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

Lahaina, Maui

4/11/2024 – 4/17/2024

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

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

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

Air quality monitoring for particulate matter was collected at all four community locations over a 24-hour period each day in accordance with the draft CAMSP. Additionally, daily air samples were collected at all community locations, as depicted in **Figure 1**. Summary analytical data is presented in **Tables 1 and 2**. **Appendix 1** provides detailed analytical results for all community locations where air sampling was performed. Analytical results were compared to site-specific screening levels for particulate matter, asbestos, and heavy metals as described in the draft CAMSP. A summary of meteorological data is presented in **Table 3.** Overall wind conditions show approximately 1.3 mph in a generally average Southerly direction.

Results for Community Locations:
Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), as this is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week at each of the following locations: Leialii Hawaiian Homelands (April 13-April 17), WW Pump Station #4 (April 11-April 17), Lahaina Intermediate School (April 11-April 17), Lahaina Boys & Girls Club (April 11-April 17). Particulate monitoring at Leialii Hawaiian Homelands was not conducted on Apri 11 and 12 because of a power outage in the area.

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

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

There were 25 samples collected for asbestos fibers at community monitoring locations throughout this reporting period. Of the 25 samples collected, two samples collected at WW Pump Station #4 on April 15 and 16 were voided due to a greater than 10% discrepancy between the pre and post calibration flow rate values, as stated in the asbestos sampling SOP. Three asbestos samples at Leialii Hawaiian Homelands on April 11, 12, and 13 were not collected due to a power outage in the sampling area. In addition, the package containing 13 asbestos samples from all stations on April 11-14 was lost by FedEx,

therefore we do not have results to include in this report. At the time of submittal, a claim has been filed with FedEx and it appears the package has been found and is anticipated to be received by the lab. This report will be updated when the claim is closed, or the lab issues the analytical reports. All asbestos results were below the Site Screening Action Level (SSAL) of 0.003 fibers/cc and less than the lab's analytical sensitivity (see Table 1). Notably, the laboratory commented "Numerous gypsum fibers present" on samples collected at the following monitoring stations:

- Lahaina Intermediate School on April 16
- Lahaina Boys & Girls Club on April 15 and 16

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

Heavy metal samples from Leialii Hawaiian Homelands on April 11-13 were not collected due to a power outage in the sampling area. Heavy metal results for sample at WW Pump Station #4 on April 15 are delayed due to sample being included in the following shipment of samples. This report will be updated when the results are available. Low levels of heavy metals were detected in ambient air samples at all community sampling locations. Although heavy metals were detected, all concentrations were below the SSALs (see Table 1). The laboratory data sheets for the metals and asbestos samples collected from the community locations are found in **Appendix 1.**

Quality Control:

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

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

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

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

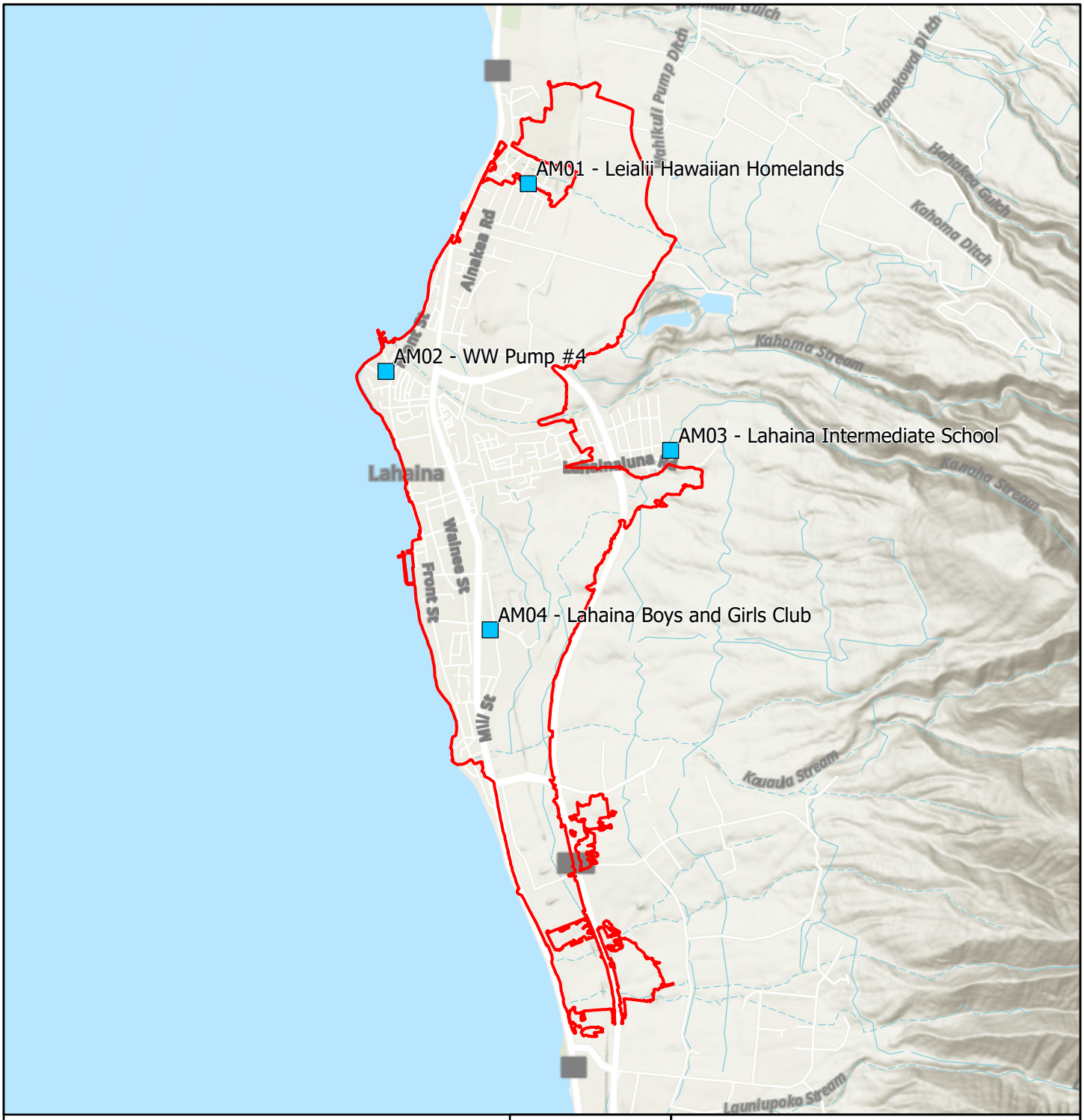
- U.S. EPA Compendium Method IO-2.1, Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 Using High Volume (HV) Sampler
- U.S. EPA Compendium Method IO-3.5: Compendium of Methods for the Determination of Inorganic Compounds in Ambient Air: Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry (ICP/MS). EPA/625/R-96/010a

- U.S. EPA 40 Code of Federal Regulations (CFR) Part 50, Method for the Determination of Lead in Total Suspended Particulate Matter.
- U.S. EPA 40 CFR Part 58, Appendix E: Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring
- Standard Operating Procedures for Lead Monitoring Using a TSP High Volume Sampler

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

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

Attachments



Air Sampling Locations

Lahaina Fire Perimeter

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results by Date
Maui Wildfire, Lahaina
4/11/2024-4/17/2024

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units		s/cc	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Screening Level*		0.003 [1]	0.7	0.05	1.2	0.05	0.02	12	0.01	240	1.5	0.12	4.8	0.02	48	24	0.24	1200
4/11/2024	Leialii Hawaiian Homelands (AM-01)																	
	WW Pump Station #4 (AM-02)		0.000113	0.000357	0.00340	0.00000856	ND	ND	0.000223	0.0283	0.000868	0.00808	0.00192	0.000962	0.000274	0.00000206	0.00107	ND
	Lahaina Intermediate School (AM-03)		0.000156	0.000535	0.00500	0.0000233	ND	0.00299	0.000569	0.0374	0.000922	0.0154	0.00222	0.00183	0.000291	0.00000248	0.00178	ND
	Lahaina Boys & Girls Club (AM-04)		0.000103	0.000415	0.00351	0.00000968	ND	0.00219	0.000284	0.0311	0.000960	0.00964	0.00164	0.00121	0.000254	0.00000199	0.00118	ND
4/12/2024	Leialii Hawaiian Homelands (AM-01)																	
	WW Pump Station #4 (AM-02)		0.000125	0.000464	0.00338	0.00000778	ND	ND	0.000236	0.0347	0.000864	0.00835	0.00175	0.00115	0.000290	0.00000153	0.00137	ND
	Lahaina Intermediate School (AM-03)		0.000103	0.000272	0.00403	0.0000225	ND	0.00353	0.000777	0.0381	0.000593	0.0167	0.00208	0.00254	0.000326	0.00000176	0.00240	ND
	Lahaina Boys & Girls Club (AM-04)		0.000171	0.000557	0.00464	0.0000124	ND	0.00251	0.000419	0.0350	0.00147	0.0132	0.00176	0.00178	0.000311	0.00000145	0.00191	ND
4/13/2024	Leialii Hawaiian Homelands (AM-01)																	
	WW Pump Station #4 (AM-02)		0.000124	0.000240	0.00319	0.00000654	ND	ND	0.000179	0.0358	0.000694	0.00637	0.00215	0.00106	0.000276	0.00000210	0.00112	ND
	Lahaina Intermediate School (AM-03)		0.0000964	0.000311	0.00404	0.0000191	ND	0.00250	0.000454	0.0475	0.000630	0.0115	0.00217	0.00170	0.000305	0.00000202	0.00180	ND
	Lahaina Boys & Girls Club (AM-04)		0.000104	0.000287	0.00342	0.00000865	ND	ND	0.000267	0.0306	0.00110	0.00850	0.00162	0.00126	0.000256	0.00000186	0.00132	ND
4/14/2024	Leialii Hawaiian Homelands (AM-01)		0.000128	0.00113	0.00392	0.00000796	ND	0.00230	0.000306	0.0674	0.000898	0.00961	0.00424	0.00186	0.000292	0.00000157	0.00110	ND
	WW Pump Station #4 (AM-02)		0.0000658	0.000287	0.00203	0.00000531	ND	ND	0.000146	0.0384	0.000518	0.00539	0.00238	0.000869	0.000294	0.00000132	0.000667	ND
	Lahaina Intermediate School (AM-03)		0.0000713	0.000317	0.00314	0.0000144	ND	0.00286	0.000545	0.0344	0.000451	0.0108	0.00164	0.00177	0.000321	0.00000143	0.00117	ND
	Lahaina Boys & Girls Club (AM-04)		0.000103	0.000869	0.00295	0.00000619	ND	0.00199	0.000220	0.0384	0.00102	0.00685	0.00214	0.00106	0.000287	0.00000133	0.000778	ND
4/15/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.000172	0.00325	0.00659	0.0000169	0.0000616	0.00442	0.000772	0.0692	0.00163	0.0218	0.00409	0.00246	0.000242	0.00000175	0.00201	ND
	WW Pump Station #4 (AM-02)																	
	Lahaina Intermediate School (AM-03)	<0.0024	0.000140	0.000151	0.00322	0.0000109	ND	0.00230	0.000394	0.0369	0.000696	0.00742	0.00146	0.00142	0.000189	0.00000101	0.000627	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000129	0.000389	0.00191	0.00000306	ND	ND	0.000115	0.0356	0.000625	0.00317	0.00186	0.000767	0.000161	0.000000901	0.000237	ND
4/16/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000819	0.000190	0.00294	0.00000266	ND	ND	0.000110	0.0735	0.000445	0.00285	0.00433	0.00119	0.000161	0.00000171	0.000396	ND
	WW Pump Station #4 (AM-02)		0.000236	0.000259	0.00752	0.00000912	ND	0.00229	0.000347	0.0420	0.000705	0.00936	0.00240	0.00175	0.000193	0.00000187	0.00101	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000837	0.000140	0.00245	0.00000546	ND	ND	0.000162	0.0532	0.000413	0.00386	0.00262	0.00102	0.000149	0.00000180	0.000478	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000101	0.000315	0.00393	0.00000888	ND	0.00192	0.000287	0.0309	0.000946	0.00874	0.00169	0.00121	0.000232	0.00000157	0.000801	ND
4/17/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000619	0.000165	0.00336	0.00000493	ND	0.00236	0.000288	0.0791	0.000942	0.00626	0.00370	0.00175	0.000117	0.000000681	0.000567	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000115	0.000261	0.00412	0.00000814	ND	0.00194	0.000331	0.0525	0.000778	0.00888	0.00260	0.00131	0.000139	0.000000886	0.000873	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000692	0.000111	0.00235	0.00000961	ND	0.00186	0.000213	0.0448	0.00132	0.00523	0.00225	0.00107	0.000128	0.000000817	0.000498	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000955	0.000345	0.00405	0.0000120	ND	0.00302	0.000404	0.0303	0.000976	0.0125	0.00177	0.00203	0.000233	0.00000101	0.000954	ND
95% Upper Confidence Limit[2]		NA	0.000130	0.000710	0.00419	0.0000130	NA	0.00286	0.000420	0.0486	0.000960	0.0114	0.00265	0.00165	0.000270	0.00000180	0.000141	NA

Notes:

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

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

s/cc = structures per cubic centimeter

ug/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 shown in Table 1 has been converted to micrograms per cubic meter so data was comparable to SSALs

Asbestos samples voided due to a greater than 10% discrepancy between the pre and post calibration flow rate values, as stated in the asbestos sampling SOP.

FedEx lost the package containing asbestos samples for 4/11-4/14. A claim was filed, this report will be updated when the claim has been resolved or sample results are available

Samples voided due to power outage

Sample held to confirm volume requirement was met, results pending. This report will be updated when the results are available.

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results for PM_{10}
Maui Wildfire, Lahaina
4/11/2024 - 4/17/2024

Screening Level		**150 µg/m^3**
4/11/2024	Leialii Hawaiian Homelands (AM-01)	
	WW Pump Station #4 (AM-02)	15
	Lahaina Intermediate School (AM-03)	15
	Lahaina Boys & Girls Club (AM-04)	14
4/12/2024	Leialii Hawaiian Homelands (AM-01)	
	WW Pump Station #4 (AM-02)	13
	Lahaina Intermediate School (AM-03)	16
	Lahaina Boys & Girls Club (AM-04)	12
4/13/2024	Leialii Hawaiian Homelands (AM-01)	13
	WW Pump Station #4 (AM-02)	14
	Lahaina Intermediate School (AM-03)	16
	Lahaina Boys & Girls Club (AM-04)	11
4/14/2024	Leialii Hawaiian Homelands (AM-01)	9.5
	WW Pump Station #4 (AM-02)	12
	Lahaina Intermediate School (AM-03)	15
	Lahaina Boys & Girls Club (AM-04)	9.5
4/15/2024	Leialii Hawaiian Homelands (AM-01)	5.6
	WW Pump Station #4 (AM-02)	9.4
	Lahaina Intermediate School (AM-03)	110
	Lahaina Boys & Girls Club (AM-04)	6.3
4/16/2024	Leialii Hawaiian Homelands (AM-01)	9.8
	WW Pump Station #4 (AM-02)	7.7
	Lahaina Intermediate School (AM-03)	6.8
	Lahaina Boys & Girls Club (AM-04)	6.2
4/17/2024	Leialii Hawaiian Homelands (AM-01)	6.9
	WW Pump Station #4 (AM-02)	8.7
	Lahaina Intermediate School (AM-03)	7.3
	Lahaina Boys & Girls Club (AM-04)	6.7

Notes:

µg/m3 = micrograms per cubic meter

24 hour TWA calculation results are shown in two significant figures

Results are based on 24 hour TWA calculation

No 24 hr TWA results due to power outage.

Results for Leialii Hawaiian Homelands (AM-01) on 4/13 are based on a 11 hr TWA because of a power outage.

Results for WW Pump Station #4 (AM-02) on 4/14 are based on a 19 hr TWA because of a power outage.

Results for WW Pump Station #4 (AM-02) on 4/13 are based on a 16 hr TWA because of a power outage.

Table 3
Maui Wildfire - Lahaina
Meteorological Data
4/11/2024-4/17/2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
4/11/2024	AM-01	Leialii Hawaiian Homelands					
4/11/2024	AM-02	WW Pump Station #4	0.7	SSE	78	73	761.0
4/11/2024	AM-03	Lahaina Intermediate School	1.0	SSE	74	73	751.6
4/11/2024	AM-04	Lahaina Boys & Girls Club	1.0	SSW	76	70	760.7
4/12/2024	AM-01	Leialii Hawaiian Homelands					
4/12/2024	AM-02	WW Pump Station #4	0.8	S	77	77	762.6
4/12/2024	AM-03	Lahaina Intermediate School	1.1	S	75	78	753.1
4/12/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	76	74	762.2
4/13/2024	AM-01	Leialii Hawaiian Homelands	1.6	SW	80	68	759.9
4/13/2024	AM-02	WW Pump Station #4	0.8	SSW	78	74	762.4
4/13/2024	AM-03	Lahaina Intermediate School	1.4	S	76	75	753.0
4/13/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	77	73	762.0
4/14/2024	AM-01	Leialii Hawaiian Homelands	1.3	SSE	77	77	758.9
4/14/2024	AM-02	WW Pump Station #4	1.4	SSE	77	81	761.1
4/14/2024	AM-03	Lahaina Intermediate School	2.4	SE	74	85	751.7
4/14/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSE	76	79	760.8
4/15/2024	AM-01	Leialii Hawaiian Homelands	1.3	S	75	77	757.8
4/15/2024	AM-02	WW Pump Station #4	1.2	SSE	77	78	760.6
4/15/2024	AM-03	Lahaina Intermediate School	1.5	SSE	73	82	750.5
4/15/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	74	79	759.6
4/16/2024	AM-01	Leialii Hawaiian Homelands	1.4	S	75	63	758.8
4/16/2024	AM-02	WW Pump Station #4	1.1	SE	76	65	761.0
4/16/2024	AM-03	Lahaina Intermediate School	1.4	SSE	74	66	751.7
4/16/2024	AM-04	Lahaina Boys & Girls Club	1.3	SSW	73	70	760.6
4/17/2024	AM-01	Leialii Hawaiian Homelands	1.6	S	77	60	760.4
4/17/2024	AM-02	WW Pump Station #4	1.1	SSE	76	63	762.7
4/17/2024	AM-03	Lahaina Intermediate School	1.2	SE	74	64	753.3
4/17/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	75	65	762.3

Notes:
°F - Fahrenheit
mBar - millibar
mph - miles per hour
Weather data for Leialii Hawaiian Homelands on 4/11 & 4/12 was not calculated due to a power outage not related to the monitoring equipment

Appendix 1

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

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

EMSL Order:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-041524-AB**

EMSL Sample Number:	042408082-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7190.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

EMSL Analytical, Inc.
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EMSL Order ID: 042408082
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: 042408082-0001 **Customer Sample:** MFL-AM01-041524-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	A6	None Detected									
A5	D4	None Detected									
A5	H7	None Detected									
A6	B4	None Detected									
A6	F7	None Detected									

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

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EMSL Order:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-041524-AB**

EMSL Sample Number:	042408082-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7215.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042408082
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: 042408082-0002 **Customer Sample:** MFL-AM03-041524-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	C5	None Detected									
B1	F2	None Detected									
B1	I7	None Detected									
B2	D5	None Detected									
B2	G3	None Detected									

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

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EMSL Order:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-041524-AB**

EMSL Sample Number:	042408082-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7273.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present

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EMSL Order ID: 042408082
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: 042408082-0003 **Customer Sample:** MFL-AM04-041524-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	A3	None Detected									
B5	F8	None Detected									
B5	I5	None Detected									
B6	C4	None Detected									
B6	H7	None Detected									

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

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EMSL Order:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-041524-AB**

EMSL Sample Number:	042408082-0004		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:	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**	**< 23.36**			
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: 042408082
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: 042408082-0004 **Customer Sample:** MFL-FB01-041524-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	I4	None Detected									
H1	G8	None Detected									
H1	D4	None Detected									
H1	A7	None Detected									
H2	C7	None Detected									
H2	E4	None Detected									
H2	J8	None Detected									
H3	H5	None Detected									
H3	D3	None Detected									
H3	B6	None Detected									

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

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EMSL Order:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-041624-AB**

EMSL Sample Number:	042408082-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7076.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	N/A			
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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EMSL Order ID: 042408082
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: 042408082-0005 **Customer Sample:** MFL-AM01-041624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C5	A6	None Detected									
C5	E5	None Detected									
C5	J6	None Detected									
C6	D3	None Detected									
C6	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:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-041624-AB**

EMSL Sample Number:	042408082-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7234.2
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:	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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

Numerous gypsum fibers present

Robyn Ray
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EMSL Order ID: 042408082
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: 042408082-0006 **Customer Sample:** MFL-AM03-041624-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	A4	None Detected									
D1	F7	None Detected									
D1	J9	None Detected									
D2	C3	None Detected									
D2	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:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-041624-AB**

EMSL Sample Number:	042408082-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7276.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	N/A			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present

Robyn Ray
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EMSL Order ID: 042408082
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: 042408082-0007 **Customer Sample:** MFL-AM04-041624-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	I8	None Detected									
D5	G4	None Detected									
D5	D5	None Detected									
D6	F9	None Detected									
D6	B6	None Detected									

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

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EMSL Order:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-041624-AB**

EMSL Sample Number:	042408082-0008		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:	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**	**< 23.36**			
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: 042408082
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: 042408082-0008 **Customer Sample:** MFL-FB01-041624-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	J6	None Detected									
E1	H9	None Detected									
E1	E4	None Detected									
E1	C5	None Detected									
E2	B9	None Detected									
E2	D4	None Detected									
E2	H6	None Detected									
E3	J7	None Detected									
E3	G3	None Detected									
E3	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:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-041724-AB**

EMSL Sample Number:	042408082-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7181.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042408082
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: 042408082-0009 **Customer Sample:** MFL-AM01-041724-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	B8	None Detected									
E5	E4	None Detected									
E5	I3	None Detected									
E6	G7	None Detected									
E6	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:	042408082
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-041724-AB**

EMSL Sample Number:	042408082-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7401.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Actinolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Amosite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Anthophyllite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Crocidolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Tremolite	ADX	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**
Other Minerals	-	0	0	< 46.72	< 0.0024	Not Applicable	0.0024
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0024**	**Not Applicable**	**0.0024**

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

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

Comment

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EMSL Order ID: 042408082
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: 042408082-0010 **Customer Sample:** MFL-AM02-041724-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	B3	None Detected									
F1	E7	None Detected									
F1	I9	None Detected									
F2	H6	None Detected									
F2	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:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/29/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-041724-AB**

EMSL Sample Number:	042408082-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7361.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042408082
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: 042408082-0011 **Customer Sample:** MFL-AM03-041724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I1	B7	None Detected									
I1	C5	None Detected									
I1	H5	None Detected									
I2	A5	None Detected									
I2	E4	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:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/29/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-041724-AB**

EMSL Sample Number:	042408082-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7247.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	9			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042408082
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: 042408082-0012 **Customer Sample:** MFL-AM04-041724-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	D4	None Detected									
G1	G5	None Detected									
G1	J4	None Detected									
G2	H7	None Detected									
G2	C5	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:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/29/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-041724-AB**

EMSL Sample Number:	042408082-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	A. Burke
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
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

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: 042408082
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: 042408082-0013 **Customer Sample:** MFL-FB01-041724-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	A5	None Detected									
G5	C4	None Detected									
G5	F3	None Detected									
G5	G6	None Detected									
G5	I4	None Detected									
G6	I7	None Detected									
G6	G5	None Detected									
G6	E7	None Detected									
G6	C8	None Detected									
G6	A7	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:	042408082
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:	04/22/2024 09:00 AM
Analysis Date:	04/24/2024
Report Date:	04/30/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042408082-0014		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:	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**	**< 23.36**			
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**			
Actinolite	ADX	0	0	< 23.36			
Amosite	ADX	0	0	< 23.36			
Anthophyllite	ADX	0	0	< 23.36			
Crocidolite	ADX	0	0	< 23.36			
Tremolite	ADX	0	0	< 23.36			
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**			
Other Minerals	-	0	0	< 23.36			
Total All Structures	**-**	**0**	**0**	**< 23.36**			

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042408082
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: 042408082-0014 **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	I4	None Detected									
A1	G7	None Detected									
A1	E4	None Detected									
A1	B6	None Detected									
A2	H3	None Detected									
A2	F8	None Detected									
A2	C5	None Detected									
A3	B8	None Detected									
A3	D5	None Detected									
A3	J6	None Detected									

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

OrderID: 042408082

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042408082

RECEIVED EMSL CINNAMINSON, NJ

24 APR 22 AM 10:32

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 Suber
Street Address: 1560 Broadway Ste. 1400
City, State, Zip: Denver, CO 80202 Country: USA
Phone: 703-489-2674
Email(s) for Report: chelsea.suber@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:
Purchase Order: 1207085
EMSL LIMS Project ID: (If applicable. EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Elizabeth Soldevila
Sampled By Signature:
No. of Samples in Shipment 13

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-AM01-041524-AB		7,190.431	04/15/24 1105
~~MFL-AM02-041524-AB~~	VOID	~~5,045.706~~	~~04/15/24 0502~~ (EKS)
MFL-AM03-041524-AB		7,215.840	04/15/24 1309
MFL-AM04-041524-AB		7,273.584	04/15/24 1331
MFL-FB01-041524-AB		0	04/15/24 1200
MFL-AM01-041624-AB		7,076.355	04/16/24 1059
~~MFL-AM02-041624-AB~~	VOID	~~7,597.945~~	~~04/16/24 1114~~ (EKS)
MFL-AM03-041624-AB		7,234.241	04/16/24 1307

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

MFL-AM02-041524-AB voided because post-cal value was greater than 10% deviation from pre-cal value.
MFL-AM02-041624-AB voided because post-cal value was greater than 10% deviation from pre-cal value

Method of Shipment: FedEx
Sample Condition Upon Receipt:

Relinquished by: Date/Time: 04/18/24 1600
Received by: FX Date/Time: 4/22/24 9:00 am

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

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

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

BCK

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.

All samples received acceptable for analysis.

OrderID: 042408082

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042408082

RECEIVED EMSL CINNAMINSON, NJ 24 APR 22 AM 10:52

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-AM04-041624-AB		7,267.663	04/16/24 1329
MFL-FB01-041624-AB		0	04/16/24 1200
MFL-AM01-041724-AB		7,181.020	04/17/24 1100
MFL-AM02-041724-AB		7,401.600	04/17/24 1118
MFL-AM03-041724-AB		7,360.978	04/17/24 1309
MFL-AM04-041724-AB		7,247.866	04/17/24 1327
MFL-FB01-041724-AB		0	04/17/24 1200

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by: [signature]	Date/Time: 04/18/24 1100	Received by: [signature] FEDEX	Date/Time: 4/22/24 9:00
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 05/03/2024 and Shanna Vasser 05/06/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 04/15/2024 – 04/17/2024
Report No: 42408082

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

Discrepancies:

4. MFL-AM02-041524-AB and MFL-AM02-041624-AB were listed on the CoC, crossed out, voided (due to post-cal value exceeding the criteria), and not shipped to the laboratory. No results were present in the laboratory report for either sample because they were not shipped.

Notes:

1. The report was revised on 05/03/24 to correct the sample volume for MFL-AM04-041624-AB.

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

May 01, 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 04/22/24 15:41.

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM02-041124-HM	4042234-02	Air	04/11/24 23:59	04/22/24 15:41
MFL-AM03-041124-HM	4042234-03	Air	04/11/24 23:59	04/22/24 15:41
MFL-AM04-041124-HM	4042234-04	Air	04/11/24 23:59	04/22/24 15:41
MFL-FB01-041124-HM	4042234-05	Air	04/11/24 00:00	04/22/24 15:41
MFL-AM02-041224-HM	4042234-07	Air	04/12/24 23:59	04/22/24 15:41
MFL-AM03-041224-HM	4042234-08	Air	04/12/24 23:59	04/22/24 15:41
MFL-AM04-041224-HM	4042234-09	Air	04/12/24 23:59	04/22/24 15:41
MFL-AM02-041324-HM/MS/I	4042234-11	Air	04/13/24 23:59	04/22/24 15:41
MFL-AM03-041324-HM	4042234-12	Air	04/13/24 23:59	04/22/24 15:41
MFL-AM04-041324-HM	4042234-13	Air	04/13/24 23:59	04/22/24 15:41
MFL-FB01-041324-HM	4042234-14	Air	04/13/24 00:00	04/22/24 15:41
MFL-AM01-041424-HM	4042234-15	Air	04/14/24 23:59	04/22/24 15:41
MFL-AM02-041424-HM	4042234-16	Air	04/14/24 23:59	04/22/24 15:41
MFL-AM03-041424-HM	4042234-17	Air	04/14/24 23:59	04/22/24 15:41
MFL-AM04-041424-HM	4042234-18	Air	04/14/24 23:59	04/22/24 15:41
MFL-AM01-041524-HM	4042234-19	Air	04/15/24 23:59	04/22/24 15:41
MFL-AM03-041524-HM	4042234-21	Air	04/15/24 23:59	04/22/24 15:41
MFL-AM04-041524-HM	4042234-22	Air	04/15/24 23:59	04/22/24 15:41
MFL-FB01-041524-HM	4042234-23	Air	04/15/24 00:00	04/22/24 15:41
MFL-AM01-041624-HM	4042234-24	Air	04/16/24 23:59	04/22/24 15:41
MFL-AM02-041624-HM	4042234-25	Air	04/16/24 23:59	04/22/24 15:41

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM03-041624-HM	4042234-26	Air	04/16/24 23:59	04/22/24 15:41
MFL-AM04-041624-HM	4042234-27	Air	04/16/24 23:59	04/22/24 15:41
MFL-AM01-041724-HM	4042234-28	Air	04/17/24 23:59	04/22/24 15:41
MFL-AM02-041724-HM	4042234-29	Air	04/17/24 23:59	04/22/24 15:41
MFL-AM03-041724-HM/MS/I	4042234-30	Air	04/17/24 23:59	04/22/24 15:41
MFL-AM04-041724-HM	4042234-31	Air	04/17/24 23:59	04/22/24 15:41
MFL-FB01-041724-HM	4042234-32	Air	04/17/24 00:00	04/22/24 15:41

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041124-HM
Matrix: Air
Lab ID: 4042234-02
Sample Volume: 2011.781 m³
Filter ID:
Sampled: 04/11/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 00:55

Comments: Q8508904 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.113**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.357**		**0.00758**
Barium	**7440-39-3**	**3.40**	QB-01	**0.865**
Beryllium	**7440-41-7**	**0.00856**		**0.00259**
Cadmium	7440-43-9	0.0111	U	0.0599
Chromium	7440-47-3	1.63	U	1.79
Cobalt	**7440-48-4**	**0.223**		**0.0353**
Copper	**7440-50-8**	**28.3**		**2.13**
Lead	**7439-92-1**	**0.868**		**0.173**
Manganese	**7439-96-5**	**8.08**		**1.53**
Molybdenum	**7439-98-7**	**1.92**		**0.290**
Nickel	**7440-02-0**	**0.962**		**0.527**
Selenium	**7782-49-2**	**0.274**	LJ, QX	**0.00725**
Thallium	**7440-28-0**	**0.00206**	QB-01	**4.76E-4**
Vanadium	**7440-62-2**	**1.07**		**0.0428**
Zinc	7440-66-6	35.9	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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041124-HM
Matrix: Air
Lab ID: 4042234-03
Sample Volume: 1871.036 m³
Filter ID:
Sampled: 04/11/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 01:14

Comments: Q8508902 - 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**	**0.156**	SL	**0.0336**
Arsenic	**7440-38-2**	**0.535**		**0.00815**
Barium	**7440-39-3**	**5.00**	QB-01	**0.930**
Beryllium	**7440-41-7**	**0.0233**		**0.00278**
Cadmium	7440-43-9	0.0226	U	0.0644
Chromium	**7440-47-3**	**2.99**		**1.92**
Cobalt	**7440-48-4**	**0.569**		**0.0379**
Copper	**7440-50-8**	**37.4**		**2.29**
Lead	**7439-92-1**	**0.922**		**0.186**
Manganese	**7439-96-5**	**15.4**		**1.64**
Molybdenum	**7439-98-7**	**2.22**		**0.312**
Nickel	**7440-02-0**	**1.83**		**0.567**
Selenium	**7782-49-2**	**0.291**	LJ, QX	**0.00779**
Thallium	**7440-28-0**	**0.00248**	QB-01	**5.12E-4**
Vanadium	**7440-62-2**	**1.78**		**0.0460**
Zinc	7440-66-6	48.8	U	66.8

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041124-HM
Matrix: Air
Lab ID: 4042234-04
Sample Volume: 1889.915 m³
Filter ID:
Sampled: 04/11/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 01:31

Comments: Q8508900 - 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	**0.0332**
Arsenic	**7440-38-2**	**0.415**		**0.00807**
Barium	**7440-39-3**	**3.51**	QB-01	**0.921**
Beryllium	**7440-41-7**	**0.00968**		**0.00275**
Cadmium	7440-43-9	0.0130	U	0.0638
Chromium	**7440-47-3**	**2.19**		**1.90**
Cobalt	**7440-48-4**	**0.284**		**0.0375**
Copper	**7440-50-8**	**31.1**		**2.26**
Lead	**7439-92-1**	**0.960**		**0.184**
Manganese	**7439-96-5**	**9.64**		**1.63**
Molybdenum	**7439-98-7**	**1.64**		**0.309**
Nickel	**7440-02-0**	**1.21**		**0.561**
Selenium	**7782-49-2**	**0.254**	LJ, QX	**0.00771**
Thallium	**7440-28-0**	**0.00199**	QB-01	**5.07E-4**
Vanadium	**7440-62-2**	**1.18**		**0.0455**
Zinc	7440-66-6	49.4	U	66.1

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-041124-HM
Matrix: Air
Lab ID: 4042234-05
Sample Volume: 2011.781 m³
Filter ID:
Sampled: 04/11/24 00:00
Received: 04/22/24 15:41
Analysis Date: 04/24/24 01:49

Comments: Q8508899 - 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	0.0188	U, SL	0.0312
Arsenic	**7440-38-2**	**0.0102**	FB-01	**0.00758**
Barium	7440-39-3	0.697	U, QB-01	0.865
Beryllium	7440-41-7	6.15E-4	U	0.00259
Cadmium	7440-43-9	6.15E-4	U	0.0599
Chromium	7440-47-3	0.905	U	1.79
Cobalt	7440-48-4	0.0169	U	0.0353
Copper	7440-50-8	0.565	U	2.13
Lead	7439-92-1	0.0371	U	0.173
Manganese	7439-96-5	0.388	U	1.53
Molybdenum	7439-98-7	0.132	U	0.290
Nickel	7440-02-0	0.384	U	0.527
Selenium	7782-49-2	ND	LJ, QX, U	0.00725
Thallium	7440-28-0	2.57E-4	QB-01, U	4.76E-4
Vanadium	**7440-62-2**	**0.0435**	FB-01	**0.0428**
Zinc	7440-66-6	34.7	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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041224-HM
Matrix: Air
Lab ID: 4042234-07
Sample Volume: 2074.718 m³
Filter ID:
Sampled: 04/12/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 02:03

Comments: Q8508895 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.125**	SL	**0.0303**
Arsenic	**7440-38-2**	**0.464**		**0.00735**
Barium	**7440-39-3**	**3.38**	QB-01	**0.839**
Beryllium	**7440-41-7**	**0.00778**		**0.00251**
Cadmium	7440-43-9	0.0119	U	0.0581
Chromium	7440-47-3	1.67	U	1.73
Cobalt	**7440-48-4**	**0.236**		**0.0342**
Copper	**7440-50-8**	**34.7**		**2.06**
Lead	**7439-92-1**	**0.864**		**0.168**
Manganese	**7439-96-5**	**8.35**		**1.48**
Molybdenum	**7439-98-7**	**1.75**		**0.282**
Nickel	**7440-02-0**	**1.15**		**0.511**
Selenium	**7782-49-2**	**0.290**	LJ, QX	**0.00703**
Thallium	**7440-28-0**	**0.00153**	QB-01	**4.62E-4**
Vanadium	**7440-62-2**	**1.37**		**0.0415**
Zinc	7440-66-6	40.1	U	60.2

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041224-HM
Matrix: Air
Lab ID: 4042234-08
Sample Volume: 1861.438 m³
Filter ID:
Sampled: 04/12/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 02:20

Comments: Q8508894 - 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	**0.0337**
Arsenic	**7440-38-2**	**0.272**		**0.00819**
Barium	**7440-39-3**	**4.03**	QB-01	**0.935**
Beryllium	**7440-41-7**	**0.0225**		**0.00280**
Cadmium	7440-43-9	0.00944	U	0.0648
Chromium	**7440-47-3**	**3.53**		**1.93**
Cobalt	**7440-48-4**	**0.777**		**0.0381**
Copper	**7440-50-8**	**38.1**		**2.30**
Lead	**7439-92-1**	**0.593**		**0.187**
Manganese	**7439-96-5**	**16.7**		**1.65**
Molybdenum	**7439-98-7**	**2.08**		**0.314**
Nickel	**7440-02-0**	**2.54**		**0.570**
Selenium	**7782-49-2**	**0.326**	LJ, QX	**0.00783**
Thallium	**7440-28-0**	**0.00176**	QB-01	**5.15E-4**
Vanadium	**7440-62-2**	**2.40**		**0.0462**
Zinc	7440-66-6	46.1	U	67.1

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041224-HM
Matrix: Air
Lab ID: 4042234-09
Sample Volume: 1862.548 m³
Filter ID:
Sampled: 04/12/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 02:36

Comments: Q8508893 - 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**	**0.171**	SL	**0.0337**
Arsenic	**7440-38-2**	**0.557**		**0.00819**
Barium	**7440-39-3**	**4.64**	QB-01	**0.935**
Beryllium	**7440-41-7**	**0.0124**		**0.00280**
Cadmium	7440-43-9	0.0192	U	0.0647
Chromium	**7440-47-3**	**2.51**		**1.93**
Cobalt	**7440-48-4**	**0.419**		**0.0381**
Copper	**7440-50-8**	**35.0**		**2.30**
Lead	**7439-92-1**	**1.47**		**0.187**
Manganese	**7439-96-5**	**13.2**		**1.65**
Molybdenum	**7439-98-7**	**1.76**		**0.314**
Nickel	**7440-02-0**	**1.78**		**0.570**
Selenium	**7782-49-2**	**0.311**	LJ, QX	**0.00783**
Thallium	**7440-28-0**	**0.00145**	QB-01	**5.15E-4**
Vanadium	**7440-62-2**	**1.91**		**0.0462**
Zinc	7440-66-6	41.2	U	67.1

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041324-HM/MS/MS
Matrix: Air
Lab ID: 4042234-11
Sample Volume: 2039.989 m³
Filter ID:
Sampled: 04/13/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/23/24 17:24

Comments: Q8508891 - Received in good condition

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.124**	SL	**0.0308**
Arsenic	**7440-38-2**	**0.240**		**0.00747**
Barium	**7440-39-3**	**3.19**	QB-01	**0.853**
Beryllium	**7440-41-7**	**0.00654**		**0.00255**
Cadmium	7440-43-9	0.0122	U	0.0591
Chromium	7440-47-3	1.50	U	1.76
Cobalt	**7440-48-4**	**0.179**		**0.0348**
Copper	**7440-50-8**	**35.8**		**2.10**
Lead	**7439-92-1**	**0.694**		**0.171**
Manganese	**7439-96-5**	**6.37**		**1.51**
Molybdenum	**7439-98-7**	**2.15**		**0.286**
Nickel	**7440-02-0**	**1.06**		**0.520**
Selenium	**7782-49-2**	**0.276**	LJ, QX	**0.00715**
Thallium	**7440-28-0**	**0.00210**	QB-01, QB-04	**4.70E-4**
Vanadium	**7440-62-2**	**1.12**		**0.0422**
Zinc	7440-66-6	40.1	U	61.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041324-HM
Matrix: Air
Lab ID: 4042234-12
Sample Volume: 1895.451 m³
Filter ID:
Sampled: 04/13/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 02:54

Comments: Q8508889 - 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**	**0.0964**	SL	**0.0331**
Arsenic	**7440-38-2**	**0.311**		**0.00804**
Barium	**7440-39-3**	**4.04**	QB-01	**0.918**
Beryllium	**7440-41-7**	**0.0191**		**0.00275**
Cadmium	7440-43-9	0.0154	U	0.0636
Chromium	**7440-47-3**	**2.50**		**1.90**
Cobalt	**7440-48-4**	**0.454**		**0.0374**
Copper	**7440-50-8**	**47.5**		**2.26**
Lead	**7439-92-1**	**0.630**		**0.184**
Manganese	**7439-96-5**	**11.5**		**1.62**
Molybdenum	**7439-98-7**	**2.17**		**0.308**
Nickel	**7440-02-0**	**1.70**		**0.560**
Selenium	**7782-49-2**	**0.305**	LJ, QX	**0.00769**
Thallium	**7440-28-0**	**0.00202**	QB-01	**5.06E-4**
Vanadium	**7440-62-2**	**1.80**		**0.0454**
Zinc	7440-66-6	32.8	U	65.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041324-HM
Matrix: Air
Lab ID: 4042234-13
Sample Volume: 1872.713 m³
Filter ID:
Sampled: 04/13/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 04:03

Comments: Q8508887- 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**	**0.104**	SL	**0.0335**
Arsenic	**7440-38-2**	**0.287**		**0.00814**
Barium	**7440-39-3**	**3.42**	QB-01	**0.930**
Beryllium	**7440-41-7**	**0.00865**		**0.00278**
Cadmium	7440-43-9	0.0282	U	0.0644
Chromium	7440-47-3	1.91	U	1.92
Cobalt	**7440-48-4**	**0.267**		**0.0379**
Copper	**7440-50-8**	**30.6**		**2.28**
Lead	**7439-92-1**	**1.10**		**0.186**
Manganese	**7439-96-5**	**8.50**		**1.64**
Molybdenum	**7439-98-7**	**1.62**		**0.312**
Nickel	**7440-02-0**	**1.26**		**0.566**
Selenium	**7782-49-2**	**0.256**	LJ, QX	**0.00778**
Thallium	**7440-28-0**	**0.00186**	QB-01	**5.12E-4**
Vanadium	**7440-62-2**	**1.32**		**0.0460**
Zinc	7440-66-6	39.3	U	66.7

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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-041324-HM
Matrix: Air
Lab ID: 4042234-14
Sample Volume: 2039.989 m³
Filter ID:
Sampled: 04/13/24 00:00
Received: 04/22/24 15:41
Analysis Date: 04/24/24 04:19

Comments: Q8508882- 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	0.0173	SL, U	0.0308
Arsenic	7440-38-2	0.00693	U	0.00747
Barium	7440-39-3	0.696	QB-01, U	0.853
Beryllium	7440-41-7	3.79E-4	U	0.00255
Cadmium	7440-43-9	6.45E-4	U	0.0591
Chromium	7440-47-3	1.00	U	1.76
Cobalt	7440-48-4	0.0139	U	0.0348
Copper	7440-50-8	0.358	U	2.10
Lead	7439-92-1	0.0259	U	0.171
Manganese	7439-96-5	0.196	U	1.51
Molybdenum	7439-98-7	0.148	U	0.286
Nickel	7440-02-0	0.505	U	0.520
Selenium	7782-49-2	ND	LJ, QX, U	0.00715
Thallium	7440-28-0	1.85E-4	QB-01, U	4.70E-4
Vanadium	7440-62-2	0.0235	U	0.0422
Zinc	7440-66-6	17.7	U	61.3

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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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-041424-HM
Matrix: Air
Lab ID: 4042234-15
Sample Volume: 1940.06 m³
Filter ID:
Sampled: 04/14/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 04:34

Comments: Q8508885- 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**	**0.128**	SL	**0.0324**
Arsenic	**7440-38-2**	**1.13**		**0.00786**
Barium	**7440-39-3**	**3.92**	QB-01	**0.897**
Beryllium	**7440-41-7**	**0.00796**		**0.00268**
Cadmium	7440-43-9	0.0151	U	0.0621
Chromium	**7440-47-3**	**2.30**		**1.85**
Cobalt	**7440-48-4**	**0.306**		**0.0366**
Copper	**7440-50-8**	**67.4**		**2.21**
Lead	**7439-92-1**	**0.898**		**0.179**
Manganese	**7439-96-5**	**9.61**		**1.59**
Molybdenum	**7439-98-7**	**4.24**		**0.301**
Nickel	**7440-02-0**	**1.86**		**0.547**
Selenium	**7782-49-2**	**0.292**	LJ, QX	**0.00751**
Thallium	**7440-28-0**	**0.00157**	QB-01	**4.94E-4**
Vanadium	**7440-62-2**	**1.10**		**0.0444**
Zinc	7440-66-6	34.2	U	64.4

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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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041424-HM
Matrix: Air
Lab ID: 4042234-16
Sample Volume: 2014.034 m³
Filter ID:
Sampled: 04/14/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 05:10

Comments: Q8508883- 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**	**0.0658**	SL	**0.0312**
Arsenic	**7440-38-2**	**0.287**		**0.00757**
Barium	**7440-39-3**	**2.03**	QB-01	**0.864**
Beryllium	**7440-41-7**	**0.00531**		**0.00259**
Cadmium	7440-43-9	0.00858	U	0.0599
Chromium	7440-47-3	1.31	U	1.79
Cobalt	**7440-48-4**	**0.146**		**0.0352**
Copper	**7440-50-8**	**38.4**		**2.12**
Lead	**7439-92-1**	**0.518**		**0.173**
Manganese	**7439-96-5**	**5.39**		**1.53**
Molybdenum	**7439-98-7**	**2.38**		**0.290**
Nickel	**7440-02-0**	**0.869**		**0.527**
Selenium	**7782-49-2**	**0.294**	LJ, QX	**0.00724**
Thallium	**7440-28-0**	**0.00132**	QB-01	**4.76E-4**
Vanadium	**7440-62-2**	**0.667**		**0.0427**
Zinc	7440-66-6	29.9	U	62.0

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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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041424-HM
Matrix: Air
Lab ID: 4042234-17
Sample Volume: 1884.357 m³
Filter ID:
Sampled: 04/14/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 05:26

Comments: Q8506892- 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**	**0.0713**	SL	**0.0333**
Arsenic	**7440-38-2**	**0.317**		**0.00809**
Barium	**7440-39-3**	**3.14**	QB-01	**0.924**
Beryllium	**7440-41-7**	**0.0144**		**0.00276**
Cadmium	7440-43-9	0.0102	U	0.0640
Chromium	**7440-47-3**	**2.86**		**1.91**
Cobalt	**7440-48-4**	**0.545**		**0.0376**
Copper	**7440-50-8**	**34.4**		**2.27**
Lead	**7439-92-1**	**0.451**		**0.185**
Manganese	**7439-96-5**	**10.8**		**1.63**
Molybdenum	**7439-98-7**	**1.64**		**0.310**
Nickel	**7440-02-0**	**1.77**		**0.563**
Selenium	**7782-49-2**	**0.321**	LJ, QX	**0.00774**
Thallium	**7440-28-0**	**0.00143**	QB-01	**5.09E-4**
Vanadium	**7440-62-2**	**1.17**		**0.0457**
Zinc	7440-66-6	25.9	U	66.3

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041424-HM
Matrix: Air
Lab ID: 4042234-18
Sample Volume: 1883.644 m³
Filter ID:
Sampled: 04/14/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 05:41

Comments: Q8506893- 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	**0.0333**
Arsenic	**7440-38-2**	**0.869**		**0.00809**
Barium	**7440-39-3**	**2.95**	QB-01	**0.924**
Beryllium	**7440-41-7**	**0.00619**		**0.00276**
Cadmium	7440-43-9	0.0280	U	0.0640
Chromium	**7440-47-3**	**1.99**		**1.91**
Cobalt	**7440-48-4**	**0.220**		**0.0377**
Copper	**7440-50-8**	**38.4**		**2.27**
Lead	**7439-92-1**	**1.02**		**0.185**
Manganese	**7439-96-5**	**6.85**		**1.63**
Molybdenum	**7439-98-7**	**2.14**		**0.310**
Nickel	**7440-02-0**	**1.06**		**0.563**
Selenium	**7782-49-2**	**0.287**	LJ, QX	**0.00774**
Thallium	**7440-28-0**	**0.00133**	QB-01	**5.09E-4**
Vanadium	**7440-62-2**	**0.778**		**0.0457**
Zinc	7440-66-6	41.4	U	66.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-041524-HM
Matrix: Air
Lab ID: 4042234-19
Sample Volume: 1974.48 m³
Filter ID:
Sampled: 04/15/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 05:59

Comments: Q8506894 - 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**	**0.172**	SL	**0.0318**
Arsenic	**7440-38-2**	**3.25**		**0.00772**
Barium	**7440-39-3**	**6.59**	QB-01	**0.882**
Beryllium	**7440-41-7**	**0.0169**		**0.00264**
Cadmium	**7440-43-9**	**0.0616**		**0.0611**
Chromium	**7440-47-3**	**4.42**		**1.82**
Cobalt	**7440-48-4**	**0.772**		**0.0359**
Copper	**7440-50-8**	**69.2**		**2.17**
Lead	**7439-92-1**	**1.63**		**0.176**
Manganese	**7439-96-5**	**21.8**		**1.56**
Molybdenum	**7439-98-7**	**4.09**		**0.296**
Nickel	**7440-02-0**	**2.46**		**0.537**
Selenium	**7782-49-2**	**0.242**	LJ, QX	**0.00738**
Thallium	**7440-28-0**	**0.00175**	QB-01	**4.85E-4**
Vanadium	**7440-62-2**	**2.01**		**0.0436**
Zinc	7440-66-6	46.2	U	63.3

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041524-HM
Matrix: Air
Lab ID: 4042234-21
Sample Volume: 1951.34 m³
Filter ID:
Sampled: 04/15/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 06:17

Comments: Q8521179 - 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**	**0.140**	SL	**0.0322**
Arsenic	**7440-38-2**	**0.151**		**0.00781**
Barium	**7440-39-3**	**3.22**	QB-01	**0.892**
Beryllium	**7440-41-7**	**0.0109**		**0.00267**
Cadmium	7440-43-9	0.0330	U	0.0618
Chromium	**7440-47-3**	**2.30**		**1.84**
Cobalt	**7440-48-4**	**0.394**		**0.0364**
Copper	**7440-50-8**	**36.9**		**2.19**
Lead	**7439-92-1**	**0.696**		**0.178**
Manganese	**7439-96-5**	**7.42**		**1.58**
Molybdenum	**7439-98-7**	**1.46**		**0.299**
Nickel	**7440-02-0**	**1.42**		**0.544**
Selenium	**7782-49-2**	**0.189**	LJ, QX	**0.00747**
Thallium	**7440-28-0**	**0.00101**	QB-01	**4.91E-4**
Vanadium	**7440-62-2**	**0.627**		**0.0441**
Zinc	7440-66-6	42.6	U	64.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041524-HM
Matrix: Air
Lab ID: 4042234-22
Sample Volume: 1981.734 m³
Filter ID:
Sampled: 04/15/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 07:30

Comments: Q8521177 - 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	**0.0317**
Arsenic	**7440-38-2**	**0.389**		**0.00769**
Barium	**7440-39-3**	**1.91**	QB-01	**0.878**
Beryllium	**7440-41-7**	**0.00306**		**0.00263**
Cadmium	7440-43-9	0.0136	U	0.0608
Chromium	7440-47-3	1.32	U	1.81
Cobalt	**7440-48-4**	**0.115**		**0.0358**
Copper	**7440-50-8**	**35.6**		**2.16**
Lead	**7439-92-1**	**0.625**		**0.176**
Manganese	**7439-96-5**	**3.17**		**1.55**
Molybdenum	**7439-98-7**	**1.86**		**0.295**
Nickel	**7440-02-0**	**0.767**		**0.535**
Selenium	**7782-49-2**	**0.161**	LJ, QX	**0.00736**
Thallium	**7440-28-0**	**9.01E-4**	QB-01	**4.84E-4**
Vanadium	**7440-62-2**	**0.237**		**0.0434**
Zinc	7440-66-6	32.6	LJ, QX, 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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-041524-HM
Matrix: Air
Lab ID: 4042234-23
Sample Volume: 1974.48 m³
Filter ID:
Sampled: 04/15/24 00:00
Received: 04/22/24 15:41
Analysis Date: 04/24/24 08:02

Comments: Q8521172 - 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	0.0296	SL, U	0.0318
Arsenic	**7440-38-2**	**0.0116**	FB-01	**0.00772**
Barium	**7440-39-3**	**1.55**	FB-01, QB-01	**0.882**
Beryllium	7440-41-7	8.10E-4	U	0.00264
Cadmium	7440-43-9	0.00426	U	0.0611
Chromium	7440-47-3	0.921	U	1.82
Cobalt	7440-48-4	0.0233	U	0.0359
Copper	**7440-50-8**	**19.3**	FB-01	**2.17**
Lead	**7439-92-1**	**0.865**	FB-01	**0.176**
Manganese	7439-96-5	0.428	U	1.56
Molybdenum	7439-98-7	0.185	U	0.296
Nickel	7440-02-0	0.486	U	0.537
Selenium	7782-49-2	ND	LJ, QX, U	0.00738
Thallium	7440-28-0	1.96E-4	QB-01, U	4.85E-4
Vanadium	**7440-62-2**	**0.0491**	FB-01	**0.0436**
Zinc	7440-66-6	31.7	LJ, QX, U	63.3

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-041624-HM
Matrix: Air
Lab ID: 4042234-24
Sample Volume: 1955.527 m³
Filter ID:
Sampled: 04/16/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 08:19

Comments: Q8521176 - 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**	**0.0819**	SL	**0.0321**
Arsenic	**7440-38-2**	**0.190**		**0.00780**
Barium	**7440-39-3**	**2.94**	QB-01	**0.890**
Beryllium	**7440-41-7**	**0.00266**		**0.00266**
Cadmium	7440-43-9	0.00807	U	0.0617
Chromium	7440-47-3	1.50	U	1.84
Cobalt	**7440-48-4**	**0.110**		**0.0363**
Copper	**7440-50-8**	**73.5**		**2.19**
Lead	**7439-92-1**	**0.445**		**0.178**
Manganese	**7439-96-5**	**2.85**		**1.57**
Molybdenum	**7439-98-7**	**4.33**		**0.299**
Nickel	**7440-02-0**	**1.19**		**0.542**
Selenium	**7782-49-2**	**0.161**	LJ, QX	**0.00745**
Thallium	**7440-28-0**	**0.00171**	QB-01	**4.90E-4**
Vanadium	**7440-62-2**	**0.396**		**0.0440**
Zinc	7440-66-6	47.5	LJ, QX, U	63.9

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041624-HM
Matrix: Air
Lab ID: 4042234-25
Sample Volume: 1939.101 m³
Filter ID:
Sampled: 04/16/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 08:37

Comments: Q8521175 - 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**	**0.236**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.259**		**0.00786**
Barium	**7440-39-3**	**7.52**	QB-01	**0.898**
Beryllium	**7440-41-7**	**0.00912**		**0.00268**
Cadmium	7440-43-9	0.0118	U	0.0622
Chromium	**7440-47-3**	**2.29**		**1.85**
Cobalt	**7440-48-4**	**0.347**		**0.0366**
Copper	**7440-50-8**	**42.0**		**2.21**
Lead	**7439-92-1**	**0.705**		**0.180**
Manganese	**7439-96-5**	**9.36**		**1.59**
Molybdenum	**7439-98-7**	**2.40**		**0.301**
Nickel	**7440-02-0**	**1.75**		**0.547**
Selenium	**7782-49-2**	**0.193**	LJ, QX	**0.00752**
Thallium	**7440-28-0**	**0.00187**	QB-01	**4.94E-4**
Vanadium	**7440-62-2**	**1.01**		**0.0444**
Zinc	7440-66-6	34.6	LJ, QX, 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: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041624-HM
Matrix: Air
Lab ID: 4042234-26
Sample Volume: 1922.954 m³
Filter ID:
Sampled: 04/16/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 08:53

Comments: Q8521173 - 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**	**0.0837**	SL	**0.0327**
Arsenic	**7440-38-2**	**0.140**		**0.00793**
Barium	**7440-39-3**	**2.45**	QB-01	**0.905**
Beryllium	**7440-41-7**	**0.00546**		**0.00271**
Cadmium	7440-43-9	0.00868	U	0.0627
Chromium	7440-47-3	1.42	U	1.87
Cobalt	**7440-48-4**	**0.162**		**0.0369**
Copper	**7440-50-8**	**53.2**		**2.23**
Lead	**7439-92-1**	**0.413**		**0.181**
Manganese	**7439-96-5**	**3.86**		**1.60**
Molybdenum	**7439-98-7**	**2.62**		**0.304**
Nickel	**7440-02-0**	**1.02**		**0.552**
Selenium	**7782-49-2**	**0.149**	LJ, QX	**0.00758**
Thallium	**7440-28-0**	**0.00180**	QB-01	**4.98E-4**
Vanadium	**7440-62-2**	**0.478**		**0.0448**
Zinc	7440-66-6	20.4	LJ, QX, U	65.0

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FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041624-HM
Matrix: Air
Lab ID: 4042234-27
Sample Volume: 1960.309 m³
Filter ID:
Sampled: 04/16/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 09:10

Comments: Q8521171 - 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	**0.0320**
Arsenic	**7440-38-2**	**0.315**		**0.00778**
Barium	**7440-39-3**	**3.93**	QB-01	**0.888**
Beryllium	**7440-41-7**	**0.00888**		**0.00266**
Cadmium	7440-43-9	0.0143	U	0.0615
Chromium	**7440-47-3**	**1.92**		**1.83**
Cobalt	**7440-48-4**	**0.287**		**0.0362**
Copper	**7440-50-8**	**30.9**		**2.18**
Lead	**7439-92-1**	**0.946**		**0.178**
Manganese	**7439-96-5**	**8.74**		**1.57**
Molybdenum	**7439-98-7**	**1.69**		**0.298**
Nickel	**7440-02-0**	**1.21**		**0.541**
Selenium	**7782-49-2**	**0.232**	LJ, QX	**0.00744**
Thallium	**7440-28-0**	**0.00157**	QB-01	**4.89E-4**
Vanadium	**7440-62-2**	**0.801**		**0.0439**
Zinc	7440-66-6	27.6	LJ, QX, U	63.7

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FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-041724-HM
Matrix: Air
Lab ID: 4042234-28
Sample Volume: 1971.184 m³
Filter ID:
Sampled: 04/17/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 09:28

Comments: Q8521170 - 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**	**0.0619**	SL	**0.0319**
Arsenic	**7440-38-2**	**0.165**		**0.00773**
Barium	**7440-39-3**	**3.36**	QB-01	**0.883**
Beryllium	**7440-41-7**	**0.00493**		**0.00264**
Cadmium	7440-43-9	0.00687	U	0.0612
Chromium	**7440-47-3**	**2.36**		**1.82**
Cobalt	**7440-48-4**	**0.288**		**0.0360**
Copper	**7440-50-8**	**79.1**		**2.17**
Lead	**7439-92-1**	**0.942**		**0.177**
Manganese	**7439-96-5**	**6.26**		**1.56**
Molybdenum	**7439-98-7**	**3.70**		**0.296**
Nickel	**7440-02-0**	**1.75**		**0.538**
Selenium	**7782-49-2**	**0.117**	LJ, QX	**0.00740**
Thallium	**7440-28-0**	**6.81E-4**	QB-01	**4.86E-4**
Vanadium	**7440-62-2**	**0.567**		**0.0437**
Zinc	7440-66-6	54.4	LJ, QX, U	63.4

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FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041724-HM
Matrix: Air
Lab ID: 4042234-29
Sample Volume: 2081.064 m³
Filter ID:
Sampled: 04/17/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 09:43

Comments: Q8521168 - 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	**0.0302**
Arsenic	**7440-38-2**	**0.261**		**0.00733**
Barium	**7440-39-3**	**4.12**	QB-01	**0.837**
Beryllium	**7440-41-7**	**0.00814**		**0.00250**
Cadmium	7440-43-9	0.0115	U	0.0579
Chromium	**7440-47-3**	**1.94**		**1.73**
Cobalt	**7440-48-4**	**0.331**		**0.0341**
Copper	**7440-50-8**	**52.5**		**2.06**
Lead	**7439-92-1**	**0.778**		**0.167**
Manganese	**7439-96-5**	**8.88**		**1.48**
Molybdenum	**7439-98-7**	**2.60**		**0.281**
Nickel	**7440-02-0**	**1.31**		**0.510**
Selenium	**7782-49-2**	**0.139**	LJ, QX	**0.00701**
Thallium	**7440-28-0**	**8.86E-4**	QB-01	**4.60E-4**
Vanadium	**7440-62-2**	**0.873**		**0.0414**
Zinc	7440-66-6	35.1	LJ, QX, U	60.0

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041724-HM/MS/MS
Matrix: Air
Lab ID: 4042234-30
Sample Volume: 1984.52 m³
Filter ID:
Sampled: 04/17/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/23/24 21:32

Comments: Q8521166 - 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**	**0.0692**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.111**		**0.00768**
Barium	**7440-39-3**	**2.35**	QB-01	**0.877**
Beryllium	**7440-41-7**	**0.00961**		**0.00262**
Cadmium	7440-43-9	0.00788	U	0.0608
Chromium	**7440-47-3**	**1.86**		**1.81**
Cobalt	**7440-48-4**	**0.213**		**0.0357**
Copper	**7440-50-8**	**44.8**		**2.16**
Lead	**7439-92-1**	**1.32**		**0.175**
Manganese	**7439-96-5**	**5.23**		**1.55**
Molybdenum	**7439-98-7**	**2.25**		**0.294**
Nickel	**7440-02-0**	**1.07**		**0.535**
Selenium	**7782-49-2**	**0.128**	LJ, QX	**0.00735**
Thallium	**7440-28-0**	**8.17E-4**	QB-01	**4.83E-4**
Vanadium	**7440-62-2**	**0.498**		**0.0434**
Zinc	7440-66-6	44.2	LJ, QM-07, QX, U	63.0

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1777 Sentry Pkwy, Bldg 12
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FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041724-HM
Matrix: Air
Lab ID: 4042234-31
Sample Volume: 1963.605 m³
Filter ID:
Sampled: 04/17/24 23:59
Received: 04/22/24 15:41
Analysis Date: 04/24/24 09:59

Comments: Q8521165 - 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**	**0.0955**	SL	**0.0320**
Arsenic	**7440-38-2**	**0.345**		**0.00776**
Barium	**7440-39-3**	**4.05**	QB-01	**0.887**
Beryllium	**7440-41-7**	**0.0120**		**0.00265**
Cadmium	7440-43-9	0.0321	U	0.0614
Chromium	**7440-47-3**	**3.02**		**1.83**
Cobalt	**7440-48-4**	**0.404**		**0.0361**
Copper	**7440-50-8**	**30.3**		**2.18**
Lead	**7439-92-1**	**0.976**		**0.177**
Manganese	**7439-96-5**	**12.5**		**1.57**
Molybdenum	**7439-98-7**	**1.77**		**0.297**
Nickel	**7440-02-0**	**2.03**		**0.540**
Selenium	**7782-49-2**	**0.233**	LJ, QX	**0.00742**
Thallium	**7440-28-0**	**0.00101**	QB-01	**4.88E-4**
Vanadium	**7440-62-2**	**0.954**		**0.0438**
Zinc	7440-66-6	39.9	LJ, QX, U	63.6

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1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-041724-HM
Matrix: Air
Lab ID: 4042234-32
Sample Volume: 1971.184 m³
Filter ID:
Sampled: 04/17/24 00:00
Received: 04/22/24 15:41
Analysis Date: 04/24/24 11:30

Comments: Q8521156 - 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	0.0202	SL, U	0.0319
Arsenic	7440-38-2	0.00339	U	0.00773
Barium	**7440-39-3**	**1.01**	FB-01, QB-01	**0.883**
Beryllium	7440-41-7	4.02E-4	U	0.00264
Cadmium	7440-43-9	5.23E-4	U	0.0612
Chromium	7440-47-3	0.845	U	1.82
Cobalt	7440-48-4	0.0107	U	0.0360
Copper	7440-50-8	0.391	U	2.17
Lead	7439-92-1	0.0308	U	0.177
Manganese	7439-96-5	0.169	U	1.56
Molybdenum	7439-98-7	0.147	U	0.296
Nickel	7440-02-0	0.395	U	0.538
Selenium	7782-49-2	ND	LJ, QX, U	0.00740
Thallium	7440-28-0	2.36E-4	QB-01, QB-04, U	4.86E-4
Vanadium	7440-62-2	0.0164	U	0.0437
Zinc	7440-66-6	21.7	LJ, QX, U	63.4

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FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
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 2404070 - B4D2306										
Calibration Blank (2404070-CCB1)				Prepared & Analyzed: 04/23/24						
Antimony	2.09		ng/l							
Arsenic	5.81		ng/l							
Barium	3.88		ng/l							
Beryllium	0.531		ng/l							
Cadmium	0.362		ng/l							
Chromium	7.34		ng/l							
Cobalt	1.20		ng/l							
Copper	128		ng/l							
Lead	23.8		ng/l							
Manganese	13.0		ng/l							
Molybdenum	44.6		ng/l							
Nickel	2.71		ng/l							
Selenium	-15.2		ng/l							LJ, QX, U
Thallium	3.15		ng/l							QB-04
Vanadium	-36.0		ng/l							U
Zinc	-7.89		ng/l							U
Calibration Blank (2404070-CCB2)				Prepared & Analyzed: 04/23/24						
Antimony	0.160		ng/l							
Arsenic	5.48		ng/l							
Barium	-0.127		ng/l							U
Beryllium	0.109		ng/l							
Cadmium	-0.125		ng/l							U
Chromium	1.79		ng/l							
Cobalt	0.214		ng/l							
Copper	57.8		ng/l							
Lead	2.32		ng/l							
Manganese	2.82		ng/l							
Molybdenum	4.36		ng/l							
Nickel	0.723		ng/l							
Selenium	-26.3		ng/l							LJ, QX, U
Thallium	0.955		ng/l							
Vanadium	-27.1		ng/l							U
Zinc	-53.8		ng/l							U
Calibration Blank (2404070-CCB3)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	0.276		ng/l							
Arsenic	2.05		ng/l							
Barium	-0.927		ng/l							U
Beryllium	-0.241		ng/l							U

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REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
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 2404070 - B4D2306										
Calibration Blank (2404070-CCB3) Contin				Prepared: 04/23/24 Analyzed: 04/24/24						
Cadmium	-0.123		ng/l							U
Chromium	1.63		ng/l							
Cobalt	0.313		ng/l							
Copper	34.9		ng/l							
Lead	2.06		ng/l							
Manganese	1.26		ng/l							
Molybdenum	5.11		ng/l							
Nickel	1.10		ng/l							
Selenium	-24.5		ng/l							LJ, QX, U
Thallium	1.04		ng/l							
Vanadium	-36.6		ng/l							U
Zinc	-57.7		ng/l							U
Calibration Blank (2404070-CCB4)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	1.67		ng/l							
Arsenic	12.3		ng/l							
Barium	14.2		ng/l							
Beryllium	-0.0264		ng/l							U
Cadmium	1.49		ng/l							
Chromium	23.3		ng/l							
Cobalt	4.14		ng/l							
Copper	215		ng/l							
Lead	15.1		ng/l							
Manganese	42.1		ng/l							
Molybdenum	7.53		ng/l							
Nickel	12.0		ng/l							
Selenium	-21.1		ng/l							LJ, QX, U
Thallium	0.889		ng/l							
Vanadium	-35.6		ng/l							U
Zinc	-4.37		ng/l							U
Calibration Blank (2404070-CCB5)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	0.183		ng/l							
Arsenic	7.89		ng/l							
Barium	0.376		ng/l							
Beryllium	-0.674		ng/l							U
Cadmium	0.0634		ng/l							
Chromium	3.72		ng/l							
Cobalt	0.390		ng/l							
Copper	55.8		ng/l							

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FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
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 2404070 - B4D2306										
Calibration Blank (2404070-CCB5) Contin				Prepared: 04/23/24 Analyzed: 04/24/24						
Lead	2.23		ng/l							
Manganese	2.66		ng/l							
Molybdenum	4.33		ng/l							
Nickel	3.28		ng/l							
Selenium	-5.72		ng/l							LJ, QX, U
Thallium	0.780		ng/l							
Vanadium	-42.6		ng/l							U
Zinc	-45.9		ng/l							U
Calibration Blank (2404070-CCB6)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	0.602		ng/l							
Arsenic	6.34		ng/l							
Barium	0.692		ng/l							
Beryllium	-0.503		ng/l							U
Cadmium	0.0858		ng/l							
Chromium	4.40		ng/l							
Cobalt	0.358		ng/l							
Copper	68.9		ng/l							
Lead	2.63		ng/l							
Manganese	3.17		ng/l							
Molybdenum	7.15		ng/l							
Nickel	2.55		ng/l							
Selenium	-17.1		ng/l							LJ, QX, U
Thallium	1.20		ng/l							
Vanadium	-52.5		ng/l							U
Zinc	-40.2		ng/l							U
Calibration Blank (2404070-CCB7)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	0.502		ng/l							
Arsenic	0.299		ng/l							
Barium	0.971		ng/l							
Beryllium	-0.152		ng/l							U
Cadmium	0.164		ng/l							
Chromium	2.50		ng/l							
Cobalt	0.353		ng/l							
Copper	74.6		ng/l							
Lead	3.91		ng/l							
Manganese	4.39		ng/l							
Molybdenum	6.88		ng/l							
Nickel	1.25		ng/l							

CERTIFICATE OF ANALYSIS

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FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
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 2404070 - B4D2306										
Calibration Blank (2404070-CCB7) Contin				Prepared: 04/23/24 Analyzed: 04/24/24						
Selenium	-17.1		ng/l							LJ, QX, U
Thallium	1.41		ng/l							QB-04
Vanadium	-52.1		ng/l							U
Zinc	-19.1		ng/l							U
Calibration Check (2404070-CCV1)				Prepared & Analyzed: 04/23/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	203000		ng/l	200000		101	90-110			
Beryllium	4780		ng/l	5000.0		95.6	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	238000		ng/l	240000		99.2	90-110			
Cobalt	52100		ng/l	50000		104	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.4	90-110			
Manganese	494000		ng/l	500000		98.9	90-110			
Molybdenum	50200		ng/l	50000		100	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20100		ng/l	20000		100	90-110			LJ, QX
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	19400		ng/l	20000		97.1	90-110			
Zinc	533000		ng/l	500000		107	90-110			
Calibration Check (2404070-CCV2)				Prepared & Analyzed: 04/23/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	201000		ng/l	200000		101	90-110			
Beryllium	4720		ng/l	5000.0		94.3	90-110			
Cadmium	19900		ng/l	20000		99.4	90-110			
Chromium	236000		ng/l	240000		98.3	90-110			
Cobalt	51300		ng/l	50000		103	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	494000		ng/l	500000		98.8	90-110			
Molybdenum	49200		ng/l	50000		98.4	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20300		ng/l	20000		101	90-110			LJ, QX
Thallium	494		ng/l	500.00		98.8	90-110			
Vanadium	19300		ng/l	20000		96.6	90-110			
Zinc	528000		ng/l	500000		106	90-110			

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

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REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
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 2404070 - B4D2306										
Calibration Check (2404070-CCV3)				Prepared & Analyzed: 04/23/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	4730		ng/l	5000.0		94.6	90-110			
Cadmium	20100		ng/l	20000		100	90-110			
Chromium	237000		ng/l	240000		98.9	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	200000		ng/l	200000		99.9	90-110			
Manganese	492000		ng/l	500000		98.5	90-110			
Molybdenum	49500		ng/l	50000		99.1	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20500		ng/l	20000		103	90-110			LJ, QX
Thallium	497		ng/l	500.00		99.3	90-110			
Vanadium	19600		ng/l	20000		98.2	90-110			
Zinc	531000		ng/l	500000		106	90-110			
Calibration Check (2404070-CCV4)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	206000		ng/l	200000		103	90-110			
Beryllium	5030		ng/l	5000.0		101	90-110			
Cadmium	20700		ng/l	20000		103	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	52700		ng/l	50000		105	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	51000		ng/l	50000		102	90-110			
Nickel	124000		ng/l	120000		104	90-110			
Selenium	20500		ng/l	20000		102	90-110			LJ, QX
Thallium	509		ng/l	500.00		102	90-110			
Vanadium	19500		ng/l	20000		97.4	90-110			
Zinc	544000		ng/l	500000		109	90-110			
Calibration Check (2404070-CCV5)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20700		ng/l	20000		104	90-110			
Barium	210000		ng/l	200000		105	90-110			
Beryllium	4770		ng/l	5000.0		95.4	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 2404070 - B4D2306										
Calibration Check (2404070-CCV5) Contin				Prepared: 04/23/24 Analyzed: 04/24/24						
Cadmium	20700		ng/l	20000		103	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	53800		ng/l	50000		108	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			
Lead	206000		ng/l	200000		103	90-110			
Manganese	515000		ng/l	500000		103	90-110			
Molybdenum	51900		ng/l	50000		104	90-110			
Nickel	127000		ng/l	120000		105	90-110			
Selenium	20700		ng/l	20000		104	90-110			LJ, QX
Thallium	511		ng/l	500.00		102	90-110			
Vanadium	19700		ng/l	20000		98.4	90-110			
Zinc	548000		ng/l	500000		110	90-110			
Calibration Check (2404070-CCV6)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	20900		ng/l	20000		104	90-110			
Arsenic	20900		ng/l	20000		104	90-110			
Barium	215000		ng/l	200000		108	90-110			
Beryllium	4800		ng/l	5000.0		96.0	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	246000		ng/l	240000		103	90-110			
Cobalt	54300		ng/l	50000		109	90-110			
Copper	2.13E6		ng/l	2.0000E6		107	90-110			
Lead	206000		ng/l	200000		103	90-110			
Manganese	515000		ng/l	500000		103	90-110			
Molybdenum	53700		ng/l	50000		107	90-110			
Nickel	128000		ng/l	120000		106	90-110			
Selenium	20700		ng/l	20000		103	90-110			LJ, QX
Thallium	517		ng/l	500.00		103	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	555000		ng/l	500000		111	90-110			LJ, QX
Calibration Check (2404070-CCV7)				Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	20900		ng/l	20000		105	90-110			
Arsenic	20800		ng/l	20000		104	90-110			
Barium	213000		ng/l	200000		107	90-110			
Beryllium	4760		ng/l	5000.0		95.1	90-110			
Cadmium	21100		ng/l	20000		106	90-110			
Chromium	248000		ng/l	240000		103	90-110			
Cobalt	53400		ng/l	50000		107	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404070 - B4D2306										
Calibration Check (2404070-CCV7) Contin				Prepared: 04/23/24 Analyzed: 04/24/24						
Lead	207000		ng/l	200000		103	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	54200		ng/l	50000		108	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	20500		ng/l	20000		103	90-110			LJ, QX
Thallium	515		ng/l	500.00		103	90-110			
Vanadium	20900		ng/l	20000		105	90-110			
Zinc	551000		ng/l	500000		110	90-110			
High Cal Check (2404070-HCV1)				Prepared & Analyzed: 04/23/24						
Antimony	40000		ng/l	40000		99.9	95-105			
Arsenic	39800		ng/l	40000		99.5	95-105			
Barium	407000		ng/l	400000		102	95-105			
Beryllium	9750		ng/l	10000		97.5	95-105			
Cadmium	39300		ng/l	40000		98.3	95-105			
Chromium	468000		ng/l	480000		97.5	95-105			
Cobalt	96400		ng/l	100000		96.4	95-105			
Copper	3.87E6		ng/l	4.0000E6		96.9	95-105			
Lead	397000		ng/l	400000		99.3	95-105			
Manganese	969000		ng/l	1.0000E6		96.9	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	234000		ng/l	240000		97.4	95-105			
Selenium	39700		ng/l	40000		99.4	95-105			LJ, QX
Thallium	1030		ng/l	1000.0		103	95-105			
Vanadium	39800		ng/l	40000		99.6	95-105			
Zinc	964000		ng/l	1.0000E6		96.4	95-105			
Initial Cal Blank (2404070-ICB1)				Prepared & Analyzed: 04/23/24						
Antimony	0.607		ng/l							
Arsenic	-2.90		ng/l							U
Barium	1.21		ng/l							
Beryllium	-0.0928		ng/l							U
Cadmium	-0.0577		ng/l							U
Chromium	3.85		ng/l							
Cobalt	0.447		ng/l							
Copper	102		ng/l							
Lead	10.5		ng/l							
Manganese	7.46		ng/l							
Molybdenum	7.24		ng/l							
Nickel	-1.23		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 2404070 - B4D2306										
Initial Cal Blank (2404070-ICB1) Continu				Prepared & Analyzed: 04/23/24						
Selenium	-14.0		ng/l							LJ, QX, U
Thallium	1.08		ng/l							
Vanadium	-35.9		ng/l							U
Zinc	-26.0		ng/l							U
Initial Cal Check (2404070-ICV1)				Prepared & Analyzed: 04/23/24						
Antimony	19700		ng/l	20000		98.5	90-110			
Arsenic	19700		ng/l	20000		98.5	90-110			
Barium	198000		ng/l	200000		99.0	90-110			
Beryllium	4810		ng/l	5000.0		96.1	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	236000		ng/l	240000		98.4	90-110			
Cobalt	49800		ng/l	50000		99.5	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	197000		ng/l	200000		98.3	90-110			
Manganese	485000		ng/l	500000		97.0	90-110			
Molybdenum	49500		ng/l	50000		99.1	90-110			
Nickel	119000		ng/l	120000		99.4	90-110			
Selenium	20300		ng/l	20000		102	90-110			LJ, QX
Thallium	514		ng/l	500.00		103	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	525000		ng/l	500000		105	90-110			
Interference Check A (2404070-IFA1)				Prepared & Analyzed: 04/23/24						
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	298000		ng/l	300000		99.5	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			LJ, QX, U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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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 2404070 - B4D2306										
Interference Check B (2404070-IFB1)				Prepared & Analyzed: 04/23/24						
Antimony	20600		ng/l	20000		103	80-120			
Arsenic	20500		ng/l	20000		102	80-120			
Barium	206000		ng/l	200000		103	80-120			
Beryllium	4470		ng/l	5000.0		89.3	80-120			
Cadmium	19800		ng/l	20000		98.8	80-120			
Chromium	230000		ng/l	240000		96.0	80-120			
Cobalt	51700		ng/l	50000		103	80-120			
Copper	1.95E6		ng/l	2.0000E6		97.4	80-120			
Lead	207000		ng/l	200000		103	80-120			
Manganese	510000		ng/l	500000		102	80-120			
Molybdenum	353000		ng/l	350000		101	80-120			
Nickel	118000		ng/l	120000		98.4	80-120			
Selenium	19300		ng/l	20000		96.7	80-120			LJ, QX
Thallium	528		ng/l	500.00		106	80-120			
Vanadium	18100		ng/l	20000		90.3	80-120			
Zinc	496000		ng/l	500000		99.2	80-120			
Batch B4D2306 - ICP-MS Extraction										
Blank (B4D2306-BLK1)				Prepared & Analyzed: 04/23/24						
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							QB-01, 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							LJ, QX, U
Thallium	ND	5.89E-4	ng/m³ Air							QB-01, QB-04 U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4D2306-BS1)				Prepared & Analyzed: 04/23/24						
Antimony	0.789	0.0386	ng/m³ Air	1.3829		57.1	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		97.0	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D2306 - ICP-MS Extraction										
LCS (B4D2306-BS1) Continued				Prepared & Analyzed: 04/23/24						
Barium	28.5	1.07	ng/m³ Air	27.658		103	80-120			QB-01
Beryllium	1.27	0.00320	ng/m³ Air	1.3829		91.5	80-120			
Cadmium	1.39	0.0741	ng/m³ Air	1.3829		100	80-120			
Chromium	15.8	2.21	ng/m³ Air	13.829		114	80-120			
Cobalt	1.38	0.0436	ng/m³ Air	1.3829		100	80-120			
Copper	29.2	2.63	ng/m³ Air	27.658		106	80-120			
Lead	13.6	0.214	ng/m³ Air	13.829		98.3	80-120			
Manganese	7.97	1.89	ng/m³ Air	8.2975		96.1	80-120			
Molybdenum	1.69	0.359	ng/m³ Air	1.3829		122	80-120			
Nickel	3.43	0.652	ng/m³ Air	2.7658		124	80-120			
Selenium	2.76	0.00896	ng/m³ Air	2.7658		100	80-120			LJ, QX
Thallium	0.138	5.89E-4	ng/m³ Air	0.13829		99.7	80-120			QB-01, QB-04
Vanadium	2.79	0.0529	ng/m³ Air	2.7658		101	80-120			
Zinc	142	76.8	ng/m³ Air	82.975		171	80-120			
LCS (B4D2306-BS2)				Prepared & Analyzed: 04/23/24						
Antimony	0.791	0.0386	ng/m³ Air	1.3829		57.2	80-120			SL
Arsenic	2.66	0.00937	ng/m³ Air	2.7658		96.1	80-120			
Barium	28.5	1.07	ng/m³ Air	27.658		103	80-120			QB-01
Beryllium	1.23	0.00320	ng/m³ Air	1.3829		88.6	80-120			
Cadmium	1.38	0.0741	ng/m³ Air	1.3829		100	80-120			
Chromium	15.2	2.21	ng/m³ Air	13.829		110	80-120			
Cobalt	1.37	0.0436	ng/m³ Air	1.3829		98.8	80-120			
Copper	29.0	2.63	ng/m³ Air	27.658		105	80-120			
Lead	13.5	0.214	ng/m³ Air	13.829		98.0	80-120			
Manganese	7.86	1.89	ng/m³ Air	8.2975		94.7	80-120			
Molybdenum	1.56	0.359	ng/m³ Air	1.3829		113	80-120			
Nickel	3.06	0.652	ng/m³ Air	2.7658		111	80-120			
Selenium	2.69	0.00896	ng/m³ Air	2.7658		97.1	80-120			LJ, QX
Thallium	0.138	5.89E-4	ng/m³ Air	0.13829		99.5	80-120			QB-01
Vanadium	2.76	0.0529	ng/m³ Air	2.7658		99.8	80-120			
Zinc	141	76.8	ng/m³ Air	82.975		170	80-120			
Duplicate (B4D2306-DUP1)		**Source: 4042234-11**		Prepared & Analyzed: 04/23/24						
Antimony	0.123	0.0308	ng/m³ Air		0.124			0.937	10	SL
Arsenic	0.263	0.00747	ng/m³ Air		0.240			9.13	10	
Barium	3.25	0.853	ng/m³ Air		3.19			2.01	10	QB-01
Beryllium	0.00652	0.00255	ng/m³ Air		0.00654			0.345	10	
Cadmium	ND	0.0591	ng/m³ Air		ND				10	U
Chromium	ND	1.76	ng/m³ Air		ND				10	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: 05/01/24 10:52
SUBMITTED: 04/22/24
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 B4D2306 - ICP-MS Extraction										
Duplicate (B4D2306-DUP1) Continued			**Source: 4042234-11**		Prepared & Analyzed: 04/23/24					
Cobalt	0.181	0.0348	ng/m³ Air		0.179			1.25	10	
Copper	37.7	2.10	ng/m³ Air		35.8			5.12	10	
Lead	0.684	0.171	ng/m³ Air		0.694			1.43	10	
Manganese	6.35	1.51	ng/m³ Air		6.37			0.393	10	
Molybdenum	2.15	0.286	ng/m³ Air		2.15			0.0772	10	
Nickel	1.04	0.520	ng/m³ Air		1.06			1.79	10	
Selenium	0.283	0.00715	ng/m³ Air		0.276			2.63	10	LJ, QX
Thallium	0.00214	4.70E-4	ng/m³ Air		0.00210			1.58	10	QB-01, QB-04
Vanadium	1.11	0.0422	ng/m³ Air		1.12			0.567	10	
Zinc	ND	61.3	ng/m³ Air		ND				10	U
Duplicate (B4D2306-DUP2)			**Source: 4042234-30**		Prepared & Analyzed: 04/23/24					
Antimony	0.0725	0.0316	ng/m³ Air		0.0692			4.67	10	SL
Arsenic	0.134	0.00768	ng/m³ Air		0.111			19.6	10	
Barium	2.62	0.877	ng/m³ Air		2.35			10.9	10	QB-01
Beryllium	0.00960	0.00262	ng/m³ Air		0.00961			0.179	10	
Cadmium	ND	0.0608	ng/m³ Air		ND				10	U
Chromium	ND	1.81	ng/m³ Air		1.86				10	U
Cobalt	0.218	0.0357	ng/m³ Air		0.213			2.12	10	
Copper	50.2	2.16	ng/m³ Air		44.8			11.3	10	
Lead	1.47	0.175	ng/m³ Air		1.32			11.0	10	
Manganese	5.28	1.55	ng/m³ Air		5.23			0.907	10	
Molybdenum	2.28	0.294	ng/m³ Air		2.25			1.49	10	
Nickel	1.05	0.535	ng/m³ Air		1.07			2.02	10	
Selenium	0.131	0.00735	ng/m³ Air		0.128			2.28	10	LJ, QX
Thallium	8.48E-4	4.83E-4	ng/m³ Air		8.17E-4			3.79	10	QB-01
Vanadium	0.534	0.0434	ng/m³ Air		0.498			7.06	10	
Zinc	ND	63.0	ng/m³ Air		ND				10	U
Duplicate (B4D2306-DUP3)			**Source: 4042234-15**		Prepared: 04/23/24 Analyzed: 04/24/24					
Antimony	0.126	0.0324	ng/m³ Air		0.128			1.68	10	SL
Arsenic	1.12	0.00786	ng/m³ Air		1.13			0.944	10	
Barium	3.93	0.897	ng/m³ Air		3.92			0.232	10	QB-01
Beryllium	0.00784	0.00268	ng/m³ Air		0.00796			1.48	10	
Cadmium	ND	0.0621	ng/m³ Air		ND				10	U
Chromium	2.27	1.85	ng/m³ Air		2.30			1.36	10	
Cobalt	0.305	0.0366	ng/m³ Air		0.306			0.397	10	
Copper	66.9	2.21	ng/m³ Air		67.4			0.736	10	
Lead	0.892	0.179	ng/m³ Air		0.898			0.672	10	
Manganese	9.53	1.59	ng/m³ Air		9.61			0.864	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 B4D2306 - ICP-MS Extraction										
Duplicate (B4D2306-DUP3) Continued		**Source: 4042234-15**		Prepared: 04/23/24 Analyzed: 04/24/24						
Molybdenum	4.22	0.301	ng/m³ Air		4.24			0.530	10	
Nickel	1.86	0.547	ng/m³ Air		1.86			0.170	10	
Selenium	0.291	0.00751	ng/m³ Air		0.292			0.206	10	LJ, QX
Thallium	0.00162	4.94E-4	ng/m³ Air		0.00157			3.28	10	QB-01
Vanadium	1.08	0.0444	ng/m³ Air		1.10			2.35	10	
Zinc	ND	64.4	ng/m³ Air		ND				10	U
Duplicate (B4D2306-DUP4)		**Source: 4042234-22**		Prepared: 04/23/24 Analyzed: 04/24/24						
Antimony	0.129	0.0317	ng/m³ Air		0.129			0.0268	10	SL
Arsenic	0.394	0.00769	ng/m³ Air		0.389			1.28	10	
Barium	1.92	0.878	ng/m³ Air		1.91			0.513	10	QB-01
Beryllium	0.00305	0.00263	ng/m³ Air		0.00306			0.290	10	
Cadmium	ND	0.0608	ng/m³ Air		ND				10	U
Chromium	ND	1.81	ng/m³ Air		ND				10	U
Cobalt	0.115	0.0358	ng/m³ Air		0.115			0.420	10	
Copper	35.5	2.16	ng/m³ Air		35.6			0.171	10	
Lead	0.618	0.176	ng/m³ Air		0.625			0.978	10	
Manganese	3.19	1.55	ng/m³ Air		3.17			0.564	10	
Molybdenum	1.87	0.295	ng/m³ Air		1.86			0.355	10	
Nickel	0.768	0.535	ng/m³ Air		0.767			0.102	10	
Selenium	0.161	0.00736	ng/m³ Air		0.161			0.310	10	LJ, QX
Thallium	8.54E-4	4.84E-4	ng/m³ Air		9.01E-4			5.36	10	QB-01
Vanadium	0.236	0.0434	ng/m³ Air		0.237			0.0722	10	
Zinc	ND	63.1	ng/m³ Air		ND				10	LJ, QX, U
Matrix Spike (B4D2306-MS1)		**Source: 4042234-11**		Prepared & Analyzed: 04/23/24						
Antimony	0.787	0.0308	ng/m³ Air	1.1029	0.124	60.1	80-120			SL
Arsenic	2.37	0.00747	ng/m³ Air	2.2059	0.240	96.4	80-120			
Barium	25.0	0.853	ng/m³ Air	22.059	3.19	98.7	80-120			QB-01
Beryllium	0.987	0.00255	ng/m³ Air	1.1029	0.00654	88.9	80-120			
Cadmium	1.07	0.0591	ng/m³ Air	1.1029	ND	97.4	80-120			
Chromium	12.6	1.76	ng/m³ Air	11.029	ND	114	80-120			
Cobalt	1.28	0.0348	ng/m³ Air	1.1029	0.179	100	80-120			
Copper	56.2	2.10	ng/m³ Air	22.059	35.8	92.2	80-120			
Lead	11.6	0.171	ng/m³ Air	11.029	0.694	98.8	80-120			
Manganese	12.3	1.51	ng/m³ Air	6.6177	6.37	89.6	80-120			
Molybdenum	3.13	0.286	ng/m³ Air	1.1029	2.15	88.9	80-120			
Nickel	3.09	0.520	ng/m³ Air	2.2059	1.06	92.1	80-120			
Selenium	2.38	0.00715	ng/m³ Air	2.2059	0.276	95.5	80-120			LJ, QX
Thallium	0.112	4.70E-4	ng/m³ Air	0.11029	0.00210	99.3	80-120			QB-01, QB-04

CERTIFICATE OF ANALYSIS

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FILE #: 4205.00.003.001
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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 B4D2306 - ICP-MS Extraction										
Matrix Spike (B4D2306-MS1) Continued Source: 4042234-11 Prepared & Analyzed: 04/23/24										
Vanadium	3.12	0.0422	ng/m³ Air	2.2059	1.12	90.7	80-120			
Zinc	100	61.3	ng/m³ Air	66.177	ND	152	80-120			
Matrix Spike (B4D2306-MS2) Source: 4042234-30 Prepared & Analyzed: 04/23/24										
Antimony	0.712	0.0316	ng/m³ Air	1.1338	0.0692	56.7	80-120			SL
Arsenic	2.23	0.00768	ng/m³ Air	2.2676	0.111	93.4	80-120			
Barium	24.4	0.877	ng/m³ Air	22.676	2.35	97.4	80-120			QB-01
Beryllium	0.996	0.00262	ng/m³ Air	1.1338	0.00961	87.0	80-120			
Cadmium	1.11	0.0608	ng/m³ Air	1.1338	ND	97.5	80-120			
Chromium	12.7	1.81	ng/m³ Air	11.338	1.86	95.9	80-120			
Cobalt	1.30	0.0357	ng/m³ Air	1.1338	0.213	96.0	80-120			
Copper	71.4	2.16	ng/m³ Air	22.676	44.8	117	80-120			
Lead	12.6	0.175	ng/m³ Air	11.338	1.32	99.6	80-120			
Manganese	11.3	1.55	ng/m³ Air	6.8027	5.23	89.6	80-120			
Molybdenum	3.27	0.294	ng/m³ Air	1.1338	2.25	90.6	80-120			
Nickel	3.03	0.535	ng/m³ Air	2.2676	1.07	86.4	80-120			
Selenium	2.26	0.00735	ng/m³ Air	2.2676	0.128	94.1	80-120			LJ, QX
Thallium	0.112	4.83E-4	ng/m³ Air	0.11338	8.17E-4	97.9	80-120			QB-01
Vanadium	2.62	0.0434	ng/m³ Air	2.2676	0.498	93.6	80-120			
Zinc	101	63.0	ng/m³ Air	68.027	ND	149	80-120			
Matrix Spike Dup (B4D2306-MSD1) Source: 4042234-11 Prepared & Analyzed: 04/23/24										
Antimony	0.788	0.0308	ng/m³ Air	1.1029	0.124	60.1	80-120	0.0378	20	SL
Arsenic	2.35	0.00747	ng/m³ Air	2.2059	0.240	95.6	80-120	0.805	20	
Barium	24.8	0.853	ng/m³ Air	22.059	3.19	98.1	80-120	0.504	20	QB-01
Beryllium	0.985	0.00255	ng/m³ Air	1.1029	0.00654	88.7	80-120	0.187	20	
Cadmium	1.08	0.0591	ng/m³ Air	1.1029	ND	97.9	80-120	0.574	20	
Chromium	12.6	1.76	ng/m³ Air	11.029	ND	114	80-120	0.231	20	
Cobalt	1.29	0.0348	ng/m³ Air	1.1029	0.179	100	80-120	0.287	20	
Copper	60.4	2.10	ng/m³ Air	22.059	35.8	112	80-120	7.30	20	
Lead	11.7	0.171	ng/m³ Air	11.029	0.694	100	80-120	1.23	20	
Manganese	12.3	1.51	ng/m³ Air	6.6177	6.37	89.0	80-120	0.336	20	
Molybdenum	3.24	0.286	ng/m³ Air	1.1029	2.15	99.3	80-120	3.60	20	
Nickel	3.18	0.520	ng/m³ Air	2.2059	1.06	96.3	80-120	2.95	20	
Selenium	2.39	0.00715	ng/m³ Air	2.2059	0.276	95.6	80-120	0.134	20	LJ, QX
Thallium	0.112	4.70E-4	ng/m³ Air	0.11029	0.00210	99.6	80-120	0.299	20	QB-01, QB-04
Vanadium	3.10	0.0422	ng/m³ Air	2.2059	1.12	89.8	80-120	0.631	20	
Zinc	103	61.3	ng/m³ Air	66.177	ND	156	80-120	2.69	20	
Matrix Spike Dup (B4D2306-MSD2) Source: 4042234-30 Prepared & Analyzed: 04/23/24										
Antimony	0.712	0.0316	ng/m³ Air	1.1338	0.0692	56.7	80-120	0.0299	20	SL

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D2306 - ICP-MS Extraction										
Matrix Spike Dup (B4D2306-MSD2) Conti			**Source: 4042234-30**			Prepared & Analyzed: 04/23/24				
Arsenic	2.28	0.00768	ng/m³ Air	2.2676	0.111	95.6	80-120	2.17	20	
Barium	24.8	0.877	ng/m³ Air	22.676	2.35	98.8	80-120	1.33	20	QB-01
Beryllium	1.01	0.00262	ng/m³ Air	1.1338	0.00961	88.0	80-120	1.14	20	
Cadmium	1.11	0.0608	ng/m³ Air	1.1338	ND	98.2	80-120	0.754	20	
Chromium	13.2	1.81	ng/m³ Air	11.338	1.86	99.9	80-120	3.48	20	
Cobalt	1.34	0.0357	ng/m³ Air	1.1338	0.213	99.0	80-120	2.55	20	
Copper	70.7	2.16	ng/m³ Air	22.676	44.8	114	80-120	0.946	20	
Lead	12.5	0.175	ng/m³ Air	11.338	1.32	98.9	80-120	0.584	20	
Manganese	11.8	1.55	ng/m³ Air	6.8027	5.23	96.0	80-120	3.82	20	
Molybdenum	3.38	0.294	ng/m³ Air	1.1338	2.25	99.5	80-120	3.05	20	
Nickel	3.25	0.535	ng/m³ Air	2.2676	1.07	96.1	80-120	7.03	20	
Selenium	2.29	0.00735	ng/m³ Air	2.2676	0.128	95.3	80-120	1.19	20	LJ, QX
Thallium	0.112	4.83E-4	ng/m³ Air	0.11338	8.17E-4	97.8	80-120	0.0950	20	QB-01
Vanadium	2.65	0.0434	ng/m³ Air	2.2676	0.498	94.8	80-120	1.01	20	
Zinc	95.5	63.0	ng/m³ Air	68.027	ND	140	80-120	5.95	20	QM-07
Post Spike (B4D2306-PS1)			**Source: 4042234-11**			Prepared & Analyzed: 04/23/24				
Antimony	0.344	0.0308	ng/m³ Air	0.22059	0.124	99.6	75-125			SL
Arsenic	1.31	0.00747	ng/m³ Air	1.1029	0.240	97.1	75-125			
Barium	5.37	0.853	ng/m³ Air	2.2059	3.19	98.9	75-125			QB-01
Beryllium	0.203	0.00255	ng/m³ Air	0.22059	0.00654	89.0	75-125			
Cadmium	0.120	0.0591	ng/m³ Air	0.11029	ND	108	75-125			
Chromium	2.58	1.76	ng/m³ Air	1.1029	ND	234	75-125			
Cobalt	0.402	0.0348	ng/m³ Air	0.22059	0.179	101	75-125			
Copper	47.6	2.10	ng/m³ Air	11.029	35.8	106	75-125			
Lead	22.4	0.171	ng/m³ Air	22.059	0.694	98.6	75-125			
Manganese	8.56	1.51	ng/m³ Air	2.2059	6.37	99.2	75-125			
Molybdenum	3.21	0.286	ng/m³ Air	1.1029	2.15	96.5	75-125			
Nickel	3.24	0.520	ng/m³ Air	2.2059	1.06	99.0	75-125			
Selenium	1.33	0.00715	ng/m³ Air	1.1029	0.276	95.2	75-125			LJ, QX
Thallium	0.0583	4.70E-4	ng/m³ Air	5.5147E-2	0.00210	102	75-125			QB-01, QB-04
Vanadium	2.12	0.0422	ng/m³ Air	1.1029	1.12	91.0	75-125			
Zinc	63.7	61.3	ng/m³ Air	22.059	ND	289	75-125			
Post Spike (B4D2306-PS2)			**Source: 4042234-30**			Prepared & Analyzed: 04/23/24				
Antimony	0.293	0.0316	ng/m³ Air	0.22676	0.0692	98.9	75-125			SL
Arsenic	1.21	0.00768	ng/m³ Air	1.1338	0.111	96.6	75-125			
Barium	4.58	0.877	ng/m³ Air	2.2676	2.35	98.2	75-125			QB-01
Beryllium	0.225	0.00262	ng/m³ Air	0.22676	0.00961	95.1	75-125			
Cadmium	0.121	0.0608	ng/m³ Air	0.11338	ND	107	75-125			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D2306 - ICP-MS Extraction										
Post Spike (B4D2306-PS2) Continued			**Source: 4042234-30**		Prepared & Analyzed: 04/23/24					
Chromium	2.96	1.81	ng/m³ Air	1.1338	1.86	97.3	75-125			
Cobalt	0.437	0.0357	ng/m³ Air	0.22676	0.213	99.0	75-125			
Copper	57.0	2.16	ng/m³ Air	11.338	44.8	108	75-125			
Lead	23.7	0.175	ng/m³ Air	22.676	1.32	98.7	75-125			
Manganese	7.53	1.55	ng/m³ Air	2.2676	5.23	101	75-125			
Molybdenum	3.31	0.294	ng/m³ Air	1.1338	2.25	93.6	75-125			
Nickel	3.31	0.535	ng/m³ Air	2.2676	1.07	98.7	75-125			
Selenium	1.26	0.00735	ng/m³ Air	1.1338	0.128	99.5	75-125			LJ, QX
Thallium	0.0594	4.83E-4	ng/m³ Air	5.6689E-2	8.17E-4	103	75-125			QB-01
Vanadium	1.57	0.0434	ng/m³ Air	1.1338	0.498	95.0	75-125			
Zinc	68.7	63.0	ng/m³ Air	22.676	ND	303	75-125			
Dilution Check (B4D2306-SRL1)			**Source: 4042234-11**		Prepared & Analyzed: 04/23/24					
Antimony	ND	0.154	ng/m³ Air		ND				10	SL, U
Arsenic	0.250	0.0374	ng/m³ Air		0.240			4.31	10	
Barium	ND	4.27	ng/m³ Air		ND				10	QB-01, U
Beryllium	ND	0.0128	ng/m³ Air		ND				10	U
Cadmium	ND	0.295	ng/m³ Air		ND				10	U
Chromium	ND	8.81	ng/m³ Air		ND				10	U
Cobalt	0.180	0.174	ng/m³ Air		0.179			0.307	10	
Copper	37.2	10.5	ng/m³ Air		35.8			3.81	10	
Lead	ND	0.853	ng/m³ Air		ND				10	U
Manganese	ND	7.54	ng/m³ Air		ND				10	U
Molybdenum	2.13	1.43	ng/m³ Air		2.15			0.796	10	
Nickel	ND	2.60	ng/m³ Air		ND				10	U
Selenium	0.250	0.0357	ng/m³ Air		0.276			9.80	10	LJ, QX
Thallium	0.00296	0.00235	ng/m³ Air		ND			33.8	10	QB-01, QB-04
Vanadium	1.10	0.211	ng/m³ Air		1.12			1.63	10	
Zinc	ND	306	ng/m³ Air		ND				10	U
Dilution Check (B4D2306-SRL2)			**Source: 4042234-30**		Prepared & Analyzed: 04/23/24					
Antimony	ND	0.158	ng/m³ Air		ND				10	SL, U
Arsenic	0.118	0.0384	ng/m³ Air		0.111			6.36	10	
Barium	ND	4.39	ng/m³ Air		ND				10	QB-01, U
Beryllium	ND	0.0131	ng/m³ Air		ND				10	U
Cadmium	ND	0.304	ng/m³ Air		ND				10	U
Chromium	ND	9.06	ng/m³ Air		ND				10	U
Cobalt	0.213	0.179	ng/m³ Air		0.213			0.157	10	
Copper	46.0	10.8	ng/m³ Air		44.8			2.66	10	
Lead	1.29	0.877	ng/m³ Air		1.32			2.45	10	

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

FILE #: 4205.00.003.001
REPORTED: 05/01/24 10:52
SUBMITTED: 04/22/24
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 B4D2306 - ICP-MS Extraction										
Dilution Check (B4D2306-SRL2) ContinueSource: 4042234-30 Prepared & Analyzed: 04/23/24										
Manganese	ND	7.75	ng/m³ Air		ND				10	U
Molybdenum	2.24	1.47	ng/m³ Air		2.25			0.394	10	
Nickel	ND	2.67	ng/m³ Air		ND				10	U
Selenium	0.100	0.0367	ng/m³ Air		0.128			24.6	10	LJ, QX
Thallium	ND	0.00241	ng/m³ Air		ND				10	QB-01, U
Vanadium	0.529	0.217	ng/m³ Air		0.498			6.18	10	
Zinc	ND	315	ng/m³ Air		ND				10	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:**

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Notes and Definitions

U	Under Detection Limit
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QX	Compound does not meet QC criteria. Results should be considered an estimate.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
QB-04	Analyte exceeds continuing calibration blank criteria
QB-01	Analyte exceeds method blank criteria
LJ	Identification of analyte is acceptable; reported value is an estimate.
FB-01	Analyte exceeds Field Blank criteria.
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 05/02/2024 and Shanna Vasser 05/03/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 04/11/2024 – 04/17/2024
Report No: 4042234

√	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:

4. MFL-AM01-041124-HM, MFL-AM01-041224-HM, and MFL-AM01-041324-HM were listed, crossed out, and voided on the CoC due to a power outage. MFL-AM02-041524-HM was listed crossed out, and on the Coc due to insufficient sample volume. These samples were not shipped to the laboratory.
13. Field blank detections above the method detection limit were reported for arsenic and vanadium in MFL-FB01-041124-HM; for arsenic, barium, copper, lead, and vanadium in MFL-FB01-041524-HM; and for barium in MFL-FB01-041724-HM.

Notes: None.