Lakeland Industry & Community Association

JANUARY 2024

Monthly Ambient Air Quality Monitoring Integrated Sampling Report

LICA-202401-INTEGRATED

February 28, 2024

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February 28, 2024

Alberta Environment and Protected Areas (EPA)
11th Floor, Oxbridge Place
9820 106 Street
Edmonton, AB, T5K 2J6

RE: LICA –January 2024 Monthly Ambient Air Quality Monitoring Integrated Sampling Report

Enclosed is the January 2024 Monthly Ambient Air Quality Monitoring Integrated Sampling Report for the Lakeland Industry and Community Association's (LICA) regional air quality monitoring network. This report summarizes monitoring data for samples collected using integrated methods including volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polycyclic aromatic compounds (PAHs), particulate matter ($PM_{2.5}$ and $PM_{2.5-10}$), ozone (O_3), hydrogen sulphide (H_2S), sulphur dioxide (SO_2), nitrogen dioxide (NO_2), ammonia (NH_3) and nitric acid (HNO_3).

The representative of the Person Responsible for this monitoring program is

LICA Airshed
Michael Bisaga, Monitoring Programs Manager
5107 50 Street
Bonnyville, AB, T9N 2J7
Phone #: 780-226-7068
E-mail: monitoring@lica.ca

This report has been prepared, reviewed and submitted by Michael Bisaga & Lily Lin of the LICA Airshed.

NETWORK STATION SUMMARY

Listing of Air Monitoring Stations and Integrated Sampling Stations

Station Name	Cold Lake South
Station ID	1174
Coordinates	54.41402, -110.23316
VOCs	√
PAHs	√
Partisol	√
Passive	√

Listing of Passive Sampling Stations

Site ID	Name	Latitude	Longitude
2	Sand River	54.53658	-111.20898
3	Therien	54.31085	-111.22607
4	Flat Lake	54.07262	-111.20510
5	Lake Eliza	53.82417	-111.16605
6	Telegraph Creek	53.74068	-110.57655
8	Muriel-Kehewin	54.09340	-110.74437
9	Dupre	54.33462	-110.77965
10	La Corey	54.49967	-110.81792
11	Wolf lake	54.698845	-110.769700
12	Foster Creek	55.03343	-110.50453
13	Primrose	54.75848	-110.45217
14	Tamarack (formerly Maskwa)	54.60518	-110.45263
15	Ardmore	54.40670	-110.46202
16	Frog Lake	53.89065	-110.38418
17	Clear Range	53.55648	-110.15423
18	Fishing Lake	53.90295	-110.07623
19	Beaverdam	54.16925	-110.23285
22	Cold Lake South (1)	54.41370	-110.23285
23	Medley-Martineau	54.72430	-110.06618
24	Fort George	53.87830	-110.74807
25	Burnt Lake	54.79104	-110.33424
26	Mahihkan	54.63738	-110.57538
27	Mahkeses	54.59014	-110.38028
28	Town of Bonnyville	54.27530	-110.74065
29	Cold Lake South (2)	54.41385	-110.23283
32	St. Lina	54.21639	-111.50295
42	Lac La Biche	54.76516	-111.971449

Listing of Passive Aromatic Compounds Stations

Site ID	Name	Latitude	Longitude
9	Dupre	54.33462	-110.77965
10	La Corey	54.49967	-110.81792
15	Ardmore	54.40670	-110.46202
18	Fishing Lake	53.90295	-110.07623
24	Fort George	53.87830	-110.74807
32	St. Lina	54.21639	-111.50295

List of Contractors who performed the air monitoring activities

Sampling Program	Monitoring Activities Conducted By	Sample Analysis Conducted By	Data/Report Prepared By	Electronic Submission Conducted By
Intermittent (VOCs/PAHs)	Bureau Veritas	InnoTech Alberta Inc	LICA	LICA
Intermittent (PACs)	Bureau Veritas	ECCC	AEP	AEP
Partisols	Bureau Veritas	InnoTech Alberta Inc	LICA	LICA
Passives	Bureau Veritas	Bureau Veritas	LICA	LICA
NMHC Canisters	Bureau Veritas	InnoTech Alberta Inc	LICA	Not Applicable

Monitoring Notes during the Month of January 2024

Cold Lake South Station

- **Volatile Organic Compounds (VOCs)**
  - Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
  - The VOC sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
  - Six samples were collected this month: on January 1, 7, 13, 19, 25 and 31.
  - The analytical results for the January 31's sample collection were not available when this report was prepared. The results will be included in the February monthly report.
- **Polycyclic Aromatic Hydrocarbons (PAHs)**
  - The PUF sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
  - Six samples were collected this month: on January 1, 7, 13, 19, 25 and 31.
  - The analytical results for the January 31's sample collection were not available when this report was prepared. The results will be included in the February monthly report.

- **Partisols**
    - Measured parameters were below Alberta Ambient Air Quality Objectives (AAAQOs) where applicable.
    - The Partisol sampler is programed to collect a 24-hour sample of air every sixth day as per the North American Pollution Surveillance schedule (NAPS).
    - Six samples were collected this month: on January 1, 7, 13, 19, 25 and 31.
- **Passives**
    - There were no exceedances of the AAAQOs for all monitored parameters at any of the passive stations during this month.
    - The passive sample filters were installed at the stations between December 30, 2023 and January 3, and were removed between January 30 and February 2.
    - A total of 13 duplicate samples were collected: 2 for H2S, 3 for SO2, 2 for NO2, 2 for O3, 2 for NMH3 and 2 for HNO3.
    - A total of 6 blank samples were collected: 3 for NMH3 and 3 for HNO3.
    - Station 19 and Station 29: O3 sample was damaged as the sample diffusion barriers were torn.

Lac La Biche Station

- **Non-methane Hydrocarbons (NMHC) Canisters**
    - The canister sampling program collects a 1-hour sample of air when the continuously measured non-methane hydrocarbon (NMHC) concentration reaches a specified trigger point. The current trigger point is 0.3 ppm, and is based on real-time monitoring data that are averaged over a 5-minute period.
    - One canister event was recorded this month; the canister system was triggered on January 4 at 11:20 when the NMHC concentration was 0.43ppm at 11:15.

Passive polycyclic aromatic compounds (PACs) Stations

- The PAC sampling program began in December 2019, and is designed to collect a 2-month integrated sample.
- The media for the January/February 2024 monitoring period were installed between December 30, 2023 and January 3, 2024. The media are scheduled to be removed by the end February.

Revisions to Alberta's Ambient Air Quality Data Warehouse

No revisions to historical data previously submitted to the Alberta's Ambient Air Quality Data Warehouse were made this month.

Deviations from Authorized Monitoring Methods

There were no deviations from authorized monitoring methods.

Certification

The report was prepared and submitted by Lily Lin in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

Lily Lin
Data & Reporting Specialist
587-225-2248
monitoring@lica.ca

The report was reviewed by Mike Bisaga in accordance with Chapter 9 of the Air Monitoring Directive (AMD 2016).

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements. I also certify that at the time of this report's submission, all air data have been electronically uploaded to Alberta ETS as required by the AMD.

Michael Bisaga
Monitoring Programs Manager
Lakeland Industry & Community Association
780-266-7068
monitoring@lica.ca

INTEGRATED SAMPLING RESULTS SUMMARY

COLD LAKE SOUTH STATION

- **VOCs analytical results**

Sample Date	2024-01-01	2024-01-07	2024-01-13	2024-01-19
Canister ID	A47974	32274	32251	28941
Maximum Reading (ppbv)	0.7	0.49	0.78	0.62
Parameter	Acetone	Freon-12	n-Butane	n-Butane
Sample Date	2024-01-25			
Canister ID	32254			
Maximum Reading (ppbv)	3.89			
Parameter	n-Butane			

- **PAHs analytical results**

Sample Date	2024-01-01		2024-01-07		2024-01-13		2024-01-19	
PUF S/N	9702		TE-12		TE-08		TE-10	
Volume (Vstd m^3)	330.41		330.41		330.43		330.43	
Maximum Reading	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3
	0.42	1.27	0.81	2.45	0.44	1.33	0.80	2.42
Parameter	Phenanthrene		Phenanthrene		Phenanthrene		Phenanthrene	
Sample Date	2024-01-25							
PUF S/N	TE-02							
Volume (Vstd m3)	330.42							
Maximum Reading	ug	ng/m3						
	2.76	8.35						
Parameter	Retene							

- **Partisol analytical results**
  - **$PM_{2.5}$**

Sample Date	2024-01-01		2024-01-07		2024-01-13		2024-01-19	
Filter #	AT85639		AT83610		AT83969		AT85631	
Volume (Vstd m^3)	22.4		23.6		25.9		21.6	
Result	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)
Particulate Matter	0.011	0.000	0.056	0.002	0.086	0.003	0.074	0.003

Sample Date	2024-01-25		2024-01-31	
Filter #	AT83960		AT85629	
Volume (Vstd m^3)	22.9		21.8	
Result	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)
Particulate Matter	0.352	0.015	0.026	0.001

  - **$PM_{2.5-10}$**

Sample Date	2024-01-01		2024-01-07		2024-01-13		2024-01-19	
Filter #	AT85640		AT83611		AT83970		AT85632	
Volume (Vstd m^3)	2.49		2.63		2.88		2.67	
Result	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)
PM2.5-10 Mass	<0.004	0.000	<0.004	0.000	<0.004	0.000	<0.004	0.000

Sample Date	2024-01-25		2024-01-31	
Filter #	AT83961		AT85630	
Volume (Vstd m^3)	2.55		2.42	
Result	Result (mg)	Result (mg/m^3)	Result (mg)	Result (mg/m^3)
PM2.5-10 Mass	<0.004	0.000	<0.004	0.000

- **Passive analytical results**

	H_2S		NO_2		O_3		SO_2		NMH3		HNO3	
	Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ppb)		Unit (ug/m3)	
Minimum	0.17	#10	1.0	#23	18.7	#16	0.5	#5	0.4	11.0	0.51	#29
Maximum	0.34	#14	8.6	#28	34.1	#17	2.0	#14	2.2	#6	2.86	#10
Average	0.23	-	3.55	-	22.73	-	0.76	-	1.00	-	1.45	-

LAC LA BICHE STATION

- **NMHC canister sample analytical results**

Sample Date / Time	2024-01-04 @11:15
Canister Triggered Conc. (ppm)	0.43
Canister ID	32202
Maximum Reading (ppbv)	27.7
Parameter	Acetone

ANALYTICAL SAMPLING RESULTS

COLD LAKE SOUTH STATION

VOCS

Sample Date		2024-01-01	2024-01-07	2024-01-13	2024-01-19	2024-01-25
Canister ID		A47974	32274	32251	28941	32254
Method		AC-058	AC-058	AC-058	AC-058	AC-058
Maximum Reading (ppbv)		0.7	0.49	0.78	0.62	3.89
Parameter		Acetone	Freon-12	n-Butane	n-Butane	n-Butane

Parameter	AAAQOs (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	RDL (ppbv)
1,1,1-Trichloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,1,2,2-Tetrachloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,1,2-Trichloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,1-Dichloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,1-Dichloroethylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
1,2,3-Trimethylbenzene		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
1,2,4-Trichlorobenzene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.8
1,2,4-Trimethylbenzene		0.05	< 0.03	< 0.03	< 0.03	< 0.03	0.05
1,2-Dibromoethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
1,2-Dichlorobenzene		< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.03
1,2-Dichloroethane		0.06	< 0.03	< 0.03	< 0.03	< 0.03	0.01
1,2-Dichloropropane		0.04	< 0.03	< 0.03	< 0.03	< 0.03	0.01
1,3,5-Trimethylbenzene		0.04	< 0.03	< 0.03	< 0.03	< 0.03	0.02
1,3-Butadiene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
1,3-Dichlorobenzene		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.3
1,4-Dichlorobenzene		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4
1,4-Dioxane		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.4
1-Butene		< 0.06	< 0.06	< 0.06	< 0.06	0.10	0.02
1-Hexene		0.13	< 0.07	< 0.07	< 0.07	< 0.07	0.02
1-Pentene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
2,2,4-Trimethylpentane		0.06	0.06	< 0.02	< 0.02	0.07	0.01
2,2-Dimethylbutane		0.06	0.06	0.07	0.08	< 0.02	0.01
2,3,4-Trimethylpentane		< 0.02	< 0.02	< 0.02	< 0.02	0.02	0.01
2,3-Dimethylbutane		< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.02
2,3-Dimethylpentane		0.06	0.05	0.07	< 0.02	0.07	0.02
2,4-Dimethylpentane		0.06	< 0.03	0.06	< 0.03	0.03	0.01
2-Methylheptane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
2-Methylhexane		0.06	< 0.03	0.05	0.09	0.08	0.01
2-Methylpentane		0.16	0.12	0.16	0.34	0.30	0.01
3-Methylheptane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
3-Methylhexane		0.07	0.05	0.07	0.14	0.12	0.02
3-Methylpentane		0.07	0.06	0.08	0.1	0.16	0.01
Acetone	2400	0.7	< 0.4	< 0.4	0.6	2.5	0.4
Acrolein	1.9	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Benzene	9.0	0.12	0.1	0.12	0.24	0.24	0.01
Benzyl chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Bromodichloromethane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
Bromoform		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Bromomethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
Carbon disulfide	10	< 0.02	< 0.02	< 0.02	0.05	< 0.02	0.01
Carbon tetrachloride		0.05	0.06	0.06	0.08	0.05	0.01
Chlorobenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Chloroethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Chloroform		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Chloromethane		0.45	0.45	0.42	0.49	0.58	0.02
cis-1,2-Dichloroethene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
cis-1,3-Dichloropropene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04
cis-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02
cis-2-Pentene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Cyclohexane		0.16	0.12	0.19	0.31	0.16	0.02
Cyclopentane		0.07	< 0.02	0.07	0.14	0.06	0.01
Dibromochloromethane		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
Ethanol		< 0.5	< 0.5	< 0.5	< 0.5	2.0	0.3
Ethyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Ethylbenzene	460	0.07	0.07	0.07	0.13	< 0.03	0.01
Freon-11		0.21	0.22	0.21	0.24	0.22	0.02
Freon-113		0.06	0.06	0.06	0.07	0.04	0.01
Freon-114		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.02

Sample Date		2024-01-01	2024-01-07	2024-01-13	2024-01-19	2024-01-25
Canister ID		A47974	32274	32251	28941	32254
Method		AC-058	AC-058	AC-058	AC-058	AC-058
Maximum Reading (ppbv)		0.7	0.49	0.78	0.62	3.89
Parameter		Acetone	Freon-12	n-Butane	n-Butane	n-Butane

Parameter	AAAQOs (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	RDL (ppbv)
Freon-12		0.52	0.49	0.47	0.47	0.71	0.02
Hexachloro-1,3-butadiene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.5
Isobutane		0.33	0.22	0.51	0.35	2.38	0.02
Isopentane		0.27	0.11	0.26	0.29	1.20	0.03
Isoprene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.01
Isopropyl alcohol		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Isopropylbenzene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.01
m,p-Xylene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.03
m-Diethylbenzene		0.03	< 0.02	< 0.02	< 0.02	< 0.02	0.04
m-Ethyltoluene		0.04	< 0.03	< 0.03	< 0.03	< 0.03	0.08
Methyl butyl ketone		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.5
Methyl ethyl ketone		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Methyl isobutyl ketone		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Methyl methacrylate		< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.07
Methyl tert butyl ether		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Methylcyclohexane		0.09	0.05	0.17	0.19	0.22	0.01
Methylcyclopentane		0.09	0.06	0.14	0.17	0.2	0.02
Methylene chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
n-Butane		0.59	0.36	0.78	0.62	3.89	0.03
n-Decane		0.08	< 0.06	< 0.06	< 0.06	< 0.06	0.06
n-Dodecane		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
n-Heptane		0.15	0.12	0.13	0.19	0.09	0.01
n-Hexane	5960	0.16	0.13	0.16	0.21	0.30	0.01
n-Nonane		0.08	< 0.04	< 0.04	< 0.04	< 0.04	0.01
n-Octane		0.08	< 0.02	0.08	0.11	< 0.02	0.02
n-Pentane		0.22	0.09	0.25	0.21	1.00	0.1
n-Propylbenzene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.05
n-Undecane		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.5
Naphthalene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.5
o-Ethyltoluene		0.03	< 0.02	< 0.02	0.06	< 0.02	0.01
o-Xylene		0.08	0.07	0.07	0.12	< 0.03	0.01
p-Diethylbenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
p-Ethyltoluene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.07
Styrene	52.0	0.12	< 0.04	< 0.04	< 0.04	< 0.04	0.04
Tetrachloroethylene		0.04	< 0.02	< 0.02	< 0.02	< 0.02	0.04
Tetrahydrofuran		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Toluene	499	0.04	< 0.03	0.04	0.04	0.17	0.01
trans-1,2-Dichloroethylene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.01
trans-1,3-Dichloropropylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
trans-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.01
trans-2-Pentene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Trichloroethylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.04
Vinyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4
Vinyl chloride	51	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02

PAHS

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - January 2024

Polycyclic Aromatic Hydrocarbons (PAHs) Results

Sample Date	2024-01-01		2024-01-07		2024-01-13		2024-01-19		2024-01-25	
PUF S/N	9702		TE-12		TE-08		TE-10		TE-02	
Volume (Vstd m^3)	330.41		330.41		330.43		330.43		330.42	
Method	AC-066		AC-066		AC-066		AC-066		AC-066	
Maximum Reading	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3
	0.42	1.27	0.81	2.45	0.44	1.33	0.80	2.42	2.76	8.35
Parameter	Phenanthrene		Phenanthrene		Phenanthrene		Phenanthrene		Retene	

Parameter	Result (ug)	Result (ng/m^3)	Result (ug)	Result (ng/m^3)	Result (ug)	Result (ng/m^3)	Result (ug)	Result (ng/m^3)	Result (ug)	Result (ng/m^3)	RDL (ug)
1-Methylnaphthalene	< 0.01	0.00	0.12	0.36	0.11	0.33	0.10	0.30	0.11	0.33	0.01
2-Methylnaphthalene	< 0.01	0.00	0.20	0.61	0.17	0.51	0.15	0.45	0.18	0.54	0.01
3-Methylcholanthrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
7,12-Dimethylbenz(a)anthracene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Acenaphthene	< 0.01	0.00	0.02	0.06	0.03	0.09	0.10	0.30	0.21	0.64	0.01
Acenaphthylene	< 0.01	0.00	0.04	0.12	< 0.01	0.00	0.26	0.79	0.37	1.12	0.01
Acridine	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Anthracene	0.04	0.12	0.12	0.36	0.11	0.33	0.10	0.30	0.15	0.45	0.01
Benzo(a)anthracene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.03	0.09	0.01
Benzo(a)pyrene	< 0.01	0.00	0.04	0.12	0.04	0.12	0.04	0.12	0.08	0.24	0.01
Benzo(b,j,k)fluoranthene	< 0.01	0.00	0.12	0.36	0.22	0.67	0.12	0.36	0.14	0.42	0.01
Benzo(c)phenanthrene	< 0.01	0.00	0.07	0.21	< 0.01	0.00	< 0.01	0.00	0.03	0.09	0.01
Benzo(e)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.02	0.06	0.01
Benzo(ghi)perylene	< 0.01	0.00	0.02	0.06	0.02	0.06	0.02	0.06	0.04	0.12	0.01
Chrysene	< 0.01	0.00	< 0.01	0.00	0.05	0.15	0.03	0.09	0.12	0.36	0.01
Dibenzo(a,h)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Dibenzo(a,i)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Dibenzo(a,l)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Dibenzo(ah)anthracene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Fluoranthene	0.06	0.18	0.26	0.79	0.13	0.39	0.17	0.51	0.24	0.73	0.01
Fluorene	0.13	0.39	0.23	0.70	0.11	0.33	0.40	1.21	0.47	1.42	0.01
Indeno(1,2,3-cd)pyrene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Naphthalene	< 0.01	0.00	0.19	0.58	0.41	1.24	0.11	0.33	0.15	0.45	0.01
Perylene	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	< 0.01	0.00	0.01
Phenanthrene	0.42	1.27	0.81	2.45	0.44	1.33	0.80	2.42	1.01	3.06	0.01
Pyrene	0.05	0.15	0.21	0.64	0.10	0.30	0.14	0.42	0.24	0.73	0.01
Retene	0.08	0.24	0.11	0.33	0.38	1.15	0.17	0.51	2.76	8.35	0.01

PARTISOLS

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - January 2024

Partisol Results - $PM_{2.5}$

Sample Date		2024-01-01		2024-01-07		2024-01-13		2024-01-19		2024-01-25		2024-01-31		
Filter #		AT85639		AT83610		AT83969		AT85631		AT83960		AT85629		
Volume (Vstd m^3)		22.4		23.6		25.9		21.6		22.9		21.8		
Method		AC-029		AC-029		AC-029		AC-029		AC-029		AC-029		
Parameter	**AAAQO (mg/m3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**RDL (mg)**
Particulate Matter	0.029	**0.011**	**0.000**	**0.056**	**0.002**	**0.086**	**0.003**	**0.074**	**0.003**	**0.352**	**0.015**	**0.026**	**0.001**	0.004
PM2.5 Mass in ug/m3			**0.491**		**2.373**		**3.320**		**3.426**		**15.371**		**1.193**	
RDL in ug/m3			**0.179**		**0.169**		**0.154**		**0.185**		**0.175**		**0.183**	

Cold Lake South Station - January 2024

Partisol Results -$PM_{2.5}$-PM_{10}

Sample Date	2024-01-01		2024-01-07		2024-01-13		2024-01-19		2024-01-25		2024-01-31		
Filter #	AT85640		AT83611		AT83970		AT85632		AT83961		AT85630		
Volume (Vstd m^3)	2.49		2.63		2.88		2.67		2.55		2.42		
Method	AC-029		AC-029		AC-029		AC-029		AC-029		AC-029		
Parameter	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**Result (mg)**	**Result (mg/m^3)**	**RDL (mg)**
PM2.5-10 Mass	**<0.004**	**0.000**	**<0.004**	**0.000**	**<0.004**	**0.000**	**<0.004**	**0.000**	**<0.004**	**0.000**	**<0.004**	**0.000**	0.004
PM2.5-10 Mass in ug/m3		**1.606**		**1.521**		**1.389**		**1.498**		**1.569**		**1.653**	
RDL in ug/m3		**1.606**		**1.521**		**1.389**		**1.498**		**1.569**		**1.653**	

PASSIVE SAMPLES

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

January 2024

Passive Results

		H_2S		NO_2		O_3		SO_2		NMH3		HNO3	
	Unit	**ppb**		**ppb**		**ppb**		**ppb**		**ppb**		**ug/m3**	
	Minimum (ppb)	0.17	#10	1.0	#23	18.7	#16	0.5	#5	0.4	11.0	0.51	#29
	Maximum (ppb)	0.34	#14	8.6	#28	34.1	#17	2.0	#14	2.2	#6	2.86	#10
	Average (ppb)	0.23	-	3.55	-	22.73	-	0.76	-	1.00	-	1.45	-
No.	**Station**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**
3	Therien	0.25	0.22	2.7		23.3		0.6		1.8		2.00	
4	Flat Lake	-		2.8		28.5		0.6	0.7	1.3		1.56	
5	Lake Eliza	0.26	0.25	2.2		22.9		0.5	0.6	0.8		1.41	
6	Telegraph Creek	-		5.5		22.0		0.5	0.5	2.2		2.06	
8	Muriel-Kehewin	-		2.6	2.1	21.8	29.6	0.8		1.0		0.62	
9	Dupre	-		3.1	3.2	21.2	22.2	0.7		1.0		1.53	
10	La Corey	0.17		7.6		20.8		0.5		0.6		2.86	
11	Wolf Lake	0.20		2.5		23.3		0.7		0.4		1.36	
12	Foster Creek	0.17		1.9		22.9		1.1		0.5		0.72	
13	Primrose	0.17		1.6		22.4		0.9		0.6		1.98	
14	Tamarack	0.34		5.2		22.1		2.0		0.7		1.02	
15	Ardmore	-		3.8		21.7		0.9		0.9		1.53	
16	Frog Lake	0.24		2.9		18.7		0.7		0.7		0.54	
17	Clear Range	0.28		2.4		34.1		0.7		1.3		2.04	
18	Fishing Lake	0.18		2.3		20.0		0.6		0.4		1.62	
19	Beaverdam	-		1.7		Missing 2		0.8		1.0	1.3	1.15	1.49
22	Cold Lake South (1)	0.18		4.2		21.0		0.8		1.6	1.4	1.70	1.72
23	Medley-Martineau	-		1.0		19.1		0.5		1.1		1.64	
24	Fort George	0.27		3.9		27.5		0.5		1.4		0.54	
25	Burnt Lake	Missing 1		-		-		Missing 1		-		-	
26	Mahihkan	0.28		-		-		1.0		0.4		0.70	
27	Mahkeses	0.20		-		-		1.2		0.7		2.42	
28	Town of Bonnyville	0.22		8.6		19.9		0.8		2.0		0.97	
29	Cold Lake South (2)	0.21		5.1		Missing 2		0.6		0.9		0.51	
32	St. Lina	0.25		2.2		24.7		0.6		1.0		2.78	
42	Lac La Biche	0.20		5.9		19.4		0.5		0.8		0.88	
BLANK -1		-		-		-		-		0.3		0.04	
BLANK -2		-		-		-		-		0.4		<0.004	
BLANK -3		-		-		-		-		0.3		<0.004	
Reportable Detection Limit (RDL)		**0.02**		**0.1**		**0.1**		**0.1**		**0.1**		**0.04**	

Note:

1 - : Sample collection was not required at the station.

2 Missing 1: Access to the station was not possible due to lack of permit to access the stations.

3 Blank (Duplicate): no duplicate sample was taken.

4 Missing 2: Sample filter was found damaged; the paper barrier was damaged and could not be analysis.

LAC LA BICHE STATION

NMHC CANISTER SAMPLES

Sample Date/Time		**2024-01-04 @11:15**
Canister Triggered Conc.		**0.43 ppm**
Canister ID		**32202**
Method		**AC-058**
Maximum Reading (ppbv)		**27.7**
Parameter		**Acetone**

Parameter	AAAQOs (ppbv)	Result (ppbv)	RDL (ppbv)
1,1,1-Trichloroethane		< 0.03	0.03
1,1,2,2-Tetrachloroethane		< 0.03	0.03
1,1,2-Trichloroethane		< 0.03	0.03
1,1-Dichloroethane		< 0.03	0.03
1,1-Dichloroethylene		0.08	0.03
1,2,3-Trimethylbenzene		< 0.07	0.07
1,2,4-Trichlorobenzene		< 0.4	0.42
1,2,4-Trimethylbenzene		0.09	0.04
1,2-Dibromoethane		< 0.03	0.03
1,2-Dichlorobenzene		< 0.04	0.04
1,2-Dichloroethane		0.11	0.04
1,2-Dichloropropane		< 0.04	0.04
1,3,5-Trimethylbenzene		0.06	0.04
1,3-Butadiene		< 0.04	0.04
1,3-Dichlorobenzene		< 0.6	0.56
1,4-Dichlorobenzene		< 0.6	0.56
1,4-Dioxane		< 0.7	0.70
1-Butene		0.77	0.08
1-Hexene		0.18	0.10
1-Pentene		< 0.04	0.04
2,2,4-Trimethylpentane		0.1	0.03
2,2-Dimethylbutane		0.12	0.03
2,3,4-Trimethylpentane		0.17	0.03
2,3-Dimethylbutane		0.41	0.13
2,3-Dimethylpentane		0.1	0.03
2,4-Dimethylpentane		0.19	0.04
2-Methylheptane		0.14	0.03
2-Methylhexane		0.11	0.04
2-Methylpentane		4.43	0.03
3-Methylheptane		0.11	0.04
3-Methylhexane		0.13	0.03
3-Methylpentane		6.08	0.03
Acetone	2400	27.7	0.56
Acrolein	1.9	< 0.4	0.42
Benzene	9.0	0.21	0.04
Benzyl chloride		< 0.4	0.42
Bromodichloromethane		< 0.04	0.04
Bromoform		< 0.03	0.03
Bromomethane		< 0.03	0.03
Carbon disulfide	10	< 0.03	0.03
Carbon tetrachloride		0.06	0.03
Chlorobenzene		< 0.03	0.03
Chloroethane		< 0.03	0.03
Chloroform		< 0.03	0.03
Chloromethane		0.48	0.06
cis-1,2-Dichloroethene		< 0.03	0.03
cis-1,3-Dichloropropene		< 0.04	0.04
cis-2-Butene		< 0.04	0.04
cis-2-Pentene		< 0.03	0.03
Cyclohexane		0.26	0.06
Cyclopentane		0.09	0.03
Dibromochloromethane		< 0.03	0.03
Ethanol		< 0.7	0.70
Ethyl acetate		0.8	0.42
Ethylbenzene	460	0.12	0.04
Freon-11		0.21	0.03
Freon-113		0.23	0.03

Freon-114		< 0.04	0.04
Freon-12		0.52	0.04
Hexachloro-1,3-butadiene		< 0.4	0.42
Isobutane		0.41	0.04
Isopentane		0.55	0.06
Isoprene		< 0.03	0.03
Isopropyl alcohol		< 0.4	0.42
Isopropylbenzene		< 0.06	0.06
m,p-Xylene		0.08	0.06
m-Diethylbenzene		0.04	0.03
m-Ethyltoluene		0.07	0.04
Methyl butyl ketone		< 0.6	0.56
Methyl ethyl ketone		< 0.4	0.42
Methyl isobutyl ketone		< 0.4	0.42
Methyl methacrylate		< 0.11	0.11
Methyl tert butyl ether		< 0.04	0.04
Methylcyclohexane		0.13	0.03
Methylcyclopentane		3.17	0.07
Methylene chloride		< 0.4	0.42
n-Butane		0.58	0.03
n-Decane		0.13	0.08
n-Dodecane		< 0.4	0.42
n-Heptane		0.28	0.06
n-Hexane	5960	16.2	0.04
n-Nonane		0.12	0.06
n-Octane		0.16	0.03
n-Pentane		0.44	0.06
n-Propylbenzene		< 0.08	0.08
n-Undecane		< 0.7	0.70
Naphthalene		< 0.4	0.42
o-Ethyltoluene		0.05	0.03
o-Xylene		0.13	0.04
p-Diethylbenzene		0.03	0.03
p-Ethyltoluene		< 0.06	0.06
Styrene	52.0	0.17	0.06
Tetrachloroethylene		0.05	0.03
Tetrahydrofuran		< 0.4	0.42
Toluene	499	1.66	0.04
trans-1,2-Dichloroethylene		< 0.08	0.08
trans-1,3-Dichloropropylene		< 0.03	0.03
trans-2-Butene		< 0.04	0.04
trans-2-Pentene		< 0.03	0.03
Trichloroethylene		< 0.03	0.03
Vinyl acetate		< 0.4	0.42
Vinyl chloride	51	< 0.03	0.03

End of Report

Lakeland Industry & Community Association

JANUARY 2024

Ambient Air Monitoring

Certified Laboratory Analysis Report

LAB-LICA-202401

Operation and Maintenance:
Bureau Veritas Canada

Data Validation and Analytical Report:
Bureau Veritas Canada and InnoTech Alberta

February 27, 2024

Table of Contents

Cold Lake South Station

Volatile Organic Compounds (VOCs) & Polycyclic Aromatic Hydrocarbons (PAHs) Samples

Sample ID: 24010054-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Jan 1, 2024

RECEIVED
JAN 10 2024
6167

Bureau Veritas

VOC Sample Collection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	
Location:	Cold Lake South	**Canister ID:**	A 47974
Station ID:	LICA 01	**Installation Date/Time (mst):**	Dec 28, 2023 @ 15:49
Sample ID:	LICA/VOC/CLS/Jan 01, 2024	**Removal Date/Time (mst):**	Jan 05, 2024 @ 18:34

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
January 1, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.1	19.0

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24010054-002 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Jan 1, 2024

RECEIVED
JAN 10 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	9702
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Dec 28, 2023 @ 15:51
Field Sample ID:	LICA/PUF/CLS/Jan 01, 2024	**Removal Date/Time:**	Jan 05, 2024 @ 18:36

Sample Data Collection Information

Sample Date:	1-Jan-24	**Average Pressure (mmHg)**	713
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-1.1
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.41

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: A47974

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: SEP 11 2023

Evacuated: NOV 06 2023 Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Jan 1, 2024

Sampled By: Alex Yakupov

18psi JMP

Starting Vacuum:	End Vacuum:
-27.1 "Hg	+19.0 "Hg/psig

Sample ID: 24010054-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Jan 1, 2024

InnoTech ALBERTA

Canister ID: 9702

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: PUF on: _____

Evacuated: _____ Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/Jan 1, 2024

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
_____ "Hg	_____ "Hg/psig

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Jan 1, 2024
Matrix: Air Filter
CANISTER ID: 9702
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 01-Jan-24 0:00
DATE RECEIVED: 10-Jan-24
REPORT CREATED: 26-Feb-24
REPORT NUMBER: 24010054
VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010054-002	1-Methylnaphthalene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	2-Methylnaphthalene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Acenaphthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Anthracene		0.04	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Benzo(b,j,k)fluoranthene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Chrysene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Jan 1, 2024	9702	Air Filter	01-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010054 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010054-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Fluoranthene		0.06	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Fluorene		0.13	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Naphthalene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Phenanthrene		0.42	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Pyrene		0.05	ug/Filter	0.01	AC-066	20-Feb-24
24010054-002	Retene		0.08	ug/Filter	0.01	AC-066	20-Feb-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 1, 2024	A47974	Ambient Air	01-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010054 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010054-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	11-Jan-24
24010054-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	1,2,4-Trimethylbenzene	I	0.05	ppbv	0.03	AC-058	11-Jan-24
24010054-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	1,2-Dichloroethane	I	0.06	ppbv	0.03	AC-058	11-Jan-24
24010054-001	1,2-Dichloropropane	I	0.04	ppbv	0.03	AC-058	11-Jan-24
24010054-001	1,3,5-Trimethylbenzene	I	0.04	ppbv	0.03	AC-058	11-Jan-24
24010054-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jan-24
24010054-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jan-24
24010054-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	11-Jan-24
24010054-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jan-24
24010054-001	1-Hexene/2-Methyl-1-pentene	I	0.13	ppbv	0.07	AC-058	11-Jan-24
24010054-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	2,2,4-Trimethylpentane	I	0.06	ppbv	0.02	AC-058	11-Jan-24
24010054-001	2,2-Dimethylbutane	I	0.06	ppbv	0.02	AC-058	11-Jan-24
24010054-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	11-Jan-24
24010054-001	2,3-Dimethylpentane	I	0.06	ppbv	0.02	AC-058	11-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 1, 2024	A47974	Ambient Air	01-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010054 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010054-001	2,4-Dimethylpentane	I	0.06	ppbv	0.03	AC-058	11-Jan-24
24010054-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	2-Methylhexane	I	0.06	ppbv	0.03	AC-058	11-Jan-24
24010054-001	2-Methylpentane		0.16	ppbv	0.02	AC-058	11-Jan-24
24010054-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	3-Methylhexane	I	0.07	ppbv	0.02	AC-058	11-Jan-24
24010054-001	3-Methylpentane	I	0.07	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Acetone		0.7	ppbv	0.4	AC-058	11-Jan-24
24010054-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Benzene	I	0.12	ppbv	0.03	AC-058	11-Jan-24
24010054-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Carbon tetrachloride	I	0.05	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Chloromethane		0.45	ppbv	0.04	AC-058	11-Jan-24
24010054-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Cyclohexane	I	0.16	ppbv	0.04	AC-058	11-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 1, 2024	A47974	Ambient Air	01-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010054 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010054-001	Cyclopentane	I	0.07	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Ethanol	K, T, U	< 0.5	ppbv	0.5	AC-058	11-Jan-24
24010054-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Ethylbenzene	I	0.07	ppbv	0.03	AC-058	11-Jan-24
24010054-001	Freon-11		0.21	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Freon-113	I	0.06	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	Freon-12		0.52	ppbv	0.03	AC-058	11-Jan-24
24010054-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Isobutane		0.33	ppbv	0.03	AC-058	11-Jan-24
24010054-001	Isopentane		0.27	ppbv	0.04	AC-058	11-Jan-24
24010054-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jan-24
24010054-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jan-24
24010054-001	m-Diethylbenzene	I	0.03	ppbv	0.02	AC-058	11-Jan-24
24010054-001	m-Ethyltoluene	I	0.04	ppbv	0.03	AC-058	11-Jan-24
24010054-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	11-Jan-24
24010054-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	11-Jan-24
24010054-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	Methylcyclohexane	I	0.09	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Methylcyclopentane	I	0.09	ppbv	0.05	AC-058	11-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 1, 2024	A47974	Ambient Air	01-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010054 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010054-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	n-Butane		0.59	ppbv	0.02	AC-058	11-Jan-24
24010054-001	n-Decane	I	0.08	ppbv	0.06	AC-058	11-Jan-24
24010054-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	n-Heptane	I	0.15	ppbv	0.04	AC-058	11-Jan-24
24010054-001	n-Hexane	I	0.16	ppbv	0.03	AC-058	11-Jan-24
24010054-001	n-Octane	I	0.08	ppbv	0.02	AC-058	11-Jan-24
24010054-001	n-Pentane		0.22	ppbv	0.04	AC-058	11-Jan-24
24010054-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jan-24
24010054-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	11-Jan-24
24010054-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	n-Nonane	I	0.08	ppbv	0.04	AC-058	11-Jan-24
24010054-001	o-Ethyltoluene	I	0.03	ppbv	0.02	AC-058	11-Jan-24
24010054-001	o-Xylene	I	0.08	ppbv	0.03	AC-058	11-Jan-24
24010054-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	11-Jan-24
24010054-001	Styrene	I	0.12	ppbv	0.04	AC-058	11-Jan-24
24010054-001	Tetrachloroethylene	I	0.04	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Toluene	I	0.04	ppbv	0.03	AC-058	11-Jan-24
24010054-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	11-Jan-24
24010054-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	11-Jan-24
24010054-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24
24010054-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 1, 2024	A47974	Ambient Air	01-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010054 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010054-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	11-Jan-24
24010054-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	11-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24010054	01	26-Feb-24	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from Air

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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Order Comments

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Sample ID: 24010097-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Jan 7, 2024

RECEIVED
JAN 17 2024

Bureau Veritas

tion Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6167
Location:	Cold Lake South	**Canister ID:**	32274
Station ID:	LICA 01	**Installation Date/Time (mst):**	Jan 05, 2024 @ 18:45
Sample ID:	LICA/VOC/CLS/Jan 07, 2024	**Removal Date/Time (mst):**	Jan 12, 2024 @ 15:45

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
January 7, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	**Final Pressure (psi)**
-27.2	17.9

Flow Settings		
Flow Reading (sccm)	**Pot Set Point**	**Pump Set (psi)**
10.00	4.89	27.5

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	****Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required****
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24010097-002 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Jan 7, 2024

RECEIVED
JAN 17 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-12
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Jan 05, 2024 @ 18:47
Field Sample ID:	LICA/PUF/CLS/Jan 07, 2024	**Removal Date/Time:**	Jan 12, 2024 @ 15:47

Sample Data Collection Information

Sample Date:	7-Jan-24	**Average Pressure (mmHg)**	713
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-15.6
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.41

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: 32274

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: OCT 24 2023

Evacuated: NOV 16 2023 Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Jan 7, 2024

Sampled By: Alex Yakupov

Starting Vacuum: -27.2 "Hg

End Vacuum: +17.9 "Hg/psig 18psi JMP

Sample ID: 24010097-001 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Jan 7, 2024

InnoTech ALBERTA

Canister ID: TE-12

PUF

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: _____ on: _____

Evacuated: _____ Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/Jan 7, 2024

Sampled By: Alex Yakupov

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/ psig

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Jan 7, 2024
Matrix: Air Filter
CANISTER ID: TE-12
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 07-Jan-24 0:00
DATE RECEIVED: 17-Jan-24
REPORT CREATED: 26-Feb-24
REPORT NUMBER: 24010097
VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010097-002	1-Methylnaphthalene		0.12	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	2-Methylnaphthalene		0.20	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Acenaphthene		0.02	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Acenaphthylene		0.04	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Anthracene		0.12	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Benzo(a)pyrene		0.04	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Benzo(b,j,k)fluoranthene		0.12	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Benzo(c)phenanthrene		0.07	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Benzo(ghi)perylene		0.02	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Chrysene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Jan 7, 2024	TE-12	Air Filter	07-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010097 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010097-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Fluoranthene		0.26	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Fluorene		0.23	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Naphthalene		0.19	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Phenanthrene		0.81	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Pyrene		0.21	ug/Filter	0.01	AC-066	20-Feb-24
24010097-002	Retene		0.11	ug/Filter	0.01	AC-066	20-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 7, 2024	32274	Ambient Air	07-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010097 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010097-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	25-Jan-24
24010097-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	25-Jan-24
24010097-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	25-Jan-24
24010097-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	25-Jan-24
24010097-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	25-Jan-24
24010097-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	25-Jan-24
24010097-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	2,2,4-Trimethylpentane	I	0.06	ppbv	0.02	AC-058	25-Jan-24
24010097-001	2,2-Dimethylbutane	I	0.06	ppbv	0.02	AC-058	25-Jan-24
24010097-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	25-Jan-24
24010097-001	2,3-Dimethylpentane	I	0.05	ppbv	0.02	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 7, 2024	32274	Ambient Air	07-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010097 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010097-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	2-Methylpentane		0.12	ppbv	0.02	AC-058	25-Jan-24
24010097-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	3-Methylhexane	I	0.05	ppbv	0.02	AC-058	25-Jan-24
24010097-001	3-Methylpentane	I	0.06	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Acetone	K, T, U	< 0.4	ppbv	0.4	AC-058	25-Jan-24
24010097-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Benzene	I	0.10	ppbv	0.03	AC-058	25-Jan-24
24010097-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Carbon tetrachloride	I	0.06	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Chloromethane		0.45	ppbv	0.04	AC-058	25-Jan-24
24010097-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Cyclohexane	I	0.12	ppbv	0.04	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 7, 2024	32274	Ambient Air	07-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010097 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010097-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Ethanol	K, T, U	< 0.5	ppbv	0.5	AC-058	25-Jan-24
24010097-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Ethylbenzene	I	0.07	ppbv	0.03	AC-058	25-Jan-24
24010097-001	Freon-11		0.22	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Freon-113	I	0.06	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	Freon-12		0.49	ppbv	0.03	AC-058	25-Jan-24
24010097-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Isobutane		0.22	ppbv	0.03	AC-058	25-Jan-24
24010097-001	Isopentane		0.11	ppbv	0.04	AC-058	25-Jan-24
24010097-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010097-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010097-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	25-Jan-24
24010097-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	25-Jan-24
24010097-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	Methylcyclohexane	I	0.05	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Methylcyclopentane	I	0.06	ppbv	0.05	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 7, 2024	32274	Ambient Air	07-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010097 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010097-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	n-Butane		0.36	ppbv	0.02	AC-058	25-Jan-24
24010097-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	25-Jan-24
24010097-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	n-Heptane	I	0.12	ppbv	0.04	AC-058	25-Jan-24
24010097-001	n-Hexane	I	0.13	ppbv	0.03	AC-058	25-Jan-24
24010097-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	n-Pentane	I	0.09	ppbv	0.04	AC-058	25-Jan-24
24010097-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	25-Jan-24
24010097-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	25-Jan-24
24010097-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010097-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	o-Xylene	I	0.07	ppbv	0.03	AC-058	25-Jan-24
24010097-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010097-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010097-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Toluene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	25-Jan-24
24010097-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010097-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010097-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 7, 2024	32274	Ambient Air	07-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010097 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010097-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010097-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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Revision History

Order ID	Ver	Date	Reason
24010097	01	26-Feb-24	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from Air

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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(780) 632-8211

Order Comments

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Sample ID: 24010145-001 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Jan 13, 2024

RECEIVED
JAN 22 2024

Bureau Veritas

Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6167
Location:	Cold Lake South	**Canister ID:**	32251
Station ID:	LICA 01	**Installation Date/Time (mst):**	Jan 12, 2024 @ 16:25
Sample ID:	LICA/VOC/CLS/Jan 13, 2024	**Removal Date/Time (mst):**	Jan 18, 2024 @ 17:20

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
January 13, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.4	18.1

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24010145-002 Priority: Normal

AI

Customer ID: LICA

Cust Samp ID: LICA/PUF/CLS/Jan 13, 2024

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JAN 22 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-08
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Jan 12, 2024 @ 16:27
Field Sample ID:	LICA/PUF/CLS/Jan 13, 2024	**Removal Date/Time:**	Jan 18, 2024 @ 17:24

Sample Data Collection Information

Sample Date:	13-Jan-24	**Average Pressure (mmHg)**	721
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-32.6
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.43

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: 32251

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: NOV 15 2023

Evacuated: DEC 21 2023 Recertified: JAN 03 2024

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Jan 13, 2024

Sampled By: Alex Yakupov

Starting Vacuum: -27.4 "Hg

End Vacuum: +18.1 "Hg/psig 15psi JWP

Sample ID: 24010145-001 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Jan 13, 2024

InnoTech ALBERTA

Canister ID: TE-08

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: PUF on:

Evacuated: Recertified:

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/Jan 13, 2024

Sampled By: Alex Yakupov

Starting Vacuum: "Hg

End Pressure: "Hg/ psig

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Jan 13, 2024
Matrix: Air Filter
CANISTER ID: TE-08
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 13-Jan-24 0:00
DATE RECEIVED: 22-Jan-24
REPORT CREATED: 26-Feb-24
REPORT NUMBER: 24010145
VERSION Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010145-002	1-Methylnaphthalene		0.11	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	2-Methylnaphthalene		0.17	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Acenaphthene		0.03	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Acenaphthylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Anthracene		0.11	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Benzo(a)pyrene		0.04	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Benzo(b,j,k)fluoranthene		0.22	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Benzo(ghi)perylene		0.02	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Chrysene		0.05	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Jan 13, 2024	TE-08	Air Filter	13-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010145 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010145-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Fluoranthene		0.13	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Fluorene		0.11	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Naphthalene		0.41	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Phenanthrene		0.44	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Pyrene		0.10	ug/Filter	0.01	AC-066	20-Feb-24
24010145-002	Retene		0.38	ug/Filter	0.01	AC-066	20-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 13, 2024	32251	Ambient Air	13-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010145 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010145-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	25-Jan-24
24010145-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	25-Jan-24
24010145-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	25-Jan-24
24010145-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	25-Jan-24
24010145-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	25-Jan-24
24010145-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	25-Jan-24
24010145-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	2,2-Dimethylbutane	I	0.07	ppbv	0.02	AC-058	25-Jan-24
24010145-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	25-Jan-24
24010145-001	2,3-Dimethylpentane	I	0.07	ppbv	0.02	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 13, 2024	32251	Ambient Air	13-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010145 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010145-001	2,4-Dimethylpentane	I	0.06	ppbv	0.03	AC-058	25-Jan-24
24010145-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	2-Methylhexane	I	0.05	ppbv	0.03	AC-058	25-Jan-24
24010145-001	2-Methylpentane		0.16	ppbv	0.02	AC-058	25-Jan-24
24010145-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	3-Methylhexane	I	0.07	ppbv	0.02	AC-058	25-Jan-24
24010145-001	3-Methylpentane	I	0.08	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Acetone	K, T, U	< 0.4	ppbv	0.4	AC-058	25-Jan-24
24010145-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Benzene	I	0.12	ppbv	0.03	AC-058	25-Jan-24
24010145-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Carbon tetrachloride	I	0.06	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Chloromethane		0.42	ppbv	0.04	AC-058	25-Jan-24
24010145-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Cyclohexane	I	0.19	ppbv	0.04	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 13, 2024	32251	Ambient Air	13-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010145 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010145-001	Cyclopentane	I	0.07	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Ethanol	K, T, U	< 0.5	ppbv	0.5	AC-058	25-Jan-24
24010145-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Ethylbenzene	I	0.07	ppbv	0.03	AC-058	25-Jan-24
24010145-001	Freon-11		0.21	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Freon-113	I	0.06	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	Freon-12		0.47	ppbv	0.03	AC-058	25-Jan-24
24010145-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Isobutane		0.51	ppbv	0.03	AC-058	25-Jan-24
24010145-001	Isopentane		0.26	ppbv	0.04	AC-058	25-Jan-24
24010145-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010145-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010145-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	25-Jan-24
24010145-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	25-Jan-24
24010145-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	Methylcyclohexane		0.17	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Methylcyclopentane		0.14	ppbv	0.05	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 13, 2024	32251	Ambient Air	13-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010145 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010145-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	n-Butane		0.78	ppbv	0.02	AC-058	25-Jan-24
24010145-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	25-Jan-24
24010145-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	n-Heptane	I	0.13	ppbv	0.04	AC-058	25-Jan-24
24010145-001	n-Hexane	I	0.16	ppbv	0.03	AC-058	25-Jan-24
24010145-001	n-Octane	I	0.08	ppbv	0.02	AC-058	25-Jan-24
24010145-001	n-Pentane		0.25	ppbv	0.04	AC-058	25-Jan-24
24010145-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	25-Jan-24
24010145-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	25-Jan-24
24010145-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010145-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	o-Xylene	I	0.07	ppbv	0.03	AC-058	25-Jan-24
24010145-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010145-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	25-Jan-24
24010145-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Toluene	I	0.04	ppbv	0.03	AC-058	25-Jan-24
24010145-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	25-Jan-24
24010145-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	25-Jan-24
24010145-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24
24010145-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 13, 2024	32251	Ambient Air	13-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010145 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010145-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	25-Jan-24
24010145-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	25-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24010145	01	26-Feb-24	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from Air

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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Order Comments

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Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

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JAN 25 2024

Bureau Veritas

VOC Sample Collection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6167
Location:	Cold Lake South	**Canister ID:**	28941
Station ID:	LICA 01	**Installation Date/Time (mst):**	Jan 18, 2024 @ 17:32
Sample ID:	LICA/VOC/CLS/Jan 19, 2024	**Removal Date/Time (mst):**	Jan 20, 2024 @ 14:54

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
January 19, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.4	18.5

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24010178-002 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Jan 19, 2024

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TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-10
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Jan 18, 2024 @ 17:33
Field Sample ID:	LICA/PUF/CLS/Jan 19, 2024	**Removal Date/Time:**	Jan 20, 2024 @ 14:58

Sample Data Collection Information

Sample Date:	19-Jan-24	**Average Pressure (mmHg)**	724
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-16.4
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.43

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: 28941

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: NOV 09 2023

Evacuated: DEC 21 2023 Recertified: JAN 03 2024

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Jan 19, 2024

Sampled By: Alex Yakupov

Starting Vacuum: -27.4 "Hg

End Vacuum: +18.5 "Hg/ psig

18psi JNP

InnoTech ALBERTA

Canister ID: TE-10

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: PUF on:

Evacuated: Recertified:

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/Jan 19, 2024

Sampled By: Alex Yakupov

Starting Vacuum: "Hg

End Pressure: "Hg/ psig

Sample ID: 24010178-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Jan 19, 2024

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Jan 19, 2024
Matrix: Air Filter
CANISTER ID: TE-10
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 19-Jan-24 0:00
DATE RECEIVED: 25-Jan-24
REPORT CREATED: 26-Feb-24
REPORT NUMBER: 24010178
VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010178-002	1-Methylnaphthalene		0.10	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	2-Methylnaphthalene		0.15	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Acenaphthene		0.10	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Acenaphthylene		0.26	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Anthracene		0.10	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Benzo(a)pyrene		0.04	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Benzo(b,j,k)fluoranthene		0.12	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Benzo(ghi)perylene		0.02	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Chrysene		0.03	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Jan 19, 2024	TE-10	Air Filter	19-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010178 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010178-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Fluoranthene		0.17	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Fluorene		0.40	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Naphthalene		0.11	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Phenanthrene		0.80	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Pyrene		0.14	ug/Filter	0.01	AC-066	20-Feb-24
24010178-002	Retene		0.17	ug/Filter	0.01	AC-066	20-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 19, 2024	28941	Ambient Air	19-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010178 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010178-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	02-Feb-24
24010178-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	1,2-Dichlorobenzene	I	0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	02-Feb-24
24010178-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	02-Feb-24
24010178-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	02-Feb-24
24010178-001	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	02-Feb-24
24010178-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	02-Feb-24
24010178-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	2,2-Dimethylbutane	I	0.08	ppbv	0.02	AC-058	02-Feb-24
24010178-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	02-Feb-24
24010178-001	2,3-Dimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 19, 2024	28941	Ambient Air	19-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010178 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010178-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	2-Methylhexane	I	0.09	ppbv	0.03	AC-058	02-Feb-24
24010178-001	2-Methylpentane		0.34	ppbv	0.02	AC-058	02-Feb-24
24010178-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	3-Methylhexane		0.14	ppbv	0.02	AC-058	02-Feb-24
24010178-001	3-Methylpentane	I	0.10	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Acetone		0.6	ppbv	0.4	AC-058	02-Feb-24
24010178-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Benzene		0.24	ppbv	0.03	AC-058	02-Feb-24
24010178-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Carbon disulfide	I	0.05	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Carbon tetrachloride	I	0.08	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Chloromethane		0.49	ppbv	0.04	AC-058	02-Feb-24
24010178-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Cyclohexane		0.31	ppbv	0.04	AC-058	02-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 19, 2024	28941	Ambient Air	19-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010178 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010178-001	Cyclopentane		0.14	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Ethanol	K, T, U	< 0.5	ppbv	0.5	AC-058	02-Feb-24
24010178-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Ethylbenzene	I	0.13	ppbv	0.03	AC-058	02-Feb-24
24010178-001	Freon-11		0.24	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Freon-113	I	0.07	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	Freon-12		0.47	ppbv	0.03	AC-058	02-Feb-24
24010178-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Isobutane		0.35	ppbv	0.03	AC-058	02-Feb-24
24010178-001	Isopentane		0.29	ppbv	0.04	AC-058	02-Feb-24
24010178-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	02-Feb-24
24010178-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	02-Feb-24
24010178-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	02-Feb-24
24010178-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	02-Feb-24
24010178-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	Methylcyclohexane		0.19	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Methylcyclopentane		0.17	ppbv	0.05	AC-058	02-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 19, 2024	28941	Ambient Air	19-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010178 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010178-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	n-Butane		0.62	ppbv	0.02	AC-058	02-Feb-24
24010178-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	02-Feb-24
24010178-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	n-Heptane	I	0.19	ppbv	0.04	AC-058	02-Feb-24
24010178-001	n-Hexane		0.21	ppbv	0.03	AC-058	02-Feb-24
24010178-001	n-Octane		0.11	ppbv	0.02	AC-058	02-Feb-24
24010178-001	n-Pentane		0.21	ppbv	0.04	AC-058	02-Feb-24
24010178-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	02-Feb-24
24010178-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	02-Feb-24
24010178-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	02-Feb-24
24010178-001	o-Ethyltoluene	I	0.06	ppbv	0.02	AC-058	02-Feb-24
24010178-001	o-Xylene	I	0.12	ppbv	0.03	AC-058	02-Feb-24
24010178-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	02-Feb-24
24010178-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	02-Feb-24
24010178-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Toluene	I	0.04	ppbv	0.03	AC-058	02-Feb-24
24010178-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	02-Feb-24
24010178-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	02-Feb-24
24010178-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24
24010178-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 19, 2024	28941	Ambient Air	19-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24010178 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010178-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	02-Feb-24
24010178-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	02-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24010178	01	26-Feb-24	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from Air

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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Order Comments

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Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Sample ID: 24020014-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Jan 25, 2024

RECEIVED
FEB 05 2024

Bureau Veritas

VOC Sample Collection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	6167
Location:	Cold Lake South	**Canister ID:**	32254
Station ID:	LICA 01	**Installation Date/Time (mst):**	Jan 20, 2024 @ 15:03
Sample ID:	LICA/VOC/CLS/Jan 25, 2024	**Removal Date/Time (mst):**	Jan 27, 2024 @ 19:10

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
January 25, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.7	19.8

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
10.00	4.89	27.5

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	****Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required****
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments: n/a

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

Sample ID: 24020014-002 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Jan 25, 2024

RECEIVED
FEB 05 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-02
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Jan 20, 2024 @ 15:04
Field Sample ID:	LICA/PUF/CLS/Jan 25, 2024	**Removal Date/Time:**	Jan 27, 2024 @ 19:11

Sample Data Collection Information

Sample Date:	25-Jan-24	**Average Pressure (mmHg)**	709
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-9.3
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.42

Sample Recovery Checklist

	(circle one)	
Flow Rate 230 slpm +/- 0.2 slpm ?	**YES**	NO
Average temperature appears correct?	**YES**	NO
Average pressure appears correct?	**YES**	NO
Any error messages? (if yes list below)	YES	**NO**
Sample duration 24 hours?	**YES**	NO
Other observations?		n/a

Deployed By:	Alex Yakupov
Collected By:	Alex Yakupov

InnoTech ALBERTA

Canister ID: 32254

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: OCT 24 2023

Evacuated: NOV 16 2023 Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Jan 25, 2024

Sampled By: Alex Yakupov

Starting Vacuum: -27.2 "Hg

End Vacuum: +19.8 "Hg/psig

InnoTech ALBERTA

Canister ID: TE 02

This cleaned canister meets or exceeds TO-15 Method Specifications

PUF

Proofed by: _____ on: _____

Evacuated: _____ Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/PUF/CLS/Jan 25, 2024

Sampled By: Alex Yakupov

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/psig

Sample ID: 24020014-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Jan 25, 2024

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/PUF/CLS/Jan 25, 2024
Matrix: Air Filter
CANISTER ID: TE-02
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 25-Jan-24 0:00
DATE RECEIVED: 05-Feb-24
REPORT CREATED: 26-Feb-24
REPORT NUMBER: 24020014
VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020014-002	1-Methylnaphthalene		0.11	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	2-Methylnaphthalene		0.18	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Acenaphthene		0.21	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Acenaphthylene		0.37	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Anthracene		0.15	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Benzo(a)anthracene		0.03	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Benzo(a)pyrene		0.08	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Benzo(b,j,k)fluoranthene		0.14	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Benzo(c)phenanthrene		0.03	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Benzo(e)pyrene		0.02	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Benzo(ghi)perylene		0.04	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Chrysene		0.12	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Jan 25, 2024	TE-02	Air Filter	25-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020014 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020014-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Fluoranthene		0.24	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Fluorene		0.47	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Naphthalene		0.15	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Phenanthrene		1.01	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Pyrene		0.24	ug/Filter	0.01	AC-066	21-Feb-24
24020014-002	Retene		2.76	ug/Filter	0.01	AC-066	21-Feb-24

Report certified by: Lisa Shi, Manager, Applied Chemistry Servi On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 25, 2024	32254	Ambient Air	25-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020014 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020014-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	13-Feb-24
24020014-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020014-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020014-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Feb-24
24020014-001	1-Butene/Isobutylene	I	0.10	ppbv	0.06	AC-058	13-Feb-24
24020014-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	13-Feb-24
24020014-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	2,2,4-Trimethylpentane	I	0.07	ppbv	0.02	AC-058	13-Feb-24
24020014-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	2,3,4-Trimethylpentane	I	0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	13-Feb-24
24020014-001	2,3-Dimethylpentane	I	0.07	ppbv	0.02	AC-058	13-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 25, 2024	32254	Ambient Air	25-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020014 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020014-001	2,4-Dimethylpentane	I	0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	2-Methylhexane	I	0.08	ppbv	0.03	AC-058	13-Feb-24
24020014-001	2-Methylpentane		0.30	ppbv	0.02	AC-058	13-Feb-24
24020014-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	3-Methylhexane		0.12	ppbv	0.02	AC-058	13-Feb-24
24020014-001	3-Methylpentane		0.16	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Acetone		2.5	ppbv	0.4	AC-058	13-Feb-24
24020014-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Benzene		0.24	ppbv	0.03	AC-058	13-Feb-24
24020014-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Carbon tetrachloride	I	0.05	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Chloromethane		0.58	ppbv	0.04	AC-058	13-Feb-24
24020014-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Cyclohexane	I	0.16	ppbv	0.04	AC-058	13-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 25, 2024	32254	Ambient Air	25-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020014 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020014-001	Cyclopentane	I	0.06	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Ethanol		2.0	ppbv	0.5	AC-058	13-Feb-24
24020014-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	Freon-11		0.22	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Freon-113	I	0.04	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	Freon-12		0.71	ppbv	0.03	AC-058	13-Feb-24
24020014-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Isobutane		2.38	ppbv	0.03	AC-058	13-Feb-24
24020014-001	Isopentane		1.20	ppbv	0.04	AC-058	13-Feb-24
24020014-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020014-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020014-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020014-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	13-Feb-24
24020014-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	Methylcyclohexane		0.22	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Methylcyclopentane		0.22	ppbv	0.05	AC-058	13-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 25, 2024	32254	Ambient Air	25-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020014 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020014-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	n-Butane		3.89	ppbv	0.02	AC-058	13-Feb-24
24020014-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020014-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	n-Heptane	I	0.09	ppbv	0.04	AC-058	13-Feb-24
24020014-001	n-Hexane		0.30	ppbv	0.03	AC-058	13-Feb-24
24020014-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	n-Pentane		1.00	ppbv	0.04	AC-058	13-Feb-24
24020014-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020014-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Feb-24
24020014-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020014-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020014-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020014-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Toluene	I	0.17	ppbv	0.03	AC-058	13-Feb-24
24020014-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020014-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020014-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020014-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 25, 2024	32254	Ambient Air	25-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020014 **REPORT CREATED:** 26-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020014-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020014-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 26, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24020014	01	26-Feb-24	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-066	Polycyclic Aromatic Hydrocarbons from Air

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

Order Comments

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Partisol Samples

Partisol 2000i-D Sample Data Sheet

Date Sampled:	1-Jan-24
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

Sample ID: 24010052-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85639

	FINE (1) (1)	COURSE (2) (2)
Filter Type:	47mm	47mm
Filter #:	AT85639	AT85640
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-2.2	
Pressure	712	
Std Volume (Instrument)	22.4	2.49

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 28-Dec-23

Removed by (Sign/Date) Alex Yakupov Date: 5-Jan-24

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 24010052-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85640

RECEIVED
JAN 10 2024

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: December 1/23

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT85639 → AT85640

Returns: coolers, large and small containers may be shipped to: Innotech Alberta, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: AT85639

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - PM2.5 - Fine

DATE SAMPLED: 01-Jan-24 0:00

DATE RECEIVED: 10-Jan-24

REPORT CREATED: 25-Jan-24

REPORT NUMBER: 24010052

VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010052-001	Particulate Weight		0.011	mg	0.004	AC-029	11-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 25, 2024

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85640		Air Filter	01-Jan-24 0:00

DESCRIPTION: Cold Lake South - PM10 - Coarse

REPORT NUMBER: 24010052 **REPORT CREATED:** 25-Jan-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010052-002	Particulate Weight	K, T, U	< 0.004	mg	0.004	AC-029	11-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 25, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24010052	01	25-Jan-24	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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

Order Comments

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

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Partisol 2000i-D Sample Data Sheet

Date Sampled:	7-Jan-24
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

Sample ID: 24010096-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT83610

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	AT83610	AT83611
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-15	
Pressure	712	
Std Volume (Instrument)	23.6	2.63

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 5-Jan-24

Removed by (Sign/Date) Alex Yakupov Date: 12-Jan-24

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 24010096-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT83611

RECEIVED
JAN 17 2024

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: November 2/23

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT83610 → AT83611

Returns: coolers, large and small containers may be shipped to: Innotech Alberta, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: AT83610

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - PM2.5 - Fine

DATE SAMPLED: 07-Jan-24 0:00

DATE RECEIVED: 17-Jan-24

REPORT CREATED: 29-Jan-24

REPORT NUMBER: 24010096

VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010096-001	Particulate Weight		0.056	mg	0.004	AC-029	19-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 29, 2024

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT83611		Air Filter	07-Jan-24 0:00

DESCRIPTION: Cold Lake South - PM10 - Coarse

REPORT NUMBER: 24010096 **REPORT CREATED:** 29-Jan-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010096-002	Particulate Weight	K, T, U	< 0.004	mg	0.004	AC-029	19-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: January 29, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24010096	01	29-Jan-24	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
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I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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

Order Comments

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

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Partisol 2000i-D Sample Data Sheet

Date Sampled:	13-Jan-24
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

Sample ID: 24010144-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT83969

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	AT83969	AT83970
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-33	
Pressure	722	
Std Volume (Instrument)	25.9	2.88

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 12-Jan-24

Removed by (Sign/Date) Alex Yakupov Date: 18-Jan-24

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 24010144-002 Priority: Normal

Customer ID: LICA
Cust Samp ID: AT83970

RECEIVED
JAN 22 2024

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: November 2/23

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT83969 → AT83970

Returns: coolers, large and small containers may be shipped to: Innotech Alberta, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: AT83969

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - Fine - PM2.5

DATE SAMPLED: 13-Jan-24 0:00

DATE RECEIVED: 22-Jan-24

REPORT CREATED: 08-Feb-24

REPORT NUMBER: 24010144

VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010144-001	Particulate Weight		0.086	mg	0.004	AC-029	24-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 8, 2024

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT83970		Air Filter	13-Jan-24 0:00

DESCRIPTION: Cold Lake South - Coarse - PM10

REPORT NUMBER: 24010144 **REPORT CREATED:** 08-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010144-002	Particulate Weight	K, T, U	< 0.004	mg	0.004	AC-029	24-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 8, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24010144	01	08-Feb-24	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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

Order Comments

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

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Partisol 2000i-D Sample Data Sheet

Date Sampled:	19-Jan-24
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

Sample ID: 24010179-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85631

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	AT85631	AT85632
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-16	
Pressure	725	
Std Volume (Instrument)	21.6	2.67

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 18-Jan-24

Removed by (Sign/Date) Alex Yakupov Date: 20-Jan-24

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 24010179-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85631

RECEIVED
JAN 25 2024

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: December 1 23

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT85631 → AT85632

Returns: coolers, large and small containers may be shipped to: Innotech Alberta, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: AT85631

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - PM2.5 - Fine

DATE SAMPLED: 19-Jan-24 0:00

DATE RECEIVED: 25-Jan-24

REPORT CREATED: 08-Feb-24

REPORT NUMBER: 24010179

VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010179-001	Particulate Weight		0.074	mg	0.004	AC-029	29-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 8, 2024

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85632		Air Filter	19-Jan-24 0:00

DESCRIPTION: Cold Lake South - PM10 - Coarse

REPORT NUMBER: 24010179 **REPORT CREATED:** 08-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010179-002	Particulate Weight	K, T, U	< 0.004	mg	0.004	AC-029	29-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 8, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24010179	01	08-Feb-24	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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

Order Comments

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

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Sample ID: 24020015-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT83960

RECEIVED
FEB 05 2024

ol 2000i-D Sample Data Sheet

Date Sampled:	25-Jan-24
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	AT83960	AT83961
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-10	
Pressure	708	
Std Volume (Instrument)	22.9	2.55

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 20-Jan-24

Removed by (Sign/Date) Alex Yakupov Date: 27-Jan-24

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 24020015-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT83961

RECEIVED
FEB 05 2024

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: November 2/23

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT83960 → AT83961

Returns: coolers, large and small containers may be shipped to: Innotech Alberta, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: AT83960

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - PM2.5 - Fine

DATE SAMPLED: 25-Jan-24 0:00

DATE RECEIVED: 05-Feb-24

REPORT CREATED: 13-Feb-24

REPORT NUMBER: 24020015

VERSION Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020015-001	Particulate Weight		0.352	mg	0.004	AC-029	08-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 13, 2024

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT83961		Air Filter	25-Jan-24 0:00

DESCRIPTION: Cold Lake South - PM10 - Coarse

REPORT NUMBER: 24020015 **REPORT CREATED:** 13-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020015-002	Particulate Weight	K, T, U	< 0.004	mg	0.004	AC-029	08-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 13, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24020015	01	13-Feb-24	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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

Order Comments

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

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Partisol 2000i-D Sample Data Sheet

Date Sampled:	31-Jan-24
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

Sample ID: 24020063-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85629

	FINE (1) 1	COURSE (2) 2
Filter Type:	47mm	47mm
Filter #:	AT85629	AT85630
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	3.6	
Pressure	707	
Std Volume (Instrument)	21.8	2.42

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 27-Jan-24

Removed by (Sign/Date) Alex Yakupov Date: 5-Feb-24

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Partisol 2000i-D Sample Data Sheet

Date Sampled:	6-Feb-24
Location:	Cold Lake South
Parameter:	PM 2.5 / PM 10
Start Time	0:00
End Time	23:59
Valid Time	24 hours
Total Time	24 hours
Status	Done

Sample ID: 24020063-003 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85635

	FINE (1)	COURSE (2)
	3	4
Filter Type:	47mm	47mm
Filter #:	AT85635	AT85636
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-8.3	
Pressure	710	
Std Volume (Instrument)	21.6	2.39

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 5-Feb-24

Removed by (Sign/Date) Alex Yakupov Date: 7-Feb-24

Programming
1) Make sure system is in "Stop Mode"
2) Sample Setup >Apply EPA times (start at 00:00 for 24hrs)
3) Navigate to SAMPLE 1 and check/correct START and STOP date/time
4) Make sure to SAVE changes
5). Make sure system is left in WAIT mode

Sample ID: 24020063-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85629

RECEIVED
FEB 09 2024

Filter Shipping Record

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: December 1 23

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT85629 → AT85630

Returns: coolers, large and small containers may be shipped to: Innotech Alberta, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

Sample ID: 24020063-003 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85635

Filter Shipping Record

RECEIVED
FEB 09 2024

Sent To: R&B Moving Systems
3410-50 Street
Cold Lake, AB T9M 1S6
(Purolator Depot)
HFPO: Alex Yakupov, BV Labs
780-545-9363

Date: December 1/23

Project: LICA/Bureau Veritas Labs

Prepared by:

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	2	AT85635 → AT85636

Returns: coolers, large and small containers may be shipped to: Innotech Alberta, PO Bag 4000, HWY 16A & 75th Street, Vegreville, AB T9C 1T4

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: AT85629

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

DATE SAMPLED: 31-Jan-24 0:00

DATE RECEIVED: 09-Feb-24

REPORT CREATED: 15-Feb-24

REPORT NUMBER: 24020063

VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020063-001	Particulate Weight		0.026	mg	0.004	AC-029	12-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 15, 2024

Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85630		Air Filter	31-Jan-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24020063 **REPORT CREATED:** 15-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020063-002	Particulate Weight	K, T, U	< 0.004	mg	0.004	AC-029	12-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 15, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85635		Air Filter	06-Feb-24 0:00

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

REPORT NUMBER: 24020063 **REPORT CREATED:** 15-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020063-003	Particulate Weight		0.006	mg	0.004	AC-029	12-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 15, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85636		Air Filter	06-Feb-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24020063 **REPORT CREATED:** 15-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020063-004	Particulate Weight	K, T, U	< 0.004	mg	0.004	AC-029	12-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 15, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24020063	01	15-Feb-24	Report created

Methods

Method	Description
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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

Order Comments

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

Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

Passive Samples

Passive Sampler Field Sheet for LICA, Jan 2024 sample period

ID	SAMPLER						START		END		NOTES
							DATE	TIME	DATE	TIME	
3	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Dec 30	18:05	Jan 30	17:43	NO_2 membrane damaged
4	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	12:04	Jan 31	13:16	
5	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	12:46	Jan 31	14:15	
6	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	14:36	Jan 31	15:34	
8	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	10:47	Jan 31	12:10	
9	---	SO_2	NO_2	O_3	HNO3	NH3	Dec 30	17:07	Jan 30	16:55	
10	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 3	16:55	Feb 1	18:10	
11	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 3	16:24	Feb 1	17:26	
12	H2S	SO2	NO2	O3	HNO3	NH3	Jan 3	14:56	Feb 1	16:15	
13	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Dec 30	14:22	Jan 30	14:58	
14	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Dec 30	13:26	Jan 30	13:36	No water/snow sampling possible - dry conditions
15	---	SO_2	NO_2	O_3	HNO3	NH3	Dec 30	15:31	Jan 30	15:59	
16	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	18:07	Feb 1	10:25	
17	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	15:37	Jan 31	16:42	
18	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	17:05	Jan 31	18:10	
19	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	18:06	Jan 31	20:01	
22	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 3	18:34	Feb 1	20:25	
23	---	SO_2	NO_2	O_3	HNO3	NH3	Dec 30	11:35	Jan 30	11:54	
24	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 2	13:42	Jan 31	14:55	
25	H2S	SO2	---	---	HNO3	NH3	NA	NA	NA	NA	
26	H_2S	SO_2	---	---	HNO3	NH3	Dec 30	13:47	Jan 30	14:22	
27	H_2S	SO_2	---	---	HNO3	NH3	Dec 30	12:54	Jan 30	13:07	
28	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Dec 30	16:40	Jan 30	16:30	
29	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 3	18:51	Feb 1	20:36	
32	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Dec 30	19:02	Jan 30	20:10	
42	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 3	11:57	Feb 2	12:45	
							DUPLICATES				
3	H2S	---	---	---	---	---	Dec 30	18:05	Jan 30	17:43	
5	H2S	---	---	---	---	---	Jan 2	12:46	Jan 31	14:15	
4	---	SO2	---	---	---	---	Jan 2	12:04	Jan 31	13:16	
5		SO2	---	---	---	---	Jan 2	12:46	Jan 31	14:15	
6	---	SO2	---	---	---	---	Jan 2	14:36	Jan 31	15:34	
8	---	---	NO_2	O_3	---	---	Jan 2	10:47	Jan 31	12:10	
9	---	---	NO_2	O_3	---	---	Dec 30	17:07	Jan 30	16:55	
19	---	---	---	---	HNO3	NH3	Jan 2	18:56	Jan 31	20:01	
22	---	---	---	---	HNO3	NH3	Jan 3	18:34	Feb 1	20:25	

2 H_2S
28 NO_2
28 O_3
31 HNO3
31 NH_3
32 SO_2

AB 24 0205
COC 100

Your Project #: JANUARY 2024 PASSIVES
Site Location: BONNYVILLE, AB

Attention: Monitoring

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

Report Date: 2024/02/27
Report #: R3467801
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C407799
Received: 2024/02/05, 08:00

Sample Matrix: Air
Samples Received: 61

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis	20	2024/02/06	2024/02/13	PTC SOP-00150	Passive H2S in ATM
HNO3 by Passive Sampler	30	2024/02/06	2024/02/12	PTC SOP-00288	Passive HNO3 in ATM
NH3 by Passive Sampler	30	2024/02/09	N/A	PTC SOP-00157	ASTM D6919
NO2 Passive Analysis	25	2024/02/07	2024/02/13	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis	25	2024/02/06	2024/02/13	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis	28	2024/02/06	2024/02/13	PTC SOP-00149	Passive SO2 in ATM

Results relate only to the items tested.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Rowena Geron
Customer Service Associate
27 Feb 2024 09:24:02

Please direct all questions regarding this Certificate of Analysis to:
Customer Service Passives,
Email: PassiveAir@bureauveritas.com
Phone# (780) 378-8500

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Branko Banjac, General Manager responsible for Alberta Petroleum laboratory operations.

Bureau Veritas Edmonton: 6744 - 50th Street T6A 3N7 Telephone (780) 378-8500 Fax (780) 378-8699

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CIP911			CIQ014			CIP912		
Sampling Date		2023/12/30 18:05			2023/12/30 18:05			2024/01/02 12:04		
	UNITS	3	RDL	QC Batch	3-DUP	RDL	QC Batch	4	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.25	0.02	B275967	0.22	0.02	B275967			
Calculated NO2	ppb	2.7	0.1	B276523				2.8	0.1	B276523
Calculated O3	ppb	23.3	0.1	B275520				28.5	0.1	B275520
Calculated SO2	ppb	0.6	0.1	B275567				0.6	0.1	B275567
RDL = Reportable Detection Limit										

Bureau Veritas ID		CIQ015			CIP913			CIQ016		
Sampling Date		2024/01/02 12:04			2024/01/02 12:46			2024/01/02 12:46		
	UNITS	4-DUP	RDL	QC Batch	5	RDL	QC Batch	5-DUP	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb				0.26	0.02	B275967	0.25	0.02	B275967
Calculated NO2	ppb				2.2	0.1	B276523			
Calculated O3	ppb				22.9	0.1	B275520			
Calculated SO2	ppb	0.7	0.1	B275569	0.5	0.1	B275567	0.6	0.1	B275569
RDL = Reportable Detection Limit										

Bureau Veritas ID		CIP914			CIQ017			CIP915		
Sampling Date		2024/01/02 14:36			2024/01/02 14:36			2024/01/02 10:47		
	UNITS	6	RDL	QC Batch	6-DUP	RDL	QC Batch	8	RDL	QC Batch
Passive Monitoring										
Calculated NO2	ppb	5.5	0.1	B276523				2.6	0.1	B276523
Calculated O3	ppb	22.0	0.1	B275520				21.8	0.1	B275520
Calculated SO2	ppb	0.5	0.1	B275567	0.5	0.1	B275569	0.8	0.1	B275567
RDL = Reportable Detection Limit										

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Bureau Veritas Job #: C407799
Report Date: 2024/02/27

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: JANUARY 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CIQ018			CIP916			CIQ019		
Sampling Date		2024/01/02 10:47			2023/12/30 17:07			2023/12/30 17:07		
	UNITS	8-DUP	RDL	QC Batch	9	RDL	QC Batch	9-DUP	RDL	QC Batch
Passive Monitoring										
Calculated NO2	ppb	2.1	0.1	B276526	3.1	0.1	B276523	3.2	0.1	B276526
Calculated O3	ppb	29.6	0.1	B278198	21.2	0.1	B275520	22.2	0.1	B278198
Calculated SO2	ppb				0.7	0.1	B275567			
RDL = Reportable Detection Limit										

Bureau Veritas ID		CIP917	CIP918	CIP919	CIP920	CIP921			CIP922		
Sampling Date		2024/01/03 16:55	2024/01/03 16:24	2024/01/03 14:56	2023/12/30 14:22	2023/12/30 13:26			2023/12/30 15:31		
	UNITS	10	11	12	13	14	RDL	QC Batch	15	RDL	QC Batch
Passive Monitoring											
Calculated H2S	ppb	0.17	0.20	0.17	0.17	0.34	0.02	B275967			
Calculated NO2	ppb	7.6	2.5	1.9	1.6	5.2	0.1	B276523	3.8	0.1	B276523
Calculated O3	ppb	20.8	23.3	22.9	22.4	22.1	0.1	B275520	21.7	0.1	B275520
Calculated SO2	ppb	0.5	0.7	1.1	0.9	2.0	0.1	B275567	0.9	0.1	B275567
RDL = Reportable Detection Limit											

Bureau Veritas ID		CIP923	CIP924	CIP925			CIP926		
Sampling Date		2024/01/02 18:07	2024/01/02 15:37	2024/01/02 17:05			2024/01/02 18:56		
	UNITS	16	17	18	RDL	QC Batch	19	RDL	QC Batch
Passive Monitoring									
Calculated H2S	ppb	0.24	0.28	0.18	0.02	B275967			
Calculated NO2	ppb	2.9	2.4	2.3	0.1	B276526	1.7	0.1	B276526
Calculated O3	ppb	18.7	34.1	20.0	0.1	B275520	DAMAGED	0.1	B275520
Calculated SO2	ppb	0.7	0.7	0.6	0.1	B275567	0.8	0.1	B275567
RDL = Reportable Detection Limit									

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Bureau Veritas Job #: C407799
Report Date: 2024/02/27

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: JANUARY 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CIP927			CIP928			CIP929		
Sampling Date		2024/01/03 18:34			2023/12/30 11:35			2024/01/02 13:42		
	UNITS	22	RDL	QC Batch	23	RDL	QC Batch	24	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.18	0.02	B275967				0.27	0.02	B275967
Calculated NO2	ppb	4.2	0.1	B276526	1.0	0.1	B276526	3.9	0.1	B276526
Calculated O3	ppb	21.0	0.1	B275520	19.1	0.1	B275520	27.5	0.1	B275520
Calculated SO2	ppb	0.8	0.1	B275569	0.5	0.1	B275569	0.5	0.1	B275569
RDL = Reportable Detection Limit										

Bureau Veritas ID		CIP930	CIP931			CIP932	CIP933	CIP934		
Sampling Date		2023/12/30 13:47	2023/12/30 12:54			2023/12/30 16:40	2024/01/03 18:51	2023/12/30 19:02		
	UNITS	26	27	RDL	QC Batch	28	29	32	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.28	0.20	0.02	B275967	0.22	0.21	0.25	0.02	B275967
Calculated NO2	ppb					8.6	5.1	2.2	0.1	B276526
Calculated O3	ppb					19.9	DAMAGED	24.7	0.1	B278198
Calculated SO2	ppb	1.0	1.2	0.1	B275569	0.8	0.6	0.6	0.1	B275569
RDL = Reportable Detection Limit										

Bureau Veritas ID		CIP935			CIP939	CIP940	CIP941	CIP942		
Sampling Date		2024/01/03 11:57			2023/12/30 18:05	2024/01/02 12:04	2024/01/02 12:46	2024/01/02 14:36		
	UNITS	42	RDL	QC Batch	3-NH3 HNO3	4-NH3 HNO3	5-NH3 HNO3	6-NH3 HNO3	RDL	QC Batch
Passive Monitoring										
Ammonia by Passive Sampler	ppb				1.8	1.3	0.8	2.2	0.1	B279874
Calculated H2S	ppb	0.20	0.02	B275967						
HNO3 by Passive Sampler	ug/m3				2.00	1.56	1.41	2.06	0.04	B276005
Calculated NO2	ppb	5.9	0.1	B276526						
Calculated O3	ppb	19.4	0.1	B278198						
Calculated SO2	ppb	0.5	0.1	B275569						
RDL = Reportable Detection Limit										

Bureau Veritas Job #: C407799
Report Date: 2024/02/27

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: JANUARY 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CIP943	CIP944	CIP945	CIP946	CIP947	CIP948		
Sampling Date		2024/01/02 10:47	2023/12/30 17:07	2024/01/03 16:55	2024/01/03 16:24	2024/01/03 14:56	2023/12/30 14:22		
	UNITS	8-NH3 HNO3	9-NH3 HNO3	10-NH3 HNO3	11-NH3 HNO3	12-NH3 HNO3	13-NH3 HNO3	RDL	QC Batch
Passive Monitoring									
Ammonia by Passive Sampler	ppb	1.0	1.0	0.6	0.4	0.5	0.6	0.1	B279874
HNO3 by Passive Sampler	ug/m3	0.62	1.53	2.86	1.36	0.72	1.98	0.04	B276005
RDL = Reportable Detection Limit									

Bureau Veritas ID		CIP949	CIP950	CIP951	CIP952	CIP953	CIP954		
Sampling Date		2023/12/30 13:26	2023/12/30 15:31	2024/01/02 18:07	2024/01/02 15:37	2024/01/02 17:05	2024/01/02 18:56		
	UNITS	14-NH3 HNO3	15-NH3 HNO3	16-NH3 HNO3	17-NH3 HNO3	18-NH3 HNO3	19-NH3 HNO3	RDL	QC Batch
Passive Monitoring									
Ammonia by Passive Sampler	ppb	0.7	0.9	0.7	1.3	0.4	1.0	0.1	B279874
HNO3 by Passive Sampler	ug/m3	1.02	1.53	0.54	2.04	1.62	1.15	0.04	B276005
RDL = Reportable Detection Limit									

Bureau Veritas ID		CIQ020		CIP955		CIQ021		
Sampling Date		2024/01/02 18:56		2024/01/03 18:34		2024/01/03 18:34		
	UNITS	19-NH3 HNO3-DUP	QC Batch	22-NH3 HNO3	QC Batch	22-NH3 HNO3-DUP	RDL	QC Batch
Passive Monitoring								
Ammonia by Passive Sampler	ppb	1.3	B279875	1.6	B279874	1.4	0.1	B279875
HNO3 by Passive Sampler	ug/m3	1.49	B276007	1.70	B276007	1.72	0.04	B276007
RDL = Reportable Detection Limit								

Bureau Veritas ID		CIP956	CIP957	CIP958		CIP959	CIP960		
Sampling Date		2023/12/30 11:35	2024/01/02 13:42	2023/12/30 13:47		2023/12/30 12:54	2023/12/30 16:40		
	UNITS	23-NH3 HNO3	24-NH3 HNO3	26-NH3 HNO3	QC Batch	27-NH3 HNO3	28-NH3 HNO3	RDL	QC Batch
Passive Monitoring									
Ammonia by Passive Sampler	ppb	1.1	1.6	0.4	B279874	0.7	2.0	0.1	B279875
HNO3 by Passive Sampler	ug/m3	1.64	0.54	0.70	B276007	2.42	0.97	0.04	B276007
RDL = Reportable Detection Limit									

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Bureau Veritas Job #: C407799
Report Date: 2024/02/27

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: JANUARY 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CIP961	CIP962	CIP963	CIP964	CIP965		
Sampling Date		2024/01/03 18:51	2023/12/30 19:02	2024/01/03 11:57				
	UNITS	29-NH3 HNO3	32-NH3 HNO3	42-NH3 HNO3	BLANK 1-NH3 HNO3	BLANK 2-NH3 HNO3	RDL	QC Batch
Passive Monitoring								
Ammonia by Passive Sampler	ppb	0.9	1.0	0.8	0.3	0.4	0.1	B279875
HNO3 by Passive Sampler	ug/m3	0.51	2.78	0.88	0.04	<0.04	0.04	B276007
RDL = Reportable Detection Limit								

Bureau Veritas ID		CIP966		
Sampling Date				
	UNITS	BLANK 3-NH3 HNO3	RDL	QC Batch
Passive Monitoring				
Ammonia by Passive Sampler	ppb	0.3	0.1	B279875
HNO3 by Passive Sampler	ug/m3	<0.04	0.04	B276007
RDL = Reportable Detection Limit				

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

GENERAL COMMENTS

Sample CIP926 [19] : O3 sample CIP926 was recieved with a damaged paper barrier. S1T (2024/02/12)

Sample CIP933 [29] : O3 sample CIP933 was recieved with a damaged paper barrier. S1T (2024/02/12)

Results relate only to the items tested.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C407799
Report Date: 2024/02/27

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: JANUARY 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
B275520	S1T	Spiked Blank	Calculated O3			100	%	90 - 110
B275520	S1T	Method Blank	Calculated O3		<0.1		ppb	
B275567	OZ	Spiked Blank	Calculated SO2			99	%	90 - 110
B275567	OZ	Method Blank	Calculated SO2		<0.1		ppb	
B275569	OZ	Spiked Blank	Calculated SO2			99	%	90 - 110
B275569	OZ	Method Blank	Calculated SO2		<0.1		ppb	
B275967	YYA	Spiked Blank	Calculated H2S			100	%	90 - 110
B276005	OZ	Method Blank	HNO3 by Passive Sampler		<0.04		ug/m3	
B276005	OZ	RPD [CIP939-01]	HNO3 by Passive Sampler	2024/02/12	NC		%	N/A
B276007	OZ	Method Blank	HNO3 by Passive Sampler		<0.04		ug/m3	
B276007	OZ	RPD [CIP955-01]	HNO3 by Passive Sampler	2024/02/12	NC		%	N/A
B276523	S1T	Spiked Blank	Calculated NO2			96	%	90 - 110
B276523	S1T	Method Blank	Calculated NO2		<0.1		ppb	
B276526	S1T	Spiked Blank	Calculated NO2			100	%	90 - 110
B276526	S1T	Method Blank	Calculated NO2		<0.1		ppb	
B278198	S1T	Spiked Blank	Calculated O3			100	%	90 - 110
B278198	S1T	Method Blank	Calculated O3		<0.1		ppb	
B279874	SDK	Spiked Blank	Ammonia by Passive Sampler			104	%	90 - 110
B279874	SDK	Method Blank	Ammonia by Passive Sampler		<0.1		ppb	
B279874	SDK	RPD [CIP939-01]	Ammonia by Passive Sampler		0		%	N/A
B279875	SDK	Spiked Blank	Ammonia by Passive Sampler			94	%	90 - 110
B279875	SDK	Method Blank	Ammonia by Passive Sampler		<0.1		ppb	
B279875	SDK	RPD [CIP959-01]	Ammonia by Passive Sampler		NC		%	N/A

N/A = Not Applicable

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

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

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

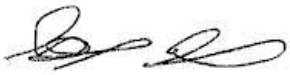
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Job #: C407799
Report Date: 2024/02/27

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: JANUARY 2024 PASSIVES
Site Location: BONNYVILLE, AB
Sampler Initials: AY

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:



Steven Gloux, Senior Analyst

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Branko Banjac, General Manager responsible for Alberta Petroleum laboratory operations.

Bureau Veritas Edmonton: 6744 - 50th Street T6B 3M9 Telephone (780) 378-8500 Fax (780) 378-8699

Lac La Biche Station

Non- Methane Hydrocarbons (NMHCs) Canister Samples

Sample ID: 24010071-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/NMHC/LLB/Jan 04, 2024

RECEIVED
JAN 11 2024

Bureau Veritas

VOC Sample Collection Data Sheet Alberta Air FCD AIR FCD-01320 / 2

Client:	LICA	**Sampler S/N:**	n/a
Location:	Lac La Biche	**Canister ID:**	32202
Station ID:	LICA 41	**Installation Date/Time (mst):**	Dec 19, 2023 @ 16:48
Sample ID:	LICA/NMHC/LLB/Jan 04, 2024	**Removal Date/Time (mst):**	Jan 09, 2024 @ 18:09

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
January 4, 2024	11:20	n/a	n/a

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
-27.1	4.0

Flow Settings		
Flow Reading (sccm)	Pot Set Point	Pump Set (psi)
n/a	n/a	n/a

Deployment/Collection and Maintenance Checklist

Initial leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	**Leak rate must be 0.0 psi over a minimum of 5 minutes or repair is required**
Final leak check deployment vacuum (in. Hg) =	n/a	@	n/a	mst	
Total leak rate =	n/a	psi over	n/a	minutes	
Timer reset to zero prior to sampling?	YES	(yes/no)			

Comments:

Exp. Date: Mar 11, 2024

Deployment Technician Signature: Alex Yakupov

Collection Technician Signature: Alex Yakupov

InnoTech ALBERTA

Canister ID: 32202

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: NOV 10 2023

Evacuated: DEC 11 2023 Recertified: _____

(Use within: 3 months from evacuation or recertification date)

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/NMHC/LLB/Jan 4, 2024

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
-27.1 "Hg	+4.0 "Hg/psig

Sample ID: 24010071-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/NMHC/LLB/Jan 04, 2024

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

RESULTS: Lica Communal Mail
Lakeland Industry and Community Assn

INVOICE: Maria Cueva
PO Box 8237
5107W-50 St
Bonnyville
AB T9N 2J5

CLIENT SAMPLE ID: LICA/NMHC/LLB/Jan 04, 2024
Matrix: Ambient Air
CANISTER ID: 32202
PRIORITY: Normal
DESCRIPTION: Lac La Biche
DATE SAMPLED: 04-Jan-24 11:20
DATE RECEIVED: 11-Jan-24
REPORT CREATED: 08-Feb-24
REPORT NUMBER: 24010071
VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010071-001	1,1,1-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	1,1,2-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	1,1-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	1,1-Dichloroethylene	I	0.08	ppbv	0.03	AC-058	12-Jan-24
24010071-001	1,2,3-Trimethylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	12-Jan-24
24010071-001	1,2,4-Trichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	1,2,4-Trimethylbenzene	I	0.09	ppbv	0.04	AC-058	12-Jan-24
24010071-001	1,2-Dibromoethane	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	1,2-Dichlorobenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	1,2-Dichloroethane	I	0.11	ppbv	0.04	AC-058	12-Jan-24
24010071-001	1,2-Dichloropropane	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	1,3,5-Trimethylbenzene	I	0.06	ppbv	0.04	AC-058	12-Jan-24
24010071-001	1,3-Butadiene	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	1,3-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	12-Jan-24
24010071-001	1,4-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	12-Jan-24
24010071-001	1,4-Dioxane	K, T, U	< 0.7	ppbv	0.7	AC-058	12-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: February 8, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Jan 04, 2024	32202	Ambient Air	04-Jan-24 11:20

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24010071 **REPORT CREATED:** 08-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010071-001	1-Butene/Isobutylene		0.77	ppbv	0.08	AC-058	12-Jan-24
24010071-001	1-Hexene/2-Methyl-1-pentene	I	0.18	ppbv	0.10	AC-058	12-Jan-24
24010071-001	1-Pentene	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	2,2,4-Trimethylpentane	I	0.10	ppbv	0.03	AC-058	12-Jan-24
24010071-001	2,2-Dimethylbutane	I	0.12	ppbv	0.03	AC-058	12-Jan-24
24010071-001	2,3,4-Trimethylpentane		0.17	ppbv	0.03	AC-058	12-Jan-24
24010071-001	2,3-Dimethylbutane		0.41	ppbv	0.13	AC-058	12-Jan-24
24010071-001	2,3-Dimethylpentane	I	0.10	ppbv	0.03	AC-058	12-Jan-24
24010071-001	2,4-Dimethylpentane		0.19	ppbv	0.04	AC-058	12-Jan-24
24010071-001	2-Methylheptane		0.14	ppbv	0.03	AC-058	12-Jan-24
24010071-001	2-Methylhexane	I	0.11	ppbv	0.04	AC-058	12-Jan-24
24010071-001	2-Methylpentane		4.43	ppbv	0.03	AC-058	12-Jan-24
24010071-001	3-Methylheptane	I	0.11	ppbv	0.04	AC-058	12-Jan-24
24010071-001	3-Methylhexane	I	0.13	ppbv	0.03	AC-058	12-Jan-24
24010071-001	3-Methylpentane		6.08	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Acetone		27.7	ppbv	0.6	AC-058	12-Jan-24
24010071-001	Acrolein	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Benzene	I	0.21	ppbv	0.04	AC-058	12-Jan-24
24010071-001	Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Bromodichloromethane	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Bromomethane	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Carbon disulfide	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Carbon tetrachloride	I	0.06	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 8, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Jan 04, 2024	32202	Ambient Air	04-Jan-24 11:20

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24010071 **REPORT CREATED:** 08-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010071-001	Chloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Chloroform	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Chloromethane		0.48	ppbv	0.06	AC-058	12-Jan-24
24010071-001	cis-1,2-Dichloroethene	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	cis-2-Butene	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Cyclohexane	I	0.26	ppbv	0.06	AC-058	12-Jan-24
24010071-001	Cyclopentane	I	0.09	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Dibromochloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Ethanol	K, T, U	< 0.7	ppbv	0.7	AC-058	12-Jan-24
24010071-001	Ethyl acetate		0.8	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Ethylbenzene	I	0.12	ppbv	0.04	AC-058	12-Jan-24
24010071-001	Freon-11		0.21	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Freon-113		0.23	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Freon-114	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	Freon-12		0.52	ppbv	0.04	AC-058	12-Jan-24
24010071-001	Hexachloro-1,3-butadiene	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Isobutane		0.41	ppbv	0.04	AC-058	12-Jan-24
24010071-001	Isopentane		0.55	ppbv	0.06	AC-058	12-Jan-24
24010071-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	12-Jan-24
24010071-001	m,p-Xylene	I	0.08	ppbv	0.06	AC-058	12-Jan-24
24010071-001	m-Diethylbenzene	I	0.04	ppbv	0.03	AC-058	12-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Jan 04, 2024	32202	Ambient Air	04-Jan-24 11:20

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24010071 **REPORT CREATED:** 08-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010071-001	m-Ethyltoluene	I	0.07	ppbv	0.04	AC-058	12-Jan-24
24010071-001	Methyl butyl ketone	K, T, U	< 0.6	ppbv	0.6	AC-058	12-Jan-24
24010071-001	Methyl ethyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Methyl methacrylate	K, T, U	< 0.11	ppbv	0.11	AC-058	12-Jan-24
24010071-001	Methyl tert butyl ether	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	Methylcyclohexane	I	0.13	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Methylcyclopentane		3.17	ppbv	0.07	AC-058	12-Jan-24
24010071-001	Methylene chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	n-Butane		0.58	ppbv	0.03	AC-058	12-Jan-24
24010071-001	n-Decane	I	0.13	ppbv	0.08	AC-058	12-Jan-24
24010071-001	n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	n-Heptane		0.28	ppbv	0.06	AC-058	12-Jan-24
24010071-001	n-Hexane		16.2	ppbv	0.04	AC-058	12-Jan-24
24010071-001	n-Octane		0.16	ppbv	0.03	AC-058	12-Jan-24
24010071-001	n-Pentane		0.44	ppbv	0.06	AC-058	12-Jan-24
24010071-001	n-Propylbenzene	K, T, U	< 0.08	ppbv	0.08	AC-058	12-Jan-24
24010071-001	n-Undecane	K, T, U	< 0.7	ppbv	0.7	AC-058	12-Jan-24
24010071-001	Naphthalene	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	n-Nonane	I	0.12	ppbv	0.06	AC-058	12-Jan-24
24010071-001	o-Ethyltoluene	I	0.05	ppbv	0.03	AC-058	12-Jan-24
24010071-001	o-Xylene	I	0.13	ppbv	0.04	AC-058	12-Jan-24
24010071-001	p-Diethylbenzene	I	0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	p-Ethyltoluene	K, T, U	< 0.06	ppbv	0.06	AC-058	12-Jan-24
24010071-001	Styrene	I	0.17	ppbv	0.06	AC-058	12-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Jan 04, 2024	32202	Ambient Air	04-Jan-24 11:20

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24010071 **REPORT CREATED:** 08-Feb-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24010071-001	Tetrachloroethylene	I	0.05	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Toluene		1.66	ppbv	0.04	AC-058	12-Jan-24
24010071-001	trans-1,2-Dichloroethylene	K, T, U	< 0.08	ppbv	0.08	AC-058	12-Jan-24
24010071-001	trans-1,3-Dichloropropylene	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	trans-2-Butene	K, T, U	< 0.04	ppbv	0.04	AC-058	12-Jan-24
24010071-001	trans-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Trichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24
24010071-001	Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	12-Jan-24
24010071-001	Vinyl chloride	K, T, U	< 0.03	ppbv	0.03	AC-058	12-Jan-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing

Date: February 8, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

InnoTech's ISO/IEC 17025:2017 scope of accreditation can be located at https://directory.cala.ca// LAB-LICA-202401

Revision History

Order ID	Ver	Date	Reason
24010071	01	08-Feb-24	Report created

Methods

Method	Description
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry

List of Analytical Method IDs within InnoTech's ISO/IEC 17025:2017 CALA Scope of Accreditation

Method ID	Description
AC-013	Mercury in Waters by Cold Vapor Atomic Fluorescence Detection (CVAFS)
AC-020	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-021	Elemental Analysis Methodology of Filter-collected Airborne Particulate Matter (PM) by ICP-MS
AC-026	Ion Chromatographic Procedures using the Dionex ICS 3000 and 5000 Systems
AC-029	Procedure for the Equilibration and Weighing of Membrane Filters and PUFs on the Mettler Toledo Micro Balance
AC-035	Analysis of Glyphosate, Aminomethylphosphonic Acid and Glufosinate in Water
AC-038	Trace Metal Analysis of Water Samples by ICP-MS
AC-048	Specific Conductance (Conductivity Meter Method)
AC-049	pH (Meter Method)
AC-054	Alkalinity Total and Phenolphthalein
AC-058	Determination of Volatile Organic Compounds in Ambient Air by Gas Chromatography Mass Spectrometry
AC-060	Trace Metal Analysis of Soil Sediment and Industrial Waste Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-061	Trace Metal Analysis for Biological Samples by Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
AC-065	Analysis of Naphthenic Acids in Water by HPLC-Orbitrap-MS analysis
AC-074	Pesticides in Water
AC-079	Alkylated PAH in Soil and Sediment
AC-080	Alkylated PAH in Water (SPE Extraction)
NA-006	Determination of BTEX, F1 Hydrocarbons and F2, F3 and F4 Hydrocarbons in Water
NA-024	Analysis of Reduced Sulfur Compounds in Air

Qualifiers

Data Qualifier	Translation
B	Blank contamination; Analyte detected above the method reporting limit in an associated blank
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
J1	Reported value is estimated; Surrogate recoveries limits were exceeded
J2	Reported value is estimated; No known QC criteria for this component
J3	Reported value is estimated; The value failed to meet QC criteria for either precision or accuracy
J4	Reported value is estimated; The sample matrix interfered with the analysis
K	Off-scale low. Actual value is known to be less than the value given
L	Off-scale high. Actual value is known to be greater than value given
N	Non-target analyte; Tentatively identified compound (using mass spectroscopy)
Q	Sample held beyond the accepted holding time
R	Rejected data; Not suitable for the projects intended use
T	Value reported is less than the laboratory method detection limit
U	Compound was analyzed for but not detected
V	Analyte was detected in both the sample and the associated method blank

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Order Comments

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Sample Comments

Result Comments

Note:

1. Results relate only to items tested and apply to the sample as received.

2. This report shall not be reproduced, except in full, without the explicit approval of the laboratory.

End of Report