Ambient Community Air Monitoring Weekly Report
For the Hawaii Department of Health – Clean Air Branch

Lahaina, Maui

1/25/2024 – 1/31/2024
[Report Updated: 7/2/2024]

Due to ongoing debris removal operations in response to the Maui Wildfires, a Community Air Monitoring and Sampling Plan (CAMSP) has been drafted and sampling is being performed at four community locations across Lahaina listed below and shown on **Figure 1**:

- Leialii Hawaiian Homelands (AM-01)
- WW Pump Station #4 (AM-02)
- Lahaina Intermediate School (AM-03)
- Lahaina Boys & Girls Club (AM-04)

This approach includes ambient community air monitoring and sampling to monitor conditions and determine whether debris removal activities, managed by the U.S. Army Corps of Engineers (USACE), significantly impacts air quality in Lahaina. Data collected is made available to HDOH via online shared site and this weekly report. This approach to air monitoring and sampling will continue until debris removal activities are complete or until HDOH CAB advises otherwise.

Air quality monitoring for particulate matter was collected at all four community locations over a 24-hour period each day in accordance with the draft CAMSP. Additionally, daily air samples were collected at all community locations, as depicted in **Figure 1**. Summary analytical data is presented in **Tables 1 and 2**. **Appendix 1** provides detailed analytical results for all community locations where air sampling was performed. Analytical results were compared to site-specific screening levels for particulate matter, asbestos, and heavy metals as described in the draft CAMSP. A summary of meteorological data is presented in **Table 3.** Overall wind conditions for this week show approximately 1.7 mph in a generally SE direction.

Results for Community Locations:
Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), as this is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week at each of the following locations: Leialii Hawaiian Homelands (January 25-31), WW Pump Station #4 (January 25-31), Lahaina Intermediate School (January 25-31), Lahaina Boys & Girls Club (January 25-31).

The PM_{10} monitoring results were not found to have exceeded the screening level during this reporting period, as shown in **Table 2**.

Please note that ambient air monitoring for fine particulate matter, with a particle size diameter of 2.5 micrometers or less ($PM_{2.5}$) is not included in this report. This monitoring is being performed by the Department of Health/EPA at six locations in Lahaina and can be viewed at: https://fire.airnow.gov/.

There were 28 samples collected for asbestos fibers at community monitoring locations throughout this reporting period. Of the 28 samples collected, one was voided. The sample from WW Pump Station #4 on 1/29 was voided due to a damaged filter and was unable to be analyzed. All asbestos results were below the Site Screening Action Level (SSAL) of 0.003 fibers per cubic centimeter (fibers/cc) and less than the laboratory's analytical sensitivity (see Table 1). Notably, the laboratory commented "Numerous gypsum fibers present" on samples collected at the following monitoring stations:

- Leialii Hawaiian Homelands on January 25, 26, 27, 28, 29, 30, and 31

- WW Pump Station #4 on January 25, 26, 27, 28, 29, 30, and 31
- Lahaina Intermediate School on January 25, 26, 27, 28, 29, 30, and 31
- Lahaina Boys & Girls Club on January 25, 26, 27, 29, 30, and 31

Gypsum is a common ingredient in drywall, plaster and cement so its presence in the sample filters is likely due to debris removal operations or other disturbances of built-environment fire debris. The presence of gypsum fibers found in the samples were not sufficient to obscure asbestos analysis; nor are they indicative of a health and safety concern. Occupational health exposure thresholds (National Institute for Occupational Safety and Health [NIOSH] and OSHA) for gypsum are 5 milligrams per cubic meter (mg/m^3) for respirable dust, and 10 mg/m^3 and 15 mg/m^3 respectively for total dust as time-weighted averages. While total dust sampling has not been conducted, the size-discriminated particulate sampling (PM_{10}) at these locations indicates these thresholds are not being approached and are orders of magnitude less than occupational gypsum exposure criteria.

Low levels of heavy metals were detected in ambient air samples at all community sampling locations. Although heavy metals were detected, all of the heavy metals concentrations were below the SSALs (see Table 1). The laboratory data sheets for the metals and asbestos samples collected from the community locations are found in **Appendix 1.**

Quality Control:

This section briefly discusses the quality control efforts made by Tetra Tech throughout the air monitoring and sampling process. All references and SOPs can be found provided with the CAMSP.

Tetra Tech is utilizing Met One Instruments, Inc., environmental beta attenuation mass monitors (E-BAM) to allow for comparison to the National Ambient Air Quality Standards (NAAQS) for particulates. E-BAMs are factory-calibrated annually and do not require daily calibration, except for a leak check and a flow audit, which were performed prior to sampling according to the manufacturer's procedures.

For asbestos sampling, Tetra Tech uses a Casella Vortex 3 or similar air sampling pump. Sampling flow rates will be determined and documented by pre- and post- calibration of each sampling pump using a primary calibration standard. Calibration and sampling are conducted in accordance with Tetra Tech SOPs 064-2, "Calibration of Air Sampling Pump" and 073-3, "Air Quality Monitoring" (Appendix A) and U.S. EPA ERT SOPs No. 2008, "General Air Monitoring and Sampling Guidelines" and 2015 "Asbestos Air Sampling," included in the CAMSP.

Tetra Tech is using Tisch Environmental High Volume Air Samplers, or equivalent, collocated with the real-time particulate monitors and asbestos samplers described above. Air samples for elemental metals at community locations are collected and analyzed in accordance with the following methods:

- U.S. EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 Using High Volume (HV) Sampler
- U.S. EPA Compendium Method IO-3.5: Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry (ICP/MS). EPA/625/R-96/010a
- U.S. EPA 40 Code of Federal Regulations (CFR) Part 50, Method for the Determination of Lead in Total Suspended Particulate Matter.
- U.S. EPA 40 CFR Part 58, Appendix E: Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring
- Standard Operating Procedures for Lead Monitoring Using a TSP High Volume Sampler

Field technicians conducted photographic and written documentation in accordance with Tetra Tech SOP No. 024- 4, "Recording of Notes in Field Logbook."

Following receipt of air sampling results from the off-site analytical laboratories, analytical data is maintained in an electronic database and compared to the SSALs. Level 1 data verification is completed on all analytical data and results are reviewed by an industrial hygienist.

Attachments

Air Sampling Locations

Lahaina Fire Perimeter

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results by Date
Maui Wildfire, Lahaina
1/25/2024-1/31/2024
[Report Updated: 7/2/2024]

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units		s/cc	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Screening Level*		0.0030 [1]	0.7	0.05	1.2	0.05	0.02	12	0.01	240	1.5	0.12	4.8	0.02	48	24	0.24	1200
1/25/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000462	0.00572	0.0141	0.0000342	ND	0.00806	0.00248	0.0478	0.00401	0.0456	0.00139	0.0123	0.000495	0.00000195	0.00355	0.0876
	WW Pump Station #4 (AM-02)	<0.0024	0.0000427	0.000272	0.000983	ND	ND	ND	0.0000693	0.0199	0.000806	ND	0.000582	ND	0.000356	ND	0.000209	ND
	Lahaina Intermediate School (AM-03)	<0.0027	0.0000628	0.0000959	0.00175	0.00000633	ND	0.00248	0.000234	0.0456	0.00136	0.00383	0.00128	0.00106	0.000335	0.000000624	0.000379	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000459	0.000128	ND	ND	ND	ND	0.0000611	0.0268	0.000375	ND	0.00102	ND	0.00031	ND	0.00016	ND
1/26/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000566	0.000381	0.00211	0.0000029	ND	ND	0.000129	0.0204	0.000242	0.00255	0.00107	0.000732	0.000113	0.000000563	0.000246	ND
	WW Pump Station #4 (AM-02)	<0.0030	0.0000475	0.000258	0.00129	ND	ND	ND	0.000122	0.0158	0.00454	ND	0.00108	ND	0.000114	0.000000943	0.000114	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000062	0.0000565	0.00162	0.00000437	ND	ND	0.0000974	0.0376	0.000548	0.00163	0.00171	0.000656	0.000115	0.000000737	0.000173	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.000049	0.000131	0.00127	ND	ND	ND	0.0000478	0.0313	0.000336	ND	0.00136	ND	0.000114	0.000000612	0.000103	ND
1/27/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000677	0.000545	0.00401	0.0000103	ND	0.00245	0.000698	0.0342	0.000438	0.013	0.00153	0.00446	0.000223	0.000000711	0.000834	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000463	0.000196	ND	ND	ND	ND	0.0000374	0.0124	0.000196	ND	0.000832	ND	0.000215	ND	0.000141	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000577	0.000061	0.00149	ND	ND	ND	0.0000779	0.025	0.000191	ND	0.0016	0.000794	0.000209	ND	0.00019	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.0000551	0.000227	0.00106	ND	ND	ND	0.0000589	0.0267	0.000456	ND	0.00111	ND	0.000204	ND	0.000152	ND
1/28/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000986	0.000749	0.00464	0.00000833	ND	0.0027	0.000485	0.0489	0.00116	0.00951	0.0017	0.00258	0.000399	0.000000798	0.000966	ND
	WW Pump Station #4 (AM-02)	<0.0024	ND	0.000202	ND	ND	ND	ND	0.0000571	0.00618	0.000216	ND	0.000444	ND	0.000371	0.000000513	0.000252	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000429	0.000083	0.00125	0.00000293	ND	ND	0.000106	0.016	0.000184	0.00179	0.000797	0.000568	0.000357	0.000000663	0.000266	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.000039	0.000361	ND	ND	ND	ND	0.0000674	0.0183	0.000416	ND	0.000965	ND	0.000348	0.000000651	0.00025	ND
1/29/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000101	0.00166	0.00548	0.0000187	ND	0.00448	0.000986	0.0366	0.00112	0.0195	0.00157	0.00475	0.000424	0.0000011	0.00208	ND
	WW Pump Station #4 (AM-02)		0.000031	0.000154	ND	ND	ND	ND	0.0000478	0.00736	0.000202	ND	0.000442	ND	0.000312	0.000000474	0.000184	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000532	0.0000987	0.00166	0.0000441	ND	0.00189	0.000186	0.0112	0.000308	0.00302	0.000478	0.00076	0.000368	0.000000604	0.000309	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.0000378	0.0002	ND	ND	ND	ND	0.0000557	0.0229	0.000365	ND	0.00128	ND	0.000357	0.000000574	0.000187	ND
1/30/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000098	0.00175	0.00566	0.0000156	ND	0.0044	0.000884	0.0348	0.00106	0.0187	0.00158	0.00487	0.000262	0.000000956	0.00165	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000036	0.00022	0.000984	ND	ND	ND	0.0000467	0.0156	0.000211	ND	0.00109	ND	0.000207	0.000000473	0.000157	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000727	0.000065	0.00145	0.0000033	ND	ND	0.000112	0.0273	0.000172	0.00203	0.00134	0.000724	0.000189	ND	0.000246	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000549	0.000121	0.00117	ND	ND	ND	0.0000646	0.0174	0.000246	ND	0.0011	ND	0.000164	ND	0.000189	ND
1/31/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.00012	0.0031	0.00376	0.00000543	ND	0.00229	0.000439	0.0573	0.00216	0.00547	0.0023	0.00112	0.000107	0.00000105	0.000503	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000198	0.000335	0.00585	0.00000802	ND	0.00178	0.000233	0.0398	0.000606	0.00653	0.00188	0.000916	0.000145	0.00000079	0.000663	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000636	0.0000721	0.00189	0.00000665	ND	ND	0.00014	0.0376	ND	0.003	0.00179	0.000758	0.000125	ND	0.000477	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000089	0.000209	0.003	0.00000541	ND	0.00186	0.000195	0.0226	0.000603	0.00501	0.00134	0.000937	0.000147	0.000000509	0.000681	ND
95% Upper Confidence Limit[2]		NA	0.0001	0.00095	0.00414	0.000016	NA	0.00459	0.00044	0.0344	0.00119	0.019	0.00147	0.00416	0.00031	0.000001	0.00075	NA

Notes:

[1] Asbestos result determined by transmission electron microscopy (TEM) in accordance with ISO Method 10312.

[2] 95% UCL determined through 'best fit' lognormal or normal parametric statistics via W test

Data unavailable, voided sample due to damaged filter. Asbestos sample from WW pump Station #4 on 1/29 was not analyized due to the damaged filter

Laboratory metals data provided in nanograms per cubic meter, however data shown in Table 1 has been converted to micrograms per cubic meter so data was comparable to SSALs

mg/m3 = milligrams per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

s/cc = structures per cubic centimeter

The asbestos results in this report have been reanalyzed by the lab in accordance with the updated SSALs

This report has been updated with new SSALs in accordance with CAMSP Rev 2, May 2024

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results for PM_{10}
Maui Wildfire, Lahaina
1/25/2024 - 1/31/2024
[Report Updated: 7/2/2024]

Screening Level		**150 µg/m^3**
1/25/2024	Leialii Hawaiian Homelands (AM-01)	6.1
	WW Pump Station #4 (AM-02)	7.6
	Lahaina Intermediate School (AM-03)	80
	Lahaina Boys & Girls Club (AM-04)	5.0
1/26/2024	Leialii Hawaiian Homelands (AM-01)	5.5
	WW Pump Station #4 (AM-02)	6.0
	Lahaina Intermediate School (AM-03)	58
	Lahaina Boys & Girls Club (AM-04)	5.8
1/27/2024	Leialii Hawaiian Homelands (AM-01)	8.0
	WW Pump Station #4 (AM-02)	7.3
	Lahaina Intermediate School (AM-03)	86
	Lahaina Boys & Girls Club (AM-04)	13.
1/28/2024	Leialii Hawaiian Homelands (AM-01)	8.8
	WW Pump Station #4 (AM-02)	12
	Lahaina Intermediate School (AM-03)	7.7
	Lahaina Boys & Girls Club (AM-04)	9.4
1/29/2024	Leialii Hawaiian Homelands (AM-01)	13
	WW Pump Station #4 (AM-02)	12
	Lahaina Intermediate School (AM-03)	8.6
	Lahaina Boys & Girls Club (AM-04)	9.9
1/30/2024	Leialii Hawaiian Homelands (AM-01)	6.3
	WW Pump Station #4 (AM-02)	5.7
	Lahaina Intermediate School (AM-03)	130
	Lahaina Boys & Girls Club (AM-04)	3.7
1/31/2024	Leialii Hawaiian Homelands (AM-01)	15
	WW Pump Station #4 (AM-02)	11
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	9.0

Notes:
µg/m3 = micrograms per cubic meter
24 hour TWA calculation results are shown in two significant figures
Results are based on 24 hour TWA calculation
Results from WW Pump Station #4 on 1/29 have been revised from previously submitted report.

Table 3
Maui Wildfire - Lahaina
Meteorological Data
1/25/2024-1/31/2024
[Report Updated: 7/2/2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
1/25/2024	AM-01	Leialii Hawaiian Homelands	1.8	SE	75	81	757.2
1/25/2024	AM-02	WW Pump Station #4	1.2	SE	75	85	759.8
1/25/2024	AM-03	Lahaina Intermediate School	3.0	SE	78	88	750.3
1/25/2024	AM-04	Lahaina Boys & Girls Club	1.0	SE	74	84	759.4
1/26/2024	AM-01	Leialii Hawaiian Homelands	1.7	SSE	75	79	757.4
1/26/2024	AM-02	WW Pump Station #4	1.1	ESE	76	83	759.9
1/26/2024	AM-03	Lahaina Intermediate School	2.2	ESE	79	85	750.3
1/26/2024	AM-04	Lahaina Boys & Girls Club	1.1	SE	74	82	759.4
1/27/2024	AM-01	Leialii Hawaiian Homelands	2.0	SSE	76	78	757.1
1/27/2024	AM-02	WW Pump Station #4	1.8	SSE	77	81	759.6
1/27/2024	AM-03	Lahaina Intermediate School	2.3	SE	80	86	750.1
1/27/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSE	76	80	759.2
1/28/2024	AM-01	Leialii Hawaiian Homelands	1.9	S	78	77	756.7
1/28/2024	AM-02	WW Pump Station #4	2.2	S	78	81	759.2
1/28/2024	AM-03	Lahaina Intermediate School	2.8	SSE	81	86	749.7
1/28/2024	AM-04	Lahaina Boys & Girls Club	1.7	S	77	80	758.8
1/29/2024	AM-01	Leialii Hawaiian Homelands	2.1	SSE	77	79	756.8
1/29/2024	AM-02	WW Pump Station #4	2.0	SSE	78	83	759.3
1/29/2024	AM-03	Lahaina Intermediate School	3.2	SSE	81	87	749.8
1/29/2024	AM-04	Lahaina Boys & Girls Club	1.4	SSE	78	80	758.9
1/30/2024	AM-01	Leialii Hawaiian Homelands	1.7	SSE	74	80	758.6
1/30/2024	AM-02	WW Pump Station #4	1.1	SE	76	83	761.1
1/30/2024	AM-03	Lahaina Intermediate School	1.0	SSE	79	88	751.5
1/30/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	74	85	760.5
1/31/2024	AM-01	Leialii Hawaiian Homelands	0.8	ESE	76	69	759.1
1/31/2024	AM-02	WW Pump Station #4	0.8	SE	76	77	761.6
1/31/2024	AM-03	Lahaina Intermediate School	1.1	E	80	76	752.0
1/31/2024	AM-04	Lahaina Boys & Girls Club	0.8	SSE	74	77	761.0

Notes:
°F - Fahrenheit
mBar - millibar
mph - miles per hour

Appendix 1

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/12/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-012524-AB**

EMSL Sample Number:	042402316-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7175.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0001 **Customer Sample:** MFL-AM01-012524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	H4	None Detected									
A2	D3	None Detected									
A2	H6	None Detected									
A3	H5	None Detected									
A3	G3	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/12/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-012524-AB**

EMSL Sample Number:	042402316-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7279.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0002 **Customer Sample:** MFL-AM02-012524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	I4	None Detected									
A5	C5	None Detected									
A6	D7	None Detected									
A6	J3	None Detected									
A7	F7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Project: **HDOH Lahaina Community Air / 103S864023206**

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Analysis Date:	02/06/2024 & 04/16/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-012524-AB**

EMSL Sample Number:	042402316-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6986.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0003 **Customer Sample:** MFL-AM03-012524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B5	D4	None Detected									
B5	G6	None Detected									
B6	J6	None Detected									
B6	B5	None Detected									
B7	C6	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
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Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Project: **HDOH Lahaina Community Air / 103S864023206**

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Analysis Date:	02/06/2024 & 04/16/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-012524-AB**

EMSL Sample Number:	042402316-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7272.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0004 **Customer Sample:** MFL-AM04-012524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C1	G7	None Detected									
C1	J3	None Detected									
C2	A4	None Detected									
C2	I4	None Detected									
C3	D7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-012524-AB**

EMSL Sample Number:	042402316-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

Comment

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0005 **Customer Sample:** MFL-FB01-012524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B1	A1	None Detected									
B1	C3	None Detected									
B1	E4	None Detected									
B1	G2	None Detected									
B1	I3	None Detected									
B2	A5	None Detected									
B2	C6	None Detected									
B2	E7	None Detected									
B2	G8	None Detected									
B2	I9	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Project: **HDOH Lahaina Community Air / 103S864023206**

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Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-012624-AB**

EMSL Sample Number:	042402316-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7134.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0006 **Customer Sample:** MFL-AM01-012624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B5	I5	None Detected									
B5	D3	None Detected									
B6	C8	None Detected									
B6	G6	None Detected									
B7	D5	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Phone:	(703) 489-2674
Fax:	
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/06/2024
Report Date:	02/10/2024

Project: **HDOH Lahaina Community Air / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-012624-AB**		**Sample Description:**	
EMSL Sample Number:	042402316-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7316.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0129
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	4
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.003			
Analytical Sensitivity (Structures/cc):	**0.0010**		**Limit of Detection (Structures/cc):**	**0.0030**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**- 0.0030**
Total Amphibole	**ADX**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**- 0.0030**
Actinolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Amosite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Anthophyllite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Crocidolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Tremolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**- 0.0030**
Other Minerals	-	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Total All Structures	**-**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**- 0.0030**

PCM EQUIVALENT (PCMe) STRUCTURES
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**- 0.0030**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**- 0.0030**
Actinolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Amosite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Anthophyllite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Crocidolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Tremolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**- 0.0030**
Other Minerals	-	0	0	< 57.95	< 0.0030	Not Applicable	- 0.0030
Total All Structures (PCMe)	**-**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**- 0.0030**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0007 **Customer Sample:** MFL-AM02-012624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D5	D2	None Detected									
D5	J3	None Detected									
D7	I8	None Detected									
D7	C5	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **HDOH Lahaina Community Air / 103S864023206**

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Analysis Date:	02/09/2024 & 04/16/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-012624-AB**

EMSL Sample Number:	042402316-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7162.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0008 **Customer Sample:** MFL-AM03-012624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C1	D7	None Detected									
C1	I9	None Detected									
C2	B9	None Detected									
C2	I8	None Detected									
C3	H3	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/16/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-012624-AB**

EMSL Sample Number:	042402316-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6944.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.72	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0009 **Customer Sample:** MFL-AM04-012624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C4	B5	None Detected									
C4	I5	None Detected									
C5	C7	None Detected									
C5	I5	None Detected									
C6	E4	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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1560 Broadway, Suite 1400
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Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-012624-AB**

EMSL Sample Number:	042402316-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

Comment

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0010 **Customer Sample:** MFL-FB01-012624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D1	G10	None Detected									
D1	F8	None Detected									
D1	E4	None Detected									
D1	D1	None Detected									
D1	D5	None Detected									
D2	A6	None Detected									
D2	C7	None Detected									
D2	E9	None Detected									
D2	G8	None Detected									
D2	I4	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/16/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-012724-AB**

EMSL Sample Number:	042402316-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7207.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0011 **Customer Sample:** MFL-AM01-012724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D5	J8	None Detected									
D5	D2	None Detected									
D6	C8	None Detected									
D6	H5	None Detected									
D7	C5	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/06/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-012724-AB**

EMSL Sample Number:	042402316-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7169.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0012 **Customer Sample:** MFL-AM02-012724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G2	A8	None Detected									
G2	G7	None Detected									
G3	C9	None Detected									
G3	H5	None Detected									
G4	E4	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **HDOH Lahaina Community Air / 103S864023206**

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Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/06/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-012724-AB**

EMSL Sample Number:	042402316-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7160.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0013 **Customer Sample:** MFL-AM03-012724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G6	J3	None Detected									
G6	H6	None Detected									
G7	A5	None Detected									
G7	H2	None Detected									
G7	H6	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **HDOH Lahaina Community Air / 103S864023206**

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Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/06/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-012724-AB**

EMSL Sample Number:	042402316-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6484.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0014 **Customer Sample:** MFL-AM04-012724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H1	H8	None Detected									
H1	C6	None Detected									
H2	F2	None Detected									
H2	H6	None Detected									
H3	B7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/06/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-012724-AB**

EMSL Sample Number:	042402316-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0015 **Customer Sample:** MFL-FB01-012724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H5	A6	None Detected									
H5	C7	None Detected									
H5	E4	None Detected									
H5	G5	None Detected									
H5	I8	None Detected									
H6	J6	None Detected									
H6	H8	None Detected									
H6	F9	None Detected									
H6	D2	None Detected									
H6	B4	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/06/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-012824-AB**

EMSL Sample Number:	042402316-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7218.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0016 **Customer Sample:** MFL-AM01-012824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I1	B4	None Detected									
I2	A7	None Detected									
I2	I10	None Detected									
I3	F3	None Detected									
I3	B4	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

Project: **HDOH Lahaina Community Air / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-012824-AB**

EMSL Sample Number:	042402316-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7244.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	10			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0017 **Customer Sample:** MFL-AM02-012824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E1	J2	None Detected									
E1	C6	None Detected									
E2	B6	None Detected									
E2	I4	None Detected									
E3	F7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-012824-AB**

EMSL Sample Number:	042402316-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7203.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0018 **Customer Sample:** MFL-AM03-012824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E5	J8	None Detected									
E5	E7	None Detected									
E6	D8	None Detected									
E6	J7	None Detected									
E7	D5	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/06/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-012824-AB**

EMSL Sample Number:	042402316-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6678.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Robyn Ray
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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0019 **Customer Sample:** MFL-AM04-012824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J5	B5	None Detected									
J5	I6	None Detected									
J6	J6	None Detected									
J6	B5	None Detected									
J6	E4	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-012824-AB**

EMSL Sample Number:	042402316-0020		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	0			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

Comment

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0020 **Customer Sample:** MFL-FB01-012824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	I5	None Detected									
F1	G7	None Detected									
F1	F4	None Detected									
F1	D6	None Detected									
F1	A5	None Detected									
F2	A6	None Detected									
F2	C5	None Detected									
F2	E3	None Detected									
F2	H4	None Detected									
F2	H7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-012924-AB**

EMSL Sample Number:	042402316-0021		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7088.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0021 **Customer Sample:** MFL-AM01-012924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F5	G3	None Detected									
F5	C6	None Detected									
F6	H8	None Detected									
F6	B5	None Detected									
F6	E8	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	N/A
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-012924-AB**

EMSL Sample Number:	042402316-0022	Sample Matrix:	Air
Magnification used for fiber counting:	N/A	Volume (L) :	7283.1
Aspect ratio for fiber definition:	N/A	Area of original collection filter (mm^2):	385
Minimum Length (µm):	N/A	Grid Opening Area (mm^2):	0.0000
Chi^2 Test for Random Distribution on Filter:	N/A	Grid Openings Analyzed:	N/A
Minimum Level of analysis (chrysotile):	CD	Analyst:	N/A
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	N/A		
Target Analytical Sensitivity (Structures/cc):	0.0034		
Analytical Sensitivity (Structures/cc):	**Not Analyzed**	**Limit of Detection (Structures/cc):**	**Not Analyzed**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**Not Analyzed**					
Total Amphibole	**ADX**	**Not Analyzed**					
Actinolite	ADX	Not Analyzed					
Amosite	ADX	Not Analyzed					
Anthophyllite	ADX	Not Analyzed					
Crocidolite	ADX	Not Analyzed					
Tremolite	ADX	Not Analyzed					
Total Asbestos Structures	**CD/ADX**	**Not Analyzed**					
Other Minerals	-	Not Analyzed					
Total All Structures	**-**	**Not Analyzed**					

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**Not Analyzed**					
Total Amphibole (PCMe)	**ADX**	**Not Analyzed**					
Actinolite	ADX	Not Analyzed					
Amosite	ADX	Not Analyzed					
Anthophyllite	ADX	Not Analyzed					
Crocidolite	ADX	Not Analyzed					
Tremolite	ADX	Not Analyzed					
Total Asbestos Structures (PCMe)	**CD/ADX**	**Not Analyzed**					
Other Minerals	-	Not Analyzed					
Total All Structures (PCMe)	**-**	**Not Analyzed**					

Comment

Filter received damaged. Unable to analyze.

Robyn Ray
Approved Signatory

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-012924-AB**

EMSL Sample Number:	042402316-0023		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7109.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0023 **Customer Sample:** MFL-AM03-012924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G1	B6	None Detected									
G1	F7	None Detected									
G2	C6	None Detected									
G2	I5	None Detected									
G2	G2	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-012924-AB**

EMSL Sample Number:	042402316-0024		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6901.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0024 **Customer Sample:** MFL-AM04-012924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B3	A6	None Detected									
B3	C9	None Detected									
B4	H3	None Detected									
B4	B5	None Detected									
B1	I7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-012924-AB**

EMSL Sample Number:	042402316-0025		Sample Matrix:	Air
Magnification used for fiber counting:	10,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

Comment

Robyn Ray
Approved Signatory

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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0025 **Customer Sample:** MFL-FB01-012924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G5	J7	None Detected									
G5	G8	None Detected									
G5	F9	None Detected									
G5	D7	None Detected									
G5	B8	None Detected									
G6	B6	None Detected									
G6	C4	None Detected									
G6	E2	None Detected									
G6	G3	None Detected									
G6	H5	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

EMSL Analytical, Inc.
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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-013024-AB**

EMSL Sample Number:	042402316-0026		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7223.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0026 **Customer Sample:** MFL-AM01-013024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H2	I6	None Detected									
H2	D5	None Detected									
H3	D7	None Detected									
H3	G4	None Detected									
H3	J6	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-013024-AB**

EMSL Sample Number:	042402316-0027		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7237.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0027 **Customer Sample:** MFL-AM02-013024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H6	B6	None Detected									
H6	F7	None Detected									
H7	C7	None Detected									
H7	J4	None Detected									
H5	F4	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-013024-AB**

EMSL Sample Number:	042402316-0028		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7273.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0028 **Customer Sample:** MFL-AM03-013024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D2	I6	None Detected									
D2	B7	None Detected									
D3	C7	None Detected									
D3	J5	None Detected									
D5	G7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-013024-AB**

EMSL Sample Number:	042402316-0029		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7195.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0029 **Customer Sample:** MFL-AM04-013024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	E3	None Detected									
F1	B5	None Detected									
F3	D4	None Detected									
F3	G3	None Detected									
F3	J7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-013024-AB**

EMSL Sample Number:	042402316-0030		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

Comment

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0030 **Customer Sample:** MFL-FB01-013024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F5	C6	None Detected									
F5	D4	None Detected									
F5	F3	None Detected									
F5	G4	None Detected									
F5	H7	None Detected									
F6	J5	None Detected									
F6	F8	None Detected									
F6	D9	None Detected									
F6	C7	None Detected									
F6	A8	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-013124-AB**

EMSL Sample Number:	042402316-0031		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7314.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0031 **Customer Sample:** MFL-AM01-013124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G1	I6	None Detected									
G1	E10	None Detected									
G2	I7	None Detected									
G2	D9	None Detected									
G3	C5	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-013124-AB**

EMSL Sample Number:	042402316-0032		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7244.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0032 **Customer Sample:** MFL-AM02-013124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	G8	None Detected									
F1	D5	None Detected									
F2	C6	None Detected									
F2	I5	None Detected									
F3	E7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **HDOH Lahaina Community Air / 103S864023206**

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Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-013124-AB**

EMSL Sample Number:	042402316-0033		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7082.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0033 **Customer Sample:** MFL-AM03-013124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I2	B4	None Detected									
I2	I3	None Detected									
I3	I7	None Detected									
I3	C5	None Detected									
I4	H3	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024 & 04/17/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-013124-AB**

EMSL Sample Number:	042402316-0034		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7219.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0034 **Customer Sample:** MFL-AM04-013124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I5	H5	None Detected									
I5	D7	None Detected									
I6	J4	None Detected									
I6	E7	None Detected									
I7	I6	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

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EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/09/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-013124-AB**

EMSL Sample Number:	042402316-0035		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**			

Comment

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EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0035 **Customer Sample:** MFL-FB01-013124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J1	J6	None Detected									
J1	G6	None Detected									
J1	E8	None Detected									
J1	D5	None Detected									
J1	A7	None Detected									
J2	B4	None Detected									
J2	D3	None Detected									
J2	E4	None Detected									
J2	E7	None Detected									
J2	I7	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042402316
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **HDOH Lahaina Community Air / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/05/2024 10:00 AM
Analysis Date:	02/05/2024
Report Date:	04/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **Lab Blank** **Sample Description:** **Lab Blank**

EMSL Sample Number:	042402316-0036		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			

Analytical Sensitivity (Structures/cc): **N/A** **Limit of Detection (Structures/cc):** **N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures	**-**	**0**	**0**	**< 23.18**			

PCM EQUIVALENT (PCMe) Fibers
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.18**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.18**			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.18**			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.18**			

Comment

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID: 042402316
Client: Tetra Tech
Project ID: HDOH Lahaina Community Air / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402316-0036 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A2	J9	None Detected									
A2	H3	None Detected									
A2	F4	None Detected									
A2	D3	None Detected									
A2	B2	None Detected									
A3	J9	None Detected									
A3	G8	None Detected									
A3	F10	None Detected									
A3	D4	None Detected									
A3	B2	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
XCGBLD - Crosses Countable Grid Bar Length Doubled

OrderID: 042402316

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only: 042402316

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization.

Customer Information

Customer ID:
Company Name: Tetra Tech
Contact Name: Chelsea Saber
Street Address: 1550 Broadway, St 1400, ~~Denver, CO~~
City, State, Zip: Denver, CO 80202 Country: US
Phone: 703-885-5494
Email(s) for Report: chelsea.saber@tetratech.com

Billing Information

Billing ID:
Company Name:
Billing Contact:
Street Address:
City, State, Zip: Country:
Phone:
Email(s) for Invoice:

RECEIVED
EMSL
CINNAMINSON, NJ
2024 FEB -5 A 8:53

Project Information

Project Name/No: HDOH Lahaina Community Air / 103S864023206
Purchase Order:
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Elia Kuryan Saldaña
Sampled By Signature:
No. of Samples in Shipment: 35

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 4-4.5 Hour AHERA ONLY ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- POINT COUNT w/ GRAVIMETRIC ☐ 400 (<0.25%) ☐ 1,000 (<0.1%)
- ☐ NIOSH 9002 (<1%)
- ☐ NYS 198.1 (Friable - NY)
- ☐ NYS 198.6 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☒ ISO 10312*

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (Non-Friable-NY)
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0.1%)

Other Test (please specify)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM Qualitative via Filtration Prep
- ☐ TEM Qualitative via Drop Mount Prep

*Please call with your project-specific requirements.

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☒ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-012524-AB		7,175.088 L	01/25/24 1109
MFL-AM02-012524-AB		7,279.344 L	01/25/24 1139
MFL-AM03-012524-AB		6,986.880 L	01/25/24 1321
MFL-AM04-012524-AB		7,272.720 L	01/25/24 1350
MFL-FB01-012524-AB		0 L	01/25/24 0730
MFL-AM01-012624-AB		7,134.431 L	01/26/24 1109
MFL-AM02-012624-AB		7,316.755 L	01/26/24 1140
MFL-AM03-012624-AB		7,162.256 L	01/26/24 1324

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Sample MFL-AM02-012924-AB received with damaged filter. Unable to analyze.
All other samples received acceptable for analysis.
Report revised 4/19/24 to reach LOD of 0.003 s/cc.

Method of Shipment: FedEx
Sample Condition Upon Receipt:

Relinquished by:	Date/Time:	Received by:	Date/Time
	02/01/24 1100		2-5-24
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-05 Asbestos R16 10/26/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

OrderID: 042402316

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

042402316

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

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Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-012624-AB		6,944.533L	01/26/24 1140
MFL-FB01-012624-AB		0 L	01/26/24 0730
MFL-AM01-012724-AB		7,207.057L	01/27/24 1104
MFL-AM02-012724-AB		7,169.702L	01/27/24 1133
MFL-AM03-012724-AB		7,160.274L	01/27/24 1309
MFL-AM04-012724-AB		6,484.031L	01/27/24 1346
MFL-FB01-012724-AB		0 L	01/27/24 0730
MFL-AM01-012824-AB		7,218.050L	01/28/24 1103
MFL-AM02-012824-AB		7,244.711L	01/28/24 1132
MFL-AM03-012824-AB		7,203.412L	01/28/24 1307
MFL-AM04-012824-AB		6,678.728L	01/28/24 1335
MFL-FB01-012824-AB		0 L	01/28/24 0730
MFL-AM01-012924-AB		7,088.820L	01/29/24 1107
MFL-AM02-012924-AB		7,283.088L	01/29/24 1134
MFL-AM03-012924-AB		7,108.992L	01/29/24 1312
MFL-AM04-012924-AB		6,901.308L	01/29/24 1342
MFL-FB01-012924-AB		0 L	01/29/24 0730
MFL-AM01-013024-AB		7,223.037L	01/30/24 1105
MFL-AM02-013024-AB		7,237.727L	01/30/24 1132
MFL-AM03-013024-AB		7,273.154L	01/30/24 1318
MFL-AM04-013024-AB		7,195.104L	01/30/24 1348
MFL-FB01-013024-AB		0 L	01/30/24 0730
MFL-AM01-013124-AB		7,314.336L	01/31/24 1108
MFL-AM02-013124-AB		7,244.784L	01/31/24 1134
MFL-AM03-013124-AB		7,082.470L	01/31/24 1318

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/01/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-05 Asbestos R16 10/26/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature.)

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EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

042402316

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077

PHONE: (800) 220-3675
EMAIL: CinnAsblab@EMSL.com

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

RECEIVED
EMSL
CINNAMINSON, NJ
2024 FEB -5 A 8:53

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-013124-AB		7,219.916 L	01/31/24 1345
MFL-FB01-013124-AB		0 L	01/31/24 0730

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/01/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-05 Asbestos R16 10/26/2021

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Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 04/19/2024 and Shanna Vasser 4/22/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Analysis date: 1/25/2024 – 1/31/2024
Report No: 042402316

√	1.	Chain of custody (CoC) documentation is present.
√	2.	Sample receipt condition information is present and acceptable.
√	3.	Laboratory conducting the analysis is identified.
X	4.	All samples submitted to the laboratory are accounted for.
√	5.	Requested analytical methods were performed.
√	6.	Analysis dates are provided.
√	7.	Analyte results are provided.
NA	8.	Result qualifiers and definitions are provided.
√	9.	Result units are reported.
√	10.	Requested reporting limits are present.
NA	11.	Method detection limits are present.
√	12.	Sample collection date and time are present.
√	13.	No detections in field QC blanks (lot/media blanks, field blanks, etc).

Discrepancies:

1. Report was revised on 04/19/2024 to adjust the limit of detection (LOD) to 0.003 s/cc.
2. MFL-AM04-012624-AB was logged in as MFL-AM07-012624-AB. A new report was generated to correct the sample ID. No action was necessary for this discrepancy.
4. Sample MFL-AM02-012924-AB was listed on the CoC; however, no results were present in the laboratory data package. The sample was received at the laboratory with a damaged filter and could not be analyzed. No action was necessary for this discrepancy.

Notes: None.

Eastern Research Group
601 Keystone Park Drive
Suite 700
Morrisville, NC 27560

February 13, 2024

Ms. Chelsea Saber
Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
Project Name: Lahaina fires

Dear Ms. Chelsea Saber,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 02/05/24 11:24.

Values below the MDL for QC results in this report are recorded as ND, however the actual values are reported in the accompanying Excel report with a "U" flag (Under the detection limit). The actual values are reported in AQS.

This test is accredited under the 2016 TNI Standard for Environmental Laboratories (FL DOH Certification # E87673). All analyses were performed as described in the US EPA-approved QAPP, under the contract for National Hazardous Air Pollutant Support (US EPA Contract No. 68HERH22D0002). This cover page is an integral part of this report, and any exceptions or comments are noted on the last page.

Release of the data contained in this data package and in the data submitted in the electronic data deliverable, has been authorized by the Program Manager, or the Program Manager's designee as verified by the following signature.

The issuance of the final Certificate of Analysis takes precedence over any previous Report. If you have any questions, please contact me at 919-468-7924.

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-012524-HM	4020650-01	Air	01/25/24 23:59	02/05/24 11:24
MFL-AM02-012524-HM	4020650-02	Air	01/25/24 23:59	02/05/24 11:24
MFL-AM03-012524-HM	4020650-03	Air	01/25/24 23:59	02/05/24 11:24
MFL-AM04-012524-HM	4020650-04	Air	01/25/24 23:59	02/05/24 11:24
MFL-AM01-012624-HM	4020650-05	Air	01/26/24 23:59	02/05/24 11:24
MFL-AM02-012624-HM	4020650-06	Air	01/26/24 23:59	02/05/24 11:24
MFL-AM03-012624-HM	4020650-07	Air	01/26/24 23:59	02/05/24 11:24
MFL-AM04-012624-HM	4020650-08	Air	01/26/24 23:59	02/05/24 11:24
MFL-FB01-012624-HM	4020650-09	Air	01/26/24 00:00	02/05/24 11:24
MFL-AM01-012724-HM	4020650-10	Air	01/27/24 23:59	02/05/24 11:24
MFL-AM02-012724-HM	4020650-11	Air	01/27/24 23:59	02/05/24 11:24
MFL-AM03-012724-HM	4020650-12	Air	01/27/24 23:59	02/05/24 11:24
MFL-AM04-012724-HM	4020650-13	Air	01/27/24 23:59	02/05/24 11:24
MFL-AM01-012824-HM	4020650-14	Air	01/28/24 23:59	02/05/24 11:24
MFL-AM02-012824-HM	4020650-15	Air	01/28/24 23:59	02/05/24 11:24
MFL-AM03-012824-HM	4020650-16	Air	01/28/24 23:59	02/05/24 11:24
MFL-AM04-012824-HM	4020650-17	Air	01/28/24 23:59	02/05/24 11:24
MFL-FB01-012824-HM	4020650-18	Air	01/28/24 00:00	02/05/24 11:24
MFL-AM01-012924-HM	4020650-19	Air	01/29/24 23:59	02/05/24 11:24
MFL-AM02-012924-HM	4020650-20	Air	01/29/24 23:59	02/05/24 11:24
MFL-AM03-012924-HM	4020650-21	Air	01/29/24 23:59	02/05/24 11:24

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-012924-HM	4020650-22	Air	01/29/24 23:59	02/05/24 11:24
MFL-AM01-013024-HM	4020650-23	Air	01/30/24 23:59	02/05/24 11:24
MFL-AM02-013024-HM	4020650-24	Air	01/30/24 23:59	02/05/24 11:24
MFL-AM03-013024-HM	4020650-25	Air	01/30/24 23:59	02/05/24 11:24
MFL-AM04-013024-HM	4020650-26	Air	01/30/24 23:59	02/05/24 11:24
MFL-FB01-013024-HM	4020650-27	Air	01/30/24 23:59	02/05/24 11:24
MFL-AM01-013124-HM	4020650-28	Air	01/31/24 23:59	02/05/24 11:24
MFL-AM02-013124-HM/MS/I	4020650-29	Air	01/31/24 23:59	02/05/24 11:24
MFL-AM03-013124-HM	4020650-30	Air	01/31/24 23:59	02/05/24 11:24
MFL-AM04-013124-HM	4020650-31	Air	01/31/24 23:59	02/05/24 11:24

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-012524-HM
Matrix: Air
Comments: TetraTech Q9534264

Lab ID: 4020650-01
Sample Volume: 1816.472 m³
Filter ID:

Sampled: 01/25/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/07/24 21:33

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.462**	SL	**0.0346**
Arsenic	**7440-38-2**	**5.72**		**0.00839**
Barium	**7440-39-3**	**14.1**		**0.958**
Beryllium	**7440-41-7**	**0.0342**		**0.00287**
Cadmium	7440-43-9	0.0585	U	0.0710
Chromium	**7440-47-3**	**8.06**		**1.98**
Cobalt	**7440-48-4**	**2.48**		**0.0391**
Copper	**7440-50-8**	**47.8**		**2.36**
Lead	**7439-92-1**	**4.01**		**0.192**
Manganese	**7439-96-5**	**45.6**		**1.69**
Molybdenum	**7439-98-7**	**1.39**		**0.322**
Nickel	**7440-02-0**	**12.3**		**0.584**
Selenium	**7782-49-2**	**0.495**		**0.00803**
Thallium	**7440-28-0**	**0.00195**	B, QB-01, QB-04	**5.28E-4**
Vanadium	**7440-62-2**	**3.55**		**0.0474**
Zinc	**7440-66-6**	**87.6**		**68.8**

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-012524-HM
Matrix: Air
Comments: TetraTech Q9534261

Lab ID: 4020650-02
Sample Volume: 2090.254 m³
Filter ID:

Sampled: 01/25/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/07/24 21:48

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0427**	SL	**0.0300**
Arsenic	**7440-38-2**	**0.272**		**0.00729**
Barium	**7440-39-3**	**0.983**		**0.833**
Beryllium	7440-41-7	0.00219	U	0.00249
Cadmium	7440-43-9	0.00851	U	0.0617
Chromium	7440-47-3	1.60	U	1.72
Cobalt	**7440-48-4**	**0.0693**		**0.0339**
Copper	**7440-50-8**	**19.9**		**2.05**
Lead	**7439-92-1**	**0.806**		**0.167**
Manganese	7439-96-5	1.35	U	1.47
Molybdenum	**7439-98-7**	**0.582**		**0.279**
Nickel	7440-02-0	0.471	U	0.508
Selenium	**7782-49-2**	**0.356**		**0.00697**
Thallium	7440-28-0	4.16E-4	B, QB-01, QB-04, U	4.58E-4
Vanadium	**7440-62-2**	**0.209**		**0.0412**
Zinc	7440-66-6	33.2	U	59.8

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-012524-HM
Matrix: Air
Comments: TetraTech Q9534259

Lab ID: 4020650-03
Sample Volume: 1966.936 m³
Filter ID:

Sampled: 01/25/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/07/24 17:55

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0628**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.0959**		**0.00775**
Barium	**7440-39-3**	**1.75**		**0.885**
Beryllium	**7440-41-7**	**0.00633**		**0.00265**
Cadmium	7440-43-9	0.00836	U	0.0656
Chromium	**7440-47-3**	**2.48**		**1.83**
Cobalt	**7440-48-4**	**0.234**		**0.0361**
Copper	**7440-50-8**	**45.6**	QM-07	**2.18**
Lead	**7439-92-1**	**1.36**		**0.177**
Manganese	**7439-96-5**	**3.83**		**1.56**
Molybdenum	**7439-98-7**	**1.28**		**0.297**
Nickel	**7440-02-0**	**1.06**		**0.539**
Selenium	**7782-49-2**	**0.335**	SRD-01	**0.00741**
Thallium	**7440-28-0**	**6.24E-4**	B, QB-01, QB-04	**4.87E-4**
Vanadium	**7440-62-2**	**0.379**		**0.0438**
Zinc	7440-66-6	46.6	QM-07, U	63.5

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-012524-HM
Matrix: Air
Lab ID: 4020650-04
Sample Volume: 1913.588 m³
Filter ID:
Sampled: 01/25/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/07/24 22:04

Comments: TetraTech Q9534258

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0459**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.128**		**0.00797**
Barium	7440-39-3	0.885	U	0.910
Beryllium	7440-41-7	0.00147	U	0.00272
Cadmium	7440-43-9	0.00808	U	0.0674
Chromium	7440-47-3	1.36	U	1.88
Cobalt	**7440-48-4**	**0.0611**		**0.0371**
Copper	**7440-50-8**	**26.8**		**2.24**
Lead	**7439-92-1**	**0.375**		**0.182**
Manganese	7439-96-5	0.988	U	1.61
Molybdenum	**7439-98-7**	**1.02**		**0.305**
Nickel	7440-02-0	0.425	U	0.554
Selenium	**7782-49-2**	**0.310**		**0.00762**
Thallium	7440-28-0	4.32E-4	B, QB-01, QB-04, U	5.01E-4
Vanadium	**7440-62-2**	**0.160**		**0.0450**
Zinc	7440-66-6	27.8	U	65.3

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-012624-HM
Matrix: Air
Comments: TetraTech Q9534256

Lab ID: 4020650-05
Sample Volume: 2031.668 m³
Filter ID:

Sampled: 01/26/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/07/24 22:17

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0566**	SL	**0.0309**
Arsenic	**7440-38-2**	**0.381**		**0.00750**
Barium	**7440-39-3**	**2.11**		**0.857**
Beryllium	**7440-41-7**	**0.00290**		**0.00256**
Cadmium	7440-43-9	0.00857	U	0.0635
Chromium	7440-47-3	1.48	U	1.77
Cobalt	**7440-48-4**	**0.129**		**0.0349**
Copper	**7440-50-8**	**20.4**		**2.11**
Lead	**7439-92-1**	**0.242**		**0.171**
Manganese	**7439-96-5**	**2.55**		**1.51**
Molybdenum	**7439-98-7**	**1.07**		**0.287**
Nickel	**7440-02-0**	**0.732**		**0.522**
Selenium	**7782-49-2**	**0.113**		**0.00718**
Thallium	**7440-28-0**	**5.63E-4**	B, QB-01, QB-04	**4.72E-4**
Vanadium	**7440-62-2**	**0.246**		**0.0424**
Zinc	7440-66-6	27.8	U	61.5

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-012624-HM
Matrix: Air
Comments: TetraTech Q9534254

Lab ID: 4020650-06
Sample Volume: 2162.914 m³
Filter ID:

Sampled: 01/26/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/07/24 23:34

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0475**	SL	**0.0290**
Arsenic	**7440-38-2**	**0.258**		**0.00705**
Barium	**7440-39-3**	**1.29**		**0.805**
Beryllium	7440-41-7	0.00185	U	0.00241
Cadmium	7440-43-9	0.0451	U	0.0597
Chromium	7440-47-3	1.40	U	1.66
Cobalt	**7440-48-4**	**0.122**		**0.0328**
Copper	**7440-50-8**	**15.8**		**1.98**
Lead	**7439-92-1**	**0.454**		**0.161**
Manganese	7439-96-5	1.31	U	1.42
Molybdenum	**7439-98-7**	**1.08**		**0.270**
Nickel	7440-02-0	0.471	U	0.490
Selenium	**7782-49-2**	**0.114**		**0.00674**
Thallium	**7440-28-0**	**9.43E-4**	B, QB-01, QB-04	**4.43E-4**
Vanadium	**7440-62-2**	**0.114**		**0.0398**
Zinc	7440-66-6	25.7	U	57.8

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-012624-HM
Matrix: Air
Comments: TetraTech Q9534253

Lab ID: 4020650-07
Sample Volume: 2039.37 m³
Filter ID:

Sampled: 01/26/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/07/24 23:48

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0620**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.0565**		**0.00748**
Barium	**7440-39-3**	**1.62**		**0.854**
Beryllium	**7440-41-7**	**0.00437**		**0.00255**
Cadmium	7440-43-9	0.00721	U	0.0633
Chromium	7440-47-3	1.51	U	1.76
Cobalt	**7440-48-4**	**0.0974**		**0.0348**
Copper	**7440-50-8**	**37.6**		**2.10**
Lead	**7439-92-1**	**0.548**		**0.171**
Manganese	**7439-96-5**	**1.63**		**1.51**
Molybdenum	**7439-98-7**	**1.71**		**0.286**
Nickel	**7440-02-0**	**0.656**		**0.520**
Selenium	**7782-49-2**	**0.115**		**0.00715**
Thallium	**7440-28-0**	**7.37E-4**	B, QB-01, QB-04	**4.70E-4**
Vanadium	**7440-62-2**	**0.173**		**0.0422**
Zinc	7440-66-6	30.0	U	61.3

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-012624-HM
Matrix: Air
Lab ID: 4020650-08
Sample Volume: 1931.629 m³
Filter ID:
Sampled: 01/26/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 00:03

Comments: TetraTech Q9534251

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0490**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.131**		**0.00789**
Barium	**7440-39-3**	**1.27**		**0.901**
Beryllium	7440-41-7	0.00180	U	0.00270
Cadmium	7440-43-9	0.00732	U	0.0668
Chromium	7440-47-3	1.45	U	1.86
Cobalt	**7440-48-4**	**0.0478**		**0.0367**
Copper	**7440-50-8**	**31.3**		**2.22**
Lead	**7439-92-1**	**0.336**		**0.180**
Manganese	7439-96-5	0.896	U	1.59
Molybdenum	**7439-98-7**	**1.36**		**0.302**
Nickel	7440-02-0	0.396	U	0.549
Selenium	**7782-49-2**	**0.114**		**0.00755**
Thallium	**7440-28-0**	**6.12E-4**	B, QB-01, QB-04	**4.96E-4**
Vanadium	**7440-62-2**	**0.103**		**0.0446**
Zinc	7440-66-6	31.0	U	64.7

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-012624-HM
Matrix: Air
Comments: TetraTech Q9534245 Field Blank

Lab ID: 4020650-09
Sample Volume: 2031.668 m³
Filter ID:

Sampled: 01/26/24 00:00
Received: 02/05/24 11:24
Analysis Date: 02/08/24 00:17

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0147	SL, U	0.0309
Arsenic	**7440-38-2**	**0.00806**	FB-01	**0.00750**
Barium	7440-39-3	0.517	U	0.857
Beryllium	7440-41-7	7.22E-4	U	0.00256
Cadmium	7440-43-9	0.00442	U	0.0635
Chromium	7440-47-3	1.25	U	1.77
Cobalt	**7440-48-4**	**0.0662**	FB-01	**0.0349**
Copper	**7440-50-8**	**3.06**	FB-01	**2.11**
Lead	7439-92-1	0.132	U	0.171
Manganese	7439-96-5	0.159	U	1.51
Molybdenum	7439-98-7	0.191	U	0.287
Nickel	7440-02-0	0.442	U	0.522
Selenium	7782-49-2	0.00522	U	0.00718
Thallium	7440-28-0	2.51E-4	B, QB-01, QB-04, U	4.72E-4
Vanadium	7440-62-2	0.0150	U	0.0424
Zinc	7440-66-6	24.0	U	61.5

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-012724-HM
Matrix: Air
Comments: TetraTech Q9534250

Lab ID: 4020650-10
Sample Volume: 2026.54 m³
Filter ID:

Sampled: 01/27/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 00:31

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0677**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.545**		**0.00752**
Barium	**7440-39-3**	**4.01**		**0.859**
Beryllium	**7440-41-7**	**0.0103**		**0.00257**
Cadmium	7440-43-9	0.0106	U	0.0637
Chromium	**7440-47-3**	**2.45**		**1.77**
Cobalt	**7440-48-4**	**0.698**		**0.0350**
Copper	**7440-50-8**	**34.2**		**2.11**
Lead	**7439-92-1**	**0.438**		**0.172**
Manganese	**7439-96-5**	**13.0**		**1.52**
Molybdenum	**7439-98-7**	**1.53**		**0.288**
Nickel	**7440-02-0**	**4.46**		**0.523**
Selenium	**7782-49-2**	**0.223**		**0.00719**
Thallium	**7440-28-0**	**7.11E-4**	B, QB-01, QB-04	**4.73E-4**
Vanadium	**7440-62-2**	**0.834**		**0.0425**
Zinc	7440-66-6	32.0	U	61.7

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-012724-HM
Matrix: Air
Lab ID: 4020650-11
Sample Volume: 2090.36 m³
Filter ID:
Sampled: 01/27/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 00:45

Comments: TetraTech Q9534248

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0463**	SL	**0.0300**
Arsenic	**7440-38-2**	**0.196**		**0.00729**
Barium	7440-39-3	0.801	U	0.833
Beryllium	7440-41-7	0.00114	U	0.00249
Cadmium	7440-43-9	0.0297	U	0.0617
Chromium	7440-47-3	1.36	U	1.72
Cobalt	**7440-48-4**	**0.0374**		**0.0339**
Copper	**7440-50-8**	**12.4**		**2.05**
Lead	**7439-92-1**	**0.196**		**0.167**
Manganese	7439-96-5	0.629	U	1.47
Molybdenum	**7439-98-7**	**0.832**		**0.279**
Nickel	7440-02-0	0.438	U	0.507
Selenium	**7782-49-2**	**0.215**		**0.00697**
Thallium	7440-28-0	4.54E-4	B, QB-01, QB-04, U	4.58E-4
Vanadium	**7440-62-2**	**0.141**		**0.0412**
Zinc	7440-66-6	22.0	U	59.8

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-012724-HM
Matrix: Air
Comments: TetraTech Q9534247

Lab ID: 4020650-12
Sample Volume: 2018.848 m³
Filter ID:

Sampled: 01/27/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 00:58

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0577**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.0610**		**0.00755**
Barium	**7440-39-3**	**1.49**		**0.862**
Beryllium	7440-41-7	0.00249	U	0.00258
Cadmium	7440-43-9	0.00579	U	0.0639
Chromium	7440-47-3	1.35	U	1.78
Cobalt	**7440-48-4**	**0.0779**		**0.0351**
Copper	**7440-50-8**	**25.0**		**2.12**
Lead	**7439-92-1**	**0.191**		**0.172**
Manganese	7439-96-5	1.28	U	1.52
Molybdenum	**7439-98-7**	**1.60**		**0.289**
Nickel	**7440-02-0**	**0.794**		**0.525**
Selenium	**7782-49-2**	**0.209**		**0.00722**
Thallium	7440-28-0	4.69E-4	B, QB-01, QB-04, U	4.75E-4
Vanadium	**7440-62-2**	**0.190**		**0.0426**
Zinc	7440-66-6	31.0	U	61.9

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-012724-HM
Matrix: Air
Lab ID: 4020650-13
Sample Volume: 1890.667 m³
Filter ID:
Sampled: 01/27/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 01:12

Comments: TetraTech Q9534246

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0551**	SL	**0.0332**
Arsenic	**7440-38-2**	**0.227**		**0.00806**
Barium	**7440-39-3**	**1.06**		**0.921**
Beryllium	7440-41-7	0.00149	U	0.00275
Cadmium	7440-43-9	0.00714	U	0.0682
Chromium	7440-47-3	1.38	U	1.90
Cobalt	**7440-48-4**	**0.0589**		**0.0375**
Copper	**7440-50-8**	**26.7**		**2.26**
Lead	**7439-92-1**	**0.456**		**0.184**
Manganese	7439-96-5	0.891	U	1.63
Molybdenum	**7439-98-7**	**1.11**		**0.309**
Nickel	7440-02-0	0.447	U	0.561
Selenium	**7782-49-2**	**0.204**		**0.00771**
Thallium	7440-28-0	3.66E-4	B, QB-01, QB-04, U	5.07E-4
Vanadium	**7440-62-2**	**0.152**		**0.0455**
Zinc	7440-66-6	27.0	U	66.1

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-012824-HM
Matrix: Air
Lab ID: 4020650-14
Sample Volume: 1996.114 m³
Filter ID:
Sampled: 01/28/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 01:26

Comments: TetraTech Q9534244

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0986**	SL	**0.0315**
Arsenic	**7440-38-2**	**0.749**		**0.00764**
Barium	**7440-39-3**	**4.64**		**0.872**
Beryllium	**7440-41-7**	**0.00833**		**0.00261**
Cadmium	7440-43-9	0.0208	U	0.0646
Chromium	**7440-47-3**	**2.70**		**1.80**
Cobalt	**7440-48-4**	**0.485**		**0.0355**
Copper	**7440-50-8**	**48.9**		**2.14**
Lead	**7439-92-1**	**1.16**		**0.174**
Manganese	**7439-96-5**	**9.51**		**1.54**
Molybdenum	**7439-98-7**	**1.70**		**0.293**
Nickel	**7440-02-0**	**2.58**		**0.531**
Selenium	**7782-49-2**	**0.399**		**0.00730**
Thallium	**7440-28-0**	**7.98E-4**	B, QB-01, QB-04	**4.80E-4**
Vanadium	**7440-62-2**	**0.966**		**0.0431**
Zinc	7440-66-6	44.8	U	62.6

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-012824-HM
Matrix: Air
Lab ID: 4020650-15
Sample Volume: 2084.134 m³
Filter ID:
Sampled: 01/28/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 01:39

Comments: TetraTech Q9534243

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0299	SL, U	0.0301
Arsenic	**7440-38-2**	**0.202**		**0.00731**
Barium	7440-39-3	0.685	U	0.835
Beryllium	7440-41-7	0.00157	U	0.00250
Cadmium	7440-43-9	0.00669	U	0.0619
Chromium	7440-47-3	1.18	U	1.73
Cobalt	**7440-48-4**	**0.0571**		**0.0340**
Copper	**7440-50-8**	**6.18**		**2.05**
Lead	**7439-92-1**	**0.216**		**0.167**
Manganese	7439-96-5	1.18	U	1.48
Molybdenum	**7439-98-7**	**0.444**		**0.280**
Nickel	7440-02-0	0.373	U	0.509
Selenium	**7782-49-2**	**0.371**		**0.00699**
Thallium	**7440-28-0**	**5.13E-4**	B, QB-01, QB-04	**4.60E-4**
Vanadium	**7440-62-2**	**0.252**		**0.0413**
Zinc	7440-66-6	22.4	U	60.0

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-012824-HM
Matrix: Air
Comments: TetraTech Q9534241

Lab ID: 4020650-16
Sample Volume: 2040.225 m³
Filter ID:

Sampled: 01/28/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 19:18

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0429**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.0830**		**0.00747**
Barium	**7440-39-3**	**1.25**		**0.853**
Beryllium	**7440-41-7**	**0.00293**		**0.00255**
Cadmium	7440-43-9	0.00669	U	0.0632
Chromium	7440-47-3	1.49	U	1.76
Cobalt	**7440-48-4**	**0.106**		**0.0348**
Copper	**7440-50-8**	**16.0**		**2.10**
Lead	**7439-92-1**	**0.184**		**0.171**
Manganese	**7439-96-5**	**1.79**		**1.51**
Molybdenum	**7439-98-7**	**0.797**		**0.286**
Nickel	**7440-02-0**	**0.568**		**0.520**
Selenium	**7782-49-2**	**0.357**		**0.00715**
Thallium	**7440-28-0**	**6.63E-4**	B, QB-01	**4.70E-4**
Vanadium	**7440-62-2**	**0.266**		**0.0422**
Zinc	7440-66-6	36.5	U	61.2

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-012824-HM
Matrix: Air
Comments: TetraTech Q9534240

Lab ID: 4020650-17
Sample Volume: 1904.321 m³
Filter ID:

Sampled: 01/28/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 19:32

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0390**	SL	**0.0330**
Arsenic	**7440-38-2**	**0.361**		**0.00801**
Barium	7440-39-3	0.913	U	0.914
Beryllium	7440-41-7	0.00185	U	0.00273
Cadmium	7440-43-9	0.00710	U	0.0678
Chromium	7440-47-3	1.46	U	1.89
Cobalt	**7440-48-4**	**0.0674**		**0.0373**
Copper	**7440-50-8**	**18.3**		**2.25**
Lead	**7439-92-1**	**0.416**		**0.183**
Manganese	7439-96-5	1.41	U	1.61
Molybdenum	**7439-98-7**	**0.965**		**0.307**
Nickel	7440-02-0	0.399	U	0.557
Selenium	**7782-49-2**	**0.348**		**0.00766**
Thallium	**7440-28-0**	**6.51E-4**	B, QB-01	**5.03E-4**
Vanadium	**7440-62-2**	**0.250**		**0.0452**
Zinc	7440-66-6	36.3	U	65.6

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Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-012824-HM
Matrix: Air
Lab ID: 4020650-18
Sample Volume: 1996.114 m³
Filter ID:
Sampled: 01/28/24 00:00
Received: 02/05/24 11:24
Analysis Date: 02/08/24 19:46

Comments: TetraTech Q9534234 Field Blank

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00664	SL, U	0.0315
Arsenic	7440-38-2	0.00358	U	0.00764
Barium	7440-39-3	0.555	U	0.872
Beryllium	7440-41-7	0.00109	U	0.00261
Cadmium	7440-43-9	0.00208	U	0.0646
Chromium	7440-47-3	1.47	U	1.80
Cobalt	7440-48-4	0.0203	U	0.0355
Copper	7440-50-8	0.839	U	2.14
Lead	7439-92-1	0.0791	U	0.174
Manganese	7439-96-5	0.125	U	1.54
Molybdenum	7439-98-7	0.242	U	0.293
Nickel	7440-02-0	0.297	U	0.531
Selenium	7782-49-2	0.00640	U	0.00730
Thallium	7440-28-0	2.26E-4	B, QB-01, U	4.80E-4
Vanadium	7440-62-2	0.0117	U	0.0431
Zinc	7440-66-6	21.4	U	62.6

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-012924-HM
Matrix: Air
Comments: TetraTech Q9534239

Lab ID: 4020650-19
Sample Volume: 1999.456 m³
Filter ID:

Sampled: 01/29/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 19:59

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.101**	SL	**0.0314**
Arsenic	**7440-38-2**	**1.66**		**0.00762**
Barium	**7440-39-3**	**5.48**		**0.871**
Beryllium	**7440-41-7**	**0.0187**		**0.00260**
Cadmium	7440-43-9	0.0258	U	0.0645
Chromium	**7440-47-3**	**4.48**		**1.80**
Cobalt	**7440-48-4**	**0.986**		**0.0355**
Copper	**7440-50-8**	**36.6**		**2.14**
Lead	**7439-92-1**	**1.12**		**0.174**
Manganese	**7439-96-5**	**19.5**		**1.54**
Molybdenum	**7439-98-7**	**1.57**		**0.292**
Nickel	**7440-02-0**	**4.75**		**0.531**
Selenium	**7782-49-2**	**0.424**		**0.00729**
Thallium	**7440-28-0**	**0.00110**	B, QB-01	**4.79E-4**
Vanadium	**7440-62-2**	**2.08**		**0.0430**
Zinc	7440-66-6	49.1	U	62.5

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Blue Bell, PA 19422
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-012924-HM
Matrix: Air
Lab ID: 4020650-20
Sample Volume: 2082.122 m³
Filter ID:
Sampled: 01/29/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 20:14

Comments: TetraTech Q9534238

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0310**	SL	**0.0302**
Arsenic	**7440-38-2**	**0.154**		**0.00732**
Barium	7440-39-3	0.776	U	0.836
Beryllium	7440-41-7	0.00120	U	0.00250
Cadmium	7440-43-9	0.00529	U	0.0620
Chromium	7440-47-3	1.46	U	1.73
Cobalt	**7440-48-4**	**0.0478**		**0.0341**
Copper	**7440-50-8**	**7.36**		**2.06**
Lead	**7439-92-1**	**0.202**		**0.167**
Manganese	7439-96-5	0.780	U	1.48
Molybdenum	**7439-98-7**	**0.442**		**0.281**
Nickel	7440-02-0	0.459	U	0.509
Selenium	**7782-49-2**	**0.312**		**0.00700**
Thallium	**7440-28-0**	**4.74E-4**	B, QB-01	**4.60E-4**
Vanadium	**7440-62-2**	**0.184**		**0.0413**
Zinc	7440-66-6	27.3	U	60.0

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1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-012924-HM
Matrix: Air
Comments: TetraTech Q9534237

Lab ID: 4020650-21
Sample Volume: 2031.318 m³
Filter ID:

Sampled: 01/29/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 20:28

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0532**	SL	**0.0309**
Arsenic	**7440-38-2**	**0.0987**		**0.00750**
Barium	**7440-39-3**	**1.66**		**0.857**
Beryllium	**7440-41-7**	**0.00441**		**0.00256**
Cadmium	7440-43-9	0.00569	U	0.0635
Chromium	**7440-47-3**	**1.89**		**1.77**
Cobalt	**7440-48-4**	**0.186**		**0.0349**
Copper	**7440-50-8**	**11.2**		**2.11**
Lead	**7439-92-1**	**0.308**		**0.171**
Manganese	**7439-96-5**	**3.02**		**1.51**
Molybdenum	**7439-98-7**	**0.478**		**0.288**
Nickel	**7440-02-0**	**0.760**		**0.522**
Selenium	**7782-49-2**	**0.368**		**0.00718**
Thallium	**7440-28-0**	**6.04E-4**	B, QB-01	**4.72E-4**
Vanadium	**7440-62-2**	**0.309**		**0.0424**
Zinc	7440-66-6	30.8	U	61.5

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-012924-HM
Matrix: Air
Lab ID: 4020650-22
Sample Volume: 1889.206 m³
Filter ID:
Sampled: 01/29/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 20:42

Comments: TetraTech Q9534236

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0378**	SL	**0.0332**
Arsenic	**7440-38-2**	**0.200**		**0.00807**
Barium	7440-39-3	0.917	U	0.921
Beryllium	7440-41-7	0.00171	U	0.00276
Cadmium	7440-43-9	0.00684	U	0.0683
Chromium	7440-47-3	1.68	U	1.90
Cobalt	**7440-48-4**	**0.0557**		**0.0375**
Copper	**7440-50-8**	**22.9**		**2.26**
Lead	**7439-92-1**	**0.365**		**0.184**
Manganese	7439-96-5	1.20	U	1.63
Molybdenum	**7439-98-7**	**1.28**		**0.309**
Nickel	7440-02-0	0.476	U	0.562
Selenium	**7782-49-2**	**0.357**		**0.00772**
Thallium	**7440-28-0**	**5.74E-4**	B, QB-01	**5.07E-4**
Vanadium	**7440-62-2**	**0.187**		**0.0456**
Zinc	7440-66-6	29.3	U	66.1

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Tetra Tech, Inc.
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Blue Bell, PA 19422
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-013024-HM
Matrix: Air
Comments: TetraTech Q9534233

Lab ID: 4020650-23
Sample Volume: 2034.232 m³
Filter ID:

Sampled: 01/30/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 20:55

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0980**	SL	**0.0309**
Arsenic	**7440-38-2**	**1.75**		**0.00749**
Barium	**7440-39-3**	**5.66**		**0.856**
Beryllium	**7440-41-7**	**0.0156**		**0.00256**
Cadmium	7440-43-9	0.0270	U	0.0634
Chromium	**7440-47-3**	**4.40**		**1.77**
Cobalt	**7440-48-4**	**0.884**		**0.0349**
Copper	**7440-50-8**	**34.8**		**2.10**
Lead	**7439-92-1**	**1.06**		**0.171**
Manganese	**7439-96-5**	**18.7**		**1.51**
Molybdenum	**7439-98-7**	**1.58**		**0.287**
Nickel	**7440-02-0**	**4.87**		**0.521**
Selenium	**7782-49-2**	**0.262**		**0.00717**
Thallium	**7440-28-0**	**9.56E-4**	B, QB-01	**4.71E-4**
Vanadium	**7440-62-2**	**1.65**		**0.0423**
Zinc	7440-66-6	44.3	U	61.4

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-013024-HM
Matrix: Air
Lab ID: 4020650-24
Sample Volume: 2085.883 m³
Filter ID:
Sampled: 01/30/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 22:01

Comments: TetraTech Q9534229

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0360**	SL	**0.0301**
Arsenic	**7440-38-2**	**0.220**		**0.00731**
Barium	**7440-39-3**	**0.984**		**0.835**
Beryllium	7440-41-7	0.00192	U	0.00250
Cadmium	7440-43-9	0.00490	U	0.0619
Chromium	7440-47-3	1.46	U	1.72
Cobalt	**7440-48-4**	**0.0467**		**0.0340**
Copper	**7440-50-8**	**15.6**		**2.05**
Lead	**7439-92-1**	**0.211**		**0.167**
Manganese	7439-96-5	1.14	U	1.47
Molybdenum	**7439-98-7**	**1.09**		**0.280**
Nickel	7440-02-0	0.454	U	0.509
Selenium	**7782-49-2**	**0.207**		**0.00699**
Thallium	**7440-28-0**	**4.73E-4**	B, QB-01	**4.59E-4**
Vanadium	**7440-62-2**	**0.157**		**0.0413**
Zinc	7440-66-6	20.9	U	59.9

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Blue Bell, PA 19422
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-013024-HM
Matrix: Air
Comments: TetraTech Q9534227

Lab ID: 4020650-25
Sample Volume: 2020.319 m³
Filter ID:

Sampled: 01/30/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 22:15

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0727**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.0650**		**0.00755**
Barium	**7440-39-3**	**1.45**		**0.862**
Beryllium	**7440-41-7**	**0.00330**		**0.00258**
Cadmium	7440-43-9	0.0175	U	0.0639
Chromium	7440-47-3	1.77	U	1.78
Cobalt	**7440-48-4**	**0.112**		**0.0351**
Copper	**7440-50-8**	**27.3**		**2.12**
Lead	**7439-92-1**	**0.172**		**0.172**
Manganese	**7439-96-5**	**2.03**		**1.52**
Molybdenum	**7439-98-7**	**1.34**		**0.289**
Nickel	**7440-02-0**	**0.724**		**0.525**
Selenium	**7782-49-2**	**0.189**		**0.00722**
Thallium	7440-28-0	4.64E-4	B, QB-01, U	4.74E-4
Vanadium	**7440-62-2**	**0.246**		**0.0426**
Zinc	7440-66-6	27.2	U	61.8

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-013024-HM
Matrix: Air
Lab ID: 4020650-26
Sample Volume: 1925.203 m³
Filter ID:
Sampled: 01/30/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 22:29

Comments: TetraTech Q9534224

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0549**	SL	**0.0326**
Arsenic	**7440-38-2**	**0.121**		**0.00792**
Barium	**7440-39-3**	**1.17**		**0.904**
Beryllium	7440-41-7	0.00192	U	0.00270
Cadmium	7440-43-9	0.00604	U	0.0670
Chromium	7440-47-3	1.38	U	1.87
Cobalt	**7440-48-4**	**0.0646**		**0.0368**
Copper	**7440-50-8**	**17.4**		**2.22**
Lead	**7439-92-1**	**0.246**		**0.181**
Manganese	7439-96-5	1.39	U	1.60
Molybdenum	**7439-98-7**	**1.10**		**0.303**
Nickel	7440-02-0	0.468	U	0.551
Selenium	**7782-49-2**	**0.164**		**0.00757**
Thallium	7440-28-0	3.57E-4	B, QB-01, U	4.98E-4
Vanadium	**7440-62-2**	**0.189**		**0.0447**
Zinc	7440-66-6	22.4	U	64.9

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-013024-HM
Matrix: Air
Comments: TetraTech Q9534220 Field Blank

Lab ID: 4020650-27
Sample Volume: 2034.232 m³
Filter ID:

Sampled: 01/30/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 22:43

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0173	SL, U	0.0309
Arsenic	7440-38-2	0.00627	U	0.00749
Barium	7440-39-3	0.460	U	0.856
Beryllium	7440-41-7	7.83E-4	U	0.00256
Cadmium	7440-43-9	0.00891	U	0.0634
Chromium	7440-47-3	1.41	U	1.77
Cobalt	7440-48-4	0.0288	U	0.0349
Copper	7440-50-8	1.01	U	2.10
Lead	7439-92-1	0.0694	U	0.171
Manganese	7439-96-5	0.151	U	1.51
Molybdenum	7439-98-7	0.190	U	0.287
Nickel	7440-02-0	0.357	U	0.521
Selenium	7782-49-2	0.00287	U	0.00717
Thallium	7440-28-0	1.54E-4	B, QB-01, U	4.71E-4
Vanadium	7440-62-2	0.0170	U	0.0423
Zinc	7440-66-6	22.3	U	61.4

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-013124-HM
Matrix: Air
Comments: TetraTech Q9534223

Lab ID: 4020650-28
Sample Volume: 2052.181 m³
Filter ID:

Sampled: 01/31/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 22:57

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.120**	SL	**0.0306**
Arsenic	**7440-38-2**	**3.10**		**0.00743**
Barium	**7440-39-3**	**3.76**		**0.848**
Beryllium	**7440-41-7**	**0.00543**		**0.00254**
Cadmium	7440-43-9	0.0482	U	0.0629
Chromium	**7440-47-3**	**2.29**		**1.75**
Cobalt	**7440-48-4**	**0.439**		**0.0346**
Copper	**7440-50-8**	**57.3**		**2.09**
Lead	**7439-92-1**	**2.16**		**0.170**
Manganese	**7439-96-5**	**5.47**		**1.50**
Molybdenum	**7439-98-7**	**2.30**		**0.285**
Nickel	**7440-02-0**	**1.12**		**0.517**
Selenium	**7782-49-2**	**0.107**		**0.00710**
Thallium	**7440-28-0**	**0.00105**	B, QB-01	**4.67E-4**
Vanadium	**7440-62-2**	**0.503**		**0.0419**
Zinc	7440-66-6	34.1	U	60.9

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-013124-HM/MS/MS
Matrix: Air
Lab ID: 4020650-29
Sample Volume: 2102.688 m³
Filter ID:
Sampled: 01/31/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 16:19

Comments: TetraTech Q9534222

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.198**	SL	**0.0299**
Arsenic	**7440-38-2**	**0.335**		**0.00725**
Barium	**7440-39-3**	**5.85**		**0.828**
Beryllium	**7440-41-7**	**0.00802**		**0.00248**
Cadmium	7440-43-9	0.0120	U	0.0614
Chromium	**7440-47-3**	**1.78**		**1.71**
Cobalt	**7440-48-4**	**0.233**		**0.0337**
Copper	**7440-50-8**	**39.8**		**2.04**
Lead	**7439-92-1**	**0.606**		**0.166**
Manganese	**7439-96-5**	**6.53**		**1.46**
Molybdenum	**7439-98-7**	**1.88**		**0.278**
Nickel	**7440-02-0**	**0.916**		**0.504**
Selenium	**7782-49-2**	**0.145**		**0.00693**
Thallium	**7440-28-0**	**7.90E-4**	B, QB-01	**4.56E-4**
Vanadium	**7440-62-2**	**0.663**		**0.0409**
Zinc	7440-66-6	51.0	U	59.4

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-013124-HM
Matrix: Air
Comments: TetraTech Q9534221

Lab ID: 4020650-30
Sample Volume: 2019.473 m³
Filter ID:

Sampled: 01/31/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 23:12

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0636**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.0721**		**0.00755**
Barium	**7440-39-3**	**1.89**		**0.862**
Beryllium	**7440-41-7**	**0.00665**		**0.00258**
Cadmium	7440-43-9	0.00630	U	0.0639
Chromium	7440-47-3	1.67	U	1.78
Cobalt	**7440-48-4**	**0.140**		**0.0351**
Copper	**7440-50-8**	**37.6**		**2.12**
Lead	7439-92-1	0.160	U	0.172
Manganese	**7439-96-5**	**3.00**		**1.52**
Molybdenum	**7439-98-7**	**1.79**		**0.289**
Nickel	**7440-02-0**	**0.758**		**0.525**
Selenium	**7782-49-2**	**0.125**		**0.00722**
Thallium	7440-28-0	3.47E-4	B, QB-01, U	4.75E-4
Vanadium	**7440-62-2**	**0.477**		**0.0426**
Zinc	7440-66-6	22.2	U	61.9

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Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-013124-HM
Matrix: Air
Comments: TetraTech Q9534218

Lab ID: 4020650-31
Sample Volume: 1939.879 m³
Filter ID:

Sampled: 01/31/24 23:59
Received: 02/05/24 11:24
Analysis Date: 02/08/24 23:26

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0890**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.209**		**0.00786**
Barium	**7440-39-3**	**3.00**		**0.897**
Beryllium	**7440-41-7**	**0.00541**		**0.00268**
Cadmium	7440-43-9	0.00802	U	0.0665
Chromium	**7440-47-3**	**1.86**		**1.85**
Cobalt	**7440-48-4**	**0.195**		**0.0366**
Copper	**7440-50-8**	**22.6**		**2.21**
Lead	**7439-92-1**	**0.603**		**0.179**
Manganese	**7439-96-5**	**5.01**		**1.59**
Molybdenum	**7439-98-7**	**1.34**		**0.301**
Nickel	**7440-02-0**	**0.937**		**0.547**
Selenium	**7782-49-2**	**0.147**		**0.00751**
Thallium	**7440-28-0**	**5.09E-4**	B, QB-01	**4.94E-4**
Vanadium	**7440-62-2**	**0.681**		**0.0444**
Zinc	7440-66-6	28.5	U	64.4

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402012 - B4B0704										
Calibration Blank (2402012-CCB1)				Prepared & Analyzed: 02/07/24						
Antimony	0.594		ng/l							
Arsenic	5.87		ng/l							
Barium	1.33		ng/l							
Beryllium	0.151		ng/l							
Cadmium	0.216		ng/l							
Chromium	3.74		ng/l							
Cobalt	0.290		ng/l							
Copper	83.4		ng/l							
Lead	4.40		ng/l							
Manganese	4.72		ng/l							
Molybdenum	8.95		ng/l							
Nickel	-1.19		ng/l							U
Selenium	0.689		ng/l							
Thallium	1.44		ng/l							
Vanadium	-64.5		ng/l							U
Zinc	-30.6		ng/l							U
Calibration Blank (2402012-CCB2)				Prepared & Analyzed: 02/07/24						
Antimony	1.85		ng/l							
Arsenic	12.5		ng/l							
Barium	13.2		ng/l							
Beryllium	0.472		ng/l							
Cadmium	0.736		ng/l							
Chromium	16.4		ng/l							
Cobalt	2.13		ng/l							
Copper	108		ng/l							
Lead	11.0		ng/l							
Manganese	25.5		ng/l							
Molybdenum	11.6		ng/l							
Nickel	3.61		ng/l							
Selenium	19.0		ng/l							
Thallium	3.61		ng/l							QB-04
Vanadium	-63.2		ng/l							U
Zinc	58.5		ng/l							
Calibration Blank (2402012-CCB3)				Prepared & Analyzed: 02/07/24						
Antimony	1.74		ng/l							
Arsenic	9.23		ng/l							
Barium	9.78		ng/l							
Beryllium	0.291		ng/l							

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402012 - B4B0704										
Calibration Blank (2402012-CCB3) Contin				Prepared & Analyzed: 02/07/24						
Cadmium	0.789		ng/l							
Chromium	13.8		ng/l							
Cobalt	1.85		ng/l							
Copper	98.6		ng/l							
Lead	8.46		ng/l							
Manganese	24.8		ng/l							
Molybdenum	9.65		ng/l							
Nickel	4.16		ng/l							
Selenium	9.23		ng/l							
Thallium	3.46		ng/l							QB-04
Vanadium	-63.6		ng/l							U
Zinc	37.7		ng/l							
Calibration Blank (2402012-CCB4)				Prepared: 02/07/24 Analyzed: 02/08/24						
Antimony	1.91		ng/l							
Arsenic	12.5		ng/l							
Barium	18.5		ng/l							
Beryllium	0.483		ng/l							
Cadmium	1.86		ng/l							
Chromium	25.8		ng/l							
Cobalt	4.03		ng/l							
Copper	179		ng/l							
Lead	15.8		ng/l							
Manganese	43.5		ng/l							
Molybdenum	12.7		ng/l							
Nickel	9.95		ng/l							
Selenium	5.19		ng/l							
Thallium	3.99		ng/l							QB-04
Vanadium	-59.7		ng/l							U
Zinc	77.4		ng/l							
Calibration Check (2402012-CCV1)				Prepared & Analyzed: 02/07/24						
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	205000		ng/l	200000		103	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402012 - B4B0704										
Calibration Check (2402012-CCV1) Contin					Prepared & Analyzed: 02/07/24					
Lead	200000		ng/l	200000		100	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	50900		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	494		ng/l	500.00		98.7	90-110			
Vanadium	19900		ng/l	20000		99.5	90-110			
Zinc	505000		ng/l	500000		101	90-110			
Calibration Check (2402012-CCV2)					Prepared & Analyzed: 02/07/24					
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	4690		ng/l	5000.0		93.9	90-110			
Cadmium	20700		ng/l	20000		103	90-110			
Chromium	248000		ng/l	240000		103	90-110			
Cobalt	50600		ng/l	50000		101	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	203000		ng/l	200000		102	90-110			
Manganese	517000		ng/l	500000		103	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	495		ng/l	500.00		99.1	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	511000		ng/l	500000		102	90-110			
Calibration Check (2402012-CCV3)					Prepared & Analyzed: 02/07/24					
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	207000		ng/l	200000		103	90-110			
Beryllium	4670		ng/l	5000.0		93.3	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	246000		ng/l	240000		102	90-110			
Cobalt	49600		ng/l	50000		99.2	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	513000		ng/l	500000		103	90-110			
Molybdenum	51200		ng/l	50000		102	90-110			
Nickel	121000		ng/l	120000		101	90-110			

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402012 - B4B0704										
Calibration Check (2402012-CCV3) Contin					Prepared & Analyzed: 02/07/24					
Selenium	20300		ng/l	20000		102	90-110			
Thallium	480		ng/l	500.00		96.0	90-110			
Vanadium	20000		ng/l	20000		99.8	90-110			
Zinc	508000		ng/l	500000		102	90-110			
Calibration Check (2402012-CCV4)					Prepared: 02/07/24 Analyzed: 02/08/24					
Antimony	20700		ng/l	20000		103	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	211000		ng/l	200000		105	90-110			
Beryllium	4780		ng/l	5000.0		95.6	90-110			
Cadmium	20900		ng/l	20000		105	90-110			
Chromium	252000		ng/l	240000		105	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.11E6		ng/l	2.0000E6		106	90-110			
Lead	205000		ng/l	200000		102	90-110			
Manganese	531000		ng/l	500000		106	90-110			
Molybdenum	52100		ng/l	50000		104	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	486		ng/l	500.00		97.3	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	520000		ng/l	500000		104	90-110			
High Cal Check (2402012-HCV1)					Prepared & Analyzed: 02/07/24					
Antimony	39800		ng/l	40000		99.6	95-105			
Arsenic	39400		ng/l	40000		98.5	95-105			
Barium	405000		ng/l	400000		101	95-105			
Beryllium	10400		ng/l	10000		104	95-105			
Cadmium	39200		ng/l	40000		98.1	95-105			
Chromium	463000		ng/l	480000		96.5	95-105			
Cobalt	97500		ng/l	100000		97.5	95-105			
Copper	3.86E6		ng/l	4.0000E6		96.4	95-105			
Lead	394000		ng/l	400000		98.6	95-105			
Manganese	972000		ng/l	1.0000E6		97.2	95-105			
Molybdenum	99100		ng/l	100000		99.1	95-105			
Nickel	232000		ng/l	240000		96.8	95-105			
Selenium	39500		ng/l	40000		98.8	95-105			
Thallium	986		ng/l	1000.0		98.6	95-105			
Vanadium	39500		ng/l	40000		98.6	95-105			
Zinc	968000		ng/l	1.0000E6		96.8	95-105			

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
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AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402012 - B4B0704										
Initial Cal Blank (2402012-ICB1)				Prepared & Analyzed: 02/07/24						
Antimony	0.960		ng/l							
Arsenic	2.10		ng/l							
Barium	1.60		ng/l							
Beryllium	0.0676		ng/l							
Cadmium	0.198		ng/l							
Chromium	3.43		ng/l							
Cobalt	0.288		ng/l							
Copper	59.0		ng/l							
Lead	4.89		ng/l							
Manganese	8.18		ng/l							
Molybdenum	6.54		ng/l							
Nickel	-0.111		ng/l							U
Selenium	18.8		ng/l							
Thallium	1.09		ng/l							
Vanadium	-68.1		ng/l							U
Zinc	-11.1		ng/l							U
Initial Cal Check (2402012-ICV1)				Prepared & Analyzed: 02/07/24						
Antimony	19400		ng/l	20000		96.9	90-110			
Arsenic	19600		ng/l	20000		98.2	90-110			
Barium	198000		ng/l	200000		98.9	90-110			
Beryllium	5250		ng/l	5000.0		105	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Chromium	232000		ng/l	240000		96.5	90-110			
Cobalt	48600		ng/l	50000		97.3	90-110			
Copper	1.96E6		ng/l	2.0000E6		97.9	90-110			
Lead	191000		ng/l	200000		95.3	90-110			
Manganese	472000		ng/l	500000		94.4	90-110			
Molybdenum	48900		ng/l	50000		97.7	90-110			
Nickel	116000		ng/l	120000		96.4	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	497		ng/l	500.00		99.3	90-110			
Vanadium	19600		ng/l	20000		97.8	90-110			
Zinc	490000		ng/l	500000		97.9	90-110			
Interference Check A (2402012-IFA1)				Prepared & Analyzed: 02/07/24						
Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402012 - B4B0704										
Interference Check A (2402012-IFA1) Co				Prepared & Analyzed: 02/07/24						
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	332000		ng/l	300000		111	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2402012-IFB1)				Prepared & Analyzed: 02/07/24						
Antimony	21000		ng/l	20000		105	80-120			
Arsenic	20800		ng/l	20000		104	80-120			
Barium	212000		ng/l	200000		106	80-120			
Beryllium	4470		ng/l	5000.0		89.5	80-120			
Cadmium	20400		ng/l	20000		102	80-120			
Chromium	239000		ng/l	240000		99.4	80-120			
Cobalt	50400		ng/l	50000		101	80-120			
Copper	1.94E6		ng/l	2.0000E6		97.2	80-120			
Lead	211000		ng/l	200000		105	80-120			
Manganese	522000		ng/l	500000		104	80-120			
Molybdenum	392000		ng/l	350000		112	80-120			
Nickel	118000		ng/l	120000		98.5	80-120			
Selenium	19300		ng/l	20000		96.7	80-120			
Thallium	527		ng/l	500.00		105	80-120			
Vanadium	19600		ng/l	20000		97.8	80-120			
Zinc	469000		ng/l	500000		93.8	80-120			
Batch 2402018 - B4B0801										
Calibration Blank (2402018-CCB1)				Prepared & Analyzed: 02/08/24						
Antimony	0.0501		ng/l							
Arsenic	1.50		ng/l							
Barium	1.16		ng/l							
Beryllium	0.0483		ng/l							
Cadmium	0.264		ng/l							
Chromium	0.836		ng/l							
Cobalt	-0.00629		ng/l							U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402018 - B4B0801										
Calibration Blank (2402018-CCB1) Contin				Prepared & Analyzed: 02/08/24						
Copper	48.2		ng/l							
Lead	1.00		ng/l							
Manganese	0.440		ng/l							
Molybdenum	9.64		ng/l							
Nickel	1.10		ng/l							
Selenium	10.8		ng/l							
Thallium	1.14		ng/l							
Vanadium	-50.9		ng/l							U
Zinc	-1.95		ng/l							U
Calibration Blank (2402018-CCB2)				Prepared & Analyzed: 02/08/24						
Antimony	-0.0694		ng/l							U
Arsenic	2.55		ng/l							
Barium	-4.70		ng/l							U
Beryllium	-0.133		ng/l							U
Cadmium	-0.663		ng/l							U
Chromium	-4.91		ng/l							U
Cobalt	-1.19		ng/l							U
Copper	-40.5		ng/l							U
Lead	-4.68		ng/l							U
Manganese	-10.3		ng/l							U
Molybdenum	1.83		ng/l							
Nickel	-2.28		ng/l							U
Selenium	12.1		ng/l							
Thallium	0.799		ng/l							
Vanadium	-54.2		ng/l							U
Zinc	-141		ng/l							U
Calibration Blank (2402018-CCB3)				Prepared & Analyzed: 02/08/24						
Antimony	-0.245		ng/l							U
Arsenic	-0.117		ng/l							U
Barium	-4.89		ng/l							U
Beryllium	-0.106		ng/l							U
Cadmium	-0.763		ng/l							U
Chromium	-4.38		ng/l							U
Cobalt	-1.05		ng/l							U
Copper	-45.2		ng/l							U
Lead	-4.95		ng/l							U
Manganese	-9.67		ng/l							U
Molybdenum	1.04		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402018 - B4B0801										
Calibration Blank (2402018-CCB3) Contin				Prepared & Analyzed: 02/08/24						
Nickel	-2.32		ng/l							U
Selenium	8.50		ng/l							
Thallium	0.718		ng/l							
Vanadium	-59.7		ng/l							U
Zinc	-161		ng/l							U
Calibration Blank (2402018-CCB4)				Prepared: 02/08/24 Analyzed: 02/09/24						
Antimony	0.0376		ng/l							
Arsenic	1.73		ng/l							
Barium	-5.19		ng/l							U
Beryllium	-0.00813		ng/l							U
Cadmium	-0.660		ng/l							U
Chromium	-4.27		ng/l							U
Cobalt	-0.945		ng/l							U
Copper	-29.8		ng/l							U
Lead	-3.93		ng/l							U
Manganese	-6.31		ng/l							U
Molybdenum	2.14		ng/l							
Nickel	-2.20		ng/l							U
Selenium	10.2		ng/l							
Thallium	0.781		ng/l							
Vanadium	-59.3		ng/l							U
Zinc	-140		ng/l							U
Calibration Check (2402018-CCV1)				Prepared & Analyzed: 02/08/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	200000		ng/l	200000		99.9	90-110			
Beryllium	5230		ng/l	5000.0		105	90-110			
Cadmium	19900		ng/l	20000		99.7	90-110			
Chromium	239000		ng/l	240000		99.6	90-110			
Cobalt	50100		ng/l	50000		100	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			
Lead	197000		ng/l	200000		98.7	90-110			
Manganese	489000		ng/l	500000		97.8	90-110			
Molybdenum	48900		ng/l	50000		97.9	90-110			
Nickel	121000		ng/l	120000		100	90-110			
Selenium	20000		ng/l	20000		99.9	90-110			
Thallium	497		ng/l	500.00		99.4	90-110			
Vanadium	19400		ng/l	20000		97.2	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402018 - B4B0801										
Calibration Check (2402018-CCV1) Contin					Prepared & Analyzed: 02/08/24					
Zinc	508000		ng/l	500000		102	90-110			
Calibration Check (2402018-CCV2)					Prepared & Analyzed: 02/08/24					
Antimony	19900		ng/l	20000		99.4	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	200000		ng/l	200000		99.8	90-110			
Beryllium	5110		ng/l	5000.0		102	90-110			
Cadmium	19900		ng/l	20000		99.4	90-110			
Chromium	235000		ng/l	240000		97.8	90-110			
Cobalt	49300		ng/l	50000		98.6	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	491000		ng/l	500000		98.2	90-110			
Molybdenum	49000		ng/l	50000		98.1	90-110			
Nickel	119000		ng/l	120000		99.5	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	487		ng/l	500.00		97.5	90-110			
Vanadium	19600		ng/l	20000		97.8	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2402018-CCV3)					Prepared & Analyzed: 02/08/24					
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	198000		ng/l	200000		99.2	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	49600		ng/l	50000		99.2	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	495000		ng/l	500000		99.0	90-110			
Molybdenum	49200		ng/l	50000		98.4	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	20300		ng/l	20000		102	90-110			
Thallium	489		ng/l	500.00		97.8	90-110			
Vanadium	19700		ng/l	20000		98.3	90-110			
Zinc	517000		ng/l	500000		103	90-110			
Calibration Check (2402018-CCV4)					Prepared & Analyzed: 02/08/24					
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		100	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402018 - B4B0801										
Calibration Check (2402018-CCV4) Contin					Prepared & Analyzed: 02/08/24					
Barium	199000		ng/l	200000		99.5	90-110			
Beryllium	4770		ng/l	5000.0		95.5	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	239000		ng/l	240000		99.6	90-110			
Cobalt	49400		ng/l	50000		98.8	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	498000		ng/l	500000		99.6	90-110			
Molybdenum	49200		ng/l	50000		98.4	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	20700		ng/l	20000		103	90-110			
Thallium	488		ng/l	500.00		97.7	90-110			
Vanadium	19800		ng/l	20000		99.0	90-110			
Zinc	517000		ng/l	500000		103	90-110			
High Cal Check (2402018-HCV1)					Prepared & Analyzed: 02/08/24					
Antimony	39200		ng/l	40000		97.9	95-105			
Arsenic	39000		ng/l	40000		97.4	95-105			
Barium	388000		ng/l	400000		97.0	95-105			
Beryllium	9730		ng/l	10000		97.3	95-105			
Cadmium	39000		ng/l	40000		97.4	95-105			
Chromium	461000		ng/l	480000		96.1	95-105			
Cobalt	96300		ng/l	100000		96.3	95-105			
Copper	3.83E6		ng/l	4.0000E6		95.8	95-105			
Lead	390000		ng/l	400000		97.6	95-105			
Manganese	956000		ng/l	1.0000E6		95.6	95-105			
Molybdenum	96600		ng/l	100000		96.6	95-105			
Nickel	230000		ng/l	240000		96.0	95-105			
Selenium	39000		ng/l	40000		97.5	95-105			
Thallium	972		ng/l	1000.0		97.2	95-105			
Vanadium	38800		ng/l	40000		96.9	95-105			
Zinc	987000		ng/l	1.0000E6		98.7	95-105			
Initial Cal Blank (2402018-ICB1)					Prepared & Analyzed: 02/08/24					
Antimony	0.233		ng/l							
Arsenic	-2.33		ng/l							U
Barium	0.434		ng/l							
Beryllium	0.0631		ng/l							
Cadmium	0.222		ng/l							
Chromium	1.60		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402018 - B4B0801										
Initial Cal Blank (2402018-ICB1) Continu				Prepared & Analyzed: 02/08/24						
Cobalt	0.168		ng/l							
Copper	51.8		ng/l							
Lead	0.902		ng/l							
Manganese	3.09		ng/l							
Molybdenum	5.89		ng/l							
Nickel	1.71		ng/l							
Selenium	4.50		ng/l							
Thallium	1.04		ng/l							
Vanadium	-59.8		ng/l							U
Zinc	-8.83		ng/l							U
Initial Cal Check (2402018-ICV1)				Prepared & Analyzed: 02/08/24						
Antimony	19900		ng/l	20000		99.5	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	200000		ng/l	200000		99.8	90-110			
Beryllium	4980		ng/l	5000.0		99.5	90-110			
Cadmium	20800		ng/l	20000		104	90-110			
Chromium	246000		ng/l	240000		103	90-110			
Cobalt	49800		ng/l	50000		99.7	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			
Lead	197000		ng/l	200000		98.7	90-110			
Manganese	485000		ng/l	500000		96.9	90-110			
Molybdenum	49800		ng/l	50000		99.7	90-110			
Nickel	119000		ng/l	120000		99.5	90-110			
Selenium	20700		ng/l	20000		104	90-110			
Thallium	512		ng/l	500.00		102	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	514000		ng/l	500000		103	90-110			
Interference Check A (2402018-IFA1)				Prepared & Analyzed: 02/08/24						
Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402018 - B4B0801										
Interference Check A (2402018-IFA1) Co				Prepared & Analyzed: 02/08/24						
Molybdenum	301000		ng/l	300000		100	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2402018-IFB1)				Prepared & Analyzed: 02/08/24						
Antimony	20200		ng/l	20000		101	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	199000		ng/l	200000		99.5	80-120			
Beryllium	5300		ng/l	5000.0		106	80-120			
Cadmium	19600		ng/l	20000		97.8	80-120			
Chromium	231000		ng/l	240000		96.2	80-120			
Cobalt	48100		ng/l	50000		96.2	80-120			
Copper	1.87E6		ng/l	2.0000E6		93.3	80-120			
Lead	203000		ng/l	200000		102	80-120			
Manganese	497000		ng/l	500000		99.3	80-120			
Molybdenum	350000		ng/l	350000		100	80-120			
Nickel	113000		ng/l	120000		94.2	80-120			
Selenium	19100		ng/l	20000		95.6	80-120			
Thallium	514		ng/l	500.00		103	80-120			
Vanadium	18800		ng/l	20000		94.1	80-120			
Zinc	464000		ng/l	500000		92.9	80-120			
Batch 2402024 - B4B0801										
Calibration Blank (2402024-CCB1)				Prepared & Analyzed: 02/09/24						
Antimony	0.866		ng/l							
Arsenic	0.781		ng/l							
Barium	-0.301		ng/l							U
Beryllium	-0.0319		ng/l							U
Cadmium	0.0307		ng/l							
Chromium	1.20		ng/l							
Cobalt	0.137		ng/l							
Copper	72.6		ng/l							
Lead	1.57		ng/l							
Manganese	-0.235		ng/l							U
Molybdenum	9.83		ng/l							
Nickel	-0.797		ng/l							U
Selenium	10.0		ng/l							

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402024 - B4B0801										
Calibration Blank (2402024-CCB1) Contin				Prepared & Analyzed: 02/09/24						
Thallium	1.64		ng/l							QB-04
Vanadium	-46.1		ng/l							U
Zinc	-7.34		ng/l							U
Calibration Blank (2402024-CCB2)				Prepared & Analyzed: 02/09/24						
Antimony	0.788		ng/l							
Arsenic	1.32		ng/l							
Barium	2.30		ng/l							
Beryllium	0.176		ng/l							
Cadmium	0.0546		ng/l							
Chromium	3.46		ng/l							
Cobalt	0.198		ng/l							
Copper	24.5		ng/l							
Lead	1.93		ng/l							
Manganese	1.78		ng/l							
Molybdenum	2.95		ng/l							
Nickel	0.228		ng/l							
Selenium	9.00		ng/l							
Thallium	1.00		ng/l							
Vanadium	-48.0		ng/l							U
Zinc	-62.3		ng/l							U
Calibration Blank (2402024-CCB3)				Prepared: 02/09/24 Analyzed: 02/10/24						
Antimony	0.634		ng/l							
Arsenic	3.46		ng/l							
Barium	0.712		ng/l							
Beryllium	0.0665		ng/l							
Cadmium	0.0514		ng/l							
Chromium	0.872		ng/l							
Cobalt	-0.0906		ng/l							U
Copper	42.0		ng/l							
Lead	1.52		ng/l							
Manganese	-0.594		ng/l							U
Molybdenum	4.88		ng/l							
Nickel	0.240		ng/l							
Selenium	7.54		ng/l							
Thallium	1.26		ng/l							
Vanadium	-53.6		ng/l							U
Zinc	-64.3		ng/l							U
Calibration Blank (2402024-CCB4)				Prepared: 02/09/24 Analyzed: 02/10/24						

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402024 - B4B0801										
Calibration Blank (2402024-CCB4) Contin				Prepared: 02/09/24 Analyzed: 02/10/24						
Antimony	0.521		ng/l							
Arsenic	-0.503		ng/l							U
Barium	1.14		ng/l							
Beryllium	0.0693		ng/l							
Cadmium	0.0886		ng/l							
Chromium	2.67		ng/l							
Cobalt	0.238		ng/l							
Copper	31.5		ng/l							
Lead	1.81		ng/l							
Manganese	0.754		ng/l							
Molybdenum	3.33		ng/l							
Nickel	1.02		ng/l							
Selenium	5.83		ng/l							
Thallium	0.888		ng/l							
Vanadium	-47.8		ng/l							U
Zinc	-52.8		ng/l							U
Calibration Check (2402024-CCV1)				Prepared & Analyzed: 02/09/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	199000		ng/l	200000		99.6	90-110			
Beryllium	4790		ng/l	5000.0		95.8	90-110			
Cadmium	19900		ng/l	20000		99.6	90-110			
Chromium	234000		ng/l	240000		97.6	90-110			
Cobalt	50200		ng/l	50000		100	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	492000		ng/l	500000		98.3	90-110			
Molybdenum	49400		ng/l	50000		98.7	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	19800		ng/l	20000		99.2	90-110			
Thallium	498		ng/l	500.00		99.7	90-110			
Vanadium	19700		ng/l	20000		98.4	90-110			
Zinc	527000		ng/l	500000		105	90-110			
Calibration Check (2402024-CCV2)				Prepared & Analyzed: 02/09/24						
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	201000		ng/l	200000		100	90-110			
Beryllium	4910		ng/l	5000.0		98.3	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402024 - B4B0801										
Calibration Check (2402024-CCV2) Contin					Prepared & Analyzed: 02/09/24					
Cadmium	20100		ng/l	20000		101	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	49600		ng/l	50000		99.1	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	490000		ng/l	500000		98.0	90-110			
Molybdenum	50100		ng/l	50000		100	90-110			
Nickel	120000		ng/l	120000		99.7	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	496		ng/l	500.00		99.1	90-110			
Vanadium	19900		ng/l	20000		99.7	90-110			
Zinc	527000		ng/l	500000		105	90-110			
Calibration Check (2402024-CCV3)					Prepared: 02/09/24 Analyzed: 02/10/24					
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	205000		ng/l	200000		102	90-110			
Beryllium	5000		ng/l	5000.0		100	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	264000		ng/l	240000		110	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	203000		ng/l	200000		102	90-110			
Manganese	501000		ng/l	500000		100	90-110			
Molybdenum	52000		ng/l	50000		104	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Thallium	497		ng/l	500.00		99.5	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	535000		ng/l	500000		107	90-110			
Calibration Check (2402024-CCV4)					Prepared: 02/09/24 Analyzed: 02/10/24					
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	197000		ng/l	200000		98.4	90-110			
Beryllium	4940		ng/l	5000.0		98.8	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	50600		ng/l	50000		101	90-110			
Copper	2.09E6		ng/l	2.0000E6		104	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402024 - B4B0801										
Calibration Check (2402024-CCV4) Contin					Prepared: 02/09/24 Analyzed: 02/10/24					
Lead	203000		ng/l	200000		101	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	49900		ng/l	50000		99.8	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Thallium	490		ng/l	500.00		97.9	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	535000		ng/l	500000		107	90-110			
High Cal Check (2402024-HCV1)					Prepared & Analyzed: 02/09/24					
Antimony	39600		ng/l	40000		99.1	95-105			
Arsenic	39400		ng/l	40000		98.4	95-105			
Barium	395000		ng/l	400000		98.7	95-105			
Beryllium	10300		ng/l	10000		103	95-105			
Cadmium	38700		ng/l	40000		96.9	95-105			
Chromium	458000		ng/l	480000		95.4	95-105			
Cobalt	96400		ng/l	100000		96.4	95-105			
Copper	3.82E6		ng/l	4.0000E6		95.4	95-105			
Lead	395000		ng/l	400000		98.7	95-105			
Manganese	959000		ng/l	1.0000E6		95.9	95-105			
Molybdenum	96500		ng/l	100000		96.5	95-105			
Nickel	230000		ng/l	240000		95.7	95-105			
Selenium	39300		ng/l	40000		98.2	95-105			
Thallium	995		ng/l	1000.0		99.5	95-105			
Vanadium	39000		ng/l	40000		97.4	95-105			
Zinc	1.02E6		ng/l	1.0000E6		102	95-105			
Initial Cal Blank (2402024-ICB1)					Prepared & Analyzed: 02/09/24					
Antimony	0.646		ng/l							
Arsenic	-1.20		ng/l							U
Barium	0.366		ng/l							
Beryllium	0.0725		ng/l							
Cadmium	0.114		ng/l							
Chromium	0.835		ng/l							
Cobalt	0.288		ng/l							
Copper	77.4		ng/l							
Lead	2.01		ng/l							
Manganese	1.07		ng/l							
Molybdenum	4.14		ng/l							
Nickel	0.846		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402024 - B4B0801										
Initial Cal Blank (2402024-ICB1) Continu				Prepared & Analyzed: 02/09/24						
Selenium	1.39		ng/l							
Thallium	1.18		ng/l							
Vanadium	-50.0		ng/l							U
Zinc	-27.9		ng/l							U
Initial Cal Check (2402024-ICV1)				Prepared & Analyzed: 02/09/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	199000		ng/l	200000		99.5	90-110			
Beryllium	4830		ng/l	5000.0		96.6	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	50100		ng/l	50000		100	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	197000		ng/l	200000		98.7	90-110			
Manganese	485000		ng/l	500000		97.1	90-110			
Molybdenum	50200		ng/l	50000		100	90-110			
Nickel	119000		ng/l	120000		99.4	90-110			
Selenium	20700		ng/l	20000		104	90-110			
Thallium	523		ng/l	500.00		105	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	531000		ng/l	500000		106	90-110			
Interference Check A (2402024-IFA1)				Prepared & Analyzed: 02/09/24						
Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	305000		ng/l	300000		102	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402024 - B4B0801										
Interference Check B (2402024-IFB1)					Prepared & Analyzed: 02/09/24					
Antimony	21000		ng/l	20000		105	80-120			
Arsenic	20800		ng/l	20000		104	80-120			
Barium	205000		ng/l	200000		102	80-120			
Beryllium	4790		ng/l	5000.0		95.7	80-120			
Cadmium	20100		ng/l	20000		100	80-120			
Chromium	228000		ng/l	240000		95.1	80-120			
Cobalt	49400		ng/l	50000		98.8	80-120			
Copper	1.91E6		ng/l	2.0000E6		95.5	80-120			
Lead	208000		ng/l	200000		104	80-120			
Manganese	509000		ng/l	500000		102	80-120			
Molybdenum	357000		ng/l	350000		102	80-120			
Nickel	115000		ng/l	120000		96.1	80-120			
Selenium	19700		ng/l	20000		98.3	80-120			
Thallium	529		ng/l	500.00		106	80-120			
Vanadium	19200		ng/l	20000		96.2	80-120			
Zinc	490000		ng/l	500000		98.0	80-120			
Batch B4B0704 - ICP-MS Extraction										
Blank (B4B0704-BLK1)					Prepared & Analyzed: 02/07/24					
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0793	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	7.20E-4	5.89E-4	ng/m³ Air							B, QB-01, QB-04
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4B0704-BS1)					Prepared & Analyzed: 02/07/24					
Antimony	0.642	0.0386	ng/m³ Air	1.3829		46.4	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		97.0	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B0704 - ICP-MS Extraction										
LCS (B4B0704-BS1) Continued				Prepared & Analyzed: 02/07/24						
Barium	27.5	1.07	ng/m³ Air	27.658		99.3	80-120			
Beryllium	1.38	0.00320	ng/m³ Air	1.3829		99.8	80-120			
Cadmium	1.36	0.0793	ng/m³ Air	1.3829		98.5	80-120			
Chromium	15.5	2.21	ng/m³ Air	13.829		112	80-120			
Cobalt	1.39	0.0436	ng/m³ Air	1.3829		101	80-120			
Copper	28.1	2.63	ng/m³ Air	27.658		102	80-120			
Lead	13.4	0.214	ng/m³ Air	13.829		96.9	80-120			
Manganese	8.42	1.89	ng/m³ Air	8.2975		102	80-120			
Molybdenum	1.61	0.359	ng/m³ Air	1.3829		116	80-120			
Nickel	3.01	0.652	ng/m³ Air	2.7658		109	80-120			
Selenium	2.69	0.00896	ng/m³ Air	2.7658		97.1	80-120			
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.5	80-120			B, QB-01, QB-04
Vanadium	2.69	0.0529	ng/m³ Air	2.7658		97.1	80-120			
Zinc	133	76.8	ng/m³ Air	82.975		160	80-120			
Duplicate (B4B0704-DUP1)		**Source: 4020650-03**		Prepared & Analyzed: 02/07/24						
Antimony	0.0639	0.0319	ng/m³ Air		0.0628			1.82	10	SL
Arsenic	0.0862	0.00775	ng/m³ Air		0.0959			10.7	10	
Barium	1.78	0.885	ng/m³ Air		1.75			1.89	10	
Beryllium	0.00635	0.00265	ng/m³ Air		0.00633			0.166	10	
Cadmium	ND	0.0656	ng/m³ Air		ND				10	U
Chromium	2.48	1.83	ng/m³ Air		2.48			0.340	10	
Cobalt	0.249	0.0361	ng/m³ Air		0.234			6.37	10	
Copper	46.0	2.18	ng/m³ Air		45.6			1.00	10	
Lead	1.40	0.177	ng/m³ Air		1.36			3.39	10	
Manganese	4.24	1.56	ng/m³ Air		3.83			10.1	10	
Molybdenum	1.35	0.297	ng/m³ Air		1.28			5.47	10	
Nickel	0.985	0.539	ng/m³ Air		1.06			7.78	10	
Selenium	0.346	0.00741	ng/m³ Air		0.335			3.12	10	
Thallium	6.89E-4	4.87E-4	ng/m³ Air		6.24E-4			9.88	10	B, QB-01, QB-04
Vanadium	0.417	0.0438	ng/m³ Air		0.379			9.62	10	
Zinc	ND	63.5	ng/m³ Air		ND				10	U
Duplicate (B4B0704-DUP2)		**Source: 4020650-05**		Prepared & Analyzed: 02/07/24						
Antimony	0.0578	0.0309	ng/m³ Air		0.0566			1.99	10	SL
Arsenic	0.390	0.00750	ng/m³ Air		0.381			2.22	10	
Barium	2.19	0.857	ng/m³ Air		2.11			3.77	10	
Beryllium	0.00272	0.00256	ng/m³ Air		0.00290			6.37	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B0704 - ICP-MS Extraction										
Duplicate (B4B0704-DUP2) Continued		**Source: 4020650-05**			Prepared & Analyzed: 02/07/24					
Cadmium	ND	0.0635	ng/m³ Air		ND				10	U
Chromium	ND	1.77	ng/m³ Air		ND				10	U
Cobalt	0.133	0.0349	ng/m³ Air		0.129			2.64	10	
Copper	20.7	2.11	ng/m³ Air		20.4			1.46	10	
Lead	0.245	0.171	ng/m³ Air		0.242			1.38	10	
Manganese	2.63	1.51	ng/m³ Air		2.55			3.03	10	
Molybdenum	1.11	0.287	ng/m³ Air		1.07			3.08	10	
Nickel	0.746	0.522	ng/m³ Air		0.732			1.94	10	
Selenium	0.112	0.00718	ng/m³ Air		0.113			0.707	10	
Thallium	5.23E-4	4.72E-4	ng/m³ Air		5.63E-4			7.35	10	B, QB-01, QB-04
Vanadium	0.253	0.0424	ng/m³ Air		0.246			2.76	10	
Zinc	ND	61.5	ng/m³ Air		ND				10	U
Matrix Spike (B4B0704-MS1)		**Source: 4020650-03**			Prepared & Analyzed: 02/07/24					
Antimony	0.737	0.0319	ng/m³ Air	1.1439	0.0628	59.0	80-120			SL
Arsenic	2.37	0.00775	ng/m³ Air	2.2878	0.0959	99.4	80-120			
Barium	24.8	0.885	ng/m³ Air	22.878	1.75	101	80-120			
Beryllium	1.13	0.00265	ng/m³ Air	1.1439	0.00633	97.8	80-120			
Cadmium	1.18	0.0656	ng/m³ Air	1.1439	ND	103	80-120			
Chromium	14.0	1.83	ng/m³ Air	11.439	2.48	101	80-120			
Cobalt	1.38	0.0361	ng/m³ Air	1.1439	0.234	100	80-120			
Copper	59.6	2.18	ng/m³ Air	22.878	45.6	61.4	80-120			QM-07
Lead	12.5	0.177	ng/m³ Air	11.439	1.36	97.8	80-120			
Manganese	10.8	1.56	ng/m³ Air	6.8635	3.83	102	80-120			
Molybdenum	2.46	0.297	ng/m³ Air	1.1439	1.28	103	80-120			
Nickel	3.37	0.539	ng/m³ Air	2.2878	1.06	101	80-120			
Selenium	2.57	0.00741	ng/m³ Air	2.2878	0.335	97.6	80-120			
Thallium	0.115	4.87E-4	ng/m³ Air	0.11439	6.24E-4	99.8	80-120			B, QB-01, QB-04
Vanadium	2.62	0.0438	ng/m³ Air	2.2878	0.379	98.0	80-120			
Zinc	108	63.5	ng/m³ Air	68.635	ND	157	80-120			
Matrix Spike Dup (B4B0704-MSD1)		**Source: 4020650-03**			Prepared & Analyzed: 02/07/24					
Antimony	0.728	0.0319	ng/m³ Air	1.1439	0.0628	58.2	80-120	1.28	20	SL
Arsenic	2.32	0.00775	ng/m³ Air	2.2878	0.0959	97.2	80-120	2.13	20	
Barium	24.5	0.885	ng/m³ Air	22.878	1.75	99.6	80-120	1.04	20	
Beryllium	1.12	0.00265	ng/m³ Air	1.1439	0.00633	97.0	80-120	0.844	20	
Cadmium	1.16	0.0656	ng/m³ Air	1.1439	ND	102	80-120	1.47	20	
Chromium	13.8	1.83	ng/m³ Air	11.439	2.48	99.1	80-120	1.54	20	

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B0704 - ICP-MS Extraction										
Matrix Spike Dup (B4B0704-MSD1) Conti			**Source: 4020650-03**		Prepared & Analyzed: 02/07/24					
Cobalt	1.35	0.0361	ng/m³ Air	1.1439	0.234	97.9	80-120	1.83	20	
Copper	51.9	2.18	ng/m³ Air	22.878	45.6	27.5	80-120	13.9	20	QM-07
Lead	12.0	0.177	ng/m³ Air	11.439	1.36	93.1	80-120	4.44	20	
Manganese	10.7	1.56	ng/m³ Air	6.8635	3.83	100	80-120	1.10	20	
Molybdenum	2.54	0.297	ng/m³ Air	1.1439	1.28	110	80-120	3.10	20	
Nickel	3.12	0.539	ng/m³ Air	2.2878	1.06	89.7	80-120	7.83	20	
Selenium	2.60	0.00741	ng/m³ Air	2.2878	0.335	99.0	80-120	1.21	20	
Thallium	0.113	4.87E-4	ng/m³ Air	0.11439	6.24E-4	98.5	80-120	1.25	20	B, QB-01, QB-04
Vanadium	2.59	0.0438	ng/m³ Air	2.2878	0.379	96.6	80-120	1.27	20	
Zinc	99.3	63.5	ng/m³ Air	68.635	ND	145	80-120	8.20	20	QM-07
Post Spike (B4B0704-PS1)			**Source: 4020650-03**		Prepared & Analyzed: 02/07/24					
Antimony	0.294	0.0319	ng/m³ Air	0.22878	0.0628	101	75-125			SL
Arsenic	1.22	0.00775	ng/m³ Air	1.1439	0.0959	98.4	75-125			
Barium	4.03	0.885	ng/m³ Air	2.2878	1.75	99.8	75-125			
Beryllium	0.238	0.00265	ng/m³ Air	0.22878	0.00633	101	75-125			
Cadmium	0.125	0.0656	ng/m³ Air	0.11439	ND	109	75-125			
Chromium	3.59	1.83	ng/m³ Air	1.1439	2.48	97.1	75-125			
Cobalt	0.461	0.0361	ng/m³ Air	0.22878	0.234	99.4	75-125			
Copper	57.6	2.18	ng/m³ Air	11.439	45.6	105	75-125			
Lead	24.1	0.177	ng/m³ Air	22.878	1.36	99.6	75-125			
Manganese	6.10	1.56	ng/m³ Air	2.2878	3.83	99.1	75-125			
Molybdenum	2.40	0.297	ng/m³ Air	1.1439	1.28	97.6	75-125			
Nickel	3.31	0.539	ng/m³ Air	2.2878	1.06	98.1	75-125			
Selenium	1.45	0.00741	ng/m³ Air	1.1439	0.335	97.3	75-125			
Thallium	0.0579	4.87E-4	ng/m³ Air	5.7196E-2	6.24E-4	100	75-125			B, QB-01, QB-04
Vanadium	1.50	0.0438	ng/m³ Air	1.1439	0.379	98.0	75-125			
Zinc	70.4	63.5	ng/m³ Air	22.878	ND	308	75-125			
Dilution Check (B4B0704-SRL1)			**Source: 4020650-03**		Prepared & Analyzed: 02/07/24					
Antimony	ND	0.160	ng/m³ Air		ND				10	SL, U
Arsenic	0.104	0.0388	ng/m³ Air		0.0959			7.85	10	
Barium	ND	4.43	ng/m³ Air		ND				10	U
Beryllium	0.0143	0.0132	ng/m³ Air		ND			77.0	10	
Cadmium	ND	0.328	ng/m³ Air		ND				10	U
Chromium	ND	9.14	ng/m³ Air		ND				10	U
Cobalt	0.237	0.180	ng/m³ Air		0.234			1.53	10	
Copper	46.2	10.9	ng/m³ Air		45.6			1.27	10	

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B0704 - ICP-MS Extraction										
Dilution Check (B4B0704-SRL1) ContinueSource: 4020650-03 Prepared & Analyzed: 02/07/24										
Lead	1.37	0.885	ng/m³ Air		1.36			0.947	10	
Manganese	ND	7.82	ng/m³ Air		ND				10	U
Molybdenum	ND	1.48	ng/m³ Air		ND				10	U
Nickel	ND	2.70	ng/m³ Air		ND				10	U
Selenium	0.374	0.0371	ng/m³ Air		0.335			11.0	10	SRD-01
Thallium	0.00443	0.00244	ng/m³ Air		ND			151	10	B, QB-01, QB-04
Vanadium	0.366	0.219	ng/m³ Air		0.379			3.56	10	
Zinc	ND	318	ng/m³ Air		ND				10	U
Batch B4B0801 - ICP-MS Extraction										
Blank (B4B0801-BLK1) Prepared & Analyzed: 02/08/24										
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0793	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	6.29E-4	5.89E-4	ng/m³ Air							B, QB-01
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4B0801-BS1) Prepared & Analyzed: 02/08/24										
Antimony	0.669	0.0386	ng/m³ Air	1.3829		48.4	80-120			SL
Arsenic	2.69	0.00937	ng/m³ Air	2.7658		97.2	80-120			
Barium	27.4	1.07	ng/m³ Air	27.658		98.9	80-120			
Beryllium	1.35	0.00320	ng/m³ Air	1.3829		97.6	80-120			
Cadmium	1.36	0.0793	ng/m³ Air	1.3829		98.4	80-120			
Chromium	16.3	2.21	ng/m³ Air	13.829		118	80-120			
Cobalt	1.37	0.0436	ng/m³ Air	1.3829		99.2	80-120			
Copper	30.0	2.63	ng/m³ Air	27.658		108	80-120			
Lead	13.6	0.214	ng/m³ Air	13.829		98.0	80-120			
Manganese	8.68	1.89	ng/m³ Air	8.2975		105	80-120			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B0801 - ICP-MS Extraction										
LCS (B4B0801-BS1) Continued					Prepared & Analyzed: 02/08/24					
Molybdenum	1.60	0.359	ng/m³ Air	1.3829		116	80-120			
Nickel	3.00	0.652	ng/m³ Air	2.7658		108	80-120			
Selenium	2.74	0.00896	ng/m³ Air	2.7658		98.9	80-120			
Thallium	0.133	5.89E-4	ng/m³ Air	0.13829		96.5	80-120			B, QB-01
Vanadium	2.67	0.0529	ng/m³ Air	2.7658		96.5	80-120			
Zinc	128	76.8	ng/m³ Air	82.975		154	80-120			
Duplicate (B4B0801-DUP1)		**Source: 4020650-29**			Prepared & Analyzed: 02/08/24					
Antimony	0.203	0.0299	ng/m³ Air		0.198			2.85	10	SL
Arsenic	0.326	0.00725	ng/m³ Air		0.335			2.83	10	
Barium	5.95	0.828	ng/m³ Air		5.85			1.64	10	
Beryllium	0.00786	0.00248	ng/m³ Air		0.00802			2.04	10	
Cadmium	ND	0.0614	ng/m³ Air		ND				10	U
Chromium	1.84	1.71	ng/m³ Air		1.78			3.42	10	
Cobalt	0.229	0.0337	ng/m³ Air		0.233			1.60	10	
Copper	38.7	2.04	ng/m³ Air		39.8			2.64	10	
Lead	0.610	0.166	ng/m³ Air		0.606			0.553	10	
Manganese	6.64	1.46	ng/m³ Air		6.53			1.56	10	
Molybdenum	1.84	0.278	ng/m³ Air		1.88			1.92	10	
Nickel	0.990	0.504	ng/m³ Air		0.916			7.79	10	
Selenium	0.136	0.00693	ng/m³ Air		0.145			6.61	10	
Thallium	6.71E-4	4.56E-4	ng/m³ Air		7.90E-4			16.3	10	B, QB-01
Vanadium	0.675	0.0409	ng/m³ Air		0.663			1.80	10	
Zinc	ND	59.4	ng/m³ Air		ND				10	U
Duplicate (B4B0801-DUP2)		**Source: 4020650-19**			Prepared: 02/08/24 Analyzed: 02/10/24					
Antimony	0.104	0.0314	ng/m³ Air		0.101			3.37	10	SL
Arsenic	1.70	0.00762	ng/m³ Air		1.66			2.52	10	
Barium	5.56	0.871	ng/m³ Air		5.48			1.42	10	
Beryllium	0.0176	0.00260	ng/m³ Air		0.0187			6.60	10	
Cadmium	ND	0.0645	ng/m³ Air		ND				10	U
Chromium	4.63	1.80	ng/m³ Air		4.48			3.28	10	
Cobalt	1.02	0.0355	ng/m³ Air		0.986			3.49	10	
Copper	37.9	2.14	ng/m³ Air		36.6			3.35	10	
Lead	1.13	0.174	ng/m³ Air		1.12			1.27	10	
Manganese	20.0	1.54	ng/m³ Air		19.5			2.53	10	
Molybdenum	1.61	0.292	ng/m³ Air		1.57			2.85	10	
Nickel	4.87	0.531	ng/m³ Air		4.75			2.60	10	
Selenium	0.417	0.00729	ng/m³ Air		0.424			1.81	10	
Thallium	0.00117	4.79E-4	ng/m³ Air		0.00110			6.15	10	

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FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B0801 - ICP-MS Extraction										
Duplicate (B4B0801-DUP2) Continued		**Source: 4020650-19**		Prepared: 02/08/24 Analyzed: 02/10/24						
Vanadium	2.13	0.0430	ng/m³ Air		2.08			2.49	10	
Zinc	ND	62.5	ng/m³ Air		ND				10	U
Matrix Spike (B4B0801-MS1)		**Source: 4020650-29**		Prepared & Analyzed: 02/08/24						
Antimony	0.732	0.0299	ng/m³ Air	1.0701	0.198	49.9	80-120			SL
Arsenic	2.36	0.00725	ng/m³ Air	2.1401	0.335	94.5	80-120			
Barium	26.7	0.828	ng/m³ Air	21.401	5.85	97.6	80-120			
Beryllium	1.09	0.00248	ng/m³ Air	1.0701	0.00802	101	80-120			
Cadmium	1.04	0.0614	ng/m³ Air	1.0701	ND	97.5	80-120			
Chromium	12.6	1.71	ng/m³ Air	10.701	1.78	101	80-120			
Cobalt	1.26	0.0337	ng/m³ Air	1.0701	0.233	96.3	80-120			
Copper	57.8	2.04	ng/m³ Air	21.401	39.8	84.1	80-120			
Lead	11.3	0.166	ng/m³ Air	10.701	0.606	99.5	80-120			
Manganese	12.9	1.46	ng/m³ Air	6.4204	6.53	98.7	80-120			
Molybdenum	2.88	0.278	ng/m³ Air	1.0701	1.88	93.9	80-120			
Nickel	2.98	0.504	ng/m³ Air	2.1401	0.916	96.4	80-120			
Selenium	2.26	0.00693	ng/m³ Air	2.1401	0.145	98.7	80-120			
Thallium	0.105	4.56E-4	ng/m³ Air	0.10701	7.90E-4	97.6	80-120			B, QB-01
Vanadium	2.65	0.0409	ng/m³ Air	2.1401	0.663	92.8	80-120			
Zinc	108	59.4	ng/m³ Air	64.204	ND	168	80-120			
Matrix Spike Dup (B4B0801-MSD1)		**Source: 4020650-29**		Prepared & Analyzed: 02/08/24						
Antimony	0.791	0.0299	ng/m³ Air	1.0701	0.198	55.4	80-120	7.76	20	SL
Arsenic	2.40	0.00725	ng/m³ Air	2.1401	0.335	96.6	80-120	1.88	20	
Barium	27.4	0.828	ng/m³ Air	21.401	5.85	100	80-120	2.23	20	
Beryllium	1.01	0.00248	ng/m³ Air	1.0701	0.00802	93.5	80-120	7.56	20	
Cadmium	1.08	0.0614	ng/m³ Air	1.0701	ND	100	80-120	3.04	20	
Chromium	17.3	1.71	ng/m³ Air	10.701	1.78	145	80-120	31.4	20	QM-4X
Cobalt	1.32	0.0337	ng/m³ Air	1.0701	0.233	102	80-120	4.53	20	
Copper	58.1	2.04	ng/m³ Air	21.401	39.8	85.6	80-120	0.573	20	
Lead	11.5	0.166	ng/m³ Air	10.701	0.606	102	80-120	1.90	20	
Manganese	13.3	1.46	ng/m³ Air	6.4204	6.53	106	80-120	3.37	20	
Molybdenum	2.99	0.278	ng/m³ Air	1.0701	1.88	104	80-120	3.75	20	
Nickel	4.96	0.504	ng/m³ Air	2.1401	0.916	189	80-120	49.8	20	QM-07
Selenium	2.29	0.00693	ng/m³ Air	2.1401	0.145	100	80-120	1.29	20	
Thallium	0.106	4.56E-4	ng/m³ Air	0.10701	7.90E-4	98.6	80-120	1.03	20	B, QB-01
Vanadium	2.72	0.0409	ng/m³ Air	2.1401	0.663	96.3	80-120	2.83	20	
Zinc	110	59.4	ng/m³ Air	64.204	ND	171	80-120	2.22	20	
Post Spike (B4B0801-PS1)		**Source: 4020650-29**		Prepared & Analyzed: 02/08/24						
Antimony	0.409	0.0299	ng/m³ Air	0.21401	0.198	99.0	75-125			SL

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B0801 - ICP-MS Extraction										
Post Spike (B4B0801-PS1) Continued			**Source: 4020650-29**		Prepared & Analyzed: 02/08/24					
Arsenic	1.35	0.00725	ng/m³ Air	1.0701	0.335	95.0	75-125			
Barium	7.87	0.828	ng/m³ Air	2.1401	5.85	94.1	75-125			
Beryllium	0.219	0.00248	ng/m³ Air	0.21401	0.00802	98.6	75-125			
Cadmium	0.116	0.0614	ng/m³ Air	0.10701	ND	108	75-125			
Chromium	2.81	1.71	ng/m³ Air	1.0701	1.78	96.2	75-125			
Cobalt	0.439	0.0337	ng/m³ Air	0.21401	0.233	96.1	75-125			
Copper	50.3	2.04	ng/m³ Air	10.701	39.8	98.2	75-125			
Lead	21.5	0.166	ng/m³ Air	21.401	0.606	97.7	75-125			
Manganese	8.67	1.46	ng/m³ Air	2.1401	6.53	99.7	75-125			
Molybdenum	2.88	0.278	ng/m³ Air	1.0701	1.88	93.4	75-125			
Nickel	2.93	0.504	ng/m³ Air	2.1401	0.916	94.2	75-125			
Selenium	1.19	0.00693	ng/m³ Air	1.0701	0.145	97.9	75-125			
Thallium	0.0544	4.56E-4	ng/m³ Air	5.3503E-2	7.90E-4	100	75-125			B, QB-01
Vanadium	1.66	0.0409	ng/m³ Air	1.0701	0.663	93.2	75-125			
Zinc	72.4	59.4	ng/m³ Air	21.401	ND	338	75-125			
Dilution Check (B4B0801-SRL1)			**Source: 4020650-29**		Prepared & Analyzed: 02/08/24					
Antimony	0.200	0.149	ng/m³ Air		0.198			1.43	10	SL
Arsenic	0.334	0.0363	ng/m³ Air		0.335			0.328	10	
Barium	5.99	4.14	ng/m³ Air		5.85			2.25	10	
Beryllium	ND	0.0124	ng/m³ Air		ND				10	U
Cadmium	ND	0.307	ng/m³ Air		ND				10	U
Chromium	ND	8.55	ng/m³ Air		ND				10	U
Cobalt	0.239	0.169	ng/m³ Air		0.233			2.77	10	
Copper	41.4	10.2	ng/m³ Air		39.8			4.08	10	
Lead	ND	0.828	ng/m³ Air		ND				10	U
Manganese	ND	7.31	ng/m³ Air		ND				10	U
Molybdenum	1.95	1.39	ng/m³ Air		1.88			3.86	10	
Nickel	ND	2.52	ng/m³ Air		ND				10	U
Selenium	0.147	0.0347	ng/m³ Air		0.145			1.15	10	
Thallium	ND	0.00228	ng/m³ Air		ND				10	B, QB-01, U
Vanadium	0.691	0.205	ng/m³ Air		0.663			4.21	10	
Zinc	ND	297	ng/m³ Air		ND				10	U

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/13/24 16:40
SUBMITTED: 02/05/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Notes and Definitions

U	Under Detection Limit
SRD-01	Serial dilution exceeds the control limits.
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QM-4X	The MS/MSD recovery exceeds criteria because the parent sample concentration is greater than 4x the spike concentration.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
QB-04	Analyte exceeds continuing calibration blank criteria
QB-01	Analyte exceeds method blank criteria
FB-01	Analyte exceeds Field Blank criteria.
B	Analyte is found in the associated blank as well as in the sample (CLP B-flag).
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

Note: This test is accredited under the 2016 TNI Standard.

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 2/14/2024 and Shanna Vasser 2/15/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 1/25/2024 – 1/31/2024
Report No: 4020650

√	1.	Chain of custody (CoC) documentation is present.
X	2.	Sample receipt condition information is present and acceptable.
√	3.	Laboratory conducting the analysis is identified.
√	4.	All samples submitted to the laboratory are accounted for.
√	5.	Requested analytical methods were performed.
√	6.	Analysis dates are provided.
√	7.	Analyte results are provided.
√	8.	Result qualifiers and definitions are provided.
√	9.	Result units are reported.
NA	10.	Requested reporting limits are present.
√	11.	Method detection limits are present.
√	12.	Sample collection date and time are present.
X	13.	No detections in field QC blanks (lot/media blanks, field blanks, etc).

Discrepancies:

13. Field blank MFL-FB01-012624-HM had detections above the method detection limit.

Notes:

2 No sample receipt information was included.