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

June 27 through July 3, 2024
[Report Updated: August 1, 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 June 27 through July 3, 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), significantly affect air quality in Lahaina. The State of Hawaii Department of Health, Clean Air Branch (HDOH) receives acquired data via an online shared site, and information conveyed in these weekly reports. Air monitoring and sampling as prescribed in the CAMSP will continue until completion of debris removal activities or until HDOH advises otherwise.

Air quality monitoring for particulate matter proceeded at all four community locations over a 24-hour period each day in accordance with the CAMSP. Intent of ambient air monitoring was to assess presence of airborne particulates with particle size diameter of 10 micrometers (µm)—the size recognized as small enough for inhalation into a person's lungs. This particle size diameter is a parameter for health evaluations, identified as "PM_{10}". Monitoring for PM_{10} occurred 24 hours a day, 7 days a week from June 27 through July 3 at each community location. Monitoring results were compared to the National Ambient Air Quality Standard (NAAQS) for PM_{10}, which is a 24-hour time-weighted average of 150 micrograms per cubic meter (µg/m^3).

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 measured at each monitoring location throughout this reporting period. None of the results exceeded the 150 µg/m^3 screening level. Notably, relatively elevated readings were recorded at Lahaina Boys & Girls Club (AM-04) on June 28 and June 29 with 24-hour TWA concentrations of 51 µg/m^3 and 80 µg/m^3, respectively. This data was recorded at 23:00 on June 28 and between 00:00 and 03:00 on June 29. Wind speeds were below 1 mph at the times of these readings and therefore not likely a contributing factor. Field observations are not available due to the timeframe of

these readings being outside of normal working hours. These are not likely related to USACE operations because debris removal operations were not being conducted at the time. **Table 1** lists results.

Air Sampling Results

Collection of 28 samples to be analyzed for asbestos fibers occurred at each monitoring location throughout this reporting period. All analytical results were below the SSAL of 0.003 fibers per cubic centimeter (fibers/cc) and below the laboratory's analytical sensitivity. **Table 2** lists results. Notably, the laboratory commented "Numerous gypsum fibers present" regarding samples collected at the following monitoring stations:

- Leialii Hawaiian Homelands on July 3
- WW Pump Station #4 on June 27, June 28, and July 3
- Lahaina Intermediate School on July 3
- Lahaina Boys & Girls Club on July 3.

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

The heavy metals sample collected at the Lahaina Boys & Girls Club (AM-04) on June 27 was withheld from laboratory analysis due to low sample volume. Following verification that the sample volume collected was in compliance with minimum volume requirements per the analytical method, the sample was analyzed by the laboratory. This report has been updated with the results for that sample. All ambient air samples from all community sampling locations yielded low levels of metals, all below SSALs.

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 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.

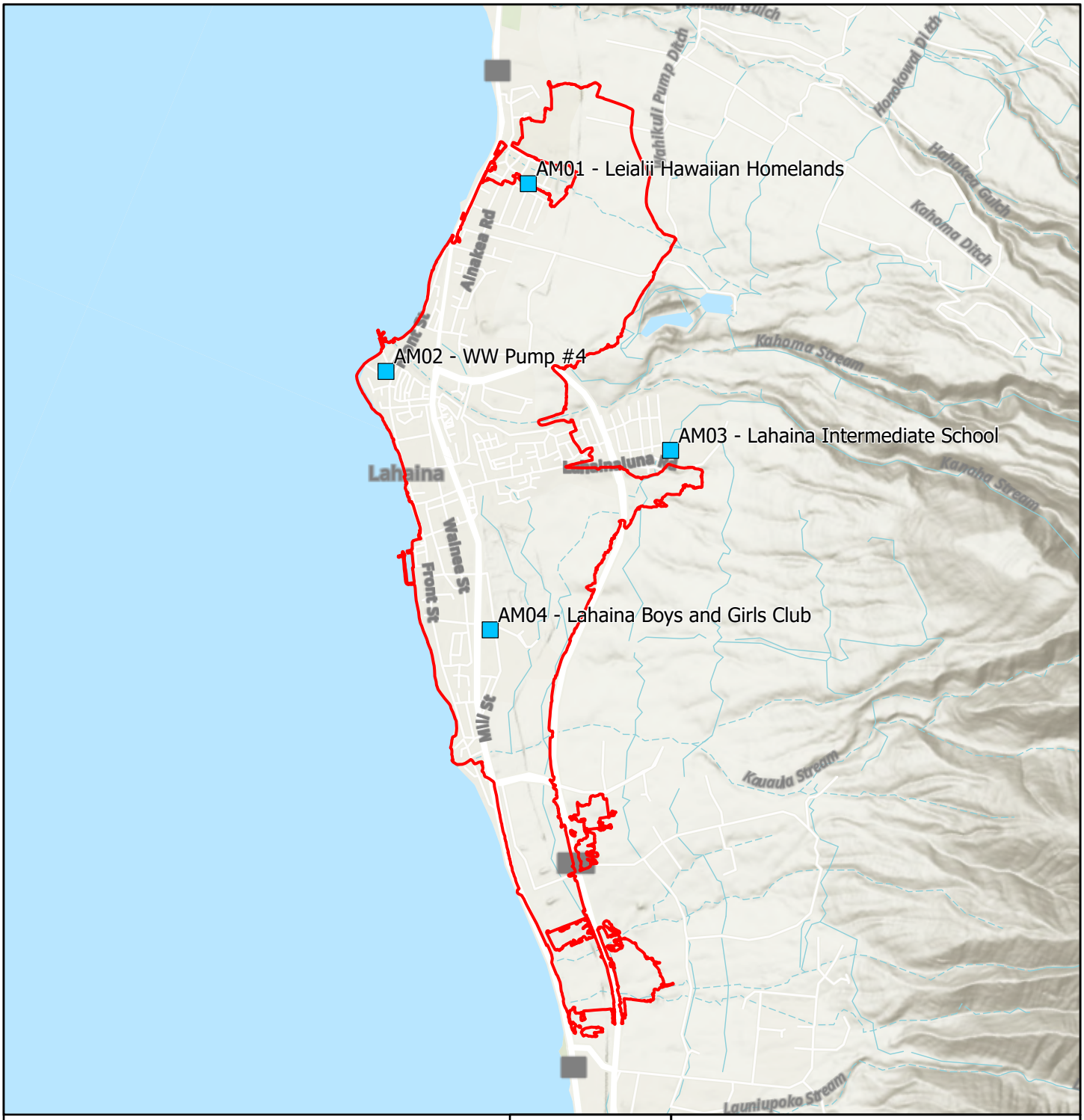
Collection of samples to be analyzed for metals occurred by use of Tisch Environmental High Volume Air Samplers, or equivalent, in accordance with the following methods:

- 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
June 27 through July 3, 2024
[Report Updated: August 1, 2024]

Screening Level		TWA Results 150 ($\mu g/m^3$)
6/27/2024	Leialii Hawaiian Homelands (AM-01)	6.0
	WW Pump Station #4 (AM-02)	5.0
	Lahaina Intermediate School (AM-03)	9.7
	Lahaina Boys & Girls Club (AM-04)	10
6/28/2024	Leialii Hawaiian Homelands (AM-01)	8.8
	WW Pump Station #4 (AM-02)	5.6
	Lahaina Intermediate School (AM-03)	27
	Lahaina Boys & Girls Club (AM-04)	51
6/29/2024	Leialii Hawaiian Homelands (AM-01)	6.3
	WW Pump Station #4 (AM-02)	4.6
	Lahaina Intermediate School (AM-03)	8.0
	Lahaina Boys & Girls Club (AM-04)	80
6/30/2024	Leialii Hawaiian Homelands (AM-01)	7.9
	WW Pump Station #4 (AM-02)	6.8
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	14
7/1/2024	Leialii Hawaiian Homelands (AM-01)	6.3
	WW Pump Station #4 (AM-02)	6.6
	Lahaina Intermediate School (AM-03)	6.9
	Lahaina Boys & Girls Club (AM-04)	14
7/2/2024	Leialii Hawaiian Homelands (AM-01)	7.7
	WW Pump Station #4 (AM-02)	5.9
	Lahaina Intermediate School (AM-03)	9.4
	Lahaina Boys & Girls Club (AM-04)	13
7/3/2024	Leialii Hawaiian Homelands (AM-01)	9.6
	WW Pump Station #4 (AM-02)	5.6
	Lahaina Intermediate School (AM-03)	10
	Lahaina Boys & Girls Club (AM-04)	15

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
June 27 through July 3, 2024
[Report Updated: August 1, 2024]

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units*		s/cc	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
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
6/27/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000903	0.00100	0.00509	0.0000165	ND	0.00339	0.000706	0.151	0.000514	0.0193	0.00440	0.00216	0.000179	0.00000129	0.00212	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000115	0.000454	0.00449	0.0000161	ND	0.00255	0.000468	0.0869	0.000959	0.0158	0.00187	0.00136	0.000176	0.000000918	0.00158	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000688	0.000301	0.00373	0.0000338	ND	0.00272	0.000579	0.0705	0.000488	0.0150	0.00180	0.00152	0.000169	0.00000101	0.00149	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000109	0.000509	0.00472	0.0000203	ND	0.00317	0.000577	0.0393	0.00108	0.0201	0.00152	0.00176	0.000161	0.00000121	0.00158	ND
6/28/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000166	0.00267	0.00620	0.0000200	ND	0.00507	0.00100	0.131	0.000444	0.0240	0.00387	0.00311	0.000154	0.00000115	0.00262	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000129	0.000589	0.00517	0.0000187	ND	0.00316	0.000634	0.0979	0.00109	0.0192	0.00245	0.00200	0.000172	0.00000113	0.00193	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000558	0.000232	0.00356	0.0000329	ND	0.00303	0.000673	0.121	0.000299	0.0164	0.00245	0.00186	0.000168	0.000000944	0.00160	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000112	0.000530	0.00503	0.0000192	ND	0.00341	0.000700	0.0419	0.00113	0.0207	0.00132	0.00225	0.000181	0.00000102	0.00188	ND
6/29/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000716	0.000674	0.00532	0.0000197	ND	0.00442	0.00106	0.132	0.000489	0.0238	0.00523	0.00387	0.000142	0.00000112	0.00273	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000179	0.000368	0.00432	0.00000758	ND	ND	0.000242	0.0336	0.000672	0.00719	0.00160	0.00121	0.0000987	0.000000677	0.000902	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000565	0.000173	0.00208	0.0000119	ND	ND	0.000227	0.0575	0.000259	0.00575	0.00228	0.00108	0.000106	0.000000571	0.000759	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000103	0.000324	0.00364	0.00000954	ND	ND	0.000336	0.0333	0.000642	0.0122	0.00144	0.00130	0.000106	0.000000813	0.00102	ND
6/30/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000870	0.000487	0.00307	0.00000812	ND	0.00229	0.000370	0.119	0.000361	0.0102	0.00536	0.00151	0.000138	0.000000857	0.00140	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000129	0.000240	0.00363	0.00000838	ND	ND	0.000256	0.0453	0.000594	0.00793	0.00221	0.00115	0.000137	0.000000782	0.00118	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000579	0.000201	0.00241	0.0000139	ND	ND	0.000242	0.0497	0.000382	0.00662	0.00202	0.00115	0.000129	0.000000748	0.00103	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000101	0.000430	0.00412	0.0000135	ND	0.00252	0.000449	0.0367	0.00106	0.0148	0.00178	0.00167	0.000174	0.000000923	0.00154	ND
7/1/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000550	0.000328	0.00247	0.00000639	ND	0.00220	0.000304	0.109	0.000233	0.00791	0.00339	0.00137	0.0000913	0.000000645	0.00102	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000129	0.000309	0.00379	0.00000958	ND	0.00194	0.000307	0.0442	0.000705	0.00896	0.00203	0.00146	0.000155	0.000000958	0.00132	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000643	0.000231	0.00279	0.0000156	ND	0.00207	0.000310	0.0604	0.000522	0.00810	0.00271	0.00123	0.000143	0.000000917	0.000998	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000142	0.000400	0.00369	0.0000131	ND	0.00232	0.000415	0.0459	0.00101	0.0136	0.00274	0.00146	0.000152	0.00000102	0.00131	ND
7/2/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000159	0.00351	0.00701	0.0000214	ND	0.00546	0.00110	0.109	0.000486	0.0261	0.00440	0.00320	0.000166	0.00000142	0.00300	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000158	0.000904	0.00591	0.0000193	ND	0.00314	0.000676	0.0440	0.00189	0.0192	0.00192	0.00220	0.000177	0.00000107	0.00200	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000544	0.000215	0.00288	0.0000180	ND	0.00224	0.000419	0.0662	0.000469	0.0101	0.00378	0.00131	0.000145	0.000000687	0.00109	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000110	0.00140	0.00380	0.0000133	ND	0.00296	0.000468	0.0394	0.000844	0.0150	0.00231	0.00147	0.000147	0.000000851	0.00123	ND
7/3/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000728	0.000692	0.00638	0.0000221	ND	0.00484	0.00114	0.0938	0.000358	0.0268	0.00430	0.00311	0.000178	0.00000132	0.00321	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000179	0.000577	0.00430	0.0000114	ND	0.00194	0.000362	0.0431	0.00152	0.0107	0.00176	0.00136	0.000150	0.000000767	0.00119	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000674	0.000321	0.00342	0.0000232	ND	0.00248	0.000468	0.0526	0.000708	0.0121	0.00313	0.00149	0.000146	0.000000845	0.00129	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000103	0.000523	0.00494	0.0000171	ND	0.00279	0.000564	0.0393	0.000863	0.0182	0.00256	0.00172	0.000168	ND	0.00153	ND
95% Upper Confidence Limit[2]		NA	0.0000900	0.000840	0.00469	0.0000190	NA	0.00342	0.000640	0.0852	0.000880	0.0176	0.00316	0.00202	0.000160	0.00000100	0.000181	NA

Notes:

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

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

s/cc = structures per cubic centimeter

µg/m³ = micrograms per cubic meter

NA = Not Applicable

ND = Not detected at or above the laboratory reporting limit

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

Report updated to include results received from lab concerning HM sample collected from Lahaina Boys & Girls Club (AM-04) on 6/27

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Meteorological Data
Maui Wildfires, Lahaina
June 27 through July 3, 2024
[Report Updated: August 1, 2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
6/27/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	82	57	761.8
6/27/2024	AM-02	WW Pump Station #4	1.1	SSE	80	65	763.8
6/27/2024	AM-03	Lahaina Intermediate School	1.2	ESE	78	64	754.5
6/27/2024	AM-04	Lahaina Boys & Girls Club	0.9	S	78	65	763.3
6/28/2024	AM-01	Leialii Hawaiian Homelands	1.2	ESE	78	66	760.3
6/28/2024	AM-02	WW Pump Station #4	1.0	SE	78	71	762.3
6/28/2024	AM-03	Lahaina Intermediate School	1.0	ESE	77	70	753.0
6/28/2024	AM-04	Lahaina Boys & Girls Club	0.8	S	77	71	762.0
6/29/2024	AM-01	Leialii Hawaiian Homelands	1.0	ESE	81	58	760.3
6/29/2024	AM-02	WW Pump Station #4	1.1	SE	80	64	762.3
6/29/2024	AM-03	Lahaina Intermediate School	1.3	ESE	78	63	753.1
6/29/2024	AM-04	Lahaina Boys & Girls Club	1.0	SSW	78	66	762.0
6/30/2024	AM-01	Leialii Hawaiian Homelands	1.0	ESE	81	57	761.5
6/30/2024	AM-02	WW Pump Station #4	1.1	SE	80	61	763.5
6/30/2024	AM-03	Lahaina Intermediate School	1.4	ESE	78	59	754.2
6/30/2024	AM-04	Lahaina Boys & Girls Club	0.9	SSW	78	64	763.1
7/1/2024	AM-01	Leialii Hawaiian Homelands	1.2	ESE	81	55	761.4
7/1/2024	AM-02	WW Pump Station #4	1.2	SE	80	62	763.4
7/1/2024	AM-03	Lahaina Intermediate School	1.2	ESE	79	59	754.2
7/1/2024	AM-04	Lahaina Boys & Girls Club	1.1	SSW	78	63	763.1
7/2/2024	AM-01	Leialii Hawaiian Homelands	0.9	ESE	80	60	760.8
7/2/2024	AM-02	WW Pump Station #4	0.9	S	79	66	762.8
7/2/2024	AM-03	Lahaina Intermediate School	1.1	SE	78	64	753.6
7/2/2024	AM-04	Lahaina Boys & Girls Club	0.9	SSW	78	66	762.7
7/3/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	81	59	760.7
7/3/2024	AM-02	WW Pump Station #4	1.0	S	80	67	762.7
7/3/2024	AM-03	Lahaina Intermediate School	1.0	ESE	79	63	753.4
7/3/2024	AM-04	Lahaina Boys & Girls Club	1.0	SSW	78	66	762.3

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

Appendix 1

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

**Please note sample data that does not fall within this reporting period have been removed or redacted

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:	042413732
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:	07/03/2024 11:20 AM
Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-062724-AB**		**Sample Description:**	**DL248520**
EMSL Sample Number:	042413732-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7190.5
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:	A. Burke
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: 042413732
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: 042413732-0001 **Customer Sample:** MFL-AM01-062724-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	J6	None Detected									
A5	G7	None Detected									
A5	C7	None Detected									
A6	H8	None Detected									
A6	D6	None Detected									

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

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EMSL Order:	042413732
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**

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Fax:	N/A
Received Date:	07/03/2024 11:20 AM
Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-062724-AB**		**Sample Description:**	**DL248528**
EMSL Sample Number:	042413732-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7229.4
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

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EMSL Order ID: 042413732
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: 042413732-0002 **Customer Sample:** MFL-AM02-062724-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	I6	None Detected									
B2	D5	None Detected									
B2	B7	None Detected									
B3	C4	None Detected									
B3	G5	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-062724-AB**		**Sample Description:**	**DL248510**
EMSL Sample Number:	042413732-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7209.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

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: 042413732-0003 **Customer Sample:** MFL-AM03-062724-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					
B6	I7	None Detected									
B6	G6	None Detected									
B6	C7	None Detected									
B7	G6	None Detected									
B7	D5	None Detected									

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

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

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Received Date:	07/03/2024 11:20 AM
Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-062724-AB**		**Sample Description:**	**DL248490**
EMSL Sample Number:	042413732-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7113.4
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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 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: 042413732
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: 042413732-0004 **Customer Sample:** MFL-AM04-062724-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	D4	None Detected									
C1	G5	None Detected									
C1	J6	None Detected									
C2	D4	None Detected									
C2	H5	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:	042413732
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-062724-AB** **Sample Description: DK864515**

EMSL Sample Number:	042413732-0005		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:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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:	**042413732**
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: 042413732-0005 **Customer Sample:** MFL-FB01-062724-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	C3	None Detected									
C5	D4	None Detected									
C5	E6	None Detected									
C5	G5	None Detected									
C5	J4	None Detected									
C7	A4	None Detected									
C7	C5	None Detected									
C7	E7	None Detected									
C8	H5	None Detected									
C8	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:	042413732
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-062824-AB**		**Sample Description:**	**DL248501**
EMSL Sample Number:	042413732-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7242.2
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:	A. Burke
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
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EMSL Order ID: 042413732
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: 042413732-0006 **Customer Sample:** MFL-AM01-062824-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					
D3	B4	None Detected									
D3	D5	None Detected									
D3	H5	None Detected									
D4	G6	None Detected									
D4	D4	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:	042413732
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**

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Received Date:	07/03/2024 11:20 AM
Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-062824-AB**		**Sample Description:**	**DL248519**
EMSL Sample Number:	042413732-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7287.8
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:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

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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: 042413732-0007 **Customer Sample:** MFL-AM02-062824-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	D7	None Detected									
D5	G6	None Detected									
D5	J4	None Detected									
D6	H8	None Detected									
D6	C5	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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Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-062824-AB**		**Sample Description:**	**DL248521**
EMSL Sample Number:	042413732-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7164.6
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:	A. Burke
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: 042413732
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: 042413732-0008 **Customer Sample:** MFL-AM03-062824-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	E8	None Detected									
E1	C6	None Detected									
E2	C5	None Detected									
E2	I4	None Detected									

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

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EMSL Order:	042413732
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:	07/03/2024 11:20 AM
Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-062824-AB**		**Sample Description:**	**DL248526**
EMSL Sample Number:	042413732-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7180.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
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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EMSL Order ID: 042413732
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: 042413732-0009 **Customer Sample:** MFL-AM04-062824-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	H7	None Detected									
E5	E8	None Detected									
E5	A7	None Detected									
E6	C5	None Detected									
E6	G4	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:	042413732
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	07/03/2024 11:20 AM
Analysis Date:	07/15/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-062824-AB** **Sample Description: DK864458**

EMSL Sample Number:	042413732-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

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

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

Comment

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EMSL Order ID: 042413732
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: 042413732-0010 **Customer Sample:** MFL-FB01-062824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F2	J1	None Detected									
F2	H3	None Detected									
F2	F1	None Detected									
F2	E3	None Detected									
F2	C1	None Detected									
F3	J1	None Detected									
F3	I4	None Detected									
F3	F4	None Detected									
F3	D5	None Detected									
F3	A6	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:	042413732
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	07/03/2024 11:20 AM
Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-062924-AB**		**Sample Description:**	**DK864465**
EMSL Sample Number:	042413732-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7259.0
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:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

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: 042413732
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: 042413732-0011 **Customer Sample:** MFL-AM01-062924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F6	H7	None Detected									
F6	E6	None Detected									
F6	C7	None Detected									
F7	I8	None Detected									
F7	D9	None Detected									

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

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EMSL Order:	042413732
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-062924-AB**		**Sample Description:**	**DK864469**
EMSL Sample Number:	042413732-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7033.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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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: 042413732-0012 **Customer Sample:** MFL-AM02-062924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G1	B5	None Detected									
G1	D4	None Detected									
G1	G4	None Detected									
G3	B3	None Detected									
G3	F2	None Detected									

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

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Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-062924-AB**		**Sample Description:**	**DK864467**
EMSL Sample Number:	042413732-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7368.9
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:	A. Burke
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: 042413732-0013 **Customer Sample:** MFL-AM03-062924-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	H7	None Detected									
G5	E8	None Detected									
G5	B7	None Detected									
G6	H8	None Detected									
G6	C6	None Detected									

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

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Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-062924-AB**		**Sample Description:**	**DK864500**
EMSL Sample Number:	042413732-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7101.0
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:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 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: 042413732-0014 **Customer Sample:** MFL-AM04-062924-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	B6	None Detected									
H1	D5	None Detected									
H1	H4	None Detected									
H2	C4	None Detected									
H2	G6	None Detected									

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

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Customer PO:	1207085
Project ID:	N/A

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-062924-AB** **Sample Description: DK864431**

EMSL Sample Number:	042413732-0015		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

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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: 042413732-0015 **Customer Sample:** MFL-FB01-062924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H5	A6	None Detected									
H5	C5	None Detected									
H5	E4	None Detected									
H5	G10	None Detected									
H5	J7	None Detected									
H6	J8	None Detected									
H6	H5	None Detected									
H6	F3	None Detected									
H6	D4	None Detected									
H6	B1	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:	042413732
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-063024-AB**		**Sample Description:**	**DK864448**
EMSL Sample Number:	042413732-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7212.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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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EMSL Order ID: 042413732
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: 042413732-0016 **Customer Sample:** MFL-AM01-063024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I2	A5	None Detected									
I2	D6	None Detected									
I2	H8	None Detected									
I3	B8	None Detected									
I3	G6	None Detected									

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

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EMSL Order:	042413732
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:	07/03/2024 11:20 AM
Analysis Date:	07/15/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-063024-AB**		**Sample Description:**	**DK864432**
EMSL Sample Number:	042413732-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7225.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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: 042413732
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: 042413732-0017 **Customer Sample:** MFL-AM02-063024-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	J3	None Detected									
I5	F3	None Detected									
I5	C5	None Detected									
I6	I1	None Detected									
I6	B4	None Detected									

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

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EMSL Order:	042413732
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires Lahaina**

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Fax:	N/A
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Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-063024-AB**		**Sample Description:**	**DK864489**
EMSL Sample Number:	042413732-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7221.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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: 042413732
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: 042413732-0018 **Customer Sample:** MFL-AM03-063024-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	E4	None Detected									
J1	D8	None Detected									
J1	A7	None Detected									
J2	I5	None Detected									
J2	D3	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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Project: **Maui Fires Lahaina**

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Received Date:	07/03/2024 11:20 AM
Analysis Date:	07/15/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-063024-AB**		**Sample Description:**	**DK864512**
EMSL Sample Number:	042413732-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7213.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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: 042413732
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: 042413732-0019 **Customer Sample:** MFL-AM04-063024-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	I6	None Detected									
J5	G7	None Detected									
J5	E4	None Detected									
J6	C3	None Detected									
J6	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:	042413732
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-063024-AB**		**Sample Description:**	**DK864517**
EMSL Sample Number:	042413732-0020		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):	0.0129
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: 042413732
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: 042413732-0020 **Customer Sample:** MFL-FB01-063024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K1	J3	None Detected									
K1	H4	None Detected									
K1	F8	None Detected									
K1	D4	None Detected									
K1	B8	None Detected									
K2	A4	None Detected									
K2	C1	None Detected									
K2	E4	None Detected									
K2	G7	None Detected									
K2	H3	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:	042413732
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:	07/03/2024 11:20 AM
Analysis Date:	07/13/2024
Report Date:	07/15/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blak**
EMSL Sample Number:	042413732-0021		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):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
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: 042413732
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: 042413732-0021 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	I5	None Detected									
A1	G7	None Detected									
A1	E8	None Detected									
A1	D6	None Detected									
A1	A6	None Detected									
A2	J7	None Detected									
A2	H8	None Detected									
A2	E8	None Detected									
A2	C7	None Detected									
A2	C5	None Detected									

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

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042413732

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

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

Customer Information

Customer ID:
Company Name: Tetra Tech
Contact Name: Chelsea Saber
Street Address: 1560 Broadway 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:
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Shaina Epstein
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-AM01-062724-AB	DL248520	7,190.496	06/27/24 1059
MFL-AM02-062724-AB	DL248528	7,229.401	06/27/24 1114
MFL-AM03-062724-AB	DL248510	7,209.261	06/27/24 1258
MFL-AM04-062724-AB	DL248490	7,113.412	06/27/24 1318
MFL-FB01-062724-AB	DK864515	0	06/27/24 1200
MFL-AM01-062824-AB	DL248501	7,242.226	06/28/24 1050
MFL-AM02-062824-AB	DL248519	7,287.788	06/28/24 1140
MFL-AM03-062824-AB	DL248521	7,164.588	06/28/24 1252

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

All samples received acceptable for analysis.

Method of Shipment: Fedex
Sample Condition Upon Receipt:

Relinquished by: Shaina Epstein	Date/Time: 07/01/24 1100	Received by:	Date/Time: 7/3/24 1120
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.

Page 1 of

RECEIVED
24 JUL -3 AM 10:20
EMSL
CINNAMINSON, NJ

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042413732

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	-062824-AB DL248526	7,180.128	06/28/24 1322
MFL-FB01	-062824-AB DK864458	0	06/28/24 1200
MFL-AM01	-062924-AB DK864465	7,259.040	06/29/24 1053
MFL-AM02	-062924-AB DK864469	7,033.198	06/29/24 1108
MFL-AM03	-062924-AB DK864467	7,368.912	06/29/24 1255
MFL-AM04	-062924-AB DK864500	7,100.994	06/29/24 1314
MFL-FB01	-062924-AB DK864431	0	06/29/24 1200
MFL-AM01	-063024-AB DK864448	7,212.096	06/30/24 1057
MFL-AM02	-063024-AB DK864432	7,225.200	06/30/24 1110
MFL-AM03	-063024-AB DK864489	7,221.478	06/30/24 1258
MFL-AM04	-063024-AB DK864512	7,213.131	06/30/24 1316
MFL-FB01	-063024-AB DK864517	0	06/30/24 1200

Method of Shipment: Fedex		Sample Condition Upon Receipt:	
Relinquished by: Shaina Epstein	Date/Time: ~~06~~ 07/01/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

RECEIVED
EMSL
CINNAMINSON, NJ
24 JUL -3 AM 11:20

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.

Page of

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 07/16/2024 and Shanna Vasser 7/16/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 06/27/2024 – 06/30/2024
Report No: 42413732

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

EMSL Order:	042413978
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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-070124-AB**		**Sample Description:**	**DK864446**
EMSL Sample Number:	042413978-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7216.0
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	4			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 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: 042413978
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: 042413978-0001 **Customer Sample:** MFL-AM01-070124-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	J5	None Detected									
A5	G7	None Detected									
A5	C3	None Detected									
A6	B6	None Detected									
A6	F9	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:	042413978
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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-070124-AB** **Sample Description: DK864434**

EMSL Sample Number:	042413978-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7198.8
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 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: 042413978
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: 042413978-0002 **Customer Sample:** MFL-AM02-070124-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	H8	None Detected									
B1	E4	None Detected									
B1	B7	None Detected									
B2	G9	None Detected									
B2	B5	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:	042413978
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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-070124-AB**		**Sample Description:**	**DK864435**
EMSL Sample Number:	042413978-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7138.5
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 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: 042413978
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: 042413978-0003 **Customer Sample:** MFL-AM03-070124-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	A4	None Detected									
B5	D7	None Detected									
B5	G3	None Detected									
B6	C8	None Detected									
B6	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:	042413978
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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-070124-AB** **Sample Description: DK864471**

EMSL Sample Number:	042413978-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7144.8
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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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: 042413978-0004 **Customer Sample:** MFL-AM04-070124-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	J5	None Detected									
C1	F4	None Detected									
C1	B7	None Detected									
C2	C3	None Detected									
C2	J2	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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-070124-AB** **Sample Description: DK864519**

EMSL Sample Number:	042413978-0005		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:	G.Barry
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: 042413978
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: 042413978-0005 **Customer Sample:** MFL-FB01-070124-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	J10	None Detected									
C5	I5	None Detected									
C5	F2	None Detected									
C5	D4	None Detected									
C6	I7	None Detected									
C6	G3	None Detected									
C6	B6	None Detected									
C7	I3	None Detected									
C7	F6	None Detected									
C7	C7	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:	042413978
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Customer PO:	1207085
Project ID:	N/A

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Received Date:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-070224-AB** **Sample Description: DK864447**

EMSL Sample Number:	042413978-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7214.9
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 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: 042413978
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: 042413978-0006 **Customer Sample:** MFL-AM01-070224-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	H9	None Detected									
D1	H4	None Detected									
D1	C7	None Detected									
D2	I4	None Detected									
D2	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:	042413978
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Fax:	N/A
Received Date:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-070224-AB**		**Sample Description:**	**DK864433**
EMSL Sample Number:	042413978-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7251.5
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 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: 042413978
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: 042413978-0007 **Customer Sample:** MFL-AM02-070224-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	G7	None Detected									
D5	E3	None Detected									
D5	A6	None Detected									
D6	G4	None Detected									
D6	C6	None Detected									

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

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EMSL Order:	042413978
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Fax:	N/A
Received Date:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-070224-AB** **Sample Description: DK864444**

EMSL Sample Number:	042413978-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7228.2
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 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: 042413978
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: 042413978-0008 **Customer Sample:** MFL-AM03-070224-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	I5	None Detected									
E1	E3	None Detected									
E1	B7	None Detected									
E2	A4	None Detected									
E2	E5	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:	042413978
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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-070224-AB** **Sample Description: DK864455**

EMSL Sample Number:	042413978-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7208.9
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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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: 042413978-0009 **Customer Sample:** MFL-AM04-070224-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	B3	None Detected									
E5	E7	None Detected									
E5	J4	None Detected									
E6	A2	None Detected									
E6	G7	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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-070224-AB** **Sample Description:** **DK864441**

EMSL Sample Number:	042413978-0010		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:	G.Barry
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: 042413978
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: 042413978-0010 **Customer Sample:** MFL-FB01-070224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F1	J2	None Detected									
F1	H5	None Detected									
F1	D7	None Detected									
F1	A4	None Detected									
F2	B6	None Detected									
F2	F4	None Detected									
F2	J7	None Detected									
F3	I8	None Detected									
F3	G10	None Detected									
F3	D4	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:	042413978
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires Lahaina**

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Fax:	N/A
Received Date:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-070324-AB** **Sample Description: DK864430**

EMSL Sample Number:	042413978-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7174.2
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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EMSL Order ID: 042413978
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: 042413978-0011 **Customer Sample:** MFL-AM01-070324-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	B5	None Detected									
F5	E3	None Detected									
F5	I6	None Detected									
F6	D8	None Detected									
F6	H9	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:	042413978
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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Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-070324-AB** **Sample Description: DK864443**

EMSL Sample Number:	042413978-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7199.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
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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: 042413978-0012 **Customer Sample:** MFL-AM02-070324-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	C7	None Detected									
G1	C4	None Detected									
G1	H5	None Detected									
G2	I2	None Detected									
G2	F6	None Detected									

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

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

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

Project: **Maui Fires Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-070324-AB** **Sample Description: DK864473**

EMSL Sample Number:	042413978-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7255.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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: 042413978
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: 042413978-0013 **Customer Sample:** MFL-AM03-070324-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	B4	None Detected									
G5	F7	None Detected									
G5	J3	None Detected									
G6	C2	None Detected									
G6	G3	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:	042413978
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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-070324-AB**		**Sample Description:**	**DK864490**
EMSL Sample Number:	042413978-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7185.5
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	7			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

Robyn Ray
Approved Signatory

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: 042413978
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: 042413978-0014 **Customer Sample:** MFL-AM04-070324-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	H9	None Detected									
H1	E5	None Detected									
H1	A3	None Detected									
H2	B6	None Detected									
H2	G7	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:	042413978
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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-070324-AB** **Sample Description: DK864462**

EMSL Sample Number:	042413978-0015		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:	G.Barry
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: 042413978
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: 042413978-0015 **Customer Sample:** MFL-FB01-070324-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	A8	None Detected									
H5	C6	None Detected									
H5	E2	None Detected									
H5	I6	None Detected									
H6	B6	None Detected									
H6	D4	None Detected									
H6	J7	None Detected									
H7	J5	None Detected									
H7	G2	None Detected									
H7	C6	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:	042413978
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:	07/08/2024 09:00 AM
Analysis Date:	07/16/2024
Report Date:	07/17/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

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

EMSL Sample Number:	042413978-0016		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:	G.Barry
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

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: 042413978
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: 042413978-0016 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	I2	None Detected									
A1	G5	None Detected									
A1	D7	None Detected									
A1	A6	None Detected									
A2	A4	None Detected									
A2	F2	None Detected									
A2	I5	None Detected									
A3	B3	None Detected									
A3	E7	None Detected									
A3	J8	None Detected									

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

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042413978

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

RECEIVED
EMSL
CINNAMINSON, NJ
24 JUL -8 AM 9:39

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

Customer Information

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

Billing Information

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

Project Information

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

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements.

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA)

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-070124-AB	DK864446	7,216.031	07/01/24 1054
MFL-AM02-070124-AB	DK864434	7,198.789	07/01/24 1108
MFL-AM03-070124-AB	DK864435	7,138.452	07/01/24 1256
MFL-AM04-070124-AB	DK864471	7,144.795	07/01/24 1311
MFL-FB01-070124-AB	DK864519	0	07/01/24 1200
MFL-AM01-070224-AB	DK864447	7,214.858	07/02/24 1055
MFL-AM02-070224-AB	DK864433	7,251.508	07/02/24 1114
MFL-AM03-070224-AB	DK864444	7,228.241	07/02/24 1258

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

All samples received acceptable for analysis.

15-EB

Method of Shipment:	Fedex	Sample Condition Upon Receipt:	
Relinquished by:	Shaina Epstein	Date/Time: 07/05/24 1102	Received by: Chelsea FX
Relinquished by:		Date/Time:	Received by: Date/Time: 7/8/24 9:00

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: 042413978

RECEIVED
EMSL
CINNAMINSON, NJ
24 JUL -8 AM 9:39

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042413978

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-AM04-070224-AB	DK864455	7,208.928	07/02/24 1314
MFL-FB01-070224-AB	DK864441	0	07/02/24 1200
MFL-AM01-070324-AB	DK864430	7,174.159	07/03/24 1052
MFL-AM02-070324-AB	DK864443	7,199.099	07/03/24 1105
MFL-AM03-070324-AB	DK864473	7,255.300	07/03/24 1253
MFL-AM04-070324-AB	DK864490	7,185.464	07/03/24 1310
MFL-FB01-070324-AB	DK864462	0	07/03/24 1200

Method of Shipment: Fedex		Sample Condition Upon Receipt:	
Relinquished by: Shaina Epstein	Date/Time: 07/05/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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.

Page of

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 07/17/2024 and Shanna Vasser 7/17/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 07/01/2024 – 07/03/2024
Report No: 42413978

√	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

July 18, 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 07/08/24 13:01.

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-062724-HM	4070847-01	Air	06/27/24 23:59	07/08/24 13:01
MFL-AM02-062724-HM	4070847-02	Air	06/27/24 23:59	07/08/24 13:01
MFL-AM03-062724-HM	4070847-03	Air	06/27/24 23:59	07/08/24 13:01
MFL-AM01-062824-HM	4070847-05	Air	06/28/24 23:59	07/08/24 13:01
MFL-AM02-062824-HM	4070847-06	Air	06/28/24 23:59	07/08/24 13:01
MFL-AM03-062824-HM	4070847-07	Air	06/28/24 23:59	07/08/24 13:01
MFL-AM04-062824-HM	4070847-08	Air	06/28/24 23:59	07/08/24 13:01
MFL-FB01-062824-HM	4070847-09	Air	06/28/24 00:00	07/08/24 13:01
MFL-AM01-062924-HM	4070847-10	Air	06/29/24 23:59	07/08/24 13:01
MFL-AM02-062924-HM	4070847-11	Air	06/29/24 23:59	07/08/24 13:01
MFL-AM03-062924-HM	4070847-12	Air	06/29/24 23:59	07/08/24 13:01
MFL-AM04-062924-HM	4070847-13	Air	06/29/24 23:59	07/08/24 13:01
MFL-AM01-063024-HM	4070847-14	Air	06/30/24 23:59	07/08/24 13:01
MFL-AM02-063024-HM	4070847-15	Air	06/30/24 23:59	07/08/24 13:01
MFL-AM03-063024-HM	4070847-16	Air	06/30/24 23:59	07/08/24 13:01
MFL-AM04-063024-HM	4070847-17	Air	06/30/24 23:59	07/08/24 13:01
MFL-FB01-063024-HM	4070847-18	Air	06/30/24 00:00	07/08/24 13:01
MFL-AM01-070124-HM	4070847-19	Air	07/01/24 23:59	07/08/24 13:01
MFL-AM02-070124-HM	4070847-20	Air	07/01/24 23:59	07/08/24 13:01
MFL-AM03-070124-HM	4070847-21	Air	07/01/24 23:59	07/08/24 13:01
MFL-AM04-070124-HM	4070847-22	Air	07/01/24 23:59	07/08/24 13:01

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM01-070224-HM	4070847-23	Air	07/02/24 23:59	07/08/24 13:01
MFL-AM02-070224-HM	4070847-24	Air	07/02/24 23:59	07/08/24 13:01
MFL-AM03-070224-HM	4070847-25	Air	07/02/24 23:59	07/08/24 13:01
MFL-AM04-070224-HM	4070847-26	Air	07/02/24 23:59	07/08/24 13:01
MFL-FB01-070224-HM	4070847-27	Air	07/02/24 00:00	07/08/24 13:01
MFL-AM01-070324-HM	4070847-28	Air	07/03/24 23:59	07/08/24 13:01
MFL-AM02-070324-HM	4070847-29	Air	07/03/24 23:59	07/08/24 13:01
MFL-AM03-070324-HM	4070847-30	Air	07/03/24 23:59	07/08/24 13:01
MFL-AM04-070324-HM	4070847-31	Air	07/03/24 23:59	07/08/24 13:01

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-062724-HM
Matrix: Air
Lab ID: 4070847-01
Sample Volume: 1940.849 m³
Filter ID:
Sampled: 06/27/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 22:21

Comments: Q8520651 - 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**	**0.0903**	SL	**0.0324**
Arsenic	**7440-38-2**	**1.00**		**0.00785**
Barium	**7440-39-3**	**5.09**		**0.897**
Beryllium	**7440-41-7**	**0.0165**		**0.00268**
Cadmium	7440-43-9	0.0125	U	0.0621
Chromium	**7440-47-3**	**3.39**		**1.85**
Cobalt	**7440-48-4**	**0.706**		**0.0365**
Copper	**7440-50-8**	**151**		**2.20**
Lead	**7439-92-1**	**0.514**		**0.179**
Manganese	**7439-96-5**	**19.3**		**1.58**
Molybdenum	**7439-98-7**	**4.40**		**0.301**
Nickel	**7440-02-0**	**2.16**		**0.547**
Selenium	**7782-49-2**	**0.179**		**0.00751**
Thallium	**7440-28-0**	**0.00129**		**4.94E-4**
Vanadium	**7440-62-2**	**2.12**		**0.0443**
Zinc	7440-66-6	12.5	U	64.4

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-062724-HM
Matrix: Air
Lab ID: 4070847-02
Sample Volume: 2013.069 m³
Filter ID:
Sampled: 06/27/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 22:31

Comments: Q8520650 - 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**	**0.115**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.454**		**0.00757**
Barium	**7440-39-3**	**4.49**		**0.865**
Beryllium	**7440-41-7**	**0.0161**		**0.00259**
Cadmium	7440-43-9	0.0106	U	0.0599
Chromium	**7440-47-3**	**2.55**		**1.79**
Cobalt	**7440-48-4**	**0.468**		**0.0352**
Copper	**7440-50-8**	**86.9**		**2.13**
Lead	**7439-92-1**	**0.959**		**0.173**
Manganese	**7439-96-5**	**15.8**		**1.53**
Molybdenum	**7439-98-7**	**1.87**		**0.290**
Nickel	**7440-02-0**	**1.36**		**0.527**
Selenium	**7782-49-2**	**0.176**		**0.00724**
Thallium	**7440-28-0**	**9.18E-4**		**4.76E-4**
Vanadium	**7440-62-2**	**1.58**		**0.0428**
Zinc	7440-66-6	13.6	U	62.1

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-062724-HM
Matrix: Air
Lab ID: 4070847-03
Sample Volume: 1957.193 m³
Filter ID:
Sampled: 06/27/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 22:42

Comments: Q8520649 - 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**	**0.0688**	SL	**0.0321**
Arsenic	**7440-38-2**	**0.301**		**0.00779**
Barium	**7440-39-3**	**3.73**		**0.889**
Beryllium	**7440-41-7**	**0.0338**		**0.00266**
Cadmium	7440-43-9	0.00760	U	0.0616
Chromium	**7440-47-3**	**2.72**		**1.84**
Cobalt	**7440-48-4**	**0.579**		**0.0362**
Copper	**7440-50-8**	**70.5**		**2.19**
Lead	**7439-92-1**	**0.488**		**0.178**
Manganese	**7439-96-5**	**15.0**		**1.57**
Molybdenum	**7439-98-7**	**1.80**		**0.298**
Nickel	**7440-02-0**	**1.52**		**0.542**
Selenium	**7782-49-2**	**0.169**		**0.00745**
Thallium	**7440-28-0**	**0.00101**		**4.90E-4**
Vanadium	**7440-62-2**	**1.49**		**0.0440**
Zinc	7440-66-6	26.3	U	63.8

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-062824-HM
Matrix: Air
Lab ID: 4070847-05
Sample Volume: 1943.91 m³
Filter ID:
Sampled: 06/28/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 22:52

Comments: Q8520642 - 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**	**0.166**	SL	**0.0323**
Barium	**7440-39-3**	**6.20**		**0.896**
Beryllium	**7440-41-7**	**0.0200**		**0.00268**
Chromium	**7440-47-3**	**5.07**		**1.85**
Cobalt	**7440-48-4**	**1.00**		**0.0365**
Copper	**7440-50-8**	**131**		**2.20**
Lead	**7439-92-1**	**0.444**		**0.179**
Manganese	**7439-96-5**	**24.0**		**1.58**
Nickel	**7440-02-0**	**3.11**		**0.546**
Thallium	**7440-28-0**	**0.00115**		**4.93E-4**
Vanadium	**7440-62-2**	**2.62**		**0.0443**
Zinc	7440-66-6	32.6	U	64.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-062824-HM
Matrix: Air
Lab ID: 4070847-05RE1
Sample Volume: 1943.91 m³
Filter ID:
Sampled: 06/28/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/12/24 00:06

Comments: Q8520642 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**2.67**		**0.0157**
Cadmium	7440-43-9	0.0191	U	0.124
Molybdenum	**7439-98-7**	**3.87**		**0.601**
Selenium	**7782-49-2**	**0.154**		**0.0150**

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-062824-HM
Matrix: Air
Lab ID: 4070847-06
Sample Volume: 2067.993 m³
Filter ID:
Sampled: 06/28/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 18:53

Comments: Q8520641 - MS/MSD - 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**	**0.129**	SL	**0.0304**
Barium	**7440-39-3**	**5.17**		**0.842**
Beryllium	**7440-41-7**	**0.0187**		**0.00252**
Chromium	**7440-47-3**	**3.16**		**1.74**
Cobalt	**7440-48-4**	**0.634**		**0.0343**
Copper	**7440-50-8**	**97.9**		**2.07**
Lead	**7439-92-1**	**1.09**		**0.168**
Manganese	**7439-96-5**	**19.2**		**1.49**
Nickel	**7440-02-0**	**2.00**		**0.513**
Thallium	**7440-28-0**	**0.00113**		**4.63E-4**
Vanadium	**7440-62-2**	**1.93**		**0.0416**
Zinc	7440-66-6	22.3	U	60.4

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-062824-HM
Matrix: Air
Lab ID: 4070847-06RE1
Sample Volume: 2067.993 m³
Filter ID:
Sampled: 06/28/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 23:04

Comments: Q8520641 - MS/MSD - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**0.589**		**0.0369**
Cadmium	7440-43-9	0.0160	U	0.291
Molybdenum	**7439-98-7**	**2.45**		**1.41**
Selenium	**7782-49-2**	**0.172**		**0.0352**

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-062824-HM
Matrix: Air
Lab ID: 4070847-07
Sample Volume: 1977.758 m³
Filter ID:
Sampled: 06/28/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 23:02

Comments: Q8520640 - 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**	**0.0558**	SL	**0.0318**
Arsenic	**7440-38-2**	**0.232**		**0.00771**
Barium	**7440-39-3**	**3.56**		**0.880**
Beryllium	**7440-41-7**	**0.0329**		**0.00263**
Cadmium	7440-43-9	0.00945	U	0.0610
Chromium	**7440-47-3**	**3.03**		**1.82**
Cobalt	**7440-48-4**	**0.673**		**0.0359**
Copper	**7440-50-8**	**121**		**2.16**
Lead	**7439-92-1**	**0.299**		**0.176**
Manganese	**7439-96-5**	**16.4**		**1.55**
Molybdenum	**7439-98-7**	**2.45**		**0.295**
Nickel	**7440-02-0**	**1.86**		**0.536**
Selenium	**7782-49-2**	**0.168**		**0.00737**
Thallium	**7440-28-0**	**9.44E-4**		**4.85E-4**
Vanadium	**7440-62-2**	**1.60**		**0.0435**
Zinc	7440-66-6	12.2	U	63.2

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-062824-HM
Matrix: Air
Lab ID: 4070847-08
Sample Volume: 1715.765 m³
Filter ID:
Sampled: 06/28/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 23:13

Comments: Q8520639 - 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**	**0.112**	SL	**0.0366**
Arsenic	**7440-38-2**	**0.530**		**0.00889**
Barium	**7440-39-3**	**5.03**		**1.01**
Beryllium	**7440-41-7**	**0.0192**		**0.00303**
Cadmium	7440-43-9	0.0121	U	0.0703
Chromium	**7440-47-3**	**3.41**		**2.10**
Cobalt	**7440-48-4**	**0.700**		**0.0413**
Copper	**7440-50-8**	**41.9**		**2.49**
Lead	**7439-92-1**	**1.13**		**0.203**
Manganese	**7439-96-5**	**20.7**		**1.79**
Molybdenum	**7439-98-7**	**1.32**		**0.340**
Nickel	**7440-02-0**	**2.25**		**0.618**
Selenium	**7782-49-2**	**0.181**		**0.00850**
Thallium	**7440-28-0**	**0.00102**		**5.59E-4**
Vanadium	**7440-62-2**	**1.88**		**0.0502**
Zinc	7440-66-6	21.8	U	72.8

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-062824-HM
Matrix: Air
Lab ID: 4070847-09
Sample Volume: 1943.91 m³
Filter ID:
Sampled: 06/28/24 00:00
Received: 07/08/24 13:01
Analysis Date: 07/10/24 23:23

Comments: Q8520634 - 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	0.0194	SL, U	0.0323
Arsenic	**7440-38-2**	**0.00790**	FB-01	**0.00784**
Barium	7440-39-3	0.785	U	0.896
Beryllium	7440-41-7	5.01E-4	U	0.00268
Cadmium	7440-43-9	0.00409	U	0.0620
Chromium	7440-47-3	0.920	U	1.85
Cobalt	7440-48-4	0.0120	U	0.0365
Copper	**7440-50-8**	**3.26**	FB-01	**2.20**
Lead	7439-92-1	0.0270	U	0.179
Manganese	7439-96-5	0.219	U	1.58
Molybdenum	7439-98-7	0.246	U	0.300
Nickel	7440-02-0	0.428	U	0.546
Selenium	7782-49-2	ND	U	0.00750
Thallium	7440-28-0	1.02E-4	U	4.93E-4
Vanadium	7440-62-2	0.00891	U	0.0443
Zinc	7440-66-6	11.6	U	64.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-062924-HM
Matrix: Air
Lab ID: 4070847-10
Sample Volume: 1852.656 m³
Filter ID:
Sampled: 06/29/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 23:34

Comments: Q8520638 - 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**	**0.0716**	SL	**0.0339**
Arsenic	**7440-38-2**	**0.674**		**0.00823**
Barium	**7440-39-3**	**5.32**		**0.940**
Beryllium	**7440-41-7**	**0.0197**		**0.00281**
Cadmium	7440-43-9	0.0172	U	0.0651
Chromium	**7440-47-3**	**4.42**		**1.94**
Cobalt	**7440-48-4**	**1.06**		**0.0383**
Copper	**7440-50-8**	**132**		**2.31**
Lead	**7439-92-1**	**0.489**		**0.188**
Manganese	**7439-96-5**	**23.8**		**1.66**
Molybdenum	**7439-98-7**	**5.23**		**0.315**
Nickel	**7440-02-0**	**3.87**		**0.573**
Selenium	**7782-49-2**	**0.142**		**0.00787**
Thallium	**7440-28-0**	**0.00112**		**5.17E-4**
Vanadium	**7440-62-2**	**2.73**		**0.0465**
Zinc	7440-66-6	25.3	U	67.4

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-062924-HM
Matrix: Air
Lab ID: 4070847-11
Sample Volume: 1894.398 m³
Filter ID:
Sampled: 06/29/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 23:44

Comments: Q8520636 - 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**	**0.179**	SL	**0.0332**
Arsenic	**7440-38-2**	**0.368**		**0.00805**
Barium	**7440-39-3**	**4.32**		**0.919**
Beryllium	**7440-41-7**	**0.00758**		**0.00275**
Cadmium	7440-43-9	0.0164	U	0.0636
Chromium	7440-47-3	1.85	U	1.90
Cobalt	**7440-48-4**	**0.242**		**0.0374**
Copper	**7440-50-8**	**33.6**		**2.26**
Lead	**7439-92-1**	**0.672**		**0.184**
Manganese	**7439-96-5**	**7.19**		**1.62**
Molybdenum	**7439-98-7**	**1.60**		**0.308**
Nickel	**7440-02-0**	**1.21**		**0.560**
Selenium	**7782-49-2**	**0.0987**		**0.00770**
Thallium	**7440-28-0**	**6.77E-4**		**5.06E-4**
Vanadium	**7440-62-2**	**0.902**		**0.0454**
Zinc	7440-66-6	19.3	U	66.0

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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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-062924-HM
Matrix: Air
Lab ID: 4070847-12
Sample Volume: 1956.146 m³
Filter ID:
Sampled: 06/29/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 23:54

Comments: Q8520635 - 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**	**0.0565**	SL	**0.0321**
Arsenic	**7440-38-2**	**0.173**		**0.00779**
Barium	**7440-39-3**	**2.08**		**0.890**
Beryllium	**7440-41-7**	**0.0119**		**0.00266**
Cadmium	7440-43-9	0.00950	U	0.0616
Chromium	7440-47-3	1.79	U	1.84
Cobalt	**7440-48-4**	**0.227**		**0.0363**
Copper	**7440-50-8**	**57.5**		**2.19**
Lead	**7439-92-1**	**0.259**		**0.178**
Manganese	**7439-96-5**	**5.75**		**1.57**
Molybdenum	**7439-98-7**	**2.28**		**0.299**
Nickel	**7440-02-0**	**1.08**		**0.542**
Selenium	**7782-49-2**	**0.106**		**0.00745**
Thallium	**7440-28-0**	**5.71E-4**		**4.90E-4**
Vanadium	**7440-62-2**	**0.759**		**0.0440**
Zinc	7440-66-6	12.0	U	63.9

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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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-062924-HM
Matrix: Air
Lab ID: 4070847-13
Sample Volume: 1710.45 m³
Filter ID:
Sampled: 06/29/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 00:25

Comments: Q8520633 - 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**	**0.103**	SL	**0.0367**
Arsenic	**7440-38-2**	**0.324**		**0.00891**
Barium	**7440-39-3**	**3.64**		**1.02**
Beryllium	**7440-41-7**	**0.00954**		**0.00304**
Cadmium	7440-43-9	0.00946	U	0.0705
Chromium	7440-47-3	1.99	U	2.10
Cobalt	**7440-48-4**	**0.336**		**0.0415**
Copper	**7440-50-8**	**33.3**		**2.50**
Lead	**7439-92-1**	**0.642**		**0.204**
Manganese	**7439-96-5**	**12.2**		**1.80**
Molybdenum	**7439-98-7**	**1.44**		**0.341**
Nickel	**7440-02-0**	**1.30**		**0.620**
Selenium	**7782-49-2**	**0.106**		**0.00852**
Thallium	**7440-28-0**	**8.13E-4**		**5.60E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0503**
Zinc	7440-66-6	15.3	U	73.1

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-063024-HM
Matrix: Air
Lab ID: 4070847-14
Sample Volume: 1918.636 m³
Filter ID:
Sampled: 06/30/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 00:36

Comments: Q8520632 - 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**	**0.0870**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.487**		**0.00795**
Barium	**7440-39-3**	**3.07**		**0.907**
Beryllium	**7440-41-7**	**0.00812**		**0.00271**
Cadmium	7440-43-9	0.0179	U	0.0628
Chromium	**7440-47-3**	**2.29**		**1.87**
Cobalt	**7440-48-4**	**0.370**		**0.0370**
Copper	**7440-50-8**	**119**		**2.23**
Lead	**7439-92-1**	**0.361**		**0.181**
Manganese	**7439-96-5**	**10.2**		**1.60**
Molybdenum	**7439-98-7**	**5.36**		**0.304**
Nickel	**7440-02-0**	**1.51**		**0.553**
Selenium	**7782-49-2**	**0.138**		**0.00760**
Thallium	**7440-28-0**	**8.57E-4**		**4.99E-4**
Vanadium	**7440-62-2**	**1.40**		**0.0449**
Zinc	7440-66-6	11.3	U	65.1

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-063024-HM
Matrix: Air
Lab ID: 4070847-15
Sample Volume: 2015.996 m³
Filter ID:
Sampled: 06/30/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 00:57

Comments: Q8520631 - 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**	**0.129**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.240**		**0.00756**
Barium	**7440-39-3**	**3.63**		**0.864**
Beryllium	**7440-41-7**	**0.00838**		**0.00258**
Cadmium	7440-43-9	0.00922	U	0.0598
Chromium	7440-47-3	1.70	U	1.78
Cobalt	**7440-48-4**	**0.256**		**0.0352**
Copper	**7440-50-8**	**45.3**		**2.12**
Lead	**7439-92-1**	**0.594**		**0.173**
Manganese	**7439-96-5**	**7.93**		**1.53**
Molybdenum	**7439-98-7**	**2.21**		**0.290**
Nickel	**7440-02-0**	**1.15**		**0.526**
Selenium	**7782-49-2**	**0.137**		**0.00723**
Thallium	**7440-28-0**	**7.82E-4**		**4.75E-4**
Vanadium	**7440-62-2**	**1.18**		**0.0427**
Zinc	7440-66-6	12.7	U	62.0

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-063024-HM
Matrix: Air
Lab ID: 4070847-16
Sample Volume: 1981.809 m³
Filter ID:
Sampled: 06/30/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 01:07

Comments: Q8520630 - 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**	**0.0579**	SL	**0.0317**
Arsenic	**7440-38-2**	**0.201**		**0.00769**
Barium	**7440-39-3**	**2.41**		**0.878**
Beryllium	**7440-41-7**	**0.0139**		**0.00263**
Cadmium	7440-43-9	0.0126	U	0.0608
Chromium	7440-47-3	1.80	U	1.81
Cobalt	**7440-48-4**	**0.242**		**0.0358**
Copper	**7440-50-8**	**49.7**		**2.16**
Lead	**7439-92-1**	**0.382**		**0.176**
Manganese	**7439-96-5**	**6.62**		**1.55**
Molybdenum	**7439-98-7**	**2.02**		**0.295**
Nickel	**7440-02-0**	**1.15**		**0.535**
Selenium	**7782-49-2**	**0.129**		**0.00736**
Thallium	**7440-28-0**	**7.48E-4**		**4.84E-4**
Vanadium	**7440-62-2**	**1.03**		**0.0434**
Zinc	7440-66-6	17.7	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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-063024-HM
Matrix: Air
Lab ID: 4070847-17
Sample Volume: 1783.719 m³
Filter ID:
Sampled: 06/30/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 01:17

Comments: Q8520629 - 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**	**0.101**	SL	**0.0352**
Arsenic	**7440-38-2**	**0.430**		**0.00855**
Barium	**7440-39-3**	**4.12**		**0.976**
Beryllium	**7440-41-7**	**0.0135**		**0.00292**
Cadmium	7440-43-9	0.0180	U	0.0676
Chromium	**7440-47-3**	**2.52**		**2.02**
Cobalt	**7440-48-4**	**0.449**		**0.0398**
Copper	**7440-50-8**	**36.7**		**2.40**
Lead	**7439-92-1**	**1.06**		**0.195**
Manganese	**7439-96-5**	**14.8**		**1.72**
Molybdenum	**7439-98-7**	**1.78**		**0.327**
Nickel	**7440-02-0**	**1.67**		**0.595**
Selenium	**7782-49-2**	**0.174**		**0.00817**
Thallium	**7440-28-0**	**9.23E-4**		**5.37E-4**
Vanadium	**7440-62-2**	**1.54**		**0.0483**
Zinc	7440-66-6	20.1	U	70.1

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-063024-HM
Matrix: Air
Lab ID: 4070847-18
Sample Volume: 1918.636 m³
Filter ID:
Sampled: 06/30/24 00:00
Received: 07/08/24 13:01
Analysis Date: 07/11/24 01:28

Comments: Q8520626 - 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	0.0197	SL, U	0.0327
Arsenic	7440-38-2	0.00632	U	0.00795
Barium	7440-39-3	0.891	U	0.907
Beryllium	7440-41-7	5.23E-4	U	0.00271
Cadmium	7440-43-9	9.60E-4	U	0.0628
Chromium	7440-47-3	0.891	U	1.87
Cobalt	7440-48-4	0.0108	U	0.0370
Copper	7440-50-8	0.714	U	2.23
Lead	7439-92-1	0.0268	U	0.181
Manganese	7439-96-5	0.169	U	1.60
Molybdenum	7439-98-7	0.158	U	0.304
Nickel	7440-02-0	0.411	U	0.553
Selenium	7782-49-2	ND	U	0.00760
Thallium	7440-28-0	6.77E-5	U	4.99E-4
Vanadium	7440-62-2	0.00608	U	0.0449
Zinc	7440-66-6	7.57	U	65.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070124-HM
Matrix: Air
Lab ID: 4070847-19
Sample Volume: 1989.787 m³
Filter ID:
Sampled: 07/01/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 01:38

Comments: Q8520628 - 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**	**0.0550**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.328**		**0.00766**
Barium	**7440-39-3**	**2.47**		**0.875**
Beryllium	**7440-41-7**	**0.00639**		**0.00262**
Cadmium	7440-43-9	0.0131	U	0.0606
Chromium	**7440-47-3**	**2.20**		**1.81**
Cobalt	**7440-48-4**	**0.304**		**0.0357**
Copper	**7440-50-8**	**109**		**2.15**
Lead	**7439-92-1**	**0.233**		**0.175**
Manganese	**7439-96-5**	**7.91**		**1.55**
Molybdenum	**7439-98-7**	**3.39**		**0.294**
Nickel	**7440-02-0**	**1.37**		**0.533**
Selenium	**7782-49-2**	**0.0913**		**0.00733**
Thallium	**7440-28-0**	**6.45E-4**		**4.82E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0433**
Zinc	7440-66-6	19.8	U	62.8

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070124-HM
Matrix: Air
Lab ID: 4070847-20
Sample Volume: 2000.889 m³
Filter ID:
Sampled: 07/01/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 01:49

Comments: Q8520627 - 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**	**0.129**	SL	**0.0314**
Arsenic	**7440-38-2**	**0.309**		**0.00762**
Barium	**7440-39-3**	**3.79**		**0.870**
Beryllium	**7440-41-7**	**0.00958**		**0.00260**
Cadmium	7440-43-9	0.0128	U	0.0603
Chromium	**7440-47-3**	**1.94**		**1.80**
Cobalt	**7440-48-4**	**0.307**		**0.0355**
Copper	**7440-50-8**	**44.2**		**2.14**
Lead	**7439-92-1**	**0.705**		**0.174**
Manganese	**7439-96-5**	**8.96**		**1.54**
Molybdenum	**7439-98-7**	**2.03**		**0.292**
Nickel	**7440-02-0**	**1.46**		**0.530**
Selenium	**7782-49-2**	**0.155**		**0.00729**
Thallium	**7440-28-0**	**9.58E-4**		**4.79E-4**
Vanadium	**7440-62-2**	**1.32**		**0.0430**
Zinc	7440-66-6	40.5	U	62.4

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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070124-HM
Matrix: Air
Lab ID: 4070847-21
Sample Volume: 1931.28 m³
Filter ID:
Sampled: 07/01/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 02:20

Comments: Q8520625 - 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**	**0.0643**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.231**		**0.00789**
Barium	**7440-39-3**	**2.79**		**0.901**
Beryllium	**7440-41-7**	**0.0156**		**0.00270**
Cadmium	7440-43-9	0.0125	U	0.0624
Chromium	**7440-47-3**	**2.07**		**1.86**
Cobalt	**7440-48-4**	**0.310**		**0.0367**
Copper	**7440-50-8**	**60.4**		**2.22**
Lead	**7439-92-1**	**0.522**		**0.180**
Manganese	**7439-96-5**	**8.10**		**1.59**
Molybdenum	**7439-98-7**	**2.71**		**0.302**
Nickel	**7440-02-0**	**1.23**		**0.549**
Selenium	**7782-49-2**	**0.143**		**0.00755**
Thallium	**7440-28-0**	**9.17E-4**		**4.96E-4**
Vanadium	**7440-62-2**	**0.998**		**0.0446**
Zinc	7440-66-6	24.3	U	64.7

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070124-HM
Matrix: Air
Lab ID: 4070847-22
Sample Volume: 1774.054 m³
Filter ID:
Sampled: 07/01/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 02:40

Comments: Q8520622 - 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**	**0.142**	SL	**0.0354**
Arsenic	**7440-38-2**	**0.400**		**0.00859**
Barium	**7440-39-3**	**3.69**		**0.981**
Beryllium	**7440-41-7**	**0.0131**		**0.00293**
Cadmium	7440-43-9	0.0151	U	0.0680
Chromium	**7440-47-3**	**2.32**		**2.03**
Cobalt	**7440-48-4**	**0.415**		**0.0400**
Copper	**7440-50-8**	**45.9**		**2.41**
Lead	**7439-92-1**	**1.01**		**0.196**
Manganese	**7439-96-5**	**13.6**		**1.73**
Molybdenum	**7439-98-7**	**2.74**		**0.329**
Nickel	**7440-02-0**	**1.46**		**0.598**
Selenium	**7782-49-2**	**0.152**		**0.00822**
Thallium	**7440-28-0**	**0.00102**		**5.40E-4**
Vanadium	**7440-62-2**	**1.31**		**0.0485**
Zinc	7440-66-6	20.1	U	70.4

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070224-HM
Matrix: Air
Lab ID: 4070847-23
Sample Volume: 1872.996 m³
Filter ID:
Sampled: 07/02/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 02:51

Comments: Q8520621 - 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**	**0.159**	SL	**0.0335**
Arsenic	**7440-38-2**	**3.51**		**0.00814**
Barium	**7440-39-3**	**7.01**		**0.929**
Beryllium	**7440-41-7**	**0.0214**		**0.00278**
Cadmium	7440-43-9	0.0245	U	0.0644
Chromium	**7440-47-3**	**5.46**		**1.92**
Cobalt	**7440-48-4**	**1.10**		**0.0379**
Copper	**7440-50-8**	**109**		**2.28**
Lead	**7439-92-1**	**0.486**		**0.186**
Manganese	**7439-96-5**	**26.1**		**1.64**
Molybdenum	**7439-98-7**	**4.40**		**0.312**
Nickel	**7440-02-0**	**3.20**		**0.566**
Selenium	**7782-49-2**	**0.166**		**0.00778**
Thallium	**7440-28-0**	**0.00142**		**5.12E-4**
Vanadium	**7440-62-2**	**3.00**		**0.0460**
Zinc	7440-66-6	25.0	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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070224-HM
Matrix: Air
Lab ID: 4070847-24
Sample Volume: 1995.181 m³
Filter ID:
Sampled: 07/02/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 03:01

Comments: Q8520620 - 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**	**0.158**	SL	**0.0315**
Arsenic	**7440-38-2**	**0.904**		**0.00764**
Barium	**7440-39-3**	**5.91**		**0.873**
Beryllium	**7440-41-7**	**0.0193**		**0.00261**
Cadmium	7440-43-9	0.0179	U	0.0604
Chromium	**7440-47-3**	**3.14**		**1.80**
Cobalt	**7440-48-4**	**0.676**		**0.0356**
Copper	**7440-50-8**	**44.0**		**2.14**
Lead	**7439-92-1**	**1.89**		**0.175**
Manganese	**7439-96-5**	**19.2**		**1.54**
Molybdenum	**7439-98-7**	**1.92**		**0.293**
Nickel	**7440-02-0**	**2.20**		**0.532**
Selenium	**7782-49-2**	**0.177**		**0.00731**
Thallium	**7440-28-0**	**0.00107**		**4.80E-4**
Vanadium	**7440-62-2**	**2.00**		**0.0431**
Zinc	7440-66-6	31.5	U	62.6

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070224-HM
Matrix: Air
Lab ID: 4070847-25
Sample Volume: 2004.242 m³
Filter ID:
Sampled: 07/02/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 03:12

Comments: Q8520618 - 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**	**0.0544**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.215**		**0.00761**
Barium	**7440-39-3**	**2.88**		**0.869**
Beryllium	**7440-41-7**	**0.0180**		**0.00260**
Cadmium	7440-43-9	0.00621	U	0.0602
Chromium	**7440-47-3**	**2.24**		**1.79**
Cobalt	**7440-48-4**	**0.419**		**0.0354**
Copper	**7440-50-8**	**66.2**		**2.13**
Lead	**7439-92-1**	**0.469**		**0.174**
Manganese	**7439-96-5**	**10.1**		**1.53**
Molybdenum	**7439-98-7**	**3.78**		**0.291**
Nickel	**7440-02-0**	**1.31**		**0.529**
Selenium	**7782-49-2**	**0.145**		**0.00727**
Thallium	**7440-28-0**	**6.87E-4**		**4.78E-4**
Vanadium	**7440-62-2**	**1.09**		**0.0429**
Zinc	7440-66-6	17.0	U	62.3

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070224-HM
Matrix: Air
Lab ID: 4070847-26
Sample Volume: 1784.463 m³
Filter ID:
Sampled: 07/02/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/10/24 20:58

Comments: Q8520617 - MS/MSD - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.110**	SL	**0.0352**
Arsenic	**7440-38-2**	**1.40**		**0.00854**
Barium	**7440-39-3**	**3.80**		**0.976**
Beryllium	**7440-41-7**	**0.0133**		**0.00292**
Cadmium	7440-43-9	0.0190	U	0.0676
Chromium	**7440-47-3**	**2.96**		**2.01**
Cobalt	**7440-48-4**	**0.468**		**0.0398**
Copper	**7440-50-8**	**39.4**	QM-07	**2.40**
Lead	**7439-92-1**	**0.844**		**0.195**
Manganese	**7439-96-5**	**15.0**	QM-07	**1.72**
Molybdenum	**7439-98-7**	**2.31**		**0.327**
Nickel	**7440-02-0**	**1.47**		**0.594**
Selenium	**7782-49-2**	**0.147**		**0.00817**
Thallium	**7440-28-0**	**8.51E-4**		**5.37E-4**
Vanadium	**7440-62-2**	**1.23**		**0.0482**
Zinc	7440-66-6	27.1	U	70.0

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-070224-HM
Matrix: Air
Lab ID: 4070847-27
Sample Volume: 1872.996 m³
Filter ID:
Sampled: 07/02/24 00:00
Received: 07/08/24 13:01
Analysis Date: 07/11/24 03:22

Comments: Q8520610 - 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	0.0212	SL, U	0.0335
Arsenic	**7440-38-2**	**0.212**	FB-01	**0.00814**
Barium	7440-39-3	0.867	U	0.929
Beryllium	7440-41-7	6.77E-4	U	0.00278
Cadmium	7440-43-9	8.58E-4	U	0.0644
Chromium	7440-47-3	1.04	U	1.92
Cobalt	7440-48-4	0.0214	U	0.0379
Copper	7440-50-8	0.542	U	2.28
Lead	7439-92-1	0.0338	U	0.186
Manganese	7439-96-5	0.307	U	1.64
Molybdenum	7439-98-7	0.148	U	0.312
Nickel	7440-02-0	0.467	U	0.566
Selenium	7782-49-2	ND	U	0.00778
Thallium	7440-28-0	1.24E-4	U	5.12E-4
Vanadium	7440-62-2	0.0185	U	0.0460
Zinc	7440-66-6	29.8	U	66.7

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-070324-HM
Matrix: Air
Lab ID: 4070847-28
Sample Volume: 1924.825 m³
Filter ID:
Sampled: 07/03/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 03:32

Comments: Q8520613 - 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**	**0.0728**	SL	**0.0326**
Arsenic	**7440-38-2**	**0.692**		**0.00792**
Barium	**7440-39-3**	**6.38**		**0.904**
Beryllium	**7440-41-7**	**0.0221**		**0.00270**
Cadmium	7440-43-9	0.0105	U	0.0626
Chromium	**7440-47-3**	**4.84**		**1.87**
Cobalt	**7440-48-4**	**1.14**		**0.0369**
Copper	**7440-50-8**	**93.8**		**2.22**
Lead	**7439-92-1**	**0.358**		**0.181**
Manganese	**7439-96-5**	**26.8**		**1.60**
Molybdenum	**7439-98-7**	**4.30**		**0.303**
Nickel	**7440-02-0**	**3.11**		**0.551**
Selenium	**7782-49-2**	**0.178**		**0.00757**
Thallium	**7440-28-0**	**0.00132**		**4.98E-4**
Vanadium	**7440-62-2**	**3.21**		**0.0447**
Zinc	7440-66-6	22.2	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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-070324-HM
Matrix: Air
Lab ID: 4070847-29
Sample Volume: 1996.692 m³
Filter ID:
Sampled: 07/03/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 03:43

Comments: Q8520611 - 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**	**0.179**	SL	**0.0315**
Arsenic	**7440-38-2**	**0.577**		**0.00764**
Barium	**7440-39-3**	**4.30**		**0.872**
Beryllium	**7440-41-7**	**0.0114**		**0.00261**
Cadmium	7440-43-9	0.0133	U	0.0604
Chromium	**7440-47-3**	**1.94**		**1.80**
Cobalt	**7440-48-4**	**0.362**		**0.0355**
Copper	**7440-50-8**	**43.1**		**2.14**
Lead	**7439-92-1**	**1.52**		**0.174**
Manganese	**7439-96-5**	**10.7**		**1.54**
Molybdenum	**7439-98-7**	**1.76**		**0.293**
Nickel	**7440-02-0**	**1.36**		**0.531**
Selenium	**7782-49-2**	**0.150**		**0.00730**
Thallium	**7440-28-0**	**7.67E-4**		**4.80E-4**
Vanadium	**7440-62-2**	**1.19**		**0.0431**
Zinc	7440-66-6	22.7	U	62.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-070324-HM
Matrix: Air
Lab ID: 4070847-30
Sample Volume: 2042.28 m³
Filter ID:
Sampled: 07/03/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 03:53

Comments: Q8520609 - 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**	**0.0674**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.321**		**0.00746**
Barium	**7440-39-3**	**3.42**		**0.852**
Beryllium	**7440-41-7**	**0.0232**		**0.00255**
Cadmium	7440-43-9	0.00912	U	0.0590
Chromium	**7440-47-3**	**2.48**		**1.76**
Cobalt	**7440-48-4**	**0.468**		**0.0347**
Copper	**7440-50-8**	**52.6**		**2.10**
Lead	**7439-92-1**	**0.708**		**0.170**
Manganese	**7439-96-5**	**12.1**		**1.51**
Molybdenum	**7439-98-7**	**3.13**		**0.286**
Nickel	**7440-02-0**	**1.49**		**0.519**
Selenium	**7782-49-2**	**0.146**		**0.00714**
Thallium	**7440-28-0**	**8.45E-4**		**4.69E-4**
Vanadium	**7440-62-2**	**1.29**		**0.0421**
Zinc	7440-66-6	19.7	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: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070324-HM
Matrix: Air
Lab ID: 4070847-31
Sample Volume: 1821.282 m³
Filter ID:
Sampled: 07/03/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/11/24 04:24

Comments: Q8520608 - 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**	**0.103**	SL	**0.0345**
Arsenic	**7440-38-2**	**0.523**		**0.00837**
Barium	**7440-39-3**	**4.94**		**0.956**
Beryllium	**7440-41-7**	**0.0171**		**0.00286**
Cadmium	7440-43-9	0.0136	U	0.0662
Chromium	**7440-47-3**	**2.79**		**1.97**
Cobalt	**7440-48-4**	**0.564**		**0.0389**
Copper	**7440-50-8**	**39.3**		**2.35**
Manganese	**7439-96-5**	**18.2**		**1.69**
Molybdenum	**7439-98-7**	**2.56**		**0.321**
Nickel	**7440-02-0**	**1.72**		**0.582**
Selenium	**7782-49-2**	**0.168**		**0.00800**
Vanadium	**7440-62-2**	**1.53**		**0.0473**
Zinc	7440-66-6	20.7	U	68.6

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

FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-070324-HM
Matrix: Air
Lab ID: 4070847-31RE1
Sample Volume: 1821.282 m³
Filter ID:
Sampled: 07/03/24 23:59
Received: 07/08/24 13:01
Analysis Date: 07/12/24 00:16

Comments: Q8520608 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Lead	**7439-92-1**	**0.863**		**0.382**
Thallium	7440-28-0	8.50E-4	U	0.00105

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: 07/18/24 11:53
SUBMITTED: 07/08/24
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 2407034 - B4G0909										
Calibration Blank (2407034-CCB1)				Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	0.829		ng/l							
Arsenic	1.22		ng/l							
Barium	0.433		ng/l							
Beryllium	0.0509		ng/l							
Cadmium	0.180		ng/l							
Chromium	2.32		ng/l							
Cobalt	-0.00733		ng/l							U
Copper	27.9		ng/l							
Lead	10.2		ng/l							
Manganese	2.62		ng/l							
Molybdenum	15.5		ng/l							
Nickel	-1.19		ng/l							U
Selenium	-14.3		ng/l							U
Thallium	1.30		ng/l							
Vanadium	-50.4		ng/l							U
Zinc	6.71		ng/l							
Calibration Blank (2407034-CCB2)				Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	0.398		ng/l							
Arsenic	1.49		ng/l							
Barium	-0.181		ng/l							U
Beryllium	-0.428		ng/l							U
Cadmium	0.151		ng/l							
Chromium	1.01		ng/l							
Cobalt	0.00571		ng/l							
Copper	5.41		ng/l							
Lead	5.58		ng/l							
Manganese	0.348		ng/l							
Molybdenum	6.52		ng/l							
Nickel	-0.846		ng/l							U
Selenium	-15.9		ng/l							U
Thallium	1.14		ng/l							
Vanadium	-52.0		ng/l							U
Zinc	11.3		ng/l							
Calibration Blank (2407034-CCB3)				Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	0.670		ng/l							
Arsenic	1.06		ng/l							
Barium	0.185		ng/l							
Beryllium	-0.379		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: 07/18/24 11:53
SUBMITTED: 07/08/24
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 2407034 - B4G0909										
Calibration Blank (2407034-CCB3) Contin				Prepared: 07/09/24 Analyzed: 07/10/24						
Cadmium	0.0210		ng/l							
Chromium	1.02		ng/l							
Cobalt	-0.148		ng/l							U
Copper	7.64		ng/l							
Lead	6.68		ng/l							
Manganese	0.485		ng/l							
Molybdenum	5.67		ng/l							
Nickel	-0.430		ng/l							U
Selenium	-13.6		ng/l							U
Thallium	0.868		ng/l							
Vanadium	-57.2		ng/l							U
Zinc	12.3		ng/l							
Calibration Blank (2407034-CCB4)				Prepared: 07/09/24 Analyzed: 07/11/24						
Antimony	0.535		ng/l							
Arsenic	0.213		ng/l							
Barium	0.444		ng/l							
Beryllium	-0.544		ng/l							U
Cadmium	0.0614		ng/l							
Chromium	1.15		ng/l							
Cobalt	-0.0955		ng/l							U
Copper	6.69		ng/l							
Lead	5.06		ng/l							
Manganese	-0.0572		ng/l							U
Molybdenum	6.88		ng/l							
Nickel	-0.209		ng/l							U
Selenium	-0.895		ng/l							U
Thallium	0.823		ng/l							
Vanadium	-57.8		ng/l							U
Zinc	7.74		ng/l							
Calibration Blank (2407034-CCB5)				Prepared: 07/09/24 Analyzed: 07/11/24						
Antimony	0.538		ng/l							
Arsenic	0.586		ng/l							
Barium	0.333		ng/l							
Beryllium	-0.265		ng/l							U
Cadmium	0.0471		ng/l							
Chromium	0.481		ng/l							
Cobalt	-0.0390		ng/l							U
Copper	7.79		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 2407034 - B4G0909										
Calibration Blank (2407034-CCB5) Contin				Prepared: 07/09/24 Analyzed: 07/11/24						
Lead	5.08		ng/l							
Manganese	-0.193		ng/l							U
Molybdenum	7.67		ng/l							
Nickel	-0.507		ng/l							U
Selenium	-16.7		ng/l							U
Thallium	0.847		ng/l							
Vanadium	-58.2		ng/l							U
Zinc	14.8		ng/l							
Calibration Blank (2407034-CCB6)				Prepared: 07/09/24 Analyzed: 07/11/24						
Antimony	0.366		ng/l							
Arsenic	-0.162		ng/l							U
Barium	0.708		ng/l							
Beryllium	-0.360		ng/l							U
Cadmium	0.0473		ng/l							
Chromium	1.66		ng/l							
Cobalt	0.197		ng/l							
Copper	8.50		ng/l							
Lead	5.99		ng/l							
Manganese	0.311		ng/l							
Molybdenum	7.37		ng/l							
Nickel	0.0604		ng/l							
Selenium	-2.89		ng/l							U
Thallium	0.834		ng/l							
Vanadium	-60.0		ng/l							U
Zinc	15.8		ng/l							
Calibration Blank (2407034-CCB7)				Prepared: 07/09/24 Analyzed: 07/11/24						
Antimony	0.635		ng/l							
Arsenic	-0.406		ng/l							U
Barium	0.722		ng/l							
Beryllium	-0.537		ng/l							U
Cadmium	0.141		ng/l							
Chromium	1.28		ng/l							
Cobalt	0.126		ng/l							
Copper	10.1		ng/l							
Lead	7.25		ng/l							
Manganese	0.795		ng/l							
Molybdenum	7.75		ng/l							
Nickel	-0.777		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 2407034 - B4G0909										
Calibration Blank (2407034-CCB7) Contin					Prepared: 07/09/24 Analyzed: 07/11/24					
Selenium	-8.90		ng/l							U
Thallium	0.866		ng/l							
Vanadium	-62.7		ng/l							U
Zinc	11.4		ng/l							
Calibration Check (2407034-CCV1)					Prepared: 07/09/24 Analyzed: 07/10/24					
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	197000		ng/l	200000		98.6	90-110			
Beryllium	5010		ng/l	5000.0		100	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	246000		ng/l	240000		102	90-110			
Cobalt	51500		ng/l	50000		103	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	198000		ng/l	200000		98.9	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	48500		ng/l	50000		96.9	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	20000		ng/l	20000		99.8	90-110			
Thallium	490		ng/l	500.00		98.0	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	520000		ng/l	500000		104	90-110			
Calibration Check (2407034-CCV2)					Prepared: 07/09/24 Analyzed: 07/10/24					
Antimony	20000		ng/l	20000		99.8	90-110			
Arsenic	20000		ng/l	20000		99.9	90-110			
Barium	196000		ng/l	200000		98.1	90-110			
Beryllium	4970		ng/l	5000.0		99.4	90-110			
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	51400		ng/l	50000		103	90-110			
Copper	2.09E6		ng/l	2.0000E6		104	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	48400		ng/l	50000		96.8	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Thallium	497		ng/l	500.00		99.4	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	515000		ng/l	500000		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 2407034 - B4G0909										
Calibration Check (2407034-CCV3)				Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	19700		ng/l	20000		98.6	90-110			
Arsenic	19800		ng/l	20000		98.8	90-110			
Barium	197000		ng/l	200000		98.6	90-110			
Beryllium	4890		ng/l	5000.0		97.9	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	506000		ng/l	500000		101	90-110			
Molybdenum	48100		ng/l	50000		96.2	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Thallium	496		ng/l	500.00		99.2	90-110			
Vanadium	19900		ng/l	20000		99.3	90-110			
Zinc	521000		ng/l	500000		104	90-110			
Calibration Check (2407034-CCV4)				Prepared: 07/09/24 Analyzed: 07/11/24						
Antimony	19700		ng/l	20000		98.4	90-110			
Arsenic	19800		ng/l	20000		98.9	90-110			
Barium	197000		ng/l	200000		98.6	90-110			
Beryllium	4870		ng/l	5000.0		97.4	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	246000		ng/l	240000		102	90-110			
Cobalt	51500		ng/l	50000		103	90-110			
Copper	2.13E6		ng/l	2.0000E6		107	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	48300		ng/l	50000		96.6	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	19800		ng/l	20000		99.0	90-110			
Thallium	495		ng/l	500.00		99.0	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	528000		ng/l	500000		106	90-110			
Calibration Check (2407034-CCV5)				Prepared: 07/09/24 Analyzed: 07/11/24						
Antimony	19600		ng/l	20000		98.2	90-110			
Arsenic	19600		ng/l	20000		97.8	90-110			
Barium	197000		ng/l	200000		98.7	90-110			
Beryllium	4850		ng/l	5000.0		97.0	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 2407034 - B4G0909										
Calibration Check (2407034-CCV5) Contin					Prepared: 07/09/24 Analyzed: 07/11/24					
Cadmium	20300		ng/l	20000		101	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	51800		ng/l	50000		104	90-110			
Copper	2.14E6		ng/l	2.0000E6		107	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	48500		ng/l	50000		97.0	90-110			
Nickel	125000		ng/l	120000		104	90-110			
Selenium	19600		ng/l	20000		98.0	90-110			
Thallium	493		ng/l	500.00		98.6	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	532000		ng/l	500000		106	90-110			
Calibration Check (2407034-CCV6)					Prepared: 07/09/24 Analyzed: 07/11/24					
Antimony	19800		ng/l	20000		98.8	90-110			
Arsenic	19600		ng/l	20000		97.9	90-110			
Barium	198000		ng/l	200000		99.2	90-110			
Beryllium	4890		ng/l	5000.0		97.9	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	51700		ng/l	50000		103	90-110			
Copper	2.15E6		ng/l	2.0000E6		107	90-110			
Lead	203000		ng/l	200000		102	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	48300		ng/l	50000		96.5	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	19600		ng/l	20000		98.2	90-110			
Thallium	489		ng/l	500.00		97.8	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	531000		ng/l	500000		106	90-110			
Calibration Check (2407034-CCV7)					Prepared: 07/09/24 Analyzed: 07/11/24					
Antimony	19700		ng/l	20000		98.7	90-110			
Arsenic	19600		ng/l	20000		98.1	90-110			
Barium	198000		ng/l	200000		98.8	90-110			
Beryllium	4900		ng/l	5000.0		98.0	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	51800		ng/l	50000		104	90-110			
Copper	2.14E6		ng/l	2.0000E6		107	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 2407034 - B4G0909										
Calibration Check (2407034-CCV7) Contin				Prepared: 07/09/24 Analyzed: 07/11/24						
Lead	204000		ng/l	200000		102	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	48500		ng/l	50000		97.0	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	19500		ng/l	20000		97.5	90-110			
Thallium	496		ng/l	500.00		99.3	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	533000		ng/l	500000		107	90-110			
High Cal Check (2407034-HCV1)				Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	40100		ng/l	40000		100	95-105			
Arsenic	39800		ng/l	40000		99.5	95-105			
Barium	402000		ng/l	400000		100	95-105			
Beryllium	9990		ng/l	10000		99.9	95-105			
Cadmium	39700		ng/l	40000		99.3	95-105			
Chromium	478000		ng/l	480000		99.5	95-105			
Cobalt	99400		ng/l	100000		99.4	95-105			
Copper	3.91E6		ng/l	4.0000E6		97.7	95-105			
Lead	403000		ng/l	400000		101	95-105			
Manganese	996000		ng/l	1.0000E6		99.6	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	238000		ng/l	240000		99.3	95-105			
Selenium	39600		ng/l	40000		98.9	95-105			
Thallium	992		ng/l	1000.0		99.2	95-105			
Vanadium	40000		ng/l	40000		100	95-105			
Zinc	993000		ng/l	1.0000E6		99.3	95-105			
Initial Cal Blank (2407034-ICB1)				Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	0.570		ng/l							
Arsenic	1.65		ng/l							
Barium	0.787		ng/l							
Beryllium	0.0928		ng/l							
Cadmium	0.0595		ng/l							
Chromium	4.02		ng/l							
Cobalt	-0.0989		ng/l							U
Copper	29.5		ng/l							
Lead	11.6		ng/l							
Manganese	3.83		ng/l							
Molybdenum	8.28		ng/l							
Nickel	-1.19		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407034 - B4G0909										
Initial Cal Blank (2407034-ICB1) Continu					Prepared: 07/09/24 Analyzed: 07/10/24					
Selenium	-5.11		ng/l							U
Thallium	1.25		ng/l							
Vanadium	-51.7		ng/l							U
Zinc	11.0		ng/l							
Initial Cal Check (2407034-ICV1)					Prepared: 07/09/24 Analyzed: 07/10/24					
Antimony	19700		ng/l	20000		98.4	90-110			
Arsenic	19400		ng/l	20000		97.2	90-110			
Barium	198000		ng/l	200000		99.0	90-110			
Beryllium	5150		ng/l	5000.0		103	90-110			
Cadmium	20700		ng/l	20000		104	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	48700		ng/l	50000		97.5	90-110			
Copper	2.06E6		ng/l	2.0000E6		103	90-110			
Lead	199000		ng/l	200000		99.5	90-110			
Manganese	506000		ng/l	500000		101	90-110			
Molybdenum	47500		ng/l	50000		95.0	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	19900		ng/l	20000		99.7	90-110			
Thallium	496		ng/l	500.00		99.2	90-110			
Vanadium	20100		ng/l	20000		100	90-110			
Zinc	523000		ng/l	500000		105	90-110			
Interference Check A (2407034-IFA1)					Prepared: 07/09/24 Analyzed: 07/10/24					
Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	310000		ng/l	300000		103	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 2407034 - B4G0909										
Interference Check B (2407034-IFB1)				Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	18800		ng/l	20000		93.9	80-120			
Arsenic	18700		ng/l	20000		93.5	80-120			
Barium	192000		ng/l	200000		96.1	80-120			
Beryllium	4450		ng/l	5000.0		89.0	80-120			
Cadmium	17900		ng/l	20000		89.5	80-120			
Chromium	229000		ng/l	240000		95.6	80-120			
Cobalt	45900		ng/l	50000		91.8	80-120			
Copper	1.76E6		ng/l	2.0000E6		87.8	80-120			
Lead	193000		ng/l	200000		96.7	80-120			
Manganese	471000		ng/l	500000		94.2	80-120			
Molybdenum	341000		ng/l	350000		97.4	80-120			
Nickel	106000		ng/l	120000		88.2	80-120			
Selenium	17000		ng/l	20000		84.8	80-120			
Thallium	473		ng/l	500.00		94.6	80-120			
Vanadium	19700		ng/l	20000		98.6	80-120			
Zinc	420000		ng/l	500000		83.9	80-120			
Batch 2407043 - B4G0909										
Calibration Blank (2407043-CCB1)				Prepared & Analyzed: 07/11/24						
Antimony	0.0768		ng/l							
Arsenic	1.37		ng/l							
Barium	0.295		ng/l							
Beryllium	0.0457		ng/l							
Cadmium	0.0335		ng/l							
Chromium	2.55		ng/l							
Cobalt	-0.0542		ng/l							U
Copper	55.4		ng/l							
Lead	5.46		ng/l							
Manganese	2.39		ng/l							
Molybdenum	1.35		ng/l							
Nickel	0.185		ng/l							
Selenium	-5.08		ng/l							U
Thallium	0.785		ng/l							
Vanadium	-37.8		ng/l							U
Zinc	97.1		ng/l							
Calibration Blank (2407043-CCB2)				Prepared & Analyzed: 07/11/24						
Antimony	0.379		ng/l							
Arsenic	0.400		ng/l							
Barium	0.0888		ng/l							

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: 07/18/24 11:53
SUBMITTED: 07/08/24
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 2407043 - B4G0909										
Calibration Blank (2407043-CCB2) Contin				Prepared & Analyzed: 07/11/24						
Beryllium	0.00450		ng/l							
Cadmium	0.0447		ng/l							
Chromium	5.40		ng/l							
Cobalt	0.151		ng/l							
Copper	44.3		ng/l							
Lead	9.66		ng/l							
Manganese	3.68		ng/l							
Molybdenum	0.453		ng/l							
Nickel	0.369		ng/l							
Selenium	-1.50		ng/l							U
Thallium	1.12		ng/l							
Vanadium	-52.6		ng/l							U
Zinc	113		ng/l							
Calibration Blank (2407043-CCB3)				Prepared & Analyzed: 07/11/24						
Antimony	0.441		ng/l							
Arsenic	0.894		ng/l							
Barium	0.493		ng/l							
Beryllium	0.0503		ng/l							
Cadmium	0.0227		ng/l							
Chromium	6.74		ng/l							
Cobalt	0.0807		ng/l							
Copper	52.2		ng/l							
Lead	7.94		ng/l							
Manganese	2.17		ng/l							
Molybdenum	0.512		ng/l							
Nickel	0.645		ng/l							
Selenium	-8.25		ng/l							U
Thallium	1.19		ng/l							
Vanadium	-54.5		ng/l							U
Zinc	119		ng/l							
Calibration Blank (2407043-CCB4)				Prepared & Analyzed: 07/11/24						
Antimony	0.360		ng/l							
Arsenic	0.539		ng/l							
Barium	0.535		ng/l							
Beryllium	0.00555		ng/l							
Cadmium	0.0480		ng/l							
Chromium	5.35		ng/l							
Cobalt	0.0150		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407043 - B4G0909										
Calibration Blank (2407043-CCB4) Contin				Prepared & Analyzed: 07/11/24						
Copper	51.6		ng/l							
Lead	8.18		ng/l							
Manganese	2.28		ng/l							
Molybdenum	1.30		ng/l							
Nickel	1.34		ng/l							
Selenium	-7.31		ng/l							U
Thallium	1.16		ng/l							
Vanadium	-52.3		ng/l							U
Zinc	98.3		ng/l							
Calibration Blank (2407043-CCB5)				Prepared: 07/11/24 Analyzed: 07/12/24						
Antimony	0.596		ng/l							
Arsenic	0.640		ng/l							
Barium	1.74		ng/l							
Beryllium	0.0968		ng/l							
Cadmium	0.102		ng/l							
Chromium	7.69		ng/l							
Cobalt	0.251		ng/l							
Copper	54.5		ng/l							
Lead	9.44		ng/l							
Manganese	4.74		ng/l							
Molybdenum	1.46		ng/l							
Nickel	2.04		ng/l							
Selenium	-16.0		ng/l							U
Thallium	1.17		ng/l							
Vanadium	-55.3		ng/l							U
Zinc	128		ng/l							
Calibration Blank (2407043-CCB6)				Prepared: 07/11/24 Analyzed: 07/12/24						
Antimony	0.530		ng/l							
Arsenic	-0.767		ng/l							U
Barium	2.04		ng/l							
Beryllium	0.00778		ng/l							
Cadmium	0.0535		ng/l							
Chromium	8.81		ng/l							
Cobalt	0.236		ng/l							
Copper	48.8		ng/l							
Lead	10.0		ng/l							
Manganese	4.93		ng/l							
Molybdenum	1.10		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch 2407043 - B4G0909

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Calibration Blank (2407043-CCB6) Contin				Prepared: 07/11/24 Analyzed: 07/12/24						
Nickel	1.36		ng/l							
Selenium	-1.22		ng/l							U
Thallium	1.11		ng/l							
Vanadium	-55.1		ng/l							U
Zinc	127		ng/l							
Calibration Check (2407043-CCV1)				Prepared & Analyzed: 07/11/24						
Antimony	20000		ng/l	20000		100	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5000		ng/l	5000.0		100	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	242000		ng/l	240000		101	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	200000		ng/l	200000		99.8	90-110			
Manganese	505000		ng/l	500000		101	90-110			
Molybdenum	48900		ng/l	50000		97.9	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	503		ng/l	500.00		101	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2407043-CCV2)				Prepared & Analyzed: 07/11/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	197000		ng/l	200000		98.6	90-110			
Beryllium	4890		ng/l	5000.0		97.8	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	51400		ng/l	50000		103	90-110			
Copper	2.09E6		ng/l	2.0000E6		105	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	49100		ng/l	50000		98.1	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20000		ng/l	20000		99.8	90-110			
Thallium	497		ng/l	500.00		99.4	90-110			
Vanadium	20100		ng/l	20000		101	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407043 - B4G0909										
Calibration Check (2407043-CCV2) Contin					Prepared & Analyzed: 07/11/24					
Zinc	521000		ng/l	500000		104	90-110			
Calibration Check (2407043-CCV3)					Prepared & Analyzed: 07/11/24					
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	19900		ng/l	20000		99.7	90-110			
Barium	196000		ng/l	200000		98.0	90-110			
Beryllium	4790		ng/l	5000.0		95.7	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	506000		ng/l	500000		101	90-110			
Molybdenum	49000		ng/l	50000		97.9	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20000		ng/l	20000		99.8	90-110			
Thallium	493		ng/l	500.00		98.7	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	524000		ng/l	500000		105	90-110			
Calibration Check (2407043-CCV4)					Prepared & Analyzed: 07/11/24					
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19800		ng/l	20000		99.1	90-110			
Barium	196000		ng/l	200000		98.0	90-110			
Beryllium	4780		ng/l	5000.0		95.7	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	51200		ng/l	50000		102	90-110			
Copper	2.11E6		ng/l	2.0000E6		105	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	509000		ng/l	500000		102	90-110			
Molybdenum	49200		ng/l	50000		98.3	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	19600		ng/l	20000		97.8	90-110			
Thallium	490		ng/l	500.00		98.0	90-110			
Vanadium	19900		ng/l	20000		99.6	90-110			
Zinc	523000		ng/l	500000		105	90-110			
Calibration Check (2407043-CCV5)					Prepared: 07/11/24 Analyzed: 07/12/24					
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19900		ng/l	20000		99.3	90-110			

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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 2407043 - B4G0909										
Calibration Check (2407043-CCV5) Contin					Prepared: 07/11/24 Analyzed: 07/12/24					
Barium	195000		ng/l	200000		97.5	90-110			
Beryllium	4780		ng/l	5000.0		95.5	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	49100		ng/l	50000		98.3	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	19800		ng/l	20000		98.9	90-110			
Thallium	492		ng/l	500.00		98.5	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	517000		ng/l	500000		103	90-110			
Calibration Check (2407043-CCV6)					Prepared: 07/11/24 Analyzed: 07/12/24					
Antimony	20100		ng/l	20000		101	90-110			
Arsenic	19800		ng/l	20000		99.2	90-110			
Barium	195000		ng/l	200000		97.6	90-110			
Beryllium	4730		ng/l	5000.0		94.5	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	50900		ng/l	50000		102	90-110			
Copper	2.11E6		ng/l	2.0000E6		105	90-110			
Lead	203000		ng/l	200000		102	90-110			
Manganese	511000		ng/l	500000		102	90-110			
Molybdenum	49100		ng/l	50000		98.2	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20000		ng/l	20000		99.9	90-110			
Thallium	490		ng/l	500.00		97.9	90-110			
Vanadium	19900		ng/l	20000		99.5	90-110			
Zinc	517000		ng/l	500000		103	90-110			
High Cal Check (2407043-HCV1)					Prepared & Analyzed: 07/11/24					
Antimony	40300		ng/l	40000		101	95-105			
Arsenic	40200		ng/l	40000		101	95-105			
Barium	400000		ng/l	400000		100	95-105			
Beryllium	10000		ng/l	10000		100	95-105			
Cadmium	39800		ng/l	40000		99.6	95-105			
Chromium	478000		ng/l	480000		99.7	95-105			

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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 2407043 - B4G0909										
High Cal Check (2407043-HCV1) Continue					Prepared & Analyzed: 07/11/24					
Cobalt	99200		ng/l	100000		99.2	95-105			
Copper	3.97E6		ng/l	4.0000E6		99.2	95-105			
Lead	403000		ng/l	400000		101	95-105			
Manganese	994000		ng/l	1.0000E6		99.4	95-105			
Molybdenum	101000		ng/l	100000		101	95-105			
Nickel	240000		ng/l	240000		99.9	95-105			
Selenium	39900		ng/l	40000		99.8	95-105			
Thallium	1000		ng/l	1000.0		100	95-105			
Vanadium	39800		ng/l	40000		99.5	95-105			
Zinc	992000		ng/l	1.0000E6		99.2	95-105			
Initial Cal Blank (2407043-ICB1)					Prepared & Analyzed: 07/11/24					
Antimony	0.162		ng/l							
Arsenic	0.0207		ng/l							
Barium	0.665		ng/l							
Beryllium	0.00404		ng/l							
Cadmium	-0.00604		ng/l							U
Chromium	4.01		ng/l							
Cobalt	-0.0414		ng/l							U
Copper	39.1		ng/l							
Lead	7.40		ng/l							
Manganese	2.58		ng/l							
Molybdenum	0.145		ng/l							
Nickel	0.530		ng/l							
Selenium	-2.15		ng/l							U
Thallium	0.688		ng/l							
Vanadium	-38.2		ng/l							U
Zinc	98.0		ng/l							
Initial Cal Check (2407043-ICV1)					Prepared & Analyzed: 07/11/24					
Antimony	19700		ng/l	20000		98.6	90-110			
Arsenic	19500		ng/l	20000		97.6	90-110			
Barium	198000		ng/l	200000		98.9	90-110			
Beryllium	5100		ng/l	5000.0		102	90-110			
Cadmium	20700		ng/l	20000		104	90-110			
Chromium	239000		ng/l	240000		99.5	90-110			
Cobalt	49200		ng/l	50000		98.5	90-110			
Copper	2.05E6		ng/l	2.0000E6		103	90-110			
Lead	198000		ng/l	200000		98.9	90-110			
Manganese	504000		ng/l	500000		101	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407043 - B4G0909										
Initial Cal Check (2407043-ICV1) Continu				Prepared & Analyzed: 07/11/24						
Molybdenum	47700		ng/l	50000		95.4	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Thallium	490		ng/l	500.00		98.0	90-110			
Vanadium	20000		ng/l	20000		100	90-110			
Zinc	523000		ng/l	500000		105	90-110			
Interference Check A (2407043-IFA1)				Prepared & Analyzed: 07/11/24						
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	316000		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
Interference Check B (2407043-IFB1)				Prepared & Analyzed: 07/11/24						
Antimony	20200		ng/l	20000		101	80-120			
Arsenic	20400		ng/l	20000		102	80-120			
Barium	204000		ng/l	200000		102	80-120			
Beryllium	4630		ng/l	5000.0		92.7	80-120			
Cadmium	19500		ng/l	20000		97.3	80-120			
Chromium	251000		ng/l	240000		105	80-120			
Cobalt	49400		ng/l	50000		98.8	80-120			
Copper	1.89E6		ng/l	2.0000E6		94.3	80-120			
Lead	208000		ng/l	200000		104	80-120			
Manganese	510000		ng/l	500000		102	80-120			
Molybdenum	369000		ng/l	350000		105	80-120			
Nickel	114000		ng/l	120000		95.1	80-120			
Selenium	18500		ng/l	20000		92.7	80-120			
Thallium	524		ng/l	500.00		105	80-120			

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: 07/18/24 11:53
SUBMITTED: 07/08/24
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 2407043 - B4G0909										
Interference Check B (2407043-IFB1) Co					Prepared & Analyzed: 07/11/24					
Vanadium	20600		ng/l	20000		103	80-120			
Zinc	449000		ng/l	500000		89.7	80-120			
Batch B4G0909 - ICP-MS Extraction										
Blank (B4G0909-BLK1)					Prepared: 07/09/24 Analyzed: 07/10/24					
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4G0909-BS1)					Prepared: 07/09/24 Analyzed: 07/10/24					
Antimony	0.459	0.0386	ng/m³ Air	1.3829		33.2	80-120			SL
Arsenic	2.72	0.00937	ng/m³ Air	2.7658		98.2	80-120			
Barium	27.7	1.07	ng/m³ Air	27.658		100	80-120			
Beryllium	1.36	0.00320	ng/m³ Air	1.3829		98.6	80-120			
Cadmium	1.41	0.0741	ng/m³ Air	1.3829		102	80-120			
Chromium	15.6	2.21	ng/m³ Air	13.829		113	80-120			
Cobalt	1.44	0.0436	ng/m³ Air	1.3829		104	80-120			
Copper	29.6	2.63	ng/m³ Air	27.658		107	80-120			
Lead	13.6	0.214	ng/m³ Air	13.829		98.2	80-120			
Manganese	8.55	1.89	ng/m³ Air	8.2975		103	80-120			
Molybdenum	1.55	0.359	ng/m³ Air	1.3829		112	80-120			
Nickel	3.13	0.652	ng/m³ Air	2.7658		113	80-120			
Selenium	2.71	0.00896	ng/m³ Air	2.7658		98.1	80-120			
Thallium	0.134	5.89E-4	ng/m³ Air	0.13829		96.8	80-120			
Vanadium	2.73	0.0529	ng/m³ Air	2.7658		98.6	80-120			
Zinc	93.1	76.8	ng/m³ Air	82.975		112	80-120			
LCS (B4G0909-BS2)					Prepared: 07/09/24 Analyzed: 07/10/24					

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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 B4G0909 - ICP-MS Extraction										
Antimony	0.453	0.0386	ng/m³ Air	1.3829		32.8	80-120			SL
Arsenic	2.72	0.00937	ng/m³ Air	2.7658		98.4	80-120			
Barium	27.8	1.07	ng/m³ Air	27.658		101	80-120			
Beryllium	1.36	0.00320	ng/m³ Air	1.3829		98.4	80-120			
Cadmium	1.42	0.0741	ng/m³ Air	1.3829		103	80-120			
Chromium	15.9	2.21	ng/m³ Air	13.829		115	80-120			
Cobalt	1.45	0.0436	ng/m³ Air	1.3829		104	80-120			
Copper	30.2	2.63	ng/m³ Air	27.658		109	80-120			
Lead	13.8	0.214	ng/m³ Air	13.829		99.4	80-120			
Manganese	8.64	1.89	ng/m³ Air	8.2975		104	80-120			
Molybdenum	1.60	0.359	ng/m³ Air	1.3829		115	80-120			
Nickel	3.20	0.652	ng/m³ Air	2.7658		116	80-120			
Selenium	2.74	0.00896	ng/m³ Air	2.7658		99.2	80-120			
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.5	80-120			
Vanadium	2.73	0.0529	ng/m³ Air	2.7658		98.5	80-120			
Zinc	93.9	76.8	ng/m³ Air	82.975		113	80-120			
Duplicate (B4G0909-DUP1)		**Source: 4070847-06**		Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	0.134	0.0304	ng/m³ Air		0.129			4.18	10	SL
Arsenic	0.616	0.00737	ng/m³ Air		0.578			6.43	10	
Barium	5.54	0.842	ng/m³ Air		5.17			6.87	10	
Beryllium	0.0197	0.00252	ng/m³ Air		0.0187			5.56	10	
Cadmium	ND	0.0583	ng/m³ Air		ND				10	U
Chromium	4.62	1.74	ng/m³ Air		3.16			37.6	10	
Cobalt	0.680	0.0343	ng/m³ Air		0.634			6.92	10	
Copper	98.2	2.07	ng/m³ Air		97.9			0.314	10	
Lead	1.11	0.168	ng/m³ Air		1.09			2.16	10	
Manganese	20.4	1.49	ng/m³ Air		19.2			5.89	10	
Molybdenum	2.11	0.282	ng/m³ Air		2.06			2.81	10	
Nickel	2.84	0.513	ng/m³ Air		2.00			34.9	10	
Selenium	0.172	0.00705	ng/m³ Air		0.169			2.29	10	
Thallium	0.00124	4.63E-4	ng/m³ Air		0.00113			9.46	10	
Vanadium	2.05	0.0416	ng/m³ Air		1.93			6.08	10	
Zinc	ND	60.4	ng/m³ Air		ND				10	U
Duplicate (B4G0909-DUP2)		**Source: 4070847-26**		Prepared: 07/09/24 Analyzed: 07/10/24						
Antimony	0.111	0.0352	ng/m³ Air		0.110			0.490	10	SL
Arsenic	1.70	0.00854	ng/m³ Air		1.40			19.5	10	
Barium	4.18	0.976	ng/m³ Air		3.80			9.38	10	
Beryllium	0.0149	0.00292	ng/m³ Air		0.0133			11.6	10	
Cadmium	ND	0.0676	ng/m³ Air		ND				10	U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G0909 - ICP-MS Extraction										
Duplicate (B4G0909-DUP2) Continued			**Source: 4070847-26**		Prepared: 07/09/24 Analyzed: 07/10/24					
Chromium	3.60	2.01	ng/m³ Air		2.96			19.7	10	
Cobalt	0.501	0.0398	ng/m³ Air		0.468			6.77	10	
Copper	42.5	2.40	ng/m³ Air		39.4			7.66	10	
Lead	0.872	0.195	ng/m³ Air		0.844			3.23	10	
Manganese	16.0	1.72	ng/m³ Air		15.0			5.99	10	
Molybdenum	2.49	0.327	ng/m³ Air		2.31			7.66	10	
Nickel	1.72	0.594	ng/m³ Air		1.47			15.7	10	
Selenium	0.152	0.00817	ng/m³ Air		0.147			3.39	10	
Thallium	9.12E-4	5.37E-4	ng/m³ Air		8.51E-4			6.96	10	
Vanadium	1.33	0.0482	ng/m³ Air		1.23			7.62	10	
Zinc	ND	70.0	ng/m³ Air		ND				10	U
Duplicate (B4G0909-DUP3)			**Source: 4070847-14**		Prepared: 07/09/24 Analyzed: 07/11/24					
Antimony	0.0871	0.0327	ng/m³ Air		0.0870			0.0454	10	SL
Arsenic	0.479	0.00795	ng/m³ Air		0.487			1.52	10	
Barium	3.07	0.907	ng/m³ Air		3.07			0.0437	10	
Beryllium	0.00880	0.00271	ng/m³ Air		0.00812			8.10	10	
Cadmium	ND	0.0628	ng/m³ Air		ND				10	U
Chromium	2.30	1.87	ng/m³ Air		2.29			0.427	10	
Cobalt	0.372	0.0370	ng/m³ Air		0.370			0.749	10	
Copper	119	2.23	ng/m³ Air		119			0.486	10	
Lead	0.361	0.181	ng/m³ Air		0.361			0.137	10	
Manganese	10.2	1.60	ng/m³ Air		10.2			0.714	10	
Molybdenum	5.37	0.304	ng/m³ Air		5.36			0.192	10	
Nickel	1.52	0.553	ng/m³ Air		1.51			0.669	10	
Selenium	0.139	0.00760	ng/m³ Air		0.138			0.0779	10	
Thallium	9.30E-4	4.99E-4	ng/m³ Air		8.57E-4			8.18	10	
Vanadium	1.40	0.0449	ng/m³ Air		1.40			0.160	10	
Zinc	ND	65.1	ng/m³ Air		ND				10	U
Duplicate (B4G0909-DUP4)			**Source: 4070847-21**		Prepared: 07/09/24 Analyzed: 07/11/24					
Antimony	0.0640	0.0325	ng/m³ Air		0.0643			0.391	10	SL
Arsenic	0.233	0.00789	ng/m³ Air		0.231			0.719	10	
Barium	2.80	0.901	ng/m³ Air		2.79			0.438	10	
Beryllium	0.0157	0.00270	ng/m³ Air		0.0156			0.681	10	
Cadmium	ND	0.0624	ng/m³ Air		ND				10	U
Chromium	2.09	1.86	ng/m³ Air		2.07			0.940	10	
Cobalt	0.311	0.0367	ng/m³ Air		0.310			0.343	10	
Copper	61.0	2.22	ng/m³ Air		60.4			0.950	10	
Lead	0.524	0.180	ng/m³ Air		0.522			0.249	10	

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REPORTED: 07/18/24 11:53
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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 B4G0909 - ICP-MS Extraction										
Duplicate (B4G0909-DUP4) Continued		**Source: 4070847-21**		Prepared: 07/09/24	Analyzed: 07/11/24					
Manganese	8.09	1.59	ng/m³ Air		8.10			0.151	10	
Molybdenum	2.73	0.302	ng/m³ Air		2.71			0.840	10	
Nickel	1.23	0.549	ng/m³ Air		1.23			0.0848	10	
Selenium	0.149	0.00755	ng/m³ Air		0.143			3.67	10	
Thallium	8.52E-4	4.96E-4	ng/m³ Air		9.17E-4			7.43	10	
Vanadium	1.00	0.0446	ng/m³ Air		0.998			0.444	10	
Zinc	ND	64.7	ng/m³ Air		ND				10	U
Duplicate (B4G0909-DUP5)		**Source: 4070847-06R**		Prepared: 07/09/24	Analyzed: 07/11/24					
Antimony	ND	0.152	ng/m³ Air		ND				10	U
Arsenic	0.619	0.0369	ng/m³ Air		0.589			5.06	10	
Barium	5.58	4.21	ng/m³ Air		5.36			4.00	10	
Beryllium	0.0173	0.0126	ng/m³ Air		0.0189			8.75	10	
Cadmium	ND	0.291	ng/m³ Air		ND				10	U
Chromium	ND	8.69	ng/m³ Air		ND				10	U
Cobalt	0.689	0.172	ng/m³ Air		0.665			3.45	10	
Copper	102	10.3	ng/m³ Air		104			1.16	10	
Lead	1.13	0.842	ng/m³ Air		1.14			0.826	10	
Manganese	20.5	7.43	ng/m³ Air		19.9			2.70	10	
Molybdenum	2.47	1.41	ng/m³ Air		2.45			0.695	10	
Nickel	2.91	2.56	ng/m³ Air		ND				10	
Selenium	0.170	0.0352	ng/m³ Air		0.172			1.60	10	
Thallium	ND	0.00232	ng/m³ Air		ND				10	U
Vanadium	1.96	0.208	ng/m³ Air		1.91			2.52	10	
Zinc	ND	302	ng/m³ Air		ND				10	U
Matrix Spike (B4G0909-MS1)		**Source: 4070847-06**		Prepared: 07/09/24	Analyzed: 07/10/24					
Antimony	0.734	0.0304	ng/m³ Air	1.0880	0.129	55.6	80-120			SL
Arsenic	2.63	0.00737	ng/m³ Air	2.1760	0.578	94.3	80-120			
Barium	26.1	0.842	ng/m³ Air	21.760	5.17	96.0	80-120			
Beryllium	1.08	0.00252	ng/m³ Air	1.0880	0.0187	98.0	80-120			
Cadmium	1.06	0.0583	ng/m³ Air	1.0880	ND	97.4	80-120			
Chromium	13.7	1.74	ng/m³ Air	10.880	3.16	96.5	80-120			
Cobalt	1.75	0.0343	ng/m³ Air	1.0880	0.634	102	80-120			
Copper	119	2.07	ng/m³ Air	21.760	97.9	95.9	80-120			
Lead	11.3	0.168	ng/m³ Air	10.880	1.09	93.9	80-120			
Manganese	26.5	1.49	ng/m³ Air	6.5281	19.2	112	80-120			
Molybdenum	2.86	0.282	ng/m³ Air	1.0880	2.06	74.0	80-120			QM-07
Nickel	4.14	0.513	ng/m³ Air	2.1760	2.00	98.7	80-120			
Selenium	2.10	0.00705	ng/m³ Air	2.1760	0.169	88.8	80-120			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G0909 - ICP-MS Extraction										
Matrix Spike (B4G0909-MS1) Continued Source: 4070847-06 Prepared: 07/09/24 Analyzed: 07/10/24										
Thallium	0.0974	4.63E-4	ng/m³ Air	0.10880	0.00113	88.5	80-120			
Vanadium	4.15	0.0416	ng/m³ Air	2.1760	1.93	102	80-120			
Zinc	90.2	60.4	ng/m³ Air	65.281	ND	138	80-120			
Matrix Spike (B4G0909-MS2) Source: 4070847-26 Prepared: 07/09/24 Analyzed: 07/10/24										
Antimony	0.856	0.0352	ng/m³ Air	1.2609	0.110	59.2	80-120			SL
Arsenic	4.08	0.00854	ng/m³ Air	2.5218	1.40	106	80-120			
Barium	29.6	0.976	ng/m³ Air	25.218	3.80	102	80-120			
Beryllium	1.32	0.00292	ng/m³ Air	1.2609	0.0133	103	80-120			
Cadmium	1.32	0.0676	ng/m³ Air	1.2609	ND	105	80-120			
Chromium	16.5	2.01	ng/m³ Air	12.609	2.96	107	80-120			
Cobalt	1.88	0.0398	ng/m³ Air	1.2609	0.468	112	80-120			
Copper	71.4	2.40	ng/m³ Air	25.218	39.4	127	80-120			QM-07
Lead	13.8	0.195	ng/m³ Air	12.609	0.844	103	80-120			
Manganese	24.3	1.72	ng/m³ Air	7.5653	15.0	122	80-120			QM-07
Molybdenum	3.62	0.327	ng/m³ Air	1.2609	2.31	104	80-120			
Nickel	4.43	0.594	ng/m³ Air	2.5218	1.47	117	80-120			
Selenium	2.66	0.00817	ng/m³ Air	2.5218	0.147	99.8	80-120			
Thallium	0.126	5.37E-4	ng/m³ Air	0.12609	8.51E-4	99.1	80-120			
Vanadium	3.94	0.0482	ng/m³ Air	2.5218	1.23	107	80-120			
Zinc	111	70.0	ng/m³ Air	75.653	ND	147	80-120			
Matrix Spike (B4G0909-MS3) Source: 4070847-06R Prepared: 07/09/24 Analyzed: 07/11/24										
Antimony	0.739	0.152	ng/m³ Air	1.0880	ND	67.9	80-120			
Arsenic	2.71	0.0369	ng/m³ Air	2.1760	0.589	97.6	80-120			
Barium	26.9	4.21	ng/m³ Air	21.760	5.36	98.9	80-120			
Beryllium	1.03	0.0126	ng/m³ Air	1.0880	0.0189	92.6	80-120			
Cadmium	1.13	0.291	ng/m³ Air	1.0880	ND	104	80-120			
Chromium	14.0	8.69	ng/m³ Air	10.880	ND	128	80-120			
Cobalt	1.81	0.172	ng/m³ Air	1.0880	0.665	105	80-120			
Copper	128	10.3	ng/m³ Air	21.760	104	111	80-120			
Lead	11.7	0.842	ng/m³ Air	10.880	1.14	96.9	80-120			
Manganese	27.3	7.43	ng/m³ Air	6.5281	19.9	113	80-120			
Molybdenum	3.44	1.41	ng/m³ Air	1.0880	2.45	90.8	80-120			
Nickel	4.34	2.56	ng/m³ Air	2.1760	ND	200	80-120			
Selenium	2.26	0.0352	ng/m³ Air	2.1760	0.172	96.0	80-120			
Thallium	0.103	0.00232	ng/m³ Air	0.10880	ND	95.1	80-120			
Vanadium	4.17	0.208	ng/m³ Air	2.1760	1.91	104	80-120			
Zinc	ND	302	ng/m³ Air	65.281	ND		80-120			U
Matrix Spike Dup (B4G0909-MSD1) Source: 4070847-06 Prepared: 07/09/24 Analyzed: 07/10/24										

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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 B4G0909 - ICP-MS Extraction										
Matrix Spike Dup (B4G0909-MSD1) Conti			**Source: 4070847-06**		Prepared: 07/09/24		Analyzed: 07/10/24			
Antimony	0.722	0.0304	ng/m³ Air	1.0880	0.129	54.5	80-120	1.62	20	SL
Arsenic	2.61	0.00737	ng/m³ Air	2.1760	0.578	93.6	80-120	0.641	20	
Barium	26.0	0.842	ng/m³ Air	21.760	5.17	95.7	80-120	0.225	20	
Beryllium	1.10	0.00252	ng/m³ Air	1.0880	0.0187	99.0	80-120	1.04	20	
Cadmium	1.06	0.0583	ng/m³ Air	1.0880	ND	97.0	80-120	0.384	20	
Chromium	13.7	1.74	ng/m³ Air	10.880	3.16	97.3	80-120	0.622	20	
Cobalt	1.74	0.0343	ng/m³ Air	1.0880	0.634	101	80-120	0.656	20	
Copper	117	2.07	ng/m³ Air	21.760	97.9	86.3	80-120	1.78	20	
Lead	11.4	0.168	ng/m³ Air	10.880	1.09	95.0	80-120	1.06	20	
Manganese	26.2	1.49	ng/m³ Air	6.5281	19.2	107	80-120	1.46	20	
Molybdenum	2.79	0.282	ng/m³ Air	1.0880	2.06	67.4	80-120	2.54	20	QM-07
Nickel	4.09	0.513	ng/m³ Air	2.1760	2.00	96.1	80-120	1.36	20	
Selenium	2.11	0.00705	ng/m³ Air	2.1760	0.169	89.0	80-120	0.213	20	
Thallium	0.0994	4.63E-4	ng/m³ Air	0.10880	0.00113	90.3	80-120	1.98	20	
Vanadium	4.11	0.0416	ng/m³ Air	2.1760	1.93	99.9	80-120	1.11	20	
Zinc	88.7	60.4	ng/m³ Air	65.281	ND	136	80-120	1.58	20	
Matrix Spike Dup (B4G0909-MSD2)			**Source: 4070847-26**		Prepared: 07/09/24		Analyzed: 07/10/24			
Antimony	0.778	0.0352	ng/m³ Air	1.2609	0.110	53.0	80-120	9.55	20	SL
Arsenic	3.85	0.00854	ng/m³ Air	2.5218	1.40	96.9	80-120	5.87	20	
Barium	27.9	0.976	ng/m³ Air	25.218	3.80	95.7	80-120	5.74	20	
Beryllium	1.23	0.00292	ng/m³ Air	1.2609	0.0133	96.8	80-120	6.57	20	
Cadmium	1.25	0.0676	ng/m³ Air	1.2609	ND	98.8	80-120	6.07	20	
Chromium	15.5	2.01	ng/m³ Air	12.609	2.96	99.5	80-120	5.97	20	
Cobalt	1.75	0.0398	ng/m³ Air	1.2609	0.468	102	80-120	6.85	20	
Copper	67.5	2.40	ng/m³ Air	25.218	39.4	111	80-120	5.71	20	
Lead	12.8	0.195	ng/m³ Air	12.609	0.844	95.1	80-120	7.36	20	
Manganese	23.1	1.72	ng/m³ Air	7.5653	15.0	107	80-120	4.97	20	
Molybdenum	3.44	0.327	ng/m³ Air	1.2609	2.31	90.3	80-120	4.95	20	
Nickel	4.17	0.594	ng/m³ Air	2.5218	1.47	107	80-120	6.10	20	
Selenium	2.49	0.00817	ng/m³ Air	2.5218	0.147	92.9	80-120	6.74	20	
Thallium	0.117	5.37E-4	ng/m³ Air	0.12609	8.51E-4	91.8	80-120	7.62	20	
Vanadium	3.74	0.0482	ng/m³ Air	2.5218	1.23	99.6	80-120	5.10	20	
Zinc	105	70.0	ng/m³ Air	75.653	ND	139	80-120	5.95	20	
Matrix Spike Dup (B4G0909-MSD3)			**Source: 4070847-06R**		Prepared: 07/09/24		Analyzed: 07/11/24			
Antimony	0.718	0.152	ng/m³ Air	1.0880	ND	66.0	80-120	2.88	20	
Arsenic	2.68	0.0369	ng/m³ Air	2.1760	0.589	95.9	80-120	1.34	20	
Barium	26.3	4.21	ng/m³ Air	21.760	5.36	96.2	80-120	2.20	20	
Beryllium	1.04	0.0126	ng/m³ Air	1.0880	0.0189	93.6	80-120	1.05	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: 07/18/24 11:53
SUBMITTED: 07/08/24
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 B4G0909 - ICP-MS Extraction										
Matrix Spike Dup (B4G0909-MSD3) Conti			**Source: 4070847-06R**		Prepared: 07/09/24		Analyzed: 07/11/24			
Cadmium	1.13	0.291	ng/m³ Air	1.0880	ND	104	80-120	0.571	20	
Chromium	13.8	8.69	ng/m³ Air	10.880	ND	127	80-120	1.19	20	
Cobalt	1.78	0.172	ng/m³ Air	1.0880	0.665	102	80-120	1.66	20	
Copper	124	10.3	ng/m³ Air	21.760	104	91.8	80-120	3.29	20	
Lead	11.5	0.842	ng/m³ Air	10.880	1.14	95.3	80-120	1.44	20	
Manganese	26.6	7.43	ng/m³ Air	6.5281	19.9	101	80-120	2.93	20	
Molybdenum	3.26	1.41	ng/m³ Air	1.0880	2.45	74.6	80-120	5.26	20	
Nickel	4.27	2.56	ng/m³ Air	2.1760	ND	196	80-120	1.58	20	
Selenium	2.23	0.0352	ng/m³ Air	2.1760	0.172	94.6	80-120	1.31	20	
Thallium	0.104	0.00232	ng/m³ Air	0.10880	ND	95.5	80-120	0.441	20	
Vanadium	4.00	0.208	ng/m³ Air	2.1760	1.91	96.0	80-120	4.28	20	
Zinc	ND	302	ng/m³ Air	65.281	ND		80-120		20	U
Post Spike (B4G0909-PS1)			**Source: 4070847-06**		Prepared: 07/09/24		Analyzed: 07/10/24			
Antimony	0.340	0.0304	ng/m³ Air	0.21760	0.129	97.3	75-125			SL
Arsenic	1.57	0.00737	ng/m³ Air	1.0880	0.578	91.2	75-125			
Barium	7.16	0.842	ng/m³ Air	2.1760	5.17	91.8	75-125			
Beryllium	0.233	0.00252	ng/m³ Air	0.21760	0.0187	98.7	75-125			
Cadmium	0.119	0.0583	ng/m³ Air	0.10880	ND	109	75-125			
Chromium	4.24	1.74	ng/m³ Air	1.0880	3.16	99.1	75-125			
Cobalt	0.845	0.0343	ng/m³ Air	0.21760	0.634	96.8	75-125			
Copper	109	2.07	ng/m³ Air	10.880	97.9	101	75-125			
Lead	21.7	0.168	ng/m³ Air	21.760	1.09	94.9	75-125			
Manganese	21.4	1.49	ng/m³ Air	2.1760	19.2	101	75-125			
Molybdenum	2.90	0.282	ng/m³ Air	1.0880	2.06	77.5	75-125			
Nickel	4.19	0.513	ng/m³ Air	2.1760	2.00	101	75-125			
Selenium	1.11	0.00705	ng/m³ Air	1.0880	0.169	86.5	75-125			
Thallium	0.0515	4.63E-4	ng/m³ Air	5.4401E-2	0.00113	92.6	75-125			
Vanadium	2.99	0.0416	ng/m³ Air	1.0880	1.93	97.6	75-125			
Zinc	ND	60.4	ng/m³ Air	21.760	ND		75-125			U
Post Spike (B4G0909-PS2)			**Source: 4070847-26**		Prepared: 07/09/24		Analyzed: 07/10/24			
Antimony	0.358	0.0352	ng/m³ Air	0.25218	0.110	98.2	75-125			SL
Arsenic	2.62	0.00854	ng/m³ Air	1.2609	1.40	96.9	75-125			
Barium	6.34	0.976	ng/m³ Air	2.5218	3.80	100	75-125			
Beryllium	0.263	0.00292	ng/m³ Air	0.25218	0.0133	99.0	75-125			
Cadmium	0.146	0.0676	ng/m³ Air	0.12609	ND	116	75-125			
Chromium	4.31	2.01	ng/m³ Air	1.2609	2.96	107	75-125			
Cobalt	0.727	0.0398	ng/m³ Air	0.25218	0.468	103	75-125			
Copper	54.2	2.40	ng/m³ Air	12.609	39.4	117	75-125			

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FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
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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 B4G0909 - ICP-MS Extraction										
Post Spike (B4G0909-PS2) Continued			**Source: 4070847-26**		Prepared: 07/09/24		Analyzed: 07/10/24			
Lead	25.9	0.195	ng/m³ Air	25.218	0.844	99.5	75-125			
Manganese	17.7	1.72	ng/m³ Air	2.5218	15.0	108	75-125			
Molybdenum	3.40	0.327	ng/m³ Air	1.2609	2.31	87.0	75-125			
Nickel	4.13	0.594	ng/m³ Air	2.5218	1.47	105	75-125			
Selenium	1.35	0.00817	ng/m³ Air	1.2609	0.147	95.0	75-125			
Thallium	0.0624	5.37E-4	ng/m³ Air	6.3044E-2	8.51E-4	97.6	75-125			
Vanadium	2.50	0.0482	ng/m³ Air	1.2609	1.23	101	75-125			
Zinc	ND	70.0	ng/m³ Air	25.218	ND		75-125			U
Post Spike (B4G0909-PS3)			**Source: 4070847-06R**		Prepared: 07/09/24		Analyzed: 07/11/24			
Antimony	0.340	0.152	ng/m³ Air	0.21760	ND	156	75-125			
Arsenic	1.56	0.0369	ng/m³ Air	1.0880	0.589	88.8	75-125			
Barium	7.30	4.21	ng/m³ Air	2.1760	5.36	89.2	75-125			
Beryllium	0.217	0.0126	ng/m³ Air	0.21760	0.0189	90.9	75-125			
Cadmium	ND	0.291	ng/m³ Air	0.10880	ND		75-125			U
Chromium	ND	8.69	ng/m³ Air	1.0880	ND		75-125			U
Cobalt	0.863	0.172	ng/m³ Air	0.21760	0.665	91.0	75-125			
Copper	116	10.3	ng/m³ Air	10.880	104	112	75-125			
Lead	21.6	0.842	ng/m³ Air	21.760	1.14	94.2	75-125			
Manganese	21.7	7.43	ng/m³ Air	2.1760	19.9	79.1	75-125			
Molybdenum	3.39	1.41	ng/m³ Air	1.0880	2.45	85.8	75-125			
Nickel	4.32	2.56	ng/m³ Air	2.1760	ND	198	75-125			
Selenium	1.17	0.0352	ng/m³ Air	1.0880	0.172	91.8	75-125			
Thallium	0.0509	0.00232	ng/m³ Air	5.4401E-2	ND	93.6	75-125			
Vanadium	2.89	0.208	ng/m³ Air	1.0880	1.91	90.1	75-125			
Zinc	ND	302	ng/m³ Air	21.760	ND		75-125			U
Dilution Check (B4G0909-SRL1)			**Source: 4070847-06**		Prepared: 07/09/24		Analyzed: 07/10/24			
Antimony	ND	0.152	ng/m³ Air		ND				10	SL, U
Arsenic	0.594	0.0369	ng/m³ Air		0.578			2.88	10	
Barium	5.35	4.21	ng/m³ Air		5.17			3.52	10	
Beryllium	0.0189	0.0126	ng/m³ Air		0.0187			1.21	10	
Cadmium	ND	0.291	ng/m³ Air		ND				10	U
Chromium	ND	8.69	ng/m³ Air		ND				10	U
Cobalt	0.650	0.172	ng/m³ Air		0.634			2.45	10	
Copper	102	10.3	ng/m³ Air		97.9			4.28	10	
Lead	1.11	0.842	ng/m³ Air		1.09			2.33	10	
Manganese	19.6	7.43	ng/m³ Air		19.2			1.84	10	
Molybdenum	2.35	1.41	ng/m³ Air		2.06			13.3	10	
Nickel	ND	2.56	ng/m³ Air		ND				10	U

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FILE #: 4205.00.003.001
REPORTED: 07/18/24 11:53
SUBMITTED: 07/08/24
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 B4G0909 - ICP-MS Extraction										
Dilution Check (B4G0909-SRL1) Continue				**Source: 4070847-06**			Prepared: 07/09/24	Analyzed: 07/10/24		
Selenium	0.168	0.0352	ng/m³ Air		0.169			0.329	10	
Thallium	0.00251	0.00232	ng/m³ Air		ND			75.5	10	
Vanadium	1.91	0.208	ng/m³ Air		1.93			1.05	10	
Zinc	ND	302	ng/m³ Air		ND				10	U
Dilution Check (B4G0909-SRL2)				**Source: 4070847-26**			Prepared: 07/09/24	Analyzed: 07/10/24		
Antimony	ND	0.176	ng/m³ Air		ND				10	SL, U
Arsenic	1.42	0.0427	ng/m³ Air		1.40			1.64	10	
Barium	ND	4.88	ng/m³ Air		ND				10	U
Beryllium	ND	0.0146	ng/m³ Air		ND				10	U
Cadmium	ND	0.338	ng/m³ Air		ND				10	U
Chromium	ND	10.1	ng/m³ Air		ND				10	U
Cobalt	0.468	0.199	ng/m³ Air		0.468			0.0612	10	
Copper	39.7	12.0	ng/m³ Air		39.4			0.889	10	
Lead	ND	0.976	ng/m³ Air		ND				10	U
Manganese	15.0	8.62	ng/m³ Air		15.0			0.467	10	
Molybdenum	2.54	1.64	ng/m³ Air		2.31			9.75	10	
Nickel	ND	2.97	ng/m³ Air		ND				10	U
Selenium	0.143	0.0408	ng/m³ Air		0.147			2.93	10	
Thallium	ND	0.00269	ng/m³ Air		ND				10	U
Vanadium	1.20	0.241	ng/m³ Air		1.23			2.60	10	
Zinc	ND	350	ng/m³ Air		ND				10	U
Dilution Check (B4G0909-SRL3)				**Source: 4070847-06R**			Prepared: 07/09/24	Analyzed: 07/11/24		
Antimony	ND	0.759	ng/m³ Air		ND				10	U
Arsenic	0.621	0.184	ng/m³ Air		0.589			5.31	10	
Barium	ND	21.0	ng/m³ Air		ND				10	U
Beryllium	ND	0.0629	ng/m³ Air		ND				10	U
Cadmium	ND	1.46	ng/m³ Air		ND				10	U
Chromium	ND	43.5	ng/m³ Air		ND				10	U
Cobalt	ND	0.858	ng/m³ Air		ND				10	U
Copper	105	51.7	ng/m³ Air		104			1.83	10	
Lead	ND	4.21	ng/m³ Air		ND				10	U
Manganese	ND	37.2	ng/m³ Air		ND				10	U
Molybdenum	ND	7.06	ng/m³ Air		ND				10	U
Nickel	ND	12.8	ng/m³ Air		ND				10	U
Selenium	0.195	0.176	ng/m³ Air		ND			12.4	10	
Thallium	ND	0.0116	ng/m³ Air		ND				10	U
Vanadium	1.70	1.04	ng/m³ Air		1.91			11.4	10	
Zinc	ND	1510	ng/m³ Air		ND				10	U

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Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
FB-01	Analyte exceeds Field Blank criteria.
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

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

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 07/17/2024 and Shanna Vasser 7/18/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 06/27/2024 – 07/03/2024
Report No: 4070847

√	1.	Chain of custody (CoC) documentation is present.
√	2.	Sample receipt condition information is present and acceptable.
√	3.	Laboratory conducting the analysis is identified.
X	4.	All samples submitted to the laboratory are accounted for.
√	5.	Requested analytical methods were performed.
√	6.	Analysis dates are provided.
√	7.	Analyte results are provided.
√	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:

4. MFL-AM04-062724-HM was listed on the CoC, but crossed off, voided (due to volume being less than the Department of Health set threshold), and not shipped to the laboratory. No results were present in the laboratory report for this sample because they were not shipped.
13. Field blank detections above the method detection limit were reported for arsenic and copper in MFL-FB01-062824-HM and for arsenic in MFL-FB01-070224-HM.

Notes:

1. A two-fold dilution was performed on MFL-AM01-062824-HM for arsenic, cadmium, molybdenum, and selenium. A five-fold dilution was performed on MFL-AM02-062824-HM for arsenic, cadmium, molybdenum, and selenium. A two-fold dilution was performed on MFL-AM04-070324-HM for lead and thallium.
2. A revised report was issued on 7/18/2024 to correct typos in volumes for MFL-AM01-062724-HM (1940.849 m^3) and MFL-AM02-062924-HM (1894.398 m^3).

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

July 31, 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 07/22/24 09:47.

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

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ATTN: Ms. Chelsea Saber
PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 07/31/24 13:55
SUBMITTED: 07/22/24
AQS SITE CODE:
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ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
[redacted]				

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REPORTED: 07/31/24 13:55
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MFL-AM04-062724-HM	4072229-32	Air	06/27/24 23:59	07/22/24 09:47

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REPORTED: 07/31/24 13:55
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AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-062724-HM
Matrix: Air
Lab ID: 4072229-32
Sample Volume: 1502.184 m³
Filter ID:
Sampled: 06/27/24 23:59
Received: 07/22/24 09:47
Analysis Date: 07/24/24 11:36

Comments: Q9539698 - Recieved 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**	**0.109**	SL	**0.0418**
Arsenic	**7440-38-2**	**0.509**		**0.0101**
Barium	**7440-39-3**	**4.72**		**1.16**
Beryllium	**7440-41-7**	**0.0203**		**0.00347**
Cadmium	7440-43-9	0.0134	U	0.0803
Chromium	**7440-47-3**	**3.17**		**2.39**
Cobalt	**7440-48-4**	**0.577**		**0.0472**
Copper	**7440-50-8**	**39.3**		**2.85**
Lead	**7439-92-1**	**1.08**		**0.232**
Manganese	**7439-96-5**	**20.1**		**2.05**
Molybdenum	**7439-98-7**	**1.52**		**0.389**
Nickel	**7440-02-0**	**1.76**		**0.706**
Selenium	**7782-49-2**	**0.161**		**0.00970**
Thallium	**7440-28-0**	**0.00121**		**6.38E-4**
Vanadium	**7440-62-2**	**1.58**		**0.0573**
Zinc	7440-66-6	18.3	U	83.2

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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 2407087 - B4G2306										
Calibration Blank (2407087-CCB1)				Prepared & Analyzed: 07/23/24						
Antimony	0.473		ng/l							
Arsenic	0.282		ng/l							
Barium	1.75		ng/l							
Beryllium	-0.0656		ng/l							U
Cadmium	0.181		ng/l							
Chromium	3.73		ng/l							
Cobalt	0.146		ng/l							
Copper	69.6		ng/l							
Lead	1.64		ng/l							
Manganese	5.82		ng/l							
Molybdenum	28.0		ng/l							
Nickel	4.24		ng/l							
Selenium	3.00		ng/l							
Thallium	0.854		ng/l							
Vanadium	44.3		ng/l							
Zinc	-36.1		ng/l							U
Calibration Blank (2407087-CCB2)				Prepared & Analyzed: 07/23/24						
Antimony	0.257		ng/l							
Arsenic	6.56		ng/l							
Barium	1.57		ng/l							
Beryllium	-0.171		ng/l							U
Cadmium	0.0526		ng/l							
Chromium	2.62		ng/l							
Cobalt	0.238		ng/l							
Copper	81.2		ng/l							
Lead	1.48		ng/l							
Manganese	4.16		ng/l							
Molybdenum	6.71		ng/l							
Nickel	3.19		ng/l							
Selenium	4.61		ng/l							
Thallium	0.599		ng/l							
Vanadium	16.2		ng/l							
Zinc	-70.7		ng/l							U
Calibration Blank (2407087-CCB3)				Prepared: 07/23/24 Analyzed: 07/24/24						
Antimony	0.273		ng/l							
Arsenic	3.21		ng/l							
Barium	1.27		ng/l							
Beryllium	-0.280		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 2407087 - B4G2306										
Calibration Blank (2407087-CCB3) Contin				Prepared: 07/23/24 Analyzed: 07/24/24						
Cadmium	0.179		ng/l							
Chromium	4.25		ng/l							
Cobalt	0.197		ng/l							
Copper	88.4		ng/l							
Lead	1.61		ng/l							
Manganese	4.77		ng/l							
Molybdenum	8.73		ng/l							
Nickel	3.70		ng/l							
Selenium	5.65		ng/l							
Thallium	0.859		ng/l							
Vanadium	-3.12		ng/l							U
Zinc	-12.6		ng/l							U
Calibration Blank (2407087-CCB4)				Prepared: 07/23/24 Analyzed: 07/24/24						
Antimony	0.419		ng/l							
Arsenic	9.73		ng/l							
Barium	1.15		ng/l							
Beryllium	-0.276		ng/l							U
Cadmium	0.100		ng/l							
Chromium	6.94		ng/l							
Cobalt	0.219		ng/l							
Copper	60.8		ng/l							
Lead	1.68		ng/l							
Manganese	4.48		ng/l							
Molybdenum	6.26		ng/l							
Nickel	5.60		ng/l							
Selenium	10.0		ng/l							
Thallium	0.738		ng/l							
Vanadium	-11.6		ng/l							U
Zinc	-76.1		ng/l							U
Calibration Blank (2407087-CCB5)				Prepared: 07/23/24 Analyzed: 07/24/24						
Antimony	0.118		ng/l							
Arsenic	8.33		ng/l							
Barium	2.98		ng/l							
Beryllium	-0.773		ng/l							U
Cadmium	0.165		ng/l							
Chromium	6.27		ng/l							
Cobalt	0.293		ng/l							
Copper	55.9		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407087 - B4G2306										
Calibration Blank (2407087-CCB5) Contin				Prepared: 07/23/24 Analyzed: 07/24/24						
Lead	1.98		ng/l							
Manganese	6.59		ng/l							
Molybdenum	9.05		ng/l							
Nickel	4.74		ng/l							
Selenium	12.7		ng/l							
Thallium	0.888		ng/l							
Vanadium	-11.3		ng/l							U
Zinc	-68.0		ng/l							U
Calibration Blank (2407087-CCB6)				Prepared: 07/23/24 Analyzed: 07/24/24						
Antimony	0.283		ng/l							
Arsenic	9.08		ng/l							
Barium	2.24		ng/l							
Beryllium	-1.00		ng/l							U
Cadmium	0.124		ng/l							
Chromium	7.91		ng/l							
Cobalt	0.330		ng/l							
Copper	45.7		ng/l							
Lead	1.66		ng/l							
Manganese	3.62		ng/l							
Molybdenum	7.66		ng/l							
Nickel	3.99		ng/l							
Selenium	-3.37		ng/l							U
Thallium	0.766		ng/l							
Vanadium	-12.6		ng/l							U
Zinc	-72.8		ng/l							U
Calibration Blank (2407087-CCB7)				Prepared: 07/23/24 Analyzed: 07/24/24						
Antimony	0.149		ng/l							
Arsenic	7.54		ng/l							
Barium	1.82		ng/l							
Beryllium	-0.811		ng/l							U
Cadmium	0.204		ng/l							
Chromium	7.94		ng/l							
Cobalt	0.400		ng/l							
Copper	44.2		ng/l							
Lead	1.81		ng/l							
Manganese	4.39		ng/l							
Molybdenum	6.83		ng/l							
Nickel	3.30		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407087 - B4G2306										
Calibration Blank (2407087-CCB7) Contin				Prepared: 07/23/24 Analyzed: 07/24/24						
Selenium	7.52		ng/l							
Thallium	1.02		ng/l							
Vanadium	-14.8		ng/l							U
Zinc	-72.5		ng/l							U
Calibration Check (2407087-CCV1)				Prepared & Analyzed: 07/23/24						
Antimony	20300		ng/l	20000		102	90-110			
Arsenic	19900		ng/l	20000		99.6	90-110			
Barium	201000		ng/l	200000		100	90-110			
Beryllium	5090		ng/l	5000.0		102	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	237000		ng/l	240000		98.8	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	50500		ng/l	50000		101	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	19500		ng/l	20000		97.7	90-110			
Thallium	494		ng/l	500.00		98.9	90-110			
Vanadium	19800		ng/l	20000		98.9	90-110			
Zinc	514000		ng/l	500000		103	90-110			
Calibration Check (2407087-CCV2)				Prepared & Analyzed: 07/23/24						
Antimony	19900		ng/l	20000		99.6	90-110			
Arsenic	19500		ng/l	20000		97.7	90-110			
Barium	196000		ng/l	200000		97.9	90-110			
Beryllium	5210		ng/l	5000.0		104	90-110			
Cadmium	20000		ng/l	20000		100	90-110			
Chromium	233000		ng/l	240000		97.1	90-110			
Cobalt	50000		ng/l	50000		100	90-110			
Copper	2.00E6		ng/l	2.0000E6		99.9	90-110			
Lead	198000		ng/l	200000		99.0	90-110			
Manganese	496000		ng/l	500000		99.1	90-110			
Molybdenum	49500		ng/l	50000		99.1	90-110			
Nickel	120000		ng/l	120000		99.9	90-110			
Selenium	19500		ng/l	20000		97.6	90-110			
Thallium	478		ng/l	500.00		95.5	90-110			
Vanadium	19600		ng/l	20000		97.9	90-110			
Zinc	506000		ng/l	500000		101	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407087 - B4G2306										
Calibration Check (2407087-CCV3)				Prepared & Analyzed: 07/23/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	200000		ng/l	200000		100	90-110			
Beryllium	5130		ng/l	5000.0		103	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	236000		ng/l	240000		98.2	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.03E6		ng/l	2.0000E6		102	90-110			
Lead	201000		ng/l	200000		101	90-110			
Manganese	503000		ng/l	500000		101	90-110			
Molybdenum	50200		ng/l	50000		100	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	19600		ng/l	20000		97.8	90-110			
Thallium	489		ng/l	500.00		97.7	90-110			
Vanadium	19800		ng/l	20000		99.1	90-110			
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2407087-CCV4)				Prepared: 07/23/24 Analyzed: 07/24/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		102	90-110			
Barium	199000		ng/l	200000		99.4	90-110			
Beryllium	5380		ng/l	5000.0		108	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	239000		ng/l	240000		99.5	90-110			
Cobalt	51800		ng/l	50000		104	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	508000		ng/l	500000		102	90-110			
Molybdenum	51300		ng/l	50000		103	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	19600		ng/l	20000		98.2	90-110			
Thallium	486		ng/l	500.00		97.1	90-110			
Vanadium	19900		ng/l	20000		99.6	90-110			
Zinc	516000		ng/l	500000		103	90-110			
Calibration Check (2407087-CCV5)				Prepared: 07/23/24 Analyzed: 07/24/24						
Antimony	20700		ng/l	20000		104	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	203000		ng/l	200000		101	90-110			
Beryllium	5100		ng/l	5000.0		102	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407087 - B4G2306										
Calibration Check (2407087-CCV5) Contin					Prepared: 07/23/24 Analyzed: 07/24/24					
Cadmium	20800		ng/l	20000		104	90-110			
Chromium	238000		ng/l	240000		99.2	90-110			
Cobalt	52100		ng/l	50000		104	90-110			
Copper	2.07E6		ng/l	2.0000E6		104	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	517000		ng/l	500000		103	90-110			
Molybdenum	51700		ng/l	50000		103	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	19600		ng/l	20000		97.9	90-110			
Thallium	484		ng/l	500.00		96.9	90-110			
Vanadium	19900		ng/l	20000		99.5	90-110			
Zinc	520000		ng/l	500000		104	90-110			
Calibration Check (2407087-CCV6)					Prepared: 07/23/24 Analyzed: 07/24/24					
Antimony	20700		ng/l	20000		104	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	210000		ng/l	200000		105	90-110			
Beryllium	5200		ng/l	5000.0		104	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	52700		ng/l	50000		105	90-110			
Copper	2.13E6		ng/l	2.0000E6		106	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	519000		ng/l	500000		104	90-110			
Molybdenum	53900		ng/l	50000		108	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	19400		ng/l	20000		96.9	90-110			
Thallium	486		ng/l	500.00		97.2	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	522000		ng/l	500000		104	90-110			
Calibration Check (2407087-CCV7)					Prepared: 07/23/24 Analyzed: 07/24/24					
Antimony	20700		ng/l	20000		103	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	211000		ng/l	200000		105	90-110			
Beryllium	5300		ng/l	5000.0		106	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	52800		ng/l	50000		106	90-110			
Copper	2.13E6		ng/l	2.0000E6		106	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2407087 - B4G2306										
Calibration Check (2407087-CCV7) Contin					Prepared: 07/23/24 Analyzed: 07/24/24					
Lead	204000		ng/l	200000		102	90-110			
Manganese	518000		ng/l	500000		104	90-110			
Molybdenum	53900		ng/l	50000		108	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	19900		ng/l	20000		99.4	90-110			
Thallium	483		ng/l	500.00		96.6	90-110			
Vanadium	20200		ng/l	20000		101	90-110			
Zinc	528000		ng/l	500000		106	90-110			
High Cal Check (2407087-HCV1)					Prepared & Analyzed: 07/23/24					
Antimony	40200		ng/l	40000		101	95-105			
Arsenic	39700		ng/l	40000		99.2	95-105			
Barium	400000		ng/l	400000		100	95-105			
Beryllium	10100		ng/l	10000		101	95-105			
Cadmium	39900		ng/l	40000		99.7	95-105			
Chromium	475000		ng/l	480000		99.0	95-105			
Cobalt	99000		ng/l	100000		99.0	95-105			
Copper	3.95E6		ng/l	4.0000E6		98.7	95-105			
Lead	400000		ng/l	400000		100	95-105			
Manganese	995000		ng/l	1.0000E6		99.5	95-105			
Molybdenum	99100		ng/l	100000		99.1	95-105			
Nickel	236000		ng/l	240000		98.4	95-105			
Selenium	39600		ng/l	40000		99.0	95-105			
Thallium	981		ng/l	1000.0		98.1	95-105			
Vanadium	39800		ng/l	40000		99.6	95-105			
Zinc	988000		ng/l	1.0000E6		98.8	95-105			
Initial Cal Blank (2407087-ICB1)					Prepared & Analyzed: 07/23/24					
Antimony	0.799		ng/l							
Arsenic	-2.82		ng/l							U
Barium	2.00		ng/l							
Beryllium	-0.123		ng/l							U
Cadmium	0.157		ng/l							
Chromium	3.06		ng/l							
Cobalt	0.207		ng/l							
Copper	75.5		ng/l							
Lead	1.52		ng/l							
Manganese	11.1		ng/l							
Molybdenum	11.2		ng/l							
Nickel	-0.842		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 2407087 - B4G2306										
Initial Cal Blank (2407087-ICB1) Continu				Prepared & Analyzed: 07/23/24						
Selenium	20.4		ng/l							
Thallium	0.720		ng/l							
Vanadium	62.8		ng/l							
Zinc	-47.0		ng/l							U
Initial Cal Check (2407087-ICV1)				Prepared & Analyzed: 07/23/24						
Antimony	19600		ng/l	20000		97.9	90-110			
Arsenic	19300		ng/l	20000		96.6	90-110			
Barium	198000		ng/l	200000		98.9	90-110			
Beryllium	5070		ng/l	5000.0		101	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	238000		ng/l	240000		99.2	90-110			
Cobalt	47800		ng/l	50000		95.7	90-110			
Copper	2.01E6		ng/l	2.0000E6		101	90-110			
Lead	198000		ng/l	200000		99.2	90-110			
Manganese	496000		ng/l	500000		99.3	90-110			
Molybdenum	48700		ng/l	50000		97.5	90-110			
Nickel	118000		ng/l	120000		98.4	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	491		ng/l	500.00		98.1	90-110			
Vanadium	19800		ng/l	20000		99.2	90-110			
Zinc	511000		ng/l	500000		102	90-110			
Interference Check A (2407087-IFA1)				Prepared & Analyzed: 07/23/24						
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	320000		ng/l	300000		107	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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: 07/31/24 13:55
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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 2407087 - B4G2306										
Interference Check B (2407087-IFB1)				Prepared & Analyzed: 07/23/24						
Antimony	20600		ng/l	20000		103	80-120			
Arsenic	20300		ng/l	20000		102	80-120			
Barium	202000		ng/l	200000		101	80-120			
Beryllium	4900		ng/l	5000.0		97.9	80-120			
Cadmium	20000		ng/l	20000		99.9	80-120			
Chromium	231000		ng/l	240000		96.1	80-120			
Cobalt	49600		ng/l	50000		99.2	80-120			
Copper	1.92E6		ng/l	2.0000E6		95.8	80-120			
Lead	207000		ng/l	200000		103	80-120			
Manganese	508000		ng/l	500000		102	80-120			
Molybdenum	375000		ng/l	350000		107	80-120			
Nickel	116000		ng/l	120000		96.6	80-120			
Selenium	19100		ng/l	20000		95.4	80-120			
Thallium	514		ng/l	500.00		103	80-120			
Vanadium	19300		ng/l	20000		96.7	80-120			
Zinc	472000		ng/l	500000		94.5	80-120			
Batch B4G2306 - ICP-MS Extraction										
Blank (B4G2306-BLK1)				Prepared & Analyzed: 07/23/24						
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4G2306-BS1)				Prepared & Analyzed: 07/23/24						
Antimony	0.764	0.0386	ng/m³ Air	1.3829		55.3	80-120			SL
Arsenic	2.69	0.00937	ng/m³ Air	2.7658		97.4	80-120			
Barium	28.4	1.07	ng/m³ Air	27.658		103	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control

Batch B4G2306 - ICP-MS Extraction

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (B4G2306-BS1) Continued				Prepared & Analyzed: 07/23/24						
Beryllium	1.31	0.00320	ng/m³ Air	1.3829		94.5	80-120			
Cadmium	1.40	0.0741	ng/m³ Air	1.3829		102	80-120			
Chromium	14.9	2.21	ng/m³ Air	13.829		108	80-120			
Cobalt	1.38	0.0436	ng/m³ Air	1.3829		100	80-120			
Copper	29.4	2.63	ng/m³ Air	27.658		106	80-120			
Lead	13.8	0.214	ng/m³ Air	13.829		99.6	80-120			
Manganese	8.47	1.89	ng/m³ Air	8.2975		102	80-120			
Molybdenum	1.52	0.359	ng/m³ Air	1.3829		110	80-120			
Nickel	3.22	0.652	ng/m³ Air	2.7658		117	80-120			
Selenium	2.67	0.00896	ng/m³ Air	2.7658		96.7	80-120			
Thallium	0.135	5.89E-4	ng/m³ Air	0.13829		97.8	80-120			
Vanadium	2.73	0.0529	ng/m³ Air	2.7658		98.8	80-120			
Zinc	89.8	76.8	ng/m³ Air	82.975		108	80-120			
LCS (B4G2306-BS2)				Prepared & Analyzed: 07/23/24						
Antimony	0.745	0.0386	ng/m³ Air	1.3829		53.9	80-120			SL
Arsenic	2.70	0.00937	ng/m³ Air	2.7658		97.6	80-120			
Barium	28.3	1.07	ng/m³ Air	27.658		102	80-120			
Beryllium	1.35	0.00320	ng/m³ Air	1.3829		97.4	80-120			
Cadmium	1.41	0.0741	ng/m³ Air	1.3829		102	80-120			
Chromium	14.9	2.21	ng/m³ Air	13.829		108	80-120			
Cobalt	1.38	0.0436	ng/m³ Air	1.3829		99.9	80-120			
Copper	29.1	2.63	ng/m³ Air	27.658		105	80-120			
Lead	13.7	0.214	ng/m³ Air	13.829		99.4	80-120			
Manganese	8.49	1.89	ng/m³ Air	8.2975		102	80-120			
Molybdenum	1.52	0.359	ng/m³ Air	1.3829		110	80-120			
Nickel	3.23	0.652	ng/m³ Air	2.7658		117	80-120			
Selenium	2.63	0.00896	ng/m³ Air	2.7658		94.9	80-120			
Thallium	0.136	5.89E-4	ng/m³ Air	0.13829		98.2	80-120			
Vanadium	2.73	0.0529	ng/m³ Air	2.7658		98.7	80-120			
Zinc	89.8	76.8	ng/m³ Air	82.975		108	80-120			
Duplicate (B4G2306-DUP1)		**Source: 4072229-04**		Prepared & Analyzed: 07/23/24						
Antimony	0.0802	0.0330	ng/m³ Air		0.0832			3.64	10	SL
Arsenic	0.840	0.00800	ng/m³ Air		0.825			1.77	10	
Barium	7.30	0.913	ng/m³ Air		7.31			0.177	10	
Beryllium	0.0424	0.00273	ng/m³ Air		0.0407			3.87	10	
Cadmium	ND	0.0633	ng/m³ Air		ND				10	U
Chromium	6.64	1.89	ng/m³ Air		6.48			2.44	10	
Cobalt	1.33	0.0372	ng/m³ Air		1.33			0.0159	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 B4G2306 - ICP-MS Extraction										
Duplicate (B4G2306-DUP1) Continued			**Source: 4072229-04**		Prepared & Analyzed: 07/23/24					
Copper	25.0	2.25	ng/m³ Air		23.3			6.86	10	
Lead	2.02	0.183	ng/m³ Air		2.12			4.73	10	
Manganese	40.2	1.61	ng/m³ Air		39.8			0.808	10	
Molybdenum	1.04	0.306	ng/m³ Air		1.07			3.02	10	
Nickel	3.74	0.557	ng/m³ Air		3.59			4.13	10	
Selenium	0.275	0.00765	ng/m³ Air		0.266			3.56	10	
Thallium	0.00229	5.03E-4	ng/m³ Air		0.00231			0.923	10	
Vanadium	2.96	0.0452	ng/m³ Air		2.91			1.77	10	
Zinc	ND	65.6	ng/m³ Air		ND				10	U
Duplicate (B4G2306-DUP2)			**Source: 4072229-24**		Prepared & Analyzed: 07/23/24					
Antimony	0.159	0.0308	ng/m³ Air		0.163			1.97	10	SL
Arsenic	0.516	0.00748	ng/m³ Air		0.515			0.196	10	
Barium	6.71	0.855	ng/m³ Air		6.82			1.70	10	
Beryllium	0.0225	0.00256	ng/m³ Air		0.0224			0.236	10	
Cadmium	ND	0.0592	ng/m³ Air		ND				10	U
Chromium	3.31	1.77	ng/m³ Air		3.26			1.37	10	
Cobalt	0.682	0.0348	ng/m³ Air		0.672			1.53	10	
Copper	63.3	2.10	ng/m³ Air		63.2			0.239	10	
Lead	1.79	0.171	ng/m³ Air		1.69			5.48	10	
Manganese	21.8	1.51	ng/m³ Air		21.8			0.439	10	
Molybdenum	1.85	0.287	ng/m³ Air		1.82			1.75	10	
Nickel	1.82	0.521	ng/m³ Air		1.80			1.00	10	
Selenium	0.231	0.00716	ng/m³ Air		0.230			0.178	10	
Thallium	0.00193	4.70E-4	ng/m³ Air		0.00195			0.972	10	
Vanadium	2.00	0.0423	ng/m³ Air		2.00			0.270	10	
Zinc	ND	61.3	ng/m³ Air		ND				10	U
Duplicate (B4G2306-DUP3)			**Source: 4072229-14**		Prepared: 07/23/24 Analyzed: 07/24/24					
Antimony	0.0772	0.0345	ng/m³ Air		0.0795			2.88	10	SL
Arsenic	0.424	0.00837	ng/m³ Air		0.426			0.686	10	
Barium	3.50	0.955	ng/m³ Air		3.52			0.569	10	
Beryllium	0.0100	0.00286	ng/m³ Air		0.00915			9.34	10	
Cadmium	ND	0.0662	ng/m³ Air		ND				10	U
Chromium	2.37	1.97	ng/m³ Air		2.39			0.902	10	
Cobalt	0.327	0.0389	ng/m³ Air		0.331			1.20	10	
Copper	229	2.35	ng/m³ Air		231			0.697	10	
Lead	0.401	0.191	ng/m³ Air		0.401			0.0690	10	
Manganese	10.2	1.69	ng/m³ Air		10.4			1.15	10	
Molybdenum	11.3	0.321	ng/m³ Air		11.4			0.764	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 B4G2306 - ICP-MS Extraction										
Duplicate (B4G2306-DUP3) Continued		**Source: 4072229-14**		Prepared: 07/23/24 Analyzed: 07/24/24						
Nickel	0.927	0.582	ng/m³ Air		0.930			0.405	10	
Selenium	0.269	0.00800	ng/m³ Air		0.283			5.22	10	
Thallium	0.00185	5.26E-4	ng/m³ Air		0.00181			1.87	10	
Vanadium	1.10	0.0472	ng/m³ Air		1.10			0.272	10	
Zinc	ND	68.6	ng/m³ Air		ND				10	U
Duplicate (B4G2306-DUP4)		**Source: 4072229-30**		Prepared: 07/23/24 Analyzed: 07/24/24						
Antimony	0.0530	0.0329	ng/m³ Air		0.0528			0.321	10	SL
Arsenic	0.257	0.00799	ng/m³ Air		0.257			0.239	10	
Barium	4.20	0.913	ng/m³ Air		4.22			0.338	10	
Beryllium	0.0572	0.00273	ng/m³ Air		0.0571			0.138	10	
Cadmium	ND	0.0632	ng/m³ Air		ND				10	U
Chromium	3.94	1.89	ng/m³ Air		3.94			0.0813	10	
Cobalt	0.749	0.0372	ng/m³ Air		0.748			0.123	10	
Copper	43.9	2.24	ng/m³ Air		43.9			0.0541	10	
Lead	0.493	0.183	ng/m³ Air		0.494			0.152	10	
Manganese	17.1	1.61	ng/m³ Air		17.2			0.752	10	
Molybdenum	2.15	0.306	ng/m³ Air		2.13			1.01	10	
Nickel	1.80	0.556	ng/m³ Air		1.81			0.171	10	
Selenium	0.197	0.00764	ng/m³ Air		0.189			4.23	10	
Thallium	0.00149	5.03E-4	ng/m³ Air		0.00151			1.79	10	
Vanadium	1.61	0.0451	ng/m³ Air		1.61			0.0949	10	
Zinc	ND	65.5	ng/m³ Air		ND				10	U
Matrix Spike (B4G2306-MS1)		**Source: 4072229-04**		Prepared & Analyzed: 07/23/24						
Antimony	0.526	0.0330	ng/m³ Air	1.1805	0.0832	37.5	80-120			SL
Arsenic	2.92	0.00800	ng/m³ Air	2.3610	0.825	88.9	80-120			
Barium	30.2	0.913	ng/m³ Air	23.610	7.31	97.1	80-120			
Beryllium	1.19	0.00273	ng/m³ Air	1.1805	0.0407	97.5	80-120			
Cadmium	1.19	0.0633	ng/m³ Air	1.1805	ND	101	80-120			
Chromium	17.2	1.89	ng/m³ Air	11.805	6.48	90.7	80-120			
Cobalt	2.50	0.0372	ng/m³ Air	1.1805	1.33	98.9	80-120			
Copper	45.8	2.25	ng/m³ Air	23.610	23.3	95.2	80-120			
Lead	13.4	0.183	ng/m³ Air	11.805	2.12	96.0	80-120			
Manganese	45.3	1.61	ng/m³ Air	7.0831	39.8	76.8	80-120			QM-4X
Molybdenum	2.06	0.306	ng/m³ Air	1.1805	1.07	84.2	80-120			
Nickel	5.58	0.557	ng/m³ Air	2.3610	3.59	84.6	80-120			
Selenium	2.42	0.00765	ng/m³ Air	2.3610	0.266	91.4	80-120			
Thallium	0.118	5.03E-4	ng/m³ Air	0.11805	0.00231	97.6	80-120			
Vanadium	4.86	0.0452	ng/m³ Air	2.3610	2.91	82.5	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G2306 - ICP-MS Extraction										
Matrix Spike (B4G2306-MS1) Continued Source: 4072229-04 Prepared & Analyzed: 07/23/24										
Zinc	91.4	65.6	ng/m³ Air	70.831	ND	129	80-120			
Matrix Spike (B4G2306-MS2) Source: 4072229-24 Prepared & Analyzed: 07/23/24										
Antimony	0.705	0.0308	ng/m³ Air	1.1046	0.163	49.1	80-120			SL
Arsenic	2.59	0.00748	ng/m³ Air	2.2093	0.515	93.8	80-120			
Barium	28.6	0.855	ng/m³ Air	22.093	6.82	98.6	80-120			
Beryllium	1.13	0.00256	ng/m³ Air	1.1046	0.0224	100	80-120			
Cadmium	1.12	0.0592	ng/m³ Air	1.1046	ND	101	80-120			
Chromium	14.2	1.77	ng/m³ Air	11.046	3.26	98.6	80-120			
Cobalt	1.76	0.0348	ng/m³ Air	1.1046	0.672	98.6	80-120			
Copper	86.4	2.10	ng/m³ Air	22.093	63.2	105	80-120			
Lead	12.8	0.171	ng/m³ Air	11.046	1.69	101	80-120			
Manganese	28.0	1.51	ng/m³ Air	6.6279	21.8	94.1	80-120			
Molybdenum	2.98	0.287	ng/m³ Air	1.1046	1.82	105	80-120			
Nickel	4.09	0.521	ng/m³ Air	2.2093	1.80	104	80-120			
Selenium	2.31	0.00716	ng/m³ Air	2.2093	0.230	94.0	80-120			
Thallium	0.107	4.70E-4	ng/m³ Air	0.11046	0.00195	94.9	80-120			
Vanadium	4.12	0.0423	ng/m³ Air	2.2093	2.00	95.7	80-120			
Zinc	86.9	61.3	ng/m³ Air	66.279	ND	131	80-120			
Matrix Spike Dup (B4G2306-MSD1) Source: 4072229-04 Prepared & Analyzed: 07/23/24										
Antimony	0.530	0.0330	ng/m³ Air	1.1805	0.0832	37.9	80-120	0.791	20	SL
Arsenic	2.99	0.00800	ng/m³ Air	2.3610	0.825	91.7	80-120	2.22	20	
Barium	30.9	0.913	ng/m³ Air	23.610	7.31	99.7	80-120	2.00	20	
Beryllium	1.17	0.00273	ng/m³ Air	1.1805	0.0407	95.4	80-120	2.14	20	
Cadmium	1.20	0.0633	ng/m³ Air	1.1805	ND	101	80-120	0.519	20	
Chromium	18.2	1.89	ng/m³ Air	11.805	6.48	99.3	80-120	5.77	20	
Cobalt	2.50	0.0372	ng/m³ Air	1.1805	1.33	99.0	80-120	0.0497	20	
Copper	46.7	2.25	ng/m³ Air	23.610	23.3	99.0	80-120	1.94	20	
Lead	13.7	0.183	ng/m³ Air	11.805	2.12	98.1	80-120	1.86	20	
Manganese	47.1	1.61	ng/m³ Air	7.0831	39.8	103	80-120	3.96	20	
Molybdenum	2.10	0.306	ng/m³ Air	1.1805	1.07	87.3	80-120	1.78	20	
Nickel	6.04	0.557	ng/m³ Air	2.3610	3.59	104	80-120	7.85	20	
Selenium	2.45	0.00765	ng/m³ Air	2.3610	0.266	92.7	80-120	1.23	20	
Thallium	0.117	5.03E-4	ng/m³ Air	0.11805	0.00231	97.4	80-120	0.232	20	
Vanadium	5.13	0.0452	ng/m³ Air	2.3610	2.91	94.1	80-120	5.48	20	
Zinc	93.2	65.6	ng/m³ Air	70.831	ND	132	80-120	1.87	20	
Matrix Spike Dup (B4G2306-MSD2) Source: 4072229-24 Prepared & Analyzed: 07/23/24										
Antimony	0.718	0.0308	ng/m³ Air	1.1046	0.163	50.3	80-120	1.87	20	SL
Arsenic	2.65	0.00748	ng/m³ Air	2.2093	0.515	96.7	80-120	2.49	20	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4G2306 - ICP-MS Extraction										
Matrix Spike Dup (B4G2306-MSD2) Conti				**Source: 4072229-24**		Prepared & Analyzed: 07/23/24				
Barium	31.5	0.855	ng/m³ Air	22.093	6.82	112	80-120	9.56	20	
Beryllium	1.12	0.00256	ng/m³ Air	1.1046	0.0224	99.3	80-120	0.906	20	
Cadmium	1.14	0.0592	ng/m³ Air	1.1046	ND	103	80-120	2.07	20	
Chromium	14.9	1.77	ng/m³ Air	11.046	3.26	106	80-120	5.40	20	
Cobalt	1.79	0.0348	ng/m³ Air	1.1046	0.672	101	80-120	1.75	20	
Copper	91.2	2.10	ng/m³ Air	22.093	63.2	127	80-120	5.36	20	QM-07
Lead	12.9	0.171	ng/m³ Air	11.046	1.69	101	80-120	0.510	20	
Manganese	28.4	1.51	ng/m³ Air	6.6279	21.8	101	80-120	1.52	20	
Molybdenum	3.31	0.287	ng/m³ Air	1.1046	1.82	135	80-120	10.4	20	QM-07
Nickel	4.12	0.521	ng/m³ Air	2.2093	1.80	105	80-120	0.820	20	
Selenium	2.34	0.00716	ng/m³ Air	2.2093	0.230	95.4	80-120	1.38	20	
Thallium	0.109	4.70E-4	ng/m³ Air	0.11046	0.00195	96.5	80-120	1.57	20	
Vanadium	4.18	0.0423	ng/m³ Air	2.2093	2.00	98.6	80-120	1.54	20	
Zinc	88.3	61.3	ng/m³ Air	66.279	ND	133	80-120	1.54	20	
Post Spike (B4G2306-PS1)				**Source: 4072229-04**		Prepared & Analyzed: 07/23/24				
Antimony	0.317	0.0330	ng/m³ Air	0.23610	0.0832	99.0	75-125			SL
Arsenic	1.93	0.00800	ng/m³ Air	1.1805	0.825	93.4	75-125			
Barium	9.52	0.913	ng/m³ Air	2.3610	7.31	93.6	75-125			
Beryllium	0.273	0.00273	ng/m³ Air	0.23610	0.0407	98.3	75-125			
Cadmium	0.158	0.0633	ng/m³ Air	0.11805	ND	134	75-125			
Chromium	7.62	1.89	ng/m³ Air	1.1805	6.48	96.3	75-125			
Cobalt	1.56	0.0372	ng/m³ Air	0.23610	1.33	96.6	75-125			
Copper	35.2	2.25	ng/m³ Air	11.805	23.3	101	75-125			
Lead	25.5	0.183	ng/m³ Air	23.610	2.12	99.2	75-125			
Manganese	42.5	1.61	ng/m³ Air	2.3610	39.8	113	75-125			
Molybdenum	2.13	0.306	ng/m³ Air	1.1805	1.07	89.6	75-125			
Nickel	5.92	0.557	ng/m³ Air	2.3610	3.59	98.9	75-125			
Selenium	1.35	0.00765	ng/m³ Air	1.1805	0.266	91.5	75-125			
Thallium	0.0598	5.03E-4	ng/m³ Air	5.9026E-2	0.00231	97.4	75-125			
Vanadium	4.05	0.0452	ng/m³ Air	1.1805	2.91	96.9	75-125			
Zinc	ND	65.6	ng/m³ Air	23.610	ND		75-125			PS-01, U
Post Spike (B4G2306-PS2)				**Source: 4072229-24**		Prepared & Analyzed: 07/23/24				
Antimony	0.387	0.0308	ng/m³ Air	0.22093	0.163	101	75-125			SL
Arsenic	1.57	0.00748	ng/m³ Air	1.1046	0.515	95.3	75-125			
Barium	8.97	0.855	ng/m³ Air	2.2093	6.82	97.3	75-125			
Beryllium	0.252	0.00256	ng/m³ Air	0.22093	0.0224	104	75-125			
Cadmium	0.128	0.0592	ng/m³ Air	0.11046	ND	116	75-125			
Chromium	4.29	1.77	ng/m³ Air	1.1046	3.26	92.8	75-125			

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 07/31/24 13:55
SUBMITTED: 07/22/24
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 B4G2306 - ICP-MS Extraction										
Post Spike (B4G2306-PS2) Continued		**Source: 4072229-24**		Prepared & Analyzed: 07/23/24						
Cobalt	0.888	0.0348	ng/m³ Air	0.22093	0.672	97.6	75-125			
Copper	74.3	2.10	ng/m³ Air	11.046	63.2	100	75-125			
Lead	24.1	0.171	ng/m³ Air	22.093	1.69	101	75-125			
Manganese	24.0	1.51	ng/m³ Air	2.2093	21.8	100	75-125			
Molybdenum	2.89	0.287	ng/m³ Air	1.1046	1.82	96.7	75-125			
Nickel	3.97	0.521	ng/m³ Air	2.2093	1.80	98.1	75-125			
Selenium	1.25	0.00716	ng/m³ Air	1.1046	0.230	92.6	75-125			
Thallium	0.0564	4.70E-4	ng/m³ Air	5.5232E-2	0.00195	98.5	75-125			
Vanadium	3.03	0.0423	ng/m³ Air	1.1046	2.00	93.0	75-125			
Zinc	ND	61.3	ng/m³ Air	22.093	ND		75-125			U
Dilution Check (B4G2306-SRL1)		**Source: 4072229-04**		Prepared & Analyzed: 07/23/24						
Antimony	ND	0.165	ng/m³ Air		ND				10	SL, U
Arsenic	0.886	0.0400	ng/m³ Air		0.825			7.12	10	
Barium	7.48	4.57	ng/m³ Air		7.31			2.25	10	
Beryllium	0.0441	0.0137	ng/m³ Air		0.0407			7.90	10	
Cadmium	ND	0.316	ng/m³ Air		ND				10	U
Chromium	ND	9.43	ng/m³ Air		ND				10	U
Cobalt	1.40	0.186	ng/m³ Air		1.33			5.13	10	
Copper	24.7	11.2	ng/m³ Air		23.3			5.86	10	
Lead	2.15	0.913	ng/m³ Air		2.12			1.48	10	
Manganese	41.9	8.07	ng/m³ Air		39.8			5.05	10	
Molybdenum	ND	1.53	ng/m³ Air		ND				10	U
Nickel	3.80	2.78	ng/m³ Air		3.59			5.76	10	
Selenium	0.288	0.0382	ng/m³ Air		0.266			8.10	10	
Thallium	0.00366	0.00251	ng/m³ Air		ND			45.1	10	
Vanadium	3.07	0.226	ng/m³ Air		2.91			5.40	10	
Zinc	ND	328	ng/m³ Air		ND				10	U
Dilution Check (B4G2306-SRL2)		**Source: 4072229-24**		Prepared & Analyzed: 07/23/24						
Antimony	0.160	0.154	ng/m³ Air		0.163			1.57	10	SL
Arsenic	0.530	0.0374	ng/m³ Air		0.515			2.85	10	
Barium	6.77	4.27	ng/m³ Air		6.82			0.716	10	
Beryllium	0.0238	0.0128	ng/m³ Air		0.0224			5.86	10	
Cadmium	ND	0.296	ng/m³ Air		ND				10	U
Chromium	ND	8.83	ng/m³ Air		ND				10	U
Cobalt	0.686	0.174	ng/m³ Air		0.672			2.09	10	
Copper	66.1	10.5	ng/m³ Air		63.2			4.48	10	
Lead	1.68	0.855	ng/m³ Air		1.69			0.570	10	
Manganese	22.3	7.55	ng/m³ Air		21.8			2.28	10	

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FILE #: 4205.00.003.001
REPORTED: 07/31/24 13:55
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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 B4G2306 - ICP-MS Extraction										
Dilution Check (B4G2306-SRL2) ContinueSource: 4072229-24 Prepared & Analyzed: 07/23/24										
Molybdenum	1.85	1.43	ng/m³ Air		1.82			1.32	10	
Nickel	ND	2.60	ng/m³ Air		ND				10	U
Selenium	0.270	0.0358	ng/m³ Air		0.230			15.7	10	SRD-01
Thallium	0.00393	0.00235	ng/m³ Air		ND			67.4	10	
Vanadium	2.07	0.211	ng/m³ Air		2.00			3.00	10	
Zinc	ND	307	ng/m³ Air		ND				10	U

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AQS SITE CODE:
SITE CODE: Lahaina fires

Notes and Definitions

U	Under Detection Limit
SRD-01	Serial dilution exceeds the control limits.
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QM-4X	The MS/MSD recovery exceeds criteria because the parent sample concentration is greater than 4x the spike concentration.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
PS-01	Post Spike exceeds DQO criteria.
FB-01	Analyte exceeds Field Blank criteria.
D	This result obtained by dilution.
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 08/01/2024 and Shanna Vasser 08/01/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 06/27/2024 and 07/11/2024 – 07/17/2027
Report No: 4072229

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

Discrepancies:

13. Field blank detections above the method detection limit were reported for arsenic, cobalt, copper, molybdenum, and vanadium in in MFL-FB01-071224-HM, for arsenic in MFL-FB01-071424-HM, and for arsenic in MFL-FB01-071624-HM.

Notes:

4. MFL-AM04-062724-HM was previously marked as void and not shipped due to low volume. It was later determined that there was sufficient volume for the lab to analyze and included with this shipment for analysis.
7. MFL-AM02-071124-HM was analyzed at a two-fold dilution for vanadium.