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

August 1 through August 7, 2024
[Report Updated: September 24, 2024]

Tetra Tech, Inc. (Tetra Tech) prepared a Community Air Monitoring and Sampling Plan (CAMSP) to address community air monitoring during debris removal operations in response to the 2023 Maui Wildfires. Air monitoring and sampling occurred from August 1 through August 7, 2024, at the 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)

The CAMSP addresses ambient community air monitoring and sampling to assess conditions and determine whether debris removal activities, managed by the U.S. Army Corps of Engineers (USACE), and private contractors, significantly impact air quality in Lahaina. Data collected is made available to the State of Hawaii Department of Health, Clean Air Branch (HDOH) through an online shared site and the information presented in these weekly reports. Air monitoring and sampling as prescribed in the CAMSP will continue until debris removal activities are complete or until HDOH advises otherwise.

Air quality monitoring for particulate matter was conducted at all four community locations over a 24-hour period each day in accordance with the CAMSP. Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), which is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week from August 1 through August 7 at each of the locations. Monitoring results were compared to the National Ambient Air Quality Standard (NAAQS) for PM_{10}, 24-hour time-weighted average of 150 micrograms per cubic meter ($\mu g/m^3$) screening level.

The weekly reports do not include air quality monitoring for fine particulate matter (particle size diameter of 2.5 µm or less [$PM_{2.5}$]). The Department of Health or U.S. Environmental Protection Agency (EPA) monitors for this at six locations in Lahaina; results are accessible at https://fire.airnow.gov/.

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

Air Monitoring Results

Real time PM_{10} concentrations were detected at each monitoring location throughout this reporting period. None of the results exceeded the 150 $\mu g/m^3$ screening level, as shown in **Table 1**.

Air Sampling Results

A total of 28 samples for asbestos fibers were collected throughout this reporting period. All analytical

results for asbestos were below the SSAL of 0.003 structures per cubic centimeter (s/cc) and below the laboratory's analytical sensitivity (see **Table 2**).

In addition, all ambient air samples from all four community sampling locations yielded low levels of metals; all detections were below their respective SSALs (see **Table 2**).

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

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.1 miles per hour originating from a generally south-southeast direction. **Table 3** summarizes meteorological data**.**

Quality Control Summary

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

Air monitoring proceeded by use of Met One Instruments, Inc., environmental beta attenuation mass monitors (E-BAM) to allow comparison to NAAQS for particulates. E-BAMs are factory-calibrated annually and do not require daily calibration, except for a leak check and a flow audit, which were performed before monitoring according to the manufacturer's procedures.

Collection of samples to be analyzed for asbestos occurred by use of a Casella Vortex 3 or similar air sampling pump. Sampling flow rates are determined and documented by pre- and post- calibration of each sampling pump according to a primary calibration standard. Calibration and sampling accorded with Tetra Tech SOPs 064-2, "Calibration of Air Sampling Pump," and 073-3, "Air Quality Monitoring"; and EPA Environmental Response Team (ERT) SOPs 2008, "General Air Monitoring and Sampling Guidelines," and 2015 "Asbestos Air Sampling," included in the CAMSP.

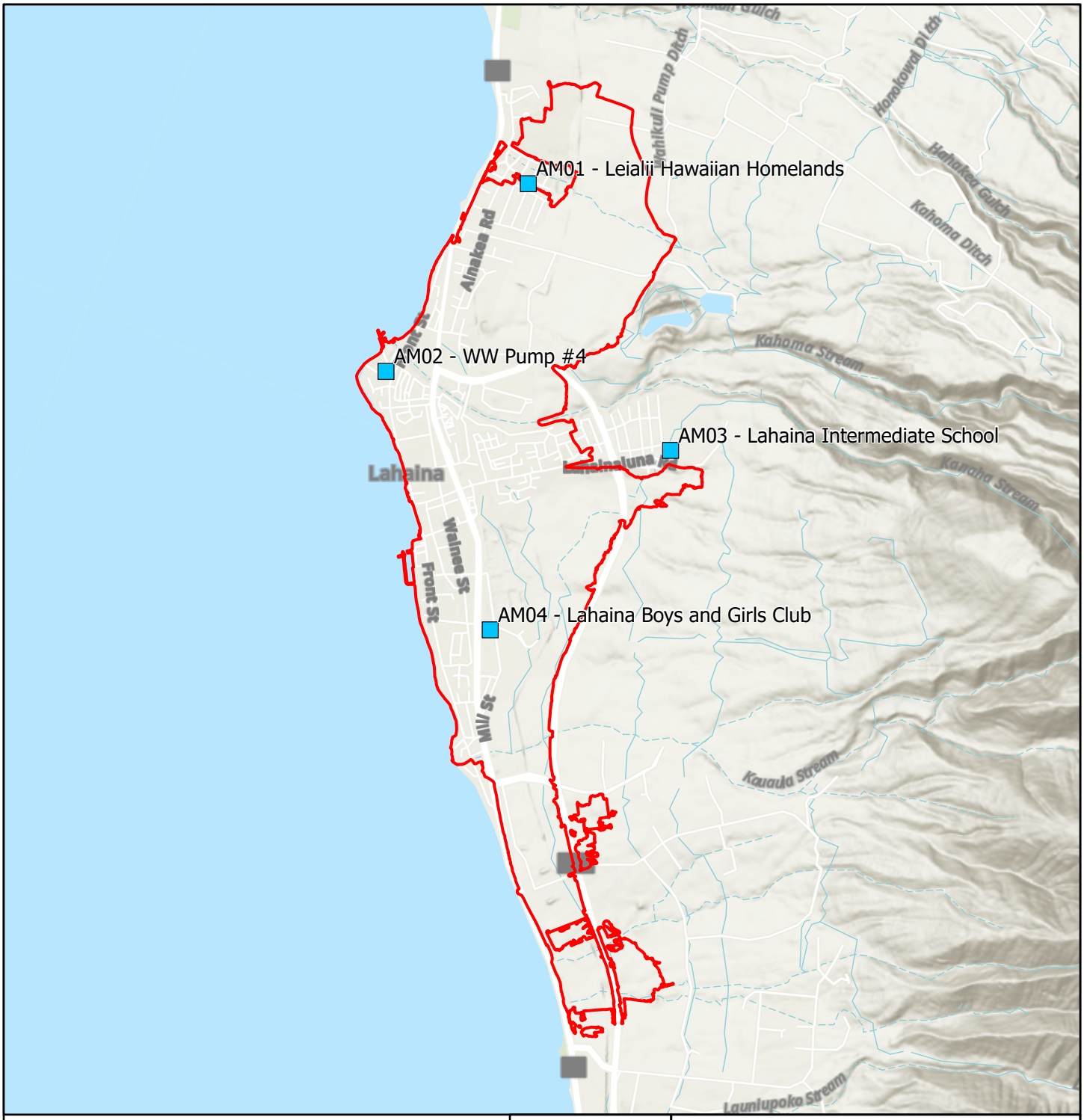
Collection of samples to be analyzed for metals occurred by use of Tisch Environmental High Volume Air Samplers, or equivalent, in accordance with the following methods:

- EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and for PM_{10} by Use of a High Volume (HV) Sampler
- EPA Compendium Method IO-3.5: Compendium of Methods for Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate Matter Via Inductively Coupled Plasma/Mass Spectrometry (ICP/MS). EPA/625/R-96/010a
- EPA 40 *Code of Federal Regulations* (CFR) Part 50, Method for Determination of Lead in Total Suspended Particulate Matter
- EPA 40 CFR Part 58, Appendix E: Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring
- SOPs for Lead Monitoring by Use of a Total Suspended Particulate (TSP) High Volume Sampler.

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

Following receipt of air sampling results from off-site analytical laboratories, analytical data are maintained in an electronic database and compared to SSALs. Level 1 data verification of all analytical data occurs, and an industrial hygienist reviews results.

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
State of Hawaii, Department of Health, Clean Air Branch
Particulate Monitoring Results for PM_{10}
Maui Wildfires, Lahaina
August 1 through August 7, 2024
[Report Updated: September 24, 2024]

Screening Level		TWA Results 150 ($\mu g/m^3$)
8/1/2024	Leialii Hawaiian Homelands (AM-01)	7.4
	WW Pump Station #4 (AM-02)	6.9
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	10
8/2/2024	Leialii Hawaiian Homelands (AM-01)	8.5
	WW Pump Station #4 (AM-02)	8.1
	Lahaina Intermediate School (AM-03)	13
	Lahaina Boys & Girls Club (AM-04)	15
8/3/2024	Leialii Hawaiian Homelands (AM-01)	6.8
	WW Pump Station #4 (AM-02)	6.1
	Lahaina Intermediate School (AM-03)	12
	Lahaina Boys & Girls Club (AM-04)	11
8/4/2024	Leialii Hawaiian Homelands (AM-01)	6.5
	WW Pump Station #4 (AM-02)	7.5
	Lahaina Intermediate School (AM-03)	7.3
	Lahaina Boys & Girls Club (AM-04)	13
8/5/2024	Leialii Hawaiian Homelands (AM-01)	8.6
	WW Pump Station #4 (AM-02)	8.1
	Lahaina Intermediate School (AM-03)	17
	Lahaina Boys & Girls Club (AM-04)	15
8/6/2024	Leialii Hawaiian Homelands (AM-01)	7.5
	WW Pump Station #4 (AM-02)	6.9
	Lahaina Intermediate School (AM-03)	10
	Lahaina Boys & Girls Club (AM-04)	8.6
8/7/2024	Leialii Hawaiian Homelands (AM-01)	8.7
	WW Pump Station #4 (AM-02)	7.4
	Lahaina Intermediate School (AM-03)	9.0
	Lahaina Boys & Girls Club (AM-04)	9.4

Notes:
$\mu g/m^3$ = micrograms per cubic meter
TWA = 24 Hour Time-Weighted Average
TWA calculation results are shown in two significant figures

Table 2
State of Hawaii, Department of Health, Clean Air Branch
Asbestos and Metals Sampling Results
Maui Wildfires, Lahaina
August 1 through August 7, 2024
[Report Updated: September 24, 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
Site Screening Action Level		0.003 [1]	0.7	0.05	1.2	0.05	0.02	12	0.01	240	1.5	0.12	4.8	0.02	48	24	0.24	1200
8/1/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000532	0.000492	0.00538	0.0000203	ND	0.00444	0.000859	0.143	0.000761	0.0214	0.00723	0.00225	0.000188	0.00000171	0.00273	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000110	0.000430	0.00587	0.0000206	ND	0.00350	0.000765	0.0322	0.000898	0.0254	0.00147	0.00192	0.000205	0.00000183	0.00213	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000628	0.000256	0.00351	0.0000283	ND	0.00294	0.000519	0.0565	0.000759	0.0124	0.00309	0.00170	0.000164	0.00000128	0.00140	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000872	0.000354	0.00385	0.0000147	ND	0.00340	0.000549	0.0384	0.000798	0.0168	0.00200	0.00152	0.000174	0.00000129	0.00154	ND
8/2/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000513	0.000369	0.00426	0.0000172	ND	0.00401	0.000757	0.124	0.000390	0.0184	0.00637	0.00213	0.000196	0.00000147	0.00228	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000815	0.000323	0.00376	0.0000126	ND	0.00221	0.000339	0.0405	0.00106	0.0114	0.00195	0.00105	0.000197	0.00000131	0.00117	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000523	0.000179	0.00259	0.0000205	ND	0.00248	0.000443	0.0429	0.000381	0.0112	0.00238	0.00161	0.000159	0.00000108	0.00102	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000785	0.000252	0.00285	0.0000105	ND	0.00623	0.000444	0.0368	0.00055	0.0123	0.00204	0.00368	0.000168	0.00000115	0.00106	ND
8/3/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000500	0.000399	0.00471	0.0000192	ND	0.00439	0.000933	0.131	0.000351	0.0208	0.00676	0.00279	0.000185	0.00000128	0.00268	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000111	0.000260	0.00334	0.0000101	ND	0.00199	0.000290	0.0568	0.000842	0.00920	0.00189	0.00103	0.000169	0.000000956	0.00125	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000575	0.000162	0.00255	0.0000130	0.000126	0.0270	0.000628	0.0821	0.00109	0.0111	0.00378	0.0124	0.000172	0.00000107	0.00119	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000899	0.000246	0.00239	0.00000881	ND	0.00284	0.000295	0.0357	0.000495	0.00920	0.00178	0.00141	0.000152	0.000000757	0.00111	ND
8/4/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000513	0.000398	0.00311	0.0000107	ND	0.00313	0.000488	0.216	0.000302	0.0117	0.0113	0.00144	0.000140	0.000000795	0.00150	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000195	0.000628	0.0222	0.0000315	0.0000632	0.00396	0.000789	0.0706	0.00216	0.0263	0.00197	0.00234	0.000228	0.00000148	0.00266	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000432	0.000105	0.00180	0.00000786	ND	ND	0.000212	0.0418	0.000430	0.00415	0.00194	0.000815	0.000102	ND	0.000528	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000116	0.000183	0.00207	0.00000655	ND	0.00310	0.000241	0.0603	0.000679	0.00664	0.00222	0.00149	0.000125	0.000000673	0.000690	ND
8/5/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000500	0.000394	0.00409	0.0000129	ND	0.00348	0.000550	0.195	0.000296	0.0131	0.00979	0.00164	0.000175	0.000000847	0.00182	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000265	0.000341	0.00378	0.0000107	ND	0.00226	0.000322	0.0456	0.000909	0.00945	0.00191	0.00114	0.000186	0.000000791	0.00122	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000357	0.000130	0.00399	0.0000118	ND	0.00195	0.000239	0.0384	0.000307	0.00618	0.00195	0.000863	0.000130	0.000000716	0.000764	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000823	0.000199	0.00243	0.00000935	ND	0.00241	0.000282	0.0571	0.000461	0.00852	0.00202	0.00130	0.000146	0.000000779	0.000897	ND
8/6/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000458	0.000477	0.00542	0.0000217	ND	0.00445	0.000921	0.247	0.000318	0.0224	0.0120	0.00221	0.000195	0.00000125	0.00283	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000124	0.000448	0.00531	0.0000144	ND	0.00254	0.000433	0.0446	0.000825	0.0125	0.00182	0.00125	0.000190	0.000000999	0.00148	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000471	0.000222	0.00327	0.0000332	ND	0.00389	0.000667	0.0511	0.000456	0.0165	0.00235	0.00228	0.000185	0.00000114	0.00159	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000940	0.000351	0.00338	0.0000105	ND	0.00317	0.000400	0.0349	0.000508	0.0109	0.00178	0.00236	0.000176	0.000000878	0.00105	ND
8/7/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000374	0.000647	0.00736	0.0000258	ND	0.00582	0.00128	0.295	0.000355	0.0286	0.0128	0.00301	0.000246	0.00000149	0.00366	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000187	0.000319	0.00629	0.0000174	ND	0.00283	0.000552	0.0435	0.000892	0.0160	0.00211	0.00143	0.000222	0.00000116	0.00170	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000456	0.000189	0.00290	0.0000263	ND	0.00280	0.000484	0.0406	0.000317	0.0123	0.00223	0.00128	0.000178	0.00000107	0.00123	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000922	0.000660	0.00409	0.0000215	ND	0.00338	0.000631	0.0319	0.000819	0.0189	0.00183	0.00154	0.000216	0.00000128	0.00156	ND
95% Upper Confidence Limit[2]		NA	0.000100	0.000400	0.00522	0.0000200	NA	0.00479	0.000650	0.106	0.000790	0.0172	0.00503	0.00248	0.000190	0.00000120	0.00190	NA

Notes:

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

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

s/cc = structures per cubic centimeter

µg/m^3 = micrograms per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

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

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Meteorological Data
Maui Wildfires, Lahaina
August 1 through August 7, 2024
[Report Updated: September 24, 2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
8/1/2024	AM-01	Leialii Hawaiian Homelands	1.2	SE	86	56	760.7
8/1/2024	AM-02	WW Pump Station #4	1.1	SSE	83	62	762.8
8/1/2024	AM-03	Lahaina Intermediate School	1.3	ESE	80	60	753.3
8/1/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	78	64	762.4
8/2/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	84	65	761.7
8/2/2024	AM-02	WW Pump Station #4	1.0	SSE	83	71	763.8
8/2/2024	AM-03	Lahaina Intermediate School	1.1	ESE	79	69	754.3
8/2/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	78	71	763.3
8/3/2024	AM-01	Leialii Hawaiian Homelands	1.0	S	87	64	762.1
8/3/2024	AM-02	WW Pump Station #4	1.0	SSE	84	71	764.2
8/3/2024	AM-03	Lahaina Intermediate School	1.2	SE	81	69	754.7
8/3/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	80	72	763.8
8/4/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	87	61	761.4
8/4/2024	AM-02	WW Pump Station #4	1.0	SSE	84	67	763.5
8/4/2024	AM-03	Lahaina Intermediate School	1.0	ESE	81	64	753.9
8/4/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	79	69	763.0
8/5/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	88	60	761.1
8/5/2024	AM-02	WW Pump Station #4	1.1	SSE	84	69	763.2
8/5/2024	AM-03	Lahaina Intermediate School	1.1	ESE	80	66	753.7
8/5/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	79	69	762.7
8/6/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	87	57	761.2
8/6/2024	AM-02	WW Pump Station #4	1.2	SSE	84	66	763.2
8/6/2024	AM-03	Lahaina Intermediate School	1.1	ESE	81	63	753.7
8/6/2024	AM-04	Lahaina Boys & Girls Club	1.3	S	79	66	762.8
8/7/2024	AM-01	Leialii Hawaiian Homelands	1.1	ESE	87	56	761.3
8/7/2024	AM-02	WW Pump Station #4	1.1	SSE	84	63	763.3
8/7/2024	AM-03	Lahaina Intermediate School	1.2	ESE	81	60	753.8
8/7/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	79	64	762.9

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

Appendix 1

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

EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-080124-AB**	**Sample Description:**	**DL246222**
EMSL Sample Number:	042416395-0001	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7182.3
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0001 **Customer Sample:** MFL-AM01-080124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	D7	None Detected									
A1	F9	None Detected									
A1	I8	None Detected									
A2	H2	None Detected									
A2	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-080124-AB**		**Sample Description:**	**DL246368**
EMSL Sample Number:	042416395-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7196.5
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0002 **Customer Sample:** MFL-AM02-080124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	B6	None Detected									
A5	D4	None Detected									
A5	F3	None Detected									
A6	C3	None Detected									
A6	H2	None Detected									

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

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Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Denver, CO, 80202

Project: **Maui Fires - Lahaina**

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

Customer Sample Number:	**MFL-AM03-080124-AB**		**Sample Description:**	**DL246198**
EMSL Sample Number:	042416395-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7230.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0003 **Customer Sample:** MFL-AM03-080124-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					
B2	C4	None Detected									
B2	F7	None Detected									
B2	H5	None Detected									
B3	C3	None Detected									
B3	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires - Lahaina**

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Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-080124-AB**		**Sample Description:**	**DL246627**
EMSL Sample Number:	042416395-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7279.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0004 **Customer Sample:** MFL-AM04-080124-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	A5	None Detected									
B5	D8	None Detected									
B5	G5	None Detected									
B6	H7	None Detected									
B6	C6	None Detected									

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

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EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/07/2024 09:35 AM
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-080124-AB** **Sample Description:** **DL246376**

EMSL Sample Number:	042416395-0005		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment


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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0005 **Customer Sample:** MFL-FB01-080124-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C2	A3	None Detected									
C2	C3	None Detected									
C2	E3	None Detected									
C2	G4	None Detected									
C2	I3	None Detected									
C6	J9	None Detected									
C6	H3	None Detected									
C6	F4	None Detected									
C6	D5	None Detected									
C6	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:	042416395
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Project: **Maui Fires - Lahaina**

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Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-080224-AB**		**Sample Description:**	**DL246618**
EMSL Sample Number:	042416395-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7190.3
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
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EMSL Analytical, Inc.
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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0006 **Customer Sample:** MFL-AM01-080224-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	B2	None Detected									
C5	D7	None Detected									
C5	G5	None Detected									
C6	D6	None Detected									
C6	H4	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-080224-AB**		**Sample Description:**	**DL246190**
EMSL Sample Number:	042416395-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7199.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0007 **Customer Sample:** MFL-AM02-080224-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	A9	None Detected									
D1	D6	None Detected									
D1	G4	None Detected									
D2	C9	None Detected									
D2	F9	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires - Lahaina**

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Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-080224-AB**		**Sample Description:**	**DL246549**
EMSL Sample Number:	042416395-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7173.9
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0008 **Customer Sample:** MFL-AM03-080224-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	H3	None Detected									
D5	E4	None Detected									
D5	C6	None Detected									
D6	I6	None Detected									
D6	E8	None Detected									

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

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Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-080224-AB**		**Sample Description:**	**DL246225**
EMSL Sample Number:	042416395-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7143.3
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0009 **Customer Sample:** MFL-AM04-080224-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	H10	None Detected									
E1	F7	None Detected									
E1	D8	None Detected									
E2	D3	None Detected									
E2	I5	None Detected									

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

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EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-080224-AB**		**Sample Description:**	**DL246215**
EMSL Sample Number:	042416395-0010		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0010 **Customer Sample:** MFL-FB01-080224-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	A4	None Detected									
E5	C5	None Detected									
E5	E2	None Detected									
E5	G8	None Detected									
E5	I8	None Detected									
E6	J8	None Detected									
E6	H4	None Detected									
E6	F8	None Detected									
E6	D10	None Detected									
E6	B9	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-080324-AB**		**Sample Description:**	**DL246246**
EMSL Sample Number:	042416395-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7144.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0011 **Customer Sample:** MFL-AM01-080324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	G8	None Detected									
F1	D3	None Detected									
F1	A1	None Detected									
F2	I3	None Detected									
F2	D2	None Detected									

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

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EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-080324-AB**	**Sample Description:**	**DL246209**
EMSL Sample Number:	042416395-0012	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7241.5
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0012 **Customer Sample:** MFL-AM02-080324-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	C10	None Detected									
F5	G8	None Detected									
F5	I5	None Detected									
F6	A5	None Detected									
F6	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-080324-AB**		**Sample Description:**	**DL246504**
EMSL Sample Number:	042416395-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7148.3
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0013 **Customer Sample:** MFL-AM03-080324-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	F3	None Detected									
G1	D2	None Detected									
G1	A6	None Detected									
G2	I6	None Detected									
G2	D7	None Detected									

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

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EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-080324-AB**		**Sample Description:**	**DL246645**
EMSL Sample Number:	042416395-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7156.9
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0014 **Customer Sample:** MFL-AM04-080324-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	I6	None Detected									
G5	F4	None Detected									
G5	C2	None Detected									
G6	H2	None Detected									
G6	C1	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-080324-AB** **Sample Description:** **DL246191**

EMSL Sample Number:	042416395-0015		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0015 **Customer Sample:** MFL-FB01-080324-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	A9	None Detected									
H1	C7	None Detected									
H1	E7	None Detected									
H1	G6	None Detected									
H1	I5	None Detected									
H2	A8	None Detected									
H2	C9	None Detected									
H2	E7	None Detected									
H2	G8	None Detected									
H2	I10	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-080424-AB**		**Sample Description:**	**DL246370**
EMSL Sample Number:	042416395-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7178.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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

EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0016 **Customer Sample:** MFL-AM01-080424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H5	B4	None Detected									
H5	D3	None Detected									
H5	G5	None Detected									
H6	H7	None Detected									
H6	C6	None Detected									

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

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EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-080424-AB**	**Sample Description:**	**DL246439**
EMSL Sample Number:	042416395-0017	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7258.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0017 **Customer Sample:** MFL-AM02-080424-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	I8	None Detected									
I1	G4	None Detected									
I1	C5	None Detected									
I2	C5	None Detected									
I2	G7	None Detected									

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

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EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-080424-AB**		**Sample Description:**	**DL246195**
EMSL Sample Number:	042416395-0018		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.00	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.00**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0018 **Customer Sample:** MFL-AM03-080424-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	A8	None Detected									
I5	D6	None Detected									
I5	H6	None Detected									
I6	C6	None Detected									
I6	H6	None Detected									

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

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EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-080424-AB**	**Sample Description:**	**DL246243**
EMSL Sample Number:	042416395-0019	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7242.5
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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0019 **Customer Sample:** MFL-AM04-080424-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	B6	None Detected									
J1	F2	None Detected									
J1	I4	None Detected									
J3	E4	None Detected									
J3	G2	None Detected									

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

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EMSL Order:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-080424-AB**		**Sample Description:**	**DL246614**
EMSL Sample Number:	042416395-0020		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment


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EMSL Order ID: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0020 **Customer Sample:** MFL-FB01-080424-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	A3	None Detected									
J5	C5	None Detected									
J5	E7	None Detected									
J5	G2	None Detected									
J5	I4	None Detected									
J8	A4	None Detected									
J8	C5	None Detected									
J8	E4	None Detected									
J8	G5	None Detected									
J8	I3	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:	042416395
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
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Received Date:	08/07/2024 09:35 AM
Analysis Date:	08/13/2024
Report Date:	08/13/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042416395-0021		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):	0.0130
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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**	**< 23.00**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures	**-**	**0**	**0**	**< 23.00**			

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

	Minimum ID Level	Fibers Detected 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**	**< 23.00**			
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.00**			
Actinolite	ADX	0	0	< 23.00			
Amosite	ADX	0	0	< 23.00			
Anthophyllite	ADX	0	0	< 23.00			
Crocidolite	ADX	0	0	< 23.00			
Tremolite	ADX	0	0	< 23.00			
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.00**			
Other Minerals	-	0	0	< 23.00			
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.00**			

Comment

Approved Signatory

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: 042416395
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416395-0021 **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					
K6	C1	None Detected									
K6	D3	None Detected									
K6	E4	None Detected									
K6	H6	None Detected									
K6	H4	None Detected									
K7	A10	None Detected									
K7	B8	None Detected									
K7	D6	None Detected									
K7	F1	None Detected									
K7	H4	None Detected									

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

OrderID: 042416395

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042416395

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

RECEIVED EMSL CINNAMINSON NJ AUG 1 AM 10: 01

Customer Information

Customer ID:
Company Name: TETRA TECH
Contact Name: CHELSEA SABER
Street Address: 1560 BROADWAY STE 1400
City, State, Zip: DENVER, CO 80202 Country: USA
Phone: 703-489-2674
Email(s) for Report: chelsea.saber@tetratech.com

Billing Information

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

Project Information

Project Name/No: MAUI FIRES - LAHAINA
Purchase Order: 1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: E. Morgan Saldana
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 198.6 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-AM01-080124-AB	DL246222	7,182.339	08/01/24 1100
MFL-AM02-080124-AB	DL246368	7,196.526	08/01/24 1120
MFL-AM03-080124-AB	~~DL246368~~ DL246198 (EMS)	7,229.976	08/01/24 1301
MFL-AM04-080124-AB	DL246627	7,279.344	08/01/24 1326
MFL-FB01-080124-AB	DL246376	0	08/01/24 1200
MFL-AM01-080224-AB	DL246618	7,190.317	08/02/24 1102
MFL-AM02-080224-AB	DL246190	7,199.395	08/02/24 1118
MFL-AM03-080224-AB	DL246549	7,173.885	08/02/24 1304

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

All samples received acceptable for analysis.

20

Method of Shipment: FedEx
Sample Condition Upon Receipt:

Relinquished by:	Date/Time:	Received by:	Date/Time
	08/05/24 1100	FedEx	8/7/24 9:35A
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: 042416395

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042416395

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-AM04-080224-AB	DL246225	7,143.328	08/02/24 1331
MFL-FB01-080224-AB	DL246215	0	08/02/24 1200
MFL-AM01-080324-AB	DL246246	7,143.981	08/03/24 1056
MFL-AM02-080324-AB	DL246209	7,241.480	08/03/24 1120
MFL-AM03-080324-AB	DL246504	7,148.282	08/03/24 1255
MFL-AM04-080324-AB	DL246645	7,156.920	08/03/24 1322
MFL-FB01-080324-AB	DL246191	0	08/03/24 1200
MFL-AM01-080424-AB	DL246370	7,178.112	08/04/24 400
MFL-AM02-080424-AB	DL246439	7,258.032	08/04/24 1124
MFL-AM03-080424-AB	DL246195	7,231.824	08/04/24 1302
MFL-AM04-080424-AB	DL246243	7,242.487	08/04/24 1324
MFL-FB01-080424-AB	DL246614	0	08/04/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 AUG -7 AM 10:01

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 08/05/24 1100	Received by: FedEx	Date/Time 8/7/24 9:35
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 08/13/2024 and Shanna Vasser 08/15/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 08/01/2024 – 08/04/2024
Report No: 42416395

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

Discrepancies: None.

Notes: None.

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:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-080524-AB** **Sample Description: DL246232**

EMSL Sample Number:	042416730-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7121.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0001 **Customer Sample:** MFL-AM01-080524-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	G5	None Detected									
B1	E9	None Detected									
B1	C2	None Detected									
B2	F2	None Detected									
B2	C5	None Detected									

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

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

EMSL Order:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-080524-AB** **Sample Description: DL246469**

EMSL Sample Number:	042416730-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7168.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	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**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.36	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0002 **Customer Sample:** MFL-AM02-080524-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	A8	None Detected									
B5	D7	None Detected									
B5	H4	None Detected									
B6	C6	None Detected									
B6	G7	None Detected									

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

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

EMSL Order:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-080524-AB** **Sample Description: DL246237**

EMSL Sample Number:	042416730-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7262.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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200 Route 130 North Cinnaminson, NJ 08077
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EMSL Order ID: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0003 **Customer Sample:** MFL-AM03-080524-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	G1	None Detected									
C1	E4	None Detected									
C1	B5	None Detected									
C2	B7	None Detected									
C2	F10	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:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-080524-AB**	**Sample Description:**	**DL246213**
EMSL Sample Number:	042416730-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7199.9
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0004 **Customer Sample:** MFL-AM04-080524-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	H4	None Detected									
C5	E4	None Detected									
C5	B9	None Detected									
C6	H6	None Detected									
C6	C5	None Detected									

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

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EMSL Order:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-080524-AB** **Sample Description:** **DL246248**

EMSL Sample Number:	042416730-0005		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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0005 **Customer Sample:** MFL-FB01-080524-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	B10	None Detected									
D1	D8	None Detected									
D1	F10	None Detected									
D1	H6	None Detected									
D1	J5	None Detected									
D2	A7	None Detected									
D2	C10	None Detected									
D2	E4	None Detected									
D2	G9	None Detected									
D2	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:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-080624-AB** **Sample Description: DL246187**

EMSL Sample Number:	042416730-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7165.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0006 **Customer Sample:** MFL-AM01-080624-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	J2	None Detected									
D5	G1	None Detected									
D5	C3	None Detected									
D6	D8	None Detected									
D6	H7	None Detected									

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

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EMSL Order:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-080624-AB** **Sample Description: DL246210**

EMSL Sample Number:	042416730-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7197.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0007 **Customer Sample:** MFL-AM02-080624-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	H7	None Detected									
E1	F9	None Detected									
E1	D4	None Detected									
E2	H4	None Detected									
E2	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:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-080624-AB** **Sample Description: DL246241**

EMSL Sample Number:	042416730-0008		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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
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EMSL Order ID: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0008 **Customer Sample:** MFL-AM03-080624-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	A8	None Detected									
E5	E9	None Detected									
E5	H7	None Detected									
E6	B9	None Detected									
E6	G10	None Detected									

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

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Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-080624-AB** **Sample Description: DL246223**

EMSL Sample Number:	042416730-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7140.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0009 **Customer Sample:** MFL-AM04-080624-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	F8	None Detected									
F1	D6	None Detected									
F1	A10	None Detected									
F2	I5	None Detected									
F2	E2	None Detected									

Abbreviations used:
XNCGBLD - Crosses Non-Countable Grid Bar Length Doubled
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Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-080624-AB** **Sample Description:** **DL246242**

EMSL Sample Number:	042416730-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0010 **Customer Sample:** MFL-FB01-080624-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	J2	None Detected									
F5	H4	None Detected									
F5	F4	None Detected									
F5	D3	None Detected									
F5	B1	None Detected									
F6	J1	None Detected									
F6	H4	None Detected									
F6	F4	None Detected									
F6	D2	None Detected									
F6	B3	None Detected									

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

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EMSL Order:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-080724-AB** **Sample Description: DL246233**

EMSL Sample Number:	042416730-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7198.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0011 **Customer Sample:** MFL-AM01-080724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G2	A10	None Detected									
G2	E8	None Detected									
G2	H10	None Detected									
G3	C10	None Detected									
G3	I3	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:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-080724-AB** **Sample Description: DL246250**

EMSL Sample Number:	042416730-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7211.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0012 **Customer Sample:** MFL-AM02-080724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G6	B7	None Detected									
G6	D9	None Detected									
G6	J10	None Detected									
G7	F10	None Detected									
G7	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:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-080724-AB** **Sample Description: DL246234**

EMSL Sample Number:	042416730-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7161.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0013 **Customer Sample:** MFL-AM03-080724-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	H2	None Detected									
H1	E4	None Detected									
H1	C6	None Detected									
H2	D7	None Detected									
H2	I9	None Detected									

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

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

EMSL Order:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-080724-AB** **Sample Description: DL246240**

EMSL Sample Number:	042416730-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7134.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0014 **Customer Sample:** MFL-AM04-080724-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	A9	None Detected									
H5	D7	None Detected									
H5	H8	None Detected									
H6	C10	None Detected									
H6	F7	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:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-080724-AB** **Sample Description: DL274893**

EMSL Sample Number:	042416730-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment


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: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0015 **Customer Sample:** MFL-FB01-080724-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	B9	None Detected									
I1	D7	None Detected									
I1	F10	None Detected									
I1	H8	None Detected									
I1	J7	None Detected									
I2	A6	None Detected									
I2	C5	None Detected									
I2	E2	None Detected									
I2	G5	None Detected									
I2	I4	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:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-LB01-080724-AB**		**Sample Description:**	**DL274870**
EMSL Sample Number:	042416730-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0016 **Customer Sample:** MFL-LB01-080724-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	A5	None Detected									
I5	C4	None Detected									
I5	E4	None Detected									
I5	G5	None Detected									
I5	I7	None Detected									
I6	A5	None Detected									
I6	C6	None Detected									
I6	E4	None Detected									
I6	G6	None Detected									
I6	I6	None Detected									

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

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

EMSL Order:	042416730
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/12/2024 10:00 AM
Analysis Date:	08/15/2024
Report Date:	08/19/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042416730-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042416730
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042416730-0017 **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	J2	None Detected									
A1	H7	None Detected									
A1	F4	None Detected									
A1	D5	None Detected									
A1	B4	None Detected									
A2	A7	None Detected									
A2	C10	None Detected									
A2	E9	None Detected									
A2	G7	None Detected									
A2	I7	None Detected									

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

OrderID: 042416730

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042416730

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

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

RECEIVED EMSL CINNAMINSON, NJ 2024 AUG 12 A 9:31

Customer Information

Customer ID:	
Company Name:	TETRA TECH
Contact Name:	CHELSEA SABER
Street Address:	1560 BROADWAY STE 1400
City, State, Zip:	DENVER, CO 80202 Country: USA
Phone:	703-489-2674
Email(s) for Report:	chelsea.saber@tetratech.com

Billing Information

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

Project Information

Project Name/No:	MAUI FIRES - LAHAINA
Purchase Order:	1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)	
US State where samples collected:	HI
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name:	E. Kenyon San Idan
Sampled By Signature:	[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-AM01-080524-AB	DL246232	7,121.850	08/05/24 1100
MFL-AM02-080524-AB	DL246469	7,168.502	08/05/24 1117
MFL-AM03-080524-AB	DL246237	7,262.208	08/05/24 1305
MFL-AM04-080524-AB	DL246213	7,199.945	08/05/24 1331
MFL-FB01-080524-AB	DL246248	0	08/05/24 1200
MFL-AM01-080624-AB	DL246187	7,165.842	08/06/24 1101
MFL-AM02-080624-AB	DL246210	7,197.478	08/06/24 1117
MFL-AM03-080624-AB	DL246241	7,171.027	08/06/24 1301

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

All samples received acceptable for analysis.

16 8/12/24

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by: [signature]	Date/Time: 08/08/24 1100	Received by: [signature]	Date/Time: 8.12.24 10
Relinquished by:	Date/Time:	Received by:	Date/Time

☐ **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.

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

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042416730

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-AM04-080624-AB	DL246223	7,139.982	08/06/24 1321
MFL-FB01-080624-AB	DL246242	0	08/06/24 1200
MFL-AM01-080724-AB	DL246233	7,198.628	08/07/24 1102
MFL-AM02-080724-AB	DL246250	7,211.917	08/07/24 1120
MFL-AM03-080724-AB	DL246234	7,160.988	08/07/24 1257
MFL-AM04-080724-AB	DL246240	7,134.940	08/07/24 1318
MFL-FB01-080724-AB	DL274893	0	08/07/24 1200
MFL-LB01-080724-AB	DL274870	0	08/07/24 1201

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 08/08/24 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.)

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 08/20/2024 and Shanna Vasser 08/21/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 08/05/2024 – 08/07/2024
Report No: 42416730

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

Discrepancies: None

Notes: None

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

August 29, 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 08/12/24 10:23.

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-080124-HM	4081227-01	Air	08/01/24 23:59	08/12/24 10:23
MFL-AM02-080124-HM	4081227-02	Air	08/01/24 23:59	08/12/24 10:23
MFL-AM03-080124-HM	4081227-03	Air	08/01/24 23:59	08/12/24 10:23
MFL-AM04-080124-HM	4081227-04	Air	08/01/24 23:59	08/12/24 10:23
MFL-FB01-080124-HM	4081227-05	Air	08/01/24 00:05	08/12/24 10:23
MFL-AM01-080224-HM	4081227-06	Air	08/02/24 23:59	08/12/24 10:23
MFL-AM02-080224-HM	4081227-07	Air	08/02/24 23:59	08/12/24 10:23
MFL-AM03-080224-HM	4081227-08	Air	08/02/24 23:59	08/12/24 10:23
MFL-AM04-080224-HM	4081227-09	Air	08/02/24 23:59	08/12/24 10:23
MFL-AM01-080324-HM	4081227-10	Air	08/03/24 23:59	08/12/24 10:23
MFL-AM02-080324-HM	4081227-11	Air	08/03/24 23:59	08/12/24 10:23
MFL-AM03-080324-HM	4081227-12	Air	08/03/24 23:59	08/12/24 10:23
MFL-AM04-080324-HM	4081227-13	Air	08/03/24 23:59	08/12/24 10:23
MFL-FB01-080324-HM	4081227-14	Air	08/03/24 00:05	08/12/24 10:23
MFL-AM01-080424-HM	4081227-15	Air	08/04/24 23:59	08/12/24 10:23
MFL-AM02-080424-HM	4081227-16	Air	08/04/24 23:59	08/12/24 10:23
MFL-AM03-080424-HM	4081227-17	Air	08/04/24 23:59	08/12/24 10:23
MFL-AM04-080424-HM	4081227-18	Air	08/04/24 23:59	08/12/24 10:23
MFL-AM01-080524-HM	4081227-19	Air	08/05/24 23:59	08/12/24 10:23
MFL-AM02-080524-HM	4081227-20	Air	08/05/24 23:59	08/12/24 10:23
MFL-AM03-080524-HM	4081227-21	Air	08/05/24 23:59	08/12/24 10:23

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-080524-HM	4081227-22	Air	08/05/24 23:59	08/12/24 10:23
MFL-FB01-080524-HM	4081227-23	Air	08/05/24 00:05	08/12/24 10:23
MFL-AM01-080624-HM	4081227-24	Air	08/06/24 23:59	08/12/24 10:23
MFL-AM02-080624-HM	4081227-25	Air	08/06/24 23:59	08/12/24 10:23
MFL-AM03-080624-HM	4081227-26	Air	08/06/24 23:59	08/12/24 10:23
MFL-AM04-080624-HM	4081227-27	Air	08/06/24 23:59	08/12/24 10:23
MFL-AM01-080724-HM	4081227-28	Air	08/07/24 23:59	08/12/24 10:23
MFL-AM02-080724-HM	4081227-29	Air	08/07/24 23:59	08/12/24 10:23
MFL-AM03-080724-HM	4081227-30	Air	08/07/24 23:59	08/12/24 10:23
MFL-AM04-080724-HM	4081227-31	Air	08/07/24 23:59	08/12/24 10:23
MFL-FB01-080724-HM	4081227-32	Air	08/07/24 00:05	08/12/24 10:23

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080124-HM
Matrix: Air
Lab ID: 4081227-01
Sample Volume: 1928.176 m³
Filter ID:
Sampled: 08/01/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 00:30

Comments: Q9547522 - 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**	**0.0532**		**0.0326**
Arsenic	**7440-38-2**	**0.492**		**0.00791**
Barium	**7440-39-3**	**5.38**		**0.903**
Beryllium	**7440-41-7**	**0.0203**		**0.00270**
Cadmium	7440-43-9	0.0172	U	0.0625
Chromium	**7440-47-3**	**4.44**		**1.86**
Cobalt	**7440-48-4**	**0.859**		**0.0368**
Copper	**7440-50-8**	**143**		**2.22**
Lead	**7439-92-1**	**0.761**		**0.181**
Manganese	**7439-96-5**	**21.4**		**1.59**
Molybdenum	**7439-98-7**	**7.23**		**0.303**
Nickel	**7440-02-0**	**2.25**		**0.550**
Selenium	**7782-49-2**	**0.188**		**0.00756**
Thallium	**7440-28-0**	**0.00171**		**4.97E-4**
Vanadium	**7440-62-2**	**2.73**		**0.0446**
Zinc	7440-66-6	14.1	U	64.8

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080124-HM
Matrix: Air
Lab ID: 4081227-02
Sample Volume: 2143.334 m³
Filter ID:
Sampled: 08/01/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 00:47

Comments: Q9547521- Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.110**		**0.0293**
Arsenic	**7440-38-2**	**0.430**		**0.00711**
Barium	**7440-39-3**	**5.87**		**0.812**
Beryllium	**7440-41-7**	**0.0206**		**0.00243**
Cadmium	7440-43-9	0.0206	U	0.0562
Chromium	**7440-47-3**	**3.50**		**1.68**
Cobalt	**7440-48-4**	**0.765**		**0.0331**
Copper	**7440-50-8**	**32.2**		**2.00**
Lead	**7439-92-1**	**0.898**		**0.162**
Manganese	**7439-96-5**	**25.4**		**1.43**
Molybdenum	**7439-98-7**	**1.47**		**0.273**
Nickel	**7440-02-0**	**1.92**		**0.495**
Selenium	**7782-49-2**	**0.205**		**0.00680**
Thallium	**7440-28-0**	**0.00183**		**4.47E-4**
Vanadium	**7440-62-2**	**2.13**		**0.0402**
Zinc	7440-66-6	12.1	U	58.3

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080124-HM
Matrix: Air
Lab ID: 4081227-03
Sample Volume: 1964.715 m³
Filter ID:
Sampled: 08/01/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 01:02

Comments: Q9547520 - 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**	**0.0628**		**0.0320**
Arsenic	**7440-38-2**	**0.256**		**0.00776**
Barium	**7440-39-3**	**3.51**		**0.886**
Beryllium	**7440-41-7**	**0.0283**		**0.00265**
Cadmium	7440-43-9	0.0138	U	0.0614
Chromium	**7440-47-3**	**2.94**		**1.83**
Cobalt	**7440-48-4**	**0.519**		**0.0361**
Copper	**7440-50-8**	**56.5**		**2.18**
Lead	**7439-92-1**	**0.759**		**0.177**
Manganese	**7439-96-5**	**12.4**		**1.57**
Molybdenum	**7439-98-7**	**3.09**		**0.297**
Nickel	**7440-02-0**	**1.70**		**0.540**
Selenium	**7782-49-2**	**0.164**		**0.00742**
Thallium	**7440-28-0**	**0.00128**		**4.88E-4**
Vanadium	**7440-62-2**	**1.40**		**0.0438**
Zinc	7440-66-6	18.2	U	63.6

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080124-HM
Matrix: Air
Lab ID: 4081227-04
Sample Volume: 1873.647 m³
Filter ID:
Sampled: 08/01/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 01:17

Comments: Q9547518 - 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**	**0.0872**		**0.0335**
Arsenic	**7440-38-2**	**0.354**		**0.00814**
Barium	**7440-39-3**	**3.85**		**0.929**
Beryllium	**7440-41-7**	**0.0147**		**0.00278**
Cadmium	7440-43-9	0.0176	U	0.0643
Chromium	**7440-47-3**	**3.40**		**1.92**
Cobalt	**7440-48-4**	**0.549**		**0.0379**
Copper	**7440-50-8**	**38.4**		**2.28**
Lead	**7439-92-1**	**0.798**		**0.186**
Manganese	**7439-96-5**	**16.8**		**1.64**
Molybdenum	**7439-98-7**	**2.00**		**0.312**
Nickel	**7440-02-0**	**1.52**		**0.566**
Selenium	**7782-49-2**	**0.174**		**0.00778**
Thallium	**7440-28-0**	**0.00129**		**5.11E-4**
Vanadium	**7440-62-2**	**1.54**		**0.0459**
Zinc	7440-66-6	12.4	U	66.7

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-080124-HM
Matrix: Air
Lab ID: 4081227-05
Sample Volume: 1928.176 m³
Filter ID:
Sampled: 08/01/24 00:05
Received: 08/12/24 10:23
Analysis Date: 08/14/24 01:32

Comments: Q9547511 - 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	0.0123	U	0.0326
Arsenic	7440-38-2	0.00476	U	0.00791
Barium	7440-39-3	0.420	U	0.903
Beryllium	7440-41-7	7.91E-4	U	0.00270
Cadmium	7440-43-9	0.00190	U	0.0625
Chromium	7440-47-3	1.27	U	1.86
Cobalt	7440-48-4	0.0200	U	0.0368
Copper	7440-50-8	0.450	U	2.22
Lead	7439-92-1	0.0341	U	0.181
Manganese	7439-96-5	0.226	U	1.59
Molybdenum	7439-98-7	0.185	U	0.303
Nickel	7440-02-0	0.336	U	0.550
Selenium	7782-49-2	0.00476	U	0.00756
Thallium	7440-28-0	8.72E-5	U	4.97E-4
Vanadium	7440-62-2	0.0279	U	0.0446
Zinc	7440-66-6	2.59	U	64.8

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080224-HM
Matrix: Air
Lab ID: 4081227-06
Sample Volume: 1949.947 m³
Filter ID:
Sampled: 08/02/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 01:46

Comments: Q9547517 - 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**	**0.0513**		**0.0322**
Arsenic	**7440-38-2**	**0.369**		**0.00782**
Barium	**7440-39-3**	**4.26**		**0.893**
Beryllium	**7440-41-7**	**0.0172**		**0.00267**
Cadmium	7440-43-9	0.0162	U	0.0618
Chromium	**7440-47-3**	**4.01**		**1.84**
Cobalt	**7440-48-4**	**0.757**		**0.0364**
Copper	**7440-50-8**	**124**		**2.19**
Lead	**7439-92-1**	**0.390**		**0.179**
Manganese	**7439-96-5**	**18.4**		**1.58**
Molybdenum	**7439-98-7**	**6.37**		**0.300**
Nickel	**7440-02-0**	**2.13**		**0.544**
Selenium	**7782-49-2**	**0.196**		**0.00748**
Thallium	**7440-28-0**	**0.00147**		**4.91E-4**
Vanadium	**7440-62-2**	**2.28**		**0.0441**
Zinc	7440-66-6	7.19	U	64.1

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080224-HM
Matrix: Air
Lab ID: 4081227-07
Sample Volume: 2142.437 m³
Filter ID:
Sampled: 08/02/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 02:19

Comments: Q9547516 - 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**	**0.0815**		**0.0293**
Arsenic	**7440-38-2**	**0.323**		**0.00712**
Barium	**7440-39-3**	**3.76**		**0.813**
Beryllium	**7440-41-7**	**0.0126**		**0.00243**
Cadmium	7440-43-9	0.0141	U	0.0563
Chromium	**7440-47-3**	**2.21**		**1.68**
Cobalt	**7440-48-4**	**0.339**		**0.0331**
Copper	**7440-50-8**	**40.5**		**2.00**
Lead	**7439-92-1**	**1.06**		**0.163**
Manganese	**7439-96-5**	**11.4**		**1.44**
Molybdenum	**7439-98-7**	**1.95**		**0.273**
Nickel	**7440-02-0**	**1.05**		**0.495**
Selenium	**7782-49-2**	**0.197**		**0.00680**
Thallium	**7440-28-0**	**0.00131**		**4.47E-4**
Vanadium	**7440-62-2**	**1.17**		**0.0402**
Zinc	7440-66-6	12.3	U	58.3

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080224-HM
Matrix: Air
Lab ID: 4081227-08
Sample Volume: 2043.359 m³
Filter ID:
Sampled: 08/02/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 02:33

Comments: Q9547514 - 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**	**0.0523**		**0.0307**
Arsenic	**7440-38-2**	**0.179**		**0.00746**
Barium	**7440-39-3**	**2.59**		**0.852**
Beryllium	**7440-41-7**	**0.0205**		**0.00255**
Cadmium	7440-43-9	0.0181	U	0.0590
Chromium	**7440-47-3**	**2.48**		**1.76**
Cobalt	**7440-48-4**	**0.443**		**0.0347**
Copper	**7440-50-8**	**42.9**		**2.09**
Lead	**7439-92-1**	**0.381**		**0.170**
Manganese	**7439-96-5**	**11.2**		**1.50**
Molybdenum	**7439-98-7**	**2.38**		**0.286**
Nickel	**7440-02-0**	**1.61**		**0.519**
Selenium	**7782-49-2**	**0.159**		**0.00713**
Thallium	**7440-28-0**	**0.00108**		**4.69E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0421**
Zinc	7440-66-6	12.8	U	61.2

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080224-HM
Matrix: Air
Lab ID: 4081227-09
Sample Volume: 1954.634 m³
Filter ID:
Sampled: 08/02/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 02:47

Comments: Q9547512 - 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**	**0.0785**		**0.0321**
Arsenic	**7440-38-2**	**0.252**		**0.00780**
Barium	**7440-39-3**	**2.85**		**0.891**
Beryllium	**7440-41-7**	**0.0105**		**0.00266**
Cadmium	7440-43-9	0.0213	U	0.0617
Chromium	**7440-47-3**	**6.23**		**1.84**
Cobalt	**7440-48-4**	**0.444**		**0.0363**
Copper	**7440-50-8**	**36.8**		**2.19**
Lead	**7439-92-1**	**0.550**		**0.178**
Manganese	**7439-96-5**	**12.3**		**1.57**
Molybdenum	**7439-98-7**	**2.04**		**0.299**
Nickel	**7440-02-0**	**3.68**		**0.543**
Selenium	**7782-49-2**	**0.168**		**0.00746**
Thallium	**7440-28-0**	**0.00115**		**4.90E-4**
Vanadium	**7440-62-2**	**1.06**		**0.0440**
Zinc	7440-66-6	10.4	U	63.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080324-HM
Matrix: Air
Lab ID: 4081227-10
Sample Volume: 1897.666 m³
Filter ID:
Sampled: 08/03/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 03:56

Comments: Q9547510 - 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**	**0.0500**		**0.0331**
Arsenic	**7440-38-2**	**0.399**		**0.00803**
Barium	**7440-39-3**	**4.71**		**0.917**
Beryllium	**7440-41-7**	**0.0192**		**0.00274**
Cadmium	7440-43-9	0.0117	U	0.0635
Chromium	**7440-47-3**	**4.39**		**1.89**
Cobalt	**7440-48-4**	**0.933**		**0.0374**
Copper	**7440-50-8**	**131**		**2.25**
Lead	**7439-92-1**	**0.351**		**0.183**
Manganese	**7439-96-5**	**20.8**		**1.62**
Molybdenum	**7439-98-7**	**6.76**		**0.308**
Nickel	**7440-02-0**	**2.79**		**0.559**
Selenium	**7782-49-2**	**0.185**		**0.00768**
Thallium	**7440-28-0**	**0.00128**		**5.05E-4**
Vanadium	**7440-62-2**	**2.68**		**0.0454**
Zinc	7440-66-6	7.12	U	65.8

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080324-HM
Matrix: Air
Lab ID: 4081227-11
Sample Volume: 2162.458 m³
Filter ID:
Sampled: 08/03/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/13/24 17:56

Comments: Q9547507 - Received in good condition MS/MSD

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.111**		**0.0290**
Arsenic	**7440-38-2**	**0.260**		**0.00705**
Barium	**7440-39-3**	**3.34**		**0.805**
Beryllium	**7440-41-7**	**0.0101**		**0.00241**
Cadmium	7440-43-9	0.0189	U	0.0558
Chromium	**7440-47-3**	**1.99**		**1.66**
Cobalt	**7440-48-4**	**0.290**		**0.0328**
Copper	**7440-50-8**	**56.8**		**1.98**
Lead	**7439-92-1**	**0.842**		**0.161**
Manganese	**7439-96-5**	**9.20**		**1.42**
Molybdenum	**7439-98-7**	**1.89**		**0.270**
Nickel	**7440-02-0**	**1.03**		**0.491**
Selenium	**7782-49-2**	**0.169**		**0.00674**
Thallium	**7440-28-0**	**9.56E-4**		**4.43E-4**
Vanadium	**7440-62-2**	**1.25**		**0.0398**
Zinc	7440-66-6	12.7	U	57.8

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080324-HM
Matrix: Air
Lab ID: 4081227-12
Sample Volume: 1773.693 m³
Filter ID:
Sampled: 08/03/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 04:13

Comments: Q9547506 - 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**	**0.0575**		**0.0354**
Arsenic	**7440-38-2**	**0.162**		**0.00860**
Barium	**7440-39-3**	**2.55**		**0.982**
Beryllium	**7440-41-7**	**0.0130**		**0.00294**
Cadmium	**7440-43-9**	**0.126**		**0.0680**
Chromium	**7440-47-3**	**27.0**		**2.03**
Cobalt	**7440-48-4**	**0.628**		**0.0400**
Copper	**7440-50-8**	**82.1**		**2.41**
Lead	**7439-92-1**	**1.09**		**0.196**
Manganese	**7439-96-5**	**11.1**		**1.73**
Molybdenum	**7439-98-7**	**3.78**		**0.329**
Nickel	**7440-02-0**	**12.4**		**0.598**
Selenium	**7782-49-2**	**0.172**		**0.00822**
Thallium	**7440-28-0**	**0.00107**		**5.40E-4**
Vanadium	**7440-62-2**	**1.19**		**0.0485**
Zinc	7440-66-6	26.7	U	70.4

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080324-HM
Matrix: Air
Lab ID: 4081227-13
Sample Volume: 1938.284 m³
Filter ID:
Sampled: 08/03/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 04:28

Comments: Q9547505 - 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**	**0.0899**		**0.0324**
Arsenic	**7440-38-2**	**0.246**		**0.00787**
Barium	**7440-39-3**	**2.39**		**0.898**
Beryllium	**7440-41-7**	**0.00881**		**0.00269**
Cadmium	7440-43-9	0.0170	U	0.0622
Chromium	**7440-47-3**	**2.84**		**1.86**
Cobalt	**7440-48-4**	**0.295**		**0.0366**
Copper	**7440-50-8**	**35.7**		**2.21**
Lead	**7439-92-1**	**0.495**		**0.180**
Manganese	**7439-96-5**	**9.20**		**1.59**
Molybdenum	**7439-98-7**	**1.78**		**0.301**
Nickel	**7440-02-0**	**1.41**		**0.547**
Selenium	**7782-49-2**	**0.152**		**0.00752**
Thallium	**7440-28-0**	**7.57E-4**		**4.94E-4**
Vanadium	**7440-62-2**	**1.11**		**0.0444**
Zinc	7440-66-6	8.81	U	64.5

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-080324-HM
Matrix: Air
Lab ID: 4081227-14
Sample Volume: 1897.666 m³
Filter ID:
Sampled: 08/03/24 00:05
Received: 08/12/24 10:23
Analysis Date: 08/14/24 04:42

Comments: Q9547502 - 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	0.0120	U	0.0331
Arsenic	7440-38-2	0.00516	U	0.00803
Barium	7440-39-3	0.416	U	0.917
Beryllium	7440-41-7	9.45E-4	U	0.00274
Cadmium	7440-43-9	0.00230	U	0.0635
Chromium	7440-47-3	1.14	U	1.89
Cobalt	7440-48-4	0.0222	U	0.0374
Copper	7440-50-8	0.733	U	2.25
Lead	7439-92-1	0.0298	U	0.183
Manganese	7439-96-5	0.258	U	1.62
Molybdenum	7439-98-7	0.205	U	0.308
Nickel	7440-02-0	0.285	U	0.559
Selenium	7782-49-2	0.00227	U	0.00768
Thallium	7440-28-0	9.93E-5	U	5.05E-4
Vanadium	7440-62-2	0.0345	U	0.0454
Zinc	7440-66-6	3.11	U	65.8

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080424-HM
Matrix: Air
Lab ID: 4081227-15
Sample Volume: 1924.128 m³
Filter ID:
Sampled: 08/04/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 04:56

Comments: Q9547504 - 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**	**0.0513**		**0.0326**
Arsenic	**7440-38-2**	**0.398**		**0.00792**
Barium	**7440-39-3**	**3.11**		**0.905**
Beryllium	**7440-41-7**	**0.0107**		**0.00271**
Cadmium	7440-43-9	0.0241	U	0.0627
Chromium	**7440-47-3**	**3.13**		**1.87**
Cobalt	**7440-48-4**	**0.488**		**0.0369**
Copper	**7440-50-8**	**216**		**2.22**
Lead	**7439-92-1**	**0.302**		**0.181**
Manganese	**7439-96-5**	**11.7**		**1.60**
Molybdenum	**7439-98-7**	**11.3**		**0.304**
Nickel	**7440-02-0**	**1.44**		**0.551**
Selenium	**7782-49-2**	**0.140**		**0.00758**
Thallium	**7440-28-0**	**7.95E-4**		**4.98E-4**
Vanadium	**7440-62-2**	**1.50**		**0.0447**
Zinc	7440-66-6	7.79	U	64.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080424-HM
Matrix: Air
Lab ID: 4081227-16
Sample Volume: 2032.294 m³
Filter ID:
Sampled: 08/04/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 05:12

Comments: Q9547503 - 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**	**0.195**		**0.0309**
Arsenic	**7440-38-2**	**0.628**		**0.00750**
Barium	**7440-39-3**	**22.2**		**0.857**
Beryllium	**7440-41-7**	**0.0315**		**0.00256**
Cadmium	**7440-43-9**	**0.0632**		**0.0593**
Chromium	**7440-47-3**	**3.96**		**1.77**
Cobalt	**7440-48-4**	**0.789**		**0.0349**
Copper	**7440-50-8**	**70.6**		**2.11**
Lead	**7439-92-1**	**2.16**		**0.171**
Manganese	**7439-96-5**	**26.3**		**1.51**
Molybdenum	**7439-98-7**	**1.97**		**0.287**
Nickel	**7440-02-0**	**2.34**		**0.522**
Selenium	**7782-49-2**	**0.228**		**0.00717**
Thallium	**7440-28-0**	**0.00148**		**4.72E-4**
Vanadium	**7440-62-2**	**2.66**		**0.0424**
Zinc	7440-66-6	24.1	U	61.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080424-HM
Matrix: Air
Lab ID: 4081227-17
Sample Volume: 1883.434 m³
Filter ID:
Sampled: 08/04/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 05:29

Comments: Q9547501 - 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**	**0.0432**		**0.0333**
Arsenic	**7440-38-2**	**0.105**		**0.00809**
Barium	**7440-39-3**	**1.80**		**0.924**
Beryllium	**7440-41-7**	**0.00786**		**0.00276**
Cadmium	7440-43-9	0.0216	U	0.0640
Chromium	7440-47-3	1.80	U	1.91
Cobalt	**7440-48-4**	**0.212**		**0.0377**
Copper	**7440-50-8**	**41.8**		**2.27**
Lead	**7439-92-1**	**0.430**		**0.185**
Manganese	**7439-96-5**	**4.15**		**1.63**
Molybdenum	**7439-98-7**	**1.94**		**0.310**
Nickel	**7440-02-0**	**0.815**		**0.563**
Selenium	**7782-49-2**	**0.102**		**0.00774**
Thallium	7440-28-0	5.08E-4	U	5.09E-4
Vanadium	**7440-62-2**	**0.528**		**0.0457**
Zinc	7440-66-6	9.90	U	66.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080424-HM
Matrix: Air
Lab ID: 4081227-18
Sample Volume: 1749.088 m³
Filter ID:
Sampled: 08/04/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 05:43

Comments: Q9547500 - 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**	**0.116**		**0.0359**
Arsenic	**7440-38-2**	**0.183**		**0.00872**
Barium	**7440-39-3**	**2.07**		**0.995**
Beryllium	**7440-41-7**	**0.00655**		**0.00298**
Cadmium	7440-43-9	0.0363	U	0.0689
Chromium	**7440-47-3**	**3.10**		**2.06**
Cobalt	**7440-48-4**	**0.241**		**0.0406**
Copper	**7440-50-8**	**60.3**		**2.45**
Lead	**7439-92-1**	**0.679**		**0.199**
Manganese	**7439-96-5**	**6.64**		**1.76**
Molybdenum	**7439-98-7**	**2.22**		**0.334**
Nickel	**7440-02-0**	**1.49**		**0.606**
Selenium	**7782-49-2**	**0.125**		**0.00833**
Thallium	**7440-28-0**	**6.73E-4**		**5.48E-4**
Vanadium	**7440-62-2**	**0.690**		**0.0492**
Zinc	7440-66-6	13.8	U	71.4

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080524-HM
Matrix: Air
Lab ID: 4081227-19
Sample Volume: 1802.011 m³
Filter ID:
Sampled: 08/05/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 05:58

Comments: Q9547499 - 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**	**0.0500**		**0.0349**
Arsenic	**7440-38-2**	**0.394**		**0.00846**
Barium	**7440-39-3**	**4.09**		**0.966**
Beryllium	**7440-41-7**	**0.0129**		**0.00289**
Cadmium	7440-43-9	0.0133	U	0.0669
Chromium	**7440-47-3**	**3.48**		**2.00**
Cobalt	**7440-48-4**	**0.550**		**0.0394**
Copper	**7440-50-8**	**195**		**2.37**
Lead	**7439-92-1**	**0.296**		**0.193**
Manganese	**7439-96-5**	**13.1**		**1.71**
Molybdenum	**7439-98-7**	**9.79**		**0.324**
Nickel	**7440-02-0**	**1.64**		**0.589**
Selenium	**7782-49-2**	**0.175**		**0.00809**
Thallium	**7440-28-0**	**8.47E-4**		**5.32E-4**
Vanadium	**7440-62-2**	**1.82**		**0.0478**
Zinc	7440-66-6	8.19	U	69.3

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080524-HM
Matrix: Air
Lab ID: 4081227-20
Sample Volume: 2039.465 m³
Filter ID:
Sampled: 08/05/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 06:13

Comments: Q9547498 - 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**	**0.265**		**0.0308**
Arsenic	**7440-38-2**	**0.341**		**0.00747**
Barium	**7440-39-3**	**3.78**		**0.854**
Beryllium	**7440-41-7**	**0.0107**		**0.00255**
Cadmium	7440-43-9	0.0153	U	0.0591
Chromium	**7440-47-3**	**2.26**		**1.76**
Cobalt	**7440-48-4**	**0.322**		**0.0348**
Copper	**7440-50-8**	**45.6**		**2.10**
Lead	**7439-92-1**	**0.909**		**0.171**
Manganese	**7439-96-5**	**9.45**		**1.51**
Molybdenum	**7439-98-7**	**1.91**		**0.286**
Nickel	**7440-02-0**	**1.14**		**0.520**
Selenium	**7782-49-2**	**0.186**		**0.00715**
Thallium	**7440-28-0**	**7.91E-4**		**4.70E-4**
Vanadium	**7440-62-2**	**1.22**		**0.0422**
Zinc	7440-66-6	11.5	U	61.3

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080524-HM
Matrix: Air
Lab ID: 4081227-21
Sample Volume: 1922.647 m³
Filter ID:
Sampled: 08/05/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 07:22

Comments: Q9547496 - 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**	**0.0357**		**0.0327**
Arsenic	**7440-38-2**	**0.130**		**0.00793**
Barium	**7440-39-3**	**3.99**		**0.905**
Beryllium	**7440-41-7**	**0.0118**		**0.00271**
Cadmium	7440-43-9	0.0118	U	0.0627
Chromium	**7440-47-3**	**1.95**		**1.87**
Cobalt	**7440-48-4**	**0.239**		**0.0369**
Copper	**7440-50-8**	**38.4**		**2.23**
Lead	**7439-92-1**	**0.307**		**0.181**
Manganese	**7439-96-5**	**6.18**		**1.60**
Molybdenum	**7439-98-7**	**1.95**		**0.304**
Nickel	**7440-02-0**	**0.863**		**0.552**
Selenium	**7782-49-2**	**0.130**		**0.00758**
Thallium	**7440-28-0**	**7.16E-4**		**4.98E-4**
Vanadium	**7440-62-2**	**0.764**		**0.0448**
Zinc	7440-66-6	8.35	U	65.0

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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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080524-HM
Matrix: Air
Lab ID: 4081227-22
Sample Volume: 1725.512 m³
Filter ID:
Sampled: 08/05/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 07:50

Comments: Q9547494 - 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**	**0.0823**		**0.0364**
Arsenic	**7440-38-2**	**0.199**		**0.00884**
Barium	**7440-39-3**	**2.43**		**1.01**
Beryllium	**7440-41-7**	**0.00935**		**0.00302**
Cadmium	7440-43-9	0.0185	U	0.0699
Chromium	**7440-47-3**	**2.41**		**2.08**
Cobalt	**7440-48-4**	**0.282**		**0.0411**
Copper	**7440-50-8**	**57.1**		**2.48**
Lead	**7439-92-1**	**0.461**		**0.202**
Manganese	**7439-96-5**	**8.52**		**1.78**
Molybdenum	**7439-98-7**	**2.02**		**0.339**
Nickel	**7440-02-0**	**1.30**		**0.615**
Selenium	**7782-49-2**	**0.146**		**0.00845**
Thallium	**7440-28-0**	**7.79E-4**		**5.55E-4**
Vanadium	**7440-62-2**	**0.897**		**0.0499**
Zinc	7440-66-6	9.35	U	72.4

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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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-080524-HM
Matrix: Air
Lab ID: 4081227-23
Sample Volume: 1802.011 m³
Filter ID:
Sampled: 08/05/24 00:05
Received: 08/12/24 10:23
Analysis Date: 08/14/24 08:05

Comments: Q9547489 - 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	0.0118	U	0.0349
Arsenic	7440-38-2	0.00785	U	0.00846
Barium	7440-39-3	0.508	U	0.966
Beryllium	7440-41-7	0.00141	U	0.00289
Cadmium	7440-43-9	0.00262	U	0.0669
Chromium	7440-47-3	1.25	U	2.00
Cobalt	7440-48-4	0.0312	U	0.0394
Copper	7440-50-8	0.961	U	2.37
Lead	7439-92-1	0.0574	U	0.193
Manganese	7439-96-5	0.388	U	1.71
Molybdenum	7439-98-7	0.216	U	0.324
Nickel	7440-02-0	0.399	U	0.589
Selenium	7782-49-2	0.00158	U	0.00809
Thallium	7440-28-0	1.21E-4	U	5.32E-4
Vanadium	**7440-62-2**	**0.0535**		**0.0478**
Zinc	7440-66-6	3.41	U	69.3

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080624-HM
Matrix: Air
Lab ID: 4081227-24
Sample Volume: 1879.138 m³
Filter ID:
Sampled: 08/06/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 08:19

Comments: Q9547492 - 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**	**0.0458**		**0.0334**
Arsenic	**7440-38-2**	**0.477**		**0.00811**
Barium	**7440-39-3**	**5.42**		**0.926**
Beryllium	**7440-41-7**	**0.0217**		**0.00277**
Cadmium	7440-43-9	0.0142	U	0.0642
Chromium	**7440-47-3**	**4.45**		**1.91**
Cobalt	**7440-48-4**	**0.921**		**0.0377**
Copper	**7440-50-8**	**247**		**2.28**
Lead	**7439-92-1**	**0.318**		**0.185**
Manganese	**7439-96-5**	**22.4**		**1.64**
Molybdenum	**7439-98-7**	**12.0**		**0.311**
Nickel	**7440-02-0**	**2.21**		**0.565**
Selenium	**7782-49-2**	**0.195**		**0.00776**
Thallium	**7440-28-0**	**0.00125**		**5.10E-4**
Vanadium	**7440-62-2**	**2.83**		**0.0458**
Zinc	7440-66-6	7.80	U	66.5

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080624-HM
Matrix: Air
Lab ID: 4081227-25
Sample Volume: 2030.593 m³
Filter ID:
Sampled: 08/06/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 08:34

Comments: Q9547491 - 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**	**0.124**		**0.0309**
Arsenic	**7440-38-2**	**0.448**		**0.00751**
Barium	**7440-39-3**	**5.31**		**0.857**
Beryllium	**7440-41-7**	**0.0144**		**0.00256**
Cadmium	7440-43-9	0.0124	U	0.0594
Chromium	**7440-47-3**	**2.54**		**1.77**
Cobalt	**7440-48-4**	**0.433**		**0.0349**
Copper	**7440-50-8**	**44.6**		**2.11**
Lead	**7439-92-1**	**0.825**		**0.171**
Manganese	**7439-96-5**	**12.5**		**1.51**
Molybdenum	**7439-98-7**	**1.82**		**0.288**
Nickel	**7440-02-0**	**1.25**		**0.522**
Selenium	**7782-49-2**	**0.190**		**0.00718**
Thallium	**7440-28-0**	**9.99E-4**		**4.72E-4**
Vanadium	**7440-62-2**	**1.48**		**0.0424**
Zinc	7440-66-6	12.4	U	61.5

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080624-HM
Matrix: Air
Lab ID: 4081227-26
Sample Volume: 1916.214 m³
Filter ID:
Sampled: 08/06/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 08:50

Comments: Q9547490 - 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**	**0.0471**		**0.0328**
Arsenic	**7440-38-2**	**0.222**		**0.00796**
Barium	**7440-39-3**	**3.27**		**0.909**
Beryllium	**7440-41-7**	**0.0332**		**0.00272**
Cadmium	7440-43-9	0.0184	U	0.0629
Chromium	**7440-47-3**	**3.89**		**1.88**
Cobalt	**7440-48-4**	**0.667**		**0.0370**
Copper	**7440-50-8**	**51.1**		**2.23**
Lead	**7439-92-1**	**0.456**		**0.182**
Manganese	**7439-96-5**	**16.5**		**1.60**
Molybdenum	**7439-98-7**	**2.35**		**0.305**
Nickel	**7440-02-0**	**2.28**		**0.554**
Selenium	**7782-49-2**	**0.185**		**0.00761**
Thallium	**7440-28-0**	**0.00114**		**5.00E-4**
Vanadium	**7440-62-2**	**1.59**		**0.0449**
Zinc	7440-66-6	16.1	U	65.2

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080624-HM
Matrix: Air
Lab ID: 4081227-27
Sample Volume: 1765.214 m³
Filter ID:
Sampled: 08/06/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 09:05

Comments: Q9547488 - 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**	**0.0940**		**0.0356**
Arsenic	**7440-38-2**	**0.351**		**0.00864**
Barium	**7440-39-3**	**3.38**		**0.986**
Beryllium	**7440-41-7**	**0.0105**		**0.00295**
Cadmium	7440-43-9	0.0134	U	0.0683
Chromium	**7440-47-3**	**3.17**		**2.04**
Cobalt	**7440-48-4**	**0.400**		**0.0402**
Copper	**7440-50-8**	**34.9**		**2.42**
Lead	**7439-92-1**	**0.508**		**0.197**
Manganese	**7439-96-5**	**10.9**		**1.74**
Molybdenum	**7439-98-7**	**1.78**		**0.331**
Nickel	**7440-02-0**	**2.36**		**0.601**
Selenium	**7782-49-2**	**0.176**		**0.00826**
Thallium	**7440-28-0**	**8.78E-4**		**5.43E-4**
Vanadium	**7440-62-2**	**1.05**		**0.0488**
Zinc	7440-66-6	13.4	U	70.8

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-080724-HM
Matrix: Air
Lab ID: 4081227-28
Sample Volume: 1923.325 m³
Filter ID:
Sampled: 08/07/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 09:19

Comments: Q9547487 - 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**	**0.0374**		**0.0327**
Arsenic	**7440-38-2**	**0.647**		**0.00793**
Barium	**7440-39-3**	**7.36**		**0.905**
Beryllium	**7440-41-7**	**0.0258**		**0.00271**
Cadmium	7440-43-9	0.0154	U	0.0627
Chromium	**7440-47-3**	**5.82**		**1.87**
Cobalt	**7440-48-4**	**1.28**		**0.0369**
Copper	**7440-50-8**	**295**		**2.22**
Lead	**7439-92-1**	**0.355**		**0.181**
Manganese	**7439-96-5**	**28.6**		**1.60**
Molybdenum	**7439-98-7**	**12.8**		**0.304**
Nickel	**7440-02-0**	**3.01**		**0.552**
Selenium	**7782-49-2**	**0.246**		**0.00758**
Thallium	**7440-28-0**	**0.00149**		**4.98E-4**
Vanadium	**7440-62-2**	**3.66**		**0.0447**
Zinc	7440-66-6	9.62	U	65.0

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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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-080724-HM
Matrix: Air
Lab ID: 4081227-29
Sample Volume: 2054.896 m³
Filter ID:
Sampled: 08/07/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 09:35

Comments: Q9547486 - 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**	**0.187**		**0.0306**
Arsenic	**7440-38-2**	**0.319**		**0.00742**
Barium	**7440-39-3**	**6.29**		**0.847**
Beryllium	**7440-41-7**	**0.0174**		**0.00253**
Cadmium	7440-43-9	0.0137	U	0.0587
Chromium	**7440-47-3**	**2.83**		**1.75**
Cobalt	**7440-48-4**	**0.552**		**0.0345**
Copper	**7440-50-8**	**43.5**		**2.08**
Lead	**7439-92-1**	**0.892**		**0.169**
Manganese	**7439-96-5**	**16.0**		**1.50**
Molybdenum	**7439-98-7**	**2.11**		**0.284**
Nickel	**7440-02-0**	**1.43**		**0.516**
Selenium	**7782-49-2**	**0.222**		**0.00709**
Thallium	**7440-28-0**	**0.00116**		**4.66E-4**
Vanadium	**7440-62-2**	**1.70**		**0.0419**
Zinc	7440-66-6	14.2	U	60.8

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

FILE #: 4205.00.003.001
REPORTED: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-080724-HM
Matrix: Air
Lab ID: 4081227-30
Sample Volume: 1979.539 m³
Filter ID:
Sampled: 08/07/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/14/24 10:46

Comments: Q9547485 - 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**	**0.0456**		**0.0317**
Arsenic	**7440-38-2**	**0.189**		**0.00770**
Barium	**7440-39-3**	**2.90**		**0.879**
Beryllium	**7440-41-7**	**0.0263**		**0.00263**
Cadmium	7440-43-9	0.00980	U	0.0609
Chromium	**7440-47-3**	**2.80**		**1.82**
Cobalt	**7440-48-4**	**0.484**		**0.0358**
Copper	**7440-50-8**	**40.6**		**2.16**
Lead	**7439-92-1**	**0.317**		**0.176**
Manganese	**7439-96-5**	**12.3**		**1.55**
Molybdenum	**7439-98-7**	**2.23**		**0.295**
Nickel	**7440-02-0**	**1.28**		**0.536**
Selenium	**7782-49-2**	**0.178**		**0.00736**
Thallium	**7440-28-0**	**0.00107**		**4.84E-4**
Vanadium	**7440-62-2**	**1.23**		**0.0435**
Zinc	7440-66-6	9.80	U	63.1

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-080724-HM
Matrix: Air
Lab ID: 4081227-31
Sample Volume: 1821.984 m³
Filter ID:
Sampled: 08/07/24 23:59
Received: 08/12/24 10:23
Analysis Date: 08/13/24 21:47

Comments: Q9547483 - Received in good condition MS/MSD

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0922**		**0.0345**
Arsenic	**7440-38-2**	**0.660**		**0.00837**
Barium	**7440-39-3**	**4.09**		**0.955**
Beryllium	**7440-41-7**	**0.0215**		**0.00286**
Cadmium	7440-43-9	0.0160	U	0.0662
Chromium	**7440-47-3**	**3.38**		**1.97**
Cobalt	**7440-48-4**	**0.631**		**0.0389**
Copper	**7440-50-8**	**31.9**		**2.35**
Lead	**7439-92-1**	**0.819**		**0.191**
Manganese	**7439-96-5**	**18.9**		**1.69**
Molybdenum	**7439-98-7**	**1.83**		**0.321**
Nickel	**7440-02-0**	**1.54**		**0.582**
Selenium	**7782-49-2**	**0.216**		**0.00800**
Thallium	**7440-28-0**	**0.00128**		**5.26E-4**
Vanadium	**7440-62-2**	**1.56**		**0.0472**
Zinc	7440-66-6	11.7	U	68.6

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: 08/29/24 09:16
SUBMITTED: 08/12/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-080724-HM
Matrix: Air
Lab ID: 4081227-32
Sample Volume: 1923.325 m³
Filter ID:
Sampled: 08/07/24 00:05
Received: 08/12/24 10:23
Analysis Date: 08/14/24 11:03

Comments: Q9547474 - 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	0.0109	U	0.0327
Arsenic	7440-38-2	0.00370	U	0.00793
Barium	7440-39-3	0.393	U	0.905
Beryllium	7440-41-7	6.94E-4	U	0.00271
Cadmium	7440-43-9	0.00180	U	0.0627
Chromium	7440-47-3	1.11	U	1.87
Cobalt	7440-48-4	0.0237	U	0.0369
Copper	7440-50-8	0.353	U	2.22
Lead	7439-92-1	0.0286	U	0.181
Manganese	7439-96-5	0.204	U	1.60
Molybdenum	7439-98-7	0.175	U	0.304
Nickel	7440-02-0	0.240	U	0.552
Selenium	7782-49-2	0.00298	U	0.00758
Thallium	7440-28-0	1.14E-4	U	4.98E-4
Vanadium	7440-62-2	0.0243	U	0.0447
Zinc	7440-66-6	2.40	U	65.0

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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 2408042 - B4H1304										
Calibration Blank (2408042-CCB1)				Prepared & Analyzed: 08/13/24						
Antimony	-0.969		ng/l							U
Arsenic	-5.32		ng/l							U
Barium	-3.95		ng/l							U
Beryllium	0.0530		ng/l							
Cadmium	-0.196		ng/l							U
Chromium	2.48		ng/l							
Cobalt	0.242		ng/l							
Copper	71.1		ng/l							
Lead	4.00		ng/l							
Manganese	5.79		ng/l							
Molybdenum	25.3		ng/l							
Nickel	0.0294		ng/l							
Selenium	-3.11		ng/l							U
Thallium	1.31		ng/l							
Vanadium	44.4		ng/l							
Zinc	-29.5		ng/l							U
Calibration Blank (2408042-CCB2)				Prepared & Analyzed: 08/13/24						
Antimony	-1.37		ng/l							U
Arsenic	-3.88		ng/l							U
Barium	-2.86		ng/l							U
Beryllium	0.0226		ng/l							
Cadmium	-0.171		ng/l							U
Chromium	4.39		ng/l							
Cobalt	0.336		ng/l							
Copper	97.2		ng/l							
Lead	2.10		ng/l							
Manganese	7.24		ng/l							
Molybdenum	6.06		ng/l							
Nickel	-1.11		ng/l							U
Selenium	-7.57		ng/l							U
Thallium	1.07		ng/l							
Vanadium	27.2		ng/l							
Zinc	68.8		ng/l							
Calibration Blank (2408042-CCB3)				Prepared: 08/13/24 Analyzed: 08/14/24						
Antimony	-1.63		ng/l							U
Arsenic	-0.113		ng/l							U
Barium	-1.68		ng/l							U
Beryllium	-0.254		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 2408042 - B4H1304										
Calibration Blank (2408042-CCB3) Contin				Prepared: 08/13/24 Analyzed: 08/14/24						
Cadmium	0.0278		ng/l							
Chromium	3.16		ng/l							
Cobalt	0.336		ng/l							
Copper	59.7		ng/l							
Lead	1.76		ng/l							
Manganese	5.04		ng/l							
Molybdenum	7.26		ng/l							
Nickel	-1.73		ng/l							U
Selenium	-4.65		ng/l							U
Thallium	1.31		ng/l							
Vanadium	2.16		ng/l							
Zinc	-33.0		ng/l							U
Calibration Blank (2408042-CCB4)				Prepared: 08/13/24 Analyzed: 08/14/24						
Antimony	-2.39		ng/l							U
Arsenic	-0.707		ng/l							U
Barium	-0.595		ng/l							U
Beryllium	-0.418		ng/l							U
Cadmium	-0.0471		ng/l							U
Chromium	3.45		ng/l							
Cobalt	0.452		ng/l							
Copper	74.8		ng/l							
Lead	1.52		ng/l							
Manganese	4.04		ng/l							
Molybdenum	6.24		ng/l							
Nickel	-0.368		ng/l							U
Selenium	6.39		ng/l							
Thallium	1.05		ng/l							
Vanadium	-3.96		ng/l							U
Zinc	-48.3		ng/l							U
Calibration Blank (2408042-CCB5)				Prepared: 08/13/24 Analyzed: 08/14/24						
Antimony	-2.40		ng/l							U
Arsenic	2.12		ng/l							
Barium	-1.42		ng/l							U
Beryllium	-0.768		ng/l							U
Cadmium	0.0297		ng/l							
Chromium	2.65		ng/l							
Cobalt	0.122		ng/l							
Copper	57.9		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 2408042 - B4H1304										
Calibration Blank (2408042-CCB5) Contin				Prepared: 08/13/24 Analyzed: 08/14/24						
Lead	1.20		ng/l							
Manganese	3.00		ng/l							
Molybdenum	7.84		ng/l							
Nickel	-1.34		ng/l							U
Selenium	-1.05		ng/l							U
Thallium	1.11		ng/l							
Vanadium	-3.95		ng/l							U
Zinc	-20.5		ng/l							U
Calibration Blank (2408042-CCB6)				Prepared: 08/13/24 Analyzed: 08/14/24						
Antimony	-2.13		ng/l							U
Arsenic	5.62		ng/l							
Barium	1.22		ng/l							
Beryllium	-0.143		ng/l							U
Cadmium	0.325		ng/l							
Chromium	5.08		ng/l							
Cobalt	0.582		ng/l							
Copper	71.7		ng/l							
Lead	2.55		ng/l							
Manganese	9.26		ng/l							
Molybdenum	6.44		ng/l							
Nickel	-0.104		ng/l							U
Selenium	12.5		ng/l							
Thallium	1.22		ng/l							
Vanadium	-6.45		ng/l							U
Zinc	-20.3		ng/l							U
Calibration Blank (2408042-CCB7)				Prepared: 08/13/24 Analyzed: 08/14/24						
Antimony	-2.17		ng/l							U
Arsenic	2.17		ng/l							
Barium	-2.00		ng/l							U
Beryllium	-0.549		ng/l							U
Cadmium	-0.132		ng/l							U
Chromium	5.58		ng/l							
Cobalt	0.450		ng/l							
Copper	41.7		ng/l							
Lead	1.66		ng/l							
Manganese	7.26		ng/l							
Molybdenum	6.15		ng/l							
Nickel	-1.90		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 2408042 - B4H1304										
Calibration Blank (2408042-CCB7) Contin				Prepared: 08/13/24 Analyzed: 08/14/24						
Selenium	4.24		ng/l							
Thallium	1.30		ng/l							
Vanadium	-5.46		ng/l							U
Zinc	-26.5		ng/l							U
Calibration Check (2408042-CCV1)				Prepared & Analyzed: 08/13/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	19900		ng/l	20000		99.6	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5010		ng/l	5000.0		100	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	500000		ng/l	500000		100	90-110			
Molybdenum	50300		ng/l	50000		101	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20000		ng/l	20000		99.9	90-110			
Thallium	487		ng/l	500.00		97.5	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2408042-CCV2)				Prepared & Analyzed: 08/13/24						
Antimony	19400		ng/l	20000		97.0	90-110			
Arsenic	19300		ng/l	20000		96.6	90-110			
Barium	191000		ng/l	200000		95.5	90-110			
Beryllium	5100		ng/l	5000.0		102	90-110			
Cadmium	19600		ng/l	20000		98.2	90-110			
Chromium	232000		ng/l	240000		96.6	90-110			
Cobalt	48600		ng/l	50000		97.2	90-110			
Copper	1.99E6		ng/l	2.0000E6		99.6	90-110			
Lead	195000		ng/l	200000		97.7	90-110			
Manganese	481000		ng/l	500000		96.2	90-110			
Molybdenum	47600		ng/l	50000		95.2	90-110			
Nickel	117000		ng/l	120000		97.9	90-110			
Selenium	19900		ng/l	20000		99.3	90-110			
Thallium	469		ng/l	500.00		93.9	90-110			
Vanadium	19300		ng/l	20000		96.4	90-110			
Zinc	495000		ng/l	500000		98.9	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 2408042 - B4H1304										
Calibration Check (2408042-CCV3)				Prepared & Analyzed: 08/13/24						
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	19800		ng/l	20000		99.2	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	5050		ng/l	5000.0		101	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	49500		ng/l	50000		99.0	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.5	90-110			
Manganese	491000		ng/l	500000		98.1	90-110			
Molybdenum	50000		ng/l	50000		100	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Thallium	470		ng/l	500.00		94.1	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	505000		ng/l	500000		101	90-110			
Calibration Check (2408042-CCV4)				Prepared: 08/13/24 Analyzed: 08/14/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	206000		ng/l	200000		103	90-110			
Beryllium	5100		ng/l	5000.0		102	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	50200		ng/l	50000		100	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	498000		ng/l	500000		99.6	90-110			
Molybdenum	51100		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	20000		ng/l	20000		99.9	90-110			
Thallium	478		ng/l	500.00		95.6	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2408042-CCV5)				Prepared: 08/13/24 Analyzed: 08/14/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	205000		ng/l	200000		103	90-110			
Beryllium	5000		ng/l	5000.0		100	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408042 - B4H1304										
Calibration Check (2408042-CCV5) Contin					Prepared: 08/13/24 Analyzed: 08/14/24					
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50300		ng/l	50000		101	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	498000		ng/l	500000		99.7	90-110			
Molybdenum	51000		ng/l	50000		102	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	472		ng/l	500.00		94.3	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	510000		ng/l	500000		102	90-110			
Calibration Check (2408042-CCV6)					Prepared: 08/13/24 Analyzed: 08/14/24					
Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	207000		ng/l	200000		103	90-110			
Beryllium	4990		ng/l	5000.0		99.9	90-110			
Cadmium	20900		ng/l	20000		104	90-110			
Chromium	248000		ng/l	240000		103	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	205000		ng/l	200000		102	90-110			
Manganese	504000		ng/l	500000		101	90-110			
Molybdenum	51400		ng/l	50000		103	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	477		ng/l	500.00		95.3	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	519000		ng/l	500000		104	90-110			
Calibration Check (2408042-CCV7)					Prepared: 08/13/24 Analyzed: 08/14/24					
Antimony	20500		ng/l	20000		102	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	5120		ng/l	5000.0		102	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50400		ng/l	50000		101	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2408042 - B4H1304										
Calibration Check (2408042-CCV7) Contin					Prepared: 08/13/24 Analyzed: 08/14/24					
Lead	202000		ng/l	200000		101	90-110			
Manganese	494000		ng/l	500000		98.8	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20300		ng/l	20000		101	90-110			
Thallium	467		ng/l	500.00		93.4	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	512000		ng/l	500000		102	90-110			
High Cal Check (2408042-HCV1)					Prepared & Analyzed: 08/13/24					
Antimony	39900		ng/l	40000		99.7	95-105			
Arsenic	39800		ng/l	40000		99.6	95-105			
Barium	397000		ng/l	400000		99.3	95-105			
Beryllium	10100		ng/l	10000		101	95-105			
Cadmium	39500		ng/l	40000		98.6	95-105			
Chromium	483000		ng/l	480000		101	95-105			
Cobalt	98600		ng/l	100000		98.6	95-105			
Copper	3.98E6		ng/l	4.0000E6		99.5	95-105			
Lead	398000		ng/l	400000		99.5	95-105			
Manganese	997000		ng/l	1.0000E6		99.7	95-105			
Molybdenum	98600		ng/l	100000		98.6	95-105			
Nickel	237000		ng/l	240000		98.9	95-105			
Selenium	39800		ng/l	40000		99.5	95-105			
Thallium	994		ng/l	1000.0		99.4	95-105			
Vanadium	40300		ng/l	40000		101	95-105			
Zinc	1.01E6		ng/l	1.0000E6		101	95-105			
Initial Cal Blank (2408042-ICB1)					Prepared & Analyzed: 08/13/24					
Antimony	-0.680		ng/l							U
Arsenic	-3.56		ng/l							U
Barium	-1.60		ng/l							U
Beryllium	-0.195		ng/l							U
Cadmium	-0.0651		ng/l							U
Chromium	1.39		ng/l							
Cobalt	0.189		ng/l							
Copper	103		ng/l							
Lead	2.27		ng/l							
Manganese	6.19		ng/l							
Molybdenum	8.37		ng/l							
Nickel	-2.14		ng/l							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: 08/29/24 09:16
SUBMITTED: 08/12/24
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 2408042 - B4H1304										
Initial Cal Blank (2408042-ICB1) Continu				Prepared & Analyzed: 08/13/24						
Selenium	2.73		ng/l							
Thallium	0.832		ng/l							
Vanadium	82.2		ng/l							
Zinc	-20.3		ng/l							U
Initial Cal Check (2408042-ICV1)				Prepared & Analyzed: 08/13/24						
Antimony	19400		ng/l	20000		97.0	90-110			
Arsenic	19300		ng/l	20000		96.5	90-110			
Barium	193000		ng/l	200000		96.4	90-110			
Beryllium	4910		ng/l	5000.0		98.2	90-110			
Cadmium	19900		ng/l	20000		99.3	90-110			
Chromium	235000		ng/l	240000		98.1	90-110			
Cobalt	47200		ng/l	50000		94.5	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	198000		ng/l	200000		98.8	90-110			
Manganese	487000		ng/l	500000		97.5	90-110			
Molybdenum	49100		ng/l	50000		98.3	90-110			
Nickel	121000		ng/l	120000		100	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	484		ng/l	500.00		96.8	90-110			
Vanadium	19500		ng/l	20000		97.3	90-110			
Zinc	505000		ng/l	500000		101	90-110			
Interference Check A (2408042-IFA1)				Prepared & Analyzed: 08/13/24						
Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	314000		ng/l	300000		105	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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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 2408042 - B4H1304										
Interference Check B (2408042-IFB1)				Prepared & Analyzed: 08/13/24						
Antimony	20200		ng/l	20000		101	80-120			
Arsenic	20200		ng/l	20000		101	80-120			
Barium	198000		ng/l	200000		98.9	80-120			
Beryllium	4760		ng/l	5000.0		95.3	80-120			
Cadmium	19700		ng/l	20000		98.4	80-120			
Chromium	232000		ng/l	240000		96.6	80-120			
Cobalt	49500		ng/l	50000		99.1	80-120			
Copper	1.93E6		ng/l	2.0000E6		96.5	80-120			
Lead	206000		ng/l	200000		103	80-120			
Manganese	488000		ng/l	500000		97.6	80-120			
Molybdenum	368000		ng/l	350000		105	80-120			
Nickel	117000		ng/l	120000		97.8	80-120			
Selenium	19200		ng/l	20000		96.0	80-120			
Thallium	514		ng/l	500.00		103	80-120			
Vanadium	18600		ng/l	20000		92.8	80-120			
Zinc	467000		ng/l	500000		93.5	80-120			
Batch B4H1304 - ICP-MS Extraction										
Blank (B4H1304-BLK1)				Prepared & Analyzed: 08/13/24						
Antimony	ND	0.0386	ng/m³ Air							U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4H1304-BS1)				Prepared & Analyzed: 08/13/24						
Antimony	0.511	0.0386	ng/m³ Air	1.3829		37.0	80-120			
Arsenic	2.71	0.00937	ng/m³ Air	2.7658		98.0	80-120			
Barium	27.9	1.07	ng/m³ Air	27.658		101	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H1304 - ICP-MS Extraction										
LCS (B4H1304-BS1) Continued					Prepared & Analyzed: 08/13/24					
Beryllium	1.35	0.00320	ng/m³ Air	1.3829		97.4	80-120			
Cadmium	1.40	0.0741	ng/m³ Air	1.3829		101	80-120			
Chromium	15.9	2.21	ng/m³ Air	13.829		115	80-120			
Cobalt	1.34	0.0436	ng/m³ Air	1.3829		97.1	80-120			
Copper	29.2	2.63	ng/m³ Air	27.658		106	80-120			
Lead	13.7	0.214	ng/m³ Air	13.829		99.3	80-120			
Manganese	8.51	1.89	ng/m³ Air	8.2975		103	80-120			
Molybdenum	1.64	0.359	ng/m³ Air	1.3829		118	80-120			
Nickel	3.13	0.652	ng/m³ Air	2.7658		113	80-120			
Selenium	2.72	0.00896	ng/m³ Air	2.7658		98.5	80-120			
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.8	80-120			
Vanadium	2.80	0.0529	ng/m³ Air	2.7658		101	80-120			
Zinc	90.0	76.8	ng/m³ Air	82.975		108	80-120			
LCS (B4H1304-BS2)					Prepared & Analyzed: 08/13/24					
Antimony	0.479	0.0386	ng/m³ Air	1.3829		34.7	80-120			
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		96.9	80-120			
Barium	28.4	1.07	ng/m³ Air	27.658		103	80-120			
Beryllium	1.35	0.00320	ng/m³ Air	1.3829		97.4	80-120			
Cadmium	1.37	0.0741	ng/m³ Air	1.3829		99.4	80-120			
Chromium	15.5	2.21	ng/m³ Air	13.829		112	80-120			
Cobalt	1.36	0.0436	ng/m³ Air	1.3829		98.4	80-120			
Copper	28.3	2.63	ng/m³ Air	27.658		102	80-120			
Lead	13.8	0.214	ng/m³ Air	13.829		99.7	80-120			
Manganese	8.33	1.89	ng/m³ Air	8.2975		100	80-120			
Molybdenum	1.63	0.359	ng/m³ Air	1.3829		118	80-120			
Nickel	3.03	0.652	ng/m³ Air	2.7658		110	80-120			
Selenium	2.66	0.00896	ng/m³ Air	2.7658		96.2	80-120			
Thallium	0.134	5.89E-4	ng/m³ Air	0.13829		97.0	80-120			
Vanadium	2.76	0.0529	ng/m³ Air	2.7658		99.9	80-120			
Zinc	88.1	76.8	ng/m³ Air	82.975		106	80-120			
Duplicate (B4H1304-DUP1)		**Source: 4081227-11**			Prepared & Analyzed: 08/13/24					
Antimony	0.116	0.0290	ng/m³ Air		0.111			4.46	10	
Arsenic	0.287	0.00705	ng/m³ Air		0.260			9.74	10	
Barium	3.50	0.805	ng/m³ Air		3.34			4.76	10	
Beryllium	0.0107	0.00241	ng/m³ Air		0.0101			6.01	10	
Cadmium	ND	0.0558	ng/m³ Air		ND				10	U
Chromium	2.10	1.66	ng/m³ Air		1.99			5.44	10	
Cobalt	0.310	0.0328	ng/m³ Air		0.290			6.77	10	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H1304 - ICP-MS Extraction										
Duplicate (B4H1304-DUP1) Continued			**Source: 4081227-11**		Prepared & Analyzed: 08/13/24					
Copper	57.0	1.98	ng/m³ Air		56.8			0.179	10	
Lead	0.905	0.161	ng/m³ Air		0.842			7.22	10	
Manganese	9.46	1.42	ng/m³ Air		9.20			2.73	10	
Molybdenum	1.95	0.270	ng/m³ Air		1.89			3.11	10	
Nickel	1.11	0.491	ng/m³ Air		1.03			7.56	10	
Selenium	0.180	0.00674	ng/m³ Air		0.169			6.34	10	
Thallium	8.51E-4	4.43E-4	ng/m³ Air		9.56E-4			11.6	10	
Vanadium	1.33	0.0398	ng/m³ Air		1.25			5.79	10	
Zinc	ND	57.8	ng/m³ Air		ND				10	U
Duplicate (B4H1304-DUP2)			**Source: 4081227-31**		Prepared & Analyzed: 08/13/24					
Antimony	0.0847	0.0345	ng/m³ Air		0.0922			8.45	10	
Arsenic	0.676	0.00837	ng/m³ Air		0.660			2.34	10	
Barium	4.04	0.955	ng/m³ Air		4.09			1.21	10	
Beryllium	0.0210	0.00286	ng/m³ Air		0.0215			2.23	10	
Cadmium	ND	0.0662	ng/m³ Air		ND				10	U
Chromium	3.55	1.97	ng/m³ Air		3.38			4.87	10	
Cobalt	0.636	0.0389	ng/m³ Air		0.631			0.736	10	
Copper	30.2	2.35	ng/m³ Air		31.9			5.25	10	
Lead	0.857	0.191	ng/m³ Air		0.819			4.57	10	
Manganese	18.8	1.69	ng/m³ Air		18.9			0.470	10	
Molybdenum	1.73	0.321	ng/m³ Air		1.83			5.59	10	
Nickel	1.53	0.582	ng/m³ Air		1.54			0.852	10	
Selenium	0.225	0.00800	ng/m³ Air		0.216			3.77	10	
Thallium	0.00128	5.26E-4	ng/m³ Air		0.00128			0.0787	10	
Vanadium	1.58	0.0472	ng/m³ Air		1.56			0.850	10	
Zinc	ND	68.6	ng/m³ Air		ND				10	U
Duplicate (B4H1304-DUP3)			**Source: 4081227-06**		Prepared: 08/13/24 Analyzed: 08/14/24					
Antimony	0.0510	0.0322	ng/m³ Air		0.0513			0.573	10	
Arsenic	0.369	0.00782	ng/m³ Air		0.369			0.0172	10	
Barium	4.25	0.893	ng/m³ Air		4.26			0.351	10	
Beryllium	0.0169	0.00267	ng/m³ Air		0.0172			1.49	10	
Cadmium	ND	0.0618	ng/m³ Air		ND				10	U
Chromium	4.01	1.84	ng/m³ Air		4.01			0.0348	10	
Cobalt	0.755	0.0364	ng/m³ Air		0.757			0.199	10	
Copper	124	2.19	ng/m³ Air		124			0.313	10	
Lead	0.389	0.179	ng/m³ Air		0.390			0.296	10	
Manganese	18.5	1.58	ng/m³ Air		18.4			0.329	10	
Molybdenum	6.32	0.300	ng/m³ Air		6.37			0.879	10	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H1304 - ICP-MS Extraction										
Duplicate (B4H1304-DUP3) Continued		**Source: 4081227-06**		Prepared: 08/13/24 Analyzed: 08/14/24						
Nickel	2.13	0.544	ng/m³ Air		2.13			0.0470	10	
Selenium	0.185	0.00748	ng/m³ Air		0.196			5.74	10	
Thallium	0.00141	4.91E-4	ng/m³ Air		0.00147			4.31	10	
Vanadium	2.28	0.0441	ng/m³ Air		2.28			0.277	10	
Zinc	ND	64.1	ng/m³ Air		ND				10	U
Duplicate (B4H1304-DUP4)		**Source: 4081227-21**		Prepared: 08/13/24 Analyzed: 08/14/24						
Antimony	0.0352	0.0327	ng/m³ Air		0.0357			1.66	10	
Arsenic	0.132	0.00793	ng/m³ Air		0.130			1.99	10	
Barium	4.03	0.905	ng/m³ Air		3.99			0.985	10	
Beryllium	0.0111	0.00271	ng/m³ Air		0.0118			6.80	10	
Cadmium	ND	0.0627	ng/m³ Air		ND				10	U
Chromium	1.96	1.87	ng/m³ Air		1.95			0.451	10	
Cobalt	0.242	0.0369	ng/m³ Air		0.239			1.46	10	
Copper	38.5	2.23	ng/m³ Air		38.4			0.342	10	
Lead	0.308	0.181	ng/m³ Air		0.307			0.434	10	
Manganese	6.16	1.60	ng/m³ Air		6.18			0.343	10	
Molybdenum	1.96	0.304	ng/m³ Air		1.95			0.311	10	
Nickel	0.873	0.552	ng/m³ Air		0.863			1.14	10	
Selenium	0.142	0.00758	ng/m³ Air		0.130			8.22	10	
Thallium	6.60E-4	4.98E-4	ng/m³ Air		7.16E-4			8.15	10	
Vanadium	0.766	0.0448	ng/m³ Air		0.764			0.368	10	
Zinc	ND	65.0	ng/m³ Air		ND				10	U
Matrix Spike (B4H1304-MS1)		**Source: 4081227-11**		Prepared & Analyzed: 08/13/24						
Antimony	0.660	0.0290	ng/m³ Air	1.0405	0.111	52.7	80-120			
Arsenic	2.24	0.00705	ng/m³ Air	2.0810	0.260	95.3	80-120			
Barium	23.9	0.805	ng/m³ Air	20.810	3.34	99.0	80-120			
Beryllium	1.02	0.00241	ng/m³ Air	1.0405	0.0101	96.7	80-120			
Cadmium	1.05	0.0558	ng/m³ Air	1.0405	ND	101	80-120			
Chromium	12.3	1.66	ng/m³ Air	10.405	1.99	99.0	80-120			
Cobalt	1.27	0.0328	ng/m³ Air	1.0405	0.290	94.5	80-120			
Copper	82.0	1.98	ng/m³ Air	20.810	56.8	121	80-120			
Lead	11.6	0.161	ng/m³ Air	10.405	0.842	103	80-120			
Manganese	14.9	1.42	ng/m³ Air	6.2429	9.20	90.9	80-120			
Molybdenum	2.89	0.270	ng/m³ Air	1.0405	1.89	96.0	80-120			
Nickel	3.08	0.491	ng/m³ Air	2.0810	1.03	98.2	80-120			
Selenium	2.15	0.00674	ng/m³ Air	2.0810	0.169	95.1	80-120			
Thallium	0.100	4.43E-4	ng/m³ Air	0.10405	9.56E-4	95.4	80-120			
Vanadium	3.25	0.0398	ng/m³ Air	2.0810	1.25	96.0	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H1304 - ICP-MS Extraction										
Matrix Spike (B4H1304-MS1) Continued Source: 4081227-11 Prepared & Analyzed: 08/13/24										
Zinc	78.3	57.8	ng/m³ Air	62.429	ND	125	80-120			
Matrix Spike (B4H1304-MS2) Source: 4081227-31 Prepared & Analyzed: 08/13/24										
Antimony	0.675	0.0345	ng/m³ Air	1.2349	0.0922	47.2	80-120			
Arsenic	3.00	0.00837	ng/m³ Air	2.4698	0.660	94.7	80-120			
Barium	28.9	0.955	ng/m³ Air	24.698	4.09	101	80-120			
Beryllium	1.22	0.00286	ng/m³ Air	1.2349	0.0215	97.3	80-120			
Cadmium	1.23	0.0662	ng/m³ Air	1.2349	ND	99.8	80-120			
Chromium	15.8	1.97	ng/m³ Air	12.349	3.38	100	80-120			
Cobalt	1.80	0.0389	ng/m³ Air	1.2349	0.631	94.5	80-120			
Copper	58.4	2.35	ng/m³ Air	24.698	31.9	108	80-120			
Lead	13.1	0.191	ng/m³ Air	12.349	0.819	99.8	80-120			
Manganese	26.6	1.69	ng/m³ Air	7.4095	18.9	103	80-120			
Molybdenum	3.07	0.321	ng/m³ Air	1.2349	1.83	100	80-120			
Nickel	4.07	0.582	ng/m³ Air	2.4698	1.54	102	80-120			
Selenium	2.57	0.00800	ng/m³ Air	2.4698	0.216	95.3	80-120			
Thallium	0.119	5.26E-4	ng/m³ Air	0.12349	0.00128	95.4	80-120			
Vanadium	4.02	0.0472	ng/m³ Air	2.4698	1.56	99.4	80-120			
Zinc	85.7	68.6	ng/m³ Air	74.095	ND	116	80-120			
Matrix Spike Dup (B4H1304-MSD1) Source: 4081227-11 Prepared & Analyzed: 08/13/24										
Antimony	0.662	0.0290	ng/m³ Air	1.0405	0.111	52.9	80-120	0.268	20	
Arsenic	2.24	0.00705	ng/m³ Air	2.0810	0.260	95.2	80-120	0.0413	20	
Barium	24.2	0.805	ng/m³ Air	20.810	3.34	100	80-120	0.881	20	
Beryllium	1.03	0.00241	ng/m³ Air	1.0405	0.0101	97.6	80-120	0.964	20	
Cadmium	1.03	0.0558	ng/m³ Air	1.0405	ND	99.3	80-120	2.03	20	
Chromium	12.1	1.66	ng/m³ Air	10.405	1.99	96.7	80-120	1.92	20	
Cobalt	1.25	0.0328	ng/m³ Air	1.0405	0.290	92.7	80-120	1.46	20	
Copper	73.8	1.98	ng/m³ Air	20.810	56.8	81.7	80-120	10.4	20	
Lead	11.2	0.161	ng/m³ Air	10.405	0.842	99.7	80-120	3.13	20	
Manganese	14.5	1.42	ng/m³ Air	6.2429	9.20	84.3	80-120	2.78	20	
Molybdenum	2.89	0.270	ng/m³ Air	1.0405	1.89	96.0	80-120	0.0153	20	
Nickel	2.99	0.491	ng/m³ Air	2.0810	1.03	94.2	80-120	2.78	20	
Selenium	2.14	0.00674	ng/m³ Air	2.0810	0.169	95.0	80-120	0.140	20	
Thallium	0.0995	4.43E-4	ng/m³ Air	0.10405	9.56E-4	94.7	80-120	0.695	20	
Vanadium	3.21	0.0398	ng/m³ Air	2.0810	1.25	94.0	80-120	1.27	20	
Zinc	73.3	57.8	ng/m³ Air	62.429	ND	117	80-120	6.55	20	
Matrix Spike Dup (B4H1304-MSD2) Source: 4081227-31 Prepared & Analyzed: 08/13/24										
Antimony	0.735	0.0345	ng/m³ Air	1.2349	0.0922	52.0	80-120	8.52	20	
Arsenic	3.12	0.00837	ng/m³ Air	2.4698	0.660	99.6	80-120	3.96	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: 08/29/24 09:16
SUBMITTED: 08/12/24
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 B4H1304 - ICP-MS Extraction										
Matrix Spike Dup (B4H1304-MSD2) Conti			**Source: 4081227-31**		Prepared & Analyzed: 08/13/24					
Barium	29.6	0.955	ng/m³ Air	24.698	4.09	103	80-120	2.40	20	
Beryllium	1.11	0.00286	ng/m³ Air	1.2349	0.0215	88.5	80-120	9.36	20	
Cadmium	1.25	0.0662	ng/m³ Air	1.2349	ND	102	80-120	1.78	20	
Chromium	16.0	1.97	ng/m³ Air	12.349	3.38	102	80-120	1.49	20	
Cobalt	1.83	0.0389	ng/m³ Air	1.2349	0.631	96.9	80-120	1.58	20	
Copper	55.8	2.35	ng/m³ Air	24.698	31.9	97.1	80-120	4.52	20	
Lead	13.7	0.191	ng/m³ Air	12.349	0.819	104	80-120	4.06	20	
Manganese	26.9	1.69	ng/m³ Air	7.4095	18.9	107	80-120	1.01	20	
Molybdenum	2.93	0.321	ng/m³ Air	1.2349	1.83	89.2	80-120	4.61	20	
Nickel	4.02	0.582	ng/m³ Air	2.4698	1.54	100	80-120	1.25	20	
Selenium	2.64	0.00800	ng/m³ Air	2.4698	0.216	98.3	80-120	2.82	20	
Thallium	0.122	5.26E-4	ng/m³ Air	0.12349	0.00128	97.6	80-120	2.32	20	
Vanadium	4.07	0.0472	ng/m³ Air	2.4698	1.56	101	80-120	1.18	20	
Zinc	86.2	68.6	ng/m³ Air	74.095	ND	116	80-120	0.482	20	
Post Spike (B4H1304-PS1)			**Source: 4081227-11**		Prepared & Analyzed: 08/13/24					
Antimony	0.313	0.0290	ng/m³ Air	0.20810	0.111	97.1	75-125			
Arsenic	1.23	0.00705	ng/m³ Air	1.0405	0.260	92.9	75-125			
Barium	5.28	0.805	ng/m³ Air	2.0810	3.34	93.4	75-125			
Beryllium	0.214	0.00241	ng/m³ Air	0.20810	0.0101	97.8	75-125			
Cadmium	0.119	0.0558	ng/m³ Air	0.10405	ND	115	75-125			
Chromium	2.98	1.66	ng/m³ Air	1.0405	1.99	95.4	75-125			
Cobalt	0.484	0.0328	ng/m³ Air	0.20810	0.290	93.5	75-125			
Copper	67.3	1.98	ng/m³ Air	10.405	56.8	100	75-125			
Lead	21.7	0.161	ng/m³ Air	20.810	0.842	100	75-125			
Manganese	11.0	1.42	ng/m³ Air	2.0810	9.20	85.9	75-125			
Molybdenum	2.83	0.270	ng/m³ Air	1.0405	1.89	90.4	75-125			
Nickel	3.06	0.491	ng/m³ Air	2.0810	1.03	97.5	75-125			
Selenium	1.17	0.00674	ng/m³ Air	1.0405	0.169	96.3	75-125			
Thallium	0.0505	4.43E-4	ng/m³ Air	5.2024E-2	9.56E-4	95.2	75-125			
Vanadium	2.21	0.0398	ng/m³ Air	1.0405	1.25	92.3	75-125			
Zinc	ND	57.8	ng/m³ Air	20.810	ND		75-125			U
Post Spike (B4H1304-PS2)			**Source: 4081227-31**		Prepared & Analyzed: 08/13/24					
Antimony	0.333	0.0345	ng/m³ Air	0.24698	0.0922	97.4	75-125			
Arsenic	1.82	0.00837	ng/m³ Air	1.2349	0.660	94.2	75-125			
Barium	6.52	0.955	ng/m³ Air	2.4698	4.09	98.3	75-125			
Beryllium	0.257	0.00286	ng/m³ Air	0.24698	0.0215	95.4	75-125			
Cadmium	0.139	0.0662	ng/m³ Air	0.12349	ND	112	75-125			
Chromium	4.62	1.97	ng/m³ Air	1.2349	3.38	101	75-125			

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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 B4H1304 - ICP-MS Extraction										
Post Spike (B4H1304-PS2) Continued			**Source: 4081227-31**		Prepared & Analyzed: 08/13/24					
Cobalt	0.879	0.0389	ng/m³ Air	0.24698	0.631	100	75-125			
Copper	44.8	2.35	ng/m³ Air	12.349	31.9	105	75-125			
Lead	25.7	0.191	ng/m³ Air	24.698	0.819	101	75-125			
Manganese	21.4	1.69	ng/m³ Air	2.4698	18.9	99.0	75-125			
Molybdenum	3.03	0.321	ng/m³ Air	1.2349	1.83	97.3	75-125			
Nickel	3.99	0.582	ng/m³ Air	2.4698	1.54	99.2	75-125			
Selenium	1.39	0.00800	ng/m³ Air	1.2349	0.216	94.9	75-125			
Thallium	0.0609	5.26E-4	ng/m³ Air	6.1746E-2	0.00128	96.6	75-125			
Vanadium	2.77	0.0472	ng/m³ Air	1.2349	1.56	97.3	75-125			
Zinc	ND	68.6	ng/m³ Air	24.698	ND		75-125			U
Dilution Check (B4H1304-SRL1)			**Source: 4081227-11**		Prepared & Analyzed: 08/13/24					
Antimony	0.108	0.0290	ng/m³ Air		0.111			2.88	10	
Arsenic	0.265	0.00705	ng/m³ Air		0.260			1.79	10	
Barium	3.32	0.805	ng/m³ Air		3.34			0.507	10	
Beryllium	0.0113	0.00241	ng/m³ Air		0.0101			10.8	10	
Cadmium	ND	0.0558	ng/m³ Air		ND				10	U
Chromium	2.03	1.66	ng/m³ Air		1.99			1.84	10	
Cobalt	0.295	0.0328	ng/m³ Air		0.290			1.69	10	
Copper	57.6	1.98	ng/m³ Air		56.8			1.38	10	
Lead	0.821	0.161	ng/m³ Air		0.842			2.57	10	
Manganese	9.49	1.42	ng/m³ Air		9.20			3.05	10	
Molybdenum	1.89	0.270	ng/m³ Air		1.89			0.259	10	
Nickel	1.06	0.491	ng/m³ Air		1.03			2.88	10	
Selenium	0.162	0.00674	ng/m³ Air		0.169			4.34	10	
Thallium	0.00252	4.43E-4	ng/m³ Air		9.56E-4			89.9	10	
Vanadium	1.30	0.0398	ng/m³ Air		1.25			3.83	10	
Zinc	ND	57.8	ng/m³ Air		ND				10	U
Dilution Check (B4H1304-SRL2)			**Source: 4081227-31**		Prepared & Analyzed: 08/13/24					
Antimony	0.0889	0.0345	ng/m³ Air		0.0922			3.67	10	
Arsenic	0.670	0.00837	ng/m³ Air		0.660			1.42	10	
Barium	4.14	0.955	ng/m³ Air		4.09			1.21	10	
Beryllium	0.0216	0.00286	ng/m³ Air		0.0215			0.717	10	
Cadmium	ND	0.0662	ng/m³ Air		ND				10	U
Chromium	3.46	1.97	ng/m³ Air		3.38			2.39	10	
Cobalt	0.651	0.0389	ng/m³ Air		0.631			3.19	10	
Copper	32.8	2.35	ng/m³ Air		31.9			2.78	10	
Lead	0.808	0.191	ng/m³ Air		0.819			1.34	10	
Manganese	19.5	1.69	ng/m³ Air		18.9			2.76	10	

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4H1304 - ICP-MS Extraction										
Dilution Check (B4H1304-SRL2) ContinueSource: 4081227-31 Prepared & Analyzed: 08/13/24										
Molybdenum	1.89	0.321	ng/m³ Air		1.83			2.83	10	
Nickel	1.60	0.582	ng/m³ Air		1.54			3.94	10	
Selenium	0.217	0.00800	ng/m³ Air		0.216			0.103	10	
Thallium	0.00319	5.26E-4	ng/m³ Air		0.00128			85.3	10	
Vanadium	1.65	0.0472	ng/m³ Air		1.56			5.54	10	
Zinc	ND	68.6	ng/m³ Air		ND				10	U

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Notes and Definitions

U	Under Detection Limit
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 08/29/2024 and Shanna Vasser 08/30/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 08/01/2024 – 08/07/2024
Report No: 4081227

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

Discrepancies:

13. Field blank detections above the method detection limit were reported for vanadium in MFL-FB01-080524-HM.

Notes:

1. The electronic data deliverable (EDD) was revised on August 29, 2024, to correct the zinc result for sample MFL-AM04-08072024-HM to 11.7 ng/m3 to be consistent with the laboratory report.
2. The laboratory report was revised on August 29, 2024, to correct the sample ID for MFL-FB01-080724-HM, which originally was incorrectly labeled as a duplicate MFL-FB01-080**5**24-HM on page 35 of the laboratory report due to a typographical error.