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

Lahaina, Maui

2/1/2024 – 2/7/2024
[Report Updated: 5/28/2024]

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

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

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

Air quality monitoring for particulate matter was collected at all four community locations over a 24-hour period each day in accordance with the draft CAMSP. Additionally, daily air samples were collected at all community locations, as depicted in **Figure 1**. Summary analytical data is presented in **Tables 1 and 2**. **Appendix 1** provides detailed analytical results for all community locations where air sampling was performed. Analytical results were compared to site-specific screening levels for particulate matter, asbestos, and heavy metals as described in the draft CAMSP. A summary of meteorological data is presented in **Table 3.** Overall wind conditions show approximately 1.5 mph in a generally SE direction.

Results for Community Locations:
Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), as this is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week at each of the following locations: Leialii Hawaiian Homelands (February 1-7), WW Pump Station #4 (February 1-7), Lahaina Intermediate School (February 1-7), Lahaina Boys & Girls Club (February 1-7).

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

Please note that ambient air monitoring for fine particulate matter, with a particle size diameter of 2.5 micrometers or less (PM2.5) is not included in this report. This monitoring is being performed by the Department of Health/EPA at six locations in Lahaina and can be viewed at: https://fire.airnow.gov/.

There were 28 samples collected for asbestos fibers at community monitoring locations throughout this reporting period. All asbestos results were below the Site Screening Action Level (SSAL) of 0.003 fibers per cubic centimeter (fibers/cc) and less than the laboratory's analytical sensitivity (see Table 1). Notably, the laboratory commented "Numerous gypsum fibers present" on samples collected at the following monitoring stations:

- Leialii Hawaiian Homelands on February 1-7
- WW Pump Station #4 on February 1-7
- Lahaina Intermediate School on February 1, and 3-7

- Lahaina Boys & Girls Club on February 1-7

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

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

Quality Control:

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

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

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

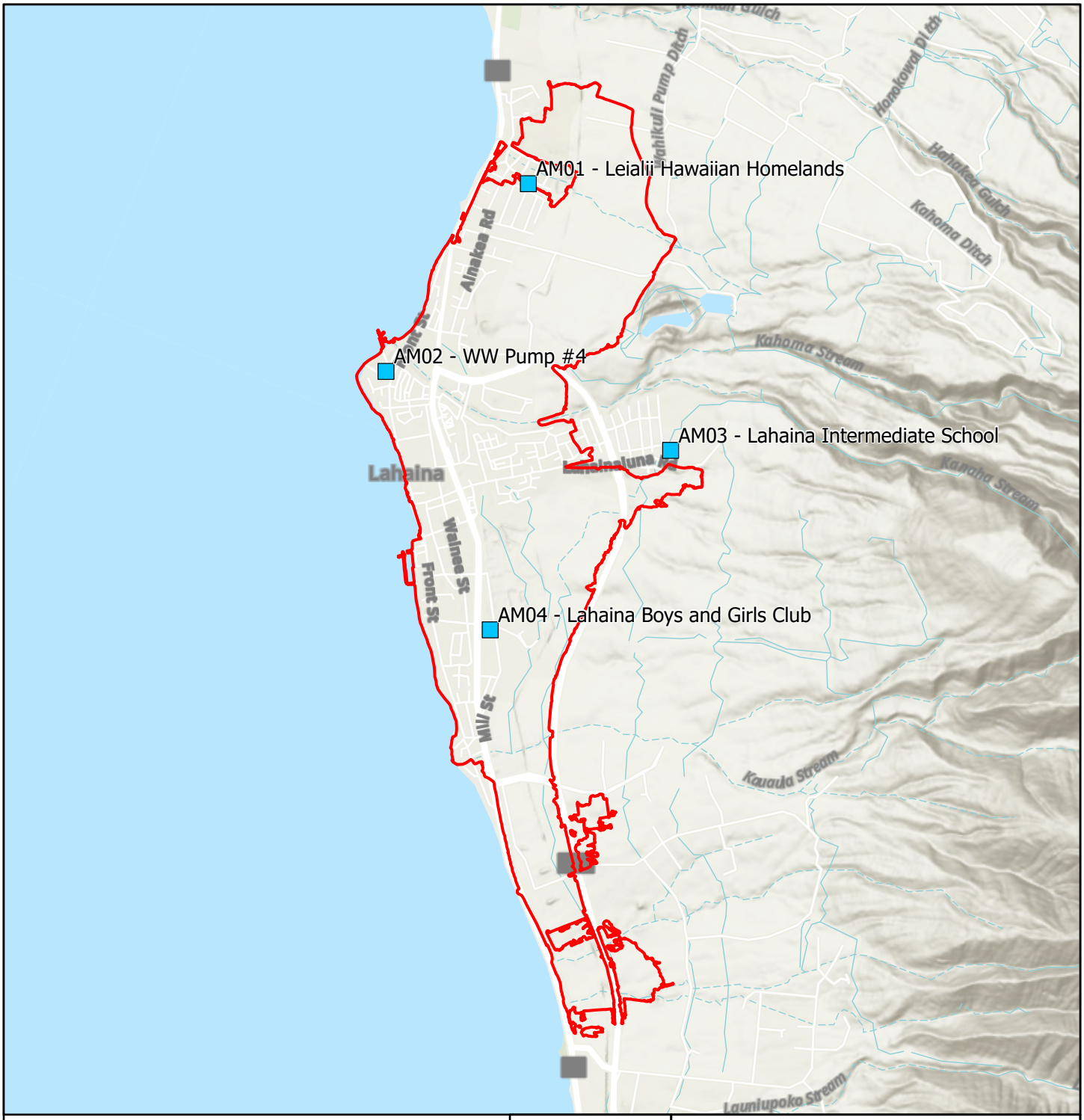
Tetra Tech is using Tisch Environmental High Volume Air Samplers, or equivalent, collocated with the real-time particulate monitors and asbestos samplers described above. Air samples for elemental metals at community locations are collected and analyzed in accordance with the following methods:

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

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

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

Attachments



Air Sampling Locations

Lahaina Fire Perimeter

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results by Date
Maui Wildfire, Lahaina
2/1//2024-2/7/2024
[Report Updated: 5/28/2024]

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units		s/cc	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Screening Level*		0.003 [1]	0.7	0.05	1.2	0.05	0.02	12	0.01	240	1.5	0.12	4.8	0.02	48	24	0.24	1200
2/1/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.000354	0.0128	0.00943	0.0000218	0.000105	0.00536	0.000808	0.109	0.00786	0.0211	0.00450	0.00343	0.000272	0.00000252	0.00256	0.0822
	WW Pump Station #4 (AM-02)	<0.00275	0.000240	0.000341	0.00593	0.00000709	ND	0.00187	0.000227	0.0460	0.000735	0.00638	0.00226	0.00129	0.000244	0.000000894	0.00166	ND
	Lahaina Intermediate School (AM-03)	<0.0027	0.000113	0.0000990	0.00401	0.0000113	ND	0.00190	0.000221	0.0375	0.000224	0.00463	0.00189	0.00114	0.000169	0.000000714	0.00139	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000472	0.000245	0.00310	0.00000529	ND	ND	0.000155	0.0216	0.000730	0.00441	0.00119	0.000959	0.000227	0.000000757	0.00155	ND
2/2/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000936	0.00301	0.00500	0.0000179	ND	0.00308	0.000362	0.0650	0.00113	0.0131	0.00240	0.00177	0.000129	0.00000225	0.00149	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000734	0.000192	0.00226	0.00000349	ND	ND	0.000104	0.0509	0.000575	0.00294	0.00171	0.000751	0.0000882	0.000000583	0.000635	ND
	Lahaina Intermediate School (AM-03)	<0.0027	0.0000338	0.0000532	0.00133	0.00000478	ND	ND	0.000104	0.0237	0.000525	0.00224	0.00124	0.000799	0.0000606	ND	0.000238	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000893	0.000225	0.00242	0.00000759	ND	0.00233	0.000251	0.0137	0.000811	0.00727	0.000511	0.000866	0.0000851	0.000000667	0.000558	ND
2/3/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000436	0.000341	0.00199	0.00000537	0.0000968	0.00199	0.000191	0.0395	0.000615	0.00608	0.00181	0.000740	0.000174	0.00000158	0.000402	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000908	0.000704	0.00528	0.0000118	ND	0.00319	0.000472	0.0393	0.00199	0.0129	0.00128	0.00181	0.000199	0.00000161	0.00109	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.0000716	0.00107	0.00000362	ND	0.00205	0.0000861	0.0393	0.000377	0.00203	0.00176	0.000847	0.000146	0.00000116	0.000172	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000802	0.000663	0.00353	0.0000177	ND	0.00431	0.000645	0.0173	0.000943	0.0177	0.000799	0.00195	0.000183	0.00000170	0.00128	ND
2/4/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000928	0.000828	0.00435	0.0000156	ND	0.00349	0.000735	0.0773	0.00129	0.0247	0.00248	0.00126	0.000229	0.00000176	0.00145	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000105	0.000216	0.00415	0.00000625	0.0000795	0.00205	0.000218	0.0581	0.000862	0.00657	0.00174	0.000767	0.000174	0.00000132	0.000523	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000406	0.0000872	0.00133	0.00000588	ND	ND	0.000121	0.0570	0.000457	0.00289	0.00228	0.000822	0.000169	0.00000127	0.000227	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000809	0.000274	0.00227	0.00000440	ND	ND	0.000125	0.0226	0.000614	0.00374	0.00123	0.000705	0.000176	0.00000114	0.000272	ND
2/5/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000724	0.000322	0.00207	0.00000432	ND	ND	0.0002	0.113	0.000848	0.00414	0.00410	0.000695	0.000136	0.000000852	0.000326	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000308	0.000176	0.00528	0.00000688	ND	ND	0.000213	0.0408	0.000692	0.00617	0.00154	0.000839	0.000177	0.000000827	0.000589	ND
	Lahaina Intermediate School (AM-03)	<0.0027	0.000062	0.000100	0.00196	0.00000796	ND	ND	0.000199	0.0404	0.000275	0.00452	0.00183	0.00107	0.000150	0.000000755	0.000409	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000119	0.000140	0.00245	0.00000519	ND	ND	0.000135	0.0198	0.000523	0.00429	0.00117	0.000570	0.000152	0.000000706	0.000389	ND
2/6/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000789	0.000413	0.00240	0.00000510	ND	ND	0.000349	0.125	0.00118	0.00557	0.00396	0.000881	0.000186	0.000000935	0.000791	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000193	0.000299	0.00602	0.0000162	ND	0.00212	0.000407	0.0443	0.00101	0.0143	0.00132	0.00137	0.000254	0.00000120	0.00149	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000114	0.000120	0.00263	0.0000104	ND	ND	0.000251	0.0494	0.000555	0.00659	0.00203	0.00116	0.000180	0.00000109	0.000904	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000933	0.000165	0.00238	0.00000569	ND	ND	0.000143	0.0239	0.000664	0.00537	0.00131	0.000628	0.000189	0.00000094	0.000733	ND
2/7/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000756	0.000345	0.00261	0.00000523	ND	ND	0.000603	0.119	0.000874	0.00603	0.00434	0.000902	0.000198	0.00000114	0.000649	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000180	0.000255	0.00408	0.00000973	ND	ND	0.000245	0.0545	0.00121	0.00871	0.00142	0.000926	0.000215	0.00000132	0.000899	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000108	0.000144	0.00273	0.0000137	ND	ND	0.000259	0.0469	0.000621	0.00709	0.00182	0.000957	0.000195	0.00000109	0.000794	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000122	0.000263	0.00285	0.00000619	ND	ND	0.000160	0.0276	0.00104	0.00562	0.00107	0.000706	0.000176	0.00000107	0.000619	ND
95% Upper Confidence Limit[2]		NA	0.000170	0.000900	0.00410	0.0000110	0.000127	0.00346	0.000360	0.0641	0.00124	0.009584	0.00230	0.00124	0.000200	0.00000140	0.00116	NA

Notes:

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

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

s/cc = structures per cubic centimeter

mg/m3 = milligrams per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

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

This report has been updated with new SSALs in accordance with the updated CAMSP

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

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results for PM_{10}
Maui Wildfire, Lahaina
2/1/2024 - 2/7/2024
Report Updated: 5/28/2024]

Screening Level		**150 µg/m^3**
2/1/2024	Leialii Hawaiian Homelands (AM-01)	15
	WW Pump Station #4 (AM-02)	12
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	9.7
2/2/2024	Leialii Hawaiian Homelands (AM-01)	8.1
	WW Pump Station #4 (AM-02)	9.1
	Lahaina Intermediate School (AM-03)	88
	Lahaina Boys & Girls Club (AM-04)	5.9
2/3/2024	Leialii Hawaiian Homelands (AM-01)	10
	WW Pump Station #4 (AM-02)	9.3
	Lahaina Intermediate School (AM-03)	8.3
	Lahaina Boys & Girls Club (AM-04)	8.2
2/4/2024	Leialii Hawaiian Homelands (AM-01)	8.2
	WW Pump Station #4 (AM-02)	7.8
	Lahaina Intermediate School (AM-03)	7.5
	Lahaina Boys & Girls Club (AM-04)	6.3
2/5/2024	Leialii Hawaiian Homelands (AM-01)	9.2
	WW Pump Station #4 (AM-02)	11
	Lahaina Intermediate School (AM-03)	10
	Lahaina Boys & Girls Club (AM-04)	7.7
2/6/2024	Leialii Hawaiian Homelands (AM-01)	9.8
	WW Pump Station #4 (AM-02)	12
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	8.0
2/7/2024	Leialii Hawaiian Homelands (AM-01)	8
	WW Pump Station #4 (AM-02)	8.8
	Lahaina Intermediate School (AM-03)	8.0
	Lahaina Boys & Girls Club (AM-04)	7.7

Notes:
µg/m3 = micrograms per cubic meter
24 hour TWA calculation results are shown in two significant figures
Results are based on 24 hour TWA calculation

Table 3
Maui Wildfire - Lahaina
Meteorological Data
2/1/2024-2/7/2024
[Report Updated: 5/28/2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
2/1/2024	AM-01	Leialii Hawaiian Homelands	0.9	SSE	75	74	760.5
2/1/2024	AM-02	WW Pump Station #4	1.0	SSE	76	77	763.1
2/1/2024	AM-03	Lahaina Intermediate School	1.4	SSE	79	77	753.3
2/1/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	74	77	762.3
2/2/2024	AM-01	Leialii Hawaiian Homelands	2.4	SE	69	78	762.7
2/2/2024	AM-02	WW Pump Station #4	2.3	E	71	78	765.1
2/2/2024	AM-03	Lahaina Intermediate School	3.8	SE	74	79	755.1
2/2/2024	AM-04	Lahaina Boys & Girls Club	4.0	SSW	71	74	764.2
2/3/2024	AM-01	Leialii Hawaiian Homelands	2.5	ESE	71	56	763.5
2/3/2024	AM-02	WW Pump Station #4	2.1	E	73	57	766.0
2/3/2024	AM-03	Lahaina Intermediate School	2.1	ESE	76	59	756.0
2/3/2024	AM-04	Lahaina Boys & Girls Club	1.8	SSE	71	59	765.1
2/4/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	74	56	762.5
2/4/2024	AM-02	WW Pump Station #4	0.9	SSE	73	61	765.1
2/4/2024	AM-03	Lahaina Intermediate School	1.0	SE	76	64	755.3
2/4/2024	AM-04	Lahaina Boys & Girls Club	1.0	S	71	63	764.4
2/5/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	74	57	762.4
2/5/2024	AM-02	WW Pump Station #4	1.0	SSE	74	60	764.9
2/5/2024	AM-03	Lahaina Intermediate School	1.0	SE	77	63	755.2
2/5/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	72	62	764.2
2/6/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	74	61	762.8
2/6/2024	AM-02	WW Pump Station #4	1.0	SE	75	63	765.3
2/6/2024	AM-03	Lahaina Intermediate School	1.0	ESE	78	66	755.6
2/6/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	73	65	764.6
2/7/2024	AM-01	Leialii Hawaiian Homelands	0.9	SE	75	58	763.8
2/7/2024	AM-02	WW Pump Station #4	1.1	SSE	76	61	766.3
2/7/2024	AM-03	Lahaina Intermediate School	1.1	SE	78	64	756.6
2/7/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	73	63	765.7

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

Appendix 1

Please note, comments pertaining to gypsum may be mentioned in the lab reports below. Gypsum is a common ingredient in drywall, plaster and cement so its presence in the sample filters is likely due to debris removal operations or other disturbances of built-environment fire debris. A more indepth discussion can be found in the attached weekly report.

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

EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/09/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-020124-AB**

EMSL Sample Number:	042402495-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	5731.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	6
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 38.93**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 38.93**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 38.93**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 38.93**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 38.93**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 38.93**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 38.93**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 38.93	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 38.93**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0001 **Customer Sample:** MFL-AM01-020124-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					
A6	I4	None Detected									
A6	A5	None Detected									
A7	I4	None Detected									
A7	E4	None Detected									
A7	B9	None Detected									
A5	C4	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:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 02/16/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-020124-AB**

EMSL Sample Number:	042402495-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6514.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	Random	*(4.00)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**0.00092**		**Limit of Detection (Structures/cc):**	**0.00275**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**1**	**1**	**< 46.72**	**< 0.00275**	**Not Applicable**	**0.00275**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.00275**	**Not Applicable**	**0.00436**
Actinolite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Amosite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Anthophyllite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Crocidolite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Tremolite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Total Asbestos Structures	**CD/ADX**	**1**	**1**	**< 46.72**	**< 0.00275**	**Not Applicable**	**0.00275**
Other Minerals	-	0	0	< 46.72	< 0.00275	Not Applicable	0.00436
Total All Structures	**-**	**1**	**1**	**< 46.72**	**< 0.00275**	**Not Applicable**	**0.00275**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.00275**	**Not Applicable**	**0.00275**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.00275**	**Not Applicable**	**0.00275**
Actinolite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Amosite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Anthophyllite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Crocidolite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Tremolite	ADX	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.00275**	**Not Applicable**	**0.00275**
Other Minerals	-	0	0	< 46.72	< 0.00275	Not Applicable	0.00275
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.00275**	**Not Applicable**	**0.00275**

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042402495
Client: Tetra Tech
Project ID: Maui Fires - Lahaina / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0002 **Customer Sample:** MFL-AM02-020124-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	H6	None Detected									
B1	C5	None Detected									
B2	I7	F	1	1	2.1	0.09	CD	Chrysotile		MG_16, MG_17	
B2	E4	None Detected									
B2	B6	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:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

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Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-020124-AB**

EMSL Sample Number:	042402495-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6868.2
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):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0003 **Customer Sample:** MFL-AM03-020124-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	G4	None Detected									
B5	B8	None Detected									
B6	B5	None Detected									
B6	F6	None Detected									
B7	D5	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-020124-AB**

EMSL Sample Number:	042402495-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7239.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0004 **Customer Sample:** MFL-AM04-020124-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	H6	None Detected									
C1	D5	None Detected									
C2	H8	None Detected									
C2	C4	None Detected									
C3	E4	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-020124-AB**

EMSL Sample Number:	042402495-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0005 **Customer Sample:** MFL-FB01-020124-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	B7	None Detected									
C5	C3	None Detected									
C5	F3	None Detected									
C5	G5	None Detected									
C5	I6	None Detected									
C6	A6	None Detected									
C6	C7	None Detected									
C6	E8	None Detected									
C6	G7	None Detected									
C6	I4	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-020224-AB**

EMSL Sample Number:	042402495-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6688.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A Burke & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0006 **Customer Sample:** MFL-AM01-020224-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	B5	None Detected									
D1	E3	None Detected									
D2	C5	None Detected									
D2	H4	None Detected									
D3	D&	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:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-020224-AB**

EMSL Sample Number:	042402495-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7151.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Approved Signatory

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0007 **Customer Sample:** MFL-AM02-020224-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	I6	None Detected									
D5	D4	None Detected									
D6	H4	None Detected									
D6	D5	None Detected									
D6	A4	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **Maui Fires - Lahaina / 103S864023206**

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Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-020224-AB**

EMSL Sample Number:	042402495-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7023.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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EMSL Order ID: 042402495
Client: Tetra Tech
Project ID: Maui Fires - Lahaina / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0008 **Customer Sample:** MFL-AM03-020224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E1	J2	None Detected									
E1	B7	None Detected									
E2	B5	None Detected									
E2	I8	None Detected									
E3	B6	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:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-020224-AB**

EMSL Sample Number:	042402495-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7228.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0009 **Customer Sample:** MFL-AM04-020224-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	J4	None Detected									
E5	C3	None Detected									
E6	I3	None Detected									
E6	B1	None Detected									
E7	G6	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:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-020224-AB**

EMSL Sample Number:	042402495-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0010 **Customer Sample:** MFL-FB01-020224-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	A10	None Detected									
F1	C7	None Detected									
F1	E8	None Detected									
F1	G9	None Detected									
F1	I10	None Detected									
F2	A10	None Detected									
F2	C1	None Detected									
F2	E4	None Detected									
F2	G5	None Detected									
F2	I6	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-020324-AB**

EMSL Sample Number:	042402495-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7236.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0011 **Customer Sample:** MFL-AM01-020324-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	J6	None Detected									
F5	B8	None Detected									
F6	B2	None Detected									
F6	I4	None Detected									
F7	F8	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:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/12/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-020324-AB**

EMSL Sample Number:	042402495-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7338.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0012 **Customer Sample:** MFL-AM02-020324-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	G4	None Detected									
G1	C5	None Detected									
G3	B7	None Detected									
G3	H5	None Detected									
G4	C4	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:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/13/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-020324-AB**

EMSL Sample Number:	042402495-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7122.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0013 **Customer Sample:** MFL-AM03-020324-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	G7	None Detected									
G5	D9	None Detected									
G6	B2	None Detected									
G6	G4	None Detected									
G7	F4	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/13/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-020324-AB**

EMSL Sample Number:	042402495-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7208.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0014 **Customer Sample:** MFL-AM04-020324-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	E2	None Detected									
H1	H3	None Detected									
H2	B2	None Detected									
H2	G5	None Detected									
H3	D5	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/13/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-020324-AB**

EMSL Sample Number:	042402495-0015		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):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0015 **Customer Sample:** MFL-FB01-020324-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	J5	None Detected									
H5	H4	None Detected									
H5	F7	None Detected									
H5	D7	None Detected									
H5	B2	None Detected									
H6	A9	None Detected									
H6	C8	None Detected									
H6	E9	None Detected									
H6	G6	None Detected									
H6	I4	None Detected									

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

EMSL Analytical, Inc.
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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/13/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-020424-AB**

EMSL Sample Number:	042402495-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7186.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0016 **Customer Sample:** MFL-AM01-020424-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	A5	None Detected									
I1	E7	None Detected									
I2	B8	None Detected									
I2	J4	None Detected									
I3	H8	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
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Analysis Date:	02/13/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-020424-AB**

EMSL Sample Number:	042402495-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7091.6
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):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0017 **Customer Sample:** MFL-AM02-020424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I5	J8	None Detected									
I5	D6	None Detected									
I6	H5	None Detected									
I6	C3	None Detected									
I6	E8	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Denver, CO, 80202

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/13/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-020424-AB**

EMSL Sample Number:	042402495-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7087.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0018 **Customer Sample:** MFL-AM03-020424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J1	J2	None Detected									
J1	C3	None Detected									
J2	I3	None Detected									
J2	C2	None Detected									
J3	B5	None Detected									

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

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EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
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Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/13/2024 & 04/12/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-020424-AB**

EMSL Sample Number:	042402495-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7216.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison & G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0019 **Customer Sample:** MFL-AM04-020424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J5	I2	None Detected									
J5	A2	None Detected									
J6	H2	None Detected									
J6	C4	None Detected									
J7	G5	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:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
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Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/13/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-020424-AB**

EMSL Sample Number:	042402495-0020		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.1280
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	95 % Confidence Interval (S/cc) Upper
Total Chrysotile	**CD**	**0**	**0**	**< 2.34**			
Total Amphibole	**ADX**	**0**	**0**	**< 2.34**			
Actinolite	ADX	0	0	< 2.34			
Amosite	ADX	0	0	< 2.34			
Anthophyllite	ADX	0	0	< 2.34			
Crocidolite	ADX	0	0	< 2.34			
Tremolite	ADX	0	0	< 2.34			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 2.34**			
Other Minerals	-	0	0	< 2.34			
Total All Structures	**-**	**0**	**0**	**< 2.34**			

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	95 % Confidence Interval (F/cc) Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 2.34**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 2.34**			
Actinolite	ADX	0	0	< 2.34			
Amosite	ADX	0	0	< 2.34			
Anthophyllite	ADX	0	0	< 2.34			
Crocidolite	ADX	0	0	< 2.34			
Tremolite	ADX	0	0	< 2.34			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 2.34**			
Other Minerals	-	0	0	< 2.34			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 2.34**			

Comment

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Approved Signatory

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

EMSL Order ID: 042402495
Client: Tetra Tech
Project ID: Maui Fires - Lahaina / 103S864023206

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0020 **Customer Sample:** MFL-FB01-020424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K1	J7	None Detected									
K1	H6	None Detected									
K1	F7	None Detected									
K1	D6	None Detected									
K1	B4	None Detected									
K2	A8	None Detected									
K2	C9	None Detected									
K2	E10	None Detected									
K2	G7	None Detected									
K2	I10	None Detected									

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

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

EMSL Order:	042402495
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/07/2024 09:30 AM
Analysis Date:	02/09/2024
Report Date:	04/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042402495-0021		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402495**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402495-0021 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	A3	None Detected									
A1	C4	None Detected									
A1	E7	None Detected									
A1	G8	None Detected									
A1	I9	None Detected									
A2	J2	None Detected									
A2	H3	None Detected									
A2	F4	None Detected									
A2	D3	None Detected									
A2	B4	None Detected									

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

OrderID: 042402495

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042402495

RECEIVED EMSL CINNAMINSON, NJ 24 FEB -7 AM 10:03

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

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

Customer Information

Customer ID:	
Company Name:	Tetra Tech
Contact Name:	Chelsea Saber
Street Address:	1560 Broadway, Suite 1400
City, State, Zip:	Denver, CO 80202
Country:	USA
Phone:	703-885-5495
Email(s) for Report:	chelsea.saber@tetratech.com

Billing Information

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

Project Information

Project Name/No:	Maui Fires - Lahaina / 103886402320 6
Purchase Order:	
EMSL LIMS Project ID: (If applicable, EMSL will provide)	
US State where samples collected:	HI
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name:	
Sampled By Signature:	
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-AM01-020124-AB			02/01/24 1103
MFL-AM02-020124-AB			02/01/24 1125
MFL-AM03-020124-AB			02/01/24 1317
MFL-AM04-020124-AB			02/01/24 1348
MFL-FB01-020124-AB			02/01/24 1200
MFL-AM01-020224-AB			02/02/24 1108
MFL-AM02-020224-AB			02/02/24 1127
MFL-AM03-020224-AB			02/02/24 1318

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

All samples received acceptable for analysis.
Report revised 4/13/24 to reach LOD of 0.003 s/cc.

20 yp

Method of Shipment:	FedEx	Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/05/24 1100	Received by: FedEx	Date/Time 2/7/24 9:30 AM
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

OrderID: 042402495

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042402495

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

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

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

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-020224-AB			02/02/24 1351
MFL-FB01-020224-AB			02/02/24 1200
MFL-AM01-020324-AB			02/03/24 1102
MFL-AM02-020324-AB			02/03/24 1141
MFL-AM03-020324-AB			02/03/24 1314
MFL-AM04-020324-AB			02/03/24 1349
MFL-FB01-020324-AB			02/03/24 1200
MFL-AM01-020424-AB			02/04/24 1102
MFL-AM02-020424-AB			02/04/24 1126
MFL-AM03-020424-AB			02/04/24 1316
MFL-AM04-020424-AB			02/04/24 1340
MFL-FB01-020424-AB			02/04/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 FEB -7 AM 10:03

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/05/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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OrderID: 042402495

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.

EMSL Order Number / Lab Use Only

#042402495

RECEIVED EMSL CINNAMINSON, NJ 24 FEB -7 AM 10:03

200 Route 130 North
Cinnaminson, NJ 08077
PHONE (800) 220-3675

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

Customer Information

Customer ID:
Company Name: Tetra Tech
Contact Name: Chelsea Saber
Street Address: 1560 Broadway, Suite 1400
City, State, Zip: Denver, CO 80202 Country: USA
Phone: 703-885-5495
Email(s) for Report: chelsea.saber@tetratech.com

Billing Information

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

Project Information

Project Name/No: Maui Fires - Lahaina / 103S864023206
Purchase Order:
EMSL LIMS Project ID (if applicable, EMSL will provide):
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name:
Sampled By Signature:
No. of Samples in Shipment: 20

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 198.8 NOB (Non-Friable - NY)
- ☐ NYS 198.8 (Vermiculite SM-V)

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-020124-AB		5,731.679 L	02/01/24 1103
MFL-AM02-020124-AB		6,514.773 L	02/01/24 1125
MFL-AM03-020124-AB		6,868.150 L	02/01/24 1317
MFL-AM04-020124-AB		7,239.897 L	02/01/24 1348
MFL-FB01-020124-AB		0 L	02/01/24 1200
MFL-AM01-020224-AB		6,688.416 L	02/02/24 1108
MFL-AM02-020224-AB		7,151.760 L	02/02/24 1127
MFL-AM03-020224-AB		7,023.875 L	02/02/24 1318

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

Rec'd 2/7/24 - revised w/ sample volumes

20 p

Method of Shipment: FedEx
Sample Condition Upon Receipt:

Relinquished by: Date/Time 02/05/24 1100 Received by: FedEX Date/Time 2/7/24 9:30 AM

Relinquished by: Date/Time Received by: Date/Time

Controlled Document - COC-06 Asbestos R18 10/26/2021

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

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Page 1 of

Page 1 of 2

OrderID: 042402495

EMSL ANALYTICAL, INC.
TESTING LABS · PRODUCTS · TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042402495

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

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

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-020224-AB		7,228.512 L	02/02/24 1351
MFL-FB01-020224-AB		0 L	02/02/24 1200
MFL-AM01-020324-AB		7,236.468 L	02/03/24 1102
MFL-AM02-020324-AB		7,338.481 L	02/03/24 1141
MFL-AM03-020324-AB		7,122.687 L	02/03/24 1314
MFL-AM04-020324-AB		7,208.491 L	02/03/24 1349
MFL-FB01-020324-AB		0 L	02/03/24 1200
MFL-AM01-020424-AB		7,186.293 L	02/04/24 1102
MFL-AM02-020424-AB		7,091.643 L	02/04/24 1126
MFL-AM03-020424-AB		7,087.680 L	02/04/24 1316
MFL-AM04-020424-AB		7,216.398 L	02/04/24 1340
MFL-FB01-020424-AB		0 L	02/04/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 FEB -7 AM 10: 03

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/05/24 1100	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:

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

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

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Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 4/15/2024 and Shanna Vasser 4/16/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection Date: 2/1/2024 – 2/4/2024
Report No: 42402495

√	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:

1. Report was revised on 04/13/2024 to adjust the limit of detection (LOD) to 0.003 s/cc. The CoC was revised to include sampling volumes.

Notes: None.

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

EMSL Order:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/13/2024 & 04/05/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-020524-AB**

EMSL Sample Number:	042402809-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7207.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0001 **Customer Sample:** MFL-AM01-020524-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					
A7	B6	None Detected									
A7	G7	None Detected									
A8	C7	None Detected									
A8	H5	None Detected									
A8	F8	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/13/2024 & 04/05/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-020524-AB**

EMSL Sample Number:	042402809-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7196.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & 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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0002 **Customer Sample:** MFL-AM02-020524-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	I6	None Detected									
B1	D5	None Detected									
B2	F7	None Detected									
B2	C3	None Detected									
B3	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
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Analysis Date:	02/13/2024 & 04/05/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-020524-AB**

EMSL Sample Number:	042402809-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7069.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0003 **Customer Sample:** MFL-AM03-020524-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	D7	None Detected									
B5	G4	None Detected									
B7	C5	None Detected									
B7	F4	None Detected									
B7	I9	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
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EMSL Order:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/13/2024 & 04/05/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-020524-AB**

EMSL Sample Number:	042402809-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7217.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & 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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0004 **Customer Sample:** MFL-AM04-020524-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	B6	None Detected									
C1	J5	None Detected									
C2	H5	None Detected									
C2	A4	None Detected									
C3	E4	None Detected									

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

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EMSL Order:	042402809
Customer ID:	TTDC42
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Project ID:	N/A

Attn: **Chelsea Saber**
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Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-020524-AB**

EMSL Sample Number:	042402809-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0005 **Customer Sample:** MFL-FB01-020524-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					
C7	A5	None Detected									
C7	C6	None Detected									
C7	E8	None Detected									
C7	H7	None Detected									
C7	J6	None Detected									
C8	B7	None Detected									
C8	D5	None Detected									
C8	F3	None Detected									
C8	G6	None Detected									
C8	I8	None Detected									

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

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Project ID:	N/A

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Phone:	(703) 489-2674
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Analysis Date:	02/13/2024 & 04/05/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-020624-AB**

EMSL Sample Number:	042402809-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7252.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & 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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0006 **Customer Sample:** MFL-AM01-020624-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	D6	None Detected									
D1	I4	None Detected									
D3	H7	None Detected									
D3	D5	None Detected									
D3	A8	None Detected									

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

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EMSL Order:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/13/2024 & 04/05/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-020624-AB**

EMSL Sample Number:	042402809-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7200.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & 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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0007 **Customer Sample:** MFL-AM02-020624-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	C6	None Detected									
D5	I4	None Detected									
D6	B5	None Detected									
D6	F3	None Detected									
D7	G8	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/14/2024 & 04/08/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-020624-AB**

EMSL Sample Number:	042402809-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7139.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & 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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0008 **Customer Sample:** MFL-AM03-020624-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	H7	None Detected									
I1	C8	None Detected									
I2	B6	None Detected									
I2	G7	None Detected									
I3	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/15/2024 & 04/08/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-020624-AB**

EMSL Sample Number:	042402809-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7231.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0009 **Customer Sample:** MFL-AM04-020624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K1	H6	None Detected									
K1	C3	None Detected									
K2	C7	None Detected									
K2	E1	None Detected									
K3	C10	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/15/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-020624-AB**

EMSL Sample Number:	042402809-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0010 **Customer Sample:** MFL-FB01-020624-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					
K7	I7	None Detected									
K7	I5	None Detected									
K7	G4	None Detected									
K7	D4	None Detected									
K7	D8	None Detected									
K8	A3	None Detected									
K8	B5	None Detected									
K8	D5	None Detected									
K8	G3	None Detected									
K8	J3	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/14/2024 & 04/09/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-020724-AB**

EMSL Sample Number:	042402809-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7283.2
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):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0011 **Customer Sample:** MFL-AM01-020724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J5	I3	None Detected									
J5	D5	None Detected									
J6	A3	None Detected									
J6	F1	None Detected									
J7	I7	None Detected									

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

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EMSL Order:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/14/2024 & 04/09/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-020724-AB**

EMSL Sample Number:	042402809-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7123.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & 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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0012 **Customer Sample:** MFL-AM02-020724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K1	A6	None Detected									
K1	I3	None Detected									
K2	C3	None Detected									
K2	G4	None Detected									
K3	B6	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
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Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/14/2024 & 04/09/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-020724-AB**

EMSL Sample Number:	042402809-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7171.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & 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 Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0013 **Customer Sample:** MFL-AM03-020724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K5	J8	None Detected									
K5	F5	None Detected									
K6	D7	None Detected									
K6	I6	None Detected									
K7	H2	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/14/2024 & 04/09/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-020724-AB**

EMSL Sample Number:	042402809-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7304.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke & P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0014 **Customer Sample:** MFL-AM04-020724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H2	B6	None Detected									
H2	H3	None Detected									
H3	H7	None Detected									
H3	E10	None Detected									
H3	A8	None Detected									

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

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EMSL Order:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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

Project: **Maui Fires - Lahaina / 103S864023206**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/14/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-020724-AB**

EMSL Sample Number:	042402809-0015		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):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042402809-0015 **Customer Sample:** MFL-FB01-020724-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	I5	None Detected									
H5	G8	None Detected									
H5	E7	None Detected									
H5	D5	None Detected									
H5	A4	None Detected									
H6	A8	None Detected									
H6	C9	None Detected									
H6	E8	None Detected									
H6	G6	None Detected									
H6	J2	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:	042402809
Customer ID:	TTDC42
Customer PO:	1206126
Project ID:	N/A

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Phone:	(703) 489-2674
Fax:	N/A
Received Date:	02/12/2024 08:40 AM
Analysis Date:	02/13/2024
Report Date:	04/09/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **LabBlank** **Sample Description:** **Labblank**

EMSL Sample Number:	042402809-0016		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):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.0034			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042402809**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S864023206**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: **042402809-LB** **Customer Sample:** **LabBlank**

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	I4	None Detected									
A2	H6	None Detected									
A2	F7	None Detected									
A2	D6	None Detected									
A2	A5	None Detected									
A3	B6	None Detected									
A3	D7	None Detected									
A3	E8	None Detected									
A3	G9	None Detected									
A3	J7	None Detected									

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

OrderID: 042402809

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042402809

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

PHONE: (800) 220-3675
EMAIL: CinnAsblab@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

Customer ID:
Company Name: Tetra Tech
Contact Name: Chelsea Saber
Street Address: 1560 Broadway, Suite 1400
City, State, Zip: Denver, CO 80202 Country: USA
Phone: 703-885-5495
Email(s) for Report: chelsea.saber@tetratech.com

Billing Information

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

RECEIVED
24 FEB 12 AM 9:08
EMSL
CINNAMINSON, NJ

Project Information

Project Name/No: Maui Fires - Lahaina / 103S864023206
Purchase Order:
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Elia Kenyon Saldaña
Sampled By Signature:
No. of Samples in Shipment: 15

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements.

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA)

Filter Pore Size (Air Samples) ☐ 0.8um ☒ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-020524-AB		7,207,056	02/05/24 1104
MFL-AM02-020524-AB		7,196.112	02/05/24 1130
MFL-AM03-020524-AB		7,068.954	02/05/24 1315
MFL-AM04-020524-AB		7,217.753	02/05/24 1340
MFL-FB01-020524-AB		0	02/05/24 1200
MFL-AM01-020624-AB		7,252.413	02/06/24 1105
MFL-AM02-020624-AB		7,200.066	02/06/24 1132
MFL-AM03-020624-AB		7,139.312	02/06/24 1316

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

All samples received acceptable for analysis.
Report revised 4/10/24 to reach LOD of 0.003 s/cc.

15

Method of Shipment: FedEx
Sample Condition Upon Receipt:

Relinquished by:	Date/Time:	Received by:	Date/Time
	02/08/24 1100	FedEx	2/12/24 8:40A
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

OrderID: 042402809

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042402809

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

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

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

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM04-020624-AB		7,231.826	02/06/24 1339
MFL-FB01-020624-AB		0	02/06/24 1200
MFL-AM01-020724-AB		7,283.152	02/07/24 1102
MFL-AM02-020724-AB		7,123.007	02/07/24 1123
MFL-AM03-020724-AB		7,171.004	02/07/24 1314
MFL-AM04-020724-AB		7,304.544	02/07/24 1340
MFL-FB01-020724-AB		0	02/07/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 FEB 12 AM 9:31

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 02/08/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 4/19/2024 and Shanna Vasser 4/19/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 02/05/2024 - 02/07/2024
Report No: 42402809

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

Discrepancies:

1. Report was revised on 04/10/2024 to adjust the limit of detection (LOD) to 0.003 s/cc.

Notes: None

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

February 21, 2024

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

Dear Ms. Chelsea Saber,

This report contains the analytical results for the sample(s) received under chain(s) of custody by Eastern Research Group on 02/12/24 10:36.

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

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

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

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

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-020124-HM	4021308-01	Air	02/01/24 23:59	02/12/24 10:36
MFL-AM02-020124-HM	4021308-02	Air	02/01/24 23:59	02/12/24 10:36
MFL-AM03-020124-HM	4021308-03	Air	02/01/24 23:59	02/12/24 10:36
MFL-AM04-020124-HM	4021308-04	Air	02/01/24 23:59	02/12/24 10:36
MFL-FB01-020124-HM	4021308-05	Air	02/01/24 00:00	02/12/24 10:36
MFL-AM01-020224-HM	4021308-06	Air	02/02/24 23:59	02/12/24 10:36
MFL-AM02-020224-HM	4021308-07	Air	02/02/24 23:59	02/12/24 10:36
MFL-AM03-020224-HM	4021308-08	Air	02/02/24 23:59	02/12/24 10:36
MFL-AM04-020224-HM	4021308-09	Air	02/02/24 23:59	02/12/24 10:36
MFL-AM01-020324-HM	4021308-10	Air	02/03/24 23:59	02/12/24 10:36
MFL-AM02-020324-HM	4021308-11	Air	02/03/24 23:59	02/12/24 10:36
MFL-AM03-020324-HM	4021308-12	Air	02/03/24 23:59	02/12/24 10:36
MFL-AM04-020324-HM	4021308-13	Air	02/03/24 23:59	02/12/24 10:36
MFL-FB01-020324-HM	4021308-14	Air	02/03/24 00:00	02/12/24 10:36
MFL-AM01-020424-HM	4021308-15	Air	02/04/24 23:59	02/12/24 10:36
MFL-AM02-020424-HM	4021308-16	Air	02/04/24 23:59	02/12/24 10:36
MFL-AM03-020424-HM/MS/I	4021308-17	Air	02/04/24 23:59	02/12/24 10:36
MFL-AM04-020424-HM	4021308-18	Air	02/04/24 23:59	02/12/24 10:36
MFL-AM01-020524-HM	4021308-19	Air	02/05/24 23:59	02/12/24 10:36
MFL-AM02-020524-HM	4021308-20	Air	02/05/24 23:59	02/12/24 10:36
MFL-AM03-020524-HM	4021308-21	Air	02/05/24 23:59	02/12/24 10:36

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-020524-HM	4021308-22	Air	02/05/24 23:59	02/12/24 10:36
MFL-FB01-020524-HM	4021308-23	Air	02/05/24 00:00	02/12/24 10:36
MFL-AM01-020624-HM	4021308-24	Air	02/06/24 23:59	02/12/24 10:36
MFL-AM02-020624-HM	4021308-25	Air	02/06/24 23:59	02/12/24 10:36
MFL-AM03-020624-HM	4021308-26	Air	02/06/24 23:59	02/12/24 10:36
MFL-AM04-020624-HM	4021308-27	Air	02/06/24 23:59	02/12/24 10:36
MFL-AM01-020724-HM	4021308-28	Air	02/07/24 23:59	02/12/24 10:36
MFL-AM02-020724-HM	4021308-29	Air	02/07/24 23:59	02/12/24 10:36
MFL-AM03-020724-HM	4021308-30	Air	02/07/24 23:59	02/12/24 10:36
MFL-AM04-020724-HM	4021308-31	Air	02/07/24 23:59	02/12/24 10:36
MFL-FB01-020724-HM	4021308-32	Air	02/07/24 00:00	02/12/24 10:36

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020124-HM
Matrix: Air
Lab ID: 4021308-01
Sample Volume: 2031.668 m³
Filter ID:
Sampled: 02/01/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 20:49

Comments: Q9534217 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.354	SL	0.0309
Barium	7440-39-3	9.43		0.857
Beryllium	7440-41-7	0.0218		0.00256
Cadmium	7440-43-9	0.105		0.0635
Chromium	7440-47-3	5.36		1.77
Cobalt	7440-48-4	0.808		0.0349
Copper	7440-50-8	109		2.11
Lead	7439-92-1	7.86		0.171
Manganese	7439-96-5	21.1		1.51
Molybdenum	7439-98-7	4.50		0.287
Nickel	7440-02-0	3.43		0.522
Selenium	7782-49-2	0.272		0.00718
Thallium	7440-28-0	0.00252	QB-01, B	4.72E-4
Vanadium	7440-62-2	2.56		0.0424
Zinc	7440-66-6	82.2		61.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020124-HM
Matrix: Air
Lab ID: 4021308-01RE1
Sample Volume: 2031.668 m³
Filter ID:
Sampled: 02/01/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/16/24 01:21

Comments: Q9534217 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**12.8**	D	**0.0150**

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020124-HM
Matrix: Air
Lab ID: 4021308-02
Sample Volume: 2088.599 m³
Filter ID:
Sampled: 02/01/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 21:09

Comments: Q9534216 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.240**	SL	**0.0301**
Arsenic	**7440-38-2**	**0.341**		**0.00730**
Barium	**7440-39-3**	**5.93**		**0.834**
Beryllium	**7440-41-7**	**0.00709**		**0.00249**
Cadmium	7440-43-9	0.0103	U	0.0618
Chromium	**7440-47-3**	**1.87**		**1.72**
Cobalt	**7440-48-4**	**0.227**		**0.0340**
Copper	**7440-50-8**	**46.0**		**2.05**
Lead	**7439-92-1**	**0.735**		**0.167**
Manganese	**7439-96-5**	**6.38**		**1.47**
Molybdenum	**7439-98-7**	**2.26**		**0.280**
Nickel	**7440-02-0**	**1.29**		**0.508**
Selenium	**7782-49-2**	**0.244**		**0.00698**
Thallium	**7440-28-0**	**8.94E-4**	B, QB-01	**4.59E-4**
Vanadium	**7440-62-2**	**1.66**		**0.0412**
Zinc	7440-66-6	36.5	U	59.8

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020124-HM
Matrix: Air
Lab ID: 4021308-03
Sample Volume: 2025.396 m³
Filter ID:
Sampled: 02/01/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 21:24

Comments: Q9534215 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.113**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.0990**		**0.00753**
Barium	**7440-39-3**	**4.01**		**0.860**
Beryllium	**7440-41-7**	**0.0113**		**0.00257**
Cadmium	7440-43-9	0.00702	U	0.0637
Chromium	**7440-47-3**	**1.90**		**1.78**
Cobalt	**7440-48-4**	**0.221**		**0.0350**
Copper	**7440-50-8**	**37.5**		**2.11**
Lead	**7439-92-1**	**0.224**		**0.172**
Manganese	**7439-96-5**	**4.63**		**1.52**
Molybdenum	**7439-98-7**	**1.89**		**0.288**
Nickel	**7440-02-0**	**1.14**		**0.524**
Selenium	**7782-49-2**	**0.169**		**0.00720**
Thallium	**7440-28-0**	**7.14E-4**	B, QB-01	**4.73E-4**
Vanadium	**7440-62-2**	**1.39**		**0.0425**
Zinc	7440-66-6	20.0	U	61.7

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020124-HM
Matrix: Air
Lab ID: 4021308-04
Sample Volume: 1920.385 m³
Filter ID:
Sampled: 02/01/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 21:39

Comments: Q9534212 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.472**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.245**		**0.00794**
Barium	**7440-39-3**	**3.10**		**0.907**
Beryllium	**7440-41-7**	**0.00529**		**0.00271**
Cadmium	7440-43-9	0.00897	U	0.0672
Chromium	7440-47-3	1.71	U	1.87
Cobalt	**7440-48-4**	**0.155**		**0.0369**
Copper	**7440-50-8**	**21.6**		**2.23**
Lead	**7439-92-1**	**0.730**		**0.181**
Manganese	**7439-96-5**	**4.41**		**1.60**
Molybdenum	**7439-98-7**	**1.19**		**0.304**
Nickel	**7440-02-0**	**0.959**		**0.552**
Selenium	**7782-49-2**	**0.227**		**0.00759**
Thallium	**7440-28-0**	**7.57E-4**	B, QB-01	**4.99E-4**
Vanadium	**7440-62-2**	**1.55**		**0.0448**
Zinc	7440-66-6	30.5	U	65.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-020124-HM
Matrix: Air
Lab ID: 4021308-05
Sample Volume: 2031.668 m³
Filter ID:
Sampled: 02/01/24 00:00
Received: 02/12/24 10:36
Analysis Date: 02/14/24 22:08

Comments: Q9537205 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00665	U, SL	0.0309
Arsenic	7440-38-2	0.00478	U	0.00750
Barium	7440-39-3	0.538	U	0.857
Beryllium	7440-41-7	7.69E-4	U	0.00256
Cadmium	7440-43-9	0.00263	U	0.0635
Chromium	7440-47-3	1.49	U	1.77
Cobalt	**7440-48-4**	**0.0395**	FB-01	**0.0349**
Copper	7440-50-8	1.95	U	2.11
Lead	7439-92-1	0.112	U	0.171
Manganese	7439-96-5	0.134	U	1.51
Molybdenum	7439-98-7	0.244	U	0.287
Nickel	7440-02-0	0.278	U	0.522
Selenium	7782-49-2	4.98E-4	U	0.00718
Thallium	7440-28-0	1.89E-4	B, QB-01, U	4.72E-4
Vanadium	7440-62-2	0.0180	U	0.0424
Zinc	7440-66-6	14.3	U	61.5

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020224-HM
Matrix: Air
Lab ID: 4021308-06
Sample Volume: 2081.251 m³
Filter ID:
Sampled: 02/02/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 20:25

Comments: Q9537213 - Filter received damp with visible signs of mold.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0936**	SL	**0.0302**
Arsenic	**7440-38-2**	**3.01**		**0.00732**
Barium	**7440-39-3**	**5.00**		**0.836**
Beryllium	**7440-41-7**	**0.0179**		**0.00250**
Cadmium	7440-43-9	0.0382	U	0.0620
Chromium	**7440-47-3**	**3.08**		**1.73**
Cobalt	**7440-48-4**	**0.362**		**0.0341**
Copper	**7440-50-8**	**65.0**		**2.06**
Lead	**7439-92-1**	**1.13**		**0.167**
Manganese	**7439-96-5**	**13.1**		**1.48**
Molybdenum	**7439-98-7**	**2.40**		**0.281**
Nickel	**7440-02-0**	**1.77**		**0.510**
Selenium	**7782-49-2**	**0.129**	LJ, QX	**0.00700**
Thallium	**7440-28-0**	**0.00225**	B, QB-01	**4.60E-4**
Vanadium	**7440-62-2**	**1.49**		**0.0414**
Zinc	7440-66-6	45.5	U	60.0

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020224-HM
Matrix: Air
Lab ID: 4021308-07
Sample Volume: 2161.199 m³
Filter ID:
Sampled: 02/02/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 22:21

Comments: Q9537212 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0734**	SL	**0.0291**
Arsenic	**7440-38-2**	**0.192**		**0.00705**
Barium	**7440-39-3**	**2.26**		**0.806**
Beryllium	**7440-41-7**	**0.00349**		**0.00241**
Cadmium	7440-43-9	0.0258	U	0.0597
Chromium	7440-47-3	1.60	U	1.66
Cobalt	**7440-48-4**	**0.104**		**0.0328**
Copper	**7440-50-8**	**50.9**		**1.98**
Lead	**7439-92-1**	**0.575**		**0.161**
Manganese	**7439-96-5**	**2.94**		**1.42**
Molybdenum	**7439-98-7**	**1.71**		**0.270**
Nickel	**7440-02-0**	**0.751**		**0.491**
Selenium	**7782-49-2**	**0.0882**		**0.00675**
Thallium	**7440-28-0**	**5.83E-4**	B, QB-01	**4.43E-4**
Vanadium	**7440-62-2**	**0.635**		**0.0398**
Zinc	7440-66-6	27.3	U	57.8

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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020224-HM
Matrix: Air
Lab ID: 4021308-08
Sample Volume: 2037.656 m³
Filter ID:
Sampled: 02/02/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 22:37

Comments: Q9537210 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0338**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.0532**		**0.00748**
Barium	**7440-39-3**	**1.33**		**0.854**
Beryllium	**7440-41-7**	**0.00478**		**0.00256**
Cadmium	7440-43-9	0.00520	U	0.0633
Chromium	7440-47-3	1.68	U	1.76
Cobalt	**7440-48-4**	**0.104**		**0.0348**
Copper	**7440-50-8**	**23.7**		**2.10**
Lead	**7439-92-1**	**0.525**		**0.171**
Manganese	**7439-96-5**	**2.24**		**1.51**
Molybdenum	**7439-98-7**	**1.24**		**0.287**
Nickel	**7440-02-0**	**0.799**		**0.521**
Selenium	**7782-49-2**	**0.0606**		**0.00715**
Thallium	7440-28-0	4.63E-4	B, QB-01, U	4.70E-4
Vanadium	**7440-62-2**	**0.238**		**0.0422**
Zinc	7440-66-6	24.1	U	61.3

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020224-HM
Matrix: Air
Lab ID: 4021308-09
Sample Volume: 1974.12 m³
Filter ID:
Sampled: 02/02/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 22:51

Comments: Q9537206 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0893**	SL	**0.0318**
Arsenic	**7440-38-2**	**0.225**		**0.00772**
Barium	**7440-39-3**	**2.42**		**0.882**
Beryllium	**7440-41-7**	**0.00759**		**0.00264**
Cadmium	7440-43-9	0.0100	U	0.0654
Chromium	**7440-47-3**	**2.33**		**1.82**
Cobalt	**7440-48-4**	**0.251**		**0.0359**
Copper	**7440-50-8**	**13.7**		**2.17**
Lead	**7439-92-1**	**0.811**		**0.176**
Manganese	**7439-96-5**	**7.27**		**1.56**
Molybdenum	**7439-98-7**	**0.511**		**0.296**
Nickel	**7440-02-0**	**0.866**		**0.537**
Selenium	**7782-49-2**	**0.0851**		**0.00738**
Thallium	**7440-28-0**	**6.67E-4**	B, QB-01	**4.85E-4**
Vanadium	**7440-62-2**	**0.558**		**0.0436**
Zinc	7440-66-6	24.0	U	63.3

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020324-HM
Matrix: Air
Lab ID: 4021308-10
Sample Volume: 2074.626 m³
Filter ID:
Sampled: 02/03/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 18:09

Comments: Q9537203 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0436**	SL	**0.0303**
Arsenic	**7440-38-2**	**0.341**		**0.00735**
Barium	**7440-39-3**	**1.99**		**0.839**
Beryllium	**7440-41-7**	**0.00537**		**0.00251**
Cadmium	**7440-43-9**	**0.0968**		**0.0622**
Chromium	**7440-47-3**	**1.99**		**1.73**
Cobalt	**7440-48-4**	**0.191**		**0.0342**
Copper	**7440-50-8**	**39.5**		**2.06**
Lead	**7439-92-1**	**0.615**		**0.168**
Manganese	**7439-96-5**	**6.08**		**1.48**
Molybdenum	**7439-98-7**	**1.81**		**0.282**
Nickel	**7440-02-0**	**0.740**		**0.511**
Selenium	**7782-49-2**	**0.174**		**0.00703**
Thallium	**7440-28-0**	**0.00158**	B, QB-01, QB-04	**4.62E-4**
Vanadium	**7440-62-2**	**0.402**		**0.0415**
Zinc	7440-66-6	27.3	U	60.2

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020324-HM
Matrix: Air
Lab ID: 4021308-11
Sample Volume: 1963.791 m³
Filter ID:
Sampled: 02/03/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/14/24 23:06

Comments: Q9537202 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0908**	SL	**0.0320**
Arsenic	**7440-38-2**	**0.704**		**0.00776**
Barium	**7440-39-3**	**5.28**		**0.886**
Beryllium	**7440-41-7**	**0.0118**		**0.00265**
Cadmium	7440-43-9	0.0370	U	0.0657
Chromium	**7440-47-3**	**3.19**		**1.83**
Cobalt	**7440-48-4**	**0.472**		**0.0361**
Copper	**7440-50-8**	**39.3**		**2.18**
Lead	**7439-92-1**	**1.99**		**0.177**
Manganese	**7439-96-5**	**12.9**		**1.57**
Molybdenum	**7439-98-7**	**1.28**		**0.297**
Nickel	**7440-02-0**	**1.81**		**0.540**
Selenium	**7782-49-2**	**0.199**		**0.00742**
Thallium	**7440-28-0**	**0.00161**	B, QB-01	**4.88E-4**
Vanadium	**7440-62-2**	**1.09**		**0.0438**
Zinc	7440-66-6	49.0	U	63.6

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020324-HM
Matrix: Air
Lab ID: 4021308-12
Sample Volume: 1843.831 m³
Filter ID:
Sampled: 02/03/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 00:17

Comments: Q9537201 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0223	SL, U	0.0341
Arsenic	**7440-38-2**	**0.0716**		**0.00827**
Barium	**7440-39-3**	**1.07**		**0.944**
Beryllium	**7440-41-7**	**0.00362**		**0.00282**
Cadmium	7440-43-9	0.00974	U	0.0700
Chromium	**7440-47-3**	**2.05**		**1.95**
Cobalt	**7440-48-4**	**0.0861**		**0.0385**
Copper	**7440-50-8**	**39.3**		**2.32**
Lead	**7439-92-1**	**0.377**		**0.189**
Manganese	**7439-96-5**	**2.03**		**1.67**
Molybdenum	**7439-98-7**	**1.76**		**0.317**
Nickel	**7440-02-0**	**0.847**		**0.575**
Selenium	**7782-49-2**	**0.146**		**0.00791**
Thallium	**7440-28-0**	**0.00116**	B, QB-01	**5.20E-4**
Vanadium	**7440-62-2**	**0.172**		**0.0467**
Zinc	7440-66-6	18.7	U	67.8

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020324-HM
Matrix: Air
Lab ID: 4021308-13
Sample Volume: 1470.905 m³
Filter ID:
Sampled: 02/03/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 00:32

Comments: Q9537200 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0802**	SL	**0.0427**
Arsenic	**7440-38-2**	**0.663**		**0.0104**
Barium	**7440-39-3**	**3.53**		**1.18**
Beryllium	**7440-41-7**	**0.0177**		**0.00354**
Cadmium	7440-43-9	0.0234	U	0.0877
Chromium	**7440-47-3**	**4.31**		**2.44**
Cobalt	**7440-48-4**	**0.645**		**0.0482**
Copper	**7440-50-8**	**17.3**		**2.91**
Lead	**7439-92-1**	**0.943**		**0.237**
Manganese	**7439-96-5**	**17.7**		**2.09**
Molybdenum	**7439-98-7**	**0.799**		**0.397**
Nickel	**7440-02-0**	**1.95**		**0.721**
Selenium	**7782-49-2**	**0.183**		**0.00991**
Thallium	**7440-28-0**	**0.00170**	B, QB-01	**6.52E-4**
Vanadium	**7440-62-2**	**1.28**		**0.0585**
Zinc	7440-66-6	36.6	U	85.0

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-020324-HM
Matrix: Air
Lab ID: 4021308-14
Sample Volume: 2074.626 m³
Filter ID:
Sampled: 02/03/24 00:00
Received: 02/12/24 10:36
Analysis Date: 02/15/24 00:48

Comments: Q9534209 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0243	SL, U	0.0303
Arsenic	**7440-38-2**	**0.00746**	FB-01	**0.00735**
Barium	7440-39-3	0.545	U	0.839
Beryllium	7440-41-7	8.06E-4	U	0.00251
Cadmium	7440-43-9	0.00509	U	0.0622
Chromium	7440-47-3	1.38	U	1.73
Cobalt	7440-48-4	0.0290	U	0.0342
Copper	**7440-50-8**	**3.54**	FB-01	**2.06**
Lead	7439-92-1	0.167	U	0.168
Manganese	7439-96-5	0.234	U	1.48
Molybdenum	7439-98-7	0.196	U	0.282
Nickel	7440-02-0	0.450	U	0.511
Selenium	7782-49-2	0.00218	U	0.00703
Thallium	7440-28-0	1.92E-4	B, QB-01, U	4.62E-4
Vanadium	7440-62-2	0.0235	U	0.0415
Zinc	7440-66-6	15.7	U	60.2

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020424-HM
Matrix: Air
Lab ID: 4021308-15
Sample Volume: 1943.884 m³
Filter ID:
Sampled: 02/04/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 01:02

Comments: Q9537199 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0928**	SL	**0.0323**
Arsenic	**7440-38-2**	**0.828**		**0.00784**
Barium	**7440-39-3**	**4.35**		**0.896**
Beryllium	**7440-41-7**	**0.0156**		**0.00268**
Cadmium	7440-43-9	0.0238	U	0.0664
Chromium	**7440-47-3**	**3.49**		**1.85**
Cobalt	**7440-48-4**	**0.735**		**0.0365**
Copper	**7440-50-8**	**77.3**		**2.20**
Lead	**7439-92-1**	**1.29**		**0.179**
Manganese	**7439-96-5**	**24.7**		**1.58**
Molybdenum	**7439-98-7**	**2.48**		**0.300**
Nickel	**7440-02-0**	**1.26**		**0.546**
Selenium	**7782-49-2**	**0.229**		**0.00750**
Thallium	**7440-28-0**	**0.00176**	B, QB-01	**4.93E-4**
Vanadium	**7440-62-2**	**1.45**		**0.0443**
Zinc	7440-66-6	36.1	U	64.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020424-HM
Matrix: Air
Lab ID: 4021308-16
Sample Volume: 2060.364 m³
Filter ID:
Sampled: 02/04/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 01:18

Comments: Q9537198 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.105**	SL	**0.0305**
Arsenic	**7440-38-2**	**0.216**		**0.00740**
Barium	**7440-39-3**	**4.15**		**0.845**
Beryllium	**7440-41-7**	**0.00625**		**0.00253**
Cadmium	**7440-43-9**	**0.0795**		**0.0626**
Chromium	**7440-47-3**	**2.05**		**1.75**
Cobalt	**7440-48-4**	**0.218**		**0.0344**
Copper	**7440-50-8**	**58.1**		**2.08**
Lead	**7439-92-1**	**0.862**		**0.169**
Manganese	**7439-96-5**	**6.57**		**1.49**
Molybdenum	**7439-98-7**	**1.74**		**0.283**
Nickel	**7440-02-0**	**0.767**		**0.515**
Selenium	**7782-49-2**	**0.174**		**0.00708**
Thallium	**7440-28-0**	**0.00132**	B, QB-01	**4.65E-4**
Vanadium	**7440-62-2**	**0.523**		**0.0418**
Zinc	7440-66-6	23.2	U	60.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020424-HM/MS/MS **Lab ID:** 4021308-17 **Sampled:** 02/04/24 23:59
Matrix: Air **Sample Volume:** 1864.102 m³ **Received:** 02/12/24 10:36
Filter ID: **Analysis Date:** 02/15/24 17:36

Comments: Q9534211 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0406**	SL	**0.0337**
Arsenic	**7440-38-2**	**0.0872**		**0.00818**
Barium	**7440-39-3**	**1.33**		**0.934**
Beryllium	**7440-41-7**	**0.00588**		**0.00279**
Cadmium	7440-43-9	0.0177	U	0.0692
Chromium	7440-47-3	1.68	U	1.93
Cobalt	**7440-48-4**	**0.121**		**0.0381**
Copper	**7440-50-8**	**57.0**		**2.30**
Lead	**7439-92-1**	**0.457**		**0.187**
Manganese	**7439-96-5**	**2.89**		**1.65**
Molybdenum	**7439-98-7**	**2.28**		**0.313**
Nickel	**7440-02-0**	**0.822**		**0.569**
Selenium	**7782-49-2**	**0.169**	LJ, QX	**0.00782**
Thallium	**7440-28-0**	**0.00127**	B, QB-01, QB-04	**5.14E-4**
Vanadium	**7440-62-2**	**0.227**		**0.0462**
Zinc	7440-66-6	34.3	U	67.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020424-HM
Matrix: Air
Lab ID: 4021308-18
Sample Volume: 1886.436 m³
Filter ID:
Sampled: 02/04/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 20:41

Comments: Q9534207 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0809**	SL	**0.0333**
Arsenic	**7440-38-2**	**0.274**		**0.00808**
Barium	**7440-39-3**	**2.27**		**0.923**
Beryllium	**7440-41-7**	**0.00440**		**0.00276**
Cadmium	7440-43-9	0.0112	U	0.0684
Chromium	7440-47-3	1.72	U	1.91
Cobalt	**7440-48-4**	**0.125**		**0.0376**
Copper	**7440-50-8**	**22.6**		**2.27**
Lead	**7439-92-1**	**0.614**		**0.185**
Manganese	**7439-96-5**	**3.74**		**1.63**
Molybdenum	**7439-98-7**	**1.23**		**0.310**
Nickel	**7440-02-0**	**0.705**		**0.562**
Selenium	**7782-49-2**	**0.176**	LJ, QX	**0.00773**
Thallium	**7440-28-0**	**0.00114**	B, QB-01	**5.08E-4**
Vanadium	**7440-62-2**	**0.272**		**0.0456**
Zinc	7440-66-6	34.4	U	66.2

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020524-HM
Matrix: Air
Lab ID: 4021308-19
Sample Volume: 1973.449 m³
Filter ID:
Sampled: 02/05/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 20:56

Comments: Q9534206 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0724**	SL	**0.0318**
Arsenic	**7440-38-2**	**0.322**		**0.00773**
Barium	**7440-39-3**	**2.07**		**0.882**
Beryllium	**7440-41-7**	**0.00432**		**0.00264**
Cadmium	7440-43-9	0.0104	U	0.0654
Chromium	7440-47-3	1.76	U	1.82
Cobalt	**7440-48-4**	**0.200**		**0.0359**
Copper	**7440-50-8**	**113**		**2.17**
Lead	**7439-92-1**	**0.848**		**0.176**
Manganese	**7439-96-5**	**4.14**		**1.56**
Molybdenum	**7439-98-7**	**4.10**		**0.296**
Nickel	**7440-02-0**	**0.695**		**0.538**
Selenium	**7782-49-2**	**0.136**	LJ, QX	**0.00739**
Thallium	**7440-28-0**	**8.52E-4**	B, QB-01	**4.86E-4**
Vanadium	**7440-62-2**	**0.326**		**0.0436**
Zinc	7440-66-6	30.2	U	63.3

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020524-HM
Matrix: Air
Lab ID: 4021308-20
Sample Volume: 2133.91 m³
Filter ID:
Sampled: 02/05/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 21:10

Comments: Q9516875 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.308**	SL	**0.0294**
Arsenic	**7440-38-2**	**0.176**		**0.00714**
Barium	**7440-39-3**	**5.28**		**0.816**
Beryllium	**7440-41-7**	**0.00688**		**0.00244**
Cadmium	7440-43-9	0.00811	U	0.0605
Chromium	7440-47-3	1.42	U	1.69
Cobalt	**7440-48-4**	**0.213**		**0.0332**
Copper	**7440-50-8**	**40.8**		**2.01**
Lead	**7439-92-1**	**0.692**		**0.163**
Manganese	**7439-96-5**	**6.17**		**1.44**
Molybdenum	**7439-98-7**	**1.54**		**0.274**
Nickel	**7440-02-0**	**0.839**		**0.497**
Selenium	**7782-49-2**	**0.177**	LJ, QX	**0.00683**
Thallium	**7440-28-0**	**8.27E-4**	B, QB-01	**4.49E-4**
Vanadium	**7440-62-2**	**0.589**		**0.0403**
Zinc	7440-66-6	36.4	U	58.6

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020524-HM
Matrix: Air
Lab ID: 4021308-21
Sample Volume: 1860.983 m³
Filter ID:
Sampled: 02/05/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 21:25

Comments: Q9516874 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0620**	SL	**0.0337**
Arsenic	**7440-38-2**	**0.100**		**0.00819**
Barium	**7440-39-3**	**1.96**		**0.935**
Beryllium	**7440-41-7**	**0.00796**		**0.00280**
Cadmium	7440-43-9	0.00533	U	0.0693
Chromium	7440-47-3	1.26	U	1.93
Cobalt	**7440-48-4**	**0.199**		**0.0381**
Copper	**7440-50-8**	**40.4**		**2.30**
Lead	**7439-92-1**	**0.275**		**0.187**
Manganese	**7439-96-5**	**4.52**		**1.65**
Molybdenum	**7439-98-7**	**1.83**		**0.314**
Nickel	**7440-02-0**	**1.07**		**0.570**
Selenium	**7782-49-2**	**0.150**	LJ, QX	**0.00783**
Thallium	**7440-28-0**	**7.55E-4**	B, QB-01	**5.15E-4**
Vanadium	**7440-62-2**	**0.409**		**0.0462**
Zinc	7440-66-6	32.1	U	67.1

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020524-HM
Matrix: Air
Lab ID: 4021308-22
Sample Volume: 1923.122 m³
Filter ID:
Sampled: 02/05/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 21:39

Comments: Q9516873 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.119**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.140**		**0.00793**
Barium	**7440-39-3**	**2.45**		**0.905**
Beryllium	**7440-41-7**	**0.00519**		**0.00271**
Cadmium	7440-43-9	0.00682	U	0.0671
Chromium	7440-47-3	1.28	U	1.87
Cobalt	**7440-48-4**	**0.135**		**0.0369**
Copper	**7440-50-8**	**19.8**		**2.23**
Lead	**7439-92-1**	**0.523**		**0.181**
Manganese	**7439-96-5**	**4.29**		**1.60**
Molybdenum	**7439-98-7**	**1.17**		**0.304**
Nickel	**7440-02-0**	**0.570**		**0.552**
Selenium	**7782-49-2**	**0.152**	LJ, QX	**0.00758**
Thallium	**7440-28-0**	**7.06E-4**	B, QB-01	**4.98E-4**
Vanadium	**7440-62-2**	**0.389**		**0.0448**
Zinc	7440-66-6	29.5	U	65.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-020524-HM
Matrix: Air
Lab ID: 4021308-23
Sample Volume: 1973.449 m³
Filter ID:
Sampled: 02/05/24 00:00
Received: 02/12/24 10:36
Analysis Date: 02/15/24 21:53

Comments: Q9516871 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0154	SL, U	0.0318
Arsenic	**7440-38-2**	**0.0238**	FB-01	**0.00773**
Barium	7440-39-3	0.512	U	0.882
Beryllium	7440-41-7	4.45E-4	U	0.00264
Cadmium	7440-43-9	7.43E-4	U	0.0654
Chromium	7440-47-3	0.624	U	1.82
Cobalt	7440-48-4	0.00960	U	0.0359
Copper	7440-50-8	1.64	U	2.17
Lead	7439-92-1	0.0842	U	0.176
Manganese	7439-96-5	0.169	U	1.56
Molybdenum	7439-98-7	0.0976	U	0.296
Nickel	7440-02-0	0.276	U	0.538
Selenium	7782-49-2	9.75E-4	LJ, QX, U	0.00739
Thallium	7440-28-0	2.28E-4	B, QB-01, U	4.86E-4
Vanadium	7440-62-2	0.0161	U	0.0436
Zinc	7440-66-6	28.5	U	63.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020624-HM
Matrix: Air
Lab ID: 4021308-24
Sample Volume: 1960.309 m³
Filter ID:
Sampled: 02/06/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 22:07

Comments: Q9516872 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0789**	SL	**0.0320**
Arsenic	**7440-38-2**	**0.413**		**0.00778**
Barium	**7440-39-3**	**2.40**		**0.888**
Beryllium	**7440-41-7**	**0.00510**		**0.00266**
Cadmium	7440-43-9	0.0136	U	0.0658
Chromium	7440-47-3	1.42	U	1.83
Cobalt	**7440-48-4**	**0.349**		**0.0362**
Copper	**7440-50-8**	**125**		**2.18**
Lead	**7439-92-1**	**1.18**		**0.178**
Manganese	**7439-96-5**	**5.57**		**1.57**
Molybdenum	**7439-98-7**	**3.96**		**0.298**
Nickel	**7440-02-0**	**0.881**		**0.541**
Selenium	**7782-49-2**	**0.186**	LJ, QX	**0.00744**
Thallium	**7440-28-0**	**9.35E-4**	B, QB-01	**4.89E-4**
Vanadium	**7440-62-2**	**0.791**		**0.0439**
Zinc	7440-66-6	41.7	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: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020624-HM
Matrix: Air
Lab ID: 4021308-25
Sample Volume: 2134.201 m³
Filter ID:
Sampled: 02/06/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 22:21

Comments: Q9516870 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.193**	SL	**0.0294**
Arsenic	**7440-38-2**	**0.299**		**0.00714**
Barium	**7440-39-3**	**6.02**		**0.816**
Beryllium	**7440-41-7**	**0.0162**		**0.00244**
Cadmium	7440-43-9	0.0112	U	0.0605
Chromium	**7440-47-3**	**2.12**		**1.68**
Cobalt	**7440-48-4**	**0.407**		**0.0332**
Copper	**7440-50-8**	**44.3**		**2.00**
Lead	**7439-92-1**	**1.01**		**0.163**
Manganese	**7439-96-5**	**14.3**		**1.44**
Molybdenum	**7439-98-7**	**1.32**		**0.274**
Nickel	**7440-02-0**	**1.37**		**0.497**
Selenium	**7782-49-2**	**0.254**	LJ, QX	**0.00683**
Thallium	**7440-28-0**	**0.00120**	B, QB-01	**4.49E-4**
Vanadium	**7440-62-2**	**1.49**		**0.0403**
Zinc	7440-66-6	34.4	U	58.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020624-HM
Matrix: Air
Lab ID: 4021308-26
Sample Volume: 1846.373 m³
Filter ID:
Sampled: 02/06/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 23:29

Comments: Q9516869 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.114**	SL	**0.0340**
Arsenic	**7440-38-2**	**0.120**		**0.00826**
Barium	**7440-39-3**	**2.63**		**0.943**
Beryllium	**7440-41-7**	**0.0104**		**0.00282**
Cadmium	7440-43-9	0.00632	U	0.0699
Chromium	7440-47-3	1.68	U	1.95
Cobalt	**7440-48-4**	**0.251**		**0.0384**
Copper	**7440-50-8**	**49.4**		**2.32**
Lead	**7439-92-1**	**0.555**		**0.189**
Manganese	**7439-96-5**	**6.59**		**1.67**
Molybdenum	**7439-98-7**	**2.03**		**0.316**
Nickel	**7440-02-0**	**1.16**		**0.575**
Selenium	**7782-49-2**	**0.180**	LJ, QX	**0.00790**
Thallium	**7440-28-0**	**0.00109**	B, QB-01	**5.19E-4**
Vanadium	**7440-62-2**	**0.904**		**0.0466**
Zinc	7440-66-6	25.4	U	67.7

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020624-HM **Lab ID:** 4021308-27 **Sampled:** 02/06/24 23:59
Matrix: Air **Sample Volume:** 1811.418 m³ **Received:** 02/12/24 10:36
Filter ID: **Analysis Date:** 02/15/24 23:42

Comments: Q9516868 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0933**	SL	**0.0347**
Arsenic	**7440-38-2**	**0.165**		**0.00842**
Barium	**7440-39-3**	**2.38**		**0.961**
Beryllium	**7440-41-7**	**0.00569**		**0.00287**
Cadmium	7440-43-9	0.00719	U	0.0712
Chromium	7440-47-3	1.48	U	1.99
Cobalt	**7440-48-4**	**0.143**		**0.0392**
Copper	**7440-50-8**	**23.9**		**2.36**
Lead	**7439-92-1**	**0.664**		**0.192**
Manganese	**7439-96-5**	**5.37**		**1.70**
Molybdenum	**7439-98-7**	**1.31**		**0.322**
Nickel	**7440-02-0**	**0.628**		**0.586**
Selenium	**7782-49-2**	**0.189**	LJ, QX	**0.00805**
Thallium	**7440-28-0**	**9.40E-4**	B, QB-01	**5.29E-4**
Vanadium	**7440-62-2**	**0.733**		**0.0475**
Zinc	7440-66-6	31.8	U	69.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-020724-HM
Matrix: Air
Lab ID: 4021308-28
Sample Volume: 1951.276 m³
Filter ID:
Sampled: 02/07/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/15/24 23:56

Comments: Q9516867 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0756**	SL	**0.0322**
Arsenic	**7440-38-2**	**0.345**		**0.00781**
Barium	**7440-39-3**	**2.61**		**0.892**
Beryllium	**7440-41-7**	**0.00523**		**0.00267**
Cadmium	7440-43-9	0.0140	U	0.0661
Chromium	7440-47-3	1.39	U	1.84
Cobalt	**7440-48-4**	**0.603**		**0.0364**
Copper	**7440-50-8**	**119**		**2.19**
Lead	**7439-92-1**	**0.874**		**0.178**
Manganese	**7439-96-5**	**6.03**		**1.58**
Molybdenum	**7439-98-7**	**4.34**		**0.299**
Nickel	**7440-02-0**	**0.902**		**0.544**
Selenium	**7782-49-2**	**0.198**	LJ, QX	**0.00747**
Thallium	**7440-28-0**	**0.00114**	B, QB-01	**4.91E-4**
Vanadium	**7440-62-2**	**0.649**		**0.0441**
Zinc	7440-66-6	29.8	U	64.0

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-020724-HM
Matrix: Air
Lab ID: 4021308-29
Sample Volume: 2116.372 m³
Filter ID:
Sampled: 02/07/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/16/24 00:10

Comments: Q9516866 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.180**	SL	**0.0297**
Arsenic	**7440-38-2**	**0.255**		**0.00720**
Barium	**7440-39-3**	**4.08**		**0.823**
Beryllium	**7440-41-7**	**0.00973**		**0.00246**
Cadmium	7440-43-9	0.0163	U	0.0610
Chromium	7440-47-3	1.66	U	1.70
Cobalt	**7440-48-4**	**0.245**		**0.0335**
Copper	**7440-50-8**	**54.5**		**2.02**
Lead	**7439-92-1**	**1.21**		**0.165**
Manganese	**7439-96-5**	**8.71**		**1.45**
Molybdenum	**7439-98-7**	**1.42**		**0.276**
Nickel	**7440-02-0**	**0.926**		**0.501**
Selenium	**7782-49-2**	**0.215**	LJ, QX	**0.00689**
Thallium	**7440-28-0**	**0.00132**	B, QB-01	**4.53E-4**
Vanadium	**7440-62-2**	**0.899**		**0.0407**
Zinc	7440-66-6	43.5	U	59.0

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-020724-HM
Matrix: Air
Lab ID: 4021308-30
Sample Volume: 1826.289 m³
Filter ID:
Sampled: 02/07/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/16/24 00:25

Comments: Q9516885 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.108**	SL	**0.0344**
Arsenic	**7440-38-2**	**0.144**		**0.00835**
Barium	**7440-39-3**	**2.73**		**0.953**
Beryllium	**7440-41-7**	**0.0137**		**0.00285**
Cadmium	7440-43-9	0.00886	U	0.0706
Chromium	7440-47-3	1.62	U	1.97
Cobalt	**7440-48-4**	**0.259**		**0.0388**
Copper	**7440-50-8**	**46.9**		**2.34**
Lead	**7439-92-1**	**0.621**		**0.191**
Manganese	**7439-96-5**	**7.09**		**1.68**
Molybdenum	**7439-98-7**	**1.82**		**0.320**
Nickel	**7440-02-0**	**0.957**		**0.581**
Selenium	**7782-49-2**	**0.195**	LJ, QX	**0.00798**
Thallium	**7440-28-0**	**0.00109**	B, QB-01	**5.25E-4**
Vanadium	**7440-62-2**	**0.794**		**0.0471**
Zinc	7440-66-6	31.1	U	68.4

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-020724-HM
Matrix: Air
Lab ID: 4021308-31
Sample Volume: 1736.112 m³
Filter ID:
Sampled: 02/07/24 23:59
Received: 02/12/24 10:36
Analysis Date: 02/16/24 00:39

Comments: Q9516884 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.122**	SL	**0.0362**
Arsenic	**7440-38-2**	**0.263**		**0.00878**
Barium	**7440-39-3**	**2.85**		**1.00**
Beryllium	**7440-41-7**	**0.00619**		**0.00300**
Cadmium	7440-43-9	0.00964	U	0.0743
Chromium	7440-47-3	1.36	U	2.07
Cobalt	**7440-48-4**	**0.160**		**0.0409**
Copper	**7440-50-8**	**27.6**		**2.46**
Lead	**7439-92-1**	**1.04**		**0.201**
Manganese	**7439-96-5**	**5.62**		**1.77**
Molybdenum	**7439-98-7**	**1.07**		**0.336**
Nickel	**7440-02-0**	**0.706**		**0.611**
Selenium	**7782-49-2**	**0.176**	LJ, QX	**0.00840**
Thallium	**7440-28-0**	**0.00107**	B, QB-01	**5.52E-4**
Vanadium	**7440-62-2**	**0.619**		**0.0496**
Zinc	7440-66-6	36.5	U	72.0

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-020724-HM
Matrix: Air
Lab ID: 4021308-32
Sample Volume: 1951.276 m³
Filter ID:
Sampled: 02/07/24 00:00
Received: 02/12/24 10:36
Analysis Date: 02/16/24 01:08

Comments: Q9516882 Field Blank - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0139	SL, U	0.0322
Arsenic	7440-38-2	0.00642	U	0.00781
Barium	7440-39-3	0.511	U	0.892
Beryllium	7440-41-7	7.39E-4	U	0.00267
Cadmium	**7440-43-9**	**0.212**	FB-01	**0.0661**
Chromium	7440-47-3	0.636	U	1.84
Cobalt	7440-48-4	0.00865	U	0.0364
Copper	7440-50-8	0.508	U	2.19
Lead	7439-92-1	0.0465	U	0.178
Manganese	7439-96-5	0.200	U	1.58
Molybdenum	7439-98-7	0.0844	U	0.299
Nickel	7440-02-0	0.217	U	0.544
Selenium	7782-49-2	0.00534	LJ, QX, U	0.00747
Thallium	7440-28-0	2.00E-4	B, QB-01, U	4.91E-4
Vanadium	7440-62-2	0.0183	U	0.0441
Zinc	7440-66-6	29.8	U	64.0

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402037 - B4B1403										
Calibration Blank (2402037-CCB1)				Prepared & Analyzed: 02/14/24						
Antimony	0.533		ng/l							
Arsenic	0.0184		ng/l							
Barium	1.20		ng/l							
Beryllium	0.0400		ng/l							
Cadmium	0.199		ng/l							
Chromium	-0.377		ng/l							U
Cobalt	0.290		ng/l							
Copper	82.1		ng/l							
Lead	2.47		ng/l							
Manganese	3.12		ng/l							
Molybdenum	9.95		ng/l							
Nickel	0.282		ng/l							
Selenium	-5.29		ng/l							U
Thallium	1.67		ng/l							QB-04
Vanadium	-17.0		ng/l							U
Zinc	-129		ng/l							U
Calibration Blank (2402037-CCB2)				Prepared & Analyzed: 02/14/24						
Antimony	0.345		ng/l							
Arsenic	7.44		ng/l							
Barium	0.946		ng/l							
Beryllium	0.0580		ng/l							
Cadmium	0.129		ng/l							
Chromium	1.43		ng/l							
Cobalt	0.161		ng/l							
Copper	25.4		ng/l							
Lead	2.03		ng/l							
Manganese	4.15		ng/l							
Molybdenum	3.71		ng/l							
Nickel	0.512		ng/l							
Selenium	5.22		ng/l							
Thallium	0.923		ng/l							
Vanadium	-17.5		ng/l							U
Zinc	-122		ng/l							U
Calibration Blank (2402037-CCB3)				Prepared: 02/14/24 Analyzed: 02/15/24						
Antimony	-0.0471		ng/l							U
Arsenic	4.76		ng/l							
Barium	0.213		ng/l							
Beryllium	-0.126		ng/l							U

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
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AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402037 - B4B1403										
Calibration Blank (2402037-CCB3) Contin				Prepared: 02/14/24 Analyzed: 02/15/24						
Cadmium	0.0486		ng/l							
Chromium	1.23		ng/l							
Cobalt	-0.100		ng/l							U
Copper	19.5		ng/l							
Lead	1.12		ng/l							
Manganese	1.48		ng/l							
Molybdenum	2.79		ng/l							
Nickel	-0.120		ng/l							U
Selenium	1.35		ng/l							
Thallium	0.836		ng/l							
Vanadium	-22.3		ng/l							U
Zinc	-148		ng/l							U
Calibration Blank (2402037-CCB4)				Prepared: 02/14/24 Analyzed: 02/15/24						
Antimony	0.295		ng/l							
Arsenic	1.28		ng/l							
Barium	0.849		ng/l							
Beryllium	0.0430		ng/l							
Cadmium	0.170		ng/l							
Chromium	0.0662		ng/l							
Cobalt	0.154		ng/l							
Copper	22.3		ng/l							
Lead	1.33		ng/l							
Manganese	2.90		ng/l							
Molybdenum	3.38		ng/l							
Nickel	0.742		ng/l							
Selenium	3.90		ng/l							
Thallium	0.881		ng/l							
Vanadium	-22.6		ng/l							U
Zinc	-130		ng/l							U
Calibration Check (2402037-CCV1)				Prepared & Analyzed: 02/14/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	207000		ng/l	200000		104	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	19900		ng/l	20000		99.3	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	50200		ng/l	50000		100	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			

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REPORTED: 02/21/24 15:48
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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402037 - B4B1403										
Calibration Check (2402037-CCV1) Contin					Prepared & Analyzed: 02/14/24					
Lead	199000		ng/l	200000		99.7	90-110			
Manganese	493000		ng/l	500000		98.6	90-110			
Molybdenum	49200		ng/l	50000		98.3	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	492		ng/l	500.00		98.4	90-110			
Vanadium	19500		ng/l	20000		97.4	90-110			
Zinc	504000		ng/l	500000		101	90-110			
Calibration Check (2402037-CCV2)					Prepared & Analyzed: 02/14/24					
Antimony	20300		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	209000		ng/l	200000		104	90-110			
Beryllium	5140		ng/l	5000.0		103	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Chromium	255000		ng/l	240000		106	90-110			
Cobalt	50500		ng/l	50000		101	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	526000		ng/l	500000		105	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	19900		ng/l	20000		99.4	90-110			
Zinc	506000		ng/l	500000		101	90-110			
Calibration Check (2402037-CCV3)					Prepared & Analyzed: 02/14/24					
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		101	90-110			
Barium	214000		ng/l	200000		107	90-110			
Beryllium	4920		ng/l	5000.0		98.5	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	254000		ng/l	240000		106	90-110			
Cobalt	50600		ng/l	50000		101	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	514000		ng/l	500000		103	90-110			
Molybdenum	51000		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		102	90-110			

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402037 - B4B1403										
Calibration Check (2402037-CCV3) Contin					Prepared & Analyzed: 02/14/24					
Selenium	20500		ng/l	20000		102	90-110			
Thallium	490		ng/l	500.00		97.9	90-110			
Vanadium	19900		ng/l	20000		99.3	90-110			
Zinc	514000		ng/l	500000		103	90-110			
Calibration Check (2402037-CCV4)					Prepared: 02/14/24 Analyzed: 02/15/24					
Antimony	20500		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		102	90-110			
Barium	215000		ng/l	200000		107	90-110			
Beryllium	5070		ng/l	5000.0		101	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	257000		ng/l	240000		107	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	51200		ng/l	50000		102	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20600		ng/l	20000		103	90-110			
Thallium	488		ng/l	500.00		97.7	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	513000		ng/l	500000		103	90-110			
High Cal Check (2402037-HCV1)					Prepared & Analyzed: 02/14/24					
Antimony	40700		ng/l	40000		102	95-105			
Arsenic	40500		ng/l	40000		101	95-105			
Barium	403000		ng/l	400000		101	95-105			
Beryllium	10200		ng/l	10000		102	95-105			
Cadmium	40000		ng/l	40000		100	95-105			
Chromium	473000		ng/l	480000		98.5	95-105			
Cobalt	98400		ng/l	100000		98.4	95-105			
Copper	3.95E6		ng/l	4.0000E6		98.7	95-105			
Lead	402000		ng/l	400000		100	95-105			
Manganese	998000		ng/l	1.0000E6		99.8	95-105			
Molybdenum	101000		ng/l	100000		101	95-105			
Nickel	237000		ng/l	240000		98.9	95-105			
Selenium	40600		ng/l	40000		101	95-105			
Thallium	995		ng/l	1000.0		99.5	95-105			
Vanadium	40000		ng/l	40000		100	95-105			
Zinc	999000		ng/l	1.0000E6		99.9	95-105			

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402037 - B4B1403										
Initial Cal Blank (2402037-ICB1)				Prepared & Analyzed: 02/14/24						
Antimony	0.376		ng/l							
Arsenic	1.99		ng/l							
Barium	-0.317		ng/l							U
Beryllium	0.117		ng/l							
Cadmium	0.154		ng/l							
Chromium	-0.466		ng/l							U
Cobalt	0.124		ng/l							
Copper	60.7		ng/l							
Lead	2.41		ng/l							
Manganese	3.38		ng/l							
Molybdenum	5.26		ng/l							
Nickel	1.90		ng/l							
Selenium	12.9		ng/l							
Thallium	1.52		ng/l							
Vanadium	-21.0		ng/l							U
Zinc	-135		ng/l							U
Initial Cal Check (2402037-ICV1)				Prepared & Analyzed: 02/14/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	199000		ng/l	200000		99.5	90-110			
Beryllium	5290		ng/l	5000.0		106	90-110			
Cadmium	20700		ng/l	20000		104	90-110			
Chromium	252000		ng/l	240000		105	90-110			
Cobalt	50400		ng/l	50000		101	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	197000		ng/l	200000		98.6	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	50300		ng/l	50000		101	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	21300		ng/l	20000		106	90-110			
Thallium	512		ng/l	500.00		102	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	513000		ng/l	500000		103	90-110			
Interference Check A (2402037-IFA1)				Prepared & Analyzed: 02/14/24						
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

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402037 - B4B1403										
Interference Check A (2402037-IFA1) Co				Prepared & Analyzed: 02/14/24						
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	300000		ng/l	300000		100	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2402037-IFB1)				Prepared & Analyzed: 02/14/24						
Antimony	20300		ng/l	20000		102	80-120			
Arsenic	20400		ng/l	20000		102	80-120			
Barium	203000		ng/l	200000		102	80-120			
Beryllium	4960		ng/l	5000.0		99.2	80-120			
Cadmium	19600		ng/l	20000		98.1	80-120			
Chromium	237000		ng/l	240000		98.6	80-120			
Cobalt	48500		ng/l	50000		97.0	80-120			
Copper	1.87E6		ng/l	2.0000E6		93.7	80-120			
Lead	202000		ng/l	200000		101	80-120			
Manganese	495000		ng/l	500000		98.9	80-120			
Molybdenum	346000		ng/l	350000		98.8	80-120			
Nickel	114000		ng/l	120000		94.7	80-120			
Selenium	19500		ng/l	20000		97.6	80-120			
Thallium	507		ng/l	500.00		101	80-120			
Vanadium	18600		ng/l	20000		92.8	80-120			
Zinc	463000		ng/l	500000		92.5	80-120			
Batch 2402040 - B4B1403										
Calibration Blank (2402040-CCB1)				Prepared & Analyzed: 02/15/24						
Antimony	0.454		ng/l							
Arsenic	6.80		ng/l							
Barium	1.45		ng/l							
Beryllium	0.150		ng/l							
Cadmium	0.204		ng/l							
Chromium	-0.811		ng/l							U
Cobalt	0.0302		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402040 - B4B1403										
Calibration Blank (2402040-CCB1) Contin				Prepared & Analyzed: 02/15/24						
Copper	83.3		ng/l							
Lead	3.09		ng/l							
Manganese	3.34		ng/l							
Molybdenum	8.60		ng/l							
Nickel	4.11		ng/l							
Selenium	13.0		ng/l							LJ, QX
Thallium	1.84		ng/l							QB-04
Vanadium	-20.7		ng/l							U
Zinc	-33.1		ng/l							U
Calibration Blank (2402040-CCB2)				Prepared & Analyzed: 02/15/24						
Antimony	0.260		ng/l							
Arsenic	2.78		ng/l							
Barium	0.964		ng/l							
Beryllium	0.452		ng/l							
Cadmium	-0.00354		ng/l							U
Chromium	1.70		ng/l							
Cobalt	0.120		ng/l							
Copper	23.6		ng/l							
Lead	1.78		ng/l							
Manganese	2.45		ng/l							
Molybdenum	2.73		ng/l							
Nickel	1.64		ng/l							
Selenium	-0.913		ng/l							LJ, QX, U
Thallium	1.11		ng/l							
Vanadium	-21.7		ng/l							U
Zinc	-59.3		ng/l							U
Calibration Blank (2402040-CCB3)				Prepared & Analyzed: 02/15/24						
Antimony	0.424		ng/l							
Arsenic	8.06		ng/l							
Barium	2.07		ng/l							
Beryllium	0.137		ng/l							
Cadmium	0.0730		ng/l							
Chromium	2.34		ng/l							
Cobalt	-0.0390		ng/l							U
Copper	28.5		ng/l							
Lead	1.50		ng/l							
Manganese	3.63		ng/l							
Molybdenum	1.82		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402040 - B4B1403										
Calibration Blank (2402040-CCB3) Contin				Prepared & Analyzed: 02/15/24						
Nickel	1.37		ng/l							
Selenium	16.0		ng/l							LJ, QX
Thallium	0.756		ng/l							
Vanadium	-25.6		ng/l							U
Zinc	-69.2		ng/l							U
Calibration Blank (2402040-CCB4)				Prepared: 02/15/24 Analyzed: 02/16/24						
Antimony	0.451		ng/l							
Arsenic	11.6		ng/l							
Barium	1.58		ng/l							
Beryllium	0.0614		ng/l							
Cadmium	0.0946		ng/l							
Chromium	1.89		ng/l							
Cobalt	-0.00824		ng/l							U
Copper	16.5		ng/l							
Lead	0.998		ng/l							
Manganese	2.02		ng/l							
Molybdenum	3.38		ng/l							
Nickel	3.37		ng/l							
Selenium	8.74		ng/l							LJ, QX
Thallium	0.844		ng/l							
Vanadium	-25.6		ng/l							U
Zinc	-68.5		ng/l							U
Calibration Check (2402040-CCV1)				Prepared & Analyzed: 02/15/24						
Antimony	20500		ng/l	20000		102	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	4800		ng/l	5000.0		96.0	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	256000		ng/l	240000		107	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	498000		ng/l	500000		99.7	90-110			
Molybdenum	50300		ng/l	50000		101	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20600		ng/l	20000		103	90-110			LJ, QX
Thallium	510		ng/l	500.00		102	90-110			
Vanadium	19900		ng/l	20000		99.4	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402040 - B4B1403										
Calibration Check (2402040-CCV1) Contin				Prepared & Analyzed: 02/15/24						
Zinc	509000		ng/l	500000		102	90-110			
Calibration Check (2402040-CCV2)				Prepared & Analyzed: 02/15/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	198000		ng/l	200000		99.0	90-110			
Beryllium	5190		ng/l	5000.0		104	90-110			
Cadmium	19900		ng/l	20000		99.5	90-110			
Chromium	255000		ng/l	240000		106	90-110			
Cobalt	49300		ng/l	50000		98.6	90-110			
Copper	1.98E6		ng/l	2.0000E6		99.2	90-110			
Lead	200000		ng/l	200000		99.9	90-110			
Manganese	493000		ng/l	500000		98.7	90-110			
Molybdenum	48600		ng/l	50000		97.1	90-110			
Nickel	119000		ng/l	120000		98.9	90-110			
Selenium	20700		ng/l	20000		103	90-110			LJ, QX
Thallium	502		ng/l	500.00		100	90-110			
Vanadium	20000		ng/l	20000		99.8	90-110			
Zinc	502000		ng/l	500000		100	90-110			
Calibration Check (2402040-CCV3)				Prepared & Analyzed: 02/15/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	4930		ng/l	5000.0		98.5	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	49700		ng/l	50000		99.4	90-110			
Copper	2.01E6		ng/l	2.0000E6		100	90-110			
Lead	200000		ng/l	200000		99.9	90-110			
Manganese	502000		ng/l	500000		100	90-110			
Molybdenum	49300		ng/l	50000		98.6	90-110			
Nickel	119000		ng/l	120000		99.4	90-110			
Selenium	20700		ng/l	20000		103	90-110			LJ, QX
Thallium	498		ng/l	500.00		99.6	90-110			
Vanadium	19500		ng/l	20000		97.3	90-110			
Zinc	503000		ng/l	500000		101	90-110			
Calibration Check (2402040-CCV4)				Prepared: 02/15/24 Analyzed: 02/16/24						
Antimony	20300		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402040 - B4B1403										
Calibration Check (2402040-CCV4) Contin				Prepared: 02/15/24 Analyzed: 02/16/24						
Barium	203000		ng/l	200000		102	90-110			
Beryllium	4960		ng/l	5000.0		99.2	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	255000		ng/l	240000		106	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	2.05E6		ng/l	2.0000E6		102	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	501000		ng/l	500000		100	90-110			
Molybdenum	49700		ng/l	50000		99.4	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20800		ng/l	20000		104	90-110			LJ, QX
Thallium	503		ng/l	500.00		101	90-110			
Vanadium	19800		ng/l	20000		99.0	90-110			
Zinc	514000		ng/l	500000		103	90-110			
High Cal Check (2402040-HCV1)				Prepared & Analyzed: 02/15/24						
Antimony	40300		ng/l	40000		101	95-105			
Arsenic	40100		ng/l	40000		100	95-105			
Barium	393000		ng/l	400000		98.3	95-105			
Beryllium	10400		ng/l	10000		104	95-105			
Cadmium	39700		ng/l	40000		99.2	95-105			
Chromium	470000		ng/l	480000		97.9	95-105			
Cobalt	98100		ng/l	100000		98.1	95-105			
Copper	3.90E6		ng/l	4.0000E6		97.4	95-105			
Lead	403000		ng/l	400000		101	95-105			
Manganese	992000		ng/l	1.0000E6		99.2	95-105			
Molybdenum	99300		ng/l	100000		99.3	95-105			
Nickel	235000		ng/l	240000		97.8	95-105			
Selenium	40900		ng/l	40000		102	95-105			LJ, QX
Thallium	1010		ng/l	1000.0		101	95-105			
Vanadium	40200		ng/l	40000		101	95-105			
Zinc	994000		ng/l	1.0000E6		99.4	95-105			
Initial Cal Blank (2402040-ICB1)				Prepared & Analyzed: 02/15/24						
Antimony	0.783		ng/l							
Arsenic	3.77		ng/l							
Barium	0.257		ng/l							
Beryllium	0.118		ng/l							
Cadmium	0.0552		ng/l							
Chromium	-0.302		ng/l							U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402040 - B4B1403										
Initial Cal Blank (2402040-ICB1) Continu					Prepared & Analyzed: 02/15/24					
Cobalt	-0.0883		ng/l							U
Copper	61.8		ng/l							
Lead	3.04		ng/l							
Manganese	3.34		ng/l							
Molybdenum	5.80		ng/l							
Nickel	1.25		ng/l							
Selenium	-0.541		ng/l							LJ, QX, U
Thallium	1.31		ng/l							
Vanadium	-23.9		ng/l							U
Zinc	-50.2		ng/l							U
Initial Cal Check (2402040-ICV1)					Prepared & Analyzed: 02/15/24					
Antimony	19900		ng/l	20000		99.5	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	195000		ng/l	200000		97.3	90-110			
Beryllium	5250		ng/l	5000.0		105	90-110			
Cadmium	20700		ng/l	20000		103	90-110			
Chromium	254000		ng/l	240000		106	90-110			
Cobalt	50300		ng/l	50000		101	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	198000		ng/l	200000		98.9	90-110			
Manganese	540000		ng/l	500000		108	90-110			
Molybdenum	50000		ng/l	50000		100	90-110			
Nickel	119000		ng/l	120000		99.4	90-110			
Selenium	21500		ng/l	20000		108	90-110			LJ, QX
Thallium	516		ng/l	500.00		103	90-110			
Vanadium	20500		ng/l	20000		102	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Interference Check A (2402040-IFA1)					Prepared & Analyzed: 02/15/24					
Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2402040 - B4B1403										
Interference Check A (2402040-IFA1) Co				Prepared & Analyzed: 02/15/24						
Molybdenum	297000		ng/l	300000		99.1	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			LJ, QX, 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 (2402040-IFB1)				Prepared & Analyzed: 02/15/24						
Antimony	19900		ng/l	20000		99.7	80-120			
Arsenic	20300		ng/l	20000		101	80-120			
Barium	195000		ng/l	200000		97.4	80-120			
Beryllium	5180		ng/l	5000.0		104	80-120			
Cadmium	19200		ng/l	20000		96.0	80-120			
Chromium	234000		ng/l	240000		97.5	80-120			
Cobalt	47400		ng/l	50000		94.8	80-120			
Copper	1.84E6		ng/l	2.0000E6		92.1	80-120			
Lead	202000		ng/l	200000		101	80-120			
Manganese	487000		ng/l	500000		97.3	80-120			
Molybdenum	339000		ng/l	350000		96.9	80-120			
Nickel	111000		ng/l	120000		92.4	80-120			
Selenium	19600		ng/l	20000		97.9	80-120			LJ, QX
Thallium	519		ng/l	500.00		104	80-120			
Vanadium	18300		ng/l	20000		91.5	80-120			
Zinc	454000		ng/l	500000		90.9	80-120			
Batch B4B1403 - ICP-MS Extraction										
Blank (B4B1403-BLK1)				Prepared & Analyzed: 02/14/24						
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0793	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B1403 - ICP-MS Extraction										
Blank (B4B1403-BLK1) Continued				Prepared & Analyzed: 02/14/24						
Thallium	ND	5.89E-4	ng/m³ Air							B, QB-01, QB-04, U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4B1403-BS1)				Prepared & Analyzed: 02/14/24						
Antimony	0.926	0.0386	ng/m³ Air	1.3829		67.0	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		96.9	80-120			
Barium	27.5	1.07	ng/m³ Air	27.658		99.4	80-120			
Beryllium	1.34	0.00320	ng/m³ Air	1.3829		97.0	80-120			
Cadmium	1.33	0.0793	ng/m³ Air	1.3829		96.5	80-120			
Chromium	14.7	2.21	ng/m³ Air	13.829		107	80-120			
Cobalt	1.33	0.0436	ng/m³ Air	1.3829		96.2	80-120			
Copper	28.8	2.63	ng/m³ Air	27.658		104	80-120			
Lead	13.4	0.214	ng/m³ Air	13.829		96.8	80-120			
Manganese	8.52	1.89	ng/m³ Air	8.2975		103	80-120			
Molybdenum	1.37	0.359	ng/m³ Air	1.3829		99.2	80-120			
Nickel	2.81	0.652	ng/m³ Air	2.7658		101	80-120			
Selenium	2.73	0.00896	ng/m³ Air	2.7658		98.6	80-120			
Thallium	0.133	5.89E-4	ng/m³ Air	0.13829		96.0	80-120			B, QB-01, QB-04
Vanadium	2.63	0.0529	ng/m³ Air	2.7658		95.2	80-120			
Zinc	106	76.8	ng/m³ Air	82.975		128	80-120			
Duplicate (B4B1403-DUP1)		**Source: 4021308-10**		Prepared & Analyzed: 02/14/24						
Antimony	0.0306	0.0303	ng/m³ Air		0.0436			35.0	10	SL
Arsenic	0.324	0.00735	ng/m³ Air		0.341			5.18	10	
Barium	2.01	0.839	ng/m³ Air		1.99			0.908	10	
Beryllium	0.00488	0.00251	ng/m³ Air		0.00537			9.54	10	
Cadmium	0.132	0.0622	ng/m³ Air		0.0968			30.7	10	
Chromium	2.39	1.73	ng/m³ Air		1.99			18.3	10	
Cobalt	0.202	0.0342	ng/m³ Air		0.191			5.70	10	
Copper	40.0	2.06	ng/m³ Air		39.5			1.31	10	
Lead	0.581	0.168	ng/m³ Air		0.615			5.67	10	
Manganese	6.38	1.48	ng/m³ Air		6.08			4.73	10	
Molybdenum	1.82	0.282	ng/m³ Air		1.81			0.405	10	
Nickel	1.26	0.511	ng/m³ Air		0.740			52.4	10	
Selenium	0.175	0.00703	ng/m³ Air		0.174			0.822	10	
Thallium	0.00162	4.62E-4	ng/m³ Air		0.00158			2.71	10	B, QB-01, QB-04
Vanadium	0.431	0.0415	ng/m³ Air		0.402			6.78	10	

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B1403 - ICP-MS Extraction										
Duplicate (B4B1403-DUP1) Continued		**Source: 4021308-10**		Prepared & Analyzed: 02/14/24						
Zinc	ND	60.2	ng/m³ Air		ND				10	U
Duplicate (B4B1403-DUP2)		**Source: 4021308-04**		Prepared & Analyzed: 02/14/24						
Antimony	0.464	0.0327	ng/m³ Air		0.472			1.78	10	SL
Arsenic	0.234	0.00794	ng/m³ Air		0.245			4.75	10	
Barium	3.12	0.907	ng/m³ Air		3.10			0.472	10	
Beryllium	0.00526	0.00271	ng/m³ Air		0.00529			0.625	10	
Cadmium	ND	0.0672	ng/m³ Air		ND				10	U
Chromium	ND	1.87	ng/m³ Air		ND				10	U
Cobalt	0.150	0.0369	ng/m³ Air		0.155			3.11	10	
Copper	20.9	2.23	ng/m³ Air		21.6			3.14	10	
Lead	0.713	0.181	ng/m³ Air		0.730			2.38	10	
Manganese	4.26	1.60	ng/m³ Air		4.41			3.42	10	
Molybdenum	1.18	0.304	ng/m³ Air		1.19			0.842	10	
Nickel	0.929	0.552	ng/m³ Air		0.959			3.18	10	
Selenium	0.206	0.00759	ng/m³ Air		0.227			10.0	10	
Thallium	6.25E-4	4.99E-4	ng/m³ Air		7.57E-4			19.0	10	B, QB-01
Vanadium	1.50	0.0448	ng/m³ Air		1.55			2.79	10	
Zinc	ND	65.1	ng/m³ Air		ND				10	U
Matrix Spike (B4B1403-MS1)		**Source: 4021308-10**		Prepared & Analyzed: 02/14/24						
Antimony	0.485	0.0303	ng/m³ Air	1.0845	0.0436	40.7	80-120			SL
Arsenic	2.51	0.00735	ng/m³ Air	2.1691	0.341	100	80-120			
Barium	23.7	0.839	ng/m³ Air	21.691	1.99	100	80-120			
Beryllium	1.08	0.00251	ng/m³ Air	1.0845	0.00537	98.9	80-120			
Cadmium	1.15	0.0622	ng/m³ Air	1.0845	0.0968	97.5	80-120			
Chromium	12.8	1.73	ng/m³ Air	10.845	1.99	99.8	80-120			
Cobalt	1.25	0.0342	ng/m³ Air	1.0845	0.191	97.6	80-120			
Copper	59.5	2.06	ng/m³ Air	21.691	39.5	92.3	80-120			
Lead	11.5	0.168	ng/m³ Air	10.845	0.615	100	80-120			
Manganese	12.7	1.48	ng/m³ Air	6.5072	6.08	101	80-120			
Molybdenum	2.78	0.282	ng/m³ Air	1.0845	1.81	89.6	80-120			
Nickel	2.95	0.511	ng/m³ Air	2.1691	0.740	102	80-120			
Selenium	2.30	0.00703	ng/m³ Air	2.1691	0.174	98.2	80-120			
Thallium	0.108	4.62E-4	ng/m³ Air	0.10845	0.00158	97.7	80-120			B, QB-01, QB-04
Vanadium	2.44	0.0415	ng/m³ Air	2.1691	0.402	93.9	80-120			
Zinc	96.3	60.2	ng/m³ Air	65.072	ND	148	80-120			
Matrix Spike Dup (B4B1403-MSD1)		**Source: 4021308-10**		Prepared & Analyzed: 02/14/24						
Antimony	0.486	0.0303	ng/m³ Air	1.0845	0.0436	40.8	80-120	0.339	20	SL

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B1403 - ICP-MS Extraction										
Matrix Spike Dup (B4B1403-MSD1) Conti			**Source: 4021308-10**		Prepared & Analyzed: 02/14/24					
Arsenic	2.47	0.00735	ng/m³ Air	2.1691	0.341	98.0	80-120	1.83	20	
Barium	24.6	0.839	ng/m³ Air	21.691	1.99	104	80-120	3.70	20	
Beryllium	1.07	0.00251	ng/m³ Air	1.0845	0.00537	98.0	80-120	0.867	20	
Cadmium	1.29	0.0622	ng/m³ Air	1.0845	0.0968	110	80-120	11.2	20	
Chromium	13.0	1.73	ng/m³ Air	10.845	1.99	102	80-120	1.62	20	
Cobalt	1.29	0.0342	ng/m³ Air	1.0845	0.191	101	80-120	3.02	20	
Copper	62.3	2.06	ng/m³ Air	21.691	39.5	105	80-120	4.63	20	
Lead	11.6	0.168	ng/m³ Air	10.845	0.615	101	80-120	0.887	20	
Manganese	12.9	1.48	ng/m³ Air	6.5072	6.08	105	80-120	1.77	20	
Molybdenum	2.93	0.282	ng/m³ Air	1.0845	1.81	103	80-120	5.25	20	
Nickel	2.88	0.511	ng/m³ Air	2.1691	0.740	98.8	80-120	2.40	20	
Selenium	2.32	0.00703	ng/m³ Air	2.1691	0.174	99.1	80-120	0.814	20	
Thallium	0.109	4.62E-4	ng/m³ Air	0.10845	0.00158	99.5	80-120	1.78	20	B, QB-01, QB-04
Vanadium	2.46	0.0415	ng/m³ Air	2.1691	0.402	95.1	80-120	1.08	20	
Zinc	91.0	60.2	ng/m³ Air	65.072	ND	140	80-120	5.58	20	
Post Spike (B4B1403-PS1)			**Source: 4021308-10**		Prepared & Analyzed: 02/14/24					
Antimony	0.262	0.0303	ng/m³ Air	0.21691	0.0436	100	75-125			SL
Arsenic	1.41	0.00735	ng/m³ Air	1.0845	0.341	98.8	75-125			
Barium	4.32	0.839	ng/m³ Air	2.1691	1.99	108	75-125			
Beryllium	0.223	0.00251	ng/m³ Air	0.21691	0.00537	101	75-125			
Cadmium	0.207	0.0622	ng/m³ Air	0.10845	0.0968	101	75-125			
Chromium	3.10	1.73	ng/m³ Air	1.0845	1.99	102	75-125			
Cobalt	0.410	0.0342	ng/m³ Air	0.21691	0.191	101	75-125			
Copper	52.7	2.06	ng/m³ Air	10.845	39.5	122	75-125			
Lead	22.1	0.168	ng/m³ Air	21.691	0.615	99.1	75-125			
Manganese	8.39	1.48	ng/m³ Air	2.1691	6.08	106	75-125			
Molybdenum	2.90	0.282	ng/m³ Air	1.0845	1.81	100	75-125			
Nickel	2.88	0.511	ng/m³ Air	2.1691	0.740	98.5	75-125			
Selenium	1.27	0.00703	ng/m³ Air	1.0845	0.174	101	75-125			
Thallium	0.0565	4.62E-4	ng/m³ Air	5.4227E-2	0.00158	101	75-125			B, QB-01, QB-04
Vanadium	1.45	0.0415	ng/m³ Air	1.0845	0.402	96.6	75-125			
Zinc	ND	60.2	ng/m³ Air	21.691	ND		75-125			U
Dilution Check (B4B1403-SRL1)			**Source: 4021308-10**		Prepared & Analyzed: 02/14/24					
Antimony	ND	0.151	ng/m³ Air		ND				10	SL, U
Arsenic	0.340	0.0367	ng/m³ Air		0.341			0.403	10	
Barium	ND	4.20	ng/m³ Air		ND				10	U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B1403 - ICP-MS Extraction										
Dilution Check (B4B1403-SRL1) ContinueSource: 4021308-10 Prepared & Analyzed: 02/14/24										
Beryllium	ND	0.0125	ng/m³ Air		ND				10	U
Cadmium	ND	0.311	ng/m³ Air		ND				10	U
Chromium	ND	8.67	ng/m³ Air		ND				10	U
Cobalt	0.193	0.171	ng/m³ Air		0.191			1.40	10	
Copper	40.9	10.3	ng/m³ Air		39.5			3.54	10	
Lead	ND	0.839	ng/m³ Air		ND				10	U
Manganese	ND	7.41	ng/m³ Air		ND				10	U
Molybdenum	1.79	1.41	ng/m³ Air		1.81			0.901	10	
Nickel	ND	2.56	ng/m³ Air		ND				10	U
Selenium	0.160	0.0351	ng/m³ Air		0.174			7.97	10	
Thallium	0.00250	0.00231	ng/m³ Air		ND			45.2	10	B, QB-01, QB-04
Vanadium	0.418	0.207	ng/m³ Air		0.402			3.83	10	
Zinc	ND	301	ng/m³ Air		ND				10	U
Batch B4B1502 - ICP-MS Extraction										
Blank (B4B1502-BLK1) Prepared & Analyzed: 02/15/24										
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0793	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							LJ, QX, U
Thallium	8.02E-4	5.89E-4	ng/m³ Air							B, QB-01, QB-04
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4B1502-BS1) Prepared & Analyzed: 02/15/24										
Antimony	0.913	0.0386	ng/m³ Air	1.3829		66.0	80-120			SL
Arsenic	2.73	0.00937	ng/m³ Air	2.7658		98.8	80-120			
Barium	28.1	1.07	ng/m³ Air	27.658		102	80-120			
Beryllium	1.38	0.00320	ng/m³ Air	1.3829		99.7	80-120			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B1502 - ICP-MS Extraction										
LCS (B4B1502-BS1) Continued				Prepared & Analyzed: 02/15/24						
Cadmium	1.35	0.0793	ng/m³ Air	1.3829		97.3	80-120			
Chromium	15.1	2.21	ng/m³ Air	13.829		109	80-120			
Cobalt	1.35	0.0436	ng/m³ Air	1.3829		97.7	80-120			
Copper	29.3	2.63	ng/m³ Air	27.658		106	80-120			
Lead	13.6	0.214	ng/m³ Air	13.829		98.5	80-120			
Manganese	8.75	1.89	ng/m³ Air	8.2975		105	80-120			
Molybdenum	1.39	0.359	ng/m³ Air	1.3829		101	80-120			
Nickel	2.86	0.652	ng/m³ Air	2.7658		103	80-120			
Selenium	2.74	0.00896	ng/m³ Air	2.7658		99.0	80-120			LJ, QX
Thallium	0.139	5.89E-4	ng/m³ Air	0.13829		100	80-120			B, QB-01, QB-04
Vanadium	2.68	0.0529	ng/m³ Air	2.7658		97.0	80-120			
Zinc	125	76.8	ng/m³ Air	82.975		150	80-120			
Duplicate (B4B1502-DUP1)		**Source: 4021308-17**		Prepared & Analyzed: 02/15/24						
Antimony	0.0392	0.0337	ng/m³ Air		0.0406			3.45	10	SL
Arsenic	0.0914	0.00818	ng/m³ Air		0.0872			4.78	10	
Barium	1.96	0.934	ng/m³ Air		1.33			38.3	10	
Beryllium	0.00540	0.00279	ng/m³ Air		0.00588			8.47	10	
Cadmium	ND	0.0692	ng/m³ Air		ND				10	U
Chromium	ND	1.93	ng/m³ Air		ND				10	U
Cobalt	0.130	0.0381	ng/m³ Air		0.121			7.09	10	
Copper	60.1	2.30	ng/m³ Air		57.0			5.29	10	
Lead	0.408	0.187	ng/m³ Air		0.457			11.3	10	
Manganese	3.12	1.65	ng/m³ Air		2.89			7.64	10	
Molybdenum	2.39	0.313	ng/m³ Air		2.28			4.68	10	
Nickel	0.674	0.569	ng/m³ Air		0.822			19.8	10	
Selenium	0.172	0.00782	ng/m³ Air		0.169			1.36	10	LJ, QX
Thallium	0.00140	5.14E-4	ng/m³ Air		0.00127			10.2	10	B, QB-01, QB-04
Vanadium	0.254	0.0462	ng/m³ Air		0.227			11.0	10	
Zinc	ND	67.0	ng/m³ Air		ND				10	U
Duplicate (B4B1502-DUP2)		**Source: 4021308-31**		Prepared: 02/15/24 Analyzed: 02/16/24						
Antimony	0.121	0.0362	ng/m³ Air		0.122			1.00	10	SL
Arsenic	0.256	0.00878	ng/m³ Air		0.263			2.79	10	
Barium	2.91	1.00	ng/m³ Air		2.85			1.93	10	
Beryllium	0.00609	0.00300	ng/m³ Air		0.00619			1.59	10	
Cadmium	ND	0.0743	ng/m³ Air		ND				10	U
Chromium	ND	2.07	ng/m³ Air		ND				10	U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B1502 - ICP-MS Extraction										
Duplicate (B4B1502-DUP2) Continued			**Source: 4021308-31**		Prepared: 02/15/24 Analyzed: 02/16/24					
Cobalt	0.157	0.0409	ng/m³ Air		0.160			1.67	10	
Copper	27.4	2.46	ng/m³ Air		27.6			0.782	10	
Lead	1.04	0.201	ng/m³ Air		1.04			0.386	10	
Manganese	5.62	1.77	ng/m³ Air		5.62			0.0142	10	
Molybdenum	1.07	0.336	ng/m³ Air		1.07			0.605	10	
Nickel	0.703	0.611	ng/m³ Air		0.706			0.474	10	
Selenium	0.166	0.00840	ng/m³ Air		0.176			6.03	10	LJ, QX
Thallium	0.00104	5.52E-4	ng/m³ Air		0.00107			2.33	10	B, QB-01
Vanadium	0.622	0.0496	ng/m³ Air		0.619			0.444	10	
Zinc	ND	72.0	ng/m³ Air		ND				10	U
Matrix Spike (B4B1502-MS1)			**Source: 4021308-17**		Prepared & Analyzed: 02/15/24					
Antimony	0.698	0.0337	ng/m³ Air	1.2070	0.0406	54.4	80-120			SL
Arsenic	2.36	0.00818	ng/m³ Air	2.4140	0.0872	94.2	80-120			
Barium	24.2	0.934	ng/m³ Air	24.140	1.33	94.7	80-120			
Beryllium	1.17	0.00279	ng/m³ Air	1.2070	0.00588	96.8	80-120			
Cadmium	1.15	0.0692	ng/m³ Air	1.2070	ND	95.2	80-120			
Chromium	13.4	1.93	ng/m³ Air	12.070	ND	111	80-120			
Cobalt	1.37	0.0381	ng/m³ Air	1.2070	0.121	104	80-120			
Copper	76.7	2.30	ng/m³ Air	24.140	57.0	81.9	80-120			
Lead	11.9	0.187	ng/m³ Air	12.070	0.457	95.2	80-120			
Manganese	9.89	1.65	ng/m³ Air	7.2421	2.89	96.6	80-120			
Molybdenum	3.34	0.313	ng/m³ Air	1.2070	2.28	87.6	80-120			
Nickel	2.80	0.569	ng/m³ Air	2.4140	0.822	81.9	80-120			
Selenium	2.49	0.00782	ng/m³ Air	2.4140	0.169	96.3	80-120			LJ, QX
Thallium	0.118	5.14E-4	ng/m³ Air	0.12070	0.00127	96.9	80-120			B, QB-01, QB-04
Vanadium	2.44	0.0462	ng/m³ Air	2.4140	0.227	91.7	80-120			
Zinc	104	67.0	ng/m³ Air	72.421	ND	143	80-120			
Matrix Spike Dup (B4B1502-MSD1)			**Source: 4021308-17**		Prepared & Analyzed: 02/15/24					
Antimony	0.697	0.0337	ng/m³ Air	1.2070	0.0406	54.4	80-120	0.0317	20	SL
Arsenic	2.45	0.00818	ng/m³ Air	2.4140	0.0872	97.9	80-120	3.67	20	
Barium	25.1	0.934	ng/m³ Air	24.140	1.33	98.3	80-120	3.51	20	
Beryllium	1.25	0.00279	ng/m³ Air	1.2070	0.00588	103	80-120	6.12	20	
Cadmium	1.18	0.0692	ng/m³ Air	1.2070	ND	97.8	80-120	2.67	20	
Chromium	14.0	1.93	ng/m³ Air	12.070	ND	116	80-120	4.08	20	
Cobalt	1.29	0.0381	ng/m³ Air	1.2070	0.121	96.8	80-120	6.28	20	
Copper	78.6	2.30	ng/m³ Air	24.140	57.0	89.5	80-120	2.34	20	
Lead	12.4	0.187	ng/m³ Air	12.070	0.457	98.6	80-120	3.33	20	

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
SUBMITTED: 02/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B1502 - ICP-MS Extraction										
Matrix Spike Dup (B4B1502-MSD1) Conti			**Source: 4021308-17**		Prepared & Analyzed: 02/15/24					
Manganese	10.3	1.65	ng/m³ Air	7.2421	2.89	103	80-120	4.28	20	
Molybdenum	3.46	0.313	ng/m³ Air	1.2070	2.28	97.7	80-120	3.56	20	
Nickel	3.17	0.569	ng/m³ Air	2.4140	0.822	97.3	80-120	12.5	20	
Selenium	2.57	0.00782	ng/m³ Air	2.4140	0.169	99.6	80-120	3.14	20	LJ, QX
Thallium	0.122	5.14E-4	ng/m³ Air	0.12070	0.00127	100	80-120	3.36	20	B, QB-01, QB-04
Vanadium	2.54	0.0462	ng/m³ Air	2.4140	0.227	96.0	80-120	4.15	20	
Zinc	97.6	67.0	ng/m³ Air	72.421	ND	135	80-120	5.95	20	
Post Spike (B4B1502-PS1)			**Source: 4021308-17**		Prepared & Analyzed: 02/15/24					
Antimony	0.282	0.0337	ng/m³ Air	0.24140	0.0406	100	75-125			SL
Arsenic	1.28	0.00818	ng/m³ Air	1.2070	0.0872	98.8	75-125			
Barium	3.68	0.934	ng/m³ Air	2.4140	1.33	97.3	75-125			
Beryllium	0.253	0.00279	ng/m³ Air	0.24140	0.00588	102	75-125			
Cadmium	0.136	0.0692	ng/m³ Air	0.12070	ND	112	75-125			
Chromium	2.86	1.93	ng/m³ Air	1.2070	ND	237	75-125			
Cobalt	0.358	0.0381	ng/m³ Air	0.24140	0.121	98.2	75-125			
Copper	67.9	2.30	ng/m³ Air	12.070	57.0	90.4	75-125			
Lead	24.3	0.187	ng/m³ Air	24.140	0.457	98.6	75-125			
Manganese	5.28	1.65	ng/m³ Air	2.4140	2.89	99.1	75-125			
Molybdenum	3.44	0.313	ng/m³ Air	1.2070	2.28	96.1	75-125			
Nickel	3.14	0.569	ng/m³ Air	2.4140	0.822	96.1	75-125			
Selenium	1.38	0.00782	ng/m³ Air	1.2070	0.169	100	75-125			LJ, QX
Thallium	0.0630	5.14E-4	ng/m³ Air	6.0351E-2	0.00127	102	75-125			B, QB-01, QB-04
Vanadium	1.38	0.0462	ng/m³ Air	1.2070	0.227	95.7	75-125			
Zinc	ND	67.0	ng/m³ Air	24.140	ND		75-125			U
Dilution Check (B4B1502-SRL1)			**Source: 4021308-17**		Prepared & Analyzed: 02/15/24					
Antimony	ND	0.168	ng/m³ Air		ND				10	SL, U
Arsenic	0.0802	0.0409	ng/m³ Air		0.0872			8.29	10	
Barium	ND	4.67	ng/m³ Air		ND				10	U
Beryllium	ND	0.0140	ng/m³ Air		ND				10	U
Cadmium	ND	0.346	ng/m³ Air		ND				10	U
Chromium	ND	9.64	ng/m³ Air		ND				10	U
Cobalt	ND	0.190	ng/m³ Air		ND				10	U
Copper	58.0	11.5	ng/m³ Air		57.0			1.74	10	
Lead	ND	0.934	ng/m³ Air		ND				10	U
Manganese	ND	8.25	ng/m³ Air		ND				10	U
Molybdenum	2.25	1.57	ng/m³ Air		2.28			1.16	10	

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FILE #: 4205.00.003.001
REPORTED: 02/21/24 15:48
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AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4B1502 - ICP-MS Extraction										
Dilution Check (B4B1502-SRL1) ContinueSource: 4021308-17 Prepared & Analyzed: 02/15/24										
Nickel	ND	2.85	ng/m³ Air		ND				10	U
Selenium	0.156	0.0391	ng/m³ Air		0.169			7.89	10	LJ, QX
Thallium	ND	0.00257	ng/m³ Air		ND				10	B, QB-01, QB-04, U
Vanadium	0.233	0.231	ng/m³ Air		ND			2.65	10	
Zinc	ND	335	ng/m³ Air		ND				10	U

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Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QX	Compound does not meet QC criteria. Results should be considered an estimate.
QB-04	Analyte exceeds continuing calibration blank criteria
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.
D	This result obtained by dilution.
B	Analyte is found in the associated blank as well as in the sample (CLP B-flag).
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

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

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 2/23/2024 and Shanna Vasser 2/26/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 2/1/2024 - 2/7/2023
Report No: 4021308

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

Discrepancies:

2. The laboratory stated that all samples were received in acceptable condition unless otherwise noted. MFL-AM01-020224-HM (filter Q9537213) was received damp, with visible signs of mold. There were no additional details; therefore, it is assumed the other samples met method criteria for analysis.

13. Field blank detections above the method detection limit were reported for cobalt in MFL-FB01-020124-HM, for arsenic and copper in MFL-FB01-020324-HM, for arsenic in MFL-FB01-020524-HM, and for cadmium in MFL-FB01-020724-HM.

Notes:

7. Sample MFL-AM01-020124-HM was analyzed at a two-fold dilution for arsenic.