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

Lahaina, Maui

2/8/2024 – 2/14/2024
[Report Updated: 5/30/2024]

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 impact 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 show approximately 1.1 mph in a generally SSE 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 (February 8-14), WW Pump Station #4 (February 8-14), Lahaina Intermediate School (February 8-14), Lahaina Boys & Girls Club (February 8-14).

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 (PM2.5) 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 lab was unable to analyze the sample from Lahaina Boys & Girls Club on February 12 due to the filter being damaged. All asbestos results were below the Site Screening Action Level (SSAL) of 0.003 fibers/cc and less than the lab'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 February 8-14
- WW Pump Station #4 on February 8-14

- Lahaina Intermediate School on February 8-14
- Lahaina Boys & Girls Club on February 8-14

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.

As previously reported, low levels of heavy metals were detected in ambient air samples at all community sampling locations (see Table 1). Although heavy metals were detected, all of the concentrations were below the SSALs (see Table 1). This revised report includes the heavy metal samples from February 8th that were not available for the first submission. 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.

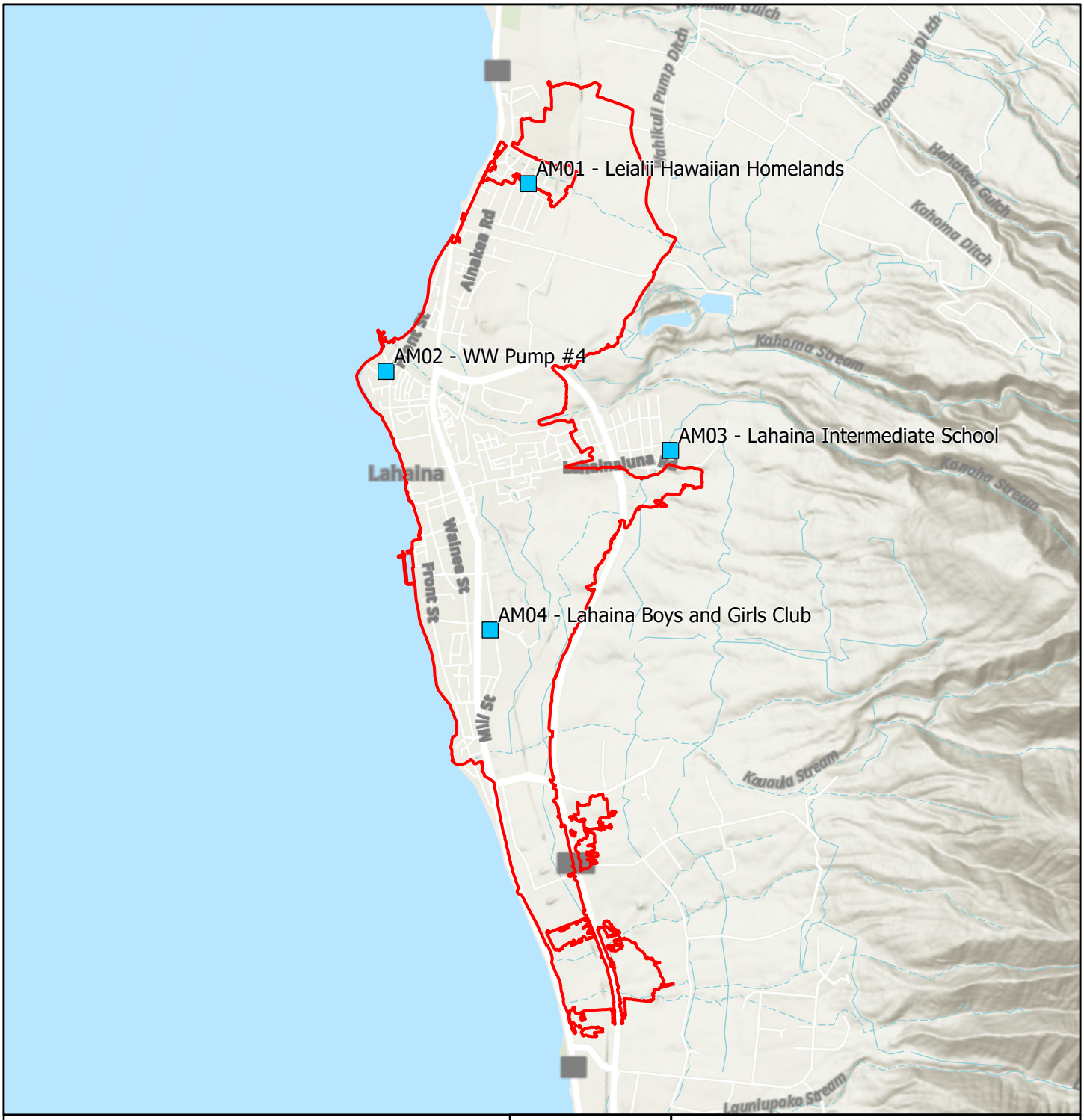
Tetra Tech is using Tisch Environmental High Volume Air Samplers, or equivalent, collocated with the real-time particulate monitors and asbestos samplers described above. Air samples for elemental metals at community locations are collected and analyzed in accordance with the following methods:

- 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
2/8//2024-2/14/2024
[Report Updated: 5/30/2024]

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*		0.003 [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
2/8/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.000102	0.000357	0.00276	0.00000668	ND	0.00199	0.000224	0.104	0.000681	0.00747	0.00403	0.000906	0.000168	0.00000105	0.00112	ND
	WW Pump Station #4 (AM-02)	<0.0025	0.000199	0.000236	0.00518	0.0000102	ND	0.00211	0.000291	0.0507	0.00114	0.0105	0.00148	0.00104	0.000203	0.00000109	0.00140	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000922	0.000123	0.00263	0.0000121	ND	0.00199	0.000289	0.0583	0.000352	0.00800	0.00218	0.00114	0.000183	0.000000921	0.00109	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.000108	0.000209	0.00282	0.00000757	ND	ND	0.000200	0.0302	0.000605	0.00724	0.00170	0.000707	0.000166	0.000000917	0.000954	ND
2/9/2024	Leialii Hawaiian Homelands (AM-01)	<0.0026	0.0000725	0.000312	0.00256	0.00000655	ND	ND	0.000228	0.0587	0.000928	0.00647	0.00268	0.000883	0.000169	0.000000587	0.000752	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000218	0.000304	0.00793	0.0000228	ND	0.00415	0.000974	0.0328	0.00125	0.0229	0.000868	0.00390	0.000250	0.00000109	0.00265	ND
	Lahaina Intermediate School (AM-03)	<0.0026	0.0000934	0.000104	0.00251	0.0000159	ND	ND	0.000264	0.0460	0.000817	0.00632	0.00198	0.00101	0.000169	0.000000616	0.000773	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0026	0.000110	0.000573	0.00288	0.00000855	ND	ND	0.000247	0.0407	0.000871	0.00779	0.000978	0.000871	0.000195	0.000000581	0.000820	ND
2/10/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.0000984	0.000190	0.00252	0.00000579	ND	ND	0.000176	0.0399	0.000695	0.00544	0.00197	0.000709	0.000175	0.000000814	0.000703	ND
	WW Pump Station #4 (AM-02)	<0.0025	0.000221	0.000202	0.00537	0.0000116	ND	ND	0.000312	0.0334	0.00121	0.00958	0.000962	0.00117	0.000202	0.000000702	0.00108	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000553	0.0000945	0.00224	0.0000131	ND	ND	0.000272	0.0472	0.000493	0.00610	0.00228	0.000957	0.000197	0.000000680	0.000751	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.000125	0.000252	0.00319	0.00000818	ND	ND	0.000239	0.0439	0.000921	0.00715	0.00121	0.000881	0.000190	0.000000681	0.000800	ND
2/11/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.0000510	0.000131	0.00169	ND	ND	ND	0.0000575	0.0323	0.000329	0.00187	0.00193	ND	0.000138	ND	0.000378	ND
	WW Pump Station #4 (AM-02)	<0.0025	0.000374	0.000140	0.00429	0.00000550	ND	ND	0.000142	0.0233	0.000511	0.00468	0.000913	0.000688	0.000213	0.000000636	0.000724	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000562	0.0000653	0.00136	0.00000342	ND	ND	0.0000696	0.0508	0.000680	0.00199	0.00221	ND	0.000139	ND	0.000438	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.000100	0.000105	0.00214	0.00000260	ND	ND	0.0000650	0.0327	0.000410	0.00213	0.00108	ND	0.000177	0.000000474	0.000501	ND
2/12/2024	Leialii Hawaiian Homelands (AM-01)	<0.0026	0.0000569	0.000196	0.00191	0.00000361	ND	ND	0.000160	0.0445	0.000340	0.00442	0.00223	0.000867	0.000137	0.000000780	0.000864	ND
	WW Pump Station #4 (AM-02)	<0.0026	0.000264	0.000163	0.00666	0.00000911	ND	0.00167	0.000286	0.0240	0.000808	0.00828	0.000916	0.00134	0.000167	0.000000951	0.00125	ND
	Lahaina Intermediate School (AM-03)	<0.0026	0.0000465	0.000130	0.00523	0.0000108	ND	ND	0.000245	0.0314	0.000480	0.00536	0.00156	0.00122	0.000119	0.000000717	0.000898	ND
	Lahaina Boys & Girls Club (AM-04)		0.0000696	0.000148	0.00369	0.00000649	ND	0.00204	0.000192	0.0407	0.000748	0.00540	0.00153	0.00117	0.000144	0.000000805	0.000867	ND
2/13/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000576	0.000220	0.00271	0.00000398	ND	ND	0.000794	0.0468	0.000433	0.00318	0.00210	0.00156	0.000118	0.000000753	0.00151	ND
	WW Pump Station #4 (AM-02)	<0.0026	0.0000907	0.000268	0.00384	0.00000636	ND	0.00198	0.000218	0.0325	0.000955	0.00594	0.00117	0.00151	0.000147	0.000000818	0.00198	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000569	0.000142	0.00264	0.0000127	ND	0.00228	0.000257	0.0397	0.000465	0.00612	0.00225	0.00143	0.000153	0.000000926	0.00169	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0026	0.0000602	0.000222	0.00261	0.00000558	ND	0.00212	0.000198	0.0388	0.000872	0.00515	0.00146	0.00123	0.000134	0.000000787	0.00158	ND
2/14/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.0000681	0.000747	0.00315	0.00000693	ND	0.00223	0.000279	0.0803	0.000814	0.00689	0.00347	0.00140	0.000123	0.000000901	0.000874	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.0000367	0.000315	0.00151	0.00000296	ND	ND	0.0000775	0.0163	0.000382	0.00224	0.000730	0.000632	0.000122	0.000000644	0.000513	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000516	0.0000844	0.00218	0.00000734	ND	ND	0.000120	0.0337	0.000280	0.00296	0.00188	0.000747	0.000123	0.000000790	0.000484	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.0000450	0.000219	0.00174	0.00000352	ND	ND	0.0000910	0.0483	0.000590	0.00239	0.00204	0.000697	0.000115	0.000000674	0.000447	ND
95% Upper Confidence Limit[2]		NA	0.000130	0.000270	0.00375	0.0000100	NA	0.00262	0.000320	0.0489	0.000800	0.00778	0.00209	0.00131	0.000170	0.000000800	0.00119	NA

Notes:

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

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

s/cc = structures per cubic centimeter

mg/m3 = milligrams per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

Data unavailable, voided sample due to damaged filter. Asbestos sample from Lahaina Boys & Girls Club on February 12 was not analyzed due to the damaged filter

Heavy Metals sample results from all sampling locations on February 8 have been received from lab and completed Stage 1 verification process.

* Laboratory 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

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results for PM_{10}
Maui Wildfire, Lahaina
2/8/2024 - 2/14/2024
[Report Updated: 5/30/2024]

Screening Level		**150 µg/m^3**
2/8/2024	Leialii Hawaiian Homelands (AM-01)	8.3
	WW Pump Station #4 (AM-02)	9.4
	Lahaina Intermediate School (AM-03)	8.1
	Lahaina Boys & Girls Club (AM-04)	7.1
2/9/2024	Leialii Hawaiian Homelands (AM-01)	7.4
	WW Pump Station #4 (AM-02)	9.1
	Lahaina Intermediate School (AM-03)	7.8
	Lahaina Boys & Girls Club (AM-04)	5.7
2/10/2024	Leialii Hawaiian Homelands (AM-01)	6.9
	WW Pump Station #4 (AM-02)	7.2
	Lahaina Intermediate School (AM-03)	7.7
	Lahaina Boys & Girls Club (AM-04)	6.4
2/11/2024	Leialii Hawaiian Homelands (AM-01)	7.1
	WW Pump Station #4 (AM-02)	6.8
	Lahaina Intermediate School (AM-03)	7.7
	Lahaina Boys & Girls Club (AM-04)	6.1
2/12/2024	Leialii Hawaiian Homelands (AM-01)	6.4
	WW Pump Station #4 (AM-02)	7.8
	Lahaina Intermediate School (AM-03)	6.9
	Lahaina Boys & Girls Club (AM-04)	6.2
2/13/2024	Leialii Hawaiian Homelands (AM-01)	6.7
	WW Pump Station #4 (AM-02)	4.8
	Lahaina Intermediate School (AM-03)	6.4
	Lahaina Boys & Girls Club (AM-04)	5.0
2/14/2024	Leialii Hawaiian Homelands (AM-01)	5.9
	WW Pump Station #4 (AM-02)	5.1
	Lahaina Intermediate School (AM-03)	72
	Lahaina Boys & Girls Club (AM-04)	4.6

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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

Table 3
Maui Wildfire - Lahaina
Meteorological Data
2/8/2024-2/14/2024
[Report Updated: 5/30/2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
2/8/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	75	61	763.1
2/8/2024	AM-02	WW Pump Station #4	1.1	SE	75	65	765.6
2/8/2024	AM-03	Lahaina Intermediate School	1.0	SE	78	67	755.9
2/8/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	73	66	764.9
2/9/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	74	67	761.8
2/9/2024	AM-02	WW Pump Station #4	0.9	SE	76	69	764.3
2/9/2024	AM-03	Lahaina Intermediate School	1.2	SE	79	72	754.6
2/9/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	73	71	763.6
2/10/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	74	67	761.5
2/10/2024	AM-02	WW Pump Station #4	0.9	SSE	76	69	763.9
2/10/2024	AM-03	Lahaina Intermediate School	1.0	ESE	78	71	754.2
2/10/2024	AM-04	Lahaina Boys & Girls Club	1.0	SSW	73	72	763.2
2/11/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	75	69	761.2
2/11/2024	AM-02	WW Pump Station #4	1.0	SE	75	70	763.6
2/11/2024	AM-03	Lahaina Intermediate School	1.1	SE	78	70	753.9
2/11/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	73	74	762.9
2/12/2024	AM-01	Leialii Hawaiian Homelands	1.2	SSE	74	68	759.6
2/12/2024	AM-02	WW Pump Station #4	0.8	SE	76	66	761.8
2/12/2024	AM-03	Lahaina Intermediate School	1.2	SSE	77	66	752.2
2/12/2024	AM-04	Lahaina Boys & Girls Club	1.2	SW	74	70	761.2
2/13/2024	AM-01	Leialii Hawaiian Homelands	0.7	ESE	77	65	758.3
2/13/2024	AM-02	WW Pump Station #4	0.9	SE	76	70	760.4
2/13/2024	AM-03	Lahaina Intermediate School	0.9	SE	76	73	751.0
2/13/2024	AM-04	Lahaina Boys & Girls Club	0.9	SSE	76	71	760.0
2/14/2024	AM-01	Leialii Hawaiian Homelands	0.8	S	77	71	758.3
2/14/2024	AM-02	WW Pump Station #4	1.7	SSE	76	75	760.5
2/14/2024	AM-03	Lahaina Intermediate School	1.8	SSE	76	79	751.1
2/14/2024	AM-04	Lahaina Boys & Girls Club	1.6	S	77	74	760.1

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

Appendix 1

Please note, comments pertaining to gypsum may be mentioned in the lab reports below. 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. A more indepth discussion can be found in the attached weekly report.

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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/19/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-020824-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7174.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	S. Richey
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):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0001 **Customer Sample:** MFL-AM01-020824-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	B7	None Detected									
A5	C8	None Detected									
A6	H5	None Detected									
A7	D3	None Detected									
A8	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/19/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-020824-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7292.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	Random	*(3.00)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	S. Richey
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):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**2**	**3**	**46.88**	**0.0025**	**0.0005**	**- 0.0064**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**2**	**3**	**46.88**	**0.0025**	**0.0005**	**- 0.0064**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**2**	**3**	**46.88**	**0.0025**	**0.0005**	**- 0.0064**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**1**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**1**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**1**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.

Approved Signatory

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EMSL Order ID: 042403029
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0002 **Customer Sample:** MFL-AM02-020824-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	J3	CD22	1		13.9	0.27	CD	Chrysotile			
B1	J3	CF		1	11.9	0.12	CDQ	Chrysotile		2024_Asbestos_029, 2024_Asbestos_030	
B1	J3	CF		2	5.73	0.11	CD	Chrysotile			
B1	H5	B	2	3	1.5	0.16	CD	Chrysotile			
B2	G7	None Detected									
B3	C2	None Detected									
B4	I5	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-020824-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7282.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	S. Richey
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):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0003 **Customer Sample:** MFL-AM03-020824-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	A6	None Detected									
B5	C8	None Detected									
B6	F7	None Detected									
B7	G9	None Detected									
B8	A2	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Project: **Maui Fires - Lahaina**

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Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/19/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-020824-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7256.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0004 **Customer Sample:** MFL-AM04-020824-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	J3	None Detected									
C1	G1	None Detected									
C1	D4	None Detected									
C2	H2	None Detected									
C2	D6	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Analysis Date:	02/19/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-020824-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0005		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0005 **Customer Sample:** MFL-FB01-020824-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					
C5	J9	None Detected									
C5	H10	None Detected									
C5	F9	None Detected									
C5	D7	None Detected									
C5	B6	None Detected									
C6	A5	None Detected									
C6	C3	None Detected									
C6	E1	None Detected									
C6	G2	None Detected									
C6	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/19/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-020924-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6996.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0006 **Customer Sample:** MFL-AM01-020924-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	F7	None Detected									
D1	I6	None Detected									
D2	J4	None Detected									
D2	G8	None Detected									
D2	D9	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project:

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/19/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-020924-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6764.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

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**	**< 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) 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**	**< 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.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0007 **Customer Sample:** MFL-AM02-020924-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	J9	None Detected									
D5	H8	None Detected									
D8	I9	None Detected									
D8	G7	None Detected									
D8	A5	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Project: **Maui Fires - Lahaina**

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Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-020924-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6992.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0008 **Customer Sample:** MFL-AM03-020924-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	B9	None Detected									
E1	D7	None Detected									
E1	G6	None Detected									
E2	H6	None Detected									
E2	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-020924-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6957.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

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**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0009 **Customer Sample:** MFL-AM04-020924-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	I1	None Detected									
E5	G4	None Detected									
E5	C6	None Detected									
E6	C4	None Detected									
E6	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:	042403029
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Attn: **Chelsea Saber**
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1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-020924-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0010		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

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**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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 / mm²	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0010 **Customer Sample:** MFL-FB01-020924-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	J9	None Detected									
F1	H8	None Detected									
F1	F4	None Detected									
F1	D2	None Detected									
F1	B6	None Detected									
F2	A5	None Detected									
F2	C6	None Detected									
F2	E8	None Detected									
F2	G6	None Detected									
F2	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-021024-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7311.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0011 **Customer Sample:** MFL-AM01-021024-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					
F6	A5	None Detected									
F6	D7	None Detected									
F6	G5	None Detected									
F7	I6	None Detected									
F7	C8	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

Attn: **Chelsea Saber**
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Project: **Maui Fires - Lahaina**

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Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-021024-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7155.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0012 **Customer Sample:** MFL-AM02-021024-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	A4	None Detected									
G2	D6	None Detected									
G2	H4	None Detected									
G3	H7	None Detected									
G3	E4	None Detected									

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

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Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-021024-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7116.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0013 **Customer Sample:** MFL-AM03-021024-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					
G7	A7	None Detected									
G7	C8	None Detected									
G7	H10	None Detected									
G8	B9	None Detected									
G8	H8	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:	042403029
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Project ID:	

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-021024-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7226.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0014 **Customer Sample:** MFL-AM04-021024-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	I2	None Detected									
H1	G5	None Detected									
H1	D7	None Detected									
H2	H7	None Detected									
H2	C7	None Detected									

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

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Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-021024-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0015		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

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:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0015 **Customer Sample:** MFL-FB01-021024-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	A2	None Detected									
H6	C3	None Detected									
H6	E8	None Detected									
H6	G10	None Detected									
H6	I6	None Detected									
H8	J3	None Detected									
H8	H2	None Detected									
H8	F1	None Detected									
H8	D5	None Detected									
H8	B8	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-021124-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0016		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
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):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0016 **Customer Sample:** MFL-AM01-021124-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	C5	None Detected									
I1	F8	None Detected									
I1	I5	None Detected									
I2	G7	None Detected									
I2	A4	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

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Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-021124-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7171.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	S. Richey
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):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0017 **Customer Sample:** MFL-AM02-021124-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					
K1	J8	None Detected									
K1	H7	None Detected									
K2	B4	None Detected									
K3	I5	None Detected									
K4	C6	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-021124-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7170.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
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):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0018 **Customer Sample:** MFL-AM03-021124-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					
J3	J5	None Detected									
J3	E2	None Detected									
J3	B7	None Detected									
J4	H8	None Detected									
J4	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

Attn: **Chelsea Saber**
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Project: **Maui Fires - Lahaina**

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Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-021124-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7061.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	Random	*(4.00)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0025**

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**	**1**	**1**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0040**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**1**	**1**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0040**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**1**	**1**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0040**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID: 042403029
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0019 **Customer Sample:** MFL-AM04-021124-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	D6	None Detected									
J5	I4	None Detected									
J6	H7	F	1	1	2.79	0.12	CD	Chrysotile		MG_24, MG_25	
J6	D8	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:	042403029
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Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-021124-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0020		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

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:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0020 **Customer Sample:** MFL-FB01-021124-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					
K2	I5	None Detected									
K2	G4	None Detected									
K2	E8	None Detected									
K2	C4	None Detected									
K2	B7	None Detected									
K3	A4	None Detected									
K3	D4	None Detected									
K3	F7	None Detected									
K3	H6	None Detected									
K3	I8	None Detected									

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

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Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/20/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-LB01-021124-AB**		**Sample Description:**	
EMSL Sample Number:	042403029-0021		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

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**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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 / mm²	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment


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:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0021 **Customer Sample:** MFL-LB01-021124-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					
K5	B7	None Detected									
K5	D6	None Detected									
K5	F4	None Detected									
K5	H7	None Detected									
K5	J4	None Detected									
K6	A8	None Detected									
K6	C5	None Detected									
K6	E5	None Detected									
K6	G7	None Detected									
K6	I5	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:	042403029
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/14/2024 09:20 AM
Analysis Date:	02/19/2024
Report Date:	02/21/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042403029-0022		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	S. Richey
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**

Comment


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:	**042403029**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403029-0022 **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					
A1	J6	None Detected									
A1	J4	None Detected									
A1	I3	None Detected									
A2	H7	None Detected									
A2	H5	None Detected									
A2	G6	None Detected									
A3	B8	None Detected									
A3	C9	None Detected									
A4	E10	None Detected									
A4	F7	None Detected									

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

OrderID: 042403029

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042403029

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

RECEIVED EMSL CINNAMINSON, NJ 24 FEB 14 AM 10:22

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

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	Tetra Tech	Company Name:	
Contact Name:	Chelsea Saber	Billing Contact:	
Street Address:	1560 Broadway, Ste. 1400	Street Address:	
City, State, Zip:	Denver, CO 80202	City, State, Zip:	
Country:	USA	Country:	
Phone:	703-489-2674	Phone:	
Email(s) for Report:	chelsea.saber@tetratech.com	Email(s) for Invoice:	

Project Information

Project Name/No: Maui Fires - Lahaina
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 Kaufman Saldana
Sampled By Signature:
No. of Samples in Shipment: 21

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-AM01-020824-AB		7,174.634	02/08/24 1051
MFL-AM02-020824-AB		7,292.592	02/08/24 1128
MFL-AM03-020824-AB		7,282.368	02/08/24 1319
MFL-AM04-020824-AB		7,256.736	02/08/24 1352
MFL-FB01-020824-AB		0	02/08/24 1200
MFL-AM01-020924-AB		6,796.528	02/09/24 1055
MFL-AM02-020924-AB		6,764.762	02/09/24 1129
MFL-AM03-020924-AB		6,992.475	02/09/24 1317

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

All samples received acceptable for analysis.

21

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/12/24 1400	Received by: FedEx	Date/Time: 2/14/24 9:20A
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: 042403029

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042403029

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.)

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-020924-AB		6,957.912	02/09/24 1338
MFL-FB01-020924-AB		0	02/09/24 1200
MFL-AM01-021024-AB		7,310.979	02/10/24 1101
MFL-AM02-021024-AB		7,155.280	02/10/24 1121
MFL-AM03-021024-AB		7,116.010	02/10/24 1308
MFL-AM04-021024-AB		7,226.928	02/10/24 1341
MFL-FB01-021024-AB		0	02/10/24 1200
MFL-AM01-021124-AB		7,218.144	02/11/24 1104
MFL-AM02-021124-AB		7,171.776	02/11/24 1123
MFL-AM03-021124-AB		7,170.732	02/11/24 1305
MFL-AM04-021124-AB		7,061.518	02/11/24 ~~1200~~ 1326 (EFS)
MFL-FB01-021124-AB		0	02/11/24 ~~1201~~ 1200 (EFS)
MFL-LB01-021124-AB		0	1201

RECEIVED
EMSL
CINNAMINSON, NJ
24 FEB 14 AM 10:32

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/12/24 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.)

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.

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23206

Reviewed by:
Kierra Johnson 02/22/2024 and Shanna Vasser 2/23/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 02/08/2024 - 02/11/2024
Report No: 42403029

√	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: None

Notes: None

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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/20/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-021224-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6963.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

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**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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

EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0001 **Customer Sample:** MFL-AM01-021224-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	I7	None Detected									
B5	G5	None Detected									
B5	B5	None Detected									
B6	G5	None Detected									
B6	B3	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-021224-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7038.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

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**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0002 **Customer Sample:** MFL-AM02-021224-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					
C2	J7	None Detected									
C2	H6	None Detected									
C2	A4	None Detected									
C3	B7	None Detected									
C3	H5	None Detected									

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

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Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Fax:	
Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-021224-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7047.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0003 **Customer Sample:** MFL-AM03-021224-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					
C5	I5	None Detected									
C5	F3	None Detected									
C5	D5	None Detected									
C3	I6	None Detected									
C3	D2	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/19/2024 08:50 AM
Analysis Date:	N/A
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-021224-AB**	**Sample Description:**	
EMSL Sample Number:	042403279-0004	Sample Matrix:	Air
Magnification used for fiber counting:	N/A	Volume (L) :	7227.1
Aspect ratio for fiber definition:	N/A	Area of original collection filter (mm²):	385
Minimum Length (µm):	N/A	Grid Opening Area (mm²):	0.0000
Chi² 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):	N/A		
Analytical Sensitivity (Structures/cc):	**N/A**	**Limit of Detection (Structures/cc):**	**Not Analyzed**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	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) STRUCTURES
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/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
Not analyzed, filter damaged.


Approved Signatory

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EMSL Order:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Project:

Phone:	(703) 489-2674
Fax:	
Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-021224-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0005		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

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**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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 / mm²	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

Approved Signatory

Concentrations and 95% Confidence Intervals are based on a Poissonian distribution. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to the cost of analysis. This report relates only to the samples reported above and may not be reproduced except in full without the written approval of EMSL. EMSL is not responsible for sample collection activities or analytical limitations. Interpretation and use of results are the responsibility of the client.

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0005 **Customer Sample:** MFL-FB01-021224-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	J4	None Detected									
D1	H3	None Detected									
D1	F1	None Detected									
D1	D4	None Detected									
D1	B6	None Detected									
D2	J5	None Detected									
D2	H3	None Detected									
D2	F4	None Detected									
D2	D5	None Detected									
D2	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Project: **Maui Fires - Lahaina**

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Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-021324-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6787.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(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) 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**	**< 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.


Approved Signatory

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

EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0006 **Customer Sample:** MFL-AM01-021324-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					
E2	J6	None Detected									
E2	G4	None Detected									
E2	C6	None Detected									
E3	E7	None Detected									
E3	B5	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-021324-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6881.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0007 **Customer Sample:** MFL-AM02-021324-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	I4	None Detected									
E5	F2	None Detected									
E5	C5	None Detected									
E6	H5	None Detected									
E6	B2	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Project: **Maui Fires - Lahaina**

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Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-021324-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7084.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0008 **Customer Sample:** MFL-AM03-021324-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					
F2	B7	None Detected									
F2	E9	None Detected									
F2	I6	None Detected									
F3	C6	None Detected									
F3	J6	None Detected									

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

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Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-021324-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7043.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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):**	**0.0026**

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**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0009 **Customer Sample:** MFL-AM04-021324-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	A5	None Detected									
F5	E7	None Detected									
F5	H8	None Detected									
F6	J3	None Detected									
F6	B3	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:	042403279
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Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-021324-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0010		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0010 **Customer Sample:** MFL-FB01-021324-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	G1	None Detected									
G1	H3	None Detected									
G1	G5	None Detected									
G1	H7	None Detected									
G1	I9	None Detected									
G3	I5	None Detected									
G3	H7	None Detected									
G3	E6	None Detected									
G3	D5	None Detected									
G3	B3	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-021424-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7057.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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):**	**0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0011 **Customer Sample:** MFL-AM01-021424-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	A9	None Detected									
G5	C7	None Detected									
G5	I5	None Detected									
G6	G7	None Detected									
G6	B8	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-021424-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6619.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
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/mm²)	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) STRUCTURES
(>5 microns in length with >3:1 Aspect Ratio)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/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.


Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0012 **Customer Sample:** MFL-AM02-021424-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	J8	None Detected									
H2	G9	None Detected									
H2	C10	None Detected									
H3	J8	None Detected									
H3	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/22/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-021424-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7069.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	-	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0013 **Customer Sample:** MFL-AM03-021424-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	A5	None Detected									
H5	D7	None Detected									
H5	H8	None Detected									
H6	G5	None Detected									
H6	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:	042403279
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-021424-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7135.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
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):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0014 **Customer Sample:** MFL-AM04-021424-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	E8	None Detected									
I1	G5	None Detected									
I1	I7	None Detected									
I2	B8	None Detected									
I2	G9	None Detected									

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

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Analysis Date:	02/22/2024
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-021424-AB**		**Sample Description:**	
EMSL Sample Number:	042403279-0015		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	-	**Not Applicable**

Comment
Numerous gypsum fibers present.

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:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0015 **Customer Sample:** MFL-FB01-021424-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	J8	None Detected									
I5	H10	None Detected									
I5	F8	None Detected									
I5	D7	None Detected									
I5	B6	None Detected									
I6	J2	None Detected									
I6	H3	None Detected									
I6	F2	None Detected									
I6	D1	None Detected									
I6	B4	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:	042403279
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	
Received Date:	02/19/2024 08:50 AM
Analysis Date:	02/20/2024
Report Date:	02/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042403279-0016		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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):	0.001			
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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	-	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

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:	**042403279**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042403279-0016 **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					
B2	A4	None Detected									
B2	C5	None Detected									
B2	E5	None Detected									
B2	D2	None Detected									
B2	I5	None Detected									
B3	J9	None Detected									
B3	H6	None Detected									
B3	F8	None Detected									
B3	D6	None Detected									
B3	B9	None Detected									

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

OrderID: 042403279

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042403279

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

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

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

RECEIVED
EMSL
CINNAMINSON, NJ
2024 FEB 19 A 9:40

Customer Information

Customer ID:	
Company Name:	Tetra Tech
Contact Name:	Chelsea Saber
Street Address:	1560 Broadway Ste 1400
City, State, Zip:	Denver, CO 80202
Country:	USA
Phone:	703-489-2674
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:	

Project Information

Project Name/No:	Maui Fires - Lahaina
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:	Elin Kenyon-Sinclaire
Sampled By Signature:	
No. of Samples in Shipment	15

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-AM01-021224-AB		6,963.723	02/12/24 1108
MFL-AM02-021224-AB		7,037.760	02/12/24 1131
MFL-AM03-021224-AB		7,047.072	02/12/24 1307
MFL-AM04-021224-AB		7,227.072	02/12/24 1328
MFL-FB01-021224-AB		0	02/12/24 1200
MFL-AM01-021324-AB		6,787.265	02/13/24 1106
MFL-AM02-021324-AB		6,881.210	02/13/24 1122
MFL-AM03-021324-AB		7,084.572	02/13/24 1316

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

Sample MFL-AM04-021224-AB received with damaged filter. Unable to analyze.
All other samples received acceptable for analysis.

15 cyl

Method of Shipment:	FedEx	Sample Condition Upon Receipt:	
Relinquished by:		Received by: FX	Date/Time: 2/19/24 850
Relinquished by:	Date/Time: 02/15/24 1100	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: 042403279

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042403279

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

RECEIVED
EMSL
CINNAMINSON, NJ
2024 FEB 19 A 9:40

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.):

EKS

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-021324-AB		7,043.728	02/13/24 1335
MFL-FB01-021324-AB		0	02/13/24 1200
MFL-AM01-021424-AB		7,057.627	02/14/24 1059
MFL-AM02-021424-AB		6,619.303	02/14/24 1116
MFL-AM03-021424-AB		7,069.205	02/14/24 1310
MFL-AM04-021424-AB		7,135.700	02/14/24 1327
MFL-FB01-021424-AB		0	02/14/24 1200

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/15/24 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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Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23206

Reviewed by:
Kierra Johnson 2/26/2024 and Shanna Vasser 2/28/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 2/12/2024 - 2/14/2024
Report No: 42403279

√	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:

4. The laboratory was unable to analyze sample MFL-AM04-021224-AB due to a damaged filter upon receipt.

Notes: None

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

March 20, 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 03/04/24 13:11.

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: 03/20/24 12:21
SUBMITTED: 03/04/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-020824-HM	4030429-01	Air	02/08/24 23:59	03/04/24 13:11
MFL-AM02-020824-HM	4030429-02	Air	02/08/24 23:59	03/04/24 13:11
MFL-AM03-020824-HM	4030429-03	Air	02/08/24 23:59	03/04/24 13:11
MFL-AM04-020824-HM	4030429-04	Air	02/08/24 23:59	03/04/24 13:11
[redacted]				

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: 03/20/24 12:21
SUBMITTED: 03/04/24
AQS SITE CODE:
SITE CODE: Lahaina fires

[redacted]

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: 03/20/24 12:21
SUBMITTED: 03/04/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020824-HM
Matrix: Air
Lab ID: 4030429-01
Sample Volume: 1918.426 m³
Filter ID:
Sampled: 02/08/24 23:59
Received: 03/04/24 13:11
Analysis Date: 03/05/24 23:40

Comments: Q9516883 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.102**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.357**		**0.00795**
Barium	**7440-39-3**	**2.76**		**0.907**
Beryllium	**7440-41-7**	**0.00668**		**0.00271**
Cadmium	7440-43-9	0.00818	U	0.0628
Chromium	**7440-47-3**	**1.99**		**1.87**
Cobalt	**7440-48-4**	**0.224**		**0.0370**
Copper	**7440-50-8**	**104**		**2.23**
Lead	**7439-92-1**	**0.681**		**0.181**
Manganese	**7439-96-5**	**7.47**		**1.60**
Molybdenum	**7439-98-7**	**4.03**		**0.304**
Nickel	**7440-02-0**	**0.906**		**0.553**
Selenium	**7782-49-2**	**0.168**		**0.00760**
Thallium	**7440-28-0**	**0.00105**	QB-01	**5.00E-4**
Vanadium	**7440-62-2**	**1.12**		**0.0449**
Zinc	7440-66-6	42.6	U	65.1

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: 03/20/24 12:21
SUBMITTED: 03/04/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020824-HM
Matrix: Air
Lab ID: 4030429-02
Sample Volume: 2170.746 m³
Filter ID:
Sampled: 02/08/24 23:59
Received: 03/04/24 13:11
Analysis Date: 03/05/24 23:56

Comments: Q9516881 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.199**	SL	**0.0289**
Arsenic	**7440-38-2**	**0.236**		**0.00702**
Barium	**7440-39-3**	**5.18**		**0.802**
Beryllium	**7440-41-7**	**0.0102**		**0.00240**
Cadmium	7440-43-9	0.0108	U	0.0555
Chromium	**7440-47-3**	**2.11**		**1.66**
Cobalt	**7440-48-4**	**0.291**		**0.0327**
Copper	**7440-50-8**	**50.7**		**1.97**
Lead	**7439-92-1**	**1.14**		**0.160**
Manganese	**7439-96-5**	**10.5**		**1.42**
Molybdenum	**7439-98-7**	**1.48**		**0.269**
Nickel	**7440-02-0**	**1.04**		**0.489**
Selenium	**7782-49-2**	**0.203**		**0.00672**
Thallium	**7440-28-0**	**0.00109**	QB-01	**4.41E-4**
Vanadium	**7440-62-2**	**1.40**		**0.0396**
Zinc	7440-66-6	52.3	U	57.6

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: 03/20/24 12:21
SUBMITTED: 03/04/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020824-HM
Matrix: Air
Lab ID: 4030429-03
Sample Volume: 1830.955 m³
Filter ID:
Sampled: 02/08/24 23:59
Received: 03/04/24 13:11
Analysis Date: 03/06/24 00:13

Comments: Q9516880 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0922**	SL	**0.0343**
Arsenic	**7440-38-2**	**0.123**		**0.00833**
Barium	**7440-39-3**	**2.63**		**0.951**
Beryllium	**7440-41-7**	**0.0121**		**0.00284**
Cadmium	7440-43-9	0.00621	U	0.0658
Chromium	**7440-47-3**	**1.99**		**1.96**
Cobalt	**7440-48-4**	**0.289**		**0.0387**
Copper	**7440-50-8**	**58.3**		**2.34**
Lead	**7439-92-1**	**0.352**		**0.190**
Manganese	**7439-96-5**	**8.00**		**1.68**
Molybdenum	**7439-98-7**	**2.18**		**0.319**
Nickel	**7440-02-0**	**1.14**		**0.579**
Selenium	**7782-49-2**	**0.183**		**0.00796**
Thallium	**7440-28-0**	**9.21E-4**	QB-01	**5.23E-4**
Vanadium	**7440-62-2**	**1.09**		**0.0470**
Zinc	7440-66-6	43.2	U	68.2

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: 03/20/24 12:21
SUBMITTED: 03/04/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020824-HM
Matrix: Air
Lab ID: 4030429-04
Sample Volume: 1694.749 m³
Filter ID:
Sampled: 02/08/24 23:59
Received: 03/04/24 13:11
Analysis Date: 03/06/24 00:28

Comments: Q9516879 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.108**	SL	**0.0371**
Arsenic	**7440-38-2**	**0.209**		**0.00900**
Barium	**7440-39-3**	**2.82**		**1.03**
Beryllium	**7440-41-7**	**0.00757**		**0.00307**
Cadmium	7440-43-9	0.00858	U	0.0711
Chromium	7440-47-3	1.86	U	2.12
Cobalt	**7440-48-4**	**0.200**		**0.0419**
Copper	**7440-50-8**	**30.2**		**2.52**
Lead	**7439-92-1**	**0.605**		**0.205**
Manganese	**7439-96-5**	**7.24**		**1.81**
Molybdenum	**7439-98-7**	**1.70**		**0.345**
Nickel	**7440-02-0**	**0.707**		**0.626**
Selenium	**7782-49-2**	**0.166**		**0.00860**
Thallium	**7440-28-0**	**9.17E-4**	QB-01	**5.65E-4**
Vanadium	**7440-62-2**	**0.954**		**0.0508**
Zinc	7440-66-6	54.9	U	73.7

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: 03/20/24 12:21
SUBMITTED: 03/04/24
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 2403017 - B4C0503										
Calibration Blank (2403017-CCB1)				Prepared & Analyzed: 03/05/24						
Antimony	0.500		ng/l							
Arsenic	3.38		ng/l							
Barium	0.774		ng/l							
Beryllium	0.281		ng/l							
Cadmium	0.196		ng/l							
Chromium	3.68		ng/l							
Cobalt	0.759		ng/l							
Copper	490		ng/l							
Lead	3.80		ng/l							
Manganese	11.5		ng/l							
Molybdenum	17.9		ng/l							
Nickel	2.87		ng/l							
Selenium	4.63		ng/l							
Thallium	1.03		ng/l							
Vanadium	39.5		ng/l							
Zinc	-2.46		ng/l							U
Calibration Blank (2403017-CCB2)				Prepared & Analyzed: 03/05/24						
Antimony	0.435		ng/l							
Arsenic	2.13		ng/l							
Barium	-0.0640		ng/l							U
Beryllium	0.113		ng/l							
Cadmium	-0.0828		ng/l							U
Chromium	1.55		ng/l							
Cobalt	0.290		ng/l							
Copper	324		ng/l							
Lead	1.97		ng/l							
Manganese	6.68		ng/l							
Molybdenum	5.27		ng/l							
Nickel	1.14		ng/l							
Selenium	-1.24		ng/l							U
Thallium	0.935		ng/l							
Vanadium	36.0		ng/l							
Zinc	-2.83		ng/l							U
Calibration Blank (2403017-CCB3)				Prepared & Analyzed: 03/05/24						
Antimony	0.441		ng/l							
Arsenic	6.74		ng/l							
Barium	0.476		ng/l							
Beryllium	-0.318		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403017 - B4C0503										
Calibration Blank (2403017-CCB3) Contin				Prepared & Analyzed: 03/05/24						
Cadmium	-0.0245		ng/l							U
Chromium	1.52		ng/l							
Cobalt	0.300		ng/l							
Copper	223		ng/l							
Lead	2.59		ng/l							
Manganese	6.47		ng/l							
Molybdenum	4.22		ng/l							
Nickel	2.00		ng/l							
Selenium	-0.354		ng/l							U
Thallium	1.00		ng/l							
Vanadium	25.9		ng/l							
Zinc	-72.7		ng/l							U
Calibration Blank (2403017-CCB4)				Prepared: 03/05/24 Analyzed: 03/06/24						
Antimony	0.242		ng/l							
Arsenic	5.97		ng/l							
Barium	-0.229		ng/l							U
Beryllium	0.0307		ng/l							
Cadmium	-0.0462		ng/l							U
Chromium	1.48		ng/l							
Cobalt	0.442		ng/l							
Copper	302		ng/l							
Lead	2.16		ng/l							
Manganese	8.25		ng/l							
Molybdenum	6.09		ng/l							
Nickel	2.42		ng/l							
Selenium	-2.15		ng/l							U
Thallium	1.25		ng/l							
Vanadium	28.1		ng/l							
Zinc	-73.4		ng/l							U
Calibration Blank (2403017-CCB5)				Prepared: 03/05/24 Analyzed: 03/06/24						
Antimony	0.157		ng/l							
Arsenic	7.77		ng/l							
Barium	0.790		ng/l							
Beryllium	-0.685		ng/l							U
Cadmium	0.168		ng/l							
Chromium	1.67		ng/l							
Cobalt	1.88		ng/l							
Copper	131		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403017 - B4C0503										
Calibration Blank (2403017-CCB5) Contin				Prepared: 03/05/24 Analyzed: 03/06/24						
Lead	1.86		ng/l							
Manganese	9.55		ng/l							
Molybdenum	5.81		ng/l							
Nickel	2.76		ng/l							
Selenium	1.97		ng/l							
Thallium	0.919		ng/l							
Vanadium	14.5		ng/l							
Zinc	-57.3		ng/l							U
Calibration Blank (2403017-CCB6)				Prepared: 03/05/24 Analyzed: 03/06/24						
Antimony	0.715		ng/l							
Arsenic	9.27		ng/l							
Barium	2.62		ng/l							
Beryllium	-0.313		ng/l							U
Cadmium	0.180		ng/l							
Chromium	5.38		ng/l							
Cobalt	0.855		ng/l							
Copper	129		ng/l							
Lead	3.63		ng/l							
Manganese	12.0		ng/l							
Molybdenum	7.00		ng/l							
Nickel	2.89		ng/l							
Selenium	2.34		ng/l							
Thallium	0.904		ng/l							
Vanadium	13.9		ng/l							
Zinc	-60.7		ng/l							U
Calibration Blank (2403017-CCB7)				Prepared: 03/05/24 Analyzed: 03/06/24						
Antimony	0.302		ng/l							
Arsenic	10.6		ng/l							
Barium	0.761		ng/l							
Beryllium	-0.517		ng/l							U
Cadmium	0.0665		ng/l							
Chromium	1.06		ng/l							
Cobalt	0.521		ng/l							
Copper	104		ng/l							
Lead	2.06		ng/l							
Manganese	7.44		ng/l							
Molybdenum	5.32		ng/l							
Nickel	1.92		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403017 - B4C0503										
Calibration Blank (2403017-CCB7) Contin				Prepared: 03/05/24 Analyzed: 03/06/24						
Selenium	-7.74		ng/l							U
Thallium	1.12		ng/l							
Vanadium	10.3		ng/l							
Zinc	-70.1		ng/l							U
Calibration Check (2403017-CCV1)				Prepared & Analyzed: 03/05/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	201000		ng/l	200000		101	90-110			
Beryllium	4870		ng/l	5000.0		97.4	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	240000		ng/l	240000		99.9	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	50800		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	503		ng/l	500.00		101	90-110			
Vanadium	19900		ng/l	20000		99.3	90-110			
Zinc	537000		ng/l	500000		107	90-110			
Calibration Check (2403017-CCV2)				Prepared & Analyzed: 03/05/24						
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	198000		ng/l	200000		99.2	90-110			
Beryllium	4880		ng/l	5000.0		97.7	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50700		ng/l	50000		101	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	505000		ng/l	500000		101	90-110			
Molybdenum	51100		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	488		ng/l	500.00		97.7	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	540000		ng/l	500000		108	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 2403017 - B4C0503										
Calibration Check (2403017-CCV3)				Prepared & Analyzed: 03/05/24						
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	199000		ng/l	200000		99.3	90-110			
Beryllium	4940		ng/l	5000.0		98.8	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	50000		ng/l	50000		99.9	90-110			
Copper	2.05E6		ng/l	2.0000E6		103	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	501000		ng/l	500000		100	90-110			
Molybdenum	50000		ng/l	50000		100	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	19900		ng/l	20000		99.6	90-110			
Thallium	479		ng/l	500.00		95.8	90-110			
Vanadium	19900		ng/l	20000		99.4	90-110			
Zinc	533000		ng/l	500000		107	90-110			
Calibration Check (2403017-CCV4)				Prepared: 03/05/24 Analyzed: 03/06/24						
Antimony	20500		ng/l	20000		103	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	4880		ng/l	5000.0		97.5	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	50500		ng/l	50000		101	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	490		ng/l	500.00		98.0	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	541000		ng/l	500000		108	90-110			
Calibration Check (2403017-CCV5)				Prepared: 03/05/24 Analyzed: 03/06/24						
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	197000		ng/l	200000		98.7	90-110			
Beryllium	4870		ng/l	5000.0		97.5	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 2403017 - B4C0503										
Calibration Check (2403017-CCV5) Contin					Prepared: 03/05/24 Analyzed: 03/06/24					
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	238000		ng/l	240000		99.3	90-110			
Cobalt	49700		ng/l	50000		99.3	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.7	90-110			
Manganese	504000		ng/l	500000		101	90-110			
Molybdenum	49700		ng/l	50000		99.4	90-110			
Nickel	120000		ng/l	120000		99.7	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	472		ng/l	500.00		94.4	90-110			
Vanadium	19700		ng/l	20000		98.3	90-110			
Zinc	531000		ng/l	500000		106	90-110			
Calibration Check (2403017-CCV6)					Prepared: 03/05/24 Analyzed: 03/06/24					
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	4770		ng/l	5000.0		95.3	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	2.09E6		ng/l	2.0000E6		104	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	516000		ng/l	500000		103	90-110			
Molybdenum	50600		ng/l	50000		101	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	477		ng/l	500.00		95.4	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	543000		ng/l	500000		109	90-110			
Calibration Check (2403017-CCV7)					Prepared: 03/05/24 Analyzed: 03/06/24					
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	201000		ng/l	200000		101	90-110			
Beryllium	4650		ng/l	5000.0		92.9	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	50700		ng/l	50000		101	90-110			
Copper	2.09E6		ng/l	2.0000E6		104	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403017 - B4C0503										
Calibration Check (2403017-CCV7) Contin					Prepared: 03/05/24 Analyzed: 03/06/24					
Lead	203000		ng/l	200000		102	90-110			
Manganese	514000		ng/l	500000		103	90-110			
Molybdenum	50800		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	476		ng/l	500.00		95.3	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	537000		ng/l	500000		107	90-110			
High Cal Check (2403017-HCV1)					Prepared & Analyzed: 03/05/24					
Antimony	39600		ng/l	40000		99.0	95-105			
Arsenic	39500		ng/l	40000		98.7	95-105			
Barium	393000		ng/l	400000		98.3	95-105			
Beryllium	9560		ng/l	10000		95.6	95-105			
Cadmium	39300		ng/l	40000		98.3	95-105			
Chromium	477000		ng/l	480000		99.3	95-105			
Cobalt	97900		ng/l	100000		97.9	95-105			
Copper	3.91E6		ng/l	4.0000E6		97.8	95-105			
Lead	397000		ng/l	400000		99.2	95-105			
Manganese	980000		ng/l	1.0000E6		98.0	95-105			
Molybdenum	98500		ng/l	100000		98.5	95-105			
Nickel	234000		ng/l	240000		97.7	95-105			
Selenium	39600		ng/l	40000		99.0	95-105			
Thallium	991		ng/l	1000.0		99.1	95-105			
Vanadium	40100		ng/l	40000		100	95-105			
Zinc	967000		ng/l	1.0000E6		96.7	95-105			
Initial Cal Blank (2403017-ICB1)					Prepared & Analyzed: 03/05/24					
Antimony	0.941		ng/l							
Arsenic	-4.14		ng/l							U
Barium	-0.264		ng/l							U
Beryllium	-0.0451		ng/l							U
Cadmium	-0.0173		ng/l							U
Chromium	0.416		ng/l							
Cobalt	0.311		ng/l							
Copper	464		ng/l							
Lead	2.55		ng/l							
Manganese	9.55		ng/l							
Molybdenum	8.14		ng/l							
Nickel	-2.34		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403017 - B4C0503										
Initial Cal Blank (2403017-ICB1) Continu				Prepared & Analyzed: 03/05/24						
Selenium	-6.77		ng/l							U
Thallium	0.812		ng/l							
Vanadium	56.9		ng/l							
Zinc	-44.9		ng/l							U
Initial Cal Check (2403017-ICV1)				Prepared & Analyzed: 03/05/24						
Antimony	19500		ng/l	20000		97.5	90-110			
Arsenic	19700		ng/l	20000		98.5	90-110			
Barium	195000		ng/l	200000		97.4	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	233000		ng/l	240000		97.0	90-110			
Cobalt	48700		ng/l	50000		97.4	90-110			
Copper	1.99E6		ng/l	2.0000E6		99.3	90-110			
Lead	193000		ng/l	200000		96.5	90-110			
Manganese	475000		ng/l	500000		94.9	90-110			
Molybdenum	49000		ng/l	50000		97.9	90-110			
Nickel	117000		ng/l	120000		97.3	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	492		ng/l	500.00		98.3	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	523000		ng/l	500000		105	90-110			
Interference Check A (2403017-IFA1)				Prepared & Analyzed: 03/05/24						
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	297000		ng/l	300000		99.1	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

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: 03/20/24 12:21
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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 2403017 - B4C0503										
Interference Check B (2403017-IFB1)					Prepared & Analyzed: 03/05/24					
Antimony	20300		ng/l	20000		102	80-120			
Arsenic	20300		ng/l	20000		102	80-120			
Barium	202000		ng/l	200000		101	80-120			
Beryllium	4880		ng/l	5000.0		97.5	80-120			
Cadmium	19500		ng/l	20000		97.4	80-120			
Chromium	229000		ng/l	240000		95.5	80-120			
Cobalt	48900		ng/l	50000		97.9	80-120			
Copper	1.90E6		ng/l	2.0000E6		95.0	80-120			
Lead	206000		ng/l	200000		103	80-120			
Manganese	512000		ng/l	500000		102	80-120			
Molybdenum	352000		ng/l	350000		101	80-120			
Nickel	115000		ng/l	120000		96.1	80-120			
Selenium	19200		ng/l	20000		95.9	80-120			
Thallium	514		ng/l	500.00		103	80-120			
Vanadium	18900		ng/l	20000		94.3	80-120			
Zinc	487000		ng/l	500000		97.4	80-120			
Batch B4C0503 - ICP-MS Extraction										
Blank (B4C0503-BLK1)					Prepared & Analyzed: 03/05/24					
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	0.0741	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	ND	5.89E-4	ng/m³ Air							QB-01, U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4C0503-BS1)					Prepared & Analyzed: 03/05/24					
Antimony	0.923	0.0386	ng/m³ Air	1.3829		66.7	80-120			SL
Arsenic	2.71	0.00937	ng/m³ Air	2.7658		98.0	80-120			
Barium	27.3	1.07	ng/m³ Air	27.658		98.9	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 B4C0503 - ICP-MS Extraction										
LCS (B4C0503-BS1) Continued					Prepared & Analyzed: 03/05/24					
Beryllium	1.38	0.00320	ng/m³ Air	1.3829		100	80-120			
Cadmium	1.39	0.0741	ng/m³ Air	1.3829		101	80-120			
Chromium	15.4	2.21	ng/m³ Air	13.829		111	80-120			
Cobalt	1.37	0.0436	ng/m³ Air	1.3829		99.4	80-120			
Copper	30.5	2.63	ng/m³ Air	27.658		110	80-120			
Lead	13.6	0.214	ng/m³ Air	13.829		98.1	80-120			
Manganese	8.62	1.89	ng/m³ Air	8.2975		104	80-120			
Molybdenum	1.46	0.359	ng/m³ Air	1.3829		106	80-120			
Nickel	2.90	0.652	ng/m³ Air	2.7658		105	80-120			
Selenium	2.76	0.00896	ng/m³ Air	2.7658		99.9	80-120			
Thallium	0.137	5.89E-4	ng/m³ Air	0.13829		99.1	80-120			QB-01
Vanadium	2.77	0.0529	ng/m³ Air	2.7658		100	80-120			
Zinc	126	76.8	ng/m³ Air	82.975		152	80-120			
LCS (B4C0503-BS2)					Prepared & Analyzed: 03/05/24					
Antimony	0.913	0.0386	ng/m³ Air	1.3829		66.0	80-120			SL
Arsenic	2.66	0.00937	ng/m³ Air	2.7658		96.0	80-120			
Barium	27.2	1.07	ng/m³ Air	27.658		98.4	80-120			
Beryllium	1.32	0.00320	ng/m³ Air	1.3829		95.5	80-120			
Cadmium	1.38	0.0741	ng/m³ Air	1.3829		99.6	80-120			
Chromium	15.2	2.21	ng/m³ Air	13.829		110	80-120			
Cobalt	1.35	0.0436	ng/m³ Air	1.3829		97.6	80-120			
Copper	30.0	2.63	ng/m³ Air	27.658		108	80-120			
Lead	13.4	0.214	ng/m³ Air	13.829		96.7	80-120			
Manganese	8.45	1.89	ng/m³ Air	8.2975		102	80-120			
Molybdenum	1.43	0.359	ng/m³ Air	1.3829		103	80-120			
Nickel	2.89	0.652	ng/m³ Air	2.7658		104	80-120			
Selenium	2.68	0.00896	ng/m³ Air	2.7658		97.1	80-120			
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.7	80-120			QB-01
Vanadium	2.75	0.0529	ng/m³ Air	2.7658		99.5	80-120			
Zinc	122	76.8	ng/m³ Air	82.975		148	80-120			
Duplicate (B4C0503-DUP1)		**Source: 4030429-11**			Prepared & Analyzed: 03/05/24					
Antimony	0.0536	0.0325	ng/m³ Air		0.0473			12.6	10	SL
Arsenic	0.350	0.00788	ng/m³ Air		0.319			9.14	10	
Barium	3.32	0.900	ng/m³ Air		3.25			2.05	10	
Beryllium	0.0233	0.00269	ng/m³ Air		0.0234			0.546	10	
Cadmium	ND	0.0623	ng/m³ Air		ND				10	U
Chromium	3.23	1.86	ng/m³ Air		3.05			5.65	10	
Cobalt	0.443	0.0367	ng/m³ Air		0.424			4.37	10	

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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 B4C0503 - ICP-MS Extraction										
Duplicate (B4C0503-DUP1) Continued			**Source: 4030429-11**		Prepared & Analyzed: 03/05/24					
Copper	49.0	2.21	ng/m³ Air		45.4			7.63	10	
Lead	0.412	0.180	ng/m³ Air		0.405			1.58	10	
Manganese	9.89	1.59	ng/m³ Air		9.52			3.81	10	
Molybdenum	2.30	0.302	ng/m³ Air		2.19			4.94	10	
Nickel	1.64	0.548	ng/m³ Air		1.55			5.25	10	
Selenium	0.164	0.00754	ng/m³ Air		0.162			1.14	10	
Thallium	8.23E-4	4.95E-4	ng/m³ Air		8.02E-4			2.59	10	QB-01
Vanadium	1.25	0.0445	ng/m³ Air		1.18			5.54	10	
Zinc	ND	64.6	ng/m³ Air		ND				10	U
Duplicate (B4C0503-DUP2)			**Source: 4030429-32**		Prepared & Analyzed: 03/05/24					
Antimony	0.0465	0.0318	ng/m³ Air		0.0425			9.04	10	SL
Arsenic	0.524	0.00773	ng/m³ Air		0.569			8.28	10	
Barium	4.21	0.882	ng/m³ Air		4.20			0.341	10	
Beryllium	0.0128	0.00264	ng/m³ Air		0.0117			8.35	10	
Cadmium	ND	0.0611	ng/m³ Air		ND				10	U
Chromium	2.84	1.82	ng/m³ Air		2.85			0.0852	10	
Cobalt	0.570	0.0360	ng/m³ Air		0.535			6.36	10	
Copper	56.9	2.17	ng/m³ Air		59.3			4.21	10	
Lead	1.28	0.176	ng/m³ Air		1.39			8.54	10	
Manganese	13.4	1.56	ng/m³ Air		12.7			5.46	10	
Molybdenum	2.37	0.296	ng/m³ Air		2.22			6.25	10	
Nickel	1.26	0.538	ng/m³ Air		1.18			6.39	10	
Selenium	0.168	0.00739	ng/m³ Air		0.153			9.27	10	
Thallium	0.00147	4.86E-4	ng/m³ Air		0.00151			2.57	10	QB-01
Vanadium	1.23	0.0436	ng/m³ Air		1.14			7.49	10	
Zinc	ND	63.3	ng/m³ Air		ND				10	U
Duplicate (B4C0503-DUP3)			**Source: 4030429-15**		Prepared: 03/05/24 Analyzed: 03/06/24					
Antimony	0.0974	0.0322	ng/m³ Air		0.0963			1.08	10	SL
Arsenic	0.243	0.00781	ng/m³ Air		0.237			2.40	10	
Barium	4.18	0.892	ng/m³ Air		4.09			2.33	10	
Beryllium	0.0101	0.00267	ng/m³ Air		0.0104			2.58	10	
Cadmium	ND	0.0618	ng/m³ Air		ND				10	U
Chromium	2.53	1.84	ng/m³ Air		2.47			2.42	10	
Cobalt	0.329	0.0364	ng/m³ Air		0.321			2.64	10	
Copper	27.9	2.19	ng/m³ Air		27.2			2.34	10	
Lead	0.648	0.178	ng/m³ Air		0.635			2.03	10	
Manganese	10.1	1.58	ng/m³ Air		9.89			2.50	10	
Molybdenum	1.60	0.299	ng/m³ Air		1.58			1.09	10	

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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 B4C0503 - ICP-MS Extraction										
Duplicate (B4C0503-DUP3) Continued		**Source: 4030429-15**		Prepared: 03/05/24 Analyzed: 03/06/24						
Nickel	1.25	0.544	ng/m³ Air		1.21			3.26	10	
Selenium	0.158	0.00747	ng/m³ Air		0.161			2.42	10	
Thallium	0.00116	4.91E-4	ng/m³ Air		0.00111			4.02	10	QB-01
Vanadium	1.04	0.0441	ng/m³ Air		1.03			1.55	10	
Zinc	ND	64.0	ng/m³ Air		ND				10	U
Duplicate (B4C0503-DUP4)		**Source: 4030429-26**		Prepared: 03/05/24 Analyzed: 03/06/24						
Antimony	0.0559	0.0336	ng/m³ Air		0.0581			3.97	10	SL
Arsenic	0.171	0.00815	ng/m³ Air		0.174			1.94	10	
Barium	2.69	0.931	ng/m³ Air		2.68			0.376	10	
Beryllium	0.00587	0.00278	ng/m³ Air		0.00611			4.05	10	
Cadmium	ND	0.0645	ng/m³ Air		ND				10	U
Chromium	2.11	1.92	ng/m³ Air		2.10			0.579	10	
Cobalt	0.157	0.0379	ng/m³ Air		0.158			0.271	10	
Copper	29.9	2.29	ng/m³ Air		30.1			0.501	10	
Lead	0.621	0.186	ng/m³ Air		0.621			0.106	10	
Manganese	4.76	1.64	ng/m³ Air		4.77			0.331	10	
Molybdenum	1.10	0.312	ng/m³ Air		1.09			1.07	10	
Nickel	0.631	0.567	ng/m³ Air		0.629			0.270	10	
Selenium	0.133	0.00780	ng/m³ Air		0.135			1.49	10	
Thallium	8.66E-4	5.12E-4	ng/m³ Air		8.25E-4			4.86	10	QB-01
Vanadium	0.393	0.0460	ng/m³ Air		0.396			0.785	10	
Zinc	ND	66.8	ng/m³ Air		ND				10	U
Matrix Spike (B4C0503-MS1)		**Source: 4030429-11**		Prepared & Analyzed: 03/05/24						
Antimony	0.499	0.0325	ng/m³ Air	1.1634	0.0473	38.8	80-120			SL
Arsenic	2.52	0.00788	ng/m³ Air	2.3267	0.319	94.4	80-120			
Barium	25.7	0.900	ng/m³ Air	23.267	3.25	96.7	80-120			
Beryllium	1.16	0.00269	ng/m³ Air	1.1634	0.0234	97.8	80-120			
Cadmium	1.18	0.0623	ng/m³ Air	1.1634	ND	101	80-120			
Chromium	15.1	1.86	ng/m³ Air	11.634	3.05	103	80-120			
Cobalt	1.60	0.0367	ng/m³ Air	1.1634	0.424	101	80-120			
Copper	70.5	2.21	ng/m³ Air	23.267	45.4	108	80-120			
Lead	11.9	0.180	ng/m³ Air	11.634	0.405	98.9	80-120			
Manganese	17.0	1.59	ng/m³ Air	6.9802	9.52	107	80-120			
Molybdenum	3.38	0.302	ng/m³ Air	1.1634	2.19	103	80-120			
Nickel	3.75	0.548	ng/m³ Air	2.3267	1.55	94.5	80-120			
Selenium	2.43	0.00754	ng/m³ Air	2.3267	0.162	97.5	80-120			
Thallium	0.116	4.95E-4	ng/m³ Air	0.11634	8.02E-4	98.7	80-120			QB-01
Vanadium	3.51	0.0445	ng/m³ Air	2.3267	1.18	100	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4C0503 - ICP-MS Extraction										
Matrix Spike (B4C0503-MS1) Continued Source: 4030429-11 Prepared & Analyzed: 03/05/24										
Zinc	104	64.6	ng/m³ Air	69.802	ND	149	80-120			
Matrix Spike (B4C0503-MS2) Source: 4030429-32 Prepared & Analyzed: 03/05/24										
Antimony	0.437	0.0318	ng/m³ Air	1.1404	0.0425	34.6	80-120			SL
Arsenic	2.69	0.00773	ng/m³ Air	2.2809	0.569	93.2	80-120			
Barium	26.2	0.882	ng/m³ Air	22.809	4.20	96.6	80-120			
Beryllium	1.18	0.00264	ng/m³ Air	1.1404	0.0117	103	80-120			
Cadmium	1.16	0.0611	ng/m³ Air	1.1404	ND	102	80-120			
Chromium	14.4	1.82	ng/m³ Air	11.404	2.85	101	80-120			
Cobalt	1.65	0.0360	ng/m³ Air	1.1404	0.535	98.1	80-120			
Copper	81.0	2.17	ng/m³ Air	22.809	59.3	94.8	80-120			
Lead	12.6	0.176	ng/m³ Air	11.404	1.39	98.5	80-120			
Manganese	20.1	1.56	ng/m³ Air	6.8426	12.7	109	80-120			
Molybdenum	3.47	0.296	ng/m³ Air	1.1404	2.22	110	80-120			
Nickel	3.44	0.538	ng/m³ Air	2.2809	1.18	99.3	80-120			
Selenium	2.35	0.00739	ng/m³ Air	2.2809	0.153	96.4	80-120			
Thallium	0.110	4.86E-4	ng/m³ Air	0.11404	0.00151	95.2	80-120			QB-01
Vanadium	3.37	0.0436	ng/m³ Air	2.2809	1.14	97.7	80-120			
Zinc	101	63.3	ng/m³ Air	68.426	ND	148	80-120			
Matrix Spike Dup (B4C0503-MSD1) Source: 4030429-11 Prepared & Analyzed: 03/05/24										
Antimony	0.506	0.0325	ng/m³ Air	1.1634	0.0473	39.4	80-120	1.34	20	SL
Arsenic	2.54	0.00788	ng/m³ Air	2.3267	0.319	95.4	80-120	0.906	20	
Barium	26.1	0.900	ng/m³ Air	23.267	3.25	98.1	80-120	1.26	20	
Beryllium	1.17	0.00269	ng/m³ Air	1.1634	0.0234	98.9	80-120	1.03	20	
Cadmium	1.18	0.0623	ng/m³ Air	1.1634	ND	102	80-120	0.341	20	
Chromium	15.0	1.86	ng/m³ Air	11.634	3.05	102	80-120	0.825	20	
Cobalt	1.60	0.0367	ng/m³ Air	1.1634	0.424	101	80-120	0.113	20	
Copper	71.7	2.21	ng/m³ Air	23.267	45.4	113	80-120	1.81	20	
Lead	11.8	0.180	ng/m³ Air	11.634	0.405	98.3	80-120	0.603	20	
Manganese	17.1	1.59	ng/m³ Air	6.9802	9.52	108	80-120	0.348	20	
Molybdenum	3.51	0.302	ng/m³ Air	1.1634	2.19	114	80-120	3.63	20	
Nickel	3.78	0.548	ng/m³ Air	2.3267	1.55	95.9	80-120	0.845	20	
Selenium	2.40	0.00754	ng/m³ Air	2.3267	0.162	96.2	80-120	1.25	20	
Thallium	0.114	4.95E-4	ng/m³ Air	0.11634	8.02E-4	97.4	80-120	1.39	20	QB-01
Vanadium	3.50	0.0445	ng/m³ Air	2.3267	1.18	99.6	80-120	0.269	20	
Zinc	103	64.6	ng/m³ Air	69.802	ND	147	80-120	1.20	20	
Matrix Spike Dup (B4C0503-MSD2) Source: 4030429-32 Prepared & Analyzed: 03/05/24										
Antimony	0.437	0.0318	ng/m³ Air	1.1404	0.0425	34.6	80-120	0.0813	20	SL
Arsenic	2.72	0.00773	ng/m³ Air	2.2809	0.569	94.4	80-120	1.07	20	

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SUBMITTED: 03/04/24
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 B4C0503 - ICP-MS Extraction										
Matrix Spike Dup (B4C0503-MSD2) Conti			**Source: 4030429-32**		Prepared & Analyzed: 03/05/24					
Barium	25.6	0.882	ng/m³ Air	22.809	4.20	93.8	80-120	2.43	20	
Beryllium	1.16	0.00264	ng/m³ Air	1.1404	0.0117	101	80-120	2.22	20	
Cadmium	1.25	0.0611	ng/m³ Air	1.1404	ND	109	80-120	7.38	20	
Chromium	14.0	1.82	ng/m³ Air	11.404	2.85	97.7	80-120	2.67	20	
Cobalt	1.63	0.0360	ng/m³ Air	1.1404	0.535	96.3	80-120	1.25	20	
Copper	68.6	2.17	ng/m³ Air	22.809	59.3	40.7	80-120	16.5	20	QM-07
Lead	11.9	0.176	ng/m³ Air	11.404	1.39	92.3	80-120	5.73	20	
Manganese	19.6	1.56	ng/m³ Air	6.8426	12.7	102	80-120	2.42	20	
Molybdenum	3.36	0.296	ng/m³ Air	1.1404	2.22	99.6	80-120	3.38	20	
Nickel	3.24	0.538	ng/m³ Air	2.2809	1.18	90.4	80-120	6.07	20	
Selenium	2.39	0.00739	ng/m³ Air	2.2809	0.153	97.9	80-120	1.49	20	
Thallium	0.112	4.86E-4	ng/m³ Air	0.11404	0.00151	97.2	80-120	1.99	20	QB-01
Vanadium	3.32	0.0436	ng/m³ Air	2.2809	1.14	95.5	80-120	1.51	20	
Zinc	90.2	63.3	ng/m³ Air	68.426	ND	132	80-120	11.3	20	
Post Spike (B4C0503-PS1)			**Source: 4030429-11**		Prepared & Analyzed: 03/05/24					
Antimony	0.278	0.0325	ng/m³ Air	0.23267	0.0473	99.1	75-125			SL
Arsenic	1.44	0.00788	ng/m³ Air	1.1634	0.319	96.5	75-125			
Barium	5.59	0.900	ng/m³ Air	2.3267	3.25	100	75-125			
Beryllium	0.257	0.00269	ng/m³ Air	0.23267	0.0234	100	75-125			
Cadmium	0.127	0.0623	ng/m³ Air	0.11634	ND	109	75-125			
Chromium	4.26	1.86	ng/m³ Air	1.1634	3.05	104	75-125			
Cobalt	0.665	0.0367	ng/m³ Air	0.23267	0.424	104	75-125			
Copper	58.5	2.21	ng/m³ Air	11.634	45.4	113	75-125			
Lead	23.2	0.180	ng/m³ Air	23.267	0.405	98.2	75-125			
Manganese	12.1	1.59	ng/m³ Air	2.3267	9.52	110	75-125			
Molybdenum	3.38	0.302	ng/m³ Air	1.1634	2.19	102	75-125			
Nickel	3.85	0.548	ng/m³ Air	2.3267	1.55	98.7	75-125			
Selenium	1.27	0.00754	ng/m³ Air	1.1634	0.162	95.5	75-125			
Thallium	0.0591	4.95E-4	ng/m³ Air	5.8168E-2	8.02E-4	100	75-125			QB-01
Vanadium	2.30	0.0445	ng/m³ Air	1.1634	1.18	96.8	75-125			
Zinc	ND	64.6	ng/m³ Air	23.267	ND		75-125			U
Post Spike (B4C0503-PS2)			**Source: 4030429-32**		Prepared & Analyzed: 03/05/24					
Antimony	0.271	0.0318	ng/m³ Air	0.22809	0.0425	100	75-125			SL
Arsenic	1.71	0.00773	ng/m³ Air	1.1404	0.569	99.6	75-125			
Barium	6.39	0.882	ng/m³ Air	2.2809	4.20	96.1	75-125			
Beryllium	0.229	0.00264	ng/m³ Air	0.22809	0.0117	95.2	75-125			
Cadmium	0.141	0.0611	ng/m³ Air	0.11404	ND	123	75-125			
Chromium	3.99	1.82	ng/m³ Air	1.1404	2.85	100	75-125			

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: 03/20/24 12:21
SUBMITTED: 03/04/24
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 B4C0503 - ICP-MS Extraction										
Post Spike (B4C0503-PS2) Continued		**Source: 4030429-32**		Prepared & Analyzed: 03/05/24						
Cobalt	0.770	0.0360	ng/m³ Air	0.22809	0.535	103	75-125			
Copper	72.2	2.17	ng/m³ Air	11.404	59.3	113	75-125			
Lead	24.0	0.176	ng/m³ Air	22.809	1.39	99.3	75-125			
Manganese	15.3	1.56	ng/m³ Air	2.2809	12.7	116	75-125			
Molybdenum	3.34	0.296	ng/m³ Air	1.1404	2.22	98.4	75-125			
Nickel	3.43	0.538	ng/m³ Air	2.2809	1.18	98.7	75-125			
Selenium	1.29	0.00739	ng/m³ Air	1.1404	0.153	100	75-125			
Thallium	0.0594	4.86E-4	ng/m³ Air	5.7022E-2	0.00151	102	75-125			QB-01
Vanadium	2.22	0.0436	ng/m³ Air	1.1404	1.14	95.1	75-125			
Zinc	ND	63.3	ng/m³ Air	22.809	ND		75-125			U
Dilution Check (B4C0503-SRL1)		**Source: 4030429-11**		Prepared & Analyzed: 03/05/24						
Antimony	ND	0.162	ng/m³ Air		ND				10	SL, U
Arsenic	0.337	0.0394	ng/m³ Air		0.319			5.55	10	
Barium	ND	4.50	ng/m³ Air		ND				10	U
Beryllium	0.0230	0.0135	ng/m³ Air		0.0234			1.59	10	
Cadmium	ND	0.312	ng/m³ Air		ND				10	U
Chromium	ND	9.30	ng/m³ Air		ND				10	U
Cobalt	0.436	0.183	ng/m³ Air		0.424			2.73	10	
Copper	49.0	11.1	ng/m³ Air		45.4			7.71	10	
Lead	ND	0.900	ng/m³ Air		ND				10	U
Manganese	9.74	7.95	ng/m³ Air		9.52			2.36	10	
Molybdenum	2.29	1.51	ng/m³ Air		2.19			4.75	10	
Nickel	ND	2.74	ng/m³ Air		ND				10	U
Selenium	0.175	0.0377	ng/m³ Air		0.162			7.66	10	
Thallium	ND	0.00248	ng/m³ Air		ND				10	QB-01, U
Vanadium	1.24	0.223	ng/m³ Air		1.18			5.38	10	
Zinc	ND	323	ng/m³ Air		ND				10	U
Dilution Check (B4C0503-SRL2)		**Source: 4030429-32**		Prepared & Analyzed: 03/05/24						
Antimony	ND	0.159	ng/m³ Air		ND				10	SL, U
Arsenic	0.594	0.0386	ng/m³ Air		0.569			4.34	10	
Barium	ND	4.41	ng/m³ Air		ND				10	U
Beryllium	ND	0.0132	ng/m³ Air		ND				10	U
Cadmium	ND	0.306	ng/m³ Air		ND				10	U
Chromium	ND	9.11	ng/m³ Air		ND				10	U
Cobalt	0.539	0.180	ng/m³ Air		0.535			0.813	10	
Copper	62.8	10.8	ng/m³ Air		59.3			5.66	10	
Lead	1.38	0.882	ng/m³ Air		1.39			1.02	10	
Manganese	12.9	7.79	ng/m³ Air		12.7			1.73	10	

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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: 03/20/24 12:21
SUBMITTED: 03/04/24
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 B4C0503 - ICP-MS Extraction										
Dilution Check (B4C0503-SRL2) Continue Source: 4030429-32 Prepared & Analyzed: 03/05/24										
Molybdenum	2.25	1.48	ng/m³ Air		2.22			1.17	10	
Nickel	ND	2.69	ng/m³ Air		ND				10	U
Selenium	0.163	0.0369	ng/m³ Air		0.153			6.04	10	
Thallium	0.00264	0.00243	ng/m³ Air		ND			54.8	10	QB-01
Vanadium	1.20	0.218	ng/m³ Air		1.14			5.06	10	
Zinc	ND	317	ng/m³ Air		ND				10	U

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FILE #: 4205.00.003.001
REPORTED: 03/20/24 12:21
SUBMITTED: 03/04/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
QB-01	Analyte exceeds method blank criteria
FB-01	Analyte exceeds Field Blank criteria.
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 3/21/2024 and Shanna Vasser 3/21/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 2/8/2024 and 2/22/24 - 2/28/2024
Report No: 4030429

√	1.	Chain of custody (CoC) documentation is present.
√	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.
√	13.	No detections in field QC blanks (lot/media blanks, field blanks, etc).

Discrepancies:

13. Field blank detections above the method detection limit were reported for chromium and copper in MFL-FB01-022324-HM.

Notes:

1. Report was revised on March 20, 2024 to match updated volumes on the revised chain of custody.

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

February 28, 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 02/20/24 11:43.

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
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.

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
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FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-020924-HM	4022021-01	Air	02/09/24 23:59	02/20/24 11:43
MFL-AM02-020924-HM	4022021-02	Air	02/09/24 23:59	02/20/24 11:43
MFL-AM03-020924-HM	4022021-03	Air	02/09/24 23:59	02/20/24 11:43
MFL-AM04-020924-HM	4022021-04	Air	02/09/24 23:59	02/20/24 11:43
MFL-FB01-020924-HM	4022021-05	Air	02/09/24 00:00	02/20/24 11:43
MFL-AM01-021024-HM/MS/I	4022021-06	Air	02/10/24 23:59	02/20/24 11:43
MFL-AM02-021024-HM	4022021-07	Air	02/10/24 23:59	02/20/24 11:43
MFL-AM03-021024-HM	4022021-08	Air	02/10/24 23:59	02/20/24 11:43
MFL-AM04-021024-HM	4022021-09	Air	02/10/24 23:59	02/20/24 11:43
MFL-AM01-021124-HM	4022021-10	Air	02/11/24 23:59	02/20/24 11:43
MFL-AM02-021124-HM	4022021-11	Air	02/11/24 23:59	02/20/24 11:43
MFL-AM03-021124-HM	4022021-12	Air	02/11/24 23:59	02/20/24 11:43
MFL-AM04-021124-HM	4022021-13	Air	02/11/24 23:59	02/20/24 11:43
MFL-FB01-021124-HM	4022021-14	Air	02/11/24 00:00	02/20/24 11:43
MFL-AM01-021224-HM	4022021-15	Air	02/12/24 23:59	02/20/24 11:43
MFL-AM02-021224-HM	4022021-16	Air	02/12/24 23:59	02/20/24 11:43
MFL-AM03-021224-HM	4022021-17	Air	02/12/24 23:59	02/20/24 11:43
MFL-AM04-021224-HM	4022021-18	Air	02/12/24 23:59	02/20/24 11:43
MFL-AM01-021324-HM	4022021-19	Air	02/13/24 23:59	02/20/24 11:43
MFL-AM02-021324-HM	4022021-20	Air	02/13/24 23:59	02/20/24 11:43
MFL-AM03-021324-HM	4022021-21	Air	02/13/24 23:59	02/20/24 11:43

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Blue Bell, PA 19422
ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-021324-HM	4022021-22	Air	02/13/24 23:59	02/20/24 11:43
MFL-FB01-021324-HM	4022021-23	Air	02/13/24 00:00	02/20/24 11:43
MFL-AM01-021424-HM	4022021-24	Air	02/14/24 23:59	02/20/24 11:43
MFL-AM02-021424-HM	4022021-25	Air	02/14/24 23:59	02/20/24 11:43
MFL-AM03-021424-HM/MS/I	4022021-26	Air	02/14/24 23:59	02/20/24 11:43
MFL-AM04-021424-HM	4022021-27	Air	02/14/24 23:59	02/20/24 11:43

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020924-HM
Matrix: Air
Lab ID: 4022021-01
Sample Volume: 2108.143 m³
Filter ID:
Sampled: 02/09/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 19:09

Comments: Q9516878 - Received in good condition. - Sample covered in dead bugs

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0725**	SL	**0.0298**
Arsenic	**7440-38-2**	**0.312**		**0.00723**
Barium	**7440-39-3**	**2.56**		**0.826**
Beryllium	**7440-41-7**	**0.00655**		**0.00247**
Cadmium	7440-43-9	0.00938	U	0.0612
Chromium	7440-47-3	1.42	U	1.71
Cobalt	**7440-48-4**	**0.228**		**0.0336**
Copper	**7440-50-8**	**58.7**		**2.03**
Lead	**7439-92-1**	**0.928**		**0.165**
Manganese	**7439-96-5**	**6.47**		**1.46**
Molybdenum	**7439-98-7**	**2.68**		**0.277**
Nickel	**7440-02-0**	**0.883**		**0.503**
Selenium	**7782-49-2**	**0.169**		**0.00692**
Thallium	**7440-28-0**	**5.87E-4**		**4.55E-4**
Vanadium	**7440-62-2**	**0.752**		**0.0408**
Zinc	7440-66-6	34.2	U	59.3

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

FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020924-HM
Matrix: Air
Lab ID: 4022021-02
Sample Volume: 2103.276 m³
Filter ID:
Sampled: 02/09/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 19:23

Comments: Q9516877 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.218**	SL	**0.0299**
Arsenic	**7440-38-2**	**0.304**		**0.00725**
Barium	**7440-39-3**	**7.93**		**0.828**
Beryllium	**7440-41-7**	**0.0228**		**0.00248**
Cadmium	7440-43-9	0.0273	U	0.0613
Chromium	**7440-47-3**	**4.15**		**1.71**
Cobalt	**7440-48-4**	**0.974**		**0.0337**
Copper	**7440-50-8**	**32.8**		**2.03**
Lead	**7439-92-1**	**1.25**		**0.166**
Manganese	**7439-96-5**	**22.9**		**1.46**
Molybdenum	**7439-98-7**	**0.868**		**0.278**
Nickel	**7440-02-0**	**3.90**		**0.504**
Selenium	**7782-49-2**	**0.250**		**0.00693**
Thallium	**7440-28-0**	**0.00109**		**4.56E-4**
Vanadium	**7440-62-2**	**2.65**		**0.0409**
Zinc	7440-66-6	47.0	U	59.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020924-HM
Matrix: Air
Lab ID: 4022021-03
Sample Volume: 1842.626 m³
Filter ID:
Sampled: 02/09/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 19:39

Comments: Q9516876 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0934**	SL	**0.0341**
Arsenic	**7440-38-2**	**0.104**		**0.00827**
Barium	**7440-39-3**	**2.51**		**0.945**
Beryllium	**7440-41-7**	**0.0159**		**0.00283**
Cadmium	7440-43-9	0.0103	U	0.0700
Chromium	7440-47-3	1.58	U	1.95
Cobalt	**7440-48-4**	**0.264**		**0.0385**
Copper	**7440-50-8**	**46.0**		**2.32**
Lead	**7439-92-1**	**0.817**		**0.189**
Manganese	**7439-96-5**	**6.32**		**1.67**
Molybdenum	**7439-98-7**	**1.98**		**0.317**
Nickel	**7440-02-0**	**1.01**		**0.576**
Selenium	**7782-49-2**	**0.169**		**0.00791**
Thallium	**7440-28-0**	**6.16E-4**		**5.20E-4**
Vanadium	**7440-62-2**	**0.773**		**0.0467**
Zinc	7440-66-6	44.8	U	67.8

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020924-HM
Matrix: Air
Lab ID: 4022021-04
Sample Volume: 1920.222 m³
Filter ID:
Sampled: 02/09/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 19:53

Comments: Q9516896 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.110**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.573**		**0.00794**
Barium	**7440-39-3**	**2.88**		**0.907**
Beryllium	**7440-41-7**	**0.00855**		**0.00271**
Cadmium	7440-43-9	0.0136	U	0.0672
Chromium	7440-47-3	1.69	U	1.87
Cobalt	**7440-48-4**	**0.247**		**0.0369**
Copper	**7440-50-8**	**40.7**		**2.23**
Lead	**7439-92-1**	**0.871**		**0.181**
Manganese	**7439-96-5**	**7.79**		**1.60**
Molybdenum	**7439-98-7**	**0.978**		**0.304**
Nickel	**7440-02-0**	**0.871**		**0.552**
Selenium	**7782-49-2**	**0.195**		**0.00759**
Thallium	**7440-28-0**	**5.81E-4**		**4.99E-4**
Vanadium	**7440-62-2**	**0.820**		**0.0448**
Zinc	7440-66-6	37.9	U	65.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-020924-HM
Matrix: Air
Lab ID: 4022021-05
Sample Volume: 2108.143 m³
Filter ID:
Sampled: 02/09/24 00:00
Received: 02/20/24 11:43
Analysis Date: 02/21/24 20:07

Comments: Q9516895 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0131	SL, U	0.0298
Arsenic	7440-38-2	0.00577	U	0.00723
Barium	7440-39-3	0.528	U	0.826
Beryllium	7440-41-7	5.49E-4	U	0.00247
Cadmium	7440-43-9	6.63E-4	U	0.0612
Chromium	7440-47-3	0.607	U	1.71
Cobalt	7440-48-4	0.00613	U	0.0336
Copper	7440-50-8	0.557	U	2.03
Lead	7439-92-1	0.0409	U	0.165
Manganese	7439-96-5	0.167	U	1.46
Molybdenum	7439-98-7	0.0836	U	0.277
Nickel	7440-02-0	0.168	U	0.503
Selenium	7782-49-2	0.00504	U	0.00692
Thallium	7440-28-0	1.00E-4	U	4.55E-4
Vanadium	7440-62-2	0.0137	U	0.0408
Zinc	7440-66-6	19.7	U	59.3

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

FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-021024-HM/MS/MS **Lab ID:** 4022021-06 **Sampled:** 02/10/24 23:59
Matrix: Air **Sample Volume:** 2006.462 m³ **Received:** 02/20/24 11:43
Filter ID: **Analysis Date:** 02/21/24 16:20

Comments: Q9516894 - Received in good condition. - Sample covered in dead bugs

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0984**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.190**		**0.00760**
Barium	**7440-39-3**	**2.52**		**0.868**
Beryllium	**7440-41-7**	**0.00579**		**0.00259**
Cadmium	7440-43-9	0.00766	U	0.0643
Chromium	7440-47-3	1.39	U	1.79
Cobalt	**7440-48-4**	**0.176**		**0.0354**
Copper	**7440-50-8**	**39.9**	QM-07	**2.13**
Lead	**7439-92-1**	**0.695**		**0.174**
Manganese	**7439-96-5**	**5.44**		**1.53**
Molybdenum	**7439-98-7**	**1.97**		**0.291**
Nickel	**7440-02-0**	**0.709**		**0.529**
Selenium	**7782-49-2**	**0.175**		**0.00727**
Thallium	**7440-28-0**	**8.14E-4**		**4.78E-4**
Vanadium	**7440-62-2**	**0.703**		**0.0429**
Zinc	7440-66-6	46.4	U	62.3

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-021024-HM
Matrix: Air
Lab ID: 4022021-07
Sample Volume: 2193.64 m³
Filter ID:
Sampled: 02/10/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 20:21

Comments: Q9516893 - Received in good condition. - Sample covered in dead bugs

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.221**	SL	**0.0286**
Arsenic	**7440-38-2**	**0.202**		**0.00695**
Barium	**7440-39-3**	**5.37**		**0.794**
Beryllium	**7440-41-7**	**0.0116**		**0.00237**
Cadmium	7440-43-9	0.0138	U	0.0588
Chromium	7440-47-3	1.61	U	1.64
Cobalt	**7440-48-4**	**0.312**		**0.0323**
Copper	**7440-50-8**	**33.4**		**1.95**
Lead	**7439-92-1**	**1.21**		**0.159**
Manganese	**7439-96-5**	**9.58**		**1.40**
Molybdenum	**7439-98-7**	**0.962**		**0.266**
Nickel	**7440-02-0**	**1.17**		**0.484**
Selenium	**7782-49-2**	**0.202**		**0.00665**
Thallium	**7440-28-0**	**7.02E-4**		**4.37E-4**
Vanadium	**7440-62-2**	**1.08**		**0.0392**
Zinc	7440-66-6	37.8	U	57.0

CERTIFICATE OF ANALYSIS

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-021024-HM
Matrix: Air
Lab ID: 4022021-08
Sample Volume: 1874.137 m³
Filter ID:
Sampled: 02/10/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 20:35

Comments: Q9516892 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0553**	SL	**0.0335**
Arsenic	**7440-38-2**	**0.0945**		**0.00813**
Barium	**7440-39-3**	**2.24**		**0.929**
Beryllium	**7440-41-7**	**0.0131**		**0.00278**
Cadmium	7440-43-9	0.0141	U	0.0688
Chromium	7440-47-3	1.58	U	1.92
Cobalt	**7440-48-4**	**0.272**		**0.0379**
Copper	**7440-50-8**	**47.2**		**2.28**
Lead	**7439-92-1**	**0.493**		**0.186**
Manganese	**7439-96-5**	**6.10**		**1.64**
Molybdenum	**7439-98-7**	**2.28**		**0.312**
Nickel	**7440-02-0**	**0.957**		**0.566**
Selenium	**7782-49-2**	**0.197**		**0.00778**
Thallium	**7440-28-0**	**6.80E-4**		**5.11E-4**
Vanadium	**7440-62-2**	**0.751**		**0.0459**
Zinc	7440-66-6	26.6	U	66.7

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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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-021024-HM
Matrix: Air
Lab ID: 4022021-09
Sample Volume: 2021.553 m³
Filter ID:
Sampled: 02/10/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 20:49

Comments: Q9516891 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.125**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.252**		**0.00754**
Barium	**7440-39-3**	**3.19**		**0.861**
Beryllium	**7440-41-7**	**0.00818**		**0.00258**
Cadmium	7440-43-9	0.0149	U	0.0638
Chromium	7440-47-3	1.63	U	1.78
Cobalt	**7440-48-4**	**0.239**		**0.0351**
Copper	**7440-50-8**	**43.9**		**2.12**
Lead	**7439-92-1**	**0.921**		**0.172**
Manganese	**7439-96-5**	**7.15**		**1.52**
Molybdenum	**7439-98-7**	**1.21**		**0.289**
Nickel	**7440-02-0**	**0.881**		**0.525**
Selenium	**7782-49-2**	**0.190**		**0.00721**
Thallium	**7440-28-0**	**6.81E-4**		**4.74E-4**
Vanadium	**7440-62-2**	**0.800**		**0.0426**
Zinc	7440-66-6	32.2	U	61.8

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
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FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-021124-HM
Matrix: Air
Lab ID: 4022021-10
Sample Volume: 2113.989 m³
Filter ID:
Sampled: 02/11/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 21:38

Comments: Q9516890 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0510**	SL	**0.0297**
Arsenic	**7440-38-2**	**0.131**		**0.00721**
Barium	**7440-39-3**	**1.69**		**0.824**
Beryllium	7440-41-7	0.00202	U	0.00246
Cadmium	7440-43-9	0.00627	U	0.0610
Chromium	7440-47-3	0.860	U	1.70
Cobalt	**7440-48-4**	**0.0575**		**0.0336**
Copper	**7440-50-8**	**32.3**		**2.02**
Lead	**7439-92-1**	**0.329**		**0.165**
Manganese	**7439-96-5**	**1.87**		**1.45**
Molybdenum	**7439-98-7**	**1.93**		**0.276**
Nickel	7440-02-0	0.392	U	0.502
Selenium	**7782-49-2**	**0.138**		**0.00690**
Thallium	7440-28-0	4.32E-4	U	4.53E-4
Vanadium	**7440-62-2**	**0.378**		**0.0407**
Zinc	7440-66-6	27.6	U	59.1

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-021124-HM
Matrix: Air
Lab ID: 4022021-11
Sample Volume: 2265.563 m³
Filter ID:
Sampled: 02/11/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 21:52

Comments: Q9516889 - Received in good condition. - Sample covered in dead bugs

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.374**	SL	**0.0277**
Arsenic	**7440-38-2**	**0.140**		**0.00673**
Barium	**7440-39-3**	**4.29**		**0.768**
Beryllium	**7440-41-7**	**0.00550**		**0.00230**
Cadmium	7440-43-9	0.00941	U	0.0569
Chromium	7440-47-3	1.16	U	1.59
Cobalt	**7440-48-4**	**0.142**		**0.0313**
Copper	**7440-50-8**	**23.3**		**1.89**
Lead	**7439-92-1**	**0.511**		**0.154**
Manganese	**7439-96-5**	**4.68**		**1.36**
Molybdenum	**7439-98-7**	**0.913**		**0.258**
Nickel	**7440-02-0**	**0.688**		**0.468**
Selenium	**7782-49-2**	**0.213**		**0.00643**
Thallium	**7440-28-0**	**6.36E-4**		**4.23E-4**
Vanadium	**7440-62-2**	**0.724**		**0.0380**
Zinc	7440-66-6	24.7	U	55.2

CERTIFICATE OF ANALYSIS

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-021124-HM
Matrix: Air
Lab ID: 4022021-12
Sample Volume: 1874.925 m³
Filter ID:
Sampled: 02/11/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 22:06

Comments: Q9516888 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0562**	SL	**0.0335**
Arsenic	**7440-38-2**	**0.0653**		**0.00813**
Barium	**7440-39-3**	**1.36**		**0.929**
Beryllium	**7440-41-7**	**0.00342**		**0.00278**
Cadmium	7440-43-9	0.00637	U	0.0688
Chromium	7440-47-3	1.00	U	1.92
Cobalt	**7440-48-4**	**0.0696**		**0.0378**
Copper	**7440-50-8**	**50.8**		**2.28**
Lead	**7439-92-1**	**0.680**		**0.186**
Manganese	**7439-96-5**	**1.99**		**1.64**
Molybdenum	**7439-98-7**	**2.21**		**0.312**
Nickel	7440-02-0	0.544	U	0.566
Selenium	**7782-49-2**	**0.139**		**0.00778**
Thallium	7440-28-0	4.90E-4	U	5.11E-4
Vanadium	**7440-62-2**	**0.438**		**0.0459**
Zinc	7440-66-6	22.4	U	66.6

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-021124-HM
Matrix: Air
Lab ID: 4022021-13
Sample Volume: 2022.083 m³
Filter ID:
Sampled: 02/11/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/21/24 22:20

Comments: Q9516887 - Received in good condition. - Sample covered in dead bugs

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.100**	SL	**0.0311**
Arsenic	**7440-38-2**	**0.105**		**0.00754**
Barium	**7440-39-3**	**2.14**		**0.861**
Beryllium	**7440-41-7**	**0.00260**		**0.00257**
Cadmium	7440-43-9	0.00509	U	0.0638
Chromium	7440-47-3	0.858	U	1.78
Cobalt	**7440-48-4**	**0.0650**		**0.0351**
Copper	**7440-50-8**	**32.7**		**2.12**
Lead	**7439-92-1**	**0.410**		**0.172**
Manganese	**7439-96-5**	**2.13**		**1.52**
Molybdenum	**7439-98-7**	**1.08**		**0.289**
Nickel	7440-02-0	0.462	U	0.525
Selenium	**7782-49-2**	**0.177**		**0.00721**
Thallium	**7440-28-0**	**4.74E-4**		**4.74E-4**
Vanadium	**7440-62-2**	**0.501**		**0.0426**
Zinc	7440-66-6	21.1	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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-021124-HM
Matrix: Air
Lab ID: 4022021-14
Sample Volume: 2113.989 m³
Filter ID:
Sampled: 02/11/24 00:00
Received: 02/20/24 11:43
Analysis Date: 02/22/24 20:19

Comments: Q9516897 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0191	SL, U	0.0297
Arsenic	7440-38-2	0.00435	U	0.00721
Barium	7440-39-3	0.496	U	0.824
Beryllium	7440-41-7	5.01E-4	U	0.00246
Cadmium	7440-43-9	0.00722	U	0.0610
Chromium	7440-47-3	0.708	U	1.70
Cobalt	7440-48-4	0.00786	U	0.0336
Copper	7440-50-8	2.00	U	2.02
Lead	7439-92-1	0.101	U	0.165
Manganese	7439-96-5	0.171	U	1.45
Molybdenum	7439-98-7	0.0976	U	0.276
Nickel	7440-02-0	0.204	U	0.502
Selenium	7782-49-2	0.00478	U	0.00690
Thallium	7440-28-0	3.94E-4	B, U	4.53E-4
Vanadium	7440-62-2	0.0149	U	0.0407
Zinc	7440-66-6	26.7	U	59.1

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-021224-HM
Matrix: Air
Lab ID: 4022021-15
Sample Volume: 2063.624 m³
Filter ID:
Sampled: 02/12/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/22/24 20:33

Comments: Q9516900 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0569**	SL	**0.0304**
Arsenic	**7440-38-2**	**0.196**		**0.00739**
Barium	**7440-39-3**	**1.91**		**0.844**
Beryllium	**7440-41-7**	**0.00361**		**0.00252**
Cadmium	7440-43-9	0.00699	U	0.0625
Chromium	7440-47-3	1.42	U	1.74
Cobalt	**7440-48-4**	**0.160**		**0.0344**
Copper	**7440-50-8**	**44.5**		**2.07**
Lead	**7439-92-1**	**0.340**		**0.169**
Manganese	**7439-96-5**	**4.42**		**1.49**
Molybdenum	**7439-98-7**	**2.23**		**0.283**
Nickel	**7440-02-0**	**0.867**		**0.514**
Selenium	**7782-49-2**	**0.137**		**0.00706**
Thallium	**7440-28-0**	**7.80E-4**	B	**4.64E-4**
Vanadium	**7440-62-2**	**0.864**		**0.0417**
Zinc	7440-66-6	39.0	U	60.6

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-021224-HM
Matrix: Air
Lab ID: 4022021-16
Sample Volume: 2199.072 m³
Filter ID:
Sampled: 02/12/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/22/24 20:48

Comments: Q9516899 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.264**	SL	**0.0286**
Arsenic	**7440-38-2**	**0.163**		**0.00693**
Barium	**7440-39-3**	**6.66**		**0.792**
Beryllium	**7440-41-7**	**0.00911**		**0.00237**
Cadmium	7440-43-9	0.0443	U	0.0587
Chromium	**7440-47-3**	**1.67**		**1.64**
Cobalt	**7440-48-4**	**0.286**		**0.0323**
Copper	**7440-50-8**	**24.0**		**1.95**
Lead	**7439-92-1**	**0.808**		**0.158**
Manganese	**7439-96-5**	**8.28**		**1.40**
Molybdenum	**7439-98-7**	**0.916**		**0.266**
Nickel	**7440-02-0**	**1.34**		**0.482**
Selenium	**7782-49-2**	**0.167**		**0.00663**
Thallium	**7440-28-0**	**9.51E-4**	B	**4.36E-4**
Vanadium	**7440-62-2**	**1.25**		**0.0391**
Zinc	7440-66-6	39.8	U	56.8

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-021224-HM
Matrix: Air
Lab ID: 4022021-17
Sample Volume: 1932.433 m³
Filter ID:
Sampled: 02/12/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/22/24 21:06

Comments: Q9516898 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0465**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.130**		**0.00789**
Barium	**7440-39-3**	**5.23**		**0.901**
Beryllium	**7440-41-7**	**0.0108**		**0.00269**
Cadmium	7440-43-9	0.00604	U	0.0668
Chromium	7440-47-3	1.61	U	1.86
Cobalt	**7440-48-4**	**0.245**		**0.0367**
Copper	**7440-50-8**	**31.4**		**2.21**
Lead	**7439-92-1**	**0.480**		**0.180**
Manganese	**7439-96-5**	**5.36**		**1.59**
Molybdenum	**7439-98-7**	**1.56**		**0.302**
Nickel	**7440-02-0**	**1.22**		**0.549**
Selenium	**7782-49-2**	**0.119**		**0.00754**
Thallium	**7440-28-0**	**7.17E-4**	B	**4.96E-4**
Vanadium	**7440-62-2**	**0.898**		**0.0445**
Zinc	7440-66-6	31.4	U	64.7

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

FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-021224-HM
Matrix: Air
Lab ID: 4022021-18
Sample Volume: 1915.517 m³
Filter ID:
Sampled: 02/12/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/22/24 21:21

Comments: Q9554688 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0696**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.148**		**0.00796**
Barium	**7440-39-3**	**3.69**		**0.909**
Beryllium	**7440-41-7**	**0.00649**		**0.00272**
Cadmium	7440-43-9	0.0115	U	0.0674
Chromium	**7440-47-3**	**2.04**		**1.88**
Cobalt	**7440-48-4**	**0.192**		**0.0370**
Copper	**7440-50-8**	**40.7**		**2.23**
Lead	**7439-92-1**	**0.748**		**0.182**
Manganese	**7439-96-5**	**5.40**		**1.61**
Molybdenum	**7439-98-7**	**1.53**		**0.305**
Nickel	**7440-02-0**	**1.17**		**0.554**
Selenium	**7782-49-2**	**0.144**		**0.00761**
Thallium	**7440-28-0**	**8.05E-4**	B	**5.00E-4**
Vanadium	**7440-62-2**	**0.867**		**0.0449**
Zinc	7440-66-6	31.3	U	65.2

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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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-021324-HM
Matrix: Air
Lab ID: 4022021-19
Sample Volume: 1984.624 m³
Filter ID:
Sampled: 02/13/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/22/24 21:36

Comments: Q9554687 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0576**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.220**		**0.00768**
Barium	**7440-39-3**	**2.71**		**0.877**
Beryllium	**7440-41-7**	**0.00398**		**0.00262**
Cadmium	7440-43-9	0.00859	U	0.0650
Chromium	7440-47-3	1.70	U	1.81
Cobalt	**7440-48-4**	**0.794**		**0.0357**
Copper	**7440-50-8**	**46.8**		**2.16**
Lead	**7439-92-1**	**0.433**		**0.175**
Manganese	**7439-96-5**	**3.18**		**1.55**
Molybdenum	**7439-98-7**	**2.10**		**0.294**
Nickel	**7440-02-0**	**1.56**		**0.535**
Selenium	**7782-49-2**	**0.118**		**0.00735**
Thallium	**7440-28-0**	**7.53E-4**	B	**4.83E-4**
Vanadium	**7440-62-2**	**1.51**		**0.0434**
Zinc	7440-66-6	29.9	U	63.0

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-021324-HM
Matrix: Air
Lab ID: 4022021-20
Sample Volume: 2067.896 m³
Filter ID:
Sampled: 02/13/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/22/24 21:51

Comments: Q9554686 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0907**	SL	**0.0304**
Arsenic	**7440-38-2**	**0.268**		**0.00737**
Barium	**7440-39-3**	**3.84**		**0.842**
Beryllium	**7440-41-7**	**0.00636**		**0.00252**
Cadmium	7440-43-9	0.0138	U	0.0624
Chromium	**7440-47-3**	**1.98**		**1.74**
Cobalt	**7440-48-4**	**0.218**		**0.0343**
Copper	**7440-50-8**	**32.5**		**2.07**
Lead	**7439-92-1**	**0.955**		**0.168**
Manganese	**7439-96-5**	**5.94**		**1.49**
Molybdenum	**7439-98-7**	**1.17**		**0.282**
Nickel	**7440-02-0**	**1.51**		**0.513**
Selenium	**7782-49-2**	**0.147**		**0.00705**
Thallium	**7440-28-0**	**8.18E-4**	B	**4.63E-4**
Vanadium	**7440-62-2**	**1.98**		**0.0416**
Zinc	7440-66-6	37.0	U	60.4

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

FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-021324-HM
Matrix: Air
Lab ID: 4022021-21
Sample Volume: 1881.344 m³
Filter ID:
Sampled: 02/13/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/22/24 22:22

Comments: Q9554683 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0569**	SL	**0.0334**
Arsenic	**7440-38-2**	**0.142**		**0.00810**
Barium	**7440-39-3**	**2.64**		**0.925**
Beryllium	**7440-41-7**	**0.0127**		**0.00277**
Cadmium	7440-43-9	0.00867	U	0.0686
Chromium	**7440-47-3**	**2.28**		**1.91**
Cobalt	**7440-48-4**	**0.257**		**0.0377**
Copper	**7440-50-8**	**39.7**		**2.27**
Lead	**7439-92-1**	**0.465**		**0.185**
Manganese	**7439-96-5**	**6.12**		**1.63**
Molybdenum	**7439-98-7**	**2.25**		**0.310**
Nickel	**7440-02-0**	**1.43**		**0.564**
Selenium	**7782-49-2**	**0.153**		**0.00775**
Thallium	**7440-28-0**	**9.26E-4**	B	**5.09E-4**
Vanadium	**7440-62-2**	**1.69**		**0.0457**
Zinc	7440-66-6	35.7	U	66.4

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-021324-HM
Matrix: Air
Lab ID: 4022021-22
Sample Volume: 1849.274 m³
Filter ID:
Sampled: 02/13/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/22/24 22:37

Comments: Q9554682 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0602**	SL	**0.0340**
Arsenic	**7440-38-2**	**0.222**		**0.00824**
Barium	**7440-39-3**	**2.61**		**0.941**
Beryllium	**7440-41-7**	**0.00558**		**0.00282**
Cadmium	7440-43-9	0.00963	U	0.0698
Chromium	**7440-47-3**	**2.12**		**1.94**
Cobalt	**7440-48-4**	**0.198**		**0.0384**
Copper	**7440-50-8**	**38.8**		**2.31**
Lead	**7439-92-1**	**0.872**		**0.188**
Manganese	**7439-96-5**	**5.15**		**1.66**
Molybdenum	**7439-98-7**	**1.46**		**0.316**
Nickel	**7440-02-0**	**1.23**		**0.574**
Selenium	**7782-49-2**	**0.134**		**0.00788**
Thallium	**7440-28-0**	**7.87E-4**	B	**5.18E-4**
Vanadium	**7440-62-2**	**1.58**		**0.0465**
Zinc	7440-66-6	27.3	U	67.6

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Tetra Tech, Inc.
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FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-021324-HM
Matrix: Air
Lab ID: 4022021-23
Sample Volume: 1984.624 m³
Filter ID:
Sampled: 02/13/24 00:00
Received: 02/20/24 11:43
Analysis Date: 02/22/24 23:46

Comments: Q9554701 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00808	SL, U	0.0316
Arsenic	7440-38-2	0.00690	U	0.00768
Barium	**7440-39-3**	**1.29**	FB-01	**0.877**
Beryllium	7440-41-7	0.00122	U	0.00262
Cadmium	7440-43-9	0.00215	U	0.0650
Chromium	7440-47-3	1.37	U	1.81
Cobalt	7440-48-4	0.0219	U	0.0357
Copper	7440-50-8	0.862	U	2.16
Lead	7439-92-1	0.0736	U	0.175
Manganese	7439-96-5	0.178	U	1.55
Molybdenum	7439-98-7	0.244	U	0.294
Nickel	7440-02-0	0.268	U	0.535
Selenium	7782-49-2	0.00214	U	0.00735
Thallium	7440-28-0	2.75E-4	B, U	4.83E-4
Vanadium	7440-62-2	0.0144	U	0.0434
Zinc	7440-66-6	17.6	U	63.0

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Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-021424-HM
Matrix: Air
Lab ID: 4022021-24
Sample Volume: 1990.476 m³
Filter ID:
Sampled: 02/14/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/23/24 00:00

Comments: Q9554681 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0681**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.747**		**0.00766**
Barium	**7440-39-3**	**3.15**		**0.875**
Beryllium	**7440-41-7**	**0.00693**		**0.00262**
Cadmium	7440-43-9	0.0169	U	0.0648
Chromium	**7440-47-3**	**2.23**		**1.81**
Cobalt	**7440-48-4**	**0.279**		**0.0356**
Copper	**7440-50-8**	**80.3**		**2.15**
Lead	**7439-92-1**	**0.814**		**0.175**
Manganese	**7439-96-5**	**6.89**		**1.54**
Molybdenum	**7439-98-7**	**3.47**		**0.293**
Nickel	**7440-02-0**	**1.40**		**0.533**
Selenium	**7782-49-2**	**0.123**		**0.00732**
Thallium	**7440-28-0**	**9.01E-4**	B	**4.81E-4**
Vanadium	**7440-62-2**	**0.874**		**0.0432**
Zinc	7440-66-6	32.4	U	62.8

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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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-021424-HM
Matrix: Air
Lab ID: 4022021-25
Sample Volume: 2085.421 m³
Filter ID:
Sampled: 02/14/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/23/24 00:18

Comments: Q9554703 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0367**	SL	**0.0301**
Arsenic	**7440-38-2**	**0.315**		**0.00731**
Barium	**7440-39-3**	**1.51**		**0.835**
Beryllium	**7440-41-7**	**0.00296**		**0.00250**
Cadmium	7440-43-9	0.00892	U	0.0619
Chromium	7440-47-3	1.56	U	1.72
Cobalt	**7440-48-4**	**0.0775**		**0.0340**
Copper	**7440-50-8**	**16.3**		**2.05**
Lead	**7439-92-1**	**0.382**		**0.167**
Manganese	**7439-96-5**	**2.24**		**1.47**
Molybdenum	**7439-98-7**	**0.730**		**0.280**
Nickel	**7440-02-0**	**0.632**		**0.509**
Selenium	**7782-49-2**	**0.122**		**0.00699**
Thallium	**7440-28-0**	**6.44E-4**	B	**4.60E-4**
Vanadium	**7440-62-2**	**0.513**		**0.0413**
Zinc	7440-66-6	19.6	U	59.9

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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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-021424-HM/MS/MS **Lab ID:** 4022021-26 **Sampled:** 02/14/24 23:59
Matrix: Air **Sample Volume:** 1897.06 m³ **Received:** 02/20/24 11:43
Filter ID: **Analysis Date:** 02/22/24 17:36

Comments: Q9554702 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0516**	SL	**0.0331**
Arsenic	**7440-38-2**	**0.0844**		**0.00804**
Barium	**7440-39-3**	**2.18**		**0.918**
Beryllium	**7440-41-7**	**0.00734**		**0.00274**
Cadmium	7440-43-9	0.00620	U	0.0680
Chromium	7440-47-3	1.78	U	1.90
Cobalt	**7440-48-4**	**0.120**		**0.0374**
Copper	**7440-50-8**	**33.7**		**2.26**
Lead	**7439-92-1**	**0.280**		**0.184**
Manganese	**7439-96-5**	**2.96**		**1.62**
Molybdenum	**7439-98-7**	**1.88**		**0.308**
Nickel	**7440-02-0**	**0.747**		**0.559**
Selenium	**7782-49-2**	**0.123**		**0.00768**
Thallium	**7440-28-0**	**7.90E-4**	B	**5.05E-4**
Vanadium	**7440-62-2**	**0.484**		**0.0454**
Zinc	7440-66-6	43.7	U	65.9

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: 02/28/24 15:08
SUBMITTED: 02/20/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-021424-HM
Matrix: Air
Lab ID: 4022021-27
Sample Volume: 1883.387 m³
Filter ID:
Sampled: 02/14/24 23:59
Received: 02/20/24 11:43
Analysis Date: 02/23/24 00:33

Comments: Q9554700 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0450**	SL	**0.0333**
Arsenic	**7440-38-2**	**0.219**		**0.00809**
Barium	**7440-39-3**	**1.74**		**0.924**
Beryllium	**7440-41-7**	**0.00352**		**0.00276**
Cadmium	7440-43-9	0.00752	U	0.0685
Chromium	7440-47-3	1.85	U	1.91
Cobalt	**7440-48-4**	**0.0910**		**0.0377**
Copper	**7440-50-8**	**48.3**		**2.27**
Lead	**7439-92-1**	**0.590**		**0.185**
Manganese	**7439-96-5**	**2.39**		**1.63**
Molybdenum	**7439-98-7**	**2.04**		**0.310**
Nickel	**7440-02-0**	**0.697**		**0.563**
Selenium	**7782-49-2**	**0.115**		**0.00774**
Thallium	**7440-28-0**	**6.74E-4**	B	**5.09E-4**
Vanadium	**7440-62-2**	**0.447**		**0.0457**
Zinc	7440-66-6	27.3	U	66.3

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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 2402055 - B4B0506										
Calibration Blank (2402055-CCB1)				Prepared & Analyzed: 02/21/24						
Antimony	7.11		ng/l							
Arsenic	5.87		ng/l							
Barium	0.506		ng/l							
Beryllium	0.123		ng/l							
Cadmium	0.123		ng/l							
Chromium	-1.87		ng/l							U
Cobalt	0.150		ng/l							
Copper	101		ng/l							
Lead	8.81		ng/l							
Manganese	1.70		ng/l							
Molybdenum	17.3		ng/l							
Nickel	0.268		ng/l							
Selenium	2.91		ng/l							
Thallium	0.345		ng/l							
Vanadium	-20.4		ng/l							U
Zinc	-87.3		ng/l							U
Calibration Blank (2402055-CCB2)				Prepared & Analyzed: 02/21/24						
Antimony	5.44		ng/l							
Arsenic	4.67		ng/l							
Barium	3.88		ng/l							
Beryllium	0.00502		ng/l							
Cadmium	0.143		ng/l							
Chromium	1.97		ng/l							
Cobalt	0.358		ng/l							
Copper	68.1		ng/l							
Lead	6.07		ng/l							
Manganese	5.51		ng/l							
Molybdenum	8.72		ng/l							
Nickel	1.26		ng/l							
Selenium	-2.72		ng/l							U
Thallium	0.567		ng/l							
Vanadium	-19.8		ng/l							U
Zinc	-73.4		ng/l							U
Calibration Blank (2402055-CCB3)				Prepared & Analyzed: 02/21/24						
Antimony	4.38		ng/l							
Arsenic	9.43		ng/l							
Barium	1.19		ng/l							
Beryllium	-0.0748		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402055 - B4B0506										
Calibration Blank (2402055-CCB3) Contin				Prepared & Analyzed: 02/21/24						
Cadmium	0.0136		ng/l							
Chromium	0.980		ng/l							
Cobalt	0.236		ng/l							
Copper	51.6		ng/l							
Lead	3.86		ng/l							
Manganese	1.84		ng/l							
Molybdenum	7.83		ng/l							
Nickel	0.195		ng/l							
Selenium	8.78		ng/l							
Thallium	0.552		ng/l							
Vanadium	-24.7		ng/l							U
Zinc	-81.2		ng/l							U
Calibration Blank (2402055-CCB4)				Prepared & Analyzed: 02/21/24						
Antimony	3.36		ng/l							
Arsenic	4.66		ng/l							
Barium	1.59		ng/l							
Beryllium	0.0520		ng/l							
Cadmium	0.128		ng/l							
Chromium	1.95		ng/l							
Cobalt	0.338		ng/l							
Copper	59.9		ng/l							
Lead	4.69		ng/l							
Manganese	3.25		ng/l							
Molybdenum	9.11		ng/l							
Nickel	0.616		ng/l							
Selenium	1.87		ng/l							
Thallium	0.607		ng/l							
Vanadium	-25.6		ng/l							U
Zinc	439		ng/l							
Calibration Check (2402055-CCV1)				Prepared & Analyzed: 02/21/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	200000		ng/l	200000		99.8	90-110			
Beryllium	5430		ng/l	5000.0		109	90-110			
Cadmium	19900		ng/l	20000		99.6	90-110			
Chromium	251000		ng/l	240000		104	90-110			
Cobalt	49700		ng/l	50000		99.4	90-110			
Copper	2.00E6		ng/l	2.0000E6		100	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402055 - B4B0506										
Calibration Check (2402055-CCV1) Contin					Prepared & Analyzed: 02/21/24					
Lead	199000		ng/l	200000		99.7	90-110			
Manganese	515000		ng/l	500000		103	90-110			
Molybdenum	49500		ng/l	50000		99.0	90-110			
Nickel	119000		ng/l	120000		99.4	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	494		ng/l	500.00		98.8	90-110			
Vanadium	19600		ng/l	20000		97.8	90-110			
Zinc	500000		ng/l	500000		99.9	90-110			
Calibration Check (2402055-CCV2)					Prepared & Analyzed: 02/21/24					
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	207000		ng/l	200000		104	90-110			
Beryllium	5310		ng/l	5000.0		106	90-110			
Cadmium	19900		ng/l	20000		99.4	90-110			
Chromium	251000		ng/l	240000		105	90-110			
Cobalt	49900		ng/l	50000		99.7	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	491000		ng/l	500000		98.1	90-110			
Molybdenum	49300		ng/l	50000		98.5	90-110			
Nickel	119000		ng/l	120000		99.4	90-110			
Selenium	21000		ng/l	20000		105	90-110			
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	19700		ng/l	20000		98.5	90-110			
Zinc	500000		ng/l	500000		100	90-110			
Calibration Check (2402055-CCV3)					Prepared & Analyzed: 02/21/24					
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	5150		ng/l	5000.0		103	90-110			
Cadmium	19900		ng/l	20000		99.4	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	49900		ng/l	50000		99.8	90-110			
Copper	2.03E6		ng/l	2.0000E6		101	90-110			
Lead	200000		ng/l	200000		99.8	90-110			
Manganese	529000		ng/l	500000		106	90-110			
Molybdenum	49400		ng/l	50000		98.8	90-110			
Nickel	120000		ng/l	120000		99.8	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402055 - B4B0506										
Calibration Check (2402055-CCV3) Contin					Prepared & Analyzed: 02/21/24					
Selenium	20700		ng/l	20000		104	90-110			
Thallium	488		ng/l	500.00		97.5	90-110			
Vanadium	19600		ng/l	20000		98.2	90-110			
Zinc	500000		ng/l	500000		99.9	90-110			
Calibration Check (2402055-CCV4)					Prepared & Analyzed: 02/21/24					
Antimony	19900		ng/l	20000		99.4	90-110			
Arsenic	19800		ng/l	20000		99.2	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	5180		ng/l	5000.0		104	90-110			
Cadmium	19800		ng/l	20000		99.1	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	49100		ng/l	50000		98.3	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	518000		ng/l	500000		104	90-110			
Molybdenum	49100		ng/l	50000		98.3	90-110			
Nickel	118000		ng/l	120000		98.1	90-110			
Selenium	20700		ng/l	20000		103	90-110			
Thallium	485		ng/l	500.00		97.0	90-110			
Vanadium	19300		ng/l	20000		96.7	90-110			
Zinc	499000		ng/l	500000		99.8	90-110			
High Cal Check (2402055-HCV1)					Prepared & Analyzed: 02/21/24					
Antimony	40500		ng/l	40000		101	95-105			
Arsenic	40400		ng/l	40000		101	95-105			
Barium	408000		ng/l	400000		102	95-105			
Beryllium	10400		ng/l	10000		104	95-105			
Cadmium	40100		ng/l	40000		100	95-105			
Chromium	476000		ng/l	480000		99.2	95-105			
Cobalt	100000		ng/l	100000		100	95-105			
Copper	3.97E6		ng/l	4.0000E6		99.2	95-105			
Lead	404000		ng/l	400000		101	95-105			
Manganese	999000		ng/l	1.0000E6		99.9	95-105			
Molybdenum	102000		ng/l	100000		102	95-105			
Nickel	239000		ng/l	240000		99.5	95-105			
Selenium	41700		ng/l	40000		104	95-105			
Thallium	997		ng/l	1000.0		99.7	95-105			
Vanadium	40300		ng/l	40000		101	95-105			
Zinc	998000		ng/l	1.0000E6		99.8	95-105			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402055 - B4B0506										
Initial Cal Blank (2402055-ICB1)				Prepared & Analyzed: 02/21/24						
Antimony	8.37		ng/l							
Arsenic	5.23		ng/l							
Barium	0.0394		ng/l							
Beryllium	0.0971		ng/l							
Cadmium	0.104		ng/l							
Chromium	1.09		ng/l							
Cobalt	0.311		ng/l							
Copper	108		ng/l							
Lead	12.3		ng/l							
Manganese	3.46		ng/l							
Molybdenum	11.1		ng/l							
Nickel	1.43		ng/l							
Selenium	14.1		ng/l							
Thallium	0.207		ng/l							
Vanadium	-21.3		ng/l							U
Zinc	-83.0		ng/l							U
Initial Cal Check (2402055-ICV1)				Prepared & Analyzed: 02/21/24						
Antimony	19400		ng/l	20000		97.0	90-110			
Arsenic	19700		ng/l	20000		98.3	90-110			
Barium	195000		ng/l	200000		97.5	90-110			
Beryllium	5420		ng/l	5000.0		108	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	49300		ng/l	50000		98.5	90-110			
Copper	1.98E6		ng/l	2.0000E6		98.8	90-110			
Lead	193000		ng/l	200000		96.5	90-110			
Manganese	505000		ng/l	500000		101	90-110			
Molybdenum	48600		ng/l	50000		97.1	90-110			
Nickel	117000		ng/l	120000		97.8	90-110			
Selenium	20800		ng/l	20000		104	90-110			
Thallium	493		ng/l	500.00		98.5	90-110			
Vanadium	19800		ng/l	20000		98.9	90-110			
Zinc	495000		ng/l	500000		98.9	90-110			
Interference Check A (2402055-IFA1)				Prepared & Analyzed: 02/21/24						
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

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402055 - B4B0506										
Interference Check A (2402055-IFA1) Co					Prepared & Analyzed: 02/21/24					
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	307000		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
Interference Check B (2402055-IFB1)					Prepared & Analyzed: 02/21/24					
Antimony	20500		ng/l	20000		103	80-120			
Arsenic	20600		ng/l	20000		103	80-120			
Barium	203000		ng/l	200000		102	80-120			
Beryllium	5570		ng/l	5000.0		111	80-120			
Cadmium	19700		ng/l	20000		98.4	80-120			
Chromium	240000		ng/l	240000		99.8	80-120			
Cobalt	49200		ng/l	50000		98.4	80-120			
Copper	1.91E6		ng/l	2.0000E6		95.5	80-120			
Lead	206000		ng/l	200000		103	80-120			
Manganese	502000		ng/l	500000		100	80-120			
Molybdenum	355000		ng/l	350000		101	80-120			
Nickel	116000		ng/l	120000		96.5	80-120			
Selenium	20000		ng/l	20000		99.9	80-120			
Thallium	504		ng/l	500.00		101	80-120			
Vanadium	18900		ng/l	20000		94.4	80-120			
Zinc	467000		ng/l	500000		93.5	80-120			
Batch 2402061 - B4B2201										
Calibration Blank (2402061-CCB1)					Prepared & Analyzed: 02/22/24					
Antimony	0.815		ng/l							
Arsenic	-0.546		ng/l							U
Barium	-1.02		ng/l							U
Beryllium	0.0793		ng/l							
Cadmium	-0.0305		ng/l							U
Chromium	-2.02		ng/l							U
Cobalt	-0.856		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402061 - B4B2201										
Calibration Blank (2402061-CCB1) Contin				Prepared & Analyzed: 02/22/24						
Copper	73.6		ng/l							
Lead	4.62		ng/l							
Manganese	3.17		ng/l							
Molybdenum	11.1		ng/l							
Nickel	-0.812		ng/l							U
Selenium	-2.56		ng/l							U
Thallium	1.51		ng/l							
Vanadium	-18.3		ng/l							U
Zinc	5.29		ng/l							
Calibration Blank (2402061-CCB2)				Prepared & Analyzed: 02/22/24						
Antimony	0.485		ng/l							
Arsenic	0.251		ng/l							
Barium	-0.998		ng/l							U
Beryllium	-0.0544		ng/l							U
Cadmium	0.0501		ng/l							
Chromium	-3.04		ng/l							U
Cobalt	-0.861		ng/l							U
Copper	17.1		ng/l							
Lead	1.35		ng/l							
Manganese	1.86		ng/l							
Molybdenum	1.48		ng/l							
Nickel	-0.227		ng/l							U
Selenium	6.43		ng/l							
Thallium	0.837		ng/l							
Vanadium	-24.9		ng/l							U
Zinc	-16.5		ng/l							U
Calibration Blank (2402061-CCB3)				Prepared & Analyzed: 02/22/24						
Antimony	0.690		ng/l							
Arsenic	-0.196		ng/l							U
Barium	0.284		ng/l							
Beryllium	-0.107		ng/l							U
Cadmium	0.0711		ng/l							
Chromium	-0.924		ng/l							U
Cobalt	-0.751		ng/l							U
Copper	17.1		ng/l							
Lead	1.20		ng/l							
Manganese	1.60		ng/l							
Molybdenum	3.31		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402061 - B4B2201										
Calibration Blank (2402061-CCB3) Contin				Prepared & Analyzed: 02/22/24						
Nickel	0.345		ng/l							
Selenium	-1.60		ng/l							U
Thallium	0.786		ng/l							
Vanadium	-26.7		ng/l							U
Zinc	-0.809		ng/l							U
Calibration Blank (2402061-CCB4)				Prepared: 02/22/24 Analyzed: 02/23/24						
Antimony	0.818		ng/l							
Arsenic	-3.25		ng/l							U
Barium	0.195		ng/l							
Beryllium	-0.0611		ng/l							U
Cadmium	0.0532		ng/l							
Chromium	-1.25		ng/l							U
Cobalt	-0.834		ng/l							U
Copper	18.5		ng/l							
Lead	1.03		ng/l							
Manganese	2.07		ng/l							
Molybdenum	2.63		ng/l							
Nickel	0.251		ng/l							
Selenium	13.5		ng/l							
Thallium	0.761		ng/l							
Vanadium	-25.7		ng/l							U
Zinc	9.25		ng/l							
Calibration Check (2402061-CCV1)				Prepared & Analyzed: 02/22/24						
Antimony	20300		ng/l	20000		102	90-110			
Arsenic	20500		ng/l	20000		103	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	4990		ng/l	5000.0		99.7	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	255000		ng/l	240000		106	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	498000		ng/l	500000		99.7	90-110			
Molybdenum	50300		ng/l	50000		101	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20700		ng/l	20000		104	90-110			
Thallium	503		ng/l	500.00		101	90-110			
Vanadium	19800		ng/l	20000		99.0	90-110			

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

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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 2402061 - B4B2201										
Calibration Check (2402061-CCV1) Contin					Prepared & Analyzed: 02/22/24					
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2402061-CCV2)					Prepared & Analyzed: 02/22/24					
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	20300		ng/l	20000		102	90-110			
Barium	200000		ng/l	200000		99.9	90-110			
Beryllium	5140		ng/l	5000.0		103	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	257000		ng/l	240000		107	90-110			
Cobalt	50600		ng/l	50000		101	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	542000		ng/l	500000		108	90-110			
Molybdenum	49900		ng/l	50000		99.9	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20900		ng/l	20000		104	90-110			
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	517000		ng/l	500000		103	90-110			
Calibration Check (2402061-CCV3)					Prepared & Analyzed: 02/22/24					
Antimony	20300		ng/l	20000		101	90-110			
Arsenic	20700		ng/l	20000		103	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	4950		ng/l	5000.0		98.9	90-110			
Cadmium	20700		ng/l	20000		103	90-110			
Chromium	260000		ng/l	240000		109	90-110			
Cobalt	51600		ng/l	50000		103	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			
Lead	207000		ng/l	200000		103	90-110			
Manganese	535000		ng/l	500000		107	90-110			
Molybdenum	51100		ng/l	50000		102	90-110			
Nickel	125000		ng/l	120000		104	90-110			
Selenium	20800		ng/l	20000		104	90-110			
Thallium	503		ng/l	500.00		101	90-110			
Vanadium	20500		ng/l	20000		103	90-110			
Zinc	525000		ng/l	500000		105	90-110			
Calibration Check (2402061-CCV4)					Prepared: 02/22/24 Analyzed: 02/23/24					
Antimony	20500		ng/l	20000		103	90-110			
Arsenic	20500		ng/l	20000		103	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 2402061 - B4B2201										
Calibration Check (2402061-CCV4) Contin				Prepared: 02/22/24 Analyzed: 02/23/24						
Barium	201000		ng/l	200000		100	90-110			
Beryllium	4960		ng/l	5000.0		99.2	90-110			
Cadmium	20900		ng/l	20000		105	90-110			
Chromium	262000		ng/l	240000		109	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.09E6		ng/l	2.0000E6		105	90-110			
Lead	206000		ng/l	200000		103	90-110			
Manganese	538000		ng/l	500000		108	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	21100		ng/l	20000		105	90-110			
Thallium	509		ng/l	500.00		102	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	526000		ng/l	500000		105	90-110			
High Cal Check (2402061-HCV1)				Prepared & Analyzed: 02/22/24						
Antimony	40400		ng/l	40000		101	95-105			
Arsenic	40400		ng/l	40000		101	95-105			
Barium	397000		ng/l	400000		99.2	95-105			
Beryllium	10400		ng/l	10000		104	95-105			
Cadmium	40100		ng/l	40000		100	95-105			
Chromium	475000		ng/l	480000		98.9	95-105			
Cobalt	99400		ng/l	100000		99.4	95-105			
Copper	3.96E6		ng/l	4.0000E6		99.1	95-105			
Lead	406000		ng/l	400000		101	95-105			
Manganese	999000		ng/l	1.0000E6		99.9	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	237000		ng/l	240000		98.8	95-105			
Selenium	40700		ng/l	40000		102	95-105			
Thallium	1000		ng/l	1000.0		100	95-105			
Vanadium	40500		ng/l	40000		101	95-105			
Zinc	1.01E6		ng/l	1.0000E6		101	95-105			
Initial Cal Blank (2402061-ICB1)				Prepared & Analyzed: 02/22/24						
Antimony	1.07		ng/l							
Arsenic	-3.25		ng/l							U
Barium	-0.924		ng/l							U
Beryllium	0.158		ng/l							
Cadmium	-0.00897		ng/l							U
Chromium	-2.75		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 2402061 - B4B2201										
Initial Cal Blank (2402061-ICB1) Continu				Prepared & Analyzed: 02/22/24						
Cobalt	-0.705		ng/l							U
Copper	71.5		ng/l							
Lead	5.82		ng/l							
Manganese	3.62		ng/l							
Molybdenum	5.13		ng/l							
Nickel	-0.246		ng/l							U
Selenium	1.96		ng/l							
Thallium	1.18		ng/l							
Vanadium	-23.2		ng/l							U
Zinc	-6.43		ng/l							U
Initial Cal Check (2402061-ICV1)				Prepared & Analyzed: 02/22/24						
Antimony	19900		ng/l	20000		99.3	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	198000		ng/l	200000		98.9	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	20800		ng/l	20000		104	90-110			
Chromium	252000		ng/l	240000		105	90-110			
Cobalt	50200		ng/l	50000		100	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	197000		ng/l	200000		98.7	90-110			
Manganese	519000		ng/l	500000		104	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	119000		ng/l	120000		99.2	90-110			
Selenium	21000		ng/l	20000		105	90-110			
Thallium	509		ng/l	500.00		102	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	511000		ng/l	500000		102	90-110			
Interference Check A (2402061-IFA1)				Prepared & Analyzed: 02/22/24						
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 2402061 - B4B2201										
Interference Check A (2402061-IFA1) Co				Prepared & Analyzed: 02/22/24						
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 (2402061-IFB1)				Prepared & Analyzed: 02/22/24						
Antimony	20600		ng/l	20000		103	80-120			
Arsenic	20900		ng/l	20000		105	80-120			
Barium	208000		ng/l	200000		104	80-120			
Beryllium	4780		ng/l	5000.0		95.6	80-120			
Cadmium	20000		ng/l	20000		99.9	80-120			
Chromium	245000		ng/l	240000		102	80-120			
Cobalt	50000		ng/l	50000		100	80-120			
Copper	1.94E6		ng/l	2.0000E6		97.2	80-120			
Lead	209000		ng/l	200000		105	80-120			
Manganese	512000		ng/l	500000		102	80-120			
Molybdenum	354000		ng/l	350000		101	80-120			
Nickel	117000		ng/l	120000		97.6	80-120			
Selenium	19800		ng/l	20000		99.2	80-120			
Thallium	526		ng/l	500.00		105	80-120			
Vanadium	19200		ng/l	20000		96.0	80-120			
Zinc	478000		ng/l	500000		95.5	80-120			
Batch B4B2104 - ICP-MS Extraction										
Blank (B4B2104-BLK1)				Prepared & Analyzed: 02/21/24						
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

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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 B4B2104 - ICP-MS Extraction										
Blank (B4B2104-BLK1) Continued				Prepared & Analyzed: 02/21/24						
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4B2104-BS1)				Prepared & Analyzed: 02/21/24						
Antimony	0.911	0.0386	ng/m³ Air	1.3829		65.9	80-120			SL
Arsenic	2.69	0.00937	ng/m³ Air	2.7658		97.3	80-120			
Barium	27.0	1.07	ng/m³ Air	27.658		97.7	80-120			
Beryllium	1.38	0.00320	ng/m³ Air	1.3829		100	80-120			
Cadmium	1.33	0.0793	ng/m³ Air	1.3829		96.3	80-120			
Chromium	14.8	2.21	ng/m³ Air	13.829		107	80-120			
Cobalt	1.33	0.0436	ng/m³ Air	1.3829		96.5	80-120			
Copper	29.2	2.63	ng/m³ Air	27.658		105	80-120			
Lead	13.5	0.214	ng/m³ Air	13.829		97.7	80-120			
Manganese	8.48	1.89	ng/m³ Air	8.2975		102	80-120			
Molybdenum	1.40	0.359	ng/m³ Air	1.3829		102	80-120			
Nickel	2.81	0.652	ng/m³ Air	2.7658		102	80-120			
Selenium	2.77	0.00896	ng/m³ Air	2.7658		100	80-120			
Thallium	0.130	5.89E-4	ng/m³ Air	0.13829		93.6	80-120			
Vanadium	2.65	0.0529	ng/m³ Air	2.7658		95.7	80-120			
Zinc	120	76.8	ng/m³ Air	82.975		145	80-120			
Duplicate (B4B2104-DUP1)		**Source: 4022021-06**		Prepared & Analyzed: 02/21/24						
Antimony	0.0870	0.0313	ng/m³ Air		0.0984			12.4	10	SL
Arsenic	0.195	0.00760	ng/m³ Air		0.190			2.99	10	
Barium	2.70	0.868	ng/m³ Air		2.52			6.95	10	
Beryllium	0.00521	0.00259	ng/m³ Air		0.00579			10.6	10	
Cadmium	ND	0.0643	ng/m³ Air		ND				10	U
Chromium	ND	1.79	ng/m³ Air		ND				10	U
Cobalt	0.181	0.0354	ng/m³ Air		0.176			2.59	10	
Copper	41.4	2.13	ng/m³ Air		39.9			3.87	10	
Lead	0.832	0.174	ng/m³ Air		0.695			18.0	10	
Manganese	5.56	1.53	ng/m³ Air		5.44			2.21	10	
Molybdenum	2.10	0.291	ng/m³ Air		1.97			6.49	10	
Nickel	0.742	0.529	ng/m³ Air		0.709			4.59	10	
Selenium	0.175	0.00727	ng/m³ Air		0.175			0.103	10	
Thallium	7.96E-4	4.78E-4	ng/m³ Air		8.14E-4			2.24	10	
Vanadium	0.739	0.0429	ng/m³ Air		0.703			5.01	10	
Zinc	ND	62.3	ng/m³ Air		ND				10	U
Duplicate (B4B2104-DUP2)		**Source: 4022021-13**		Prepared & Analyzed: 02/21/24						

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B2104 - ICP-MS Extraction										
Duplicate (B4B2104-DUP2) Continued		**Source: 4022021-13**		Prepared & Analyzed: 02/21/24						
Antimony	0.101	0.0311	ng/m³ Air		0.100			0.934	10	SL
Arsenic	0.105	0.00754	ng/m³ Air		0.105			0.353	10	
Barium	2.15	0.861	ng/m³ Air		2.14			0.671	10	
Beryllium	ND	0.00257	ng/m³ Air		0.00260				10	U
Cadmium	ND	0.0638	ng/m³ Air		ND				10	U
Chromium	ND	1.78	ng/m³ Air		ND				10	U
Cobalt	0.0669	0.0351	ng/m³ Air		0.0650			2.89	10	
Copper	33.3	2.12	ng/m³ Air		32.7			1.77	10	
Lead	0.414	0.172	ng/m³ Air		0.410			0.946	10	
Manganese	2.19	1.52	ng/m³ Air		2.13			2.53	10	
Molybdenum	1.08	0.289	ng/m³ Air		1.08			0.0679	10	
Nickel	ND	0.525	ng/m³ Air		ND				10	U
Selenium	0.172	0.00721	ng/m³ Air		0.177			2.77	10	
Thallium	4.97E-4	4.74E-4	ng/m³ Air		4.74E-4			4.67	10	
Vanadium	0.509	0.0426	ng/m³ Air		0.501			1.53	10	
Zinc	ND	61.8	ng/m³ Air		ND				10	U
Matrix Spike (B4B2104-MS1)		**Source: 4022021-06**		Prepared & Analyzed: 02/21/24						
Antimony	0.828	0.0313	ng/m³ Air	1.1214	0.0984	65.0	80-120			SL
Arsenic	2.39	0.00760	ng/m³ Air	2.2428	0.190	98.2	80-120			
Barium	24.5	0.868	ng/m³ Air	22.428	2.52	98.0	80-120			
Beryllium	1.16	0.00259	ng/m³ Air	1.1214	0.00579	103	80-120			
Cadmium	1.10	0.0643	ng/m³ Air	1.1214	ND	98.3	80-120			
Chromium	12.5	1.79	ng/m³ Air	11.214	ND	112	80-120			
Cobalt	1.29	0.0354	ng/m³ Air	1.1214	0.176	99.0	80-120			
Copper	64.3	2.13	ng/m³ Air	22.428	39.9	109	80-120			
Lead	12.0	0.174	ng/m³ Air	11.214	0.695	101	80-120			
Manganese	12.4	1.53	ng/m³ Air	6.7283	5.44	104	80-120			
Molybdenum	3.13	0.291	ng/m³ Air	1.1214	1.97	103	80-120			
Nickel	2.77	0.529	ng/m³ Air	2.2428	0.709	92.0	80-120			
Selenium	2.46	0.00727	ng/m³ Air	2.2428	0.175	102	80-120			
Thallium	0.106	4.78E-4	ng/m³ Air	0.11214	8.14E-4	94.0	80-120			
Vanadium	2.87	0.0429	ng/m³ Air	2.2428	0.703	96.6	80-120			
Zinc	104	62.3	ng/m³ Air	67.283	ND	155	80-120			
Matrix Spike Dup (B4B2104-MSD1)		**Source: 4022021-06**		Prepared & Analyzed: 02/21/24						
Antimony	0.795	0.0313	ng/m³ Air	1.1214	0.0984	62.1	80-120	4.00	20	SL
Arsenic	2.37	0.00760	ng/m³ Air	2.2428	0.190	97.4	80-120	0.774	20	
Barium	24.2	0.868	ng/m³ Air	22.428	2.52	96.8	80-120	1.04	20	
Beryllium	1.16	0.00259	ng/m³ Air	1.1214	0.00579	103	80-120	0.180	20	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B2104 - ICP-MS Extraction										
Matrix Spike Dup (B4B2104-MSD1) Conti			**Source: 4022021-06**		Prepared & Analyzed: 02/21/24					
Cadmium	1.08	0.0643	ng/m³ Air	1.1214	ND	96.6	80-120	1.73	20	
Chromium	12.5	1.79	ng/m³ Air	11.214	ND	111	80-120	0.455	20	
Cobalt	1.26	0.0354	ng/m³ Air	1.1214	0.176	96.8	80-120	1.94	20	
Copper	67.0	2.13	ng/m³ Air	22.428	39.9	121	80-120	4.11	20	QM-07
Lead	12.0	0.174	ng/m³ Air	11.214	0.695	101	80-120	0.535	20	
Manganese	12.3	1.53	ng/m³ Air	6.7283	5.44	102	80-120	1.03	20	
Molybdenum	3.21	0.291	ng/m³ Air	1.1214	1.97	111	80-120	2.58	20	
Nickel	2.73	0.529	ng/m³ Air	2.2428	0.709	90.2	80-120	1.49	20	
Selenium	2.42	0.00727	ng/m³ Air	2.2428	0.175	100	80-120	1.34	20	
Thallium	0.106	4.78E-4	ng/m³ Air	0.11214	8.14E-4	93.7	80-120	0.303	20	
Vanadium	2.84	0.0429	ng/m³ Air	2.2428	0.703	95.3	80-120	1.02	20	
Zinc	104	62.3	ng/m³ Air	67.283	ND	155	80-120	0.00183	20	
Post Spike (B4B2104-PS1)			**Source: 4022021-06**		Prepared & Analyzed: 02/21/24					
Antimony	0.316	0.0313	ng/m³ Air	0.22428	0.0984	97.2	75-125			SL
Arsenic	1.25	0.00760	ng/m³ Air	1.1214	0.190	94.4	75-125			
Barium	4.69	0.868	ng/m³ Air	2.2428	2.52	97.1	75-125			
Beryllium	0.238	0.00259	ng/m³ Air	0.22428	0.00579	103	75-125			
Cadmium	0.115	0.0643	ng/m³ Air	0.11214	ND	103	75-125			
Chromium	2.45	1.79	ng/m³ Air	1.1214	ND	219	75-125			
Cobalt	0.388	0.0354	ng/m³ Air	0.22428	0.176	94.7	75-125			
Copper	51.7	2.13	ng/m³ Air	11.214	39.9	105	75-125			
Lead	22.3	0.174	ng/m³ Air	22.428	0.695	96.1	75-125			
Manganese	7.60	1.53	ng/m³ Air	2.2428	5.44	96.1	75-125			
Molybdenum	3.00	0.291	ng/m³ Air	1.1214	1.97	92.2	75-125			
Nickel	2.77	0.529	ng/m³ Air	2.2428	0.709	92.1	75-125			
Selenium	1.32	0.00727	ng/m³ Air	1.1214	0.175	102	75-125			
Thallium	0.0548	4.78E-4	ng/m³ Air	5.6069E-2	8.14E-4	96.2	75-125			
Vanadium	1.75	0.0429	ng/m³ Air	1.1214	0.703	93.3	75-125			
Zinc	68.5	62.3	ng/m³ Air	22.428	ND	305	75-125			
Dilution Check (B4B2104-SRL1)			**Source: 4022021-06**		Prepared & Analyzed: 02/21/24					
Antimony	ND	0.156	ng/m³ Air		ND				10	SL, U
Arsenic	0.206	0.0380	ng/m³ Air		0.190			8.29	10	
Barium	ND	4.34	ng/m³ Air		ND				10	U
Beryllium	ND	0.0130	ng/m³ Air		ND				10	U
Cadmium	ND	0.322	ng/m³ Air		ND				10	U
Chromium	ND	8.96	ng/m³ Air		ND				10	U
Cobalt	0.180	0.177	ng/m³ Air		ND			2.05	10	
Copper	40.7	10.7	ng/m³ Air		39.9			2.02	10	

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FILE #: 4205.00.003.001
REPORTED: 02/28/24 15:08
SUBMITTED: 02/20/24
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 B4B2104 - ICP-MS Extraction										
Dilution Check (B4B2104-SRL1) ContinueSource: 4022021-06 Prepared & Analyzed: 02/21/24										
Lead	ND	0.868	ng/m³ Air		ND				10	U
Manganese	ND	7.66	ng/m³ Air		ND				10	U
Molybdenum	1.96	1.46	ng/m³ Air		1.97			0.372	10	
Nickel	ND	2.64	ng/m³ Air		ND				10	U
Selenium	0.209	0.0363	ng/m³ Air		0.175			18.0	10	
Thallium	ND	0.00239	ng/m³ Air		ND				10	U
Vanadium	0.712	0.214	ng/m³ Air		0.703			1.27	10	
Zinc	ND	311	ng/m³ Air		ND				10	U
Batch B4B2201 - ICP-MS Extraction										
Blank (B4B2201-BLK1) Prepared & Analyzed: 02/22/24										
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	ND	5.89E-4	ng/m³ Air							B, U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4B2201-BS1) Prepared & Analyzed: 02/22/24										
Antimony	0.767	0.0386	ng/m³ Air	1.3829		55.5	80-120			SL
Arsenic	2.77	0.00937	ng/m³ Air	2.7658		100	80-120			
Barium	27.9	1.07	ng/m³ Air	27.658		101	80-120			
Beryllium	1.37	0.00320	ng/m³ Air	1.3829		99.2	80-120			
Cadmium	1.39	0.0793	ng/m³ Air	1.3829		101	80-120			
Chromium	15.8	2.21	ng/m³ Air	13.829		114	80-120			
Cobalt	1.40	0.0436	ng/m³ Air	1.3829		101	80-120			
Copper	33.4	2.63	ng/m³ Air	27.658		121	80-120			
Lead	14.1	0.214	ng/m³ Air	13.829		102	80-120			
Manganese	8.99	1.89	ng/m³ Air	8.2975		108	80-120			
Molybdenum	1.52	0.359	ng/m³ Air	1.3829		110	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 B4B2201 - ICP-MS Extraction										
LCS (B4B2201-BS1) Continued				Prepared & Analyzed: 02/22/24						
Nickel	3.20	0.652	ng/m³ Air	2.7658		116	80-120			
Selenium	2.82	0.00896	ng/m³ Air	2.7658		102	80-120			
Thallium	0.141	5.89E-4	ng/m³ Air	0.13829		102	80-120			B
Vanadium	2.75	0.0529	ng/m³ Air	2.7658		99.6	80-120			
Zinc	117	76.8	ng/m³ Air	82.975		142	80-120			
Duplicate (B4B2201-DUP1)				**Source: 4022021-26**	Prepared & Analyzed: 02/22/24					
Antimony	0.0569	0.0331	ng/m³ Air		0.0516			9.75	10	SL
Arsenic	0.0947	0.00804	ng/m³ Air		0.0844			11.4	10	
Barium	2.36	0.918	ng/m³ Air		2.18			7.95	10	
Beryllium	0.00692	0.00274	ng/m³ Air		0.00734			5.81	10	
Cadmium	ND	0.0680	ng/m³ Air		ND				10	U
Chromium	1.97	1.90	ng/m³ Air		ND				10	
Cobalt	0.137	0.0374	ng/m³ Air		0.120			13.0	10	
Copper	34.5	2.26	ng/m³ Air		33.7			2.49	10	
Lead	0.289	0.184	ng/m³ Air		0.280			3.24	10	
Manganese	3.29	1.62	ng/m³ Air		2.96			10.6	10	
Molybdenum	1.99	0.308	ng/m³ Air		1.88			5.44	10	
Nickel	0.856	0.559	ng/m³ Air		0.747			13.6	10	
Selenium	0.126	0.00768	ng/m³ Air		0.123			2.44	10	
Thallium	7.81E-4	5.05E-4	ng/m³ Air		7.90E-4			1.02	10	B
Vanadium	0.509	0.0454	ng/m³ Air		0.484			5.13	10	
Zinc	ND	65.9	ng/m³ Air		ND				10	U
Duplicate (B4B2201-DUP2)				**Source: 4022021-20**	Prepared & Analyzed: 02/22/24					
Antimony	0.0923	0.0304	ng/m³ Air		0.0907			1.85	10	SL
Arsenic	0.269	0.00737	ng/m³ Air		0.268			0.467	10	
Barium	3.84	0.842	ng/m³ Air		3.84			0.00182	10	
Beryllium	0.00741	0.00252	ng/m³ Air		0.00636			15.3	10	
Cadmium	ND	0.0624	ng/m³ Air		ND				10	U
Chromium	2.00	1.74	ng/m³ Air		1.98			0.610	10	
Cobalt	0.220	0.0343	ng/m³ Air		0.218			0.518	10	
Copper	32.6	2.07	ng/m³ Air		32.5			0.280	10	
Lead	0.957	0.168	ng/m³ Air		0.955			0.299	10	
Manganese	5.97	1.49	ng/m³ Air		5.94			0.533	10	
Molybdenum	1.18	0.282	ng/m³ Air		1.17			0.566	10	
Nickel	1.54	0.513	ng/m³ Air		1.51			1.99	10	
Selenium	0.137	0.00705	ng/m³ Air		0.147			7.07	10	
Thallium	9.27E-4	4.63E-4	ng/m³ Air		8.18E-4			12.6	10	B
Vanadium	2.00	0.0416	ng/m³ Air		1.98			1.05	10	

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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 B4B2201 - ICP-MS Extraction										
Duplicate (B4B2201-DUP2) Continued		**Source: 4022021-20**		Prepared & Analyzed: 02/22/24						
Zinc	ND	60.4	ng/m³ Air		ND				10	U
Matrix Spike (B4B2201-MS1)		**Source: 4022021-26**		Prepared & Analyzed: 02/22/24						
Antimony	0.554	0.0331	ng/m³ Air	1.1860	0.0516	42.4	80-120			SL
Arsenic	2.46	0.00804	ng/m³ Air	2.3721	0.0844	100	80-120			
Barium	26.0	0.918	ng/m³ Air	23.721	2.18	100	80-120			
Beryllium	1.15	0.00274	ng/m³ Air	1.1860	0.00734	95.9	80-120			
Cadmium	1.22	0.0680	ng/m³ Air	1.1860	ND	103	80-120			
Chromium	14.3	1.90	ng/m³ Air	11.860	ND	121	80-120			
Cobalt	1.33	0.0374	ng/m³ Air	1.1860	0.120	102	80-120			
Copper	59.5	2.26	ng/m³ Air	23.721	33.7	109	80-120			
Lead	12.5	0.184	ng/m³ Air	11.860	0.280	103	80-120			
Manganese	10.7	1.62	ng/m³ Air	7.1163	2.96	109	80-120			
Molybdenum	3.01	0.308	ng/m³ Air	1.1860	1.88	95.5	80-120			
Nickel	3.11	0.559	ng/m³ Air	2.3721	0.747	99.6	80-120			
Selenium	2.51	0.00768	ng/m³ Air	2.3721	0.123	100	80-120			
Thallium	0.121	5.05E-4	ng/m³ Air	0.11860	7.90E-4	101	80-120			B
Vanadium	2.86	0.0454	ng/m³ Air	2.3721	0.484	100	80-120			
Zinc	112	65.9	ng/m³ Air	71.163	ND	157	80-120			
Matrix Spike Dup (B4B2201-MSD1)		**Source: 4022021-26**		Prepared & Analyzed: 02/22/24						
Antimony	0.541	0.0331	ng/m³ Air	1.1860	0.0516	41.3	80-120	2.44	20	SL
Arsenic	2.48	0.00804	ng/m³ Air	2.3721	0.0844	101	80-120	0.722	20	
Barium	26.2	0.918	ng/m³ Air	23.721	2.18	101	80-120	0.877	20	
Beryllium	1.08	0.00274	ng/m³ Air	1.1860	0.00734	90.3	80-120	6.07	20	
Cadmium	1.22	0.0680	ng/m³ Air	1.1860	ND	103	80-120	0.0103	20	
Chromium	14.4	1.90	ng/m³ Air	11.860	ND	122	80-120	0.923	20	
Cobalt	1.36	0.0374	ng/m³ Air	1.1860	0.120	104	80-120	1.77	20	
Copper	60.9	2.26	ng/m³ Air	23.721	33.7	115	80-120	2.29	20	
Lead	12.5	0.184	ng/m³ Air	11.860	0.280	103	80-120	0.0240	20	
Manganese	10.6	1.62	ng/m³ Air	7.1163	2.96	108	80-120	0.669	20	
Molybdenum	3.14	0.308	ng/m³ Air	1.1860	1.88	106	80-120	3.97	20	
Nickel	3.09	0.559	ng/m³ Air	2.3721	0.747	98.8	80-120	0.647	20	
Selenium	2.53	0.00768	ng/m³ Air	2.3721	0.123	102	80-120	1.13	20	
Thallium	0.121	5.05E-4	ng/m³ Air	0.11860	7.90E-4	101	80-120	0.0178	20	B
Vanadium	2.87	0.0454	ng/m³ Air	2.3721	0.484	101	80-120	0.622	20	
Zinc	105	65.9	ng/m³ Air	71.163	ND	147	80-120	6.84	20	
Post Spike (B4B2201-PS1)		**Source: 4022021-26**		Prepared & Analyzed: 02/22/24						
Antimony	0.283	0.0331	ng/m³ Air	0.23721	0.0516	97.6	75-125			SL
Arsenic	1.24	0.00804	ng/m³ Air	1.1860	0.0844	97.3	75-125			

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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 B4B2201 - ICP-MS Extraction										
Post Spike (B4B2201-PS1) Continued			**Source: 4022021-26**		Prepared & Analyzed: 02/22/24					
Barium	4.49	0.918	ng/m³ Air	2.3721	2.18	97.4	75-125			
Beryllium	0.238	0.00274	ng/m³ Air	0.23721	0.00734	97.1	75-125			
Cadmium	0.125	0.0680	ng/m³ Air	0.11860	ND	106	75-125			
Chromium	2.94	1.90	ng/m³ Air	1.1860	ND	248	75-125			
Cobalt	0.354	0.0374	ng/m³ Air	0.23721	0.120	98.3	75-125			
Copper	46.2	2.26	ng/m³ Air	11.860	33.7	106	75-125			
Lead	23.8	0.184	ng/m³ Air	23.721	0.280	99.0	75-125			
Manganese	5.32	1.62	ng/m³ Air	2.3721	2.96	99.5	75-125			
Molybdenum	2.98	0.308	ng/m³ Air	1.1860	1.88	93.1	75-125			
Nickel	3.05	0.559	ng/m³ Air	2.3721	0.747	96.9	75-125			
Selenium	1.31	0.00768	ng/m³ Air	1.1860	0.123	99.9	75-125			
Thallium	0.0611	5.05E-4	ng/m³ Air	5.9302E-2	7.90E-4	102	75-125			B
Vanadium	1.63	0.0454	ng/m³ Air	1.1860	0.484	96.3	75-125			
Zinc	68.7	65.9	ng/m³ Air	23.721	ND	290	75-125			
Dilution Check (B4B2201-SRL1)			**Source: 4022021-26**		Prepared & Analyzed: 02/22/24					
Antimony	ND	0.166	ng/m³ Air		ND				10	SL, U
Arsenic	0.0843	0.0402	ng/m³ Air		0.0844			0.105	10	
Barium	ND	4.59	ng/m³ Air		ND				10	U
Beryllium	ND	0.0137	ng/m³ Air		ND				10	U
Cadmium	ND	0.340	ng/m³ Air		ND				10	U
Chromium	ND	9.48	ng/m³ Air		ND				10	U
Cobalt	ND	0.187	ng/m³ Air		ND				10	U
Copper	33.9	11.3	ng/m³ Air		33.7			0.513	10	
Lead	ND	0.918	ng/m³ Air		ND				10	U
Manganese	ND	8.10	ng/m³ Air		ND				10	U
Molybdenum	1.87	1.54	ng/m³ Air		1.88			0.534	10	
Nickel	ND	2.80	ng/m³ Air		ND				10	U
Selenium	0.154	0.0384	ng/m³ Air		0.123			22.1	10	
Thallium	ND	0.00253	ng/m³ Air		ND				10	B, U
Vanadium	0.495	0.227	ng/m³ Air		0.484			2.34	10	
Zinc	ND	329	ng/m³ Air		ND				10	U

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23206

Reviewed by:
Kierra Johnson 2/29/2024 and Shanna Vasser 3/1/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 2/9/2024 – 2/14/2024
Report No: 4022021

√	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:

2. The laboratory noted that MFL-AM01-020924-HM, MFL-AM01-021024-HM/MS/MSD, MFL-AM02-021024-HM, MFL-AM02-021124-HM, and MFL-AM04-021124-HM were received in good condition and covered in dead bugs. There were no additional details; therefore, it is assumed the other samples met method criteria for analysis.

13. Field blank detections above the method detection limit were reported for barium in MFL-FB01-021324-HM

Notes: None