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Project / Location: CG2304329; City of Medicine Hat

PO Number: CG2304329

ALS Work Order: 23040473

**NARRATIVE:** Analysis performed on FEI Tecnai TEM equipped with EDAX Octane T Plus Silicon Drift Detector and Z2 Analyzer. Fiber morphology, selected area electron diffraction (SAED), and energy dispersive x-ray analysis (EDXA) used to determine species. All sample collection is performed outside of ALS Cincinnati is therefore the sole responsibility of the client. Contact your local authority for information on method selection, sampling instructions, and reporting requirements prior to submission.

**NOTICE:** All US EPA Public Water System (PWS) drinking water compliance samples must be filtered by the laboratory within 48 hours of sampling. ALS cannot report analytical results directly to the EPA unless all of the information required by the state EPA agency is provided via the COC at the time of receipt. Report revisions resulting from failure to provide this information via the COC will result in additional administrative fees. ALS is not responsible for late or inaccurate EPA reporting as a result of client sample collection errors or sample information omissions. Water samples originating from outside the United States do not fall under the US EPA drinking water guidelines and are therefore not required to meet the 48 hour hold and are not reported to any agency.

**METHOD CODES:** "EPA 100.2" refers only to drinking (potable) PWS samples for EPA compliance which are required to be filtered within 48 hours of sampling and are analyzed at >10,000x for asbestos fibers >10µm long. "ENV 005" refers to a modified version of EPA 100.2 developed for all other non-potable, non-compliance, and non-US waters which are also analyzed at >10,000x for asbestos fibers >10µm long but are not required to meet the 48 hour hold time. "EPA 100.1" refers to waters analyzed by a modified version of the method for asbestos fibers of any size. All excess water is disposed immediately following adequate filtration. All filtered samples are disposed after 60 day archive. All TEM grids analyzed are archived for a minimum of 3 years. Results apply only to portions of samples analyzed.

**SUMMARY:** An AS of <0.2 MFL is desired for drinking (potable) waters, and an AS of <7 MFL is generally acceptable for non-potable waters. Whenever possible, a sufficient volume is analyzed to yield the desired AS based on the detection of 1 confirmed asbestos fiber in the total area analyzed. However, waters containing excessive solids may require filtration of volumes too low to achieve the desired AS. In any case, a minimum of 4 and maximum of 10 grid openings are analyzed regardless of the AS reached or the asbestos concentration detected. Representative EDXA spectra and/or photomicrographs are available upon request for an additional fee. *NA=Not Applicable, AS=Analytical Sensitivity, MFL=Millions of Fibers per Liter, MRL=Method Reporting Limit*

**ALS Cincinnati accredited by NY ELAP for Asbestos in Water by EPA 100.2**

*OH State Lab No.: 4077, OH Analyst Nos.: 2268 (P. Hizar), 3431 (A. Sohn)*

*PA State Lab No.: 68-01320, PA Certification No.: 003*

*WA State Lab No.: 211*

*NY State Lab No.: 11371*

*Pamela M. Hizar*

Pamela M. Hizar

ALS Microscopy Technical Manager

**IDENTIFICATION**

	CG2304329-001	CG2304329-002	CG2304329-003	CG2304329-004	CG2304329-005
Client ID:	23040473-01A	23040473-02A	23040473-03A	23040473-04A	23040473-05A
ALS ID:	ENV 005	ENV 005	ENV 005	ENV 005	ENV 005
Method:	<7MFL	<7MFL	<7MFL	<7MFL	<7MFL
MRL:	4/11/23 12:00 PM	4/11/23 12:30 PM	4/11/23 12:50 PM	4/11/23 1:32 PM	4/11/23 3:49 PM
Collection:	4/13/23 12:15 PM	4/13/23 12:15 PM	4/13/23 12:15 PM	4/13/23 12:15 PM	4/13/23 12:15 PM
Filtration:	NA	NA	NA	NA	NA
Elapsed:	<i>NONE</i>	<i>NONE</i>	<i>NONE</i>	<i>NONE</i>	<i>NONE</i>
Sample Comments:					

**ANALYSIS**

	Pamela Hizar	Pamela Hizar	Pamela Hizar	Pamela Hizar	Pamela Hizar
Analyst:	4/17/23 9:15 AM	4/17/23 9:30 AM	4/17/23 9:45 AM	4/17/23 10:00 AM	4/17/23 10:15 AM
Completed:	0.15	0.15	0.15	0.15	0.15
Volume (L):	0.0102	0.0102	0.0102	0.0102	0.0102
Avg. Opening Area (mm <sup>2</sup> ):	4	4	4	4	4
No. Openings Analyzed:	0.18	0.18	0.18	0.18	0.18
AS (MFL):					

**COUNT**

Chrysotile:	0	0	0	0	0
Amosite:	0	0	0	0	0
Crocidolite:	0	0	0	0	0
Actinolite:	0	0	0	0	0
Tremolite:	0	0	0	0	0
Anthophyllite:	0	0	0	0	0
Total Asbestos:	0	0	0	0	0

**CONCENTRATION (MFL)**

Chrysotile:	<AS	<AS	<AS	<AS	<AS
Amosite:	<AS	<AS	<AS	<AS	<AS
Crocidolite:	<AS	<AS	<AS	<AS	<AS
Actinolite:	<AS	<AS	<AS	<AS	<AS
Tremolite:	<AS	<AS	<AS	<AS	<AS
Anthophyllite:	<AS	<AS	<AS	<AS	<AS
<b>Total Asbestos:</b>	<AS	<AS	<AS	<AS	<AS
Analysis Comments:	<i>NONE</i>	<i>NONE</i>	<i>NONE</i>	<i>NONE</i>	<i>NONE</i>

**IDENTIFICATION**

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Client ID: CG2304329-006  
ALS ID: 23040473-06A  
Method: ENV 005  
MRL: <7MFL  
Collection: 4/11/23 4:07 PM  
Filtration: 4/13/23 12:15 PM  
Elapsed: NA  
*Sample Comments: NONE*

**ANALYSIS**

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Analyst: Pamela Hizar  
Completed: 4/17/23 10:30 AM  
Volume (L): 0.15  
Avg. Opening Area (mm<sup>2</sup>): 0.0102  
No. Openings Analyzed: 4  
AS (MFL): 0.18

**COUNT**

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Chrysotile: 0  
Amosite: 0  
Crocidolite: 0  
Actinolite: 0  
Tremolite: 0  
Anthophyllite: 0  
Total Asbestos: 0

**CONCENTRATION (MFL)**

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Chrysotile: <AS  
Amosite: <AS  
Crocidolite: <AS  
Actinolite: <AS  
Tremolite: <AS  
Anthophyllite: <AS  
**Total Asbestos:** <AS  
*Analysis Comments: NONE*