

State of Hawaii, Department of Health, Clean Air Branch
2023 Maui Wildfires
Ambient Community Air Monitoring and Sampling Weekly Report
Lahaina, Maui

November 28 through December 4, 2024

Tetra Tech, Inc. (Tetra Tech) prepared a Community Air Monitoring and Sampling Plan (CAMSP) to address the evaluation and documentation of air quality and inhalation exposure risks during debris removal operations performed in response to the 2023 Maui Wildfires. Air monitoring and sampling as prescribed in the CAMSP will continue until debris removal activities are complete or until HDOH advises otherwise.

Particulate monitoring and air sampling occurred from November 28 through December 4, 2024, at the community locations listed below and shown on **Figure 1**.

- WW Pump Station #4 (AM-02)
- Lahaina Intermediate School (AM-03)
- Opukea Townhomes (AM-05)
- Lahaina Recreational Center (AM-07)

Real-time air quality monitoring for particulate matter was collected at each community location over a 24-hour period each day in accordance with the CAMSP. Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (μm), which 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 "PM₁₀". Monitoring for PM₁₀ was conducted 24 hours a day, 7 days a week from November 28 through December 4 at each of the community locations. Ambient air monitoring results were compared to the National Ambient Air Quality Standard (NAAQS) for PM₁₀, 24-hour time-weighted average of 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), which was selected as the screening level for this activity.

This weekly report does not address air quality monitoring results for fine particulate matter (particle size diameter of 2.5 μm or less [PM_{2.5}]). This was not necessary because the Department of Health/U.S. Environmental Protection Agency (EPA) monitors for this parameter at six locations in Lahaina, and the results from that monitoring are accessible at <https://fire.airnow.gov/>.

Air samples were analyzed for asbestos and 16 metals, including antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, molybdenum, nickel, selenium, thallium, vanadium, and zinc. Analytical results were compared to Site Screening Action Levels (SSALs) as presented in the CAMSP.

Air Monitoring Results

In addition to the air sampling activities, real-time PM₁₀ concentrations were collected at each of the four monitoring locations throughout this reporting period. Monitoring was conducted 24 hours a day at each station. None of the PM₁₀ monitoring results exceeded the 150 $\mu\text{g}/\text{m}^3$ screening level established in the CAMSP, as shown in **Table 1**.

Air Sampling Results

A total of 16 samples for asbestos fibers were collected during this reporting period. With the approval of the HDOH, Tetra Tech field teams were not dispatched on November 28 or 29 in observance of the Thanksgiving Day holiday. The field teams did not deploy air samples at any of the four air sampling stations on November 27, 28, or 29. Subsequently, samples were not collected on November 28, 29 or 30

because of the approximate 24-hr sampling period for asbestos and heavy metals requirements described in the CAMSP. All analytical results for asbestos samples collected during this reporting period were below the SSAL for asbestos of 0.003 structures per cubic centimeter (s/cc). Results were reported below the laboratory's analytical sensitivity (see **Table 2**). On December 4, the laboratory included the comment "Numerous gypsum fibers present" for samples collected at WW Pump Station #4.

Gypsum is a common material used in drywall, plaster, and cement, so its presence in the sample filters likely resulted from debris removal operations or other disturbances of built-environment fire debris. The presence of gypsum fibers in that sample was not sufficient to obscure asbestos analyses; nor did this pose a health and safety concern. Occupational health exposure thresholds for gypsum are 5 milligrams per cubic meter (mg/m³) for respirable dust, and 10 mg/m³ and 15 mg/m³ for total dust (both as time-weighted averages), specified by the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA). While total dust sampling was not performed, results of size-discriminated particulate sampling (PM₁₀) at these locations did not approach these thresholds and are orders of magnitude less than occupational gypsum exposure criteria.

Low levels of metals were detected in samples collected during this reporting period at all community locations. However, all detections were below their respective SSALs (see **Table 2**).

Laboratory data sheets conveying asbestos and metals results are in **Appendix 1**.

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.2 miles per hour and were generally from a southeast direction. **Table 3** summarizes the collected meteorological data.

Quality Control Summary

This section presents quality control measures implemented throughout the air monitoring and sampling reporting period. All references and standard operating procedures (SOPs) are included in the CAMSP.

Air monitoring was performed using Met One Instruments, Inc., environmental beta attenuation mass monitors (E-BAM) to allow comparison to NAAQS for particulates. E-BAMs are factory-calibrated annually and do not require daily calibrations. Leak checks and a flow audit were performed before each monitoring activity, in accordance with the manufacturer's procedures.

Asbestos sampling was performed using Casella Vortex 3 (or similar) air sampling pumps. Sampling flow rates were determined and documented by pre- and post-calibration of each sampling pump, using a primary calibration standard. Pump calibration and sampling were performed according to Tetra Tech SOPs 064-2 "Calibration of Air Sampling Pump" and 073-3, "Air Quality Monitoring" and EPA Environmental Response Team (ERT) SOPs 2008 "General Air Monitoring and Sampling Guidelines" and 2015 "Asbestos Air Sampling," included in the CAMSP.

Sampling for metals occurred using Tisch Environmental High Volume Air Samplers (or equivalent) in accordance with the following methods:

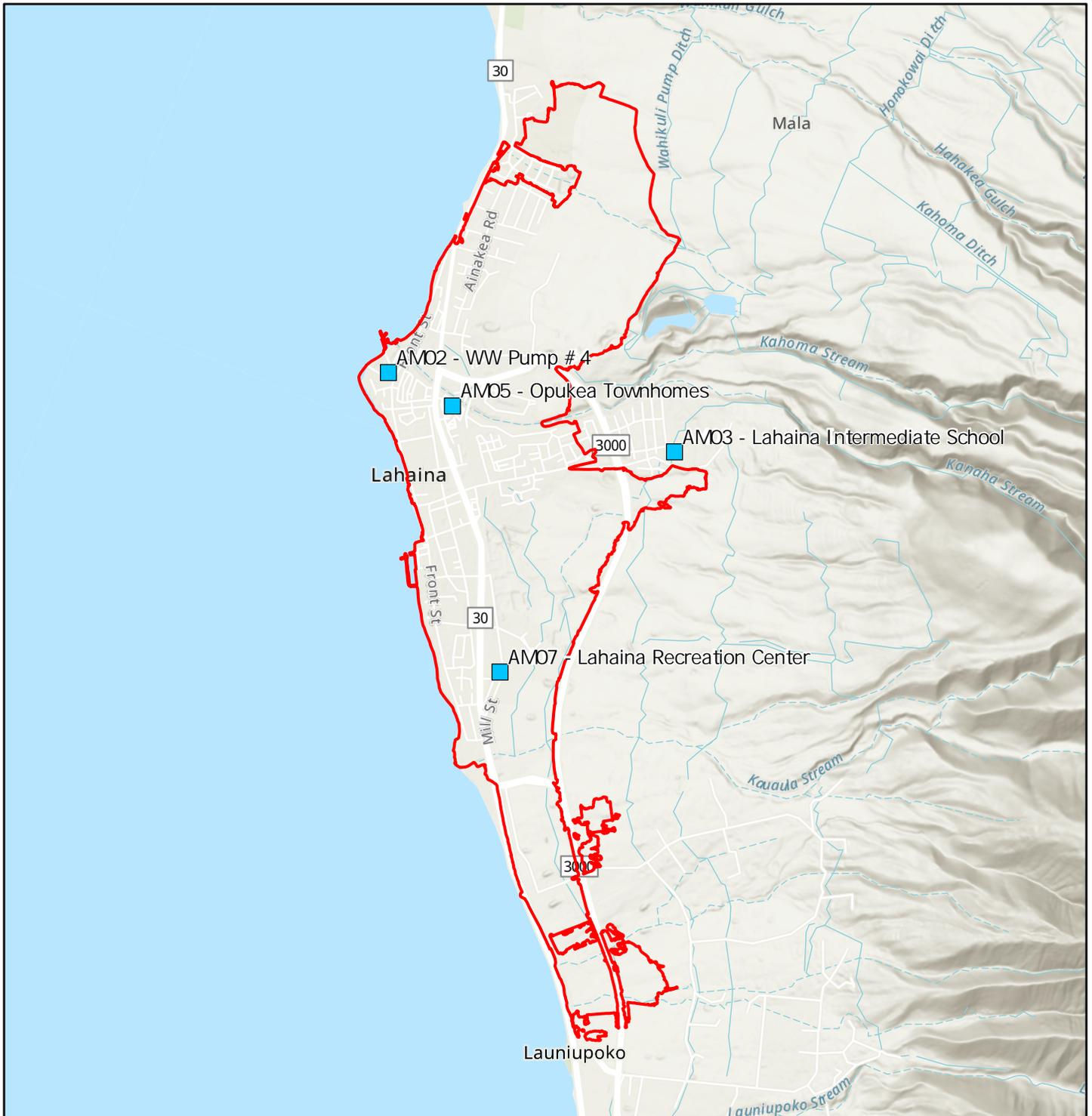
- EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and for PM₁₀ by Use of a High Volume (HV) Sampler
- EPA Compendium Method IO-3.5: Compendium of Methods for Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate Matter Via Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) EPA/625/R-96/010a
- EPA 40 *Code of Federal Regulations* (CFR) Part 50, Method for Determination of Lead in Total Suspended Particulate Matter

- EPA 40 CFR Part 58, Appendix E: Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring
- American Society for Testing and Materials (ASTM) SOPs for Lead Monitoring by Use of a Total Suspended Particulate (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 off-site analytical laboratories, analytical data were compared to SSALs and are maintained in an electronic database. All data were subjected to Level 1 data verification and are reviewed by an industrial hygienist.

Attachments



- Air Sampling Locations
- Lahaina Fire Perimeter

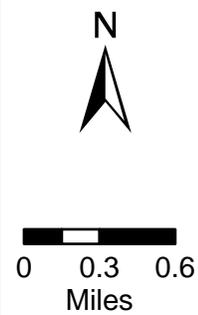


Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Table 1
State of Hawaii, Department of Health, Clean Air Branch
Particulate Monitoring Results for PM₁₀
Maui Wildfires, Lahaina
November 28 through December 4, 2024

Screening Level		TWA Results 150 (µg/m ³)
11/28/2024	Opukea Townhomes (AM-05)	6.2
	WW Pump Station #4 (AM-02)	5.1
	Lahaina Intermediate School (AM-03)	4.4
	Lahaina Recreation Center (AM-07)	3.8
11/29/2024	Opukea Townhomes (AM-05)	6.0
	WW Pump Station #4 (AM-02)	7.3
	Lahaina Intermediate School (AM-03)	5.5
	Lahaina Recreation Center (AM-07)	5.7
11/30/2024	Opukea Townhomes (AM-05)	8.0
	WW Pump Station #4 (AM-02)	5.5
	Lahaina Intermediate School (AM-03)	6.1
	Lahaina Recreation Center (AM-07)	9.3
12/1/2024	Opukea Townhomes (AM-05)	6.7
	WW Pump Station #4 (AM-02)	5.6
	Lahaina Intermediate School (AM-03)	4.9
	Lahaina Recreation Center (AM-07)	9.9
12/2/2024	Opukea Townhomes (AM-05)	6.5
	WW Pump Station #4 (AM-02)	4.5
	Lahaina Intermediate School (AM-03)	4.7
	Lahaina Recreation Center (AM-07)	10
12/3/2024	Opukea Townhomes (AM-05)	7.8
	WW Pump Station #4 (AM-02)	6.2
	Lahaina Intermediate School (AM-03)	5.6
	Lahaina Recreation Center (AM-07)	10
12/4/2024	Opukea Townhomes (AM-05)	8.4
	WW Pump Station #4 (AM-02)	7.3
	Lahaina Intermediate School (AM-03)	5.0
	Lahaina Recreation Center (AM-07)	12

Notes:

µg/m³ = micrograms per cubic meter

TWA = 24-Hour Time-Weighted Average

TWA calculation results are shown in two significant figures

Table 2
State of Hawaii, Department of Health, Clean Air Branch
Asbestos and Metals Sampling Results
Maui Wildfires, Lahaina
November 28 through December 4, 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																
Site Screening Action 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	
11/28/2024	Opukea Townhomes (AM-05)																	
	WW Pump Station #4 (AM-02)																	
	Lahaina Intermediate School (AM-03)																	
	Lahaina Recreation Center (AM-07)																	
11/29/2024	Opukea Townhomes (AM-05)																	
	WW Pump Station #4 (AM-02)																	
	Lahaina Intermediate School (AM-03)																	
	Lahaina Recreation Center (AM-07)																	
11/30/2024	Opukea Townhomes (AM-05)																	
	WW Pump Station #4 (AM-02)																	
	Lahaina Intermediate School (AM-03)																	
	Lahaina Recreation Center (AM-07)																	
12/1/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000616	0.000198	0.00341	0.00000760	ND	0.00230	0.000262	0.0425	0.000514	0.00788	0.00277	0.000957	0.000151	0.000000853	0.000981	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000204	0.000198	0.00558	0.0000113	ND	0.00279	0.000355	0.0361	0.000631	0.0109	0.00192	0.00117	0.000169	0.000000913	0.00133	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.0000849	0.00180	0.00000843	ND	0.00191	0.000176	0.0481	0.000325	0.00464	0.00266	0.000742	0.000143	0.000000593	0.000676	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000724	0.00121	0.0193	0.000129	ND	0.0120	0.00376	0.0212	0.00518	0.117	0.000904	0.00707	0.000633	0.00000463	0.00897	ND
12/2/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000541	0.000125	0.00327	0.00000641	ND	0.00204	0.000211	0.0503	0.000472	0.00610	0.00345	0.000776	0.000140	0.000000585	0.000744	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.0000827	0.000174	0.00390	0.00000720	ND	0.00177	0.000213	0.0462	0.000613	0.00671	0.00224	0.000710	0.000148	0.000000577	0.000790	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.000269	0.00529	0.0000281	ND	0.00737	0.000611	0.0453	ND	0.0127	0.00328	0.00278	0.000205	ND	0.00138	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000600	0.000636	0.0184	0.000113	ND	0.0101	0.00308	0.0194	0.00353	0.0935	0.00103	0.00585	0.000555	0.00000405	0.00704	ND
12/3/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000990	0.000343	0.00609	0.0000166	ND	0.00364	0.000671	0.0451	0.00105	0.0171	0.00284	0.00194	0.000178	0.000000909	0.00200	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000203	0.000364	0.0114	0.0000252	ND	0.00427	0.000920	0.0513	0.00105	0.0266	0.00261	0.00237	0.000217	0.00000129	0.00286	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000482	0.000165	0.00376	0.0000379	ND	0.00334	0.000640	0.0384	0.000296	0.0137	0.00249	0.00165	0.000181	0.000000751	0.00160	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.0000950	0.000839	0.0144	0.0000959	ND	0.0100	0.00297	0.0216	0.00292	0.0852	0.00121	0.00580	0.000511	0.00000365	0.00699	ND
12/4/2024	Opukea Townhomes (AM-05)	<0.0024	0.000119	0.000274	0.00627	0.0000178	ND	0.00366	0.000710	0.0333	0.000583	0.0188	0.00223	0.00215	0.000177	0.000000984	0.00299	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000211	0.000361	0.00992	0.0000289	ND	0.00512	0.00116	0.0627	0.000890	0.0289	0.00327	0.00350	0.000221	0.00000133	0.00432	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000551	0.000194	0.00352	0.0000242	ND	0.00340	0.000630	0.0469	0.000309	0.0148	0.00276	0.00187	0.000166	0.000000901	0.00207	ND
	Lahaina Recreation Center (AM-07)	<0.0024	0.000116	0.00137	0.0128	0.0000650	ND	0.00832	0.00217	0.0203	0.00118	0.0767	0.00129	0.00456	0.000415	0.00000359	0.00601	ND
95% Upper Confidence Limit ²	NA	0.000140	0.000690	0.0124	0.0000790	NA	0.00738	0.00239	0.0478	0.00232	0.0712	0.00292	0.00448	0.000340	0.00000270	0.00567	NA	

Notes:

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

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

s/cc = structures per cubic centimeter

µg/m³ = micrograms per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

* Laboratory data provided in nanograms per cubic meter, however data presented has been converted to micrograms per cubic meter so data was comparable to the Site Screening Action Levels presented in the CAMSP

Thanksgiving and following day holiday observance

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Averaged Meteorological Data
Maui Wildfires, Lahaina
November 28, through December 4, 2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
11/28/2024	AM-02	WW Pump Station #4	1.0	SSE	77	65	760.6
11/28/2024	AM-03	Lahaina Intermediate School	1.1	ESE	76	63	751.2
11/28/2024	AM-05	Opukea Townhomes	1.3	ESE	77	60	760.1
11/28/2024	AM-07	Lahaina Recreational Center	1.5	SE	75	66	759.8
11/29/2024	AM-02	WW Pump Station #4	1.2	SE	78	64	760.4
11/29/2024	AM-03	Lahaina Intermediate School	1.1	ESE	76	61	751.1
11/29/2024	AM-05	Opukea Townhomes	1.2	ESE	77	59	759.9
11/29/2024	AM-07	Lahaina Recreational Center	1.7	SE	76	64	759.6
11/30/2024	AM-02	WW Pump Station #4	1.0	SE	77	64	760.9
11/30/2024	AM-03	Lahaina Intermediate School	1.0	ESE	75	62	751.6
11/30/2024	AM-05	Opukea Townhomes	1.0	SE	77	59	760.5
11/30/2024	AM-07	Lahaina Recreational Center	1.5	SE	75	64	760.2
12/1/2024	AM-02	WW Pump Station #4	0.9	SSE	77	65	761.3
12/1/2024	AM-03	Lahaina Intermediate School	1.0	SE	76	63	751.9
12/1/2024	AM-05	Opukea Townhomes	1.1	ESE	77	60	760.8
12/1/2024	AM-07	Lahaina Recreational Center	1.4	SE	75	65	760.5
12/2/2024	AM-02	WW Pump Station #4	0.9	SE	78	64	762.1
12/2/2024	AM-03	Lahaina Intermediate School	1.4	SE	77	59	752.7
12/2/2024	AM-05	Opukea Townhomes	1.2	SSE	77	59	761.7
12/2/2024	AM-07	Lahaina Recreational Center	1.4	ESE	76	61	761.4
12/3/2024	AM-02	WW Pump Station #4	0.8	SSE	77	72	762.4
12/3/2024	AM-03	Lahaina Intermediate School	1.0	ESE	76	67	753.0
12/3/2024	AM-05	Opukea Townhomes	1.0	SSE	77	66	762.0
12/3/2024	AM-07	Lahaina Recreational Center	1.3	SE	76	70	761.6
12/4/2024	AM-02	WW Pump Station #4	0.8	SSE	78	66	762.2
12/4/2024	AM-03	Lahaina Intermediate School	1.3	SE	78	58	752.8
12/4/2024	AM-05	Opukea Townhomes	1.2	ENE	79	58	761.7
12/4/2024	AM-07	Lahaina Recreational Center	1.5	S	76	65	761.3

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.



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

EMSL Order: 042424722
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/04/2024 09:30 AM
Analysis Date: 12/10/2024
Report Date: 12/10/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-FB01-113024-AB **Sample Description:** DL698503

EMSL Sample Number: 042424722-0001 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): 0.0130
 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 (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.00			
Total Amphibole	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures	-	0	0	< 23.00			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.00			
Total Amphibole (PCMe)	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	-	0	0	< 23.00			

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

EMSL Order ID: 042424722

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:		042424722-0001		Customer Sample:		MFL-FB01-113024-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	B5	None Detected									
G1	D7	None Detected									
G1	F7	None Detected									
G1	H9	None Detected									
G1	J7	None Detected									
G2	A4	None Detected									
G2	C7	None Detected									
G2	E1	None Detected									
G2	G4	None Detected									
G2	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: 042424722
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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

Project: Maui Fires Lahaina

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/04/2024 09:30 AM
Analysis Date: 12/10/2024
Report Date: 12/10/2024

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM05-120124-AB	Sample Description:	DL698467
EMSL Sample Number:	042424722-0002	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7129.1
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 042424722
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: 042424722-0002			Customer Sample: MFL-AM05-120124-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	A4	None Detected									
G5	D7	None Detected									
G5	H10	None Detected									
G6	B9	None Detected									
G6	H9	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: 1207085
Project ID: N/A

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Fax: N/A
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Analysis Date: 12/10/2024
Report Date: 12/10/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM02-120124-AB	Sample Description:	DL698169
EMSL Sample Number:	042424722-0003	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7389.4
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: **042424722**
 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: 042424722-0003			Customer Sample: MFL-AM02-120124-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	H3	None Detected									
H1	E4	None Detected									
H1	B3	None Detected									
H2	C7	None Detected									
H2	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: 042424722
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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Fax: N/A
Received Date: 12/04/2024 09:30 AM
Analysis Date: 12/10/2024
Report Date: 12/10/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM03-120124-AB **Sample Description:** DL698005

EMSL Sample Number: 042424722-0004 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7361.4
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0130
 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): 0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: 042424722
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: 042424722-0004			Customer Sample: MFL-AM03-120124-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	B4	None Detected									
H5	D8	None Detected									
H5	H3	None Detected									
H8	A6	None Detected									
H8	D8	None Detected									

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



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Phone: (703) 489-2674
Fax: N/A
Received Date: 12/04/2024 09:30 AM
Analysis Date: 12/10/2024
Report Date: 12/10/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM07-120124-AB	Sample Description:	DL698121
EMSL Sample Number:	042424722-0005	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7263.6
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.00	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 042424722

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: 042424722-0005			Customer Sample: MFL-AM07-120124-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	C7	None Detected									
I1	E4	None Detected									
I1	H4	None Detected									
I2	I8	None Detected									
I2	G4	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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Received Date: 12/04/2024 09:30 AM
Analysis Date: 12/10/2024
Report Date: 12/10/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-FB01-120124-AB	Sample Description:	DL698006
EMSL Sample Number:	042424722-0006	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	0.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	1		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc):	N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.00			
Total Amphibole	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures	-	0	0	< 23.00			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.00			
Total Amphibole (PCMe)	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	-	0	0	< 23.00			

Comment

Approved Signatory

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EMSL Order ID: 042424722
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: 042424722-0006			Customer Sample: MFL-FB01-120124-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	J6	None Detected									
I5	H5	None Detected									
I5	F8	None Detected									
I5	D5	None Detected									
I5	B9	None Detected									
I6	J9	None Detected									
I6	H3	None Detected									
I6	F3	None Detected									
I6	D7	None Detected									
I6	B9	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: 1207085
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Phone: (703) 489-2674
Fax: N/A
Received Date: 12/04/2024 09:30 AM
Analysis Date: 12/10/2024
Report Date: 12/10/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	Lab Blank	Sample Description: Lab Blank
EMSL Sample Number:	042424722-0007	Sample Matrix: Air
Magnification used for fiber counting:	20,000	Volume (L): 0.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²): 385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²): 0.0130
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed: 10
Minimum Level of analysis (chrysotile):	CD	Analyst: P. Harrison
Minimum Level of analysis (amphibole):	ADX	
Estimated Particulate Loading on Filter %:	1	
Target Analytical Sensitivity (Structures/cc):	0.001	
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc): N/A

TOTAL STRUCTURES (All Sizes)							
	Minimum ID Level	Structures Detected		Density (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.00			
Total Amphibole	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures	-	0	0	< 23.00			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.00			
Total Amphibole (PCMe)	ADX	0	0	< 23.00			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.00			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	-	0	0	< 23.00			

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.



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

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

EMSL Order ID: 042424722

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: 042424722-0007			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					
F1	J8	None Detected									
F1	H5	None Detected									
F1	F4	None Detected									
F1	D6	None Detected									
F1	B1	None Detected									
F2	J7	None Detected									
F2	H3	None Detected									
F2	F2	None Detected									
F2	D5	None Detected									
F2	B5	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

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

#042424722

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

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

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:	US	Country:	
Phone:	703-489-2674	Phone:	
Email(s) for Report:	Chelsea.sabor@tetratech.com	Email(s) for Invoice:	

Project Information			
Project Name/No:	Maui Fires Lahaina	Purchase Order:	1207085
EMSL LIMS Project ID:		US State where samples collected:	HI
(If applicable, EMSL will provide)		State of Connecticut (CT) must select project location:	<input type="checkbox"/> Commercial (Taxable) <input type="checkbox"/> Residential (Non-Taxable)
Sampled By Name:	Nicholas Keele	Sampled By Signature:	<i>Nick Keele</i>
		No. of Samples in Shipment:	6

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

<p>PCM Air</p> <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> NIOSH 7400 w/ 8hr. TWA <p>PLM - Bulk (reporting limit)</p> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> POINT COUNT <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1,000 (<0.1%) POINT COUNT w/ GRAVIMETRIC <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1,000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NYS 198.1 (Friable - NY) <input type="checkbox"/> NYS 198.6 NOB (Non-Friable - NY) <input type="checkbox"/> NYS 198.8 (Vermiculite SM-V)	<p>TEM - Air</p> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input checked="" type="checkbox"/> ISO 10312* <p>TEM - Bulk</p> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (Non-Friable-NY) <input type="checkbox"/> TEM EPA 600/R-93/116 w Milling Prep (0.1%) <p>Other Test (please specify)</p>	<p>TEM - Settled Dust</p> <input type="checkbox"/> Microvac - ASTM D5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Qualitative via Filtration Prep <input type="checkbox"/> Qualitative via Drop Mount Prep <p>Soil - Rock - Vermiculite (reporting limit)*</p> <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> 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-FB01-113024-AB	DL698503	0	11/30/24 1200
MFL-AM05-120124-AB	DL698467	7129.069	12/01/24 1058
MFL-AM02-120124-AB	DL698169	7389.398	12/01/24 1111
MFL-AM03-120124-AB	DL698005	7361.354	12/01/24 1252
MFL-AM07-120124-AB	DL698121	7263.616	12/01/24 1311
MFL-FB01-120124-AB	DL698006	0	12/01/24 1200

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

All samples received acceptable for analysis

Method of Shipment:	Fedex	Sample Condition Upon Receipt:	
Relinquished by:	<i>Nick Keele</i>	Date/Time:	12/02/24 1100
Relinquished by:		Received by:	<i>[Signature]</i> FX
		Date/Time:	12/4/24 932

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.

65P

Stage 1 Data Verification Checklist – Asbestos
HDOH CAB – Ambient Community Air Sampling – Lahaina
Task Order No. 23141

Reviewed by:

Kierra Johnson 12/10/2024 and Shanna Vasser 12/11/2024

Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ

Collection date(s): 11/30/2024 – 12/01/2024

Report No: 42424722

- √ 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.
- 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.



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<http://www.EMSL.com> / cinnaaslab@EMSL.com

EMSL Order: 042424953
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/09/2024 09:25 AM
Analysis Date: 12/10/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM05-120224-AB	Sample Description:	DI698531
EMSL Sample Number:	042424953-0001	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7150.7
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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: 042424953
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: 042424953-0001			Customer Sample: MFL-AM05-120224-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	B4	None Detected									
A5	D9	None Detected									
A5	H8	None Detected									
A6	B4	None Detected									
A6	F3	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: 042424953
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/09/2024 09:25 AM
Analysis Date: 12/10/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM02-120224-AB	Sample Description:	DL698474
EMSL Sample Number:	042424953-0002	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	6993.6
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
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 (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

Comment

Approved Signatory

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EMSL Order ID: 042424953
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: 042424953-0002			Customer Sample: MFL-AM02-120224-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	J5	None Detected									
B1	G7	None Detected									
B1	B5	None Detected									
B2	I4	None Detected									
B2	B1	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: 1207085
Project ID: N/A

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

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/09/2024 09:25 AM
Analysis Date: 12/10/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM03-120224-AB **Sample Description:** DL698519

EMSL Sample Number: 042424953-0003 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7239.6
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 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): 0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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

EMSL Order ID: 042424953

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:		042424953-0003		Customer Sample:		MFL-AM03-120224-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	C8	None Detected									
B5	G7	None Detected									
B5	J3	None Detected									
B6	C5	None Detected									
B6	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: 042424953
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/09/2024 09:25 AM
Analysis Date: 12/12/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM07-120224-AB	Sample Description:	DL698184
EMSL Sample Number:	042424953-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7301.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	10		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: 042424953
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: 042424953-0004		Customer Sample: MFL-AM07-120224-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	E8	None Detected									
C1	G10	None Detected									
C1	I7	None Detected									
C2	C7	None Detected									
C2	G8	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: 12/12/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-FB01-120224-AB **Sample Description:** DL698013

EMSL Sample Number: 042424953-0005 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): 0.0129
 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 (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 23.18			
Total Amphibole	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures	-	0	0	< 23.18			

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

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EMSL Order ID: 042424953
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: 042424953-0005		Customer Sample: MFL-FB01-120224-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	A6	None Detected									
C5	C3	None Detected									
C5	E2	None Detected									
C5	G4	None Detected									
C5	I6	None Detected									
C7	J5	None Detected									
C7	H1	None Detected									
C7	F8	None Detected									
C7	D9	None Detected									
C7	B6	None Detected									

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



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Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM05-120324-AB	Sample Description:	DL698255
EMSL Sample Number:	042424953-0006	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7234.9
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: **042424953**
 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: 042424953-0006			Customer Sample: MFL-AM05-120324-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	A7	None Detected									
D1	D9	None Detected									
D1	H6	None Detected									
D2	I4	None Detected									
D2	B2	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: 12/12/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM02-120324-AB **Sample Description:** DL698127

EMSL Sample Number: 042424953-0007 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 7207.5
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 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): 0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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: 042424953-0007			Customer Sample: MFL-AM02-120324-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	J1	None Detected									
D5	G5	None Detected									
D5	E3	None Detected									
D6	H1	None Detected									
D6	C6	None Detected									

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



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Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM03-120324-AB	Sample Description:	DL698008
EMSL Sample Number:	042424953-0008	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7340.2
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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EMSL Order ID: 042424953
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: 042424953-0008		Customer Sample: MFL-AM03-120324-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	I6	None Detected									
E1	G8	None Detected									
E1	D9	None Detected									
E2	C2	None Detected									
E2	F4	None Detected									

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



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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM07-120324-AB	Sample Description:	DL698498
EMSL Sample Number:	042424953-0009	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7101.7
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	8		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

Approved Signatory

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EMSL Order ID: 042424953

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: 042424953-0009			Customer Sample: MFL-AM07-120324-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	B6	None Detected									
E5	E7	None Detected									
E5	G3	None Detected									
E6	H1	None Detected									
E6	D3	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: 12/12/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-FB01-120324-AB	Sample Description:	DL697944
EMSL Sample Number:	042424953-0010	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	0.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	1		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc):	N/A

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

Approved Signatory

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EMSL Order ID: 042424953
 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:		042424953-0010		Customer Sample:		MFL-FB01-120324-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	J2	None Detected									
F1	H4	None Detected									
F1	F2	None Detected									
F1	D5	None Detected									
F1	B3	None Detected									
F4	J5	None Detected									
F4	H10	None Detected									
F4	F9	None Detected									
F4	D9	None Detected									
F4	B10	None Detected									

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



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Report Date: 12/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	MFL-AM05-120424-AB	Sample Description:	DL698064
EMSL Sample Number:	042424953-0011	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7190.2
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	2		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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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: 042424953-0011			Customer Sample: MFL-AM05-120424-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	J7	None Detected									
F5	G10	None Detected									
F5	C9	None Detected									
F6	C2	None Detected									
F6	F4	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: 12/12/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number: MFL-AM02-120424-AB **Sample Description:** DL698476

EMSL Sample Number: 042424953-0012 Sample Matrix: Air
 Magnification used for fiber counting: 20,000 Volume (L): 6756.8
 Aspect ratio for fiber definition: 3:1 Area of original collection filter (mm²): 385
 Minimum Length (µm): ≥ 0.5 Grid Opening Area (mm²): 0.0129
 Chi² Test for Random Distribution on Filter: N/A (N/A) Grid Openings Analyzed: 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 (S/mm ²)	Concentration (S/cc)	95 % Confidence Interval (S/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0027	Not Applicable - 0.0027	

Comment
 Numerous gypsum fibers present.

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:		042424953-0012		Customer Sample:		MFL-AM02-120424-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	H10	None Detected									
G1	E7	None Detected									
G1	C8	None Detected									
G2	J8	None Detected									
G2	E10	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM03-120424-AB	Sample Description:	DL697959
EMSL Sample Number:	042424953-0013	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7350.5
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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Project ID: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Analytical Bench Sheet Data

EMSL Sample ID: 042424953-0013			Customer Sample: MFL-AM03-120424-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	B3	None Detected									
G5	E4	None Detected									
G5	H1	None Detected									
G6	A4	None Detected									
G6	G4	None Detected									

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



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Phone: (703) 489-2674
Fax: N/A
Received Date: 12/09/2024 09:25 AM
Analysis Date: 12/12/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-AM07-120424-AB	Sample Description:	DL698446
EMSL Sample Number:	042424953-0014	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	7270.2
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	10		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	0.0008	Limit of Detection (Structures/cc):	0.0024

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Amphibole (PCMe)	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	
Total All Structures (PCMe)	-	0	0	< 46.36	< 0.0024	Not Applicable - 0.0024	

Comment

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.



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: 042424953
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: 042424953-0014		Customer Sample: MFL-AM07-120424-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	B3	None Detected									
H1	F7	None Detected									
H1	I9	None Detected									
H2	I2	None Detected									
H2	D2	None Detected									

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



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

EMSL Order: 042424953
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/09/2024 09:25 AM
Analysis Date: 12/12/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

**ISO 10312 Determination of Asbestos Fibers
 Direct Transfer Transmission Electron Microscopy**

Customer Sample Number:	MFL-FB01-120424-AB	Sample Description:	DL698165
EMSL Sample Number:	042424953-0015	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L):	0.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm ²):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²):	0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	1		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc):	N/A

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

Approved Signatory

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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: 042424953

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:		042424953-0015		Customer Sample:		MFL-FB01-120424-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	J2	None Detected									
H6	H5	None Detected									
H6	F4	None Detected									
H6	D5	None Detected									
H6	B4	None Detected									
H7	A10	None Detected									
H7	C9	None Detected									
H7	E7	None Detected									
H7	G8	None Detected									
H7	I9	None Detected									

Abbreviations used:

XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled

XCGBLD - Crosses Countable Grid Bar Length Doubled



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EMSL Order: 042424953
Customer ID: TTDC42
Customer PO: 1207085
Project ID: N/A

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

Phone: (703) 489-2674
Fax: N/A
Received Date: 12/09/2024 09:25 AM
Analysis Date: 12/10/2024
Report Date: 12/13/2024

Project: Maui Fires Lahaina

ISO 10312 Determination of Asbestos Fibers Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	Lab Blank	Sample Description: Lab Blank
EMSL Sample Number:	042424953-0016	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 (mm ²): 385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm ²): 0.0129
Chi ² Test for Random Distribution on Filter:	N/A (N/A)	Grid Openings Analyzed: 10
Minimum Level of analysis (chrysotile):	CD	Analyst: P. Harrison
Minimum Level of analysis (amphibole):	ADX	
Estimated Particulate Loading on Filter %:	1	
Target Analytical Sensitivity (Structures/cc):	0.001	
Analytical Sensitivity (Structures/cc):	N/A	Limit of Detection (Structures/cc): N/A

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

PCM EQUIVALENT (PCMe) Fibers (>5 microns in length with >3:1 Aspect Ratio)							
	Minimum ID Level	Fibers Detected		Density (F/mm ²)	Concentration (F/cc)	95 % Confidence Interval (F/cc)	
		Primary	Total			Lower	Upper
Total Chrysotile (PCMe)	CD	0	0	< 23.18			
Total Amphibole (PCMe)	ADX	0	0	< 23.18			
Actinolite	ADX	0	0	< 23.18			
Amosite	ADX	0	0	< 23.18			
Anthophyllite	ADX	0	0	< 23.18			
Crocidolite	ADX	0	0	< 23.18			
Tremolite	ADX	0	0	< 23.18			
Total Asbestos Structures (PCMe)	CD/ADX	0	0	< 23.18			
Other Minerals	-	0	0	< 23.18			
Total All Structures (PCMe)	-	0	0	< 23.18			

Comment

Approved Signatory

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200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

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

EMSL Order ID: 042424953

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: 042424953-0016		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					
A2	J6	None Detected									
A2	I10	None Detected									
A2	G6	None Detected									
A2	E8	None Detected									
A2	C9	None Detected									
A3	A1	None Detected									
A3	C3	None Detected									
A3	E2	None Detected									
A3	G9	None Detected									
A3	I5	None Detected									

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

Asbestos Chain of Custody (Air, Bulk, Soil)

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



EMSL Order Number / Lab Use Only

#042424953

PHONE: (800) 229-3675
EMAIL: ChrisAeblab@EMSL.com

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

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:	US	Country:	
Phone:	703-489-2674	Phone:	
Email(s) for Report:	Chelsea.Saber@tetra.tech.com	Email(s) for Invoice:	

RECEIVED
COC-9 AM 9:34
EMSL
CINNAMINSON, NJ

Project Information

Project Name/No: Mawi Fires Lahaina Purchase Order: 1207085

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: Nicholas Keeffe Sampled By Signature: Nicholas Keeffe No. of Samples in Shipment: _____

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-AM05-120224-AB	DL698474		
MFL-AM05-120224-AB	DL698531	7150.713	12/02/24 1054
MFL-AM02-120224-AB	DL698474	6993.612	12/02/24 1114
MFL-AM03-120224-AB	DL698519	7239.611	12/02/24 1254
MFL-AM07-120224-AB	DL698184	7301.840	12/02/24 1329
MFL-FB01-120224-AB	DL698013	0	12/02/24 1200
MFL-AM05-120324-AB	DL698255	7234.860	12/03/24 1055
MFL-AM02-120324-AB	DL698127	7207.486	12/03/24 1107

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)
All samples received acceptable for analysis.

Method of Shipment: Fedex Sample Condition Upon Receipt: _____

Relinquished by: Nicholas Keeffe Date/Time: 12/05/24 1100 Received by: [Signature] - Fedex Date/Time: 12/9/24 9:25A

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. 23141

Reviewed by:

Kierra Johnson 12/19/2024 and Shanna Vasser 12/19/2024

Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ

Collection date(s): 12/02/2024 – 12/04/2024

Report No: 42424953

- √ 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.
- 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.



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

December 17, 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 12/09/24 10:59.

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

The information contained in this report and its attachment(s) are intended only for the use of the individual to whom it is addressed and may contain information that is privileged, confidential, or exempt from disclosure. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this report is strictly prohibited. If you have received this report in error, please notify julie.swift@erg.com and delete the report without retaining any copies.



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: 12/17/24 13:49

SUBMITTED: 12/09/24

AQS SITE CODE:

SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

<u>SampleName</u>	<u>LabNumber</u>	<u>Matrix</u>	<u>Sampled</u>	<u>Received</u>
MFL-FB01-113024-HM	4120938-01	Air	11/30/24 00:00	12/09/24 10:59
MFL-AM05-120124-HM	4120938-02	Air	12/01/24 23:59	12/09/24 10:59
MFL-AM02-120124-HM	4120938-03	Air	12/01/24 23:59	12/09/24 10:59
MFL-AM03-120124-HM	4120938-04	Air	12/01/24 23:59	12/09/24 10:59
MFL-AM07-120124-HM	4120938-05	Air	12/01/24 23:59	12/09/24 10:59
MFL-AM05-120224-HM	4120938-06	Air	12/02/24 23:59	12/09/24 10:59
MFL-AM02-120224-HM	4120938-07	Air	12/02/24 23:59	12/09/24 10:59
MFL-AM03-120224-HM	4120938-08	Air	12/02/24 23:59	12/09/24 10:59
MFL-AM07-120224-HM	4120938-09	Air	12/02/24 23:59	12/09/24 10:59
MFL-FB01-120224-HM	4120938-10	Air	12/02/24 00:00	12/09/24 10:59
MFL-AM05-120324-HM	4120938-11	Air	12/03/24 23:59	12/09/24 10:59
MFL-AM02-120324-HM	4120938-12	Air	12/03/24 23:59	12/09/24 10:59
MFL-AM03-120324-HM	4120938-13	Air	12/03/24 23:59	12/09/24 10:59
MFL-AM07-120324-HM	4120938-14	Air	12/03/24 23:59	12/09/24 10:59
MFL-AM05-120424-HM	4120938-15	Air	12/04/24 23:59	12/09/24 10:59
MFL-AM02-120424-HM	4120938-16	Air	12/04/24 23:59	12/09/24 10:59
MFL-AM03-120424-HM	4120938-17	Air	12/04/24 23:59	12/09/24 10:59
MFL-AM07-120424-HM	4120938-18	Air	12/04/24 23:59	12/09/24 10:59
MFL-FB01-120424-HM	4120938-19	Air	12/04/24 00:00	12/09/24 10:59



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: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-FB01-113024-HM **Lab ID:** 4120938-01 **Sampled:** 11/30/24 00:00
Matrix: Air **Sample Volume:** 1884.542 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 20:36
Comments: Q9552328 - Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.00969	SL, U	0.0333	
Arsenic	7440-38-2	0.00513	U	0.00809	
Barium	7440-39-3	0.781	QB-01, U	0.924	
Beryllium	7440-41-7	0.00112	U	0.00276	
Cadmium	7440-43-9	0.00163	U	0.0640	
Chromium	7440-47-3	1.34	U	1.91	
Cobalt	7440-48-4	0.0240	U	0.0376	
Copper	7440-50-8	0.422	U	2.27	
Lead	7439-92-1	0.0386	U	0.185	
Manganese	7439-96-5	0.341	U	1.63	
Molybdenum	7439-98-7	0.220	U	0.310	
Nickel	7440-02-0	0.300	U	0.563	
Selenium	7782-49-2	7.42E-4	U	0.00774	
Thallium	7440-28-0	2.22E-4	U	5.09E-4	
Vanadium	7440-62-2	0.0377	U	0.0457	
Zinc	7440-66-6	4.27	U	66.3	



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: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-120124-HM **Lab ID:** 4120938-02 **Sampled:** 12/01/24 23:59
Matrix: Air **Sample Volume:** 1884.542 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 18:07
Comments: Q9552332 - MS/MSD - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0616	SL	0.0333
Arsenic	7440-38-2	0.198		0.00809
Barium	7440-39-3	3.41	QB-01	0.924
Beryllium	7440-41-7	0.00760		0.00276
Cadmium	7440-43-9	0.0160	U	0.0640
Chromium	7440-47-3	2.30		1.91
Cobalt	7440-48-4	0.262		0.0376
Copper	7440-50-8	42.5		2.27
Lead	7439-92-1	0.514		0.185
Manganese	7439-96-5	7.88		1.63
Molybdenum	7439-98-7	2.77		0.310
Nickel	7440-02-0	0.957		0.563
Selenium	7782-49-2	0.151		0.00774
Thallium	7440-28-0	8.53E-4		5.09E-4
Vanadium	7440-62-2	0.981		0.0457
Zinc	7440-66-6	11.5	U	66.3



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-120124-HM **Lab ID:** 4120938-03 **Sampled:** 12/01/24 23:59
Matrix: Air **Sample Volume:** 2097.722 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 20:50
Comments: Q9552330 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.204	SL	0.0299
Arsenic	7440-38-2	0.198		0.00727
Barium	7440-39-3	5.58	QB-01	0.830
Beryllium	7440-41-7	0.0113		0.00248
Cadmium	7440-43-9	0.0143	U	0.0575
Chromium	7440-47-3	2.79		1.71
Cobalt	7440-48-4	0.355		0.0338
Copper	7440-50-8	36.1		2.04
Lead	7439-92-1	0.631		0.166
Manganese	7439-96-5	10.9		1.47
Molybdenum	7439-98-7	1.92		0.278
Nickel	7440-02-0	1.17		0.506
Selenium	7782-49-2	0.169		0.00695
Thallium	7440-28-0	9.13E-4		4.57E-4
Vanadium	7440-62-2	1.33		0.0410
Zinc	7440-66-6	15.8	U	59.6



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-120124-HM **Lab ID:** 4120938-04 **Sampled:** 12/01/24 23:59
Matrix: Air **Sample Volume:** 1943.407 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 21:04
Comments: Q9552329 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0210	SL, U	0.0323
Arsenic	7440-38-2	0.0849		0.00784
Barium	7440-39-3	1.80	QB-01	0.896
Beryllium	7440-41-7	0.00843		0.00268
Cadmium	7440-43-9	0.00602	U	0.0620
Chromium	7440-47-3	1.91		1.85
Cobalt	7440-48-4	0.176		0.0365
Copper	7440-50-8	48.1		2.20
Lead	7439-92-1	0.325		0.179
Manganese	7439-96-5	4.64		1.58
Molybdenum	7439-98-7	2.66		0.301
Nickel	7440-02-0	0.742		0.546
Selenium	7782-49-2	0.143		0.00750
Thallium	7440-28-0	5.93E-4		4.93E-4
Vanadium	7440-62-2	0.676		0.0443
Zinc	7440-66-6	7.63	U	64.3



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-120124-HM **Lab ID:** 4120938-05 **Sampled:** 12/01/24 23:59
Matrix: Air **Sample Volume:** 1884.985 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 21:18
Comments: Q9552327 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0724	SL	0.0333	
Arsenic	7440-38-2	1.21	LJ, QX	0.00809	
Barium	7440-39-3	19.3	QB-01	0.924	
Beryllium	7440-41-7	0.129		0.00276	
Cadmium	7440-43-9	0.0412	LJ, QX, U	0.0640	
Chromium	7440-47-3	12.0		1.91	
Cobalt	7440-48-4	3.76		0.0376	
Copper	7440-50-8	21.2		2.27	
Lead	7439-92-1	5.18		0.185	
Manganese	7439-96-5	117		1.63	
Molybdenum	7439-98-7	0.904	LJ, QX	0.310	
Nickel	7440-02-0	7.07		0.563	
Selenium	7782-49-2	0.633	LJ, QX	0.00773	
Thallium	7440-28-0	0.00463		5.08E-4	
Vanadium	7440-62-2	8.97		0.0457	
Zinc	7440-66-6	24.4	U	66.3	



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-120224-HM **Lab ID:** 4120938-06 **Sampled:** 12/02/24 23:59
Matrix: Air **Sample Volume:** 1901.867 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 21:36
Comments: Q9552325 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0541	SL	0.0330	
Arsenic	7440-38-2	0.125		0.00802	
Barium	7440-39-3	3.27	QB-01	0.915	
Beryllium	7440-41-7	0.00641		0.00274	
Cadmium	7440-43-9	0.0152	U	0.0634	
Chromium	7440-47-3	2.04		1.89	
Cobalt	7440-48-4	0.211		0.0373	
Copper	7440-50-8	50.3		2.25	
Lead	7439-92-1	0.472		0.183	
Manganese	7439-96-5	6.10		1.62	
Molybdenum	7439-98-7	3.45		0.307	
Nickel	7440-02-0	0.776		0.558	
Selenium	7782-49-2	0.140		0.00767	
Thallium	7440-28-0	5.85E-4		5.04E-4	
Vanadium	7440-62-2	0.744		0.0453	
Zinc	7440-66-6	8.83	U	65.7	



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-120224-HM **Lab ID:** 4120938-07 **Sampled:** 12/02/24 23:59
Matrix: Air **Sample Volume:** 2093.872 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 21:50
Comments: Q9552323 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0827	SL	0.0300
Arsenic	7440-38-2	0.174		0.00728
Barium	7440-39-3	3.90	QB-01	0.831
Beryllium	7440-41-7	0.00720		0.00249
Cadmium	7440-43-9	0.0145	U	0.0576
Chromium	7440-47-3	1.77		1.72
Cobalt	7440-48-4	0.213		0.0339
Copper	7440-50-8	46.2		2.04
Lead	7439-92-1	0.613		0.166
Manganese	7439-96-5	6.71		1.47
Molybdenum	7439-98-7	2.24		0.279
Nickel	7440-02-0	0.710		0.507
Selenium	7782-49-2	0.148		0.00696
Thallium	7440-28-0	5.77E-4		4.58E-4
Vanadium	7440-62-2	0.790		0.0411
Zinc	7440-66-6	9.99	U	59.7



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-120224-HM **Lab ID:** 4120938-08 **Sampled:** 12/02/24 23:59
Matrix: Air **Sample Volume:** 710.653 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 22:04
Comments: Q9552322 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0586	SL, U	0.0884	
Arsenic	7440-38-2	0.269		0.0215	
Barium	7440-39-3	5.29	QB-01	2.45	
Beryllium	7440-41-7	0.0281		0.00733	
Cadmium	7440-43-9	0.0129	U	0.170	
Chromium	7440-47-3	7.37		5.06	
Cobalt	7440-48-4	0.611		0.0998	
Copper	7440-50-8	45.3		6.02	
Lead	7439-92-1	0.433	U	0.490	
Manganese	7439-96-5	12.7		4.33	
Molybdenum	7439-98-7	3.28		0.822	
Nickel	7440-02-0	2.78		1.49	
Selenium	7782-49-2	0.205		0.0205	
Thallium	7440-28-0	9.07E-4	U	0.00135	
Vanadium	7440-62-2	1.38		0.121	
Zinc	7440-66-6	16.3	U	176	



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-120224-HM **Lab ID:** 4120938-09 **Sampled:** 12/02/24 23:59
Matrix: Air **Sample Volume:** 1779.727 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 22:18
Comments: Q9552321 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0600	SL	0.0353
Arsenic	7440-38-2	0.636		0.00857
Barium	7440-39-3	18.4	QB-01	0.978
Beryllium	7440-41-7	0.113		0.00293
Cadmium	7440-43-9	0.0344	U	0.0677
Chromium	7440-47-3	10.1		2.02
Cobalt	7440-48-4	3.08		0.0399
Copper	7440-50-8	19.4		2.40
Lead	7439-92-1	3.53		0.196
Manganese	7439-96-5	93.5		1.73
Molybdenum	7439-98-7	1.03		0.328
Nickel	7440-02-0	5.85		0.596
Selenium	7782-49-2	0.555		0.00819
Thallium	7440-28-0	0.00405		5.38E-4
Vanadium	7440-62-2	7.04		0.0484
Zinc	7440-66-6	20.1	U	70.2



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-FB01-120224-HM **Lab ID:** 4120938-10 **Sampled:** 12/02/24 00:00
Matrix: Air **Sample Volume:** 1901.867 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 22:33
Comments: Q9552318 - Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0108	SL, U	0.0330
Arsenic	7440-38-2	0.00805	FB-01	0.00802
Barium	7440-39-3	1.39	FB-01, QB-01	0.915
Beryllium	7440-41-7	0.00121	U	0.00274
Cadmium	7440-43-9	0.00785	U	0.0634
Chromium	7440-47-3	1.50	U	1.89
Cobalt	7440-48-4	0.0270	U	0.0373
Copper	7440-50-8	0.597	U	2.25
Lead	7439-92-1	0.0851	U	0.183
Manganese	7439-96-5	0.405	U	1.62
Molybdenum	7439-98-7	0.201	U	0.307
Nickel	7440-02-0	0.335	U	0.558
Selenium	7782-49-2	0.00526	U	0.00767
Thallium	7440-28-0	9.36E-5	U	5.04E-4
Vanadium	7440-62-2	0.0416	U	0.0453
Zinc	7440-66-6	3.87	U	65.7



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-120324-HM **Lab ID:** 4120938-11 **Sampled:** 12/03/24 23:59
Matrix: Air **Sample Volume:** 1919.176 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 22:47
Comments: Q9552319 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0990	SL	0.0327
Arsenic	7440-38-2	0.343		0.00794
Barium	7440-39-3	6.09	QB-01	0.907
Beryllium	7440-41-7	0.0166		0.00271
Cadmium	7440-43-9	0.0167	U	0.0628
Chromium	7440-47-3	3.64		1.87
Cobalt	7440-48-4	0.671		0.0370
Copper	7440-50-8	45.1		2.23
Lead	7439-92-1	1.05		0.181
Manganese	7439-96-5	17.1		1.60
Molybdenum	7439-98-7	2.84		0.304
Nickel	7440-02-0	1.94		0.553
Selenium	7782-49-2	0.178		0.00760
Thallium	7440-28-0	9.09E-4		4.99E-4
Vanadium	7440-62-2	2.00		0.0448
Zinc	7440-66-6	15.4	U	65.1



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-120324-HM **Lab ID:** 4120938-12 **Sampled:** 12/03/24 23:59
Matrix: Air **Sample Volume:** 2095.082 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/10/24 23:52
Comments: Q9552317 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.203	SL	0.0300	
Arsenic	7440-38-2	0.364		0.00728	
Barium	7440-39-3	11.4	QB-01	0.831	
Beryllium	7440-41-7	0.0252		0.00249	
Cadmium	7440-43-9	0.0164	U	0.0575	
Chromium	7440-47-3	4.27		1.72	
Cobalt	7440-48-4	0.920		0.0339	
Copper	7440-50-8	51.3		2.04	
Lead	7439-92-1	1.05		0.166	
Manganese	7439-96-5	26.6		1.47	
Molybdenum	7439-98-7	2.61		0.279	
Nickel	7440-02-0	2.37		0.506	
Selenium	7782-49-2	0.217		0.00696	
Thallium	7440-28-0	0.00129		4.57E-4	
Vanadium	7440-62-2	2.86		0.0411	
Zinc	7440-66-6	21.7	U	59.6	



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-120324-HM **Lab ID:** 4120938-13 **Sampled:** 12/03/24 23:59
Matrix: Air **Sample Volume:** 1962.07 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/11/24 00:06
Comments: Q9552313 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0482	SL	0.0320	
Arsenic	7440-38-2	0.165		0.00777	
Barium	7440-39-3	3.76	QB-01	0.887	
Beryllium	7440-41-7	0.0379		0.00265	
Cadmium	7440-43-9	0.00929	U	0.0614	
Chromium	7440-47-3	3.34		1.83	
Cobalt	7440-48-4	0.640		0.0362	
Copper	7440-50-8	38.4		2.18	
Lead	7439-92-1	0.296		0.177	
Manganese	7439-96-5	13.7		1.57	
Molybdenum	7439-98-7	2.49		0.298	
Nickel	7440-02-0	1.65		0.541	
Selenium	7782-49-2	0.181		0.00743	
Thallium	7440-28-0	7.51E-4		4.88E-4	
Vanadium	7440-62-2	1.60		0.0439	
Zinc	7440-66-6	8.39	U	63.7	



CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-120324-HM **Lab ID:** 4120938-14 **Sampled:** 12/03/24 23:59
Matrix: Air **Sample Volume:** 1521.631 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/11/24 00:20
Comments: Q9552312 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0950	SL	0.0413
Arsenic	7440-38-2	0.839		0.0100
Barium	7440-39-3	14.4	QB-01	1.14
Beryllium	7440-41-7	0.0959	R-F	0.00342
Cadmium	7440-43-9	0.0468	U	0.0792
Chromium	7440-47-3	10.0		2.36
Cobalt	7440-48-4	2.97		0.0466
Copper	7440-50-8	21.6		2.81
Lead	7439-92-1	2.92		0.229
Manganese	7439-96-5	85.2		2.02
Molybdenum	7439-98-7	1.21		0.384
Nickel	7440-02-0	5.80		0.697
Selenium	7782-49-2	0.511		0.00958
Thallium	7440-28-0	0.00365		6.30E-4
Vanadium	7440-62-2	6.99		0.0566
Zinc	7440-66-6	20.0	U	82.1



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 REPORTED: 12/17/24 13:49
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 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM05-120424-HM **Lab ID:** 4120938-15 **Sampled:** 12/04/24 23:59
Matrix: Air **Sample Volume:** 1941.338 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/11/24 00:53
Comments: Q9552311 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.119	SL	0.0323	
Arsenic	7440-38-2	0.274		0.00785	
Barium	7440-39-3	6.27	QB-01	0.897	
Beryllium	7440-41-7	0.0178		0.00268	
Cadmium	7440-43-9	0.0199	U	0.0621	
Chromium	7440-47-3	3.66		1.85	
Cobalt	7440-48-4	0.710		0.0365	
Copper	7440-50-8	33.3		2.20	
Lead	7439-92-1	0.583		0.179	
Manganese	7439-96-5	18.8		1.58	
Molybdenum	7439-98-7	2.23		0.301	
Nickel	7440-02-0	2.15		0.546	
Selenium	7782-49-2	0.177		0.00751	
Thallium	7440-28-0	9.84E-4		4.94E-4	
Vanadium	7440-62-2	2.99		0.0443	
Zinc	7440-66-6	14.1	U	64.4	



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM02-120424-HM **Lab ID:** 4120938-16 **Sampled:** 12/04/24 23:59
Matrix: Air **Sample Volume:** 2123.534 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/11/24 01:07
Comments: Q9552308 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.211	SL	0.0296
Arsenic	7440-38-2	0.361		0.00718
Barium	7440-39-3	9.92	QB-01	0.820
Beryllium	7440-41-7	0.0289		0.00245
Cadmium	7440-43-9	0.0140	U	0.0568
Chromium	7440-47-3	5.12		1.69
Cobalt	7440-48-4	1.16		0.0334
Copper	7440-50-8	62.7		2.02
Lead	7439-92-1	0.890		0.164
Manganese	7439-96-5	28.9		1.45
Molybdenum	7439-98-7	3.27		0.275
Nickel	7440-02-0	3.50		0.500
Selenium	7782-49-2	0.221		0.00686
Thallium	7440-28-0	0.00133		4.51E-4
Vanadium	7440-62-2	4.32		0.0405
Zinc	7440-66-6	19.0	U	58.8



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 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM03-120424-HM **Lab ID:** 4120938-17 **Sampled:** 12/04/24 23:59
Matrix: Air **Sample Volume:** 1956.439 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/11/24 01:21
Comments: Q9552307 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.0551	SL	0.0321
Arsenic	7440-38-2	0.194		0.00779
Barium	7440-39-3	3.52	QB-01	0.890
Beryllium	7440-41-7	0.0242		0.00266
Cadmium	7440-43-9	0.00999	U	0.0616
Chromium	7440-47-3	3.40		1.84
Cobalt	7440-48-4	0.630		0.0363
Copper	7440-50-8	46.9		2.19
Lead	7439-92-1	0.309		0.178
Manganese	7439-96-5	14.8		1.57
Molybdenum	7439-98-7	2.76		0.299
Nickel	7440-02-0	1.87		0.542
Selenium	7782-49-2	0.166		0.00745
Thallium	7440-28-0	9.01E-4		4.90E-4
Vanadium	7440-62-2	2.07		0.0440
Zinc	7440-66-6	9.10	U	63.9



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-AM07-120424-HM **Lab ID:** 4120938-18 **Sampled:** 12/04/24 23:59
Matrix: Air **Sample Volume:** 1612.564 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/11/24 01:36
Comments: Q9552306 - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>
Antimony	7440-36-0	0.116	SL	0.0389
Arsenic	7440-38-2	1.37		0.00945
Barium	7440-39-3	12.8	QB-01	1.08
Beryllium	7440-41-7	0.0650		0.00323
Cadmium	7440-43-9	0.0343	U	0.0748
Chromium	7440-47-3	8.32		2.23
Cobalt	7440-48-4	2.17		0.0440
Copper	7440-50-8	20.3		2.65
Lead	7439-92-1	1.18		0.216
Manganese	7439-96-5	76.7		1.91
Molybdenum	7439-98-7	1.29		0.362
Nickel	7440-02-0	4.56		0.658
Selenium	7782-49-2	0.415		0.00904
Thallium	7440-28-0	0.00359		5.94E-4
Vanadium	7440-62-2	6.01		0.0534
Zinc	7440-66-6	26.3	U	77.5



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Description: MFL-FB01-120424-HM **Lab ID:** 4120938-19 **Sampled:** 12/04/24 00:00
Matrix: Air **Sample Volume:** 1941.338 m³ **Received:** 12/09/24 10:59
Filter ID: **Analysis Date:** 12/11/24 01:51
Comments: Q9552303 - Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

<u>Analyte</u>	<u>CAS Number</u>	<u>Results</u>		<u>MDL</u>	
		<u>ng/m³ Air</u>	<u>Flag</u>	<u>ng/m³ Air</u>	
Antimony	7440-36-0	0.0264	SL, U	0.0323	
Arsenic	7440-38-2	0.0128	FB-01	0.00785	
Barium	7440-39-3	1.05	FB-01, QB-01	0.897	
Beryllium	7440-41-7	0.00159	U	0.00268	
Cadmium	7440-43-9	0.00177	U	0.0621	
Chromium	7440-47-3	1.43	U	1.85	
Cobalt	7440-48-4	0.0434	FB-01	0.0365	
Copper	7440-50-8	1.54	U	2.20	
Lead	7439-92-1	0.0723	U	0.179	
Manganese	7439-96-5	0.676	U	1.58	
Molybdenum	7439-98-7	0.245	U	0.301	
Nickel	7440-02-0	0.493	U	0.546	
Selenium	7782-49-2	0.00694	U	0.00751	
Thallium	7440-28-0	7.23E-5	U	4.94E-4	
Vanadium	7440-62-2	0.0754	FB-01	0.0443	
Zinc	7440-66-6	3.64	U	64.4	



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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
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 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412026 - B4J3006

Calibration Blank (2412026-CCB1)

Prepared & Analyzed: 12/10/24

Antimony	0.480		ng/l							
Arsenic	1.58		ng/l							
Barium	0.504		ng/l							
Beryllium	-0.158		ng/l							U
Cadmium	-0.124		ng/l							U
Chromium	1.63		ng/l							
Cobalt	0.194		ng/l							
Copper	8.71		ng/l							
Lead	2.16		ng/l							
Manganese	2.02		ng/l							
Molybdenum	24.5		ng/l							
Nickel	-0.515		ng/l							U
Selenium	2.09		ng/l							
Thallium	1.17		ng/l							
Vanadium	65.8		ng/l							
Zinc	-66.6		ng/l							U

Calibration Blank (2412026-CCB2)

Prepared & Analyzed: 12/10/24

Antimony	0.535		ng/l							
Arsenic	4.65		ng/l							
Barium	-0.342		ng/l							U
Beryllium	-0.379		ng/l							U
Cadmium	0.0273		ng/l							
Chromium	2.98		ng/l							
Cobalt	0.0875		ng/l							
Copper	6.74		ng/l							
Lead	1.66		ng/l							
Manganese	2.09		ng/l							
Molybdenum	8.25		ng/l							
Nickel	2.04		ng/l							
Selenium	-4.08		ng/l							U
Thallium	1.08		ng/l							
Vanadium	54.7		ng/l							
Zinc	-77.9		ng/l							U

Calibration Blank (2412026-CCB3)

Prepared & Analyzed: 12/10/24

Antimony	0.398		ng/l							
Arsenic	0.932		ng/l							
Barium	2.07		ng/l							
Beryllium	-0.790		ng/l							U

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FILE #: 4205.00.003.001
 REPORTED: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412026 - B4J3006

Calibration Blank (2412026-CCB3) Contin

Prepared & Analyzed: 12/10/24

Cadmium	0.0462		ng/l							
Chromium	2.68		ng/l							
Cobalt	0.375		ng/l							
Copper	11.9		ng/l							
Lead	1.96		ng/l							
Manganese	4.66		ng/l							
Molybdenum	6.61		ng/l							
Nickel	3.73		ng/l							
Selenium	-1.80		ng/l							U
Thallium	0.852		ng/l							
Vanadium	31.0		ng/l							
Zinc	-54.9		ng/l							U

Calibration Blank (2412026-CCB4)

Prepared: 12/10/24 Analyzed: 12/11/24

Antimony	0.487		ng/l							
Arsenic	1.53		ng/l							
Barium	-1.25		ng/l							U
Beryllium	-1.04		ng/l							U
Cadmium	-0.0444		ng/l							U
Chromium	1.67		ng/l							
Cobalt	-0.0737		ng/l							U
Copper	-1.71		ng/l							U
Lead	0.974		ng/l							
Manganese	1.06		ng/l							
Molybdenum	6.13		ng/l							
Nickel	1.05		ng/l							
Selenium	3.73		ng/l							
Thallium	0.780		ng/l							
Vanadium	22.4		ng/l							
Zinc	-70.8		ng/l							U

Calibration Blank (2412026-CCB5)

Prepared: 12/10/24 Analyzed: 12/11/24

Antimony	0.291		ng/l							
Arsenic	2.29		ng/l							
Barium	0.312		ng/l							
Beryllium	-1.41		ng/l							U
Cadmium	-0.0415		ng/l							U
Chromium	0.902		ng/l							
Cobalt	0.135		ng/l							
Copper	2.34		ng/l							

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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
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412026 - B4J3006

Calibration Blank (2412026-CCB5) Contin

Prepared: 12/10/24 Analyzed: 12/11/24

Lead	1.78		ng/l							
Manganese	2.99		ng/l							
Molybdenum	9.21		ng/l							
Nickel	2.05		ng/l							
Selenium	-3.42		ng/l							U
Thallium	1.11		ng/l							
Vanadium	12.6		ng/l							
Zinc	-67.8		ng/l							U

Calibration Check (2412026-CCV1)

Prepared & Analyzed: 12/10/24

Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	4880		ng/l	5000.0		97.7	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	239000		ng/l	240000		99.7	90-110			
Cobalt	52600		ng/l	50000		105	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	50900		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Thallium	504		ng/l	500.00		101	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	536000		ng/l	500000		107	90-110			

Calibration Check (2412026-CCV2)

Prepared & Analyzed: 12/10/24

Antimony	20300		ng/l	20000		102	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5070		ng/l	5000.0		101	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	240000		ng/l	240000		99.8	90-110			
Cobalt	51700		ng/l	50000		103	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	506000		ng/l	500000		101	90-110			
Molybdenum	50000		ng/l	50000		100	90-110			
Nickel	120000		ng/l	120000		100	90-110			

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FILE #: 4205.00.003.001
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 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412026 - B4J3006

Calibration Check (2412026-CCV2) Contin

Prepared & Analyzed: 12/10/24

Selenium	20400		ng/l	20000		102	90-110			
Thallium	495		ng/l	500.00		99.0	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	533000		ng/l	500000		107	90-110			

Calibration Check (2412026-CCV3)

Prepared & Analyzed: 12/10/24

Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	203000		ng/l	200000		101	90-110			
Beryllium	5050		ng/l	5000.0		101	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	51900		ng/l	50000		104	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	50600		ng/l	50000		101	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	488		ng/l	500.00		97.5	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	538000		ng/l	500000		108	90-110			

Calibration Check (2412026-CCV4)

Prepared: 12/10/24 Analyzed: 12/11/24

Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	201000		ng/l	200000		100	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	20700		ng/l	20000		104	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	51700		ng/l	50000		103	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	516000		ng/l	500000		103	90-110			
Molybdenum	50500		ng/l	50000		101	90-110			
Nickel	121000		ng/l	120000		100	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	494		ng/l	500.00		98.8	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	541000		ng/l	500000		108	90-110			

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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: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412026 - B4J3006

Calibration Check (2412026-CCV5)

Prepared: 12/10/24 Analyzed: 12/11/24

Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	198000		ng/l	200000		98.9	90-110			
Beryllium	4960		ng/l	5000.0		99.2	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	119000		ng/l	120000		99.0	90-110			
Selenium	20300		ng/l	20000		101	90-110			
Thallium	490		ng/l	500.00		98.0	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	535000		ng/l	500000		107	90-110			

High Cal Check (2412026-HCV1)

Prepared & Analyzed: 12/10/24

Antimony	40300		ng/l	40000		101	95-105			
Arsenic	40300		ng/l	40000		101	95-105			
Barium	405000		ng/l	400000		101	95-105			
Beryllium	10000		ng/l	10000		100	95-105			
Cadmium	40200		ng/l	40000		101	95-105			
Chromium	480000		ng/l	480000		100	95-105			
Cobalt	98500		ng/l	100000		98.5	95-105			
Copper	3.96E6		ng/l	4.0000E6		98.9	95-105			
Lead	404000		ng/l	400000		101	95-105			
Manganese	991000		ng/l	1.0000E6		99.1	95-105			
Molybdenum	101000		ng/l	100000		101	95-105			
Nickel	237000		ng/l	240000		98.6	95-105			
Selenium	40200		ng/l	40000		100	95-105			
Thallium	1010		ng/l	1000.0		101	95-105			
Vanadium	40600		ng/l	40000		101	95-105			
Zinc	987000		ng/l	1.0000E6		98.7	95-105			

Initial Cal Blank (2412026-ICB1)

Prepared & Analyzed: 12/10/24

Antimony	0.511		ng/l							
Arsenic	1.82		ng/l							
Barium	-0.897		ng/l							U
Beryllium	-0.441		ng/l							U



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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412026 - B4J3006

Initial Cal Blank (2412026-ICB1) Continuu

Prepared & Analyzed: 12/10/24

Cadmium	-0.0362		ng/l							U
Chromium	2.23		ng/l							
Cobalt	0.0878		ng/l							
Copper	10.1		ng/l							
Lead	4.29		ng/l							
Manganese	3.37		ng/l							
Molybdenum	10.9		ng/l							
Nickel	-1.65		ng/l							U
Selenium	0.260		ng/l							
Thallium	1.06		ng/l							
Vanadium	99.1		ng/l							
Zinc	-5.83		ng/l							U

Initial Cal Check (2412026-ICV1)

Prepared & Analyzed: 12/10/24

Antimony	19500		ng/l	20000		97.7	90-110			
Arsenic	19600		ng/l	20000		97.9	90-110			
Barium	196000		ng/l	200000		98.0	90-110			
Beryllium	5010		ng/l	5000.0		100	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	238000		ng/l	240000		99.1	90-110			
Cobalt	49600		ng/l	50000		99.3	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	199000		ng/l	200000		99.5	90-110			
Manganese	488000		ng/l	500000		97.6	90-110			
Molybdenum	50200		ng/l	50000		100	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	534000		ng/l	500000		107	90-110			

Interference Check A (2412026-IFA1)

Prepared & Analyzed: 12/10/24

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

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2412026 - B4J3006

Interference Check A (2412026-IFA1) Co

Prepared & Analyzed: 12/10/24

Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	322000		ng/l	300000		107	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 (2412026-IFB1)

Prepared & Analyzed: 12/10/24

Antimony	20500		ng/l	20000		103	80-120			
Arsenic	20500		ng/l	20000		102	80-120			
Barium	203000		ng/l	200000		102	80-120			
Beryllium	4960		ng/l	5000.0		99.1	80-120			
Cadmium	19900		ng/l	20000		99.5	80-120			
Chromium	231000		ng/l	240000		96.4	80-120			
Cobalt	51000		ng/l	50000		102	80-120			
Copper	1.92E6		ng/l	2.0000E6		96.2	80-120			
Lead	207000		ng/l	200000		104	80-120			
Manganese	515000		ng/l	500000		103	80-120			
Molybdenum	374000		ng/l	350000		107	80-120			
Nickel	116000		ng/l	120000		96.9	80-120			
Selenium	19300		ng/l	20000		96.7	80-120			
Thallium	527		ng/l	500.00		105	80-120			
Vanadium	19600		ng/l	20000		97.9	80-120			
Zinc	493000		ng/l	500000		98.6	80-120			

Batch B4L1008 - ICP-MS Extraction

Blank (B4L1008-BLK1)

Prepared & Analyzed: 12/10/24

Antimony	ND	0.0386	ng/m ³ Air							SL, U
Arsenic	ND	0.00937	ng/m ³ Air							U
Barium	ND	1.07	ng/m ³ Air							QB-01, U
Beryllium	ND	0.00320	ng/m ³ Air							U
Cadmium	ND	0.0741	ng/m ³ Air							U
Chromium	ND	2.21	ng/m ³ Air							U
Cobalt	ND	0.0436	ng/m ³ Air							U
Copper	ND	2.63	ng/m ³ Air							U
Lead	ND	0.214	ng/m ³ Air							U
Manganese	ND	1.89	ng/m ³ Air							U
Molybdenum	ND	0.359	ng/m ³ Air							U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1008 - ICP-MS Extraction

Blank (B4L1008-BLK1) Continued

Prepared & Analyzed: 12/10/24

Nickel	ND	0.652	ng/m ³ Air							U
Selenium	ND	0.00896	ng/m ³ Air							U
Thallium	ND	5.89E-4	ng/m ³ Air							U
Vanadium	ND	0.0529	ng/m ³ Air							U
Zinc	ND	76.8	ng/m ³ Air							U

LCS (B4L1008-BS1)

Prepared & Analyzed: 12/10/24

Antimony	0.752	0.0386	ng/m ³ Air	1.3829		54.4	80-120			SL
Arsenic	2.79	0.00937	ng/m ³ Air	2.7658		101	80-120			
Barium	30.1	1.07	ng/m ³ Air	27.658		109	80-120			QB-01
Beryllium	1.35	0.00320	ng/m ³ Air	1.3829		97.6	80-120			
Cadmium	1.45	0.0741	ng/m ³ Air	1.3829		105	80-120			
Chromium	15.8	2.21	ng/m ³ Air	13.829		114	80-120			
Cobalt	1.45	0.0436	ng/m ³ Air	1.3829		105	80-120			
Copper	30.8	2.63	ng/m ³ Air	27.658		111	80-120			
Lead	14.2	0.214	ng/m ³ Air	13.829		102	80-120			
Manganese	9.11	1.89	ng/m ³ Air	8.2975		110	80-120			
Molybdenum	1.58	0.359	ng/m ³ Air	1.3829		114	80-120			
Nickel	3.25	0.652	ng/m ³ Air	2.7658		117	80-120			
Selenium	2.81	0.00896	ng/m ³ Air	2.7658		102	80-120			
Thallium	0.143	5.89E-4	ng/m ³ Air	0.13829		104	80-120			
Vanadium	2.84	0.0529	ng/m ³ Air	2.7658		103	80-120			
Zinc	96.3	76.8	ng/m ³ Air	82.975		116	80-120			

LCS (B4L1008-BS2)

Prepared & Analyzed: 12/10/24

Antimony	1.37	0.0386	ng/m ³ Air	1.3829		99.3	80-120			SL
Arsenic	2.75	0.00937	ng/m ³ Air	2.7658		99.3	80-120			
Barium	28.1	1.07	ng/m ³ Air	27.658		102	80-120			QB-01
Beryllium	1.34	0.00320	ng/m ³ Air	1.3829		96.7	80-120			
Cadmium	1.41	0.0741	ng/m ³ Air	1.3829		102	80-120			
Chromium	14.6	2.21	ng/m ³ Air	13.829		105	80-120			
Cobalt	1.42	0.0436	ng/m ³ Air	1.3829		102	80-120			
Copper	29.5	2.63	ng/m ³ Air	27.658		107	80-120			
Lead	13.8	0.214	ng/m ³ Air	13.829		100	80-120			
Manganese	8.68	1.89	ng/m ³ Air	8.2975		105	80-120			
Molybdenum	1.38	0.359	ng/m ³ Air	1.3829		100	80-120			
Nickel	2.78	0.652	ng/m ³ Air	2.7658		101	80-120			
Selenium	2.81	0.00896	ng/m ³ Air	2.7658		102	80-120			
Thallium	0.142	5.89E-4	ng/m ³ Air	0.13829		103	80-120			
Vanadium	2.78	0.0529	ng/m ³ Air	2.7658		100	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1008 - ICP-MS Extraction

LCS (B4L1008-BS2) Continued

Prepared & Analyzed: 12/10/24

Zinc	90.4	76.8	ng/m ³ Air	82.975		109	80-120			
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Duplicate (B4L1008-DUP1)

Source: 4120938-02

Prepared & Analyzed: 12/10/24

Antimony	0.0717	0.0333	ng/m ³ Air		0.0616			15.2	10	SL
Arsenic	0.182	0.00809	ng/m ³ Air		0.198			8.54	10	
Barium	3.44	0.924	ng/m ³ Air		3.41			0.911	10	QB-01
Beryllium	0.00760	0.00276	ng/m ³ Air		0.00760			0.0576	10	
Cadmium	ND	0.0640	ng/m ³ Air		ND				10	U
Chromium	2.36	1.91	ng/m ³ Air		2.30			2.60	10	
Cobalt	0.263	0.0376	ng/m ³ Air		0.262			0.385	10	
Copper	43.2	2.27	ng/m ³ Air		42.5			1.55	10	
Lead	0.502	0.185	ng/m ³ Air		0.514			2.36	10	
Manganese	7.81	1.63	ng/m ³ Air		7.88			0.889	10	
Molybdenum	2.72	0.310	ng/m ³ Air		2.77			1.84	10	
Nickel	1.02	0.563	ng/m ³ Air		0.957			6.12	10	
Selenium	0.151	0.00774	ng/m ³ Air		0.151			0.346	10	
Thallium	8.05E-4	5.09E-4	ng/m ³ Air		8.53E-4			5.68	10	
Vanadium	0.955	0.0457	ng/m ³ Air		0.981			2.71	10	
Zinc	ND	66.3	ng/m ³ Air		ND				10	U

Duplicate (B4L1008-DUP2)

Source: 4120938-14

Prepared: 12/10/24 Analyzed: 12/11/24

Antimony	0.0979	0.0413	ng/m ³ Air		0.0950			3.04	10	SL
Arsenic	0.863	0.0100	ng/m ³ Air		0.839			2.83	10	
Barium	14.7	1.14	ng/m ³ Air		14.4			1.78	10	QB-01
Beryllium	0.0853	0.00342	ng/m ³ Air		0.0959			11.6	10	R-F
Cadmium	ND	0.0792	ng/m ³ Air		ND				10	U
Chromium	10.3	2.36	ng/m ³ Air		10.0			2.66	10	
Cobalt	3.04	0.0466	ng/m ³ Air		2.97			2.47	10	
Copper	22.0	2.81	ng/m ³ Air		21.6			2.09	10	
Lead	3.00	0.229	ng/m ³ Air		2.92			2.55	10	
Manganese	88.1	2.02	ng/m ³ Air		85.2			3.40	10	
Molybdenum	1.25	0.384	ng/m ³ Air		1.21			2.49	10	
Nickel	5.95	0.697	ng/m ³ Air		5.80			2.47	10	
Selenium	0.519	0.00958	ng/m ³ Air		0.511			1.43	10	
Thallium	0.00373	6.30E-4	ng/m ³ Air		0.00365			2.15	10	
Vanadium	7.15	0.0566	ng/m ³ Air		6.99			2.34	10	
Zinc	ND	82.1	ng/m ³ Air		ND				10	U

Matrix Spike (B4L1008-MS1)

Source: 4120938-02

Prepared & Analyzed: 12/10/24

Antimony	0.583	0.0333	ng/m ³ Air	1.1939	0.0616	43.7	80-120			SL
Arsenic	2.50	0.00809	ng/m ³ Air	2.3878	0.198	96.5	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1008 - ICP-MS Extraction

Matrix Spike (B4L1008-MS1) Continued Source: 4120938-02 Prepared & Analyzed: 12/10/24

Barium	27.8	0.924	ng/m ³ Air	23.878	3.41	102	80-120			QB-01
Beryllium	1.30	0.00276	ng/m ³ Air	1.1939	0.00760	108	80-120			
Cadmium	1.23	0.0640	ng/m ³ Air	1.1939	ND	103	80-120			
Chromium	14.6	1.91	ng/m ³ Air	11.939	2.30	103	80-120			
Cobalt	1.47	0.0376	ng/m ³ Air	1.1939	0.262	101	80-120			
Copper	66.7	2.27	ng/m ³ Air	23.878	42.5	101	80-120			
Lead	12.6	0.185	ng/m ³ Air	11.939	0.514	101	80-120			
Manganese	15.7	1.63	ng/m ³ Air	7.1635	7.88	109	80-120			
Molybdenum	3.88	0.310	ng/m ³ Air	1.1939	2.77	93.5	80-120			
Nickel	3.30	0.563	ng/m ³ Air	2.3878	0.957	98.1	80-120			
Selenium	2.44	0.00774	ng/m ³ Air	2.3878	0.151	95.8	80-120			
Thallium	0.121	5.09E-4	ng/m ³ Air	0.11939	8.53E-4	100	80-120			
Vanadium	3.35	0.0457	ng/m ³ Air	2.3878	0.981	99.0	80-120			
Zinc	88.6	66.3	ng/m ³ Air	71.635	ND	124	80-120			

Matrix Spike Dup (B4L1008-MSD1) Source: 4120938-02 Prepared & Analyzed: 12/10/24

Antimony	0.579	0.0333	ng/m ³ Air	1.1939	0.0616	43.3	80-120	0.758	20	SL
Arsenic	2.54	0.00809	ng/m ³ Air	2.3878	0.198	98.1	80-120	1.54	20	
Barium	28.0	0.924	ng/m ³ Air	23.878	3.41	103	80-120	0.805	20	QB-01
Beryllium	1.18	0.00276	ng/m ³ Air	1.1939	0.00760	98.5	80-120	9.18	20	
Cadmium	1.24	0.0640	ng/m ³ Air	1.1939	ND	104	80-120	1.46	20	
Chromium	14.6	1.91	ng/m ³ Air	11.939	2.30	103	80-120	0.130	20	
Cobalt	1.50	0.0376	ng/m ³ Air	1.1939	0.262	104	80-120	2.19	20	
Copper	68.3	2.27	ng/m ³ Air	23.878	42.5	108	80-120	2.38	20	
Lead	12.8	0.185	ng/m ³ Air	11.939	0.514	103	80-120	1.62	20	
Manganese	15.5	1.63	ng/m ³ Air	7.1635	7.88	106	80-120	1.38	20	
Molybdenum	3.95	0.310	ng/m ³ Air	1.1939	2.77	98.7	80-120	1.58	20	
Nickel	3.29	0.563	ng/m ³ Air	2.3878	0.957	97.9	80-120	0.151	20	
Selenium	2.52	0.00774	ng/m ³ Air	2.3878	0.151	99.3	80-120	3.37	20	
Thallium	0.123	5.09E-4	ng/m ³ Air	0.11939	8.53E-4	102	80-120	1.94	20	
Vanadium	3.37	0.0457	ng/m ³ Air	2.3878	0.981	99.8	80-120	0.572	20	
Zinc	89.6	66.3	ng/m ³ Air	71.635	ND	125	80-120	1.15	20	

Post Spike (B4L1008-PS1) Source: 4120938-02 Prepared & Analyzed: 12/10/24

Antimony	0.298	0.0333	ng/m ³ Air	0.23878	0.0616	99.1	75-125			SL
Arsenic	1.34	0.00809	ng/m ³ Air	1.1939	0.198	95.5	75-125			
Barium	5.72	0.924	ng/m ³ Air	2.3878	3.41	96.5	75-125			QB-01
Beryllium	0.258	0.00276	ng/m ³ Air	0.23878	0.00760	105	75-125			
Cadmium	0.138	0.0640	ng/m ³ Air	0.11939	ND	116	75-125			
Chromium	3.51	1.91	ng/m ³ Air	1.1939	2.30	101	75-125			

Eastern Research Group

The results in this report apply only to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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: 12/17/24 13:49
 SUBMITTED: 12/09/24
 AQS SITE CODE:
 SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4L1008 - ICP-MS Extraction

Post Spike (B4L1008-PS1) Continued Source: 4120938-02 Prepared & Analyzed: 12/10/24

Cobalt	0.500	0.0376	ng/m ³ Air	0.23878	0.262	99.6	75-125			
Copper	54.7	2.27	ng/m ³ Air	11.939	42.5	102	75-125			
Lead	24.4	0.185	ng/m ³ Air	23.878	0.514	100	75-125			
Manganese	10.5	1.63	ng/m ³ Air	2.3878	7.88	108	75-125			
Molybdenum	3.91	0.310	ng/m ³ Air	1.1939	2.77	95.6	75-125			
Nickel	3.32	0.563	ng/m ³ Air	2.3878	0.957	98.9	75-125			
Selenium	1.29	0.00774	ng/m ³ Air	1.1939	0.151	95.6	75-125			
Thallium	0.0605	5.09E-4	ng/m ³ Air	5.9696E-2	8.53E-4	100	75-125			
Vanadium	2.14	0.0457	ng/m ³ Air	1.1939	0.981	97.1	75-125			
Zinc	ND	66.3	ng/m ³ Air	23.878	ND		75-125			U

Dilution Check (B4L1008-SRL1) Source: 4120938-02 Prepared & Analyzed: 12/10/24

Antimony	ND	0.167	ng/m ³ Air		ND			10		SL, U
Arsenic	0.204	0.0404	ng/m ³ Air		0.198			2.65	10	
Barium	ND	4.62	ng/m ³ Air		ND				10	QB-01, U
Beryllium	ND	0.0138	ng/m ³ Air		ND				10	U
Cadmium	ND	0.320	ng/m ³ Air		ND				10	U
Chromium	ND	9.54	ng/m ³ Air		ND				10	U
Cobalt	0.267	0.188	ng/m ³ Air		0.262			1.68	10	
Copper	44.3	11.4	ng/m ³ Air		42.5			4.17	10	
Lead	ND	0.924	ng/m ³ Air		ND				10	U
Manganese	ND	8.16	ng/m ³ Air		ND				10	U
Molybdenum	2.76	1.55	ng/m ³ Air		2.77			0.309	10	
Nickel	ND	2.81	ng/m ³ Air		ND				10	U
Selenium	0.145	0.0387	ng/m ³ Air		0.151			4.12	10	
Thallium	ND	0.00254	ng/m ³ Air		ND				10	U
Vanadium	1.07	0.228	ng/m ³ Air		0.981			8.24	10	
Zinc	ND	332	ng/m ³ Air		ND				10	U



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FILE #: 4205.00.003.001
REPORTED: 12/17/24 13:49
SUBMITTED: 12/09/24
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.
R-F Replicate exceeds DQO criteria.
QX Compound does not meet QC criteria. Results should be considered an estimate.
QB-01 Analyte exceeds method blank criteria
LJ Identification of analyte is acceptable; reported value is an estimate.
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 12/19/2024 and Shanna Vasser 12/19/2024

Laboratory: Eastern Research Group – Morrisville, NC

Collection date(s): 11/30/2024 – 12/04/2024

Report No: 4120938

- √ 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.
- X 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 arsenic and barium in MFL-FB01-120224-HM and for arsenic, barium, cobalt, and vanadium in MFL-FB01-120424-HM

Notes: None.