Lakeland Industry & Community Association

FEBRUARY 2024

Monthly Ambient Air Quality Monitoring Integrated Sampling Report

LICA-202402-INTEGRATED

March 21, 2024

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March 21, 2024

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

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

Enclosed is the February 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
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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 February 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).
  - Four samples were collected this month: on February 6, 12, 18 and 24.
  - The analytical results for the January 31's sample collection were not available when the January monthly report was prepared. The results are included in this 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).
  - Four samples were collected this month: on February 6, 12, 18 and 24.
  - The analytical results for the January 31's sample collection were not available when the January monthly report was prepared. The results are included in this 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).
    - Four samples were collected this month: on February 6, 12, 18 and 24.
- **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 January 30 and February 2, and were removed between March 1 and March 3.
    - 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 8: NO2 sample was disturbed by horses andNH3 was not found.
    - Station 28: H2S membrane was found damaged and could not be analysis.
    - Station 14: Sample media of H2S, NO2, O3 and SO2 were not changed due to an operator error. Instead of removing the February's sample media for sample collected between January 30 and March 1 and installing a new media for the month of March, the February's media remain in the field.

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 February 17 at 08:30 when the NMHC concentration was 0.38ppm at 08:25.

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 monitoring period were installed between December 30, 2023 and January 2, 2024. The media were removed are scheduled to be removed between March 1 and March 3.
- The media for the March/April monitoring period were installed between March 1 and March 3. The media are scheduled to be removed by the end April.

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
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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
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INTEGRATED SAMPLING RESULTS SUMMARY

COLD LAKE SOUTH STATION

- **VOCs analytical results**

Sample Date	2024-01-31	2024-02-06	2024-02-12	2024-02-18
Canister ID	32198	28892	28966	29007
Maximum Reading (ppbv)	2.3	0.8	2.2	5.5
Parameter	Ethanol	Ethanol	Ethanol	Ethanol

Sample Date	2024-02-24
Canister ID	31826
Maximum Reading (ppbv)	1.8
Parameter	Isobutane

- **PAHs analytical results**

Sample Date	2024-01-31		2024-02-06		2024-02-12		2024-02-18	
PUF S/N	TE-06		TE-09		TE-05		9802	
Volume (Vstd m^3)	330.40		330.42		330.41		330.41	
Maximum Reading	ug	ng/m3	ug	ng/m3	ug	ng/m3	ug	ng/m3
	0.98	2.97	0.54	1.63	0.84	2.54	1.46	4.42
Parameter	Phenanthrene		Naphthalene		Phenanthrene		Naphthalene	

Sample Date	2024-02-24	
PUF S/N	TE-03	
Volume (Vstd m3)	330.39	
Maximum Reading	ug	ng/m3
	1.17	3.54
Parameter	Naphthalene	

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

Sample Date	2024-02-06		2024-02-12		2024-02-18		2024-02-24	
Filter #	AT85629		AT83606		AT85633		AT79707	
Volume (Vstd m^3)	21.8		22.6		22.8		22.0	
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	0.006	0.000	0.112	0.005	0.168	0.007	0.032	0.001

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

Sample Date	2024-02-06		2024-02-12		2024-02-18		2024-02-24	
Filter #	AT85630		AT83607		AT85634		AT79651	
Volume (Vstd m^3)	2.42		2.52		2.54		2.45	
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	0.010	0.004	0.076	0.030	0.061	0.025

- **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	0.11	#18	0.5	#23	26.7	#13	0.2	#23	<0.1	#11	0.40	#29
Maximum	0.26	#26	5.4	#10	44.0	#17	1.4	#27	2.1	#3	1.76	#42
Average	0.16	-	1.93	-	33.27	-	0.47	-	0.88	-	1.06	-

LAC LA BICHE STATION

- **NMHC canister sample analytical results**

Sample Date / Time	2024-02-17 @08:30
Canister Triggered Conc. (ppm)	0.38
Canister ID	29011
Maximum Reading (ppbv)	117
Parameter	Isobutane

ANALYTICAL SAMPLING RESULTS

COLD LAKE SOUTH STATION

VOCS

Sample Date		2024-01-31	2024-02-06	2024-02-12	2024-02-18	2024-02-24	
Canister ID		32198	28892	28966	29007	31826	
Method		AC-058	AC-058	AC-058	AC-058	AC-058	
Maximum Reading (ppbv)		2.3	0.8	2.2	5.5	1.8	
Parameter		Ethanol	Ethanol	Ethanol	Ethanol	Isobutane	
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	0.02
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	0.3
1,2,4-Trimethylbenzene		< 0.03	< 0.03	< 0.03	0.04	< 0.03	0.03
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		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
1,2-Dichloropropane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
1,3,5-Trimethylbenzene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
1,3-Butadiene		< 0.03	< 0.03	0.03	0.04	< 0.03	0.03
1,3-Dichlorobenzene		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4
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	0.5
1-Butene		0.09	< 0.06	0.09	0.19	0.07	0.06
1-Hexene		< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	0.07
1-Pentene		< 0.03	< 0.03	< 0.03	0.04	< 0.03	0.03
2,2,4-Trimethylpentane		0.06	0.02	0.04	0.19	< 0.02	0.02
2,2-Dimethylbutane		< 0.02	< 0.02	< 0.02	0.02	< 0.02	0.02
2,3,4-Trimethylpentane		< 0.02	< 0.02	< 0.02	0.03	< 0.02	0.02
2,3-Dimethylbutane		< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.09
2,3-Dimethylpentane		0.06	< 0.02	0.05	0.18	0.02	0.02
2,4-Dimethylpentane		< 0.03	< 0.03	< 0.03	0.07	< 0.03	0.03
2-Methylheptane		< 0.02	< 0.02	< 0.02	0.02	< 0.02	0.02
2-Methylhexane		0.04	< 0.03	0.06	0.1	< 0.03	0.03
2-Methylpentane		0.12	0.02	0.15	0.28	0.10	0.02
3-Methylheptane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
3-Methylhexane		0.06	< 0.02	0.07	0.1	0.02	0.02
3-Methylpentane		0.05	< 0.02	0.06	0.11	0.03	0.02
Acetone	2400	1.3	0.6	1.1	1.6	1.1	0.4
Acrolein	1.9	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Benzene	9.0	0.17	0.07	0.22	0.29	0.10	0.03
Benzyl chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Bromodichloromethane		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Bromoform		< 0.02	< 0.02	0.41	< 0.02	< 0.02	0.02
Bromomethane		< 0.02	< 0.02	< 0.02	0.03	< 0.02	0.02
Carbon disulfide	10	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Carbon tetrachloride		0.05	0.04	0.06	0.07	0.07	0.02
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		0.69	0.66	0.65	0.67	0.72	0.04
cis-1,2-Dichloroethene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
cis-1,3-Dichloropropene		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
cis-2-Butene		< 0.03	< 0.03	< 0.03	< 0.03	0.03	0.03
cis-2-Pentene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Cyclohexane		< 0.04	< 0.04	0.07	0.06	< 0.04	0.04
Cyclopentane		< 0.02	< 0.02	0.03	0.04	< 0.02	0.02
Dibromochloromethane		< 0.02	< 0.02	< 0.02	0.06	0.06	0.02
Ethanol		2.3	0.8	2.2	5.5	1.6	0.5
Ethyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Ethylbenzene	460	< 0.03	< 0.03	0.05	0.08	0.03	0.03
Freon-11		0.22	0.23	0.25	0.25	0.26	0.02
Freon-113		0.04	0.04	0.08	0.07	0.08	0.02
Freon-114		< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03

Sample Date		2024-01-31	2024-02-06	2024-02-12	2024-02-18	2024-02-24
Canister ID		32198	28892	28966	29007	31826
Method		AC-058	AC-058	AC-058	AC-058	AC-058
Maximum Reading (ppbv)		2.3	0.8	2.2	5.5	1.8
Parameter		Ethanol	Ethanol	Ethanol	Ethanol	Isobutane

Parameter	AAAQOs (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	Result (ppbv)	RDL (ppbv)
Freon-12		0.74	0.76	0.62	0.62	0.62	0.03
Hexachloro-1,3-butadiene		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Isobutane		0.78	0.38	0.99	1.95	1.80	0.03
Isopentane		0.44	0.2	0.48	0.98	0.56	0.04
Isoprene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Isopropyl alcohol		< 0.3	< 0.3	0.3	0.4	< 0.3	0.3
Isopropylbenzene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
m,p-Xylene		< 0.04	< 0.04	0.07	0.21	< 0.04	0.04
m-Diethylbenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
m-Ethyltoluene		< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.03
Methyl butyl ketone		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4
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	0.3
Methyl methacrylate		< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	0.08
Methyl tert butyl ether		< 0.03	< 0.03	0.03	0.03	0.03	0.03
Methylcyclohexane		0.07	< 0.02	0.09	0.09	< 0.02	0.02
Methylcyclopentane		0.08	< 0.05	0.09	0.13	< 0.05	0.05
Methylene chloride		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
n-Butane		1.29	0.57	1.79	4.09	1.51	0.02
n-Decane		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.06
n-Dodecane		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
n-Heptane		< 0.04	< 0.04	0.04	0.07	< 0.04	0.04
n-Hexane	5960	0.06	< 0.03	0.09	0.13	0.04	0.03
n-Nonane		< 0.04	< 0.04	0.05	0.05	< 0.04	0.04
n-Octane		< 0.02	< 0.02	0.02	0.03	< 0.02	0.02
n-Pentane		0.22	0.09	0.3	0.45	0.24	0.04
n-Propylbenzene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.06
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	0.3
o-Ethyltoluene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
o-Xylene		< 0.03	< 0.03	< 0.03	0.08	< 0.03	0.03
p-Diethylbenzene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
p-Ethyltoluene		< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
Styrene	52.0	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.04
Tetrachloroethylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Tetrahydrofuran		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Toluene	499	0.16	0.04	0.17	0.35	0.06	0.03
trans-1,2-Dichloroethylene		< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.06
trans-1,3-Dichloropropylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
trans-2-Butene		< 0.03	< 0.03	< 0.03	0.03	0.04	0.03
trans-2-Pentene		< 0.02	< 0.02	< 0.02	0.03	< 0.02	0.02
Trichloroethylene		< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Vinyl acetate		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.3
Vinyl chloride	51	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02

PAHS

Sample Date	2024-01-31		2024-02-06		2024-02-12		2024-02-18		2024-02-24	
PUF S/N	TE-06		TE-09		TE-05		9802		TE-03	
Volume (Vstd m^3)	330.40		330.42		330.41		330.41		330.39	
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
	0.98	2.97	0.54	1.63	0.84	2.54	1.46	4.42	1.17	3.54
Parameter	Phenanthrene		Naphthalene		Phenanthrene		Naphthalene		Naphthalene	

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	0.11	0.33	0.23	0.70	0.46	1.39	0.64	1.94	0.45	1.36	0.01
2-Methylnaphthalene	0.19	0.58	0.36	1.09	0.55	1.66	1.05	3.18	0.70	2.12	0.01
3-Methylcholanthrene	< 0.01	0.00	0.01	0.03	< 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	0.10	0.30	0.04	0.12	0.16	0.48	0.15	0.45	0.04	0.12	0.01
Acenaphthylene	0.12	0.36	0.15	0.45	0.08	0.24	0.12	0.36	0.04	0.12	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	0.15	0.45	0.04	0.12	0.03	0.09	0.03	0.09	< 0.01	0.00	0.01
Benzo(a)anthracene	< 0.01	0.00	< 0.01	0.00	0.05	0.15	0.04	0.12	< 0.01	0.00	0.01
Benzo(a)pyrene	0.05	0.15	< 0.01	0.00	0.03	0.09	0.04	0.12	0.01	0.03	0.01
Benzo(b,j,k)fluoranthene	0.13	0.39	0.04	0.12	0.18	0.54	0.20	0.61	0.07	0.21	0.01
Benzo(c)phenanthrene	< 0.01	0.00	< 0.01	0.00	0.02	0.06	0.02	0.06	< 0.01	0.00	0.01
Benzo(e)pyrene	< 0.01	0.00	< 0.01	0.00	0.07	0.21	0.05	0.15	< 0.01	0.00	0.01
Benzo(ghi)perylene	0.02	0.06	< 0.01	0.00	0.04	0.12	0.07	0.21	< 0.01	0.00	0.01
Chrysene	0.04	0.12	0.02	0.06	0.17	0.51	0.14	0.42	0.04	0.12	0.01
Dibenzo(a,h)pyrene	< 0.01	0.00	0.02	0.06	< 0.01	0.00	0.02	0.06	0.02	0.06	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	0.03	0.02	0.06	0.01	0.03	0.01
Fluoranthene	0.29	0.88	0.08	0.24	0.24	0.73	0.23	0.70	0.05	0.15	0.01
Fluorene	0.38	1.15	0.15	0.45	0.38	1.15	0.33	1.00	0.11	0.33	0.01
Indeno(1,2,3-cd)pyrene	< 0.01	0.00	< 0.01	0.00	0.02	0.06	0.07	0.21	< 0.01	0.00	0.01
Naphthalene	0.16	0.48	0.54	1.63	0.35	1.06	1.46	4.42	1.17	3.54	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	0.98	2.97	0.38	1.15	0.84	2.54	0.66	2.00	0.22	0.67	0.01
Pyrene	0.25	0.76	0.07	0.21	0.23	0.70	0.20	0.61	0.04	0.12	0.01
Retene	0.15	0.45	0.03	0.09	0.41	1.24	0.27	0.82	0.04	0.12	0.01

PARTISOLS

AKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2024

Partisol Results - $PM_{2.5}$

Sample Date		**2024-02-06**		**2024-02-12**		**2024-02-18**		**2024-02-24**		
Filter #		**AT85629**		**AT83606**		**AT85633**		**AT79707**		
Volume (Vstd m^3)		**21.8**		**22.6**		**22.8**		**22.0**		
Method		**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)**	**RDL (mg)**
Particulate Matter	0.029	**0.006**	**0.000**	**0.112**	**0.005**	**0.168**	**0.007**	**0.032**	**0.001**	0.004
PM2.5 Mass in ug/m3			**0.275**		**4.956**		**7.368**		**1.455**	
RDL in ug/m3			**0.183**		**0.177**		**0.175**		**0.182**	

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

Cold Lake South Station - February 2024

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

Sample Date	2024-02-06		2024-02-12		2024-02-18		2024-02-24		
Filter #	AT85630		AT83607		AT85634		AT79651		
Volume (Vstd m^3)	2.42		2.52		2.54		2.45		
Method	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)	RDL (mg)
PM2.5-10 Mass	<0.004	0.000	0.010	0.004	0.076	0.030	0.061	0.025	0.004
PM2.5-10 Mass in ug/m3		1.653		3.968		29.921		24.898	
RDL in ug/m3		1.653		1.587		1.575		1.633	

PASSIVE SAMPLES

LAKELAND INDUSTRY & COMMUNITY ASSOCIATION

February 2024

Passive Results

		H_2S		NO_2		O_3		SO_2		NMH3		HNO3	
	Unit	**ppb**		**ppb**		**ppb**		**ppb**		**ppb**		**ug/m3**	
	Minimum (ppb)	0.11	#18	0.5	#23	26.7	#13	0.2	#23	<0.1	#11	0.40	#29
	Maximum (ppb)	0.26	#26	5.4	#10	44.0	#17	1.4	#27	2.1	#3	1.76	#42
	Average (ppb)	0.16	-	1.93	-	33.27	-	0.47	-	0.88	-	1.06	-
No.	**Station**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**	**Sample**	**Duplicate**
3	Therien	0.15		1.5		35.8		0.4		2.1		1.27	
4	Flat Lake	-		2.1		36.6		0.4		1.2		1.14	
5	Lake Eliza	0.19		1.5		33.8		0.6		0.5		1.40	
6	Telegraph Creek	-		3.2		31.4		0.4		1.0		0.98	
8	Muriel-Kehewin	-		1.7		43.1		0.5	0.6	Missing 3		1.18	
9	Dupre	-		1.6		32.9		0.3	0.3	0.6		1.14	
10	La Corey	0.14	0.15	5.4	5.1	30.1	27.7	0.6	0.5	0.4		1.20	
11	Wolf Lake	0.12	0.12	0.9	1.1	29.6	34.4	0.4		<0.1		0.70	
12	Foster Creek	0.13		0.6		33.4		0.4		<0.1		0.66	
13	Primrose	0.12		1.0		26.7		0.5		<0.1		1.47	
14	Tamarack	Missing 4		Missing 4		Missing 4		Missing 4		<0.1		1.29	
15	Ardmore	-		1.3		29.9		0.3		0.3		1.16	
16	Frog Lake	0.17		3.5		29.7		0.3		0.3		1.19	
17	Clear Range	0.18		1.2		44.0		0.6		1.4		0.77	
18	Fishing Lake	0.11		1.0		32.4		0.3		<0.1		0.76	
19	Beaverdam	-		0.9		36.6		0.3		0.9		1.24	
22	Cold Lake South (1)	0.15		2.3		28.7		0.3		0.4		1.58	
23	Medley-Martineau	-		0.5		27.0		0.2		<0.1	<0.1	0.70	1.27
24	Fort George	0.18		1.9		35.4		0.5		0.6	0.7	0.70	0.59
25	Burnt Lake	Missing 1		-		-		Missing 1		-		-	
26	Mahihkan	0.26		-		-		0.9		<0.1		1.41	
27	Mahkeses	0.25		-		-		1.4		0.2		0.88	
28	Town of Bonnyville	Missing 2		4.4		30.8		0.3		1.9		0.77	
29	Cold Lake South (2)	0.13		2.1		32.4		0.4		0.6		0.40	
32	St. Lina	0.17		1.1		35.6		0.5		1.2		0.73	
42	Lac La Biche	0.16		2.7		36.1		0.4		1.4		1.76	
BLANK -1		-		-		-		-		1.1		1.01	
BLANK -2		-		-		-		-		0.8		0.58	
BLANK -3		-		-		-		-		0.8		0.56	
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:H2S samole was damaged and could not be analysis.

5 Missing 3: NH3 sample was not found during sample pick-up.

6 Missing 4: .The sample media was not changed due to operator error.

LAC LA BICHE STATION

NMHC CANISTER SAMPLES

Sample Date/Time		**2024-02-17 @08:30**
Canister Triggered Conc.		**0.38**
Canister ID		**29011**
Method		**AC-058**
Maximum Reading (ppbv)		**117**
Parameter		**Isobutane**

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		< 0.03	0.03
1,2,3-Trimethylbenzene		< 0.07	0.07
1,2,4-Trichlorobenzene		< 0.4	0.43
1,2,4-Trimethylbenzene		< 0.04	0.04
1,2-Dibromoethane		< 0.03	0.03
1,2-Dichlorobenzene		< 0.04	0.04
1,2-Dichloroethane		< 0.04	0.04
1,2-Dichloropropane		< 0.04	0.04
1,3,5-Trimethylbenzene		< 0.04	0.04
1,3-Butadiene		0.07	0.04
1,3-Dichlorobenzene		< 0.6	0.58
1,4-Dichlorobenzene		< 0.6	0.58
1,4-Dioxane		< 0.7	0.72
1-Butene		2.31	0.09
1-Hexene		< 0.10	0.10
1-Pentene		0.06	0.04
2,2,4-Trimethylpentane		0.04	0.03
2,2-Dimethylbutane		0.25	0.03
2,3,4-Trimethylpentane		0.03	0.03
2,3-Dimethylbutane		0.6	0.13
2,3-Dimethylpentane		0.17	0.03
2,4-Dimethylpentane		0.14	0.04
2-Methylheptane		0.04	0.03
2-Methylhexane		0.49	0.04
2-Methylpentane		4.85	0.03
3-Methylheptane		< 0.04	0.04
3-Methylhexane		0.47	0.03
3-Methylpentane		1.8	0.03
Acetone	2400	2.7	0.58
Acrolein	1.9	< 0.4	0.43
Benzene	9.0	0.54	0.04
Benzyl chloride		< 0.4	0.43
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		0.7	0.06
cis-1,2-Dichloroethene		< 0.03	0.03
cis-1,3-Dichloropropene		< 0.04	0.04
cis-2-Butene		0.11	0.04
cis-2-Pentene		< 0.03	0.03
Cyclohexane		0.17	0.06
Cyclopentane		0.57	0.03
Dibromochloromethane		< 0.03	0.03
Ethanol		17.2	0.72
Ethyl acetate		< 0.4	0.43
Ethylbenzene	460	0.09	0.04
Freon-11		0.25	0.03
Freon-113		0.07	0.03

Sample Date/Time		**2024-02-17 @08:30**
Canister Triggered Conc.		**0.38**
Canister ID		**29011**
Method		**AC-058**
Maximum Reading (ppbv)		**117**
Parameter		**Isobutane**

Parameter	AAAQOs (ppbv)	Result (ppbv)	RDL (ppbv)
Freon-114		< 0.04	0.04
Freon-12		0.55	0.04
Hexachloro-1,3-butadiene		< 0.4	0.43
Isobutane		117	0.43
Isopentane		35.4	0.58
Isoprene		< 0.03	0.03
Isopropyl alcohol		< 0.4	0.43
Isopropylbenzene		< 0.06	0.06
m,p-Xylene		0.2	0.06
m-Diethylbenzene		< 0.03	0.03
m-Ethyltoluene		< 0.04	0.04
Methyl butyl ketone		< 0.6	0.58
Methyl ethyl ketone		< 0.4	0.43
Methyl isobutyl ketone		< 0.4	0.43
Methyl methacrylate		< 0.12	0.12
Methyl tert butyl ether		< 0.04	0.04
Methylcyclohexane		0.2	0.03
Methylcyclopentane		1.63	0.07
Methylene chloride		< 0.4	0.43
n-Butane		86.7	0.29
n-Decane		< 0.09	0.09
n-Dodecane		< 0.4	0.43
n-Heptane		0.21	0.06
n-Hexane	5960	1.22	0.04
n-Nonane		0.06	0.06
n-Octane		0.04	0.03
n-Pentane		13.1	0.06
n-Propylbenzene		< 0.09	0.09
n-Undecane		< 0.7	0.72
Naphthalene		< 0.4	0.43
o-Ethyltoluene		< 0.03	0.03
o-Xylene		0.07	0.04
p-Diethylbenzene		< 0.03	0.03
p-Ethyltoluene		< 0.06	0.06
Styrene	52.0	< 0.06	0.06
Tetrachloroethylene		< 0.03	0.03
Tetrahydrofuran		< 0.4	0.43
Toluene	499	0.88	0.04
trans-1,2-Dichloroethylene		< 0.09	0.09
trans-1,3-Dichloropropylene		< 0.03	0.03
trans-2-Butene		0.13	0.04
trans-2-Pentene		0.03	0.03
Trichloroethylene		< 0.03	0.03
Vinyl acetate		< 0.4	0.43
Vinyl chloride	51	< 0.03	0.03

End of Report

Lakeland Industry & Community Association

FEBRUARY 2024

Ambient Air Monitoring

Certified Laboratory Analysis Report

LAB-LICA-202402

Operation and Maintenance:
Bureau Veritas Canada

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

March 20, 2024

Table of Contents

Cold Lake South Station

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

Sample ID: 24020062-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Jan 31, 2024

RECEIVED
FEB 09 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:**	32198
Station ID:	LICA 01	**Installation Date/Time (mst):**	Jan 27, 2024 @ 19:17
Sample ID:	LICA/VOC/CLS/Jan 31, 2024	**Removal Date/Time (mst):**	Feb 05, 2024 @ 12:50

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
January 31, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.2	18.9

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: 24020062-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Jan 31, 2024

RECEIVED
FEB 09 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-06
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Jan 27, 2024 @ 19:21
Field Sample ID:	LICA/PUF/CLS/Jan 31, 2024	**Removal Date/Time:**	Feb 05, 2024 @ 12:52

Sample Data Collection Information

Sample Date:	31-Jan-24	**Average Pressure (mmHg)**	708
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	4
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.4

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

Sample ID: 24020062-003 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Feb 6, 2024

RECEIVED
FEB 09 2024

Bureau Veritas

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

Client:	LICA	**Sampler S/N:**	6167
Location:	Cold Lake South	**Canister ID:**	28892
Station ID:	LICA 01	**Installation Date/Time (mst):**	Feb 05, 2024 @ 12:56
Sample ID:	LICA/VOC/CLS/Feb 6, 2024	**Removal Date/Time (mst):**	Feb 7, 2024 @ 15:29

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
February 6, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.1	17.5

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: 24020062-004 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Feb 6, 2024

RECEIVED
FEB 09 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-09
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Feb 05, 2024 @ 12:58
Field Sample ID:	LICA/PUF/CLS/Feb 06, 2024	**Removal Date/Time:**	Feb 7, 2024 @ 15:34

Sample Data Collection Information

Sample Date:	6-Feb-24	**Average Pressure (mmHg)**	710
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-9.1
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: 32198

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: OCT 24 2023

Evacuated: JAN 04 2024 Recertified: _____

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

Sample ID: 24020062-001 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Jan 31, 2024

Sample ID: LICA/VOC/CCS/Jan 31, 2024

Sampled By: Alex Yakupov

14 psi JMP

Starting Vacuum: -27.2 "Hg

End Vacuum: +18.9 "Hg/psig

InnoTech ALBERTA

Canister ID: TE-06

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/CCS/Jan 31, 2024

Sampled By: Alex Yakupov

Starting Vacuum: _____ "Hg

End Vacuum: _____ "Hg/psig

InnoTech ALBERTA

Canister ID: 28892

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/VOC/CLS/Feb 6, 2024

Sampled By: Alex Yakupov

17 psi JMP

Starting Vacuum: -27.1 "Hg

End Vacuum: +17.5 "Hg/psig

InnoTech ALBERTA

Canister ID: TE-09

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/Feb 6, 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/Feb 6, 2024
Matrix: Air Filter
CANISTER ID: TE-09
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 06-Feb-24 0:00
DATE RECEIVED: 09-Feb-24
REPORT CREATED: 20-Mar-24
REPORT NUMBER: 24020062
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-004	1-Methylnaphthalene		0.23	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	2-Methylnaphthalene		0.36	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	3-Methylcholanthrene		0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Acenaphthene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Acenaphthylene		0.15	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Anthracene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Benzo(a)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Benzo(b,j,k)fluoranthene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Chrysene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Dibenzo(a,h)pyrene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: March 20, 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/PUF/CLS/Feb 6, 2024	TE-09	Air Filter	06-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-004	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Fluoranthene		0.08	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Fluorene		0.15	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Naphthalene		0.54	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Phenanthrene		0.38	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Pyrene		0.07	ug/Filter	0.01	AC-066	19-Mar-24
24020062-004	Retene		0.03	ug/Filter	0.01	AC-066	19-Mar-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Jan 31, 2024	TE-06	Air Filter	31-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-002	1-Methylnaphthalene		0.11	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	2-Methylnaphthalene		0.19	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Acenaphthene		0.10	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Acenaphthylene		0.12	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Anthracene		0.15	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Benzo(a)pyrene		0.05	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Benzo(b,j,k)fluoranthene		0.13	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Benzo(ghi)perylene		0.02	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Chrysene		0.04	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Dibenzo(ah)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Fluoranthene		0.29	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Fluorene		0.38	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Naphthalene		0.16	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Phenanthrene		0.98	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: March 20, 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/PUF/CLS/Jan 31, 2024	TE-06	Air Filter	31-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-002	Pyrene		0.25	ug/Filter	0.01	AC-066	21-Feb-24
24020062-002	Retene		0.15	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: March 20, 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-202402

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Feb 6, 2024	28892	Ambient Air	06-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-003	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	13-Feb-24
24020062-003	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020062-003	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020062-003	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Feb-24
24020062-003	1-Butene/Isobutylene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020062-003	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	13-Feb-24
24020062-003	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	2,2,4-Trimethylpentane	I	0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	13-Feb-24
24020062-003	2,3-Dimethylpentane	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: March 20, 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/Feb 6, 2024	28892	Ambient Air	06-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-003	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	2-Methylpentane	I	0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	3-Methylhexane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	3-Methylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Acetone		0.6	ppbv	0.4	AC-058	13-Feb-24
24020062-003	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Benzene	I	0.07	ppbv	0.03	AC-058	13-Feb-24
24020062-003	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Carbon tetrachloride	I	0.04	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Chloromethane		0.66	ppbv	0.04	AC-058	13-Feb-24
24020062-003	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24

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

Date: March 20, 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/Feb 6, 2024	28892	Ambient Air	06-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-003	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Ethanol	I	0.8	ppbv	0.5	AC-058	13-Feb-24
24020062-003	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	Freon-11		0.23	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Freon-113	I	0.04	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	Freon-12		0.76	ppbv	0.03	AC-058	13-Feb-24
24020062-003	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Isobutane		0.38	ppbv	0.03	AC-058	13-Feb-24
24020062-003	Isopentane		0.20	ppbv	0.04	AC-058	13-Feb-24
24020062-003	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-003	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-003	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020062-003	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	13-Feb-24
24020062-003	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	13-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/Feb 6, 2024	28892	Ambient Air	06-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-003	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	n-Butane		0.57	ppbv	0.02	AC-058	13-Feb-24
24020062-003	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020062-003	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-003	n-Hexane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	n-Pentane	I	0.09	ppbv	0.04	AC-058	13-Feb-24
24020062-003	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020062-003	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Feb-24
24020062-003	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-003	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-003	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-003	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Toluene	I	0.04	ppbv	0.03	AC-058	13-Feb-24
24020062-003	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020062-003	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-003	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-003	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: March 20, 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/Feb 6, 2024	28892	Ambient Air	06-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-003	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-003	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 31, 2024	32198	Ambient Air	31-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	13-Feb-24
24020062-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020062-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020062-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Feb-24
24020062-001	1-Butene/Isobutylene	I	0.09	ppbv	0.06	AC-058	13-Feb-24
24020062-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	13-Feb-24
24020062-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	2,2,4-Trimethylpentane	I	0.06	ppbv	0.02	AC-058	13-Feb-24
24020062-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	13-Feb-24
24020062-001	2,3-Dimethylpentane	I	0.06	ppbv	0.02	AC-058	13-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 31, 2024	32198	Ambient Air	31-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	2-Methylhexane	I	0.04	ppbv	0.03	AC-058	13-Feb-24
24020062-001	2-Methylpentane		0.12	ppbv	0.02	AC-058	13-Feb-24
24020062-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	3-Methylhexane	I	0.06	ppbv	0.02	AC-058	13-Feb-24
24020062-001	3-Methylpentane	I	0.05	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Acetone		1.3	ppbv	0.4	AC-058	13-Feb-24
24020062-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	Benzene	I	0.17	ppbv	0.03	AC-058	13-Feb-24
24020062-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Carbon tetrachloride	I	0.05	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Chloromethane		0.69	ppbv	0.04	AC-058	13-Feb-24
24020062-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 31, 2024	32198	Ambient Air	31-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Ethanol		2.3	ppbv	0.5	AC-058	13-Feb-24
24020062-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	Ethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	Freon-11		0.22	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Freon-113	I	0.04	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	Freon-12		0.74	ppbv	0.03	AC-058	13-Feb-24
24020062-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	Isobutane		0.78	ppbv	0.03	AC-058	13-Feb-24
24020062-001	Isopentane		0.44	ppbv	0.04	AC-058	13-Feb-24
24020062-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	13-Feb-24
24020062-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	13-Feb-24
24020062-001	Methyl tert butyl ether	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	Methylcyclohexane	I	0.07	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Methylcyclopentane	I	0.08	ppbv	0.05	AC-058	13-Feb-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 31, 2024	32198	Ambient Air	31-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	n-Butane		1.29	ppbv	0.02	AC-058	13-Feb-24
24020062-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020062-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-001	n-Hexane	I	0.06	ppbv	0.03	AC-058	13-Feb-24
24020062-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	n-Pentane		0.22	ppbv	0.04	AC-058	13-Feb-24
24020062-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020062-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	13-Feb-24
24020062-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	13-Feb-24
24020062-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	Toluene	I	0.16	ppbv	0.03	AC-058	13-Feb-24
24020062-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	13-Feb-24
24020062-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	13-Feb-24
24020062-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24
24020062-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	13-Feb-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Jan 31, 2024	32198	Ambient Air	31-Jan-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020062 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020062-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	13-Feb-24
24020062-001	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: March 20, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
24020062	01	20-Mar-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: 24020195-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Feb 12, 2024

RECEIVED
FEB 29 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:**	28966
Station ID:	LICA 01	**Installation Date/Time (mst):**	Feb 07, 2024 @ 15:51
Sample ID:	LICA/VOC/CLS/Feb 12, 2024	**Removal Date/Time (mst):**	Feb 16, 2024 @ 17:58

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
February 12, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.1	19.1

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: 24020195-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Feb 12, 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-05
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Feb 07, 2024 @ 15:52
Field Sample ID:	LICA/PUF/CLS/Feb 12, 2024	**Removal Date/Time:**	Feb 16, 2024 @ 18:01

Sample Data Collection Information

Sample Date:	12-Feb-24	**Average Pressure (mmHg)**	710
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-5.2
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

Sample ID: 24020195-003 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Feb 18, 2024

RECEIVED
FEB 29 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:**	29007
Station ID:	LICA 01	**Installation Date/Time (mst):**	Feb 16, 2024 @ 18:12
Sample ID:	LICA/VOC/CLS/Feb 18, 2024	**Removal Date/Time (mst):**	Feb 23, 2024 @ 09:58

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
February 18, 2024	0:00	23:59	24

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-27.3	19.1

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: Chris Wesson

Sample ID: 24020195-004 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Feb 18, 2024

RECEIVED
FEB 29 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	9802
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Feb 16, 2024 @ 18:16
Field Sample ID:	LICA/PUF/CLS/Feb 18, 2024	**Removal Date/Time:**	Feb 23, 2024 @ 10:08

Sample Data Collection Information

Sample Date:	18-Feb-24	**Average Pressure (mmHg)**	708
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-7.7
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:	Chris Wesson

InnoTech ALBERTA

Canister ID: 28966

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1523 on: JAN 0 8 2024

Evacuated: JAN 2 2 2024 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/Feb 12, 2024

Sampled By: Alex Yakupov

Starting Vacuum:	End Vacuum:
-27.3 "Hg	+19.1 "Hg/ psig

InnoTech ALBERTA

Canister ID: TE-05

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/Feb 12, 2024

Sampled By: _____

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

InnoTech ALBERTA

Canister ID: 29007

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: 1503 on: JAN 1 5 2024

Evacuated: JAN 2 2 2024 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/VOC/CLS/FEB 18, 2024

Sampled By: [signature]

Starting Vacuum:	End Vacuum:
-27.3 "Hg	+19.1 "Hg/ psig

InnoTech ALBERTA

Canister ID: 9802

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/FEB 18, 2024

Sampled By: [signature]

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

Sample ID: 24020195-001 **Priority:** Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Feb 12, 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/Feb 12, 2024
Matrix: Air Filter
CANISTER ID: TE-05
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 12-Feb-24 0:00
DATE RECEIVED: 29-Feb-24
REPORT CREATED: 20-Mar-24
REPORT NUMBER: 24020195
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-002	1-Methylnaphthalene		0.46	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	2-Methylnaphthalene		0.55	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Acenaphthene		0.16	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Acenaphthylene		0.08	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Anthracene		0.03	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Benzo(a)anthracene		0.05	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Benzo(a)pyrene		0.03	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Benzo(b,j,k)fluoranthene		0.18	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Benzo(c)phenanthrene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Benzo(e)pyrene		0.07	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Benzo(ghi)perylene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Chrysene		0.17	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Dibenzo(a,h)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: March 20, 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/PUF/CLS/Feb 12, 2024	TE-05	Air Filter	12-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Dibenzo(ah)anthracene		0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Fluoranthene		0.24	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Fluorene		0.38	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Indeno(1,2,3-cd)pyrene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Naphthalene		0.35	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Phenanthrene		0.84	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Pyrene		0.23	ug/Filter	0.01	AC-066	19-Mar-24
24020195-002	Retene		0.41	ug/Filter	0.01	AC-066	19-Mar-24

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

Date: March 20, 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-202402

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Feb 18, 2024	9802	Air Filter	18-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-004	1-Methylnaphthalene		0.64	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	2-Methylnaphthalene		1.05	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Acenaphthene		0.15	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Acenaphthylene		0.12	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Anthracene		0.03	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Benzo(a)anthracene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Benzo(a)pyrene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Benzo(b,j,k)fluoranthene		0.20	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Benzo(c)phenanthrene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Benzo(e)pyrene		0.05	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Benzo(ghi)perylene		0.07	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Chrysene		0.14	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Dibenzo(a,h)pyrene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Dibenzo(ah)anthracene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Fluoranthene		0.23	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Fluorene		0.33	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Indeno(1,2,3-cd)pyrene		0.07	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Naphthalene		1.46	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Phenanthrene		0.66	ug/Filter	0.01	AC-066	19-Mar-24

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

Date: March 20, 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/PUF/CLS/Feb 18, 2024	9802	Air Filter	18-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-004	Pyrene		0.20	ug/Filter	0.01	AC-066	19-Mar-24
24020195-004	Retene		0.27	ug/Filter	0.01	AC-066	19-Mar-24

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

Date: March 20, 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-202402

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Feb 12, 2024	28966	Ambient Air	12-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	06-Mar-24
24020195-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	1,3-Butadiene	I	0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Mar-24
24020195-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Mar-24
24020195-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-Mar-24
24020195-001	1-Butene/Isobutylene	I	0.09	ppbv	0.06	AC-058	06-Mar-24
24020195-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	06-Mar-24
24020195-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	2,2,4-Trimethylpentane	I	0.04	ppbv	0.02	AC-058	06-Mar-24
24020195-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	06-Mar-24
24020195-001	2,3-Dimethylpentane	I	0.05	ppbv	0.02	AC-058	06-Mar-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/Feb 12, 2024	28966	Ambient Air	12-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	2-Methylhexane	I	0.06	ppbv	0.03	AC-058	06-Mar-24
24020195-001	2-Methylpentane		0.15	ppbv	0.02	AC-058	06-Mar-24
24020195-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	3-Methylhexane	I	0.07	ppbv	0.02	AC-058	06-Mar-24
24020195-001	3-Methylpentane	I	0.06	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Acetone		1.1	ppbv	0.4	AC-058	06-Mar-24
24020195-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Benzene		0.22	ppbv	0.03	AC-058	06-Mar-24
24020195-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	Bromoform		0.41	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Carbon tetrachloride	I	0.06	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Chloromethane		0.65	ppbv	0.04	AC-058	06-Mar-24
24020195-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Cyclohexane	I	0.07	ppbv	0.04	AC-058	06-Mar-24

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

Date: March 20, 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/Feb 12, 2024	28966	Ambient Air	12-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-001	Cyclopentane	I	0.03	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Dibromochloromethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Ethanol		2.2	ppbv	0.5	AC-058	06-Mar-24
24020195-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Ethylbenzene	I	0.05	ppbv	0.03	AC-058	06-Mar-24
24020195-001	Freon-11		0.25	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Freon-113	I	0.08	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	Freon-12		0.62	ppbv	0.03	AC-058	06-Mar-24
24020195-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Isobutane		0.99	ppbv	0.03	AC-058	06-Mar-24
24020195-001	Isopentane		0.48	ppbv	0.04	AC-058	06-Mar-24
24020195-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Isopropyl alcohol	I	0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Mar-24
24020195-001	m,p-Xylene	I	0.07	ppbv	0.04	AC-058	06-Mar-24
24020195-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Mar-24
24020195-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	06-Mar-24
24020195-001	Methyl tert butyl ether	I	0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	Methylcyclohexane	I	0.09	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Methylcyclopentane	I	0.09	ppbv	0.05	AC-058	06-Mar-24

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

Date: March 20, 2024

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Feb 12, 2024	28966	Ambient Air	12-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	n-Butane		1.79	ppbv	0.02	AC-058	06-Mar-24
24020195-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Mar-24
24020195-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	n-Heptane	I	0.04	ppbv	0.04	AC-058	06-Mar-24
24020195-001	n-Hexane	I	0.09	ppbv	0.03	AC-058	06-Mar-24
24020195-001	n-Octane	I	0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	n-Pentane		0.30	ppbv	0.04	AC-058	06-Mar-24
24020195-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Mar-24
24020195-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-Mar-24
24020195-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	n-Nonane	I	0.05	ppbv	0.04	AC-058	06-Mar-24
24020195-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Mar-24
24020195-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Mar-24
24020195-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Toluene	I	0.17	ppbv	0.03	AC-058	06-Mar-24
24020195-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Mar-24
24020195-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	trans-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24

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

Date: March 20, 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/Feb 12, 2024	28966	Ambient Air	12-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-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/Feb 18, 2024	29007	Ambient Air	18-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-003	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	06-Mar-24
24020195-003	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	1,2,4-Trimethylbenzene	I	0.04	ppbv	0.03	AC-058	06-Mar-24
24020195-003	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	1,3-Butadiene	I	0.04	ppbv	0.03	AC-058	06-Mar-24
24020195-003	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Mar-24
24020195-003	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Mar-24
24020195-003	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-Mar-24
24020195-003	1-Butene/Isobutylene	I	0.19	ppbv	0.06	AC-058	06-Mar-24
24020195-003	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	06-Mar-24
24020195-003	1-Pentene	I	0.04	ppbv	0.03	AC-058	06-Mar-24
24020195-003	2,2,4-Trimethylpentane		0.19	ppbv	0.02	AC-058	06-Mar-24
24020195-003	2,2-Dimethylbutane	I	0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	2,3,4-Trimethylpentane	I	0.03	ppbv	0.02	AC-058	06-Mar-24
24020195-003	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	06-Mar-24
24020195-003	2,3-Dimethylpentane		0.18	ppbv	0.02	AC-058	06-Mar-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/Feb 18, 2024	29007	Ambient Air	18-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-003	2,4-Dimethylpentane	I	0.07	ppbv	0.03	AC-058	06-Mar-24
24020195-003	2-Methylheptane	I	0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	2-Methylhexane	I	0.10	ppbv	0.03	AC-058	06-Mar-24
24020195-003	2-Methylpentane		0.28	ppbv	0.02	AC-058	06-Mar-24
24020195-003	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	3-Methylhexane	I	0.10	ppbv	0.02	AC-058	06-Mar-24
24020195-003	3-Methylpentane		0.11	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Acetone		1.6	ppbv	0.4	AC-058	06-Mar-24
24020195-003	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Benzene		0.29	ppbv	0.03	AC-058	06-Mar-24
24020195-003	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Bromomethane	I	0.03	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Carbon tetrachloride	I	0.07	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Chloroform	I	0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Chloromethane		0.67	ppbv	0.04	AC-058	06-Mar-24
24020195-003	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	cis-2-Butene	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Cyclohexane	I	0.06	ppbv	0.04	AC-058	06-Mar-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Feb 18, 2024	29007	Ambient Air	18-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-003	Cyclopentane	I	0.04	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Dibromochloromethane	I	0.06	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Ethanol		5.5	ppbv	0.5	AC-058	06-Mar-24
24020195-003	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Ethylbenzene	I	0.08	ppbv	0.03	AC-058	06-Mar-24
24020195-003	Freon-11		0.25	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Freon-113	I	0.07	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	Freon-12		0.62	ppbv	0.03	AC-058	06-Mar-24
24020195-003	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Isobutane		1.95	ppbv	0.03	AC-058	06-Mar-24
24020195-003	Isopentane		0.98	ppbv	0.04	AC-058	06-Mar-24
24020195-003	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Isopropyl alcohol	I	0.4	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Mar-24
24020195-003	m,p-Xylene	I	0.21	ppbv	0.04	AC-058	06-Mar-24
24020195-003	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	m-Ethyltoluene	I	0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	06-Mar-24
24020195-003	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	06-Mar-24
24020195-003	Methyl tert butyl ether	I	0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	Methylcyclohexane	I	0.09	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Methylcyclopentane		0.13	ppbv	0.05	AC-058	06-Mar-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Feb 18, 2024	29007	Ambient Air	18-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-003	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	n-Butane		4.09	ppbv	0.02	AC-058	06-Mar-24
24020195-003	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Mar-24
24020195-003	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	n-Heptane	I	0.07	ppbv	0.04	AC-058	06-Mar-24
24020195-003	n-Hexane	I	0.13	ppbv	0.03	AC-058	06-Mar-24
24020195-003	n-Octane	I	0.03	ppbv	0.02	AC-058	06-Mar-24
24020195-003	n-Pentane		0.45	ppbv	0.04	AC-058	06-Mar-24
24020195-003	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Mar-24
24020195-003	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	06-Mar-24
24020195-003	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	n-Nonane	I	0.05	ppbv	0.04	AC-058	06-Mar-24
24020195-003	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	o-Xylene	I	0.08	ppbv	0.03	AC-058	06-Mar-24
24020195-003	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Mar-24
24020195-003	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	06-Mar-24
24020195-003	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Toluene		0.35	ppbv	0.03	AC-058	06-Mar-24
24020195-003	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	06-Mar-24
24020195-003	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24
24020195-003	trans-2-Butene	I	0.03	ppbv	0.03	AC-058	06-Mar-24
24020195-003	trans-2-Pentene	I	0.03	ppbv	0.02	AC-058	06-Mar-24
24020195-003	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Feb 18, 2024	29007	Ambient Air	18-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24020195 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020195-003	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	06-Mar-24
24020195-003	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	06-Mar-24

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

Date: March 20, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
24020195	01	20-Mar-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.

Sample ID: 24030004-001 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/VOC/CLS/Feb 24, 2024

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Bureau Veritas

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

Client:	LICA	**Sampler S/N:**	6167
Location:	Cold Lake South	**Canister ID:**	31826
Station ID:	LICA 01	**Installation Date/Time (mst):**	Feb 23, 2024 @10:06
Sample ID:	LICA/VOC/CLS/Feb 24, 2024	**Removal Date/Time (mst):**	Feb 28, 2024 @08:49

Date and Time Information

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

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Pressure (psi)
-30.0	18.0

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: Chris Wesson

Collection Technician Signature: Chris Wesson

Sample ID: 24030004-002 Priority: Normal

Customer ID: LICA
Cust Samp ID: LICA/PUF/CLS/Feb 24, 2024

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MAR 01 2024

TISCH PUF PLUS Sample Collection Data Sheet

Client:	LICA	**Puf+ S/N:**	TE-03
Location:	Cold Lake South	**Motor S/N:**	1138/100-1020
Station ID:	LICA 01	**Installation Date/Time:**	Feb 23, 2024 @ 10:10
Field Sample ID:	LICA/PUF/CLS/Feb 24, 2024	**Removal Date/Time:**	Feb 28, 2024 @ 08:56

Sample Data Collection Information

Sample Date:	24-Feb-24	**Average Pressure (mmHg)**	703
Start Time (mst):	0:00	**Average Flow (Q_{std})**	229
End Time (mst):	23:59	**Average Tempurature (°C)**	-0.6
Elapsed Time (Hours):	24	**Volume (Vstd m^3)**	330.39

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:	Chris Wesson
Collected By:	Chris Wesson

Laboratory Contact Number: 780-632-8403

	_____ "Hg	_____ "Hg/psig

InnoTech ALBERTA

Canister ID: 31826

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ3 on: JAN 15 2024

Evacuated: JAN 22 2024 Recertified: _____

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

Sample ID: LICA/VOC/CLS/FEB 24, 2024

Sampled By: [signature]

Starting Vacuum:	End Vacuum:
-27.3	17psi Temp + 15 psi

InnoTech ALBERTA

Canister ID: TE-03

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: 24030004-001 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/VOC/CLS/Feb 24, 2024

Sample ID: LICA/PUF/CLS/FEB 24, 2024

Sampled By: [signature]

Starting Vacuum:	End Vacuum:
_____ "Hg	_____ "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/Feb 24, 2024
Matrix: Air Filter
CANISTER ID: TE-03
PRIORITY: Normal
DESCRIPTION: Cold Lake South
DATE SAMPLED: 24-Feb-24 0:00
DATE RECEIVED: 01-Mar-24
REPORT CREATED: 20-Mar-24
REPORT NUMBER: 24030004
VERSION: Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030004-002	1-Methylnaphthalene		0.45	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	2-Methylnaphthalene		0.70	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	3-Methylcholanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	7,12-Dimethylbenz(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Acenaphthene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Acenaphthylene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Acridine	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Benzo(a)anthracene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Benzo(a)pyrene		0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Benzo(b,j,k)fluoranthene		0.07	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Benzo(c)phenanthrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Benzo(e)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Benzo(ghi)perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Chrysene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Dibenzo(a,h)pyrene		0.02	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Dibenzo(a,i)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: March 20, 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-202402

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/PUF/CLS/Feb 24, 2024	TE-03	Air Filter	24-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030004 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030004-002	Dibenzo(a,l)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Dibenzo(ah)anthracene		0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Fluoranthene		0.05	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Fluorene		0.11	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Indeno(1,2,3-cd)pyrene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Naphthalene		1.17	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Perylene	K, T, U	< 0.01	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Phenanthrene		0.22	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Pyrene		0.04	ug/Filter	0.01	AC-066	19-Mar-24
24030004-002	Retene		0.04	ug/Filter	0.01	AC-066	19-Mar-24

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

Date: March 20, 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/Feb 24, 2024	31826	Ambient Air	24-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030004 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030004-001	1,1,1-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	1,1,2-Trichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	1,1-Dichloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	1,1-Dichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	1,2,3-Trimethylbenzene	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Mar-24
24030004-001	1,2,4-Trichlorobenzene	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	1,2,4-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	1,2-Dibromoethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	1,2-Dichlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	1,2-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	1,2-Dichloropropane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	1,3,5-Trimethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	1,3-Butadiene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	1,3-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	07-Mar-24
24030004-001	1,4-Dichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	07-Mar-24
24030004-001	1,4-Dioxane	K, T, U	< 0.5	ppbv	0.5	AC-058	07-Mar-24
24030004-001	1-Butene/Isobutylene	I	0.07	ppbv	0.06	AC-058	07-Mar-24
24030004-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.07	ppbv	0.07	AC-058	07-Mar-24
24030004-001	1-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	2,2,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	2,2-Dimethylbutane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	2,3,4-Trimethylpentane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	2,3-Dimethylbutane	K, T, U	< 0.09	ppbv	0.09	AC-058	07-Mar-24
24030004-001	2,3-Dimethylpentane	I	0.02	ppbv	0.02	AC-058	07-Mar-24

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

Date: March 20, 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/Feb 24, 2024	31826	Ambient Air	24-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030004 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030004-001	2,4-Dimethylpentane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	2-Methylheptane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	2-Methylhexane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	2-Methylpentane	I	0.10	ppbv	0.02	AC-058	07-Mar-24
24030004-001	3-Methylheptane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	3-Methylhexane	I	0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	3-Methylpentane	I	0.03	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Acetone		1.1	ppbv	0.4	AC-058	07-Mar-24
24030004-001	Acrolein	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Benzene	I	0.10	ppbv	0.03	AC-058	07-Mar-24
24030004-001	Benzyl chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Bromodichloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	Bromoform	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Bromomethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Carbon disulfide	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Carbon tetrachloride	I	0.07	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Chlorobenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Chloroethane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Chloroform	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Chloromethane		0.72	ppbv	0.04	AC-058	07-Mar-24
24030004-001	cis-1,2-Dichloroethene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	cis-1,3-Dichloropropene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	cis-2-Butene	I	0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	cis-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Cyclohexane	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Feb 24, 2024	31826	Ambient Air	24-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030004 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030004-001	Cyclopentane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Dibromochloromethane	I	0.06	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Ethanol		1.6	ppbv	0.5	AC-058	07-Mar-24
24030004-001	Ethyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Ethylbenzene	I	0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	Freon-11		0.26	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Freon-113	I	0.08	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Freon-114	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	Freon-12		0.62	ppbv	0.03	AC-058	07-Mar-24
24030004-001	Hexachloro-1,3-butadiene	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Isobutane		1.80	ppbv	0.03	AC-058	07-Mar-24
24030004-001	Isopentane		0.56	ppbv	0.04	AC-058	07-Mar-24
24030004-001	Isoprene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Isopropyl alcohol	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Isopropylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030004-001	m,p-Xylene	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030004-001	m-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	m-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	Methyl butyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	07-Mar-24
24030004-001	Methyl ethyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Methyl isobutyl ketone	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Methyl methacrylate	K, T, U	< 0.08	ppbv	0.08	AC-058	07-Mar-24
24030004-001	Methyl tert butyl ether	I	0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	Methylcyclohexane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Methylcyclopentane	K, T, U	< 0.05	ppbv	0.05	AC-058	07-Mar-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/Feb 24, 2024	31826	Ambient Air	24-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030004 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030004-001	Methylene chloride	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	n-Butane		1.51	ppbv	0.02	AC-058	07-Mar-24
24030004-001	n-Decane	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Mar-24
24030004-001	n-Dodecane	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	n-Heptane	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030004-001	n-Hexane	I	0.04	ppbv	0.03	AC-058	07-Mar-24
24030004-001	n-Octane	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	n-Pentane		0.24	ppbv	0.04	AC-058	07-Mar-24
24030004-001	n-Propylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Mar-24
24030004-001	n-Undecane	K, T, U	< 0.5	ppbv	0.5	AC-058	07-Mar-24
24030004-001	Naphthalene	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	n-Nonane	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030004-001	o-Ethyltoluene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	o-Xylene	K, T, U	< 0.03	ppbv	0.03	AC-058	07-Mar-24
24030004-001	p-Diethylbenzene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	p-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030004-001	Styrene	K, T, U	< 0.04	ppbv	0.04	AC-058	07-Mar-24
24030004-001	Tetrachloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Tetrahydrofuran	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Toluene	I	0.06	ppbv	0.03	AC-058	07-Mar-24
24030004-001	trans-1,2-Dichloroethylene	K, T, U	< 0.06	ppbv	0.06	AC-058	07-Mar-24
24030004-001	trans-1,3-Dichloropropylene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	trans-2-Butene	I	0.04	ppbv	0.03	AC-058	07-Mar-24
24030004-001	trans-2-Pentene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24
24030004-001	Trichloroethylene	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/VOC/CLS/Feb 24, 2024	31826	Ambient Air	24-Feb-24 0:00

DESCRIPTION: Cold Lake South

REPORT NUMBER: 24030004 **REPORT CREATED:** 20-Mar-24 **VERSION:** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030004-001	Vinyl acetate	K, T, U	< 0.3	ppbv	0.3	AC-058	07-Mar-24
24030004-001	Vinyl chloride	K, T, U	< 0.02	ppbv	0.02	AC-058	07-Mar-24

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

Date: March 20, 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-202402

Revision History

Order ID	Ver	Date	Reason
24030004	01	20-Mar-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:	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

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: 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-202402

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
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-202402

PO Bag 4000
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-202402

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-202402

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.

Sample ID: 24020193-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT83606

RECEIVED
FEB 29 2024

;ol 2000i-D Sample Data Sheet

Date Sampled:	12-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

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	AT83606	AT83607
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-6.3	
Pressure	709	
Std Volume (Instrument)	22.6	2.52

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 6-Feb-24

Removed by (Sign/Date) Alex Yakupov Date: 16-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: 24020193-003 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85633

ol 2000i-D Sample Data Sheet

RECEIVED
FEB 29 2024

Date Sampled:	18-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

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	AT85633	AT85634
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-10	
Pressure	705.3	
Std Volume (Instrument)	22.8	2.54

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Alex yakupov Date: 16-Feb-24

Removed by (Sign/Date) Chris Wesson Date: 23-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: 24020193-002 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT83607

Filter Shipping Record

RECEIVED
FEB 29 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: 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	AT83606 → AT83607

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: 24020193-004 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT85634

Filter Shipping Record

RECEIVED
FEB 29 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	AT85633 → AT85634

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: AT83606

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

DATE SAMPLED: 12-Feb-24 0:00

DATE RECEIVED: 29-Feb-24

REPORT CREATED: 05-Mar-24

REPORT NUMBER: 24020193

VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020193-001	Particulate Weight		0.112	mg	0.004	AC-029	04-Mar-24

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

Date: March 5, 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-202402

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT83607		Air Filter	12-Feb-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24020193 **REPORT CREATED:** 05-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020193-002	Particulate Weight		0.010	mg	0.004	AC-029	04-Mar-24

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

Date: March 5, 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-202402

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
AT85633		Air Filter	18-Feb-24 0:00

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

REPORT NUMBER: 24020193 **REPORT CREATED:** 05-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020193-003	Particulate Weight		0.168	mg	0.004	AC-029	04-Mar-24

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

Date: March 5, 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-202402

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT85634		Air Filter	18-Feb-24 0:00

DESCRIPTION: Cold Lake South - PM 10 - Coarse

REPORT NUMBER: 24020193 **REPORT CREATED:** 05-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020193-004	Particulate Weight		0.076	mg	0.004	AC-029	04-Mar-24

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

Date: March 5, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
24020193	01	05-Mar-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

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:	24-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: 24030003-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT79707

	FINE (1)	COURSE (2)
Filter Type:	47mm	47mm
Filter #:	AT79707	AT79651
Average Flow Rate	15	1.67
Sample Volume	21.6	2.41
Temperature	-3.3	
Pressure	701.6	
Std Volume (Instrument)	22	2.45

Comments: Weather Conditions, etc.

n/a

Install by (Sign/Date): Chris Wesson Date: 23-Feb-24

Removed by (Sign/Date) Chris Wesson Date: 28-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: 24030003-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: AT79707

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: January 8/24

Project: LICA/Bureau Veritas Labs

Prepared by: [signature]

For information contact:
EAS.Reception@albertainnovates.ca

Filter Size	# of Filters (in cassettes)	Filter IDs
47 mm	1	AT79651
	1	AT79707

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: AT79651

Matrix: Air Filter

CANISTER ID:

PRIORITY: Normal

DESCRIPTION: Cold Lake South - PM 10 - Coarse

DATE SAMPLED: 24-Feb-24 0:00

DATE RECEIVED: 01-Mar-24

REPORT CREATED: 05-Mar-24

REPORT NUMBER: 24030003

VERSION Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030003-002	Particulate Weight		0.061	mg	0.004	AC-029	04-Mar-24

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

Date: March 5, 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-202402

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

ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
AT79707		Air Filter	24-Feb-24 0:00

DESCRIPTION: Cold Lake South - PM 2.5 - Fine

REPORT NUMBER: 24030003 **REPORT CREATED:** 05-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24030003-001	Particulate Weight		0.032	mg	0.004	AC-029	04-Mar-24

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

Date: March 5, 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-202402

Revision History

Order ID	Ver	Date	Reason
24030003	01	05-Mar-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

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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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Canada T9C 1T4
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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.

Passive Samples

Passive Sampler Field Sheet for LICA, Feb 2024 sample period

ID	SAMPLER						START		END		NOTES
							DATE	TIME	DATE	TIME	
3	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 30	17:43	Mar 3	10:16	
4	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 31	13:16	Mar 2	11:36	
5	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 31	14:15	Mar 2	12:19	
6	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 31	15:34	Mar 2	14:03	
8	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 31	12:10	Mar 2	10:16	NO_2 - disturbed by horses/ NH_3 - not found
9	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 30	16:55	Mar 1	13:40	
10	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Feb 1	18:10	Mar 3	17:51	
11	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Feb 1	17:25	Mar 3	17:08	
12	H2S	SO2	NO2	O3	HNO3	NH3	Feb 1	16:45	Mar 3	15:55	
13	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 30	14:58	Mar 1	14:10	
14	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 30	13:36	Mar 1	18:20	water sample taken #2=9
15	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 30	15:59	Mar 1	12:54	
16	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Feb 1	10:25	Mar 2	17:16	
17	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 31	16:42	Mar 2	15:01	
18	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 31	18:10	Mar 2	16:24	
19	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 31	20:01	Mar 2	18:00	
22	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Feb 1	20:25	Mar 3	19:18	
23	---	SO_2	NO_2	O_3	HNO3	NH3	Jan 30	11:54	Mar 1	11:07	
24	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 31	14:05	Mar 2	13:07	
25	H2S	SO2	---	---	HNO3	NH3	NA	NA	NA	NA	
26	H_2S	SO_2	---	---	HNO3	NH3	Jan 30	14:22	Mar 1	13:25	
27	H_2S	SO_2	---	---	HNO3	NH3	Jan 30	13:07	Mar 1	12:20	
28	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 30	16:30	Mar 1	19:07	Broken membrane on #3
29	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Feb 1	20:36	Mar 3	19:24	
32	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Jan 30	20:10	Mar 3	11:06	
42	H_2S	SO_2	NO_2	O_3	HNO3	NH3	Feb 1	12:45	Mar 3	12:45	
							DUPLICATES				
10	H2S	---	---	---	---	---	Feb 1	18:10	Mar 3	17:51	
11	H2S	---	---	---	---	---	Feb 1	17:25	Mar 3	17:08	
8	---	SO2	---	---	---	---	Jan 31	12:10	Mar 2	10:16	
9		SO2	---	---	---	---	Jan 30	16:55	Mar 1	13:40	
10	---	SO2	---	---	---	---	Feb 1	18:10	Mar 3	17:51	
10	---	---	NO_2	O_3	---	---	Feb 1	18:10	Mar 3	17:51	
11	---	---	NO_2	O_3	---	---	Feb 1	17:25	Mar 3	17:08	
23	---	---	---	---	HNO3	NH3	Jan 30	11:54	Mar 1	11:07	
24	---	---	---	---	HNO3	NH3	Jan 31	14:55	Mar 2	13:07	

NB
24-03-05
COB100

32 NH_3 23 H_2S
32 SO_2 27 NO_2
31 HNO_3 28 O_3

Your Project #: FEBRUARY 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: 2024/03/21
Report #: R3477917
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C415636
Received: 2024/03/05, 08:00

Sample Matrix: Air
Samples Received: 59

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
H2S Passive Analysis	20	2024/03/12	2024/03/14	PTC SOP-00150	Passive H2S in ATM
HNO3 by Passive Sampler	30	2024/03/07	2024/03/12	PTC SOP-00288	Passive HNO3 in ATM
NH3 by Passive Sampler	30	2024/03/12	N/A	PTC SOP-00157	ASTM D6919
NO2 Passive Analysis	25	2024/03/08	2024/03/14	PTC SOP-00148	Passive NO2 in ATM
O3 Passive Analysis	25	2024/03/11	2024/03/14	PTC SOP-00197	EPA 300 R2.1
SO2 Passive Analysis	28	2024/03/08	2024/03/14	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
21 Mar 2024 10:19:25

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 Edmonton: 6744 - 50th Street T9A 3N3 Telephone (780) 378-8500 Fax (780) 378-8699

Bureau Veritas Job #: C415636
Report Date: 2024/03/21

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

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CKH653			CKH654			CKH655		
Sampling Date		2024/01/30 17:43			2024/01/31 13:16			2024/01/31 14:15		
	UNITS	3	RDL	QC Batch	4	RDL	QC Batch	5	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.15	0.02	B309654				0.19	0.02	B309654
Calculated NO2	ppb	1.5	0.1	B307294	2.1	0.1	B307294	1.5	0.1	B307294
Calculated O3	ppb	35.8	0.1	B309276	36.6	0.1	B309276	33.8	0.1	B309276
Calculated SO2	ppb	0.4	0.1	B307191	0.4	0.1	B307191	0.6	0.1	B307191
RDL = Reportable Detection Limit										

Bureau Veritas ID		CKH656	CKH657			CKI455			CKH658		
Sampling Date		2024/01/31 15:34	2024/01/31 12:10			2024/01/31 12:10			2024/01/30 16:55		
	UNITS	6	8	RDL	QC Batch	8-DUP	RDL	QC Batch	9	RDL	QC Batch
Passive Monitoring											
Calculated NO2	ppb	3.2	1.7	0.1	B307294				1.6	0.1	B307294
Calculated O3	ppb	31.4	43.1	0.1	B309276				32.9	0.1	B309276
Calculated SO2	ppb	0.4	0.5	0.1	B307191	0.6	0.1	B307194	0.3	0.1	B307191
RDL = Reportable Detection Limit											

Bureau Veritas ID		CKI456			CKH659		CKI453		CKH660		
Sampling Date		2024/01/30 16:55			2024/02/01 18:10		2024/02/01 18:10		2024/02/01 17:25		
	UNITS	9-DUP	RDL	QC Batch	10	QC Batch	10-DUP	QC Batch	11	RDL	QC Batch
Passive Monitoring											
Calculated H2S	ppb				0.14	B309654	0.15	B309654	0.12	0.02	B309654
Calculated NO2	ppb				5.4	B307294	5.1	B307305	0.9	0.1	B307294
Calculated O3	ppb				30.1	B309276	27.7	B309278	29.6	0.1	B309276
Calculated SO2	ppb	0.3	0.1	B307194	0.6	B307191	0.5	B307194	0.4	0.1	B307191
RDL = Reportable Detection Limit											

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Bureau Veritas Job #: C415636
Report Date: 2024/03/21

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

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CKI454			CKH661	CKH662	CKH663		
Sampling Date		2024/02/01 17:25			2024/02/01 16:15	2024/01/30 14:58	2024/01/30 13:36		
	UNITS	11-DUP	RDL	QC Batch	12	13	14	RDL	QC Batch
Passive Monitoring									
Calculated H2S	ppb	0.12	0.02	B309654	0.13	0.12	<0.02	0.02	B309654
Calculated NO2	ppb	1.1	0.1	B307305	0.6	1.0	<0.1	0.1	B307294
Calculated O3	ppb	34.4	0.1	B309278	33.4	26.7	<0.1	0.1	B309278
Calculated SO2	ppb				0.4	0.5	<0.1	0.1	B307191
RDL = Reportable Detection Limit									

Bureau Veritas ID		CKH664			CKH665	CKH666	CKH667			CKH668		
Sampling Date		2024/01/30 15:59			2024/02/01 10:25	2024/01/31 16:42	2024/01/31 18:10			2024/01/31 20:01		
	UNITS	15	RDL	QC Batch	16	17	18	RDL	QC Batch	19	RDL	QC Batch
Passive Monitoring												
Calculated H2S	ppb				0.17	0.18	0.11	0.02	B309654			
Calculated NO2	ppb	1.3	0.1	B307294	3.5	1.2	1.0	0.1	B307294	0.9	0.1	B307294
Calculated O3	ppb	29.9	0.1	B309278	29.7	44.0	32.4	0.1	B309278	36.6	0.1	B309278
Calculated SO2	ppb	0.3	0.1	B307191	0.3	0.6	0.3	0.1	B307191	0.3	0.1	B307191
RDL = Reportable Detection Limit												

Bureau Veritas ID		CKH669			CKH670			CKH671		
Sampling Date		2024/02/01 20:25			2024/01/30 11:59			2024/01/31 14:55		
	UNITS	22	RDL	QC Batch	23	RDL	QC Batch	24	RDL	QC Batch
Passive Monitoring										
Calculated H2S	ppb	0.15	0.02	B309654				0.18	0.02	B309654
Calculated NO2	ppb	2.3	0.1	B307294	0.5	0.1	B307294	1.9	0.1	B307294
Calculated O3	ppb	28.7	0.1	B309278	27.0	0.1	B309278	35.4	0.1	B309278
Calculated SO2	ppb	0.3	0.1	B307194	0.2	0.1	B307194	0.5	0.1	B307194
RDL = Reportable Detection Limit										

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Bureau Veritas Job #: C415636
Report Date: 2024/03/21

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

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CKH672	CKH673			CKH674		CKH675	CKH676		
Sampling Date		2024/01/30 14:22	2024/01/30 13:07			2024/01/30 16:30		2024/02/01 20:36	2024/01/30 20:10		
	UNITS	26	27	RDL	QC Batch	28	QC Batch	29	32	RDL	QC Batch
Passive Monitoring											
Calculated H2S	ppb	0.26	0.25	0.02	B309654	DAMAGED	B309654	0.13	0.17	0.02	B309654
Calculated NO2	ppb					4.4	B307294	2.1	1.1	0.1	B307305
Calculated O3	ppb					30.8	B309278	32.4	35.6	0.1	B309278
Calculated SO2	ppb	0.9	1.4	0.1	B307194	0.3	B307194	0.4	0.5	0.1	B307194
RDL = Reportable Detection Limit											

Bureau Veritas ID		CKH677			CKH681	CKH682	CKH683	CKH684		
Sampling Date		2024/02/01 12:45			2024/01/30 17:43	2024/01/31 13:16	2024/01/31 14:15	2024/01/31 15:34		
	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				2.1	1.2	0.5	1.0	0.1	B310335
Calculated H2S	ppb	0.16	0.02	B309654						
HNO3 by Passive Sampler	ug/m3				1.27	1.14	1.40	0.98	0.04	B306473
Calculated NO2	ppb	2.7	0.1	B307305						
Calculated O3	ppb	36.1	0.1	B309278						
Calculated SO2	ppb	0.4	0.1	B307194						
RDL = Reportable Detection Limit										

Bureau Veritas ID		CKH685	CKH686	CKH687	CKH688	CKH689	CKH690		
Sampling Date		2024/01/31 12:10	2024/01/30 16:55	2024/02/01 18:10	2024/02/01 17:25	2024/02/01 16:15	2024/01/30 14:58		
	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	NA	0.6	0.4	<0.1	<0.1	<0.1	0.1	B310335
HNO3 by Passive Sampler	ug/m3	1.18	1.14	1.20	0.70	0.66	1.47	0.04	B306473
RDL = Reportable Detection Limit									

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Bureau Veritas Job #: C415636
Report Date: 2024/03/21

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

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CKH691	CKH692	CKH693	CKH694	CKH695	CKH696		
Sampling Date		2024/01/30 13:36	2024/01/30 15:59	2024/02/01 10:25	2024/01/31 16:42	2024/01/31 18:10	2024/01/31 20:01		
	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	<0.1	0.3	0.3	1.4	<0.1	0.9	0.1	B310335
HNO3 by Passive Sampler	ug/m3	1.29	1.16	1.19	0.77	0.76	1.24	0.04	B306473
RDL = Reportable Detection Limit									

Bureau Veritas ID		CKH697	CKH698		CKI457		CKH699		
Sampling Date		2024/02/01 20:25	2024/01/30 11:59		2024/01/30 11:54		2024/01/31 14:55		
	UNITS	22-NH3 HNO3	23-NH3 HNO3	QC Batch	23-NH3 HNO3-DUP	QC Batch	24-NH3 HNO3	RDL	QC Batch
Passive Monitoring									
Ammonia by Passive Sampler	ppb	0.4	<0.1	B310335	<0.1	B310338	0.6	0.1	B310335
HNO3 by Passive Sampler	ug/m3	1.58	0.70	B306476	1.27	B306476	0.70	0.04	B306476
RDL = Reportable Detection Limit									

Bureau Veritas ID		CKI458		CKH700		CKH701	CKH702		
Sampling Date		2024/01/31 14:55		2024/01/30 14:22		2024/01/30 13:07	2024/01/30 16:30		
	UNITS	24-NH3 HNO3-DUP	QC Batch	26-NH3 HNO3	QC Batch	27-NH3 HNO3	28-NH3 HNO3	RDL	QC Batch
Passive Monitoring									
Ammonia by Passive Sampler	ppb	0.7	B310338	<0.1	B310335	0.2	1.9	0.1	B310338
HNO3 by Passive Sampler	ug/m3	0.59	B306476	1.41	B306476	0.88	0.77	0.04	B306476
RDL = Reportable Detection Limit									

Bureau Veritas ID		CKH703	CKH704	CKH705	CKH706	CKH707		
Sampling Date		2024/02/01 20:36	2024/01/30 20:10	2024/02/01 12:45				
	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	0.6	1.2	1.4	1.1	0.8	0.1	B310338
HNO3 by Passive Sampler	ug/m3	0.40	0.73	1.76	1.01	0.58	0.04	B306476
RDL = Reportable Detection Limit								

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Bureau Veritas Job #: C415636
Report Date: 2024/03/21

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

RESULTS OF CHEMICAL ANALYSES OF AIR

Bureau Veritas ID		CKH715		
Sampling Date				
	UNITS	BLANK 3-NH3 HNO3	RDL	QC Batch
Passive Monitoring				
Ammonia by Passive Sampler	ppb	0.8	0.1	B310338
HNO3 by Passive Sampler	ug/m3	0.56	0.04	B306476
RDL = Reportable Detection Limit				

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

GENERAL COMMENTS

Sample CKH663 [14] : Sampler labeled as "MAR24" rather than "FEB24", appears that the samplers were not swapped and the new one was returned instead. Next month exposure time will be calculated inclusive of February's exposure period for this sampling point. 2024/03/21 SDK

Sample CKH674 [28] : CKH674 28 H2S Damaged Membrane 2024/03/18 SDK

Sample CKH685 [8-NH3 HNO3] : CKH685 8 NH3 Missing as per CoC 2024/03/18 SDK

Sample CKH698 [23-NH3 HNO3] : CKH698 Sample 23 - NH3 and HNO3 sampler labels swapped. 2024/03/18 SDK

Sample CKI457 [23-NH3 HNO3-DUP] : CKI457 Sample 23 Dup - NH3 and HNO3 sampler labels swapped. 2024/03/18 SDK

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 #: C415636
Report Date: 2024/03/21

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: FEBRUARY 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
B306473	OZ	Method Blank	HNO3 by Passive Sampler		<0.04		ug/m3	
B306473	OZ	RPD [CKH681-01]	HNO3 by Passive Sampler	2024/03/12	NC		%	N/A
B306476	OZ	Method Blank	HNO3 by Passive Sampler		<0.04		ug/m3	
B306476	OZ	RPD [CKH697-01]	HNO3 by Passive Sampler	2024/03/12	NC		%	N/A
B307191	OZ	Spiked Blank	Calculated SO2			99	%	90 - 110
B307191	OZ	Method Blank	Calculated SO2		<0.1		ppb	
B307194	OZ	Spiked Blank	Calculated SO2			101	%	90 - 110
B307194	OZ	Method Blank	Calculated SO2		<0.1		ppb	
B307294	S1T	Spiked Blank	Calculated NO2			100	%	90 - 110
B307294	S1T	Method Blank	Calculated NO2		<0.1		ppb	
B307305	S1T	Spiked Blank	Calculated NO2			99	%	90 - 110
B307305	S1T	Method Blank	Calculated NO2		<0.1		ppb	
B309276	S1T	Spiked Blank	Calculated O3			100	%	90 - 110
B309276	S1T	Method Blank	Calculated O3		<0.1		ppb	
B309278	S1T	Spiked Blank	Calculated O3			101	%	90 - 110
B309278	S1T	Method Blank	Calculated O3		<0.1		ppb	
B309654	YYA	Spiked Blank	Calculated H2S			100	%	90 - 110
B310335	S1T	Spiked Blank	Ammonia by Passive Sampler			110	%	90 - 110
B310335	S1T	Method Blank	Ammonia by Passive Sampler		<0.1		ppb	
B310335	S1T	RPD [CKH681-01]	Ammonia by Passive Sampler		NC		%	N/A
B310338	S1T	Spiked Blank	Ammonia by Passive Sampler			110	%	90 - 110
B310338	S1T	Method Blank	Ammonia by Passive Sampler		<0.1		ppb	
B310338	S1T	RPD [CKH701-01]	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.

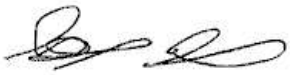
NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Job #: C415636
Report Date: 2024/03/21

LAKELAND INDUSTRY AND COMMUNITY ASSOCIATION
Client Project #: FEBRUARY 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: 24020172-001 **Priority:** Normal

Customer ID: LICA
Cust Samp ID: LICA/NMHC/LLB/Feb 17, 2024

RECEIVED
FEB 26 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:**	29011
Station ID:	LICA 41	**Installation Date/Time (mst):**	Jan 09, 2024 @ 18:12
Sample ID:	LICA/NMHC/LLB/Feb17, 2024	**Removal Date/Time (mst):**	Feb 20, 2024 @ 14:16

Date and Time Information

Sample Date:	Start Time (mst)	End Time (mst)	Elapsed Time (hours)
February 17, 2024	10:50	n/a	n/a

Canister Pressure/Vacuum	
Initial Vacuum (in. Hg)	Final Vacuum (in. Hg)
-27.1	-3.0

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: Chris Wesson

InnoTech ALBERTA

Canister ID: 29011

This cleaned canister meets or exceeds TO-15 Method Specifications

Proofed by: ISQ on: NOV 0 9 2023

Evacuated: DEC 1 1 2023 Recertified: _____

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

Laboratory Contact Number: 780-632-8403

Sample ID: LICA/NMHC/LLB/FEB 17, 2024

Sampled By: [signature]

Starting Vacuum:	End Vacuum:
-27.1 "Hg	-3.0 "Hg/ psig

-4 "Hg

Sample ID: 24020172-001 Priority: Normal

Customer ID: LICA

Cust Samp ID: LICA/NMHC/LLB/Feb 17, 2024

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/NMHC/LLB/Feb 17, 2024
Matrix: Ambient Air
CANISTER ID: 29011
PRIORITY: Normal
DESCRIPTION: Lac La Biche
DATE SAMPLED: 17-Feb-24 10:50
DATE RECEIVED: 26-Feb-24
REPORT CREATED: 05-Mar-24
REPORT NUMBER: 24020172
VERSION **Version 01**

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020172-001	1,1,1-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	1,1,2,2-Tetrachloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	1,1,2-Trichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	1,1-Dichloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	1,1-Dichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	1,2,3-Trimethylbenzene	K, T, U	< 0.07	ppbv	0.07	AC-058	28-Feb-24
24020172-001	1,2,4-Trichlorobenzene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	1,2,4-Trimethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	1,2-Dibromoethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	1,2-Dichlorobenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	1,2-Dichloroethane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	1,2-Dichloropropane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	1,3,5-Trimethylbenzene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	1,3-Butadiene	I	0.07	ppbv	0.04	AC-058	28-Feb-24
24020172-001	1,3-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Feb-24
24020172-001	1,4-Dichlorobenzene	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Feb-24
24020172-001	1,4-Dioxane	K, T, U	< 0.7	ppbv	0.7	AC-058	28-Feb-24

Report certified by: Andrea Conner, Admin Assistant On behalf of: Adam Malcolm, Manager, Chemical Testing
Date: March 5, 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/Feb 17, 2024	29011	Ambient Air	17-Feb-24 10:50

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24020172 **REPORT CREATED:** 05-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020172-001	1-Butene/Isobutylene		2.31	ppbv	0.09	AC-058	28-Feb-24
24020172-001	1-Hexene/2-Methyl-1-pentene	K, T, U	< 0.10	ppbv	0.10	AC-058	28-Feb-24
24020172-001	1-Pentene	I	0.06	ppbv	0.04	AC-058	28-Feb-24
24020172-001	2,2,4-Trimethylpentane	I	0.04	ppbv	0.03	AC-058	28-Feb-24
24020172-001	2,2-Dimethylbutane		0.25	ppbv	0.03	AC-058	28-Feb-24
24020172-001	2,3,4-Trimethylpentane	I	0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	2,3-Dimethylbutane		0.60	ppbv	0.13	AC-058	28-Feb-24
24020172-001	2,3-Dimethylpentane		0.17	ppbv	0.03	AC-058	28-Feb-24
24020172-001	2,4-Dimethylpentane	I	0.14	ppbv	0.04	AC-058	28-Feb-24
24020172-001	2-Methylheptane	I	0.04	ppbv	0.03	AC-058	28-Feb-24
24020172-001	2-Methylhexane		0.49	ppbv	0.04	AC-058	28-Feb-24
24020172-001	2-Methylpentane		4.85	ppbv	0.03	AC-058	28-Feb-24
24020172-001	3-Methylheptane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	3-Methylhexane		0.47	ppbv	0.03	AC-058	28-Feb-24
24020172-001	3-Methylpentane		1.80	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Acetone		2.7	ppbv	0.6	AC-058	28-Feb-24
24020172-001	Acrolein	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Benzene		0.54	ppbv	0.04	AC-058	28-Feb-24
24020172-001	Benzyl chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Bromodichloromethane	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	Bromoform	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Bromomethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Carbon disulfide	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Carbon tetrachloride	I	0.06	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Chlorobenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24

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

Date: March 5, 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-202402

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ENVIRONMENTAL ANALYTICAL SERVICES

TEST REPORT

CLIENT SAMPLE ID	CANISTER ID	Matrix	DATE SAMPLED
LICA/NMHC/LLB/Feb 17, 2024	29011	Ambient Air	17-Feb-24 10:50

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24020172 **REPORT CREATED:** 05-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020172-001	Chloroethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Chloroform	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Chloromethane		0.70	ppbv	0.06	AC-058	28-Feb-24
24020172-001	cis-1,2-Dichloroethene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	cis-1,3-Dichloropropene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	cis-2-Butene	I	0.11	ppbv	0.04	AC-058	28-Feb-24
24020172-001	cis-2-Pentene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Cyclohexane	I	0.17	ppbv	0.06	AC-058	28-Feb-24
24020172-001	Cyclopentane		0.57	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Dibromochloromethane	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Ethanol		17.2	ppbv	0.7	AC-058	28-Feb-24
24020172-001	Ethyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Ethylbenzene	I	0.09	ppbv	0.04	AC-058	28-Feb-24
24020172-001	Freon-11		0.25	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Freon-113	I	0.07	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Freon-114	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	Freon-12		0.55	ppbv	0.04	AC-058	28-Feb-24
24020172-001	Hexachloro-1,3-butadiene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Isobutane		117	ppbv	0.43	AC-058	28-Feb-24
24020172-001	Isopentane		35.4	ppbv	0.58	AC-058	28-Feb-24
24020172-001	Isoprene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Isopropyl alcohol	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Isopropylbenzene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Feb-24
24020172-001	m,p-Xylene	I	0.20	ppbv	0.06	AC-058	28-Feb-24
24020172-001	m-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24

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

Date: March 5, 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/Feb 17, 2024	29011	Ambient Air	17-Feb-24 10:50

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24020172 **REPORT CREATED:** 05-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020172-001	m-Ethyltoluene	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	Methyl butyl ketone	K, T, U	< 0.6	ppbv	0.6	AC-058	28-Feb-24
24020172-001	Methyl ethyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Methyl isobutyl ketone	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Methyl methacrylate	K, T, U	< 0.12	ppbv	0.12	AC-058	28-Feb-24
24020172-001	Methyl tert butyl ether	K, T, U	< 0.04	ppbv	0.04	AC-058	28-Feb-24
24020172-001	Methylcyclohexane		0.20	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Methylcyclopentane		1.63	ppbv	0.07	AC-058	28-Feb-24
24020172-001	Methylene chloride	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	n-Butane		86.7	ppbv	0.29	AC-058	28-Feb-24
24020172-001	n-Decane	K, T, U	< 0.09	ppbv	0.09	AC-058	28-Feb-24
24020172-001	n-Dodecane	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	n-Heptane	I	0.21	ppbv	0.06	AC-058	28-Feb-24
24020172-001	n-Hexane		1.22	ppbv	0.04	AC-058	28-Feb-24
24020172-001	n-Octane	I	0.04	ppbv	0.03	AC-058	28-Feb-24
24020172-001	n-Pentane		13.1	ppbv	0.06	AC-058	28-Feb-24
24020172-001	n-Propylbenzene	K, T, U	< 0.09	ppbv	0.09	AC-058	28-Feb-24
24020172-001	n-Undecane	K, T, U	< 0.7	ppbv	0.7	AC-058	28-Feb-24
24020172-001	Naphthalene	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	n-Nonane	I	0.06	ppbv	0.06	AC-058	28-Feb-24
24020172-001	o-Ethyltoluene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	o-Xylene	I	0.07	ppbv	0.04	AC-058	28-Feb-24
24020172-001	p-Diethylbenzene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	p-Ethyltoluene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Feb-24
24020172-001	Styrene	K, T, U	< 0.06	ppbv	0.06	AC-058	28-Feb-24

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

Date: March 5, 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/Feb 17, 2024	29011	Ambient Air	17-Feb-24 10:50

DESCRIPTION: Lac La Biche

REPORT NUMBER: 24020172 **REPORT CREATED:** 05-Mar-24 **VERSION** Version 01

Lab ID	Parameter	Qualifier	Result	Units	RDL	Method	Analysis Date
24020172-001	Tetrachloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Tetrahydrofuran	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Toluene		0.88	ppbv	0.04	AC-058	28-Feb-24
24020172-001	trans-1,2-Dichloroethylene	K, T, U	< 0.09	ppbv	0.09	AC-058	28-Feb-24
24020172-001	trans-1,3-Dichloropropylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	trans-2-Butene	I	0.13	ppbv	0.04	AC-058	28-Feb-24
24020172-001	trans-2-Pentene	I	0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Trichloroethylene	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24
24020172-001	Vinyl acetate	K, T, U	< 0.4	ppbv	0.4	AC-058	28-Feb-24
24020172-001	Vinyl chloride	K, T, U	< 0.03	ppbv	0.03	AC-058	28-Feb-24

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

Date: March 5, 2024 Inquiries: (780) 632 8403 E-mail: EAS.Results@innotechalberta.ca

Revision History

Order ID	Ver	Date	Reason
24020172	01	05-Mar-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

Order Comments

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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.

End of Report