 9	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp PRES SAMP FL PMT UV LAMP LAMP RATIO STR. LGI	As left:		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPI OFFSE HVP: DCP: RCELL TEMM BOX TEMM PMT TEMM IZS TEMM Converter Temp PRES SAMP UV LAMM LAMP RATIC 5TR. LG DRK PMI	As fou 1.05 30.0 68.2 50.0 26.0 50.0 31S 22.1 499 80.0 3288 93.3 1.15.5 55.	sind: 188 0 14 5 5 0 0 2 1 1 0 0 7 2 2 0 1 3 1 9 1 1	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp PRES SAMP FIL PMT UV LAMP LAMP RATIO STR. LGI DRK PMT	As left:		90
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SLOPI OFFSE* HVPS DCP* RCELL TEM BOX TEM PMT TEM IZS TEM Converter Tem PRES SAMP FI PM1 UV LAM LAMP RATIC 5TR. LG DRK PM1 DRK LMF	As four 1.08   : 1.08   : 30.0   : 684   : 550.0   : 26.   : 6.9   : 315   : 328   : 80.0   : 328   : 93.3   : 555.0   : 0.1	sind: 188 0 14 15 0 16 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp PRES SAMP FL PMT UV LAMP LAMP RATIO STR. LGT DRK PMT DRK LMP	As left:		90
20 -	SLOPI OFFSE HVP: DCP: RCELL TEMM BOX TEMM PMT TEMM IZS TEMM Converter Temp PRES SAMP UV LAMM LAMP RATIC 5TR. LG DRK PMI	As four 1.08   : 1.08   : 30.0   : 684   : 550.0   : 26.   : 6.9   : 315   : 328   : 80.0   : 328   : 93.3   : 555.0   : 0.1	sind: 188 0 14 15 0 16 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	40 50 calculated ppb  SLOPE OFFSET HVPS DCPS RCELL TEMP BOX TEMP PMT TEMP IZS TEMP Converter Temp PRES SAMP FIL PMT UV LAMP LAMP RATIO STR. LGI DRK PMT	As left:		90

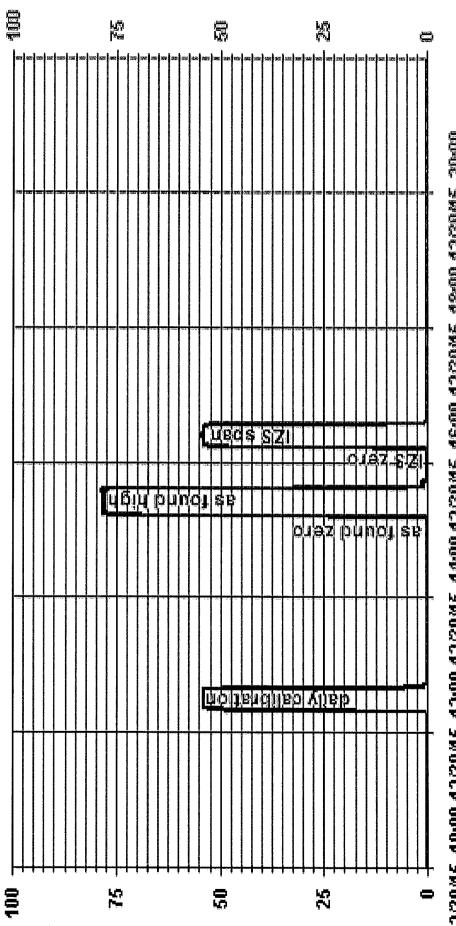




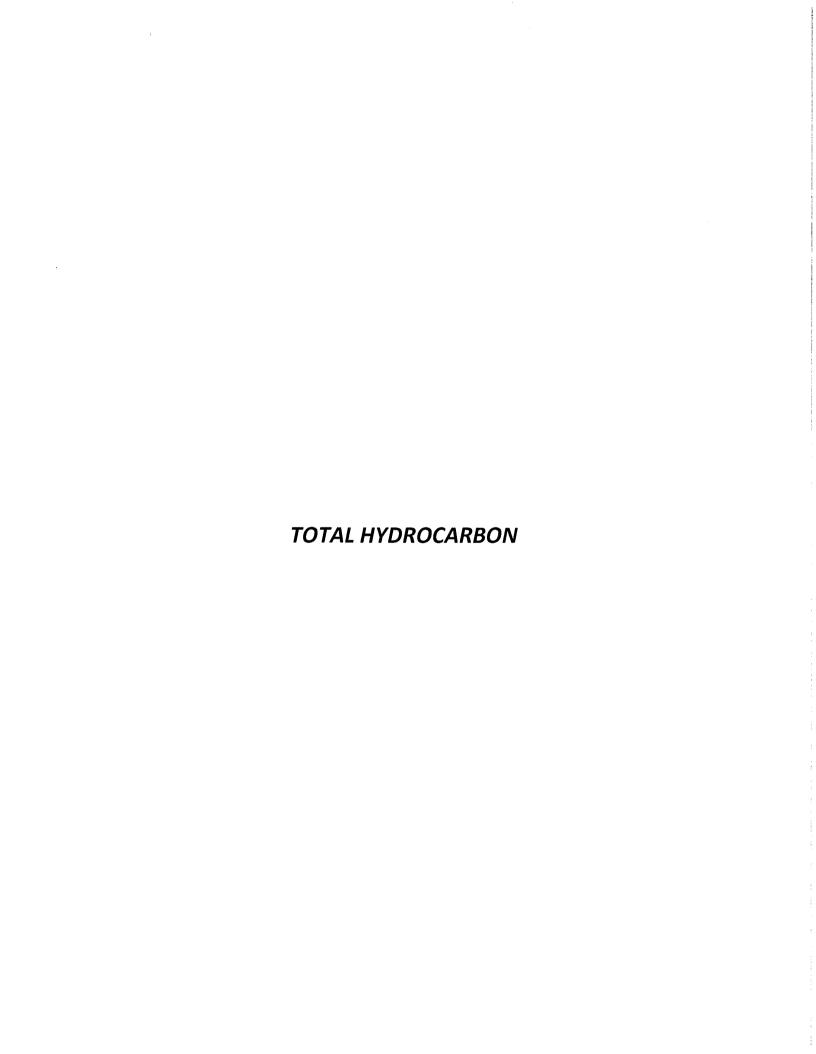
12/10/15 10:00 12/10/15 12:00 12/10/15 14:00 12/10/15 16:00 12/10/15 18:00 12/10/15 20:00

- LICA31

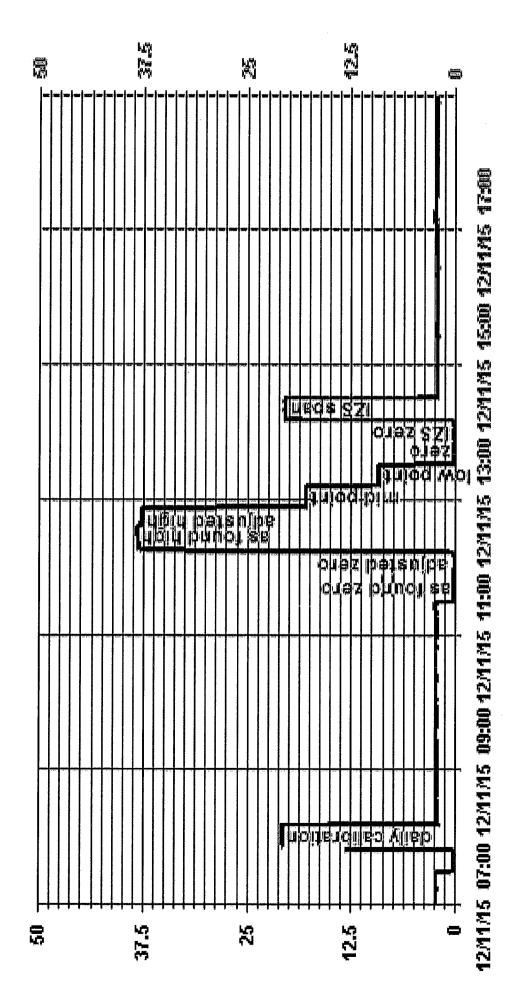
Maxxa i	AP	I 101E H	ydrog	en Sulphide Analyz	zer Calibratio	n
Date:	December 30,	2015		В	arometric Pressure:	0.925 atm
Company/Airshed:	LICA		-	Stati	on Temperature °C:	20
Location/Station Name:	St. lina		_		Veather Conditions:	Mainly cloudy with clear breaks
Parameter:	Hydrogen Sul	phide	_		Calibration Purpose:	as found
Start Time 24 hr. (mst):	14:52		_	Performed By/Reviewer:		Alex Yakupov Trina Whitsitt
End Time 24 hr. (mst):	16:39		-		Cal Gas Expiry Date:	July 15, 2017
Calibration Method:	Gas Dilutio	on	-	Converter Model &	& s/n (If applicable):	n/a
Analyzer:						
Serial Number:	509	2015	-	Range ppb:		
Last Calibration Date: Previous C.F.:	December 10, 0.998	. 2015	-	As Found C.F.:		
Previous C.P.;	0.938		-	New C.F.:	Пуа	<del></del>
Calibrator:					libration Points for Ra	
Flow Meter ID's:	n/a		_			ndard Calibration Points
Make & Model:	\$ABIO 2010		_	High	7	
Serial #:	11900613		_	Mid	3	
Cal Gas Cylinder I.D. #:	LL36837		_ ]	Low	1	9
Cal Gas Conc. (ppm):	10.0	ALL DOMES	100 40 4-1	MUTEC OF CTABLLEY AC OF SEC	TEMBER 12 2045	
Calibr	ator Flow Rates (cc/ml		KKE 15 IVIII	NUTES OF STABILITY AS OF SEP Calculated Concentration:	Indicated Concentrat	tion: Correction Factors (C.F.):
Point	Diluent	Cal Gas	Total	(ppb)	(ppb)	correction ractors (C.P.).
as found zero	7497	0.00	7497	0.0	0.0	N/A
as found high	7440	58.50	7499	78.0	78.3	0.996
as round riigh	7440	36.50	7400	78.0	Average	
	b (Inter	orrelation Coe	ffecient = Slope = ull scale)=	n/a n/a	LIMITS > or = 0.995 .95-1.05 ± 3% F.S.	
	% chan	ge in C.F. from	ı last cal≕	0.16%	± 10%	
		As four	nd:	·	As left:	
	SLOPE:	1,07	1	SLOPE: _	1.071	
	OFFSET:	35,5		OFFSET:	35,5	
	HVP5:	651		. HVPS; _	6S1	· · · · ·
	RCELL TEMP:	50,0		RCELL TEMP:	50.0	
	BOX TEMP:	29.5 8.0		BOX TEMP:	30.3 8.0	<u>_</u>
	PMT TEMP: IZ5 TEMP:	48.0		PMT TEMP: _ IZS TEMP:	48,0	
	Converter Temp:	315.0		. Converter Temp;	315.1	
	PRES:	20,7		PRES:	20.7	<del></del>
	SAMP FL:	524		SAMP FL:	524	
	UV LAMP;	3492.		UV LAMP:	3489.4	
	LAMP RATIO:	99,8	3	LAMP RATIO:	99.8	
	STR. LGT	19.0	)	STR. LGT	19.0	<del></del>
	DRK PMT:	0.2		DRK PMT:	0.2	
	DRK LMP:	. 0.7		DRK LMP:	0.8	
	Internal Span:	60,9	)	Internal Span:	60.9	
Comments:						
	"As Found" ca	alibration perf	ormed <b>b</b> ed	cause according to a daily repor	t SPAN check was low	( -11.48%)



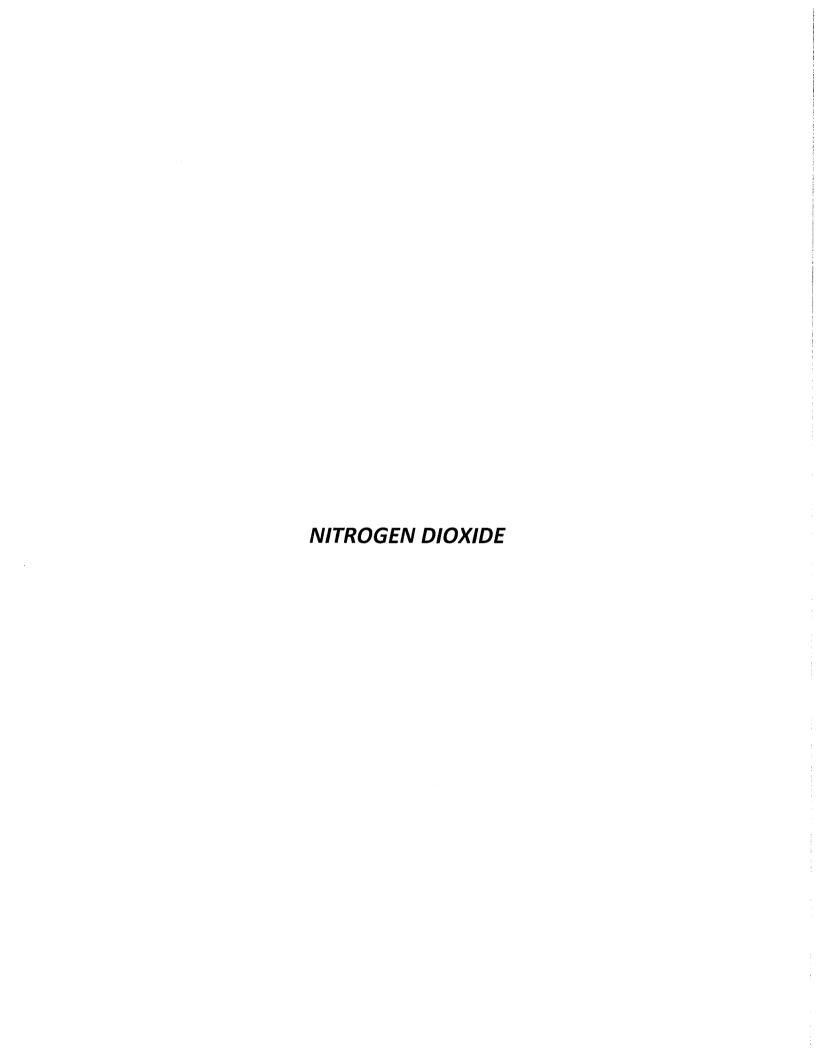
12/30/15 10:00 12/30/15 12:00 12/30/15 14:00 12/30/15 16:00 12/30/15 18:00 12/30/15 20:00



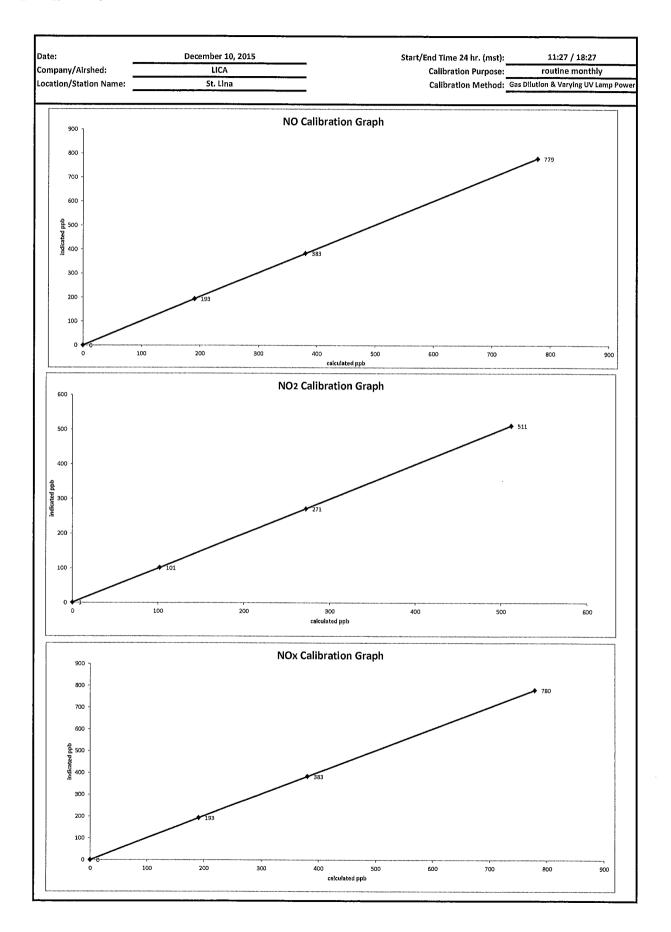
	December 11	, 2015	_		metric Pressure:		4 atm
Company/Alrshed:	LICA St. Lina		_		Temperature °C: ther Conditions:		dy with snow
Location/Station Name: Parameter:	Total Hydroc		<b>-</b>		bration Purpose:		monthly
Start/End Time 24 hr. (mst):	11:18 / 14	:35	<u>-</u>			Alex Yakupov	Trina Whitsitt
Calibration Method:	Gas Diluti	on	_	Cal	Gas Expiry Date:	March	26, 2017
yzer: Serial Number:	51CLT-7702	1_38/		Range ppm:	50		
Last Calibration Date:			_	As Found C.F.:		_	
Previous Cal High Point C.F.:			_	New C.F.:	0,999	_	
rator:							· · · · · · · · · · · · · · · ·
Flow Meter ID's: _ Make & Model:	n/a API 700	)		Standard Calibratio	on Points for a Range o	of: 50 ppm	
Serial #: _	830		_	Po		Target ppm	
Cal Gas Cylinder I.D. #:_	LL3367	202.0	- ∤	HI _.		38 18	
I ₄ /C ₃ H ₈ Cylinder Conc. (ppm): CH ₄ as propane/total CH ₄	601.4 555.5	1156,9	7 I	Lo		9	
equivilants (ppm):			OF STABILIT	Y AS OF SEPTEME	BER 23, 2015		
Calibrator	r Flow Rates (cc/mln)			Calculated	Indicated	Correc	tion Factors:
Point	Diluent	Cal Gas	Total	Concentration: (ppm)	Concentration: (ppm)		
as found zero	1999	0.00	1999	0.0	0.10		n/a
as found high	1932	65.00	1997	37.66	38.10		0.991
adjusted zero	1999	0.00	1999	0.00	0,00 37,70	1	n/a 0.999
adjusted high	1932 1969	65,00 31,00	1997 2000	37.66 17.93	17.90		1,002
mid low	1984	16.00	2000	9.26	9,20		1,006
calibrator zero	1999	0,00	1999	0,0	0,10		n/a
					Average C.F	-	1,002
		Linear Regre	ssion/Callb	ration Results:			
			-		LIMITS		
		Correlation Co		1.000	> or = 0.995		
	1.0-4		Slope =	0,998	.95-1,05 ± 3% F.S.		
		ercept as % of i		0.08%	± 10%		
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
30 · E 25 · G. H 20		1	_				
w 25 - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 1	9.20		17.90				
w 25 dd pp 20 pp 15 15 10 5 5	9.20	15		25	30	95	40
u 25 u 26 pu 20 pu 20 115 10	10		17.90 20 calculated	25			AO
w 25 dd pp 20 pp 15 15 10 5 5	10 As	found:	20	25	As lef	:t:	40
w 25 dd pp 20 pp 15 15 10 5 5	10	found:	20	25			AO
u 25	10 As H2 cylinder (psi):	found: 2100	20	25	As lef H2 cylinder (psi): H2 cylinder reg	:t:	40
u 25 6 20 9 20 15 15 10 5	10  As  H2 cylinder (psi): cylinder reg set (psi):	found: 2100 27	20	25	As let  H2 cylinder  (psi):  H2 cylinder reg  set (psi):	2100 27	AO
u 25	10 As H2 cylinder (psi):	found: 2100 27	20	25	As lef H2 cylinder (psi): H2 cylinder reg	2100	40
under 25	10  As  H2 cylinder (psi): cylinder reg set (psi): Span Cylinder (psi): Span Cylinder Reg Set	found: 2100 27 400	20	25	As lef H2 cylinder (psi); H2 cylinder reg set (ɒsi): Span Cylinder (psi); Span Cylinder	2100 27	40
u 25	10  As  H2 cylinder (psi): cylinder reg set (psi): Span Cylinder (psi)ses Span Cylinder Reg Set	found: 2100 27 400	20	25	As lef H2 cylinder (psi); H2 cylinder reg set (psi); Span Cylinder (psi); Span Cylinder Reg Set (psi);	2100 27 400	40
under 25	10  As  H2 cylinder (psi): cylinder reg set (psi): Span Cylinder (psi): Span Cylinder Reg Set	found: 2100 27 400	20	25	As lef H2 cylinder (psi); H2 cylinder reg set (ɒsi): Span Cylinder (psi); Span Cylinder	2100 27 400	40
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	10  As  H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Alr Gen	found: 2100 27 400 19	20	25	H2 cylinder (psi); H2 cylinder reg set (psi); Span Cylinder (psi); Span Cylinder (psi); Span Cylinder (psi); Caro Air Gen Pressure:	2100 27 400	40
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	10  As  H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms:	found: 2100 27 400 19 42 None	20	25	H2 cylinder (psi): H2 cylinder reg set (psi): Span Cylinder (psi): Span Cylinder (psi): Span Cylinder Reg. Set (psi): Zero Air Gen Pressure: measurement alarms:	2100 27 400 19 42 None	40
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	10  As  H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms:	found: 2100 27 400 19 42 None	20	25	As lef H2 cylinder (psi]: H2 cylinder reg set (psi): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms:	2100 27 400 19 42 None	40
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	10  As  H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt:	found: 2100 27 400 19 42 None None	20	25	H2 cylinder (psi); H2 cylinder reg set (psi); Span Cylinder (psi); Span Cylinder (psi); Span Cylinder Reg Set (psi); Zero Air Gen Pressure: measurement alarms: service alarms:	2100 27 400 19 42 None	AO
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	As H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng;	found: 2100 27 400 19 42 None None	20	25	As lef H2 cylinder (psi]: H2 cylinder reg set (psi): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms:	2100 27 400 19 42 None None	AD.
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: ng; try:	found: 2100 27 400 19 42 None None	20	25	As lef H2 cylinder (psi): H2 cylinder reg set (asi): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng:	2100 27 400 19 42 None None 1648 1 1 188.4	40
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng; try: film: det:	found: 2100 27 400 19 42 None None 161S 1 1 188.1 125.9	20	25	As lef H2 cylinder (psi): H2 cylinder reg set (asi): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: fim: det:	100 27 400 19 42 None None 1648 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	40
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: mg; try: fim: det: Flame:	found: 2100 27 400 19 42 None None 161S 1 188.1 125.9 188	20	25	As lef H2 cylinder (psi): H2 cylinder reg set (psi): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: film: det: Harme:	2100 27 400 19 42 None None 1648 1 1 188.4 125.8 188	40
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	As H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: cnt: rng: try: film: det: Flanne: Fillter:	found: 2100 27 400 19 42 None None 161S 1 1188.1 125.9	20	25	H2 cylinder (psi): H2 cylinder reg set (ssi): Span Cylinder (psi): Span Cylinder (psi): Span Cylinder Reg Set (ssi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: fim: det: Flame: Filter:	100 27 400 19 42 None None 1648 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AO
under 25 10 20 10 10 10 10 10 10 10 10 10 10 10 10 10	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: mg; try: fim: det: Flame:	Found: 2100 27 400 19 42 None None 161S 1 1 1188.1 125.9 188 125 125	20	25	As lef H2 cylinder (psi): H2 cylinder reg set (psi): Span Cylinder (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: film: det: Harme:	2100 27 400 19 42 None None 1648 1 1 188.4 125.8 188 125	40
u 25	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng; try: film: det: Flane: Filter: Base:	Found: 2100 27 400 19 42 None None 161S 1 188.1 125.9 188 125 06.92	20	25	H2 cylinder (psi): H2 cylinder reg set (soli): Span Cylinder (psi): Span Cylinder (psi): Span Cylinder Reg Set (soli): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: film: det: Flame: Flame: Sample psi: Internal Air	2100 27 400 19 42 None None 1648 1 1 188.4 125.8 188 125	40
u 25	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng; try: film: det; Flame: Filter: Base: Sample psi:	found: 2100 27 400 19 42 None None 161S 1 188.1 125.9 188 125 06.92 13	20	25	As lef H2 cylinder reg set (psi]; H2 cylinder reg set (psi); Span Cylinder (psi); Span Cylinder Reg Set (psi); Zero Air Gen Pressure: measurement alarms: cnt: rng: try: film: det: Flame: Filter: Base: Sample psi; Internal Air	2100 27 400 19 42 None 1648 1 1 1 188.4 125.8 125 06.90	40
u 25 u 25 par 20 10 5 0 0 0.00 5	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: mg; try: film: det: Flame: Flame: Sample psi: internal Air Pressure: nternal Fuel Pressure:	found: 2100 27 400 19 42 None None 161S 1 1 188.1 12S.9 12S 12S 12S 12S 12S 12S 13 19	20	25	H2 cylinder (psi): H2 cylinder reg set (psi): Span Cylinder (psi): Span Cylinder (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: film: det: Flame: Filtre: Base: Sample psi: Internal Fuel Pressure:	2100 27 400 19 42 None None 1648 1 1 188.4 125.8 125 125 06.90 13 19	40
um 25	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng; try: film: det; Flame: Filter: Base: Sample psi: internal Air Pressure: nternal Fuel Pressure:	found: 2100 27 400 19 42 None None 161S 1 188,1 125,9 188 125 06,92 13 19	20	25	As lef H2 cylinder (psi); H2 cylinder reg set (usi); Span Cylinder (psi); Span Cylinder Reg Set (psi); Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng: try: film: det: Get: Base: Sample psi; Internal Air Internal Fuel Pressure: Internal Pressure: Gauge psi:	2100 27 400 19 42 None 1648 1 1 1 188.4 125.8 125 06.90 13 19 27	40
um 25	H2 cylinder (psi): cylinder reg set (psi): Span Cylinder Reg Set (psi): Zero Air Gen Pressure: measurement alarms: service alarms: cnt: mg; try: film: det: Flame: Flame: Sample psi: internal Air Pressure: nternal Fuel Pressure:	found: 2100 27 400 19 42 None None 161S 1 188,1 125,9 188 125 06,92 13 19	20	25	As lef H2 cylinder (psi); H2 cylinder reg set (psi); Span Cylinder (psi); Span Cylinder Reg Set (psi); Zero Air Gen Pressure: measurement alarms: service alarms: cnt: rng; try: film: det: Get: Base: Sample psi; Internal Air Internal Fuel Pressure: Internal Fuel Pressure: Internal Pressure:	2100 27 400 19 42 None None 1648 1 1 188.4 125.8 125 125 06.90 13 19	40



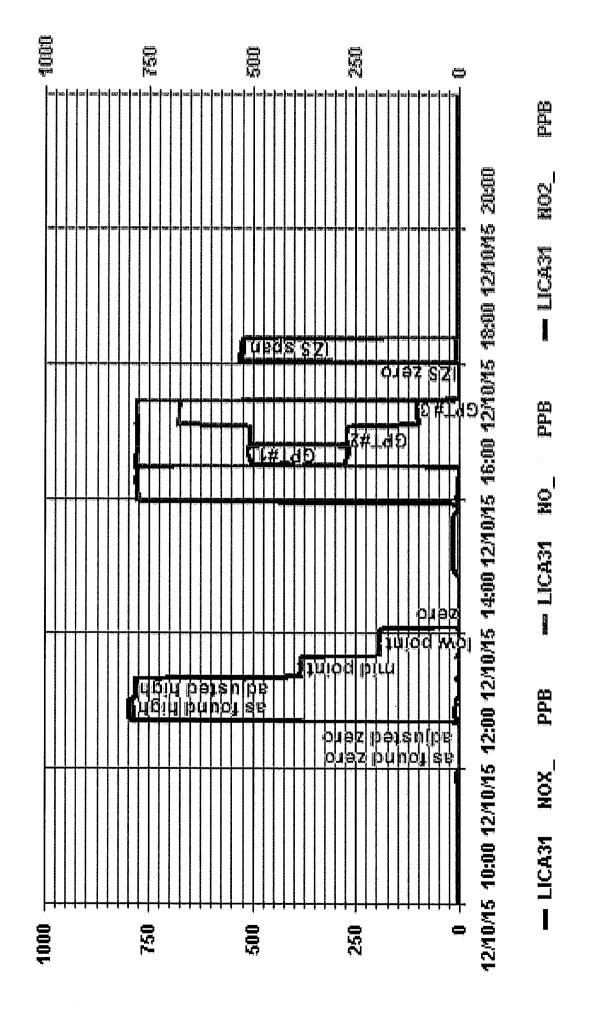
- Lichai The PPM



		ember 10,	2015	-			Barometric Pressure:		0.899 a	itm
Company/Airshed: Location/Station Name:		LICA St. Lina		-		St	ation Temperature °C: Weather Conditions:		21	
art/End Time 24 hr. (mst):		11:27 / 18:	27	-			Calibration Purpose:		routine m	
P.T. to be used for Ozone?		No		<u>.</u> -		Pe	rformed By/Reviewer:	Alex Y	akupov	Trina White
Calibration Method:	Gas Dilution	& Varying U	/ Lamp Power	-			Cal Gas Expiry Date:		March 12	, 2019
lyzer:							rection Factors:			
Serial Number:		594			NO =	0,999	As Found C.F.: 0.990		/ C.F.:	
Last Calibration Date:		vember 2,	2015	•	NO ₂ =	1.000	1,002		002	
Range ppb;		1000		•	NOx =	0.999	0.986	0.	999	
brator:					*****		***		<del>,</del>	***
Flow Meter ID's: Make & Model:				i		ndard Calibration Po		1000 ppb	(O (easls)	
Serial #:			-			igh .	Target NO (ppb) 780		VO₂ (ppb) 00	Cc Ozone
Cal Gas Cylinder I.D. #:			•			lid	380		75	n/a n/a
NO/NOx Gas Conc. (ppm):		50.6	•			ow .	190		00	n/a
			-			oint #1	n/a		√a	n/a
						oint #2	n/a	r	√a	n/a
Calibrator Flo	w Rates (co	/m(n)	ALL F	Calculated NO	TES OF STABILITY AS Calculated NOx	OF SEPTEMBER 23, 2 Indicated NO	015 Indicated NOx	NO C.F.	NOVCE	
Point	Diluent	Cal Gas	Total Flow	(ppb)	(ppb)	(ppb)	(ppb)	NO C.F.	NOx C.F.	
as found zero	5012	0.0	5012	0	0	0.0	(ppu) 6.0	n/a	n/a	
as found high	4938	77.2	5015	778.9	778.9	787.0	796.0	0.990	0.986	
adjusted zero	5012	0.00	5012	0.0	0.0	0.0	0.0	n/a	n/a	
adjusted high	4938	77.20	5015	778.9	778.9	779.0	780.0	1.000	0.999	
mld	4976	37.70	5014	380,5	380.5	383.0	383.0	0.993	0.993	
low	4994	18.90	5013	190,8	190.8	193.0	193.0	0,988	0.988	
calibrator zero	5013	0.00	5013	0	0	-1.0	0.0	n/a	n/a	
	· · · · ·		ALLE	POINTS ARE 15 MINU	TES OF STABILITY AS	OF SEPTEMBER 23. 2	Average C.F.=	0.994	0.993	
Calibrator Flo	w Rates (cc	/min)		Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ gain	NO ₂ C.F.
Point	Diluent	Cal Gas	Total Flow	volts or ppb	(dqq)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
NOx reference	4938	77.20	5015	0,0	778,0	779,0	1.0	0,0	1.0	(bbn)
as found high NO2	4938	77.20	5015	540.0	266,0	779.0	512.0	512.0	511.0	1.002
gpt mid	4938	77.20	5015	275.0	506.0	778.0	272.0	272.0	271.0	1.004
gpt low	4938	77.20	5015	100.0	676.0	779.0	102.0	102.0	101.0	1.010
				Linear Rea	gression/Calibration	Results:		Average	e NO₂ C.F.=	1.005
				NO	NOx	NO ₂	LIMITS			
	Cor	relation Co	effecient =	1.000	1.000	1.000	> or = 0.995			
			Slope =	1.001	0.999	1.003	.95-1.05			
	b (Interc	ept as % of	full scale)=	0.14%	0.12%	0.02%	± 3% F.S.			
		e in C.F. fro	m last cal=	0.93%	1.31%	-0.20%	± 10%			
	% chang		r effeciency			1.00	0.96 to 1.04			
	_									
	NO	2 converte As f	ound:				As left:			
	NO:	2 converte As f	ound: 956			NOx SLOPE:	0.937			
	NO: NOx SLOPE: NOx OFFS;	2 converte As f	ound: 956 0.7			NOx OFFS:	0.937 2.9			
	NOX SLOPE: NOX OFFS: NO SLOPE;	As f	ound: 956 0.7			NOx OFFS: NO SLOPE:	0.937 2.9 0.938			
	NOX SLOPE: NOX OFFS; NO SLOPE; NO OFFS:	As f. 0. 0	ound: 956 0.7			NOx OFFS: NO SLOPE: NO OFFS:	0.937 2.9 0.938 2.2			
	NOX SLOPE: NOX OFFS: NO SLOPE;	As fi 0. (0	ound: 956 0.7 950			NOx OFFS: NO SLOPE: NO OFFS: SAMP FLW;	0.937 2.9 0.938 2.2 446			
	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW:	As f. 0. (0	ound: 956 0.7 950 0.3			NOx OFFS: NO SLOPE: NO OFFS:	0.937 2.9 0.938 2.2			
;	NOX SLOPE: NOX OFFS; NO SLOPE: NO OFFS: SAMP FLW: OZONE FL:	As f. 0. 0. 0	pund: 956 0.7 950 0.3 46 77 9.1			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL:	0.937 2.9 0.938 2.2 446 77			
;	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO:	2 converte  As f 0. 0. 1. 2. 2. 1.	pund: 956 0.7 950 0.3 46 77 9.1 2.2			NOx OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO:	0.937 2.9 0.938 2.2 446 77 20.3 2.5			
s N	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: OZONE FLW: PMT: OZONE FL: PMT: AZERO: HVPS:	2 converte  As fi 0, 0 0, 4 2 1 7	pund: 956 0.7 950 0.3 46 77 9.1 2.2 5.9			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7			
N Re	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO: HVPS: CELL TEMP:	As fi 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	pund: 956 0.7 950 0.3 46 77 9.1 2.2 5.9 71			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0			
N Ro	NOX SLOPE: NOX OFFS: NO OFFS: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO: HVPS: CELL TEMP: BOX TEMP:	As fi 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	pund: 956 1.7 950 1.3 46 77 99.1 2.2 5.9 71 0.0			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP: BOX TEMP:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0 26.7			
N Ro	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO: HVPS: CELL TEMP: BOX TEMP:	2 converte  As f 0, 0, 0, -1, 4 2 -1, 7 5 2 6	pound: 956 7.7 950 0.3 46 77 9.1 2.2 5.9 71 0.0 7.6 6.6			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0 26.7 6.6			
N Re I	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: AZERO: HVPS: CENTEMP: BOX TEMP: IZS TEMP:	As f. 0. (0. 0. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	pund: 956 1.7 950 1.3 46 77 99.1 2.2 5.9 71 0.0			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP: BOX TEMP: IZS TEMP:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0 26.7 6.6 45.4			
N Re I	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO: HVPS: CELL TEMP: BOX TEMP:	As f 0. 0. 0. 1. 4 4 2 2 1. 7 5 2 6 4 31	pound: 956 0.7 950 0.3 46 77 99.1 2.2 5.9 71 10.0 0.0 0.0 0.6 6.6 6.6			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: MOLY TEMP:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0 26.7 6.6 45.4 314.2			
N Re I	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO: HVPS: CELL TEMP: BOX TEMP: IZS TEMP: IZS TEMP:	As fr 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C 0. (C)))))))))))))))))))))))))))))))	pound: 956 0.7 950 0.3 46 77 77 2.2 2.5 5.9 71 0.0 7.6 6.6 6.5 6.6			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP: BOX TEMP: IZS TEMP:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0 26.7 6.6 45.4			
N Ro M	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO: HVPS: CELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: RCEL:	As f. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	pund: 956 957 950 933 46 77 991 2.2 5.9 71 0.0 7.6 6.6 6.4 8			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: MOLY TEMP: RCEL:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0 26.7 6.6 45.4 314.2 6.8			
N R( M Interna Interna	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO: HVPS: CELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: IZS TEMP: SAMP. al Span NO:	As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.	pound: 956 0.7 950 0.3 46 77 77 2.2 5.9 71 10.0 7.6 6.6 6.4 8.8 8			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: MOLY TEMP: RCEL: SAMP: Internal Span NO2:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0 26.7 6.6 45.4 314.2 6.8 26.0 6.3 520.3			
N R( M Interna Interna	NOX SLOPE: NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: IORM PMT: AZERO: HVPS: CCELL TEMP: BOX TEMP: IZS TEMP: IOLY TEMP: RCEL: SAMP:	As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.  As finds.	pund: 956 957 950 933 46 77 991 2.2 5.9 71 0.0 7.6 6.6 6.4 8			NOX OFFS: NO SLOPE: NO OFFS: SAMP FLW: OZONE FL: PMT: NORM PMT: AZERO: HVPS: RCELL TEMP: BOX TEMP: PMT TEMP: IZS TEMP: MOLY TEMP: RCEL: SAMP:	0.937 2.9 0.938 2.2 446 77 20.3 2.5 15.7 771 50.0 26.7 6.6 45.4 314.2 6.8 26.0 6.3			

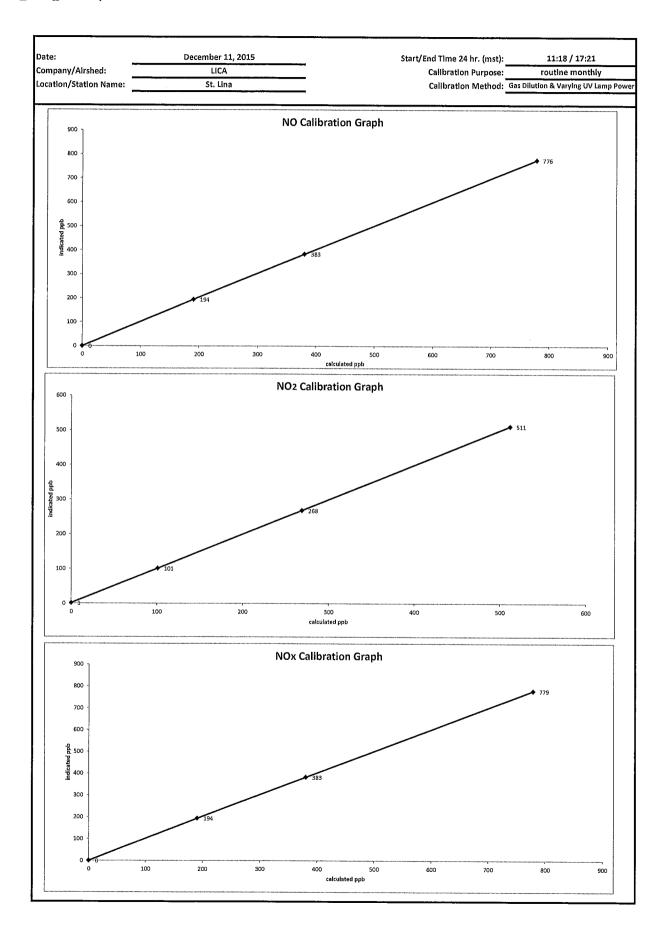


Of Minute Averages

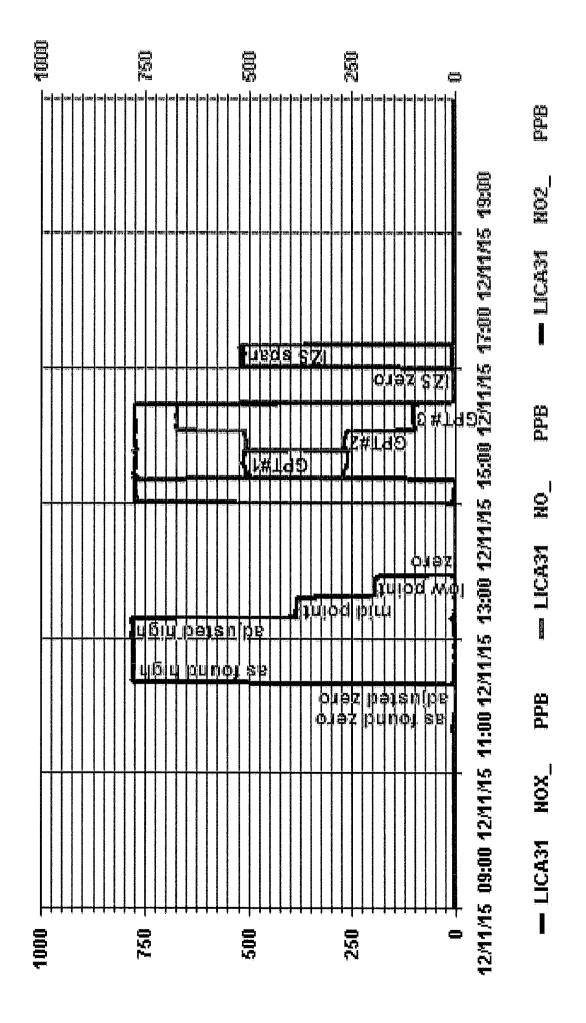


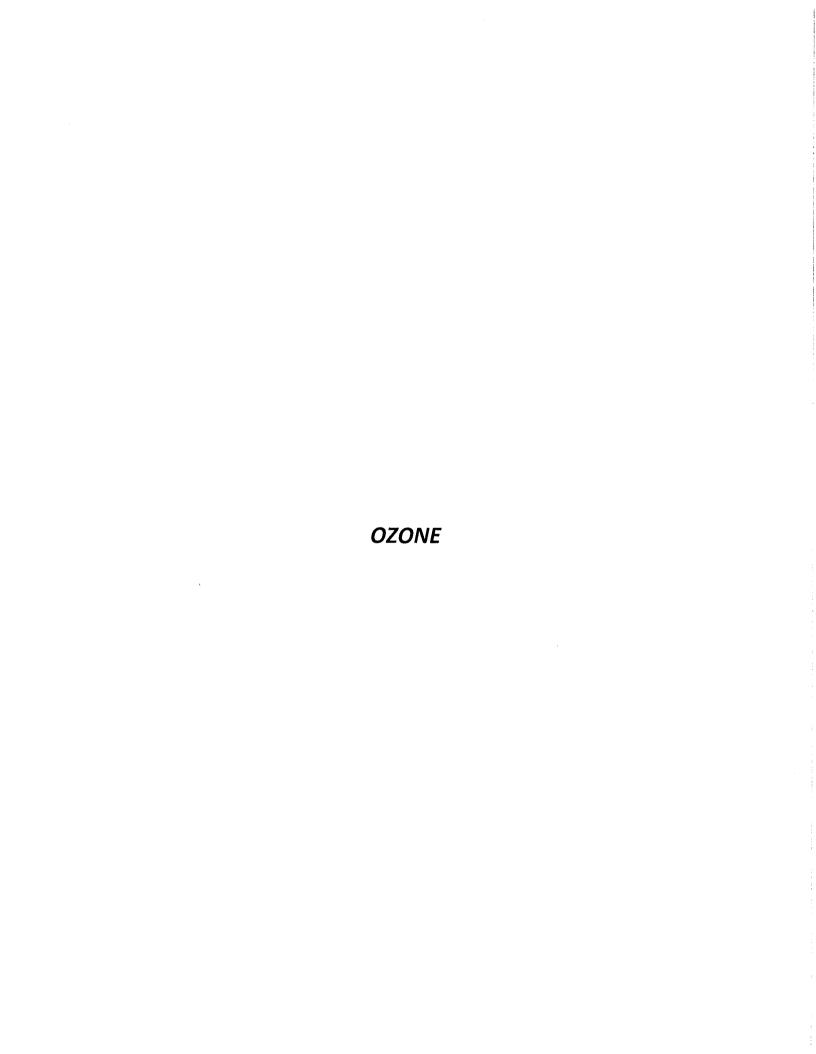
Date: Company/Airshed: Location/Station Name: Lart/End Time 24 hr. (mst): P.T. to be used for Ozone? Calibration Method: Serial Number: Last Calibration Date: Range ppb: Ibrator: Flow Meter ID's: Make & Model: Serial #: Cal Gas Cylinder I.D. # : NO/NOx Gas Conc. (ppm):	1 Gas Dllution	594 ember 10, 1000	21 / Lamp Power		NO =	Per	Barometric Pressure: ktion Temperature °C: Weather Conditions: Calibration Purpose: formed By/Revlewer: Cal Gas Expiry Date: rection Factors:	Alex Y	0.904 a 21 Jainly cloudy wi routine m Jakupov March 12	th light snow onthly Trina Whits
art/End Time 24 hr. (mst): P.T. to be used for Ozone? Calibration Method:  Serial Number: Last Calibration Date: Range ppb:  Ibrator: Flow Meter ID's: Make & Model: Serial #: Cal Gas Cylinder I.D. # :	Gas Dilution  Dece  n/  SABIO 2	1:18 / 17:2 No & Varying Uv 594 ember 10,	ł Lamp Power		NO.	Per	Weather Conditions: Calibration Purpose: formed By/Reviewer: Cal Gas Expiry Date:	Alex Y	routine m akupov	onthly Trina White
P.T. to be used for Ozone?  Calibration Method:  Serial Number:  Last Calibration Date:  Range ppb:  Ibrator:  Flow Meter ID's:  Make & Model:  Serial #:  Cal Gas Cylinder I.D. #:	Gas Dilution  Dece  n/  SABIO 2	No & Varying Uv 594 ember 10, 1000	ł Lamp Power		No	Cor	formed By/Reviewer: Cal Gas Expiry Date:		akupov	Trina White
Calibration Method:  Serial Number: Last Calibration Date: Range ppb:  Ibrator: Flow Meter ID's: Make & Model: Serial #: Cal Gas Cylinder I.D. #:	Dece n/ SABIO 2	\$ Varying UV 594 ember 10, 1000			NO	Cor	Cal Gas Explry Date:			
Serial Number:  Last Calibration Date: Range ppb:  ibrator: Flow Meter ID's: Make & Model: Serial #: Cal Gas Cylinder I.D. # :	Dece n/ SABIO 2	594 ember 10, 1000			No				March 12	, 2019
Serial Number: Last Calibration Date: Range ppb:  ibrator: Flow Meter ID's: Make & Model: Serial #: Cal Gas Cylinder I.D. # :	n/ SABIO 2	ember 10, 1000	2015		NO		rection Factors:			
Last Calibration Date: Range ppb:	n/ SABIO 2	ember 10, 1000	2015		No			New		
Last Calibration Date: Range ppb:	n/ SABIO 2	ember 10, 1000	2015			Previous C.F.: 1,000	As Found C.F.: 1.001		7 C.F.:	
Range ppb: ibrator: Flow Meter ID's: Make & Model: Serial #: Cal Gas Cylinder I.D. # :	n/ SABIO 2	1000			NO ₂ =	1,002	1.002		002	
Flow Meter ID's:  Make & Model:  Serial #:  Cal Gas Cylinder I.D. #:	SABIO 2				NOx =	0.999	1.005		000	
Make & Model: Serial #: Cal Gas Cylinder I.D. # :	SABIO 2	,			· · · · · · · · · · · · · · · · · · ·					
Serial #: Cal Gas Cylinder I.D. # :						ndard Calibration Po	ints for a Range of:	1000 ppb		
Cal Gas Cylinder I.D. #:	11900					Int	Target NO (ppb)		NO₂ (ppb)	Cc Ozone
					HI		780		00	n/a
Tro/ Nox das conc. (ppin/	50.6	50,6			Lo Lo		380 190		00	n/a
	50.0	30,0	•			oint #1	n/a		√a	n/a n/a
					Extra P	oint #2	n/a		via .	n/a
Calibrator Flow	Rates (cc)	/min)	ALL P	Calculated NO		·		NOCE	NOx C.F.	
	Diluent	Cal Gas	Total Flow	Calculated NO (ppb)	Calculated NOx (ppb)	Indicated NO (ppb)	Indicated NOx (ppb)	NO C.F.	NOX C.F.	
as found zero	5012	0.0	5012	0	0	-1,0	3.0	n/a	n/a	
as found high	4938	77.2	5015	778.9	778.9	777.0	778.0	1,001	1.005	
adjusted zero	5012	0.00	5012	0.0	0.0	0.0	0.0	n/a	n/a	
adjusted high	4938	77.20	5015	778.9	778.9	776.0	779.0	1.004	1,000	
mld low	4976 4994	37.70 18.90	5014 5013	380.5 190.8	380.5 190.8	383.0 194.0	383,0 194.0	0.993	0,993	
calibrator zero	5013	0.00	5013	0	0	0.0	0,0	n/a	n/a	
							Average C.F.=	0.994	0.992	
			ALLP	OINTS ARE 15 MINU	TES OF STABILITY AS	OF SEPTEMBER 23, 2	015			
Calibrator Flow				Calibrator Setting	Indicated NO	Indicated NOx	Indicated NO ₂	NO drop	NO ₂ gain	NO ₂ C ₁ F,
Point I NOx reference	Diluent 4938	Cal Gas 77.20	Total Flow 5015	volts or ppb 0.0	(ppb) 773.0	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
as found high NO2	4938	77.20	5015	540.0	261.0	774.0 774.0	1,0 512,0	0.0 512.0	1.0 511.0	1,002
gpt mld	4938	77.20	5015	275,0	504.0	774.0	269.0	269.0	268.0	1.004
gpt low	4938	77.20	5015	100.0	672.0	775.0	102.0	101.0	101.0	1.000
				Linear Res	gression/Calibration	Results:		Average	e NO ₂ C.F.=	1.002
				NO NO	NOx	NO ₂	LIMITS			
	Cor	relation Co	peffecient =	1.000	1.000	1.000	> or = 0.995			
			Slope =	1.005	1.001	1.004	.95-1.05			
			fuli scale)=	0.24%	0.18%	0.06%	± 3% F.S.			
	_		om last cal= r effeciency	-0.12%	-0.60%	0.00% 1.00	± 10% 0.96 to 1.04			
MO	x SLOPE:		ound: 937			NOx SLOPE:	As left: 0.939			
	Ox OFFS:		2.9			NOx OFF5:	1.1			
	O SLOPE:		938			NO 5LOPE;	0.937			
	NO OFFS:		2.2			NO OFF5;	-0.7			
	MP FLW:		49			5AMP FLW:	450			
O _Z	ZONE FL: _ PMT:		78 7.3			OZONE FL: PMT:	78 15.4			
NOF	RM PMT:		0.2			NORM PMT:	2.8			
	AZERO:		5.8			AZERO:	15.8			
	HVPS:		71			HVP5:	771			
	LL TEMP:		0.0			RCELL TEMP:	50,0			
	OX TEMP: _ NT TEMP: _		6.6 6.6			BOX TEMP: PMT TEMP:	26,3 6,6			
	ZS TEMP:		5.0			IZS TEMP:	45.2			
	LY TEMP:		16,4			MOLY TEMP:	315.7			
	RCEL:		5.9			RCEL:	6.9			
	SAMP:		6.1			5AMP:	26.2			
Internal S			5,3			Internal 5pan NO:	7.4			
Internal Sp Internal Sp	-		26.8			Internal Span NO2: Internal Span NOx:	512.8 520.3	•		

No NO2 adjustment made. Re-calibration required because NO hourly readings drifted -1.0 ppb after calibration on December 10. After "Calibrator ZERO" calibration stopped (14:16). Single phase ZERO check started. GPT calibration started at 15:00. Sample filter changed on December 10, 2015.

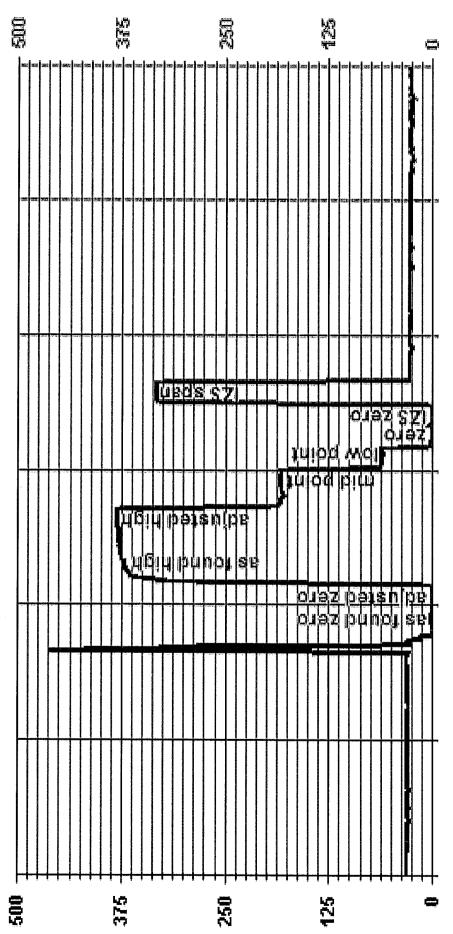


Of Minute Averages



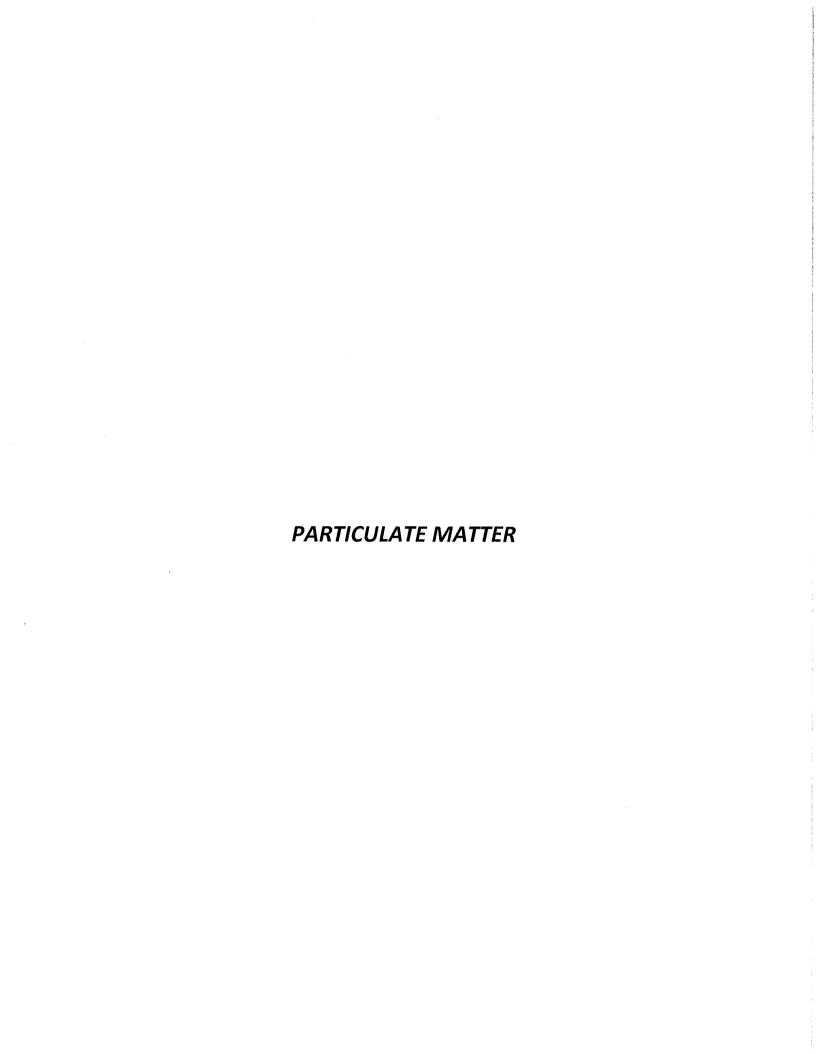


Date	: Decemeber	17, 2015		Barometric Pressure:		0.918 atm
Company/Airshed			S	Station Temperature °C:		20
Location/Station Name art/End Time 24 hr. (mst)			-	Weather Conditions: Calibration Purpose:		ily cloudy with snow outine monthly
ozone Calibration Method			. Р	erformed By/Reviewer:	Alex Yakupov	
G.P.T. Date	n/a-done by Varying	UV Lamp Power	•	Cal Gas Expiry Date:		n/a
alyzer:						
Serial Number	100224		Ozone Range ppb:	500		
Last Calibration Date revious Cal High Point C.F.	November	4, 2015	As Found C.F.:	1,008		
revious carriigh Follit Cir.			. New C.F.;	1.000	,	
librator:				-		
Flow Meter ID's Make & Model			•	Point High		nge of Ozone Calibration Pol 300-400 ppb
Serial #			•	Mid		150-200 ppb
Cal Gas Cylinder I.D. #				Low		50-75 ppb
	ALI	POINTS ARE 15 N	AINUTES OF STABILITY	Y AS OF SEPTEMBER 23, .	2015	
	Calibrator Flow	Rate (cc/min)	Calculated Concentration:	Corrected Calculated Conentration:	Indicated Concentration:	Correction Factors:
Point	Total Flow @ Point Start	Total Flow @ Point Finish	(bbp)	(dqq)	(ppb)	
as found zero	5013	5013	0.0	n/a	1.0	n/a
as found high adjusted zero	5013 5013	5013 5013	380.0 0.0	380.0 0.0	378.0 0.0	1.008 n/a
adjusted high	5013	5013	380,0	380.0	380.0	1.000
mid	5013	5013	180.0	180,0	181.0	0.994
low calibrator zero	5013 5013	5013 5013	60.0 0.0	60,0 n/a	0.0	0.984 n/a
			0.0	11/4	Average C.F.=	0.993
350		Ther	no 49i Ozone Analyze	er Calibration		380,0
300 - 			181.0			
100 - 50 -	61.0					
0 -0:0	50 10	D 1	50 200	250	300	350 4
		As found:	calculated	l ppb	As left:	
	O3 Bkg: _	-0.2		O3 Bkg:	-0,3	
	O3 Coef:	0.973		O3 Coef:	0,978	
	Photo Lamp _ O3 Lamp	9.4 7.8		Photo Lamp O3 Lamp	9.4 7.8	
	Bench:	26.5		Bench:	26.4	
	Bench Lamp:	53.5		Bench Lamp;	53,5	
	O3 Lamp; _ Pressure;	67.8 673.8		O3 Lamp: Pressure:	67.8 676.1	
	Cell A lpm:	0.726		Cell A Ipm:	0,726	
	Cell B lpm:	0.720		Cell B lpm:	0.720	
	O3 ppb:	2,2		O3 ppb:	0.6	
	Cell A ppb: _ Cell B ppb:	2.3		Cell A ppb: Cell B ppb:	5.5 -4.3	
	Cell A int:	57223		Cell A Int:	57230	
	Cell B int:	70194		Cell B Int:	70197	
	Internal Span:	491		Internal Span:	333	



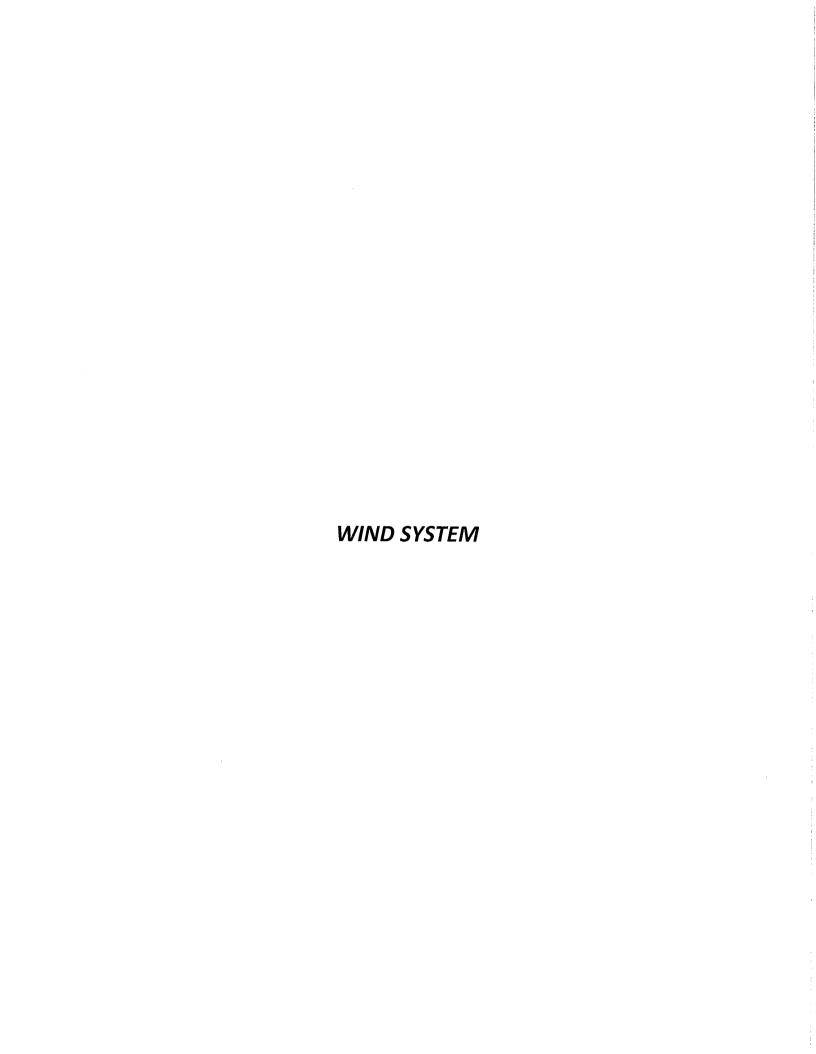
12M7M5 08:25 12M7M5 10:25 12M7M5 12:25 12M7M5 14:25 12M7M5 16:25 12M7M5 18:25

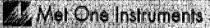
S



Date:	Decembe	er 11, 2015		Perfo	rmed By/Reviewer:	Alex Yakupov Trina Whitsii
Company:	LI	CA			Start Time (mst):	12:33
Station Name/Location:	St.	Lina			End Time (mst):	13:18
Previous Audit Date:	Novembe	er 26, 2015		С	alibration Purpose:	Bi-monthly #1
Parameter:	PN	12.5		W	leather Conditions:	Mainly cloudy with light snow
1400A Information and Status:						
Serial Number:	1 <i>4</i> 05Δ20	08301003	As Found I	ilter Loading %:	42,4	0
Ko Factor:		25,0		ilter Loading %:	20.43	
Ambient Temperature °C:	-3	.55	<del></del>	As Found Noise:	0.00	·
Ambient Pressure atm:	0.9	905		As Left Noise:	0.00	0
Main Flow Reading Ipm:	3.	00		Pump Vacuum:	0.26	)
Aux Flow Reading Ipm:	13	.68		Warnings:	None	e
eference Standards:						
ñ.a1		ow:	1	sure:	Tempera	
Make: Model:		/yer /lark III	Fisi FB 1		Fishe FB 129	
Serial Number:		/a		58457	130168	
Calibration Date:		/a /a		ar-15	18-Mar	<del></del>
As found leak check:			<del></del>			
		Base	Zero	Reference	Zero	
PM 2.5 Flow	<b>a</b> c <b>tu</b> al	-0.01	-0.08	-0.01	-0.08	
	limit	0.15	<u> </u>	0.15	$\geq$	
Bypass Flow	actual	0.00	-1.67	0.00	-1.67	
to left lank about forms on the second for	limit	0.60		0.60		
as left leak check (same as above if a	s round passes):	Base	Zero	Reference	Zero	
PM 2.5 Flow	actual	-0.01	-0.08	-0.01	-0.08	
111, 213 1101	limit	0.15	><	0.15		
Bypass Flow	actual	0.00	-1.67	0.00	-1,67	
	limit	0.60		0.60	$\gg$	
As found temperature and pressure:						
tolerance	•				+/- 0.01 atm	
1405F temperature °C: _ reference temperature °C:	-3.6 -3.8			F pressure atm: _	0.905	
difference °C:	-0.3	•	reie	erence pressure: _ difference :	-0.008	
s left temperature and pressure (sar		found adequate):		unici circe i	0.000	
tolerance	+/- 2.0°C			tolerance	+/- 0.01 atm	
1405F temperature °C: _	-3.8			F pressure atm: _	0.913	
reference temperature °C:	-3.8		refe	rence pressure:	0.913	
difference °C:	0.0		· · ·	difference :	0.000	
main flow tolerance 3.00 lpm +	·/- 0.20 lpm			total/au	x flow tolerance 16.67	/13.67 lpm +/- 1.00 lpm/+/- 7%
1405F main flow lpm: _	3.00			1400A t	otal/aux flow lpm: _	16.67
reference main flow lpm: _ difference lpm:	3.04 0.04			reference t	total/aux flow lpm:	16.73
as left flows (same as above if as four					difference Ipm:	0.06
main flow tolerance 3.00 lpm +				total/au	x flow tolerance 16.67	/13.67 lpm +/- 1.00 lpm/+/- 7%
1405F main flow lpm: _	3.00				total/aux flow lpm:_	16.67
reference main flow lpm: _ difference lpm:	3.04 0.04			reference t	total/aux flow lpm: difference lpm:	0.06
Audit:	V.UT				unrerence (pin):	0.00
Last K _o audit date:	17-Jul-15					
1405F K _o factor:	13125.0					
Measured K _o factor:	13184.8000					
% difference:	0.46					

Date:	Decembe	r 24, 2015		Perfo	rmed By/Reviewer:	Alex Yakupov Trina Whitsit	
Company:		CA	<del></del>		Start Time (mst):	14;42	
Station Name/Location:	St.	Lina			End Time (mst):	15:31	
Previous Audit Date:	Decembe	r 11, 2015	<del></del>	(	Calibration Purpose:	Bi-monthly #2	
Parameter:	PM	2.5	Weather Conditions: Mainly cloudy v				
400A Information and Status:							
Serial Number:	1405A20	8301003	As Found	Filter Loading %:	30,	43	
Ko Factor:	131	25.0		Filter Loading %:	31.1		
Ambient Temperature °C:	-16	.15		As Found Noise:	0.0	07	
Ambient Pressure atm:	<del></del>	)17	As Left Noise:		0.00	00	
Main Flow Reading Ipm:		00	Pump Vacuum:		0.2		
Aux Flow Reading Ipm: eference Standards:	13	.68		Warnings:	Nor	ne	
verei ence Standards:	Flo	w;	Droc	ssure:	Tompor	entines.	
Make:		yer	ı	sure: her	Temper Fish		
Model:	475 N			1291	FB 12		
Serial Number:	n,	/a	1301	68457	13016	8457	
Calibration Date:	n,	/a	18-N	1ar-15	18-Ma	ar-15	
As found leak check:				7~~~		· · ·	
D14.0.7.7!	actual	Base	Zero	Reference	Zero		
PM 2.5 Flow	limit	-0.01 0.15	-0.07	-0.01 0.15	-0.07		
Bypass Flow	actual	0.00	-1.67	0.00	-1.67		
= , p = 0 1 10 11	limit	0.60		0.60			
s left leak check (same as above if as	found passes):					7	
		Base	Zero	Reference	Zero		
PM 2.5 Flow	actual	-0.01	-0.07	-0.01	-0.07		
	limit	0.15		0.15			
Bypass Flow	actual limit	0.00	-1.67	0.00 0.60	-1.67		
s found temperature and pressure:		0.00		0.00			
tolerance	+/- 2.0°C			tolerance	+/- 0.01 atm		
1405F temperature °C:	-16.2		1405	F pressure atm:	0.917		
reference temperature °C:	-15.9		refe	erence pressure:	0.917		
difference °C:	0.2			difference :	0,000		
as left temperature and pressure (san • tolerance		ound adequate):		tolerance	+/- 0.01 atm		
1405F temperature °C:	-15.9		1409	5F pressure atm:	0.917		
reference temperature °C:	-15.9			erence pressure:	0.917		
difference °C:	0.0			difference :	0.000		
s found flows: main flow tolerance 3.00 lpm +,	/- 0.20 lpm			4-4-1/		7/40.571	
1405F main flow lpm:	3.00				total/aux flow lpm:	7/13.67 lpm +/- 1.00 lpm/+/- 7% 16.67	
reference main flow lpm:	2.97				total/aux flow lpm:	16.23	
difference lpm: as left flows (same as above if as four	-0.03	***************************************			difference lpm:	-0.44	
main flow tolerance 3.00 lpm +,				total/aı	ux flow tolerance 16.67	7/13.67 lpm +/- 1.00 lpm/+/- 7%	
1405F main flow lpm:	3.00				total/aux flow lpm:	16.67	
reference main flow lpm: difference lpm:	-0.03			reference	total/aux flow lpm: _ difference lpm:	16.23	
o Audit:	-0.03	· · · · · · · · · · · · · · · · · · ·			umerence ipm:	-0.44	
Last K _o audit date:	17-Jul-15						
1405F K _o factor:	13125.0						
Measured K _o factor:	13184.8000						
% difference:	0.46						





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	11.10 0.224 11.32 0.14 11.16 0.224 11.18 0.02
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				2,19 6,042 2,56 0,10
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			9 (1975)	220 042 212 40) 2 20 72 042 216 4.11
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# Meteorological System Checklist

11-Dec-15 Performed by: Date:

Alex Yakupov

St. Lina Station:

End: 13:43 Start: 13:19

PRECIPITATION SENSOR CHECK Previous check date: December 11, 2015

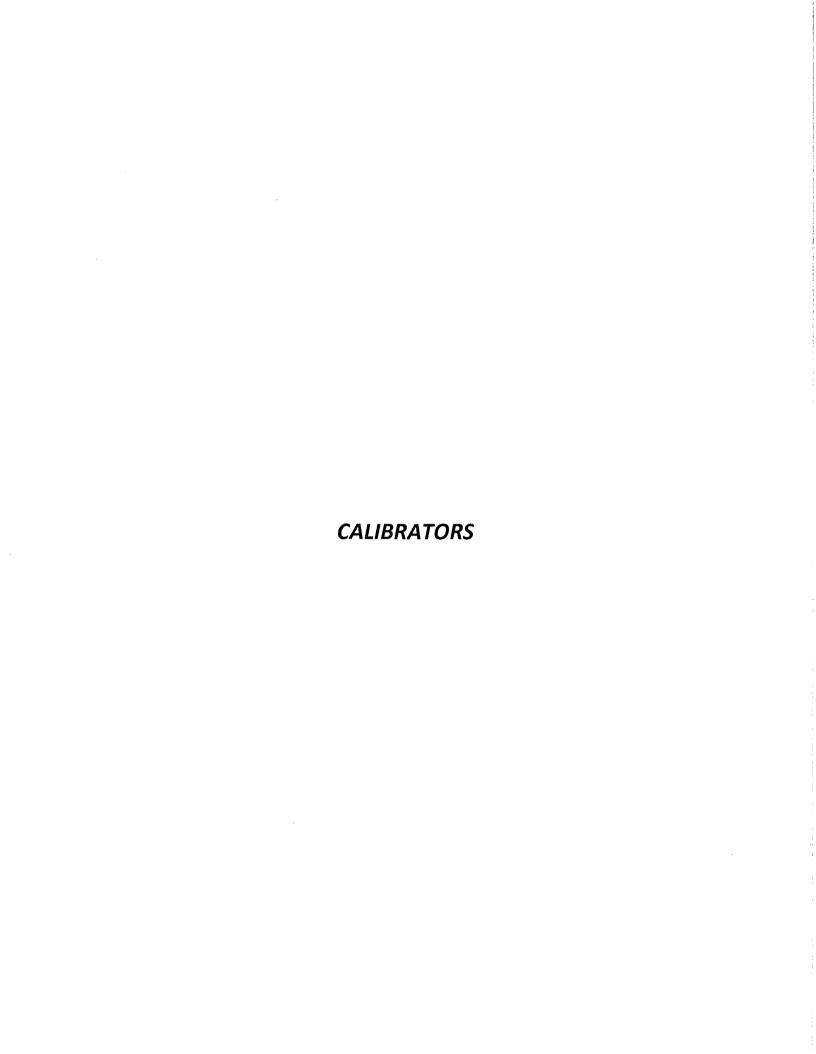
	YES	ON
Is the sensor Level?	YES	
Is the heater operating properly?	YES	
Are the bucket drain holes clean?	YES	
Is the inner screen on the housing? (screen should be on between July and September		ON
Is the upper screen on the housing? (screen should be on between July and September)		ON
Is the housing clean?	YES	
Is the area around the housing clean and free from obsticle?	YES	
Is the tipping sensor working properly? (13:38 - live test / water)	YES	
(test amount - 2.0 mm)	PASS	

Comments: the rain gauge has been tested with water. Response is timely and accurate. No issues.

Field Technician:

Alexander Yakupov

December 11, 2015





# Calibrator Performance Audit OZONE

File No. 2015-030A

Company: Maxxam			Operator: Limin	ı Li		
<b>Calibrator</b> :			Flow Measurement I	Device:		
Make/Model	Sabio	2010D	Make/Model	del N/A		
Serial Number	119	00613	Serial Number	N/	Ä	
Oven Temperature		N/A	Temperature (°C)	N/A		
Last Verification Date	e N/A		Barometric Pressure	N/A		
Flow Measuren	ients					
Pt. No. 15000	Pt. No. 2	5000	Pt. No. 3 5000			
Calibrator Flow	Calo	culated	Indicated	% Dif	ference	
(sccm)	Concentr	ation (ppm)	Concentration (ppm)		% Diff. Limit	
5013		.000	. 0.001			
5013	0	400	0.407	1%	± 10%	
5013		.200 ·	0.204	1%	± 10%	
5014		.100	0.101	0%	± 10%	
**************************************			Average Percent Difference	1%	± 10%	
O ₃ Correlation= m (Slope)= b (Intercept % of FS)=	1.0000 1.0163 0.0800	<u>LIMITS</u> ≥ 0.995 0.90-1.10 ± 3% F.S.				
AENV S	tandards		Ozone An	alyzer		
Audit Calibrator			Make/Model	Tec	49i	
Make/Model _		49i PS	Serial/AMU Number	AMU		
Serial/AMU Number		J 1808	Last Calibration Date	May 21		
Ozone Standard	Pri	mary	Full Scale (ppm)	0,	5	
	-					
COMMENTS:						
- -						
Auditor:	Al	Clark	Date: May 21	, 2015		
Operator Signature:	asla C	anl	Location: McIntyre Cent		•	

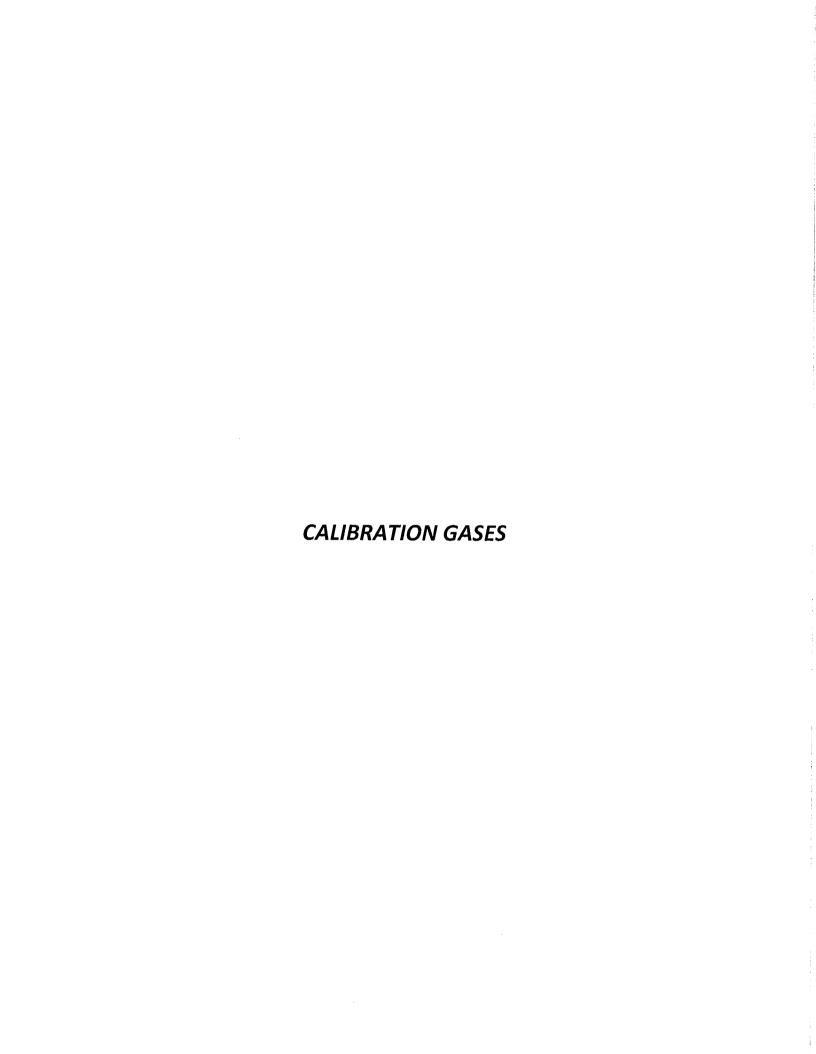


## Calibrator Performance Audit

Sulphur Dioxide (by Cylinder Dilution)

File No. 2014-258A

Company: Max	cxam	m)	Operator: _	Limir	ı Li	
Calibrator	:		Flow Me	asurement I	Device:	
Make/Model		1 700	Make/Model		N/	<b>'</b> A
Serial Number		30		Serial Number N/A		'A
Last Verification Date	Oct 2013			Temperature (°C) N/A		/A
SO ₂ Cylinder Conc.	50.3		Barometric Pressure N/A		/A	
SO ₂ Cylinder S/N	والمرجوب المعاومات المراجوب المرجوب المحادث والمحادث والمحادث والمحادث والمحادث والمحادث والمحادث والمحادث			•		
Flow Measure	nents					
Pt. No. 1 79.5	Pt. No. 2	39.8	Pt. No. 3	19.9		
	0.1		Y 1'		0/ 15:4	Yanana
Calibrator Flow		ulated	Indica			ference
(sccm)		ation (ppm)	Concentrati		vs Audit Gas	% Diff, Limit
Zero Air		000	0.00		201	
4918	<del></del>	800	0.79		0%	± 10%
4960	<del></del>	400	0,39		-1%	± 10%
4977	0.	200	Average Percen		0% 0%	± 10% ± 10%
SO ₂ Correlation=  m (Slope)=  b (Intercept % of FS)=	0.9971	LIMITS ≥ 0.995 0.90-1.10 ± 3% F.S.	mx+b (where x≖cald			a sansani ulion
AENV	Standards			SO ₂ An:	alyzer	
Audit Calibrator			Make/N	Model	Tec	43C
Make/Model	R&R M	MFC 201	Serial/AM	U Number	AMU	1623
Serial/AMU Number	AMU	J 1690 .	Last Calibr	ation Date	Dec	15/14
			Full Scal	e (ppm)	1	0.0
COMMENTS:		slow to move t	hrough the calibra	ator. Check fo	or contamnat	ion inside
Auditor:	Al	Clark	Date:	Decembe	r 16, 2014	
Operator Signature:		VIVII (	-	McIntyre Cen		<u>1</u>



Form No. Version No. F-GAS-002 1.1



# Calibration Gas Audit Single Component Cylinder Gas

File No. 2015-344CGA

Company: _	Max	xam	Ope	ator's Name:	Lim	nin Li	
Cylinder#:_	BLM002073	Concentration PPM:	49.5	Tolerance(%)_	2	Certified By:	Air Liquide
Reference C	Calibrator a	nd Gas:		Flow Mea	surement	Device:	
M	ake/Model:	R&R MFC 201		Ma	ke/Model:	Blos [	OC2
Seri	al Number:	AMU 1690		Seria	l Number:	AMU 1	1659
		March 31, 2015				22,5	
	Gas Type:	SO2 Conc.	98.57			690 m	
Cylino	•	CAL016720					
Reference A	-	Teco 43C	Sarial//	AMU Number:	1622		
instrument S		Zero: 7.9		1.028		. 10	
nsu umem o	oumgs.	200. 7.8	span.	1.020	Range.	1.0	
Last Calibrat	tion:	Date: Mar 31/15	C.F.	1,000	Done By:	AI CI	ark
		Date: Mar 31/15  Indicated	C.F.	1.000 Concentra			
					ation	Al Cl Cylin Concen	der
Calibrator Flo	ws (scem)	Indicated	Gas Flow/	Concentra	ation	Cylin	der
Calibrator Flor Dilution 5000 4976	ws (secm) Gas 0.0 82.6	Indicated Concentration (PPM) 0,000 0,801	Gas Flow/ Dilution Flow 0.01660	Concentra Facto 60.242	ation r	Cylin Concent 48.	der tration
Calibrator Floo Dilution 5000 4976 4993	ws (sccm) Gas 0.0 82.6 41.0	Indicated Concentration (PPM) 0,000 0.801 0,396	Gas Flow/ Dilution Flow 0.01660 0.00821	Concentra Facto 60.242 121.78	ation r 2	Cylin Concern 48.	der tration
Calibrator Flor Dilution 5000 4976	ws (secm) Gas 0.0 82.6	Indicated Concentration (PPM) 0,000 0,801	Gas Flow/ Dilution Flow 0.01660 0.00821 0.00406	Concentra Facto 60.242 121.78 246.38	ation r 2 0	Cylin Concern 48. 48.	der tration 3 2
5000 4976 4993 4977 Previous St	ws (sccm) Gas 0.0 82.6 41.0 20.2 tated Concen	Indicated Concentration (PPM) 0,000 0.801 0,396	Gas Flow/ Dilution Flow 0.01660 0.00821 0.00406	Concentra Facto 60.242 121.78	ation r 2 0	Cylin Concern 48. 48.	der tration 3 2
Calibrator Flov Dilution 5000 4976 4993 4977  Previous St	ws (sccm) Gas 0.0 82.6 41.0 20.2 tated Concent cent variance	Indicated Concentration (PPM)  0,000  0.801  0.396  0.193  tration PPM: 49.5  from Stated: 3.0  ance, Use manufacturers stated	Gas Flow/ Dilution Flow  0.01660 0.00821 0.00406 Avera	Concentra Facto 60.242 121.78 246.38	ation r 2 0	Cylin Concern 48. 48.	der tration 3 2
Calibrator Flor Dilution   5000   4976   4993   4977   Previous States Manual   <=5% Outside	ws (sccm) Gas 0.0 82.6 41.0 20.2  tated Concent variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or varian	Indicated Concentration (PPM) 0,000 0,801 0,396 0,193  tration PPM: 49.5 from Stated: 3.0  ance, Use manufacturers stated Tolerance. Use manufacturers	Gas Flow/ Dilution Flow  0.01660 0.00821 0.00406 Avera	Concentra Facto 60.242 121.78 246.38 ge Cylinder Con	ation r 2 0	Cylin Concern 48. 48.	der tration 3 2
Calibrator Flor Dilution   5000   4976   4993   4977   Previous State   Pere   Meets Manuary   <=5% Outside	ws (sccm) Gas 0.0 82.6 41.0 20.2  tated Concent variance of tacturer Toler of Manufacturer utside Manufacturer	Indicated Concentration (PPM) 0,000 0.801 0.396 0.193  tration PPM: 49.5  from Stated: 3.0  ance, Use manufacturers stated at Tolerance. Use manufacturers cturer Tolerance. DO NOT US	Gas Flow/ Dilution Flow  0.01660 0.00821 0.00406 Avera	Concentra Facto 60.242 121.78 246.38 ge Cylinder Con	ation r 2 0	Cylin Concern 48. 48.	der tration 3 2
Calibrator Flor Dilution  5000 4976 4993 4977  Previous St  Pere Meets Manu <=5% Outside >5% Ou	ws (sccm) Gas 0.0 82.6 41.0 20.2  tated Concent variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or variance or varian	Indicated Concentration (PPM)  0,000  0.801  0.396  0.193  tration PPM: 49.5  from Stated: 3.0  ance, Use manufacturers stated ar Tolerance. Use manufacturers cturer Tolerance. DO NOT US  Al Clark	Gas Flow/ Dilution Flow  0.01660 0.00821 0.00406 Avera	Concentra Facto 60.242 121.78 246.38 ge Cylinder Con	ation r 2 0 6 centration:	Cylin Concern 48. 48.	der tration 3 2

Form No. Version No. F-GAS-002



# Calibration Gas Audit Single Component Cylinder Gas

Company: Maxxam			Oper	rator's Name:	Limin Li
Cylinder#:	LL36837	Concentration PPM:	10.0	Tolerance(%) 2	Certified By: Air Liquide
Reference (	Calibrator a	and Gas:		Flow Measureme	ent Device:
M	[ake/Model:	R&R MFC 201		Make/Mod	el; Bios DC2
Seri	ial Number:	AMU 1690		Serial Numb	er: AMU 1659
Last Verific	cation Date:	December 15, 2014	•		C: 23.0 C
		H2S Conc.	20,43		.P. 702 mmhg
Cylin		CAL015106			
Reference A	-	Teco 45C	Sarja1/A	AMU Number: 1624	
nstrument S		Zero: 6.4		1.160 Rang	
Last Calibra	_	Date: Dec15/14			
Calibrator Flo	ows (sccm)	Indicated	Gas Flow/	Concentration	Cylinder
Calibrator Flo	ows (sccm) Gas	Indicated Concentration (PPM)	Gas Flow/ Dilution Flow	Concentration Factor	Cylinder Concentration
		· · ·			
Dilution	Gas	Concentration (PPM)			
Dilution 5000 5099 5092	Gas 0.0 38.5 18.0	Concentration (PPM) 0,0000 0.0754 0.0349	0.00755 0.00363	132,442 282,889	Concentration 10.0 9.9
Dilution 5000 5099	Gas 0.0 38,5	Concentration (PPM) 0,0000 0.0754	0.00755 0.00363 0.00182	132,442 282,889 550,652	10.0 9.9 9.8
Dilution 5000 5099 5092	Gas 0.0 38.5 18.0	Concentration (PPM) 0,0000 0.0754 0.0349	0.00755 0.00363 0.00182	132,442 282,889	10.0 9.9 9.8
5000 5099 5092 5066	Gas 0.0 38.5 18.0 9.2	Concentration (PPM) 0,0000 0.0754 0.0349	0.00755 0.00363 0.00182	132,442 282,889 550,652	10.0 9.9 9.8
Dilution 5000 5099 5092 5066 Previous S	Gas 0.0 38.5 18.0 9.2	Concentration (PPM) 0,0000 0,0754 0,0349 0,0178	0.00755 0.00363 0.00182	132,442 282,889 550,652	10.0 9.9 9.8
Dilution   5000   5099   5092   5066   Previous S	Gas 0.0 38.5 18.0 9.2 stated Concentrated variance	Concentration (PPM)  0,0000  0,0754  0,0349  0,0178  tration PPM: 10.0	0.00755 0.00363 0.00182 Avera	132,442 282,889 550,652	10.0 9.9 9.8
Dilution 5000 5099 5092 5066  Previous S Per	Gas 0.0 38.5 18.0 9.2 stated Concernate variance ufacturer Toler	Concentration (PPM)  0.0000  0.0754  0.0349  0.0178  tration PPM: 10.0  from Stated: 1.1	0.00755 0.00363 0.00182 Average	Factor  132,442 282,889 550,652 ge Cylinder Concentration	10.0 9.9 9.8
Dilution 5000 5099 5092 5066  Previous S Per Meets Manuel <=5% Outside	Gas 0.0 38.5 18.0 9.2 Stated Concentrated variance ufacturer Toler	Concentration (PPM)  0,0000  0,0754  0,0349  0,0178  tration PPM: 10.0  from Stated: 1.1  ance. Use manufacturers stated	0.00755 0.00363 0.00182 Averaged a concentration X s concentration	Factor  132,442 282,889 550,652 ge Cylinder Concentration	10.0 9.9 9.8
Dilution 5000 5099 5092 5066  Previous S Per Meets Manuary <=5% Outside	Gas 0.0 38.5 18.0 9.2 Stated Concentrated variance ufacturer Toler	Concentration (PPM) 0,0000 0,0754 0,0349 0,0178  tration PPM: 10.0 from Stated: 1.1 ance. Use manufacturers stated Tolerance. Use manufacturers	0.00755 0.00363 0.00182 Averaged a concentration X s concentration	Factor  132,442 282,889 550,652 ge Cylinder Concentration	10.0 9.9 9.8

Form No.

F-GAS-003 1.1

Version No



### Calibration Gas Audit

Company:_	Max	xxam		Operators na	me:	Limit	n Li	
Cylinder#:_ <u>l</u>	3LM002073	Conc (PPM)	50.6/50.6	Tolerance (%)	2	Certified By:	Air Lic	quide
Reference C	alibrator a	and Gas:			Flo	w Measurem	ent Device:	
Make/N	Aodel	Teco 1	461		M	ake/Model	Bios I	DC2
Serial N	umber	AMU 1	809	_	Ser	ial Number	AMU	1659
Last Verifica	ation Date	March 31	, 2015		-	Гетр.°С	22.5	C
Gas T	<b>уре</b>	NO	Conc.	48.79			690 m	
Cylinder 1	Number	CAL018	3024					
Reference A Make/N	• .	Teco 4	<b>42</b> i			Serial/AMU	J Number:	1868
nstrument Se	ettings	Zero:	4.2	Sp	oan:	1,008	Range:	1.0
Last Calibrat	ion:	Date:	Mar 31/15	-			Done By:	
Callbrator Flo	ws (sccm) Gas	Indicated Cor NO	NOX	Gas Flow/ Dilution Flow	Co	oncentration Factor	Cylinder Co NO	ncentration NOX
Dilution		0.000	61 [ [ [ [ [ [		-			
	0,0 82,6	0.000 0.855	0,000 0,848	0.01660		60.242	51.5	51.1
Dilution 5000	0,0		0.848 0.421	0.01660 0.00821		60.242 121.780	51.5 52,0	51.1 51.3
Dilution 5000 4976	0,0 82,6	0.855	0.848	0.00821 0.00406		121.780 246.386		
Dilution 5000 4976 4993	0.0 82.6 41.0	0.855 0.427	0.848 0.421 0.209	0.00821		121.780 246.386 oncentration:	52.0 52.5	51.3 51.5
Dilution           5000           4976           4993           4977	0.0 82.6 41.0 20.2	0.855 0.427	0.848 0.421 0.209	0.00821 0.00406		121.780 246.386	52.0 52.5	51.3 51.5
Dilution 5000 4976 4993 4977  Previous St	0.0 82.6 41.0 20.2	0.855 0.427 0.213	0.848 0.421 0.209	0.00821 0.00406		121.780 246.386 oncentration:	52.0 52.5	51.3 51.5
Dilution 5000 4976 4993 4977  Previous St Pere Cyli Meets Manu	0.0 82,6 41.0 20.2  tated Concercent variance cent variance nder gas to	0.855 0.427 0.213  ntration PPM: e from Stated: olerances bas	0.848 0.421 0.209  NO 50.6  2.8  sed on NO facturers sta	0.00821 0.00406 Average Cylin  only ted concentration	der C	121.780 246.386 oncentration: NOx 50.6 1.4	52.0 52.5 <b>52.0</b>	51.3 51.5 <b>51.3</b>
Dilution 5000 4976 4993 4977  Previous St  Pere  Cyli Meets Manu <=5% Outside	0.0 82.6 41.0 20.2  tated Concercent variance ander gas to	0.855 0.427 0.213  ntration PPM: e from Stated: olerances baserance. Use manuer Tolerance. Use	0.848 0.421 0.209  NO 50.6 2.8 sed on NO facturers sta	0.00821 0.00406 Average Cylin	der C	121.780 246.386 oncentration: NOx 50.6 1.4	52.0 52.5	51.3 51.5 <b>51.3</b>



Prater Carolia III. 9501-34(n Sheet Edmonan, AB, 750-2X0 Cel. 795-449-0778 Fax. 781-449-5302

03/27/2014

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> edijeztek ete

Girita ( adica di Na ras Par Indiana Product Pari No. 

### CERTIFICATE OF ANALYSIS

Component Methans Propane Nitrogen

Requested Convertibilion 600.0epm 260.Capes Balurica

Certified Concentration \$01.4ppm 202ppm Balance

<u>Amaiytesi</u> Anadyteia Accuracy ±1% rei Principle es da sei

Metter-Toledo Analytical Balance-ID2sx/USA---Hewlett-Packard (Agilent)-6890---GC-FID

r fyririkr Siyle Cylinder Styre
Gylinder Pressure 270F,
Cylinder Volume
Valve Outles Connection
Cylinder Nicks)

KÖ. ising ear 

Filing Memodi Ditter Fili

raras maltic Expiration Date: 03/26/2017

- Cart Childrighed von Stillenburg (Selfinburg)
- The Bull Procedure of a section of the
- Elektrick 18 Paki Karalina nakipin pendikan mengapatan kelabana

on his program with Proper Carata me. After we became the advisable is because while the second for a supplied that the production of the advisory of approximation as it did nothing of the loss of the construction of any particular postero. The according is a first properly and the first car of the part which had being the court of making the carbon, and the carbon of the

# APPENDIX III CHAIN OF CUSTODY



# Maxxam Analytics - Air Services Group Project Chain of Custody

Client: Lakelar Site: St. Lina	nd Industry & Community Association I Site	Project #: 2833-20 Contact: Mike Bis	
QA Check Complete	_hill	Date	>0-Jan-16
QA Check Review		Date	
Report Complete	E. Tangang	Date	21-Jan-16
Report Reviewed	Miles	Date	21-Jan-16
Report Shipped		Date	
Notes			
,			