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

Lahaina, Maui

4/4/2024 – 4/10/2024

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 SSE 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 4-April 10), WW Pump Station #4 (April 4-April 10), Lahaina Intermediate School (April 4-April 10), Lahaina Boys & Girls Club (April 4-April 10).

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

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

There were 28 samples collected for asbestos fibers at community monitoring locations throughout this reporting period. Of the 28 samples collected, one sample collected at Leialii Hawaiian Homelands on April 5 was voided due to a greater than 10% discrepancy between the pre and post calibration flow rate values, as stated in the asbestos sampling SOP. 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:

- Leialii Hawaiian Homelands on April 6 and 9
- WW Pump Station #4 on April 4, 9, and 10
- Lahaina Intermediate School on April 8 and 9
- Lahaina Boys & Girls Club on April 9

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

Low levels of heavy metals were detected in ambient air samples at all community sampling locations (see Table 1). Although heavy metals were detected, all 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.

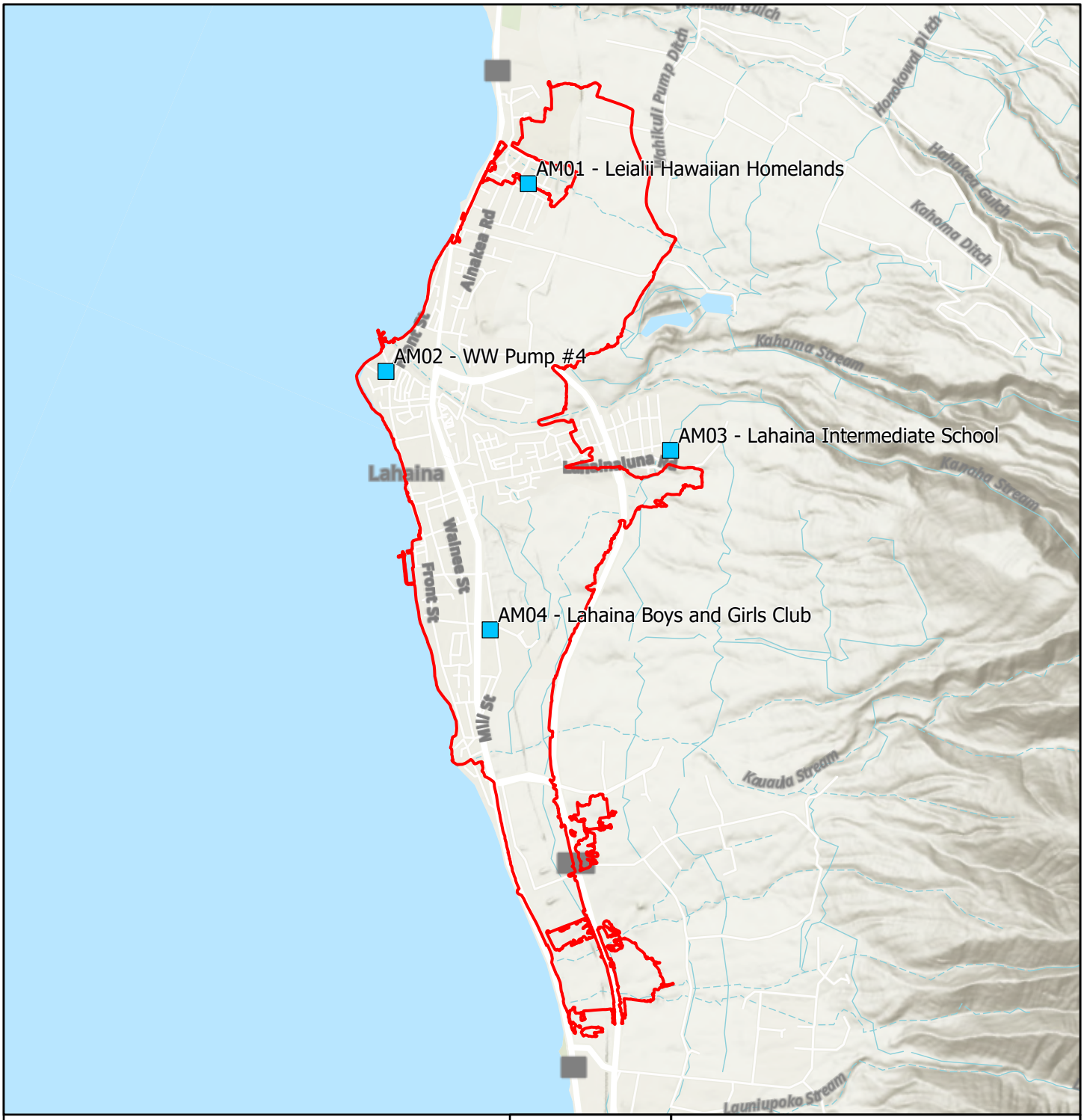
Tetra Tech is using Tisch Environmental High Volume Air Samplers, or equivalent, collocated with the real-time particulate monitors and asbestos samplers described above. Air samples for elemental metals at community locations are collected and analyzed in accordance with the following methods:

- 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



Basemap: ESRI ArcGIS World Street Map

Table 1
HDOH CAB Ambient Community Monitoring and Sampling
Analytical Sampling Results by Date
Maui Wildfire, Lahaina
4/4/2024-4/10/2024

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
4/4/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.000209	0.00178	0.00685	0.0000216	ND	0.00451	0.000780	0.0584	0.000930	0.0237	0.00225	0.00226	0.000202	0.00000183	0.00271	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.00245	0.00373	0.0382	0.0000357	0.0000859	0.00562	0.00141	0.102	0.0118	0.0446	0.00214	0.00458	0.000292	0.00000372	0.00344	0.194
	Lahaina Intermediate School (AM-03)	<0.0024	0.000102	0.000424	0.00509	0.0000528	ND	0.00547	0.000916	0.0359	0.000791	0.0210	0.00157	0.00245	0.000218	0.00000134	0.00233	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000108	0.000565	0.00323	0.0000131	ND	0.00273	0.000457	0.0213	0.000943	0.0132	0.00111	0.00133	0.000162	0.00000105	0.00132	ND
4/5/2024	Leialii Hawaiian Homelands (AM-01)		0.0000822	0.000705	0.00467	0.0000159	ND	0.00373	0.000815	0.0381	0.000895	0.0222	0.00172	0.00194	0.000186	0.00000180	0.00231	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000507	0.00106	0.0117	0.0000282	0.0000692	0.00350	0.000943	0.0542	0.00332	0.0333	0.00196	0.00264	0.000259	0.00000272	0.00279	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000837	0.000389	0.00575	0.0000718	ND	0.00536	0.00125	0.0346	0.000751	0.0278	0.00161	0.00292	0.000318	0.00000210	0.00295	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000168	0.00213	0.00460	0.0000189	ND	0.00373	0.000692	0.0249	0.00242	0.0204	0.00100	0.00226	0.000207	0.00000174	0.00174	ND
4/6/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.000133	0.00126	0.00569	0.0000171	ND	0.00356	0.000785	0.0816	0.00121	0.0214	0.00233	0.00171	0.000198	0.00000210	0.00199	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000174	0.000611	0.00534	0.0000201	0.000130	0.00296	0.000642	0.0719	0.00226	0.0192	0.00122	0.00187	0.000242	0.00000245	0.00183	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000880	0.000371	0.00492	0.0000619	ND	0.00482	0.00103	0.0459	0.000878	0.0226	0.00238	0.00270	0.000279	0.00000261	0.00235	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.000135	0.00239	0.00415	0.0000131	ND	0.00287	0.000469	0.0394	0.00214	0.0142	0.00128	0.00140	0.000184	0.00000216	0.00116	ND
4/7/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000650	0.000489	0.00336	0.00000864	ND	0.00239	0.000383	0.0929	0.000891	0.0111	0.00501	0.000999	0.000126	0.00000114	0.00105	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000150	0.000531	0.00468	0.0000153	ND	0.00215	0.000492	0.0320	0.00131	0.0146	0.00136	0.00139	0.000152	0.00000127	0.00137	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000550	0.000120	0.00206	0.00000547	ND	ND	0.000138	0.0691	0.00206	0.00364	0.00125	0.000660	0.0000604	0.000000584	0.000331	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000720	0.000304	0.00229	0.00000626	ND	0.00171	0.000236	0.0232	0.000821	0.00705	0.00103	0.000768	0.0000933	0.000000687	0.000556	ND
4/8/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000881	0.000770	0.00390	0.0000104	ND	0.00364	0.000512	0.0990	0.000592	0.0148	0.00544	0.00145	0.000177	0.00000142	0.00146	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000172	0.000525	0.00638	0.0000150	0.0000649	0.00236	0.000515	0.0259	0.00143	0.0156	0.00122	0.00152	0.000205	0.00000152	0.00151	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000857	0.000428	0.00330	0.0000285	ND	0.00261	0.000512	0.0414	0.000969	0.0125	0.00235	0.00149	0.000211	0.00000165	0.00136	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000104	0.000639	0.00435	0.0000163	ND	0.00274	0.000516	0.0305	0.00106	0.0161	0.00184	0.00130	0.000210	0.00000185	0.00152	ND
4/9/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000885	0.000423	0.00292	0.00000843	ND	0.00203	0.000335	0.104	0.000354	0.00994	0.00666	0.000914	0.000189	0.00000145	0.00114	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000140	0.000369	0.00467	0.0000105	ND	0.00191	0.000381	0.0249	0.000673	0.0113	0.00146	0.00113	0.000205	0.00000152	0.00126	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000115	0.000352	0.00369	0.0000226	ND	0.00238	0.000456	0.0407	0.000696	0.0128	0.00250	0.00128	0.000225	0.00000156	0.00140	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000105	0.000372	0.00326	0.00000948	ND	ND	0.000298	0.0259	0.000729	0.00968	0.00184	0.000893	0.000183	0.00000132	0.00104	ND
4/10/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.0000757	0.000434	0.00300	0.00000768	ND	ND	0.000275	0.0792	0.000491	0.00940	0.00534	0.000947	0.000219	0.00000180	0.00131	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000191	0.000269	0.00614	0.0000124	ND	0.00196	0.000410	0.0239	0.000805	0.0129	0.00146	0.00136	0.000229	0.00000173	0.00164	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.000162	0.000483	0.00461	0.0000293	ND	0.00271	0.000610	0.0409	0.00104	0.0175	0.00229	0.00154	0.000287	0.00000218	0.00200	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000125	0.000309	0.00398	0.0000109	ND	0.00193	0.000336	0.0281	0.000909	0.0115	0.00214	0.00104	0.000242	0.00000213	0.00139	ND
95% Upper Confidence Limit[2]		NA	0.000230	0.00104	0.00663	0.0000270	0.000147	0.00363	0.000730	0.0600	0.00184	0.0205	0.00271	0.00196	0.000230	0.00000200	0.00206	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
The asbestos sample was voided at Leialii Hawaiian Homelands on 4/5 due to a greater than 10% discrepancy between the pre and post calibration flow rate values, as stated in the asbestos sampling SOP.

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

Screening Level		**150 µg/m^3**
4/4/2024	Leialii Hawaiian Homelands (AM-01)	5.5
	WW Pump Station #4 (AM-02)	8.2
	Lahaina Intermediate School (AM-03)	8.2
	Lahaina Boys & Girls Club (AM-04)	6.7
4/5/2024	Leialii Hawaiian Homelands (AM-01)	8.2
	WW Pump Station #4 (AM-02)	11
	Lahaina Intermediate School (AM-03)	9.4
	Lahaina Boys & Girls Club (AM-04)	7.9
4/6/2024	Leialii Hawaiian Homelands (AM-01)	8.9
	WW Pump Station #4 (AM-02)	6.3
	Lahaina Intermediate School (AM-03)	7.7
	Lahaina Boys & Girls Club (AM-04)	6.0
4/7/2024	Leialii Hawaiian Homelands (AM-01)	5.4
	WW Pump Station #4 (AM-02)	6.6
	Lahaina Intermediate School (AM-03)	5.9
	Lahaina Boys & Girls Club (AM-04)	5.9
4/8/2024	Leialii Hawaiian Homelands (AM-01)	12
	WW Pump Station #4 (AM-02)	9.1
	Lahaina Intermediate School (AM-03)	10
	Lahaina Boys & Girls Club (AM-04)	7.7
4/9/2024	Leialii Hawaiian Homelands (AM-01)	13
	WW Pump Station #4 (AM-02)	9.7
	Lahaina Intermediate School (AM-03)	9.5
	Lahaina Boys & Girls Club (AM-04)	9.2
4/10/2024	Leialii Hawaiian Homelands (AM-01)	13
	WW Pump Station #4 (AM-02)	12
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	11

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
Results forLeialii Hawaiian Homelands (AM-01) on 4/10 are based on a 22 hr TWA because of a power outage.

Table 3
Maui Wildfire - Lahaina
Meteorological Data
4/4/2024-4/10/2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
4/4/2024	AM-01	Leialii Hawaiian Homelands	1.3	SSE	79	55	762.2
4/4/2024	AM-02	WW Pump Station #4	1.2	S	79	61	764.4
4/4/2024	AM-03	Lahaina Intermediate School	1.5	S	75	63	754.9
4/4/2024	AM-04	Lahaina Boys & Girls Club	2.0	SSW	77	60	764.1
4/5/2024	AM-01	Leialii Hawaiian Homelands	1.7	S	78	52	762.1
4/5/2024	AM-02	WW Pump Station #4	1.2	S	78	56	764.3
4/5/2024	AM-03	Lahaina Intermediate School	1.6	S	74	60	754.8
4/5/2024	AM-04	Lahaina Boys & Girls Club	1.7	SSW	76	56	764.0
4/6/2024	AM-01	Leialii Hawaiian Homelands	2.1	ESE	78	52	762.3
4/6/2024	AM-02	WW Pump Station #4	1.3	SSE	78	56	764.5
4/6/2024	AM-03	Lahaina Intermediate School	1.5	S	75	58	755.0
4/6/2024	AM-04	Lahaina Boys & Girls Club	1.7	SSW	76	56	764.0
4/7/2024	AM-01	Leialii Hawaiian Homelands	1.1	SE	78	54	762.2
4/7/2024	AM-02	WW Pump Station #4	1.0	S	77	59	764.4
4/7/2024	AM-03	Lahaina Intermediate School	1.2	SSE	74	62	754.9
4/7/2024	AM-04	Lahaina Boys & Girls Club	1.5	S	76	59	764.1
4/8/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	78	56	761.5
4/8/2024	AM-02	WW Pump Station #4	1.0	SSE	77	60	763.8
4/8/2024	AM-03	Lahaina Intermediate School	1.1	SSE	73	63	754.3
4/8/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	75	61	763.5
4/9/2024	AM-01	Leialii Hawaiian Homelands	1.0	SE	78	61	760.1
4/9/2024	AM-02	WW Pump Station #4	1.1	SE	77	66	762.4
4/9/2024	AM-03	Lahaina Intermediate School	1.2	SE	73	69	753.0
4/9/2024	AM-04	Lahaina Boys & Girls Club	1.2	S	74	66	762.1
4/10/2024	AM-01	Leialii Hawaiian Homelands	1.1	SSE	78	64	758.8
4/10/2024	AM-02	WW Pump Station #4	1.1	SSE	77	67	761.0
4/10/2024	AM-03	Lahaina Intermediate School	1.2	SE	74	68	751.6
4/10/2024	AM-04	Lahaina Boys & Girls Club	1.3	S	75	68	760.7

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

Appendix 1

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

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

EMSL Order:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/12/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-040424-AB**

EMSL Sample Number:	042407332-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6887.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
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EMSL Order ID: 042407332
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: 042407332-0001 **Customer Sample:** MFL-AM01-040424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	J6	None Detected									
A5	G3	None Detected									
A5	D2	None Detected									
A6	D9	None Detected									
A6	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:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/12/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-040424-AB**

EMSL Sample Number:	042407332-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7222.2
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
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected 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: 042407332
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: 042407332-0002 **Customer Sample:** MFL-AM02-040424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B2	A8	None Detected									
B2	D5	None Detected									
B2	F4	None Detected									
B3	A3	None Detected									
B3	G2	None Detected									

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

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

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Project: **Maui Fires - Lahaina**

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Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-040424-AB**

EMSL Sample Number:	042407332-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7147.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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: 042407332
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: 042407332-0003 **Customer Sample:** MFL-AM03-040424-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	A2	None Detected									
B5	C5	None Detected									
B5	G6	None Detected									
B6	D7	None Detected									
B6	G4	None Detected									

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

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

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Project: **Maui Fires - Lahaina**

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Fax:	N/A
Received Date:	04/10/2024 09:30 AM
Analysis Date:	04/12/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-040424-AB**

EMSL Sample Number:	042407332-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7196.8
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:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042407332
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: 042407332-0004 **Customer Sample:** MFL-AM04-040424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C2	I8	None Detected									
C2	F8	None Detected									
C2	C9	None Detected									
C3	D3	None Detected									
C3	I2	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:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/12/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-040424-AB**

EMSL Sample Number:	042407332-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042407332
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: 042407332-0005 **Customer Sample:** MFL-FB01-040424-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	J9	None Detected									
C5	H8	None Detected									
C5	F7	None Detected									
C5	D5	None Detected									
C5	B4	None Detected									
C6	A7	None Detected									
C6	C8	None Detected									
C6	E9	None Detected									
C6	G7	None Detected									
C6	I5	None Detected									

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

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EMSL Order:	042407332
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Phone:	(703) 489-2674
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Received Date:	04/10/2024 09:30 AM
Analysis Date:	04/12/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-040524-AB**

EMSL Sample Number:	042407332-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7161.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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
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EMSL Order ID: 042407332
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: 042407332-0006 **Customer Sample:** MFL-AM02-040524-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					
D2	B3	None Detected									
D2	E9	None Detected									
D2	H8	None Detected									
D3	B7	None Detected									
D3	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:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/12/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-040524-AB**

EMSL Sample Number:	042407332-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7266.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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: 042407332
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: 042407332-0007 **Customer Sample:** MFL-AM03-040524-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	B5	None Detected									
D5	E7	None Detected									
D5	I9	None Detected									
D6	B10	None Detected									
D6	I9	None Detected									

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

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EMSL Order:	042407332
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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Fax:	N/A
Received Date:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-040524-AB**

EMSL Sample Number:	042407332-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7288.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	10			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042407332
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: 042407332-0008 **Customer Sample:** MFL-AM04-040524-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					
E2	B6	None Detected									
E2	E7	None Detected									
E2	I10	None Detected									
E4	I4	None Detected									
E4	C2	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:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-040524-AB**

EMSL Sample Number:	042407332-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042407332
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: 042407332-0009 **Customer Sample:** MFL-FB01-040524-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	G1	None Detected									
E5	E3	None Detected									
E5	G8	None Detected									
E5	B8	None Detected									
E5	A4	None Detected									
E6	A10	None Detected									
E6	B8	None Detected									
E6	C9	None Detected									
E6	D7	None Detected									
E6	E10	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:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-040624-AB**

EMSL Sample Number:	042407332-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6773.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present.

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EMSL Order ID: 042407332
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: 042407332-0010 **Customer Sample:** MFL-AM01-040624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F2	A10	None Detected									
F2	D8	None Detected									
F2	F7	None Detected									
F3	B5	None Detected									
F3	H8	None Detected									

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

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EMSL Order:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-040624-AB**

EMSL Sample Number:	042407332-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6991.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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

EMSL Order ID: 042407332
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: 042407332-0011 **Customer Sample:** MFL-AM02-040624-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					
F7	A8	None Detected									
F7	C6	None Detected									
F7	H10	None Detected									
F8	H7	None Detected									
F8	E5	None Detected									

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

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EMSL Order:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-040624-AB**

EMSL Sample Number:	042407332-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7146.8
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:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 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: 042407332
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: 042407332-0012 **Customer Sample:** MFL-AM03-040624-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	F1	None Detected									
G1	D4	None Detected									
G1	B1	None Detected									
G2	J1	None Detected									
G2	C3	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:	042407332
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-040624-AB**

EMSL Sample Number:	042407332-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7037.8
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:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042407332-0013 **Customer Sample:** MFL-AM04-040624-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	J2	None Detected									
G5	F3	None Detected									
G5	B2	None Detected									
G6	A10	None Detected									
G6	C8	None Detected									

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

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

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

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-040624-AB**

EMSL Sample Number:	042407332-0014		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:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042407332
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: 042407332-0014 **Customer Sample:** MFL-FB01-040624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H2	J5	None Detected									
H2	H3	None Detected									
H2	F1	None Detected									
H2	D3	None Detected									
H2	B4	None Detected									
H3	J8	None Detected									
H3	H10	None Detected									
H3	F9	None Detected									
H3	D7	None Detected									
H3	B8	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:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-040724-AB**

EMSL Sample Number:	042407332-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7430.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
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: 042407332
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: 042407332-0015 **Customer Sample:** MFL-AM01-040724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H5	A7	None Detected									
H5	C9	None Detected									
H5	F10	None Detected									
H6	H1	None Detected									
H6	A3	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:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-040724-AB**

EMSL Sample Number:	042407332-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7148.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	8			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042407332
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: 042407332-0016 **Customer Sample:** MFL-AM02-040724-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					
I3	I3	None Detected									
I3	F4	None Detected									
I3	B5	None Detected									
I4	J6	None Detected									
I4	A8	None Detected									

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

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

EMSL Order:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-040724-AB**

EMSL Sample Number:	042407332-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7313.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042407332
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: 042407332-0017 **Customer Sample:** MFL-AM03-040724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I5	J6	None Detected									
I5	G7	None Detected									
I5	C5	None Detected									
I6	A3	None Detected									
I6	G1	None Detected									

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

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

EMSL Order:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-040724-AB**

EMSL Sample Number:	042407332-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7153.0
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:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 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: 042407332
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: 042407332-0018 **Customer Sample:** MFL-AM04-040724-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					
J3	C3	None Detected									
J3	F4	None Detected									
J3	H3	None Detected									
J4	C4	None Detected									
J4	I6	None Detected									

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

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

EMSL Order:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/15/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-040724-AB**

EMSL Sample Number:	042407332-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID:	**042407332**
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: 042407332-0019 **Customer Sample:** MFL-FB01-040724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J5	J5	None Detected									
J5	I6	None Detected									
J5	F8	None Detected									
J5	D10	None Detected									
J5	B8	None Detected									
J6	J10	None Detected									
J6	H8	None Detected									
J6	F7	None Detected									
J6	D9	None Detected									
J6	B7	None Detected									

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

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

EMSL Order:	042407332
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:	04/10/2024 09:30 AM
Analysis Date:	04/12/2024
Report Date:	04/18/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042407332-0020		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042407332
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: 042407332-0020 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A2	J3	None Detected									
A2	H4	None Detected									
A2	F3	None Detected									
A2	D5	None Detected									
A2	B7	None Detected									
A3	A5	None Detected									
A3	C6	None Detected									
A3	E4	None Detected									
A3	G5	None Detected									
A3	I6	None Detected									

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

OrderID: 042407332

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042407332

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		Billing Information	
Customer ID:		Billing ID:	
Company Name:	Tetra Tech	Company Name:	
Contact Name:	Chelsea Saber	Billing Contact:	
Street Address:	1560 Broadway Ste 1400	Street Address:	
City, State, Zip:	Denver, CO 80202	City, State, Zip:	
Country:	USA	Country:	
Phone:	703-489-2674	Phone:	
Email(s) for Report:	Chelsea.Saber@tetratech.com	Email(s) for Invoice:	

RECEIVED EMSL CINNAMINSON, NJ 2024 APR 10 A 8:

Project Information

Project Name/No:	Maui Fires - Lahaina	Purchase Order:	12070085
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:	Sean Daniel Hallahan	Sampled By Signature:	Sean Hallahan
No. of Samples in Shipment	19		

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-AM01-040424-AB		6887.401	04/04/24 (1059)
MFL-AM02-040424-AB		7222.198	04/04/24 (1122)
MFL-AM03-040424-AB		7147.853	04/04/24 (1314)
MFL-AM04-040424-AB		7196.759	04/04/24 (1333)
MFL-FB01-040424-AB		0	04/04/24 (1200)
~~MFL-AM01-040524-AB~~	VOID	~~6038.201~~	~~04/05/24 (1054)~~ SH
MFL-AM02-040524-AB		7161.552	04/05/24 (1125)
MFL-AM03-040524-AB		7266.688	04/05/24 (1308)

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

MFL-AM01-040524-AB voided because post-cal value was greater than 10% deviation from pre-cal value.

19 AP

Method of Shipment:	FedEx	Sample Condition Upon Receipt:	
Relinquished by:	Sean Hallahan	Date/Time: 04/08/24 (1100)	Received by: FedEx
Date/Time: 4/10/24 9:30A			
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.

All samples received acceptable for analysis.

OrderID: 042407332

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042407332

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-AM04-040524-AB		7288.416	04/05/24 (1336)
MFL-FB01-040524-AB		0	04/05/24 (1200)
MFL-AM01-040624-AB		6773.421	04/06/24 (1058)
MFL-AM02-040624-AB		6991.590	04/06/24 (1115)
MFL-AM03-040624-AB		7146.798	04/06/24 (1306)
MFL-AM04-040624-AB		7037.786	04/06/24 (1330)
MFL-FB01-040624-AB		0	04/06/24 (1200)
MFL-AM01-040724-AB		7430.861	04/07/24 (1058)
MFL-AM02-040724-AB		7148.695	04/07/24 (1115)
MFL-AM03-040724-AB		7313.367	04/07/24 (1303)
MFL-AM04-040724-AB		7152.983	04/07/24 (1325)
MFL-FB01-040724-AB		0	04/07/24 (1200)

RECEIVED
EMSL
CINNAMINSON, NJ
2024 APR 10 A 11:15

Method of Shipment: FedEx

Relinquished by: Sam Callahan — Date/Time: 04/08/2024 (1100)

Relinquished by: — Date/Time:

Sample Condition Upon Receipt:

Received by: FedEx — Date/Time 4/10/24 9:30A

Received by: — Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 4/18/2024 and Shanna Vasser 4/19/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 4/4/2024 – 4/7/2024
Report No: 42407332

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

Discrepancies:

4. MFL-AM01-040524-AB was listed on the CoC as void because the post-cal value deviated from the pre-cal valve by more than 10%. It was not shipped to the laboratory.

Notes: None.

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

EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/17/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-040824-AB**

EMSL Sample Number:	042407595-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7301.7
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 %:	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

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: 042407595
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: 042407595-0001 **Customer Sample:** MFL-AM01-040824-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	G9	None Detected									
B1	C5	None Detected									
B2	A7	None Detected									
B2	G5	None Detected									
B3	H8	None Detected									

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

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

EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/17/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-040824-AB**

EMSL Sample Number:	042407595-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7275.7
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 %:	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

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: 042407595
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: 042407595-0002 **Customer Sample:** MFL-AM02-040824-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	F7	None Detected									
B5	D4	None Detected									
B6	B7	None Detected									
B6	E3	None Detected									
B6	I6	None Detected									

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

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EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/17/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-040824-AB**

EMSL Sample Number:	042407595-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7259.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G. Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present

Robyn Ray
Approved Signatory

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: 042407595
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: 042407595-0003 **Customer Sample:** MFL-AM03-040824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
C2	J4	None Detected									
C2	E3	None Detected									
C2	B7	None Detected									
C3	D3	None Detected									
C3	H8	None Detected									

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

EMSL Analytical, Inc.
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EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/17/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-040824-AB**

EMSL Sample Number:	042407595-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7244.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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.
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: 042407595
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: 042407595-0004 **Customer Sample:** MFL-AM04-040824-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	G4	None Detected									
C5	D7	None Detected									
C5	A9	None Detected									
C6	J7	None Detected									
C6	E4	None Detected									

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

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EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/17/2024 & 04/20/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-040824-AB**

EMSL Sample Number:	042407595-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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EMSL Order ID: 042407595
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: 042407595-0005 **Customer Sample:** MFL-FB01-040824-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	C8	None Detected									
D1	C4	None Detected									
D1	G7	None Detected									
D2	A5	None Detected									
D2	F8	None Detected									
D1	J3	None Detected									
D1	H6	None Detected									
D1	I9	None Detected									
D2	D9	None Detected									
D2	I5	None Detected									

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

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EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/17/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-040924-AB**

EMSL Sample Number:	042407595-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6996.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

numerous gypsum fibers present

Robyn Ray
Approved Signatory

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EMSL Order ID: 042407595
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: 042407595-0006 **Customer Sample:** MFL-AM01-040924-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	H5	None Detected									
D5	E4	None Detected									
D5	A6	None Detected									
D6	G6	None Detected									
D6	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:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/17/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-040924-AB**

EMSL Sample Number:	042407595-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7286.9
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:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

numerous gypsum fibers present

Robyn Ray
Approved Signatory

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EMSL Order ID: 042407595
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: 042407595-0007 **Customer Sample:** MFL-AM02-040924-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	E3	None Detected									
E1	I6	None Detected									
E2	A7	None Detected									
E2	D4	None Detected									
E2	H3	None Detected									

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

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

EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/20/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-040924-AB**

EMSL Sample Number:	042407595-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7233.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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
Approved Signatory

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EMSL Order ID: 042407595
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: 042407595-0008 **Customer Sample:** MFL-AM03-040924-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	I4	None Detected									
E5	F7	None Detected									
E5	A5	None Detected									
E6	D5	None Detected									
E6	H5	None Detected									

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

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EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/20/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-040924-AB**

EMSL Sample Number:	042407595-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7197.0
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 %:	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

Nuerous gypsum fibers present.

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042407595
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: 042407595-0009 **Customer Sample:** MFL-AM04-040924-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	I7	None Detected									
F1	F3	None Detected									
F1	B6	None Detected									
F2	G6	None Detected									
F2	C3	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:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/18/2024 & 04/20/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-040924-AB**

EMSL Sample Number:	042407595-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**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
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EMSL Order ID: 042407595
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: 042407595-0010 **Customer Sample:** MFL-FB01-040924-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
F5	B6	None Detected									
F5	E3	None Detected									
F5	J7	None Detected									
F6	C8	None Detected									
F6	G5	None Detected									
F6	I3	None Detected									
F7	B2	None Detected									
F7	E5	None Detected									
F7	H7	None Detected									
F7	J4	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:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/18/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM01-041024-AB**

EMSL Sample Number:	042407595-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6850.6
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):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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EMSL Order ID: 042407595
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: 042407595-0011 **Customer Sample:** MFL-AM01-041024-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	C2	None Detected									
G1	E5	None Detected									
G1	J8	None Detected									
G2	F4	None Detected									
G2	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:	042407595
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/15/2024 10:00 AM
Analysis Date:	04/18/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM02-041024-AB**

EMSL Sample Number:	042407595-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7252.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	G.Barry
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	6			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Numerous gypsum fibers present

Robyn Ray
Approved Signatory

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EMSL Order ID: 042407595
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: 042407595-0012 **Customer Sample:** MFL-AM02-041024-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	A2	None Detected									
G5	D4	None Detected									
G5	J3	None Detected									
G6	G8	None Detected									
G6	C5	None Detected									

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

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EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/18/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-041024-AB**

EMSL Sample Number:	042407595-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7241.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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: 042407595
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: 042407595-0013 **Customer Sample:** MFL-AM03-041024-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	G7	None Detected									
H1	D6	None Detected									
H2	J6	None Detected									
H2	E4	None Detected									
H2	B8	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:	042407595
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	04/15/2024 10:00 AM
Analysis Date:	04/18/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM04-041024-AB**

EMSL Sample Number:	042407595-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7234.7
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 %:	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: 042407595
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: 042407595-0014 **Customer Sample:** MFL-AM04-041024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H5	C2	None Detected									
H5	D6	None Detected									
H5	J5	None Detected									
H6	I7	None Detected									
H6	E7	None Detected									

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

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

EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/18/2024 & 04/20/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-041024-AB**

EMSL Sample Number:	042407595-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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: 042407595
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: 042407595-0015 **Customer Sample:** MFL-FB01-041024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I2	B4	None Detected									
I2	D7	None Detected									
I2	H6	None Detected									
I3	G5	None Detected									
I3	C2	None Detected									
I2	C7	None Detected									
I2	J5	None Detected									
I3	E4	None Detected									
I4	G7	None Detected									
I4	C8	None Detected									

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

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

EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/18/2024 & 04/20/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-LB01-041024-AB**

EMSL Sample Number:	042407595-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	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: 042407595
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: 042407595-0016 **Customer Sample:** MFL-LB01-041024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I5	J6	None Detected									
I5	F9	None Detected									
I5	A5	None Detected									
I6	B4	None Detected									
I6	H3	None Detected									
I5	J2	None Detected									
I5	D3	None Detected									
I7	A3	None Detected									
I7	A7	None Detected									
I7	G7	None Detected									

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

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

EMSL Order:	042407595
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:	04/15/2024 10:00 AM
Analysis Date:	04/18/2024 & 04/20/2024
Report Date:	04/23/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **Lab Blank**

EMSL Sample Number:	042407595-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0128
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: 042407595
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: 042407595-0017 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A1	I7	None Detected									
A1	F4	None Detected									
A1	A7	None Detected									
A2	D6	None Detected									
A2	H5	None Detected									
A1	J3	None Detected									
A1	C3	None Detected									
A2	B9	None Detected									
A2	E8	None Detected									
A2	J6	None Detected									

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

OrderID: 042407595

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only: 042407595

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

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

Customer Information

Customer ID:
Company Name: Tetra Tech
Contact Name: Chelsea Saber
Street Address: 1560 Broadway Ste 1400
City, State, Zip: Denver, CO 80202 Country: USA
Phone: 703-489-2674
Email(s) for Report: Chelsea.Saber@tetratech.com

Billing Information

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

Project Information

Project Name/No: Maui Fires - Lahaina
Purchase Order: 1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: Sean Daniel Hallahan
Sampled By Signature: Sean Daniel Hallahan
No. of Samples in Shipment: 16

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)
~~04/08/~~ SH			
MFL-AM01-040824-AB		7301.664	04/08/24 1102
MFL-AM02-040824-AB		7275.744	04/08/24 1117
MFL-AM03-040824-AB		7259.112	04/08/24 1306
MFL-AM04-040824-AB		7244.496	04/08/24 1329
MFL-FB01-040824-AB		0	04/08/24 1200
MFL-AM01-040924-AB		6996.146	04/09/24 1103
MFL-AM02-040924-AB		7286.930	04/09/24 1121

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

All samples received acceptable for analysis. 16

Method of Shipment: FedEx

Relinquished by:	Date/Time:	Received by:	Date/Time:
Sean Daniel Hallahan	04/11/24 1100	FX	4/15/24 850
Relinquished by:	Date/Time:	Received by:	Date/Time

Sample Condition Upon Receipt:

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

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

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

OrderID: 042407595

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

042407595

RECEIVED
EMSL
CINNAMINSON, N.J.
2024 APR 15 A 9:30

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-AM03-040924-AB		7233.347	04/09/24 1308
MFL-AM04-040924-AB		7196.977	04/09/24 1327
MFL-FB01-040924-AB		0	04/09/24 1200
MFL-AM01-041024-AB		6850.555	04/10/24 1059
MFL-AM02-041024-AB		7252.507	04/10/24 1116
MFL-AM03-041024-AB		7241.085	04/10/24 1258
MFL-AM04-041024-AB		7234.741	04/10/24 1319
MFL-FB01-041024-AB		0	04/10/24 1200
MFL-LB01-041024-AB		0	04/10/24 1201

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by: Sam Callahan	Date/Time: 04/11/24 1100	Received by: Charles FX	Date/Time: 4/15/24 850
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 04/25/2024 and Shanna Vasser 4/25/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 04/08/2024-04/10/2024
Report No: 42407595

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

Discrepancies: None.

Notes: None.

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

April 23, 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 04/15/24 14:36.

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

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

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

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

Sincerely,

Julie Swift
Program Manager
julie.swift@erg.com

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-040424-HM/MS/I	4041535-01	Air	04/04/24 23:59	04/15/24 14:36
MFL-AM02-040424-HM	4041535-02	Air	04/04/24 23:59	04/15/24 14:36
MFL-AM03-040424-HM	4041535-03	Air	04/04/24 23:59	04/15/24 14:36
MFL-AM04-040424-HM	4041535-04	Air	04/04/24 23:59	04/15/24 14:36
MFL-AM01-040524-HM	4041535-05	Air	04/05/24 23:59	04/15/24 14:36
MFL-AM02-040524-HM	4041535-06	Air	04/05/24 23:59	04/15/24 14:36
MFL-AM03-040524-HM	4041535-07	Air	04/05/24 23:59	04/15/24 14:36
MFL-AM04-040524-HM	4041535-08	Air	04/05/24 23:59	04/15/24 14:36
MFL-FB01-040524-HM	4041535-09	Air	04/05/24 00:00	04/15/24 14:36
MFL-AM01-040624-HM	4041535-10	Air	04/06/24 23:59	04/15/24 14:36
MFL-AM02-040624-HM	4041535-11	Air	04/06/24 23:59	04/15/24 14:36
MFL-AM03-040624-HM	4041535-12	Air	04/06/24 23:59	04/15/24 14:36
MFL-AM04-040624-HM	4041535-13	Air	04/06/24 23:59	04/15/24 14:36
MFL-AM01-040724-HM	4041535-14	Air	04/07/24 23:59	04/15/24 14:36
MFL-AM02-040724-HM	4041535-15	Air	04/07/24 23:59	04/15/24 14:36
MFL-AM03-040724-HM	4041535-16	Air	04/07/24 23:59	04/15/24 14:36
MFL-AM04-040724-HM	4041535-17	Air	04/07/24 23:59	04/15/24 14:36
MFL-FB01-040724-HM	4041535-18	Air	04/07/24 00:00	04/15/24 14:36
MFL-AM01-040824-HM	4041535-19	Air	04/08/24 23:59	04/15/24 14:36
MFL-AM02-040824-HM	4041535-20	Air	04/08/24 23:59	04/15/24 14:36
MFL-AM03-040824-HM/MS/I	4041535-21	Air	04/08/24 23:59	04/15/24 14:36

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REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-040824-HM	4041535-22	Air	04/08/24 23:59	04/15/24 14:36
MFL-AM01-040924-HM	4041535-23	Air	04/09/24 23:59	04/15/24 14:36
MFL-AM02-040924-HM	4041535-24	Air	04/09/24 23:59	04/15/24 14:36
MFL-AM03-040924-HM	4041535-25	Air	04/09/24 23:59	04/15/24 14:36
MFL-AM04-040924-HM	4041535-26	Air	04/09/24 23:59	04/15/24 14:36
MFL-FB01-040924-HM	4041535-27	Air	04/09/24 00:00	04/15/24 14:36
MFL-AM01-041024-HM	4041535-28	Air	04/10/24 23:59	04/15/24 14:36
MFL-AM02-041024-HM	4041535-29	Air	04/10/24 23:59	04/15/24 14:36
MFL-AM03-041024-HM	4041535-30	Air	04/10/24 23:59	04/15/24 14:36
MFL-AM04-041024-HM	4041535-31	Air	04/10/24 23:59	04/15/24 14:36

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040424-HM/MS/MS **Lab ID:** 4041535-01 **Sampled:** 04/04/24 23:59
Matrix: Air **Sample Volume:** 1905.311 m³ **Received:** 04/15/24 14:36
Filter ID: **Analysis Date:** 04/16/24 20:39

Comments: Q8508568 - Received in good condition. - Nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.209**	SL	**0.0330**
Arsenic	**7440-38-2**	**1.78**		**0.00800**
Barium	**7440-39-3**	**6.85**	QB-01	**0.914**
Beryllium	**7440-41-7**	**0.0216**		**0.00273**
Cadmium	7440-43-9	0.0196	U	0.0633
Chromium	**7440-47-3**	**4.51**		**1.89**
Cobalt	**7440-48-4**	**0.780**		**0.0372**
Copper	**7440-50-8**	**58.4**		**2.25**
Lead	**7439-92-1**	**0.930**		**0.183**
Manganese	**7439-96-5**	**23.7**	A-01	**1.61**
Molybdenum	**7439-98-7**	**2.25**		**0.307**
Nickel	**7440-02-0**	**2.26**	GC-BS	**0.557**
Selenium	**7782-49-2**	**0.202**		**0.00765**
Thallium	**7440-28-0**	**0.00183**	QB-01, QB-04	**5.03E-4**
Vanadium	**7440-62-2**	**2.71**		**0.0452**
Zinc	7440-66-6	52.0	U	65.6

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040424-HM
Matrix: Air
Lab ID: 4041535-02
Sample Volume: 2018.661 m³
Filter ID:
Sampled: 04/04/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 03:23

Comments: Q8508567 - 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	2.45	SL	0.0311
Barium	7440-39-3	38.2	QB-01	0.862
Beryllium	7440-41-7	0.0357		0.00258
Cadmium	7440-43-9	0.0859		0.0597
Chromium	7440-47-3	5.62		1.78
Cobalt	7440-48-4	1.41		0.0351
Copper	7440-50-8	102		2.12
Lead	7439-92-1	11.8		0.172
Manganese	7439-96-5	44.6		1.52
Molybdenum	7439-98-7	2.14		0.289
Nickel	7440-02-0	4.58	GC-BS	0.525
Selenium	7782-49-2	0.292		0.00722
Thallium	7440-28-0	0.00372	QB-01, QB-04	4.75E-4
Vanadium	7440-62-2	3.44		0.0426
Zinc	7440-66-6	194		61.9

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040424-HM
Matrix: Air
Lab ID: 4041535-02RE1
Sample Volume: 2018.661 m³
Filter ID:
Sampled: 04/04/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 16:40

Comments: Q8508567 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	3.73		0.00755

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040424-HM
Matrix: Air
Lab ID: 4041535-03
Sample Volume: 2184.23 m³
Filter ID:
Sampled: 04/04/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 03:41

Comments: Q9516864 - 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**	**0.102**	SL	**0.0288**
Barium	**7440-39-3**	**5.09**	QB-01	**0.797**
Beryllium	**7440-41-7**	**0.0528**		**0.00238**
Cadmium	7440-43-9	0.0177	U	0.0552
Chromium	**7440-47-3**	**5.47**		**1.65**
Cobalt	**7440-48-4**	**0.916**		**0.0325**
Copper	**7440-50-8**	**35.9**		**1.96**
Lead	**7439-92-1**	**0.791**		**0.159**
Manganese	**7439-96-5**	**21.0**		**1.41**
Molybdenum	**7439-98-7**	**1.57**		**0.267**
Nickel	**7440-02-0**	**2.45**	GC-BS	**0.486**
Selenium	**7782-49-2**	**0.218**		**0.00667**
Thallium	**7440-28-0**	**0.00134**	QB-01, QB-04	**4.39E-4**
Vanadium	**7440-62-2**	**2.33**		**0.0394**
Zinc	7440-66-6	30.6	U	57.2

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040424-HM
Matrix: Air
Lab ID: 4041535-03RE1
Sample Volume: 2184.23 m³
Filter ID:
Sampled: 04/04/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 17:00

Comments: Q9516864 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.424		0.00698

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040424-HM
Matrix: Air
Lab ID: 4041535-04
Sample Volume: 1926.499 m³
Filter ID:
Sampled: 04/04/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 04:01

Comments: Q9516863 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.108**	SL	**0.0326**
Barium	**7440-39-3**	**3.23**	QB-01	**0.904**
Beryllium	**7440-41-7**	**0.0131**		**0.00270**
Cadmium	7440-43-9	0.0201	U	0.0626
Chromium	**7440-47-3**	**2.73**		**1.87**
Cobalt	**7440-48-4**	**0.457**		**0.0368**
Copper	**7440-50-8**	**21.3**		**2.22**
Lead	**7439-92-1**	**0.943**		**0.181**
Manganese	**7439-96-5**	**13.2**		**1.60**
Molybdenum	**7439-98-7**	**1.11**		**0.303**
Nickel	**7440-02-0**	**1.33**	GC-BS	**0.551**
Selenium	**7782-49-2**	**0.162**		**0.00757**
Thallium	**7440-28-0**	**0.00105**	QB-01, QB-04	**4.97E-4**
Vanadium	**7440-62-2**	**1.32**		**0.0447**
Zinc	7440-66-6	45.1	U	64.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040424-HM
Matrix: Air
Lab ID: 4041535-04RE1
Sample Volume: 1926.499 m³
Filter ID:
Sampled: 04/04/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 17:20

Comments: Q9516863 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.565		0.00791

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REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040524-HM
Matrix: Air
Lab ID: 4041535-05
Sample Volume: 2039.946 m³
Filter ID:
Sampled: 04/05/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 04:17

Comments: Q9516862 - 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**	**0.0822**	SL	**0.0308**
Barium	**7440-39-3**	**4.67**	QB-01	**0.853**
Beryllium	**7440-41-7**	**0.0159**		**0.00255**
Cadmium	7440-43-9	0.0162	U	0.0591
Chromium	**7440-47-3**	**3.73**		**1.76**
Cobalt	**7440-48-4**	**0.815**		**0.0348**
Copper	**7440-50-8**	**38.1**		**2.10**
Lead	**7439-92-1**	**0.895**		**0.171**
Manganese	**7439-96-5**	**22.2**		**1.51**
Molybdenum	**7439-98-7**	**1.72**		**0.286**
Nickel	**7440-02-0**	**1.94**	GC-BS	**0.520**
Selenium	**7782-49-2**	**0.186**		**0.00715**
Thallium	**7440-28-0**	**0.00180**	QB-01, QB-04	**4.70E-4**
Vanadium	**7440-62-2**	**2.31**		**0.0422**
Zinc	7440-66-6	33.6	U	61.3

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040524-HM
Matrix: Air
Lab ID: 4041535-05RE1
Sample Volume: 2039.946 m³
Filter ID:
Sampled: 04/05/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 17:39

Comments: Q9516862 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.705		0.00747

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040524-HM
Matrix: Air
Lab ID: 4041535-06
Sample Volume: 2098.788 m³
Filter ID:
Sampled: 04/05/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 04:33

Comments: Q9516861 - 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**	**0.507**	SL	**0.0299**
Barium	**7440-39-3**	**11.7**	QB-01	**0.829**
Beryllium	**7440-41-7**	**0.0282**		**0.00248**
Cadmium	**7440-43-9**	**0.0692**		**0.0574**
Chromium	**7440-47-3**	**3.50**		**1.71**
Cobalt	**7440-48-4**	**0.943**		**0.0338**
Copper	**7440-50-8**	**54.2**		**2.04**
Lead	**7439-92-1**	**3.32**		**0.166**
Manganese	**7439-96-5**	**33.3**		**1.47**
Molybdenum	**7439-98-7**	**1.96**		**0.278**
Nickel	**7440-02-0**	**2.64**	GC-BS	**0.505**
Selenium	**7782-49-2**	**0.259**		**0.00695**
Thallium	**7440-28-0**	**0.00272**	QB-01, QB-04	**4.57E-4**
Vanadium	**7440-62-2**	**2.79**		**0.0410**
Zinc	7440-66-6	52.4	U	59.5

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040524-HM
Matrix: Air
Lab ID: 4041535-06RE1
Sample Volume: 2098.788 m³
Filter ID:
Sampled: 04/05/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 17:53

Comments: Q9516861 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	1.06		0.00726

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040524-HM
Matrix: Air
Lab ID: 4041535-07
Sample Volume: 2097.322 m³
Filter ID:
Sampled: 04/05/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 05:08

Comments: Q9516860 - 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	**0.0299**
Barium	**7440-39-3**	**5.75**	QB-01	**0.830**
Beryllium	**7440-41-7**	**0.0718**		**0.00248**
Cadmium	7440-43-9	0.0228	U	0.0575
Chromium	**7440-47-3**	**5.36**		**1.71**
Cobalt	**7440-48-4**	**1.25**		**0.0338**
Copper	**7440-50-8**	**34.6**		**2.04**
Lead	**7439-92-1**	**0.751**		**0.166**
Manganese	**7439-96-5**	**27.8**		**1.47**
Molybdenum	**7439-98-7**	**1.61**		**0.278**
Nickel	**7440-02-0**	**2.92**	GC-BS	**0.506**
Selenium	**7782-49-2**	**0.318**		**0.00695**
Thallium	**7440-28-0**	**0.00210**	QB-01, QB-04	**4.57E-4**
Vanadium	**7440-62-2**	**2.95**		**0.0410**
Zinc	7440-66-6	27.3	U	59.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040524-HM
Matrix: Air
Lab ID: 4041535-07RE1
Sample Volume: 2097.322 m³
Filter ID:
Sampled: 04/05/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 18:47

Comments: Q9516860 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.389		0.00727

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040524-HM
Matrix: Air
Lab ID: 4041535-08
Sample Volume: 2183.987 m³
Filter ID:
Sampled: 04/05/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 05:24

Comments: Q9516859 - 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**	**0.168**	SL	**0.0288**
Barium	**7440-39-3**	**4.60**	QB-01	**0.797**
Beryllium	**7440-41-7**	**0.0189**		**0.00238**
Cadmium	7440-43-9	0.0226	U	0.0552
Chromium	**7440-47-3**	**3.73**		**1.65**
Cobalt	**7440-48-4**	**0.692**		**0.0325**
Copper	**7440-50-8**	**24.9**		**1.96**
Lead	**7439-92-1**	**2.42**		**0.159**
Manganese	**7439-96-5**	**20.4**		**1.41**
Molybdenum	**7439-98-7**	**1.00**		**0.267**
Nickel	**7440-02-0**	**2.26**	GC-BS	**0.486**
Selenium	**7782-49-2**	**0.207**		**0.00667**
Thallium	**7440-28-0**	**0.00174**	QB-01, QB-04	**4.39E-4**
Vanadium	**7440-62-2**	**1.74**		**0.0394**
Zinc	7440-66-6	36.5	U	57.2

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040524-HM
Matrix: Air
Lab ID: 4041535-08RE1
Sample Volume: 2183.987 m³
Filter ID:
Sampled: 04/05/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 19:03

Comments: Q9516859 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	2.13		0.00698

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-040524-HM
Matrix: Air
Lab ID: 4041535-09
Sample Volume: 2039.946 m³
Filter ID:
Sampled: 04/05/24 00:00
Received: 04/15/24 14:36
Analysis Date: 04/17/24 05:41

Comments: Q9516857 - 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	0.0144	U, SL	0.0308
Barium	7440-39-3	0.495	U, QB-01	0.853
Beryllium	7440-41-7	1.84E-4	U	0.00255
Cadmium	7440-43-9	0.00199	U	0.0591
Chromium	7440-47-3	0.635	U	1.76
Cobalt	7440-48-4	0.00949	U	0.0348
Copper	7440-50-8	1.17	U	2.10
Lead	7439-92-1	0.0454	U	0.171
Manganese	7439-96-5	0.260	U	1.51
Molybdenum	7439-98-7	0.104	U	0.286
Nickel	7440-02-0	0.231	GC-BS, U	0.520
Selenium	7782-49-2	0.00338	U	0.00715
Thallium	7440-28-0	1.74E-4	QB-01, QB-04, U	4.70E-4
Vanadium	7440-62-2	0.00792	U	0.0422
Zinc	7440-66-6	17.7	U	61.3

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

FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-040524-HM
Matrix: Air
Lab ID: 4041535-09RE1
Sample Volume: 2039.946 m³
Filter ID:
Sampled: 04/05/24 00:00
Received: 04/15/24 14:36
Analysis Date: 04/18/24 19:20

Comments: Q9516857 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**0.00950**	FB-01	**0.00747**

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040624-HM **Lab ID:** 4041535-10 **Sampled:** 04/06/24 23:59
Matrix: Air **Sample Volume:** 2020 m³ **Received:** 04/15/24 14:36
Filter ID: **Analysis Date:** 04/17/24 05:55

Comments: Q9516858 - 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**	**0.133**	SL	**0.0311**
Barium	**7440-39-3**	**5.69**	QB-01	**0.862**
Beryllium	**7440-41-7**	**0.0171**		**0.00258**
Cadmium	7440-43-9	0.0417	U	0.0597
Chromium	**7440-47-3**	**3.56**		**1.78**
Cobalt	**7440-48-4**	**0.785**		**0.0351**
Copper	**7440-50-8**	**81.6**		**2.12**
Lead	**7439-92-1**	**1.21**		**0.172**
Manganese	**7439-96-5**	**21.4**		**1.52**
Molybdenum	**7439-98-7**	**2.33**		**0.289**
Nickel	**7440-02-0**	**1.71**	GC-BS	**0.525**
Selenium	**7782-49-2**	**0.198**		**0.00722**
Thallium	**7440-28-0**	**0.00210**	QB-01, QB-04	**4.74E-4**
Vanadium	**7440-62-2**	**1.99**		**0.0426**
Zinc	7440-66-6	44.5	U	61.9

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040624-HM
Matrix: Air
Lab ID: 4041535-10RE1
Sample Volume: 2020 m³
Filter ID:
Sampled: 04/06/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 20:13

Comments: Q9516858 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	1.26		0.00755

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040624-HM
Matrix: Air
Lab ID: 4041535-11
Sample Volume: 2039.402 m³
Filter ID:
Sampled: 04/06/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 07:26

Comments: Q9516856 - 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**	**0.174**	SL	**0.0308**
Barium	**7440-39-3**	**5.34**	QB-01	**0.854**
Beryllium	**7440-41-7**	**0.0201**		**0.00255**
Cadmium	**7440-43-9**	**0.130**		**0.0591**
Chromium	**7440-47-3**	**2.96**		**1.76**
Cobalt	**7440-48-4**	**0.642**		**0.0348**
Copper	**7440-50-8**	**71.9**		**2.10**
Lead	**7439-92-1**	**2.26**		**0.171**
Manganese	**7439-96-5**	**19.2**		**1.51**
Molybdenum	**7439-98-7**	**1.22**		**0.286**
Nickel	**7440-02-0**	**1.87**	GC-BS	**0.520**
Selenium	**7782-49-2**	**0.242**		**0.00715**
Thallium	**7440-28-0**	**0.00245**	QB-01, QB-04	**4.70E-4**
Vanadium	**7440-62-2**	**1.83**		**0.0422**
Zinc	7440-66-6	43.1	U	61.3

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040624-HM
Matrix: Air
Lab ID: 4041535-11RE1
Sample Volume: 2039.402 m³
Filter ID:
Sampled: 04/06/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 20:32

Comments: Q9516856 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.611		0.00748

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040624-HM
Matrix: Air
Lab ID: 4041535-12
Sample Volume: 1896.547 m³
Filter ID:
Sampled: 04/06/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 07:46

Comments: Q8508580 - 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**	**0.0880**	SL	**0.0331**
Barium	**7440-39-3**	**4.92**	QB-01	**0.918**
Beryllium	**7440-41-7**	**0.0619**		**0.00275**
Cadmium	7440-43-9	0.0245	U	0.0636
Chromium	**7440-47-3**	**4.82**		**1.90**
Cobalt	**7440-48-4**	**1.03**		**0.0374**
Copper	**7440-50-8**	**45.9**		**2.26**
Lead	**7439-92-1**	**0.878**		**0.184**
Manganese	**7439-96-5**	**22.6**		**1.62**
Molybdenum	**7439-98-7**	**2.38**		**0.308**
Nickel	**7440-02-0**	**2.70**	GC-BS	**0.559**
Selenium	**7782-49-2**	**0.279**		**0.00769**
Thallium	**7440-28-0**	**0.00261**	QB-01, QB-04	**5.05E-4**
Vanadium	**7440-62-2**	**2.35**		**0.0454**
Zinc	7440-66-6	28.8	U	65.9

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040624-HM
Matrix: Air
Lab ID: 4041535-12RE1
Sample Volume: 1896.547 m³
Filter ID:
Sampled: 04/06/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 20:51

Comments: Q8508580 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.371		0.00804

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040624-HM
Matrix: Air
Lab ID: 4041535-13
Sample Volume: 1956.66 m³
Filter ID:
Sampled: 04/06/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 08:03

Comments: Q9516855 - 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**	**0.135**	SL	**0.0321**
Barium	**7440-39-3**	**4.15**	QB-01	**0.890**
Beryllium	**7440-41-7**	**0.0131**		**0.00266**
Cadmium	7440-43-9	0.0239	U	0.0616
Chromium	**7440-47-3**	**2.87**		**1.84**
Cobalt	**7440-48-4**	**0.469**		**0.0363**
Copper	**7440-50-8**	**39.4**		**2.19**
Lead	**7439-92-1**	**2.14**		**0.178**
Manganese	**7439-96-5**	**14.2**		**1.57**
Molybdenum	**7439-98-7**	**1.28**		**0.299**
Nickel	**7440-02-0**	**1.40**	GC-BS	**0.542**
Selenium	**7782-49-2**	**0.184**		**0.00745**
Thallium	**7440-28-0**	**0.00216**	QB-01, QB-04	**4.90E-4**
Vanadium	**7440-62-2**	**1.16**		**0.0440**
Zinc	7440-66-6	42.2	U	63.9

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

FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040624-HM
Matrix: Air
Lab ID: 4041535-13RE1
Sample Volume: 1956.66 m³
Filter ID:
Sampled: 04/06/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 21:07

Comments: Q9516855 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	2.39		0.00779

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040724-HM **Lab ID:** 4041535-14 **Sampled:** 04/07/24 23:59
Matrix: Air **Sample Volume:** 2045.71 m³ **Received:** 04/15/24 14:36
Filter ID: **Analysis Date:** 04/17/24 08:19

Comments: Q9516854 - 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**	**0.0650**	SL	**0.0307**
Barium	**7440-39-3**	**3.36**	QB-01	**0.851**
Beryllium	**7440-41-7**	**0.00864**		**0.00255**
Cadmium	7440-43-9	0.0186	U	0.0589
Chromium	**7440-47-3**	**2.39**		**1.76**
Cobalt	**7440-48-4**	**0.383**		**0.0347**
Copper	**7440-50-8**	**92.9**		**2.09**
Lead	**7439-92-1**	**0.891**		**0.170**
Manganese	**7439-96-5**	**11.1**		**1.50**
Molybdenum	**7439-98-7**	**5.01**		**0.286**
Nickel	**7440-02-0**	**0.999**	GC-BS	**0.519**
Selenium	**7782-49-2**	**0.126**		**0.00713**
Thallium	**7440-28-0**	**0.00114**	QB-01, QB-04	**4.68E-4**
Vanadium	**7440-62-2**	**1.05**		**0.0421**
Zinc	7440-66-6	39.7	U	61.1

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

FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040724-HM
Matrix: Air
Lab ID: 4041535-14RE1
Sample Volume: 2045.71 m³
Filter ID:
Sampled: 04/07/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 21:23

Comments: Q9516854 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.489		0.00745

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040724-HM
Matrix: Air
Lab ID: 4041535-15
Sample Volume: 2108.264 m³
Filter ID:
Sampled: 04/07/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 08:35

Comments: Q9516853 - 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**	**0.150**	SL	**0.0298**
Barium	**7440-39-3**	**4.68**	QB-01	**0.826**
Beryllium	**7440-41-7**	**0.0153**		**0.00247**
Cadmium	7440-43-9	0.0198	U	0.0572
Chromium	**7440-47-3**	**2.15**		**1.71**
Cobalt	**7440-48-4**	**0.492**		**0.0336**
Copper	**7440-50-8**	**32.0**		**2.03**
Lead	**7439-92-1**	**1.31**		**0.165**
Manganese	**7439-96-5**	**14.6**		**1.46**
Molybdenum	**7439-98-7**	**1.36**		**0.277**
Nickel	**7440-02-0**	**1.39**	GC-BS	**0.503**
Selenium	**7782-49-2**	**0.152**		**0.00691**
Thallium	**7440-28-0**	**0.00127**	QB-01, QB-04	**4.55E-4**
Vanadium	**7440-62-2**	**1.37**		**0.0408**
Zinc	7440-66-6	32.4	U	59.3

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Tetra Tech, Inc.
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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040724-HM
Matrix: Air
Lab ID: 4041535-15RE1
Sample Volume: 2108.264 m³
Filter ID:
Sampled: 04/07/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 21:38

Comments: Q9516853 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.531		0.00723

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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: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040724-HM
Matrix: Air
Lab ID: 4041535-16
Sample Volume: 2466.123 m³
Filter ID:
Sampled: 04/07/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 08:51

Comments: Q9516852 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0550**	SL	**0.0255**
Barium	**7440-39-3**	**2.06**	QB-01	**0.706**
Beryllium	**7440-41-7**	**0.00547**		**0.00211**
Cadmium	7440-43-9	0.00995	U	0.0489
Chromium	7440-47-3	1.23	U	1.46
Cobalt	**7440-48-4**	**0.138**		**0.0288**
Copper	**7440-50-8**	**69.1**		**1.74**
Lead	**7439-92-1**	**2.06**		**0.141**
Manganese	**7439-96-5**	**3.64**		**1.25**
Molybdenum	**7439-98-7**	**1.25**		**0.237**
Nickel	**7440-02-0**	**0.660**	GC-BS	**0.430**
Selenium	**7782-49-2**	**0.0604**		**0.00591**
Thallium	**7440-28-0**	**5.84E-4**	QB-01, QB-04	**3.89E-4**
Vanadium	**7440-62-2**	**0.331**		**0.0349**
Zinc	7440-66-6	42.4	U	50.7

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040724-HM
Matrix: Air
Lab ID: 4041535-16RE1
Sample Volume: 2466.123 m³
Filter ID:
Sampled: 04/07/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 21:53

Comments: Q9516852 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.120		0.00618

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040724-HM
Matrix: Air
Lab ID: 4041535-17
Sample Volume: 2162.34 m³
Filter ID:
Sampled: 04/07/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 09:07

Comments: Q9516851 - 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**	**0.0720**	SL	**0.0290**
Barium	**7440-39-3**	**2.29**	QB-01	**0.805**
Beryllium	**7440-41-7**	**0.00626**		**0.00241**
Cadmium	7440-43-9	0.00944	U	0.0558
Chromium	**7440-47-3**	**1.71**		**1.66**
Cobalt	**7440-48-4**	**0.236**		**0.0328**
Copper	**7440-50-8**	**23.2**		**1.98**
Lead	**7439-92-1**	**0.821**		**0.161**
Manganese	**7439-96-5**	**7.05**		**1.42**
Molybdenum	**7439-98-7**	**1.03**		**0.270**
Nickel	**7440-02-0**	**0.768**	GC-BS	**0.491**
Selenium	**7782-49-2**	**0.0933**		**0.00674**
Thallium	**7440-28-0**	**6.87E-4**	QB-01, QB-04	**4.43E-4**
Vanadium	**7440-62-2**	**0.556**		**0.0398**
Zinc	7440-66-6	24.4	U	57.8

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040724-HM
Matrix: Air
Lab ID: 4041535-17RE1
Sample Volume: 2162.34 m³
Filter ID:
Sampled: 04/07/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 22:10

Comments: Q9516851 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.304		0.00705

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REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-040724-HM
Matrix: Air
Lab ID: 4041535-18
Sample Volume: 2045.71 m³
Filter ID:
Sampled: 04/07/24 00:00
Received: 04/15/24 14:36
Analysis Date: 04/17/24 09:23

Comments: Q9516848 - 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	0.0140	SL, U	0.0307
Barium	7440-39-3	0.513	QB-01, U	0.851
Beryllium	7440-41-7	7.93E-5	U	0.00255
Cadmium	7440-43-9	0.00197	U	0.0589
Chromium	7440-47-3	0.695	U	1.76
Cobalt	7440-48-4	0.00870	U	0.0347
Copper	7440-50-8	1.34	U	2.09
Lead	7439-92-1	0.0525	U	0.170
Manganese	7439-96-5	0.213	U	1.50
Molybdenum	7439-98-7	0.0991	U	0.286
Nickel	7440-02-0	0.211	GC-BS, U	0.519
Selenium	7782-49-2	0.00175	U	0.00713
Thallium	7440-28-0	1.62E-4	QB-01, QB-04, U	4.68E-4
Vanadium	7440-62-2	0.00873	U	0.0421
Zinc	7440-66-6	18.3	U	61.1

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REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-040724-HM
Matrix: Air
Lab ID: 4041535-18RE1
Sample Volume: 2045.71 m³
Filter ID:
Sampled: 04/07/24 00:00
Received: 04/15/24 14:36
Analysis Date: 04/18/24 22:26

Comments: Q9516848 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**0.00787**	FB-01	**0.00745**

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REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040824-HM
Matrix: Air
Lab ID: 4041535-19
Sample Volume: 2054.28 m³
Filter ID:
Sampled: 04/08/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 09:36

Comments: Q9516850 - 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**	**0.0881**	SL	**0.0306**
Barium	**7440-39-3**	**3.90**	QB-01	**0.847**
Beryllium	**7440-41-7**	**0.0104**		**0.00253**
Cadmium	7440-43-9	0.0174	U	0.0587
Chromium	**7440-47-3**	**3.64**		**1.75**
Cobalt	**7440-48-4**	**0.512**		**0.0345**
Copper	**7440-50-8**	**99.0**		**2.08**
Lead	**7439-92-1**	**0.592**		**0.169**
Manganese	**7439-96-5**	**14.8**		**1.50**
Molybdenum	**7439-98-7**	**5.44**		**0.284**
Nickel	**7440-02-0**	**1.45**	GC-BS	**0.516**
Selenium	**7782-49-2**	**0.177**		**0.00710**
Thallium	**7440-28-0**	**0.00142**	QB-01, QB-04	**4.66E-4**
Vanadium	**7440-62-2**	**1.46**		**0.0419**
Zinc	7440-66-6	23.6	U	60.8

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AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040824-HM
Matrix: Air
Lab ID: 4041535-19RE1
Sample Volume: 2054.28 m³
Filter ID:
Sampled: 04/08/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 22:40

Comments: Q9516850 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.770		0.00742

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REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040824-HM
Matrix: Air
Lab ID: 4041535-20
Sample Volume: 2147.825 m³
Filter ID:
Sampled: 04/08/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 09:51

Comments: Q9516849 - 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	**0.0292**
Barium	**7440-39-3**	**6.38**	QB-01	**0.811**
Beryllium	**7440-41-7**	**0.0150**		**0.00242**
Cadmium	**7440-43-9**	**0.0649**		**0.0561**
Chromium	**7440-47-3**	**2.36**		**1.67**
Cobalt	**7440-48-4**	**0.515**		**0.0330**
Copper	**7440-50-8**	**25.9**		**1.99**
Lead	**7439-92-1**	**1.43**		**0.162**
Manganese	**7439-96-5**	**15.6**		**1.43**
Molybdenum	**7439-98-7**	**1.22**		**0.272**
Nickel	**7440-02-0**	**1.52**	GC-BS	**0.494**
Selenium	**7782-49-2**	**0.205**		**0.00679**
Thallium	**7440-28-0**	**0.00152**	QB-01, QB-04	**4.46E-4**
Vanadium	**7440-62-2**	**1.51**		**0.0401**
Zinc	7440-66-6	41.0	U	58.2

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040824-HM
Matrix: Air
Lab ID: 4041535-20RE1
Sample Volume: 2147.825 m³
Filter ID:
Sampled: 04/08/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 23:29

Comments: Q9516849 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.525		0.00710

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040824-HM/MS/MS **Lab ID:** 4041535-21 **Sampled:** 04/08/24 23:59
Matrix: Air **Sample Volume:** 1944.852 m³ **Received:** 04/15/24 14:36
Filter ID: **Analysis Date:** 04/17/24 00:35

Comments: Q9516847 - Received in good condition. - Nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0857**	SL	**0.0323**
Arsenic	**7440-38-2**	**0.428**		**0.00784**
Barium	**7440-39-3**	**3.30**	QB-01	**0.895**
Beryllium	**7440-41-7**	**0.0285**		**0.00268**
Cadmium	7440-43-9	0.0187	U	0.0620
Chromium	**7440-47-3**	**2.61**		**1.85**
Cobalt	**7440-48-4**	**0.512**		**0.0365**
Copper	**7440-50-8**	**41.4**		**2.20**
Lead	**7439-92-1**	**0.969**	D-F	**0.179**
Manganese	**7439-96-5**	**12.5**		**1.58**
Molybdenum	**7439-98-7**	**2.35**		**0.300**
Nickel	**7440-02-0**	**1.49**	GC-BS	**0.545**
Selenium	**7782-49-2**	**0.211**		**0.00750**
Thallium	**7440-28-0**	**0.00165**	QB-01, QB-04	**4.93E-4**
Vanadium	**7440-62-2**	**1.36**		**0.0443**
Zinc	7440-66-6	25.7	U	64.2

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040824-HM
Matrix: Air
Lab ID: 4041535-22
Sample Volume: 2080.337 m³
Filter ID:
Sampled: 04/08/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 11:25

Comments: Q9516846 - 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	**0.0302**
Barium	**7440-39-3**	**4.35**	QB-01	**0.837**
Beryllium	**7440-41-7**	**0.0163**		**0.00250**
Cadmium	7440-43-9	0.0136	U	0.0580
Chromium	**7440-47-3**	**2.74**		**1.73**
Cobalt	**7440-48-4**	**0.516**		**0.0341**
Copper	**7440-50-8**	**30.5**		**2.06**
Lead	**7439-92-1**	**1.06**		**0.167**
Manganese	**7439-96-5**	**16.1**		**1.48**
Molybdenum	**7439-98-7**	**1.84**		**0.281**
Selenium	**7782-49-2**	**0.210**		**0.00701**
Thallium	**7440-28-0**	**0.00185**	QB-01, QB-04	**4.61E-4**
Vanadium	**7440-62-2**	**1.52**		**0.0414**
Zinc	7440-66-6	31.4	U	60.1

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040824-HM
Matrix: Air
Lab ID: 4041535-22RE1
Sample Volume: 2080.337 m³
Filter ID:
Sampled: 04/08/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/18/24 23:46

Comments: Q9516846 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.639		0.00733
Nickel	7440-02-0	1.30	GC-BS	0.510

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040924-HM
Matrix: Air
Lab ID: 4041535-23
Sample Volume: 2046.567 m³
Filter ID:
Sampled: 04/09/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 11:45

Comments: Q9516845 - 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**	**0.0885**	SL	**0.0307**
Barium	**7440-39-3**	**2.92**	QB-01	**0.851**
Beryllium	**7440-41-7**	**0.00843**		**0.00254**
Cadmium	7440-43-9	0.0109	U	0.0589
Chromium	**7440-47-3**	**2.03**		**1.76**
Cobalt	**7440-48-4**	**0.335**		**0.0347**
Copper	**7440-50-8**	**104**		**2.09**
Lead	**7439-92-1**	**0.354**		**0.170**
Manganese	**7439-96-5**	**9.94**		**1.50**
Molybdenum	**7439-98-7**	**6.66**		**0.285**
Selenium	**7782-49-2**	**0.189**		**0.00712**
Thallium	**7440-28-0**	**0.00145**	QB-01, QB-04	**4.68E-4**
Vanadium	**7440-62-2**	**1.14**		**0.0421**
Zinc	7440-66-6	19.6	U	61.1

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-040924-HM
Matrix: Air
Lab ID: 4041535-23RE1
Sample Volume: 2046.567 m³
Filter ID:
Sampled: 04/09/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/19/24 00:00

Comments: Q9516845 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.423		0.00745
Nickel	7440-02-0	0.914	GC-BS	0.518

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040924-HM
Matrix: Air
Lab ID: 4041535-24
Sample Volume: 2141.547 m³
Filter ID:
Sampled: 04/09/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 12:00

Comments: Q9516844 - 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	**0.0293**
Barium	**7440-39-3**	**4.67**	QB-01	**0.813**
Beryllium	**7440-41-7**	**0.0105**		**0.00243**
Cadmium	7440-43-9	0.0113	U	0.0563
Chromium	**7440-47-3**	**1.91**		**1.68**
Cobalt	**7440-48-4**	**0.381**		**0.0331**
Copper	**7440-50-8**	**24.9**		**2.00**
Lead	**7439-92-1**	**0.673**		**0.163**
Manganese	**7439-96-5**	**11.3**		**1.44**
Molybdenum	**7439-98-7**	**1.46**		**0.273**
Selenium	**7782-49-2**	**0.205**		**0.00681**
Thallium	**7440-28-0**	**0.00152**	QB-01, QB-04	**4.47E-4**
Vanadium	**7440-62-2**	**1.26**		**0.0402**
Zinc	7440-66-6	20.5	U	58.3

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-040924-HM
Matrix: Air
Lab ID: 4041535-24RE1
Sample Volume: 2141.547 m³
Filter ID:
Sampled: 04/09/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/19/24 00:15

Comments: Q9516844 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.369		0.00712
Nickel	7440-02-0	1.13	GC-BS	0.495

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Tetra Tech, Inc.
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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040924-HM
Matrix: Air
Lab ID: 4041535-25
Sample Volume: 1928.631 m³
Filter ID:
Sampled: 04/09/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 12:15

Comments: Q9516843 - 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	**0.0326**
Barium	**7440-39-3**	**3.69**	QB-01	**0.903**
Beryllium	**7440-41-7**	**0.0226**		**0.00270**
Cadmium	7440-43-9	0.0365	U	0.0625
Chromium	**7440-47-3**	**2.38**		**1.86**
Cobalt	**7440-48-4**	**0.456**		**0.0368**
Copper	**7440-50-8**	**40.7**		**2.22**
Lead	**7439-92-1**	**0.696**		**0.181**
Manganese	**7439-96-5**	**12.8**		**1.59**
Molybdenum	**7439-98-7**	**2.50**		**0.303**
Selenium	**7782-49-2**	**0.225**		**0.00756**
Thallium	**7440-28-0**	**0.00156**	QB-01, QB-04	**4.97E-4**
Vanadium	**7440-62-2**	**1.40**		**0.0446**
Zinc	7440-66-6	25.4	U	64.8

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-040924-HM
Matrix: Air
Lab ID: 4041535-25RE1
Sample Volume: 1928.631 m³
Filter ID:
Sampled: 04/09/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/19/24 00:30

Comments: Q9516843 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.352		0.00790
Nickel	7440-02-0	1.28	GC-BS	0.550

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040924-HM
Matrix: Air
Lab ID: 4041535-26
Sample Volume: 2011.208 m³
Filter ID:
Sampled: 04/09/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 12:30

Comments: Q9516842 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.105**	SL	**0.0312**
Barium	**7440-39-3**	**3.26**	QB-01	**0.866**
Beryllium	**7440-41-7**	**0.00948**		**0.00259**
Cadmium	7440-43-9	0.00976	U	0.0599
Chromium	7440-47-3	1.70	U	1.79
Cobalt	**7440-48-4**	**0.298**		**0.0353**
Copper	**7440-50-8**	**25.9**		**2.13**
Lead	**7439-92-1**	**0.729**		**0.173**
Manganese	**7439-96-5**	**9.68**		**1.53**
Molybdenum	**7439-98-7**	**1.84**		**0.290**
Selenium	**7782-49-2**	**0.183**		**0.00725**
Thallium	**7440-28-0**	**0.00132**	QB-01, QB-04	**4.76E-4**
Vanadium	**7440-62-2**	**1.04**		**0.0428**
Zinc	7440-66-6	21.1	U	62.1

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-040924-HM
Matrix: Air
Lab ID: 4041535-26RE1
Sample Volume: 2011.208 m³
Filter ID:
Sampled: 04/09/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/19/24 00:45

Comments: Q9516842 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.372		0.00758
Nickel	7440-02-0	0.893	GC-BS	0.527

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-040924-HM
Matrix: Air
Lab ID: 4041535-27
Sample Volume: 2046.567 m³
Filter ID:
Sampled: 04/09/24 00:00
Received: 04/15/24 14:36
Analysis Date: 04/17/24 13:01

Comments: Q9516837 - 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	0.0136	SL, U	0.0307
Barium	7440-39-3	0.540	QB-01, U	0.851
Beryllium	7440-41-7	8.16E-5	U	0.00254
Cadmium	7440-43-9	0.00136	U	0.0589
Chromium	7440-47-3	1.08	U	1.76
Cobalt	7440-48-4	0.00732	U	0.0347
Copper	7440-50-8	0.337	U	2.09
Lead	7439-92-1	0.0426	U	0.170
Manganese	7439-96-5	0.202	U	1.50
Molybdenum	7439-98-7	0.115	U	0.285
Selenium	7782-49-2	0.00208	U	0.00712
Thallium	7440-28-0	2.12E-4	QB-01, QB-04, U	4.68E-4
Vanadium	7440-62-2	0.00157	U	0.0421
Zinc	7440-66-6	12.1	U	61.1

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-040924-HM
Matrix: Air
Lab ID: 4041535-27RE1
Sample Volume: 2046.567 m³
Filter ID:
Sampled: 04/09/24 00:00
Received: 04/15/24 14:36
Analysis Date: 04/19/24 01:13

Comments: Q9516837 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**0.00777**	FB-01	**0.00745**
Nickel	7440-02-0	0.214	GC-BS, U	0.518

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-041024-HM
Matrix: Air
Lab ID: 4041535-28
Sample Volume: 2043.139 m³
Filter ID:
Sampled: 04/10/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 13:14

Comments: Q9516841 - 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**	**0.0757**	SL	**0.0307**
Barium	**7440-39-3**	**3.00**	QB-01	**0.852**
Beryllium	**7440-41-7**	**0.00768**		**0.00255**
Cadmium	7440-43-9	0.0105	U	0.0590
Chromium	7440-47-3	1.72	U	1.76
Cobalt	**7440-48-4**	**0.275**		**0.0347**
Copper	**7440-50-8**	**79.2**		**2.09**
Lead	**7439-92-1**	**0.491**		**0.170**
Manganese	**7439-96-5**	**9.40**		**1.51**
Molybdenum	**7439-98-7**	**5.34**		**0.286**
Selenium	**7782-49-2**	**0.219**		**0.00714**
Thallium	**7440-28-0**	**0.00180**	QB-01, QB-04	**4.69E-4**
Vanadium	**7440-62-2**	**1.31**		**0.0421**
Zinc	7440-66-6	17.1	U	61.2

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-041024-HM
Matrix: Air
Lab ID: 4041535-28RE1
Sample Volume: 2043.139 m³
Filter ID:
Sampled: 04/10/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/19/24 01:27

Comments: Q9516841 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.434		0.00746
Nickel	7440-02-0	0.947	GC-BS	0.519

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041024-HM
Matrix: Air
Lab ID: 4041535-29
Sample Volume: 2203.489 m³
Filter ID:
Sampled: 04/10/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 13:30

Comments: Q9516840 - 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**	**0.191**	SL	**0.0285**
Barium	**7440-39-3**	**6.14**	QB-01	**0.790**
Beryllium	**7440-41-7**	**0.0124**		**0.00236**
Cadmium	7440-43-9	0.0118	U	0.0547
Chromium	**7440-47-3**	**1.96**		**1.63**
Cobalt	**7440-48-4**	**0.410**		**0.0322**
Copper	**7440-50-8**	**23.9**		**1.94**
Lead	**7439-92-1**	**0.805**		**0.158**
Manganese	**7439-96-5**	**12.9**		**1.40**
Molybdenum	**7439-98-7**	**1.46**		**0.265**
Selenium	**7782-49-2**	**0.229**		**0.00662**
Thallium	**7440-28-0**	**0.00173**	QB-01, QB-04	**4.35E-4**
Vanadium	**7440-62-2**	**1.64**		**0.0391**
Zinc	7440-66-6	19.9	U	56.7

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-041024-HM
Matrix: Air
Lab ID: 4041535-29RE1
Sample Volume: 2203.489 m³
Filter ID:
Sampled: 04/10/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/19/24 01:41

Comments: Q9516840 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	7440-38-2	0.269		0.00692
Nickel	7440-02-0	1.36	GC-BS	0.481

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041024-HM
Matrix: Air
Lab ID: 4041535-30
Sample Volume: 1927.82 m³
Filter ID:
Sampled: 04/10/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 13:44

Comments: Q9516839 - Received in good condition. - Nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.162**	SL	**0.0326**
Barium	**7440-39-3**	**4.61**	QB-01	**0.903**
Beryllium	**7440-41-7**	**0.0293**		**0.00270**
Cadmium	7440-43-9	0.0256	U	0.0625
Chromium	**7440-47-3**	**2.71**		**1.87**
Cobalt	**7440-48-4**	**0.610**		**0.0368**
Copper	**7440-50-8**	**40.9**		**2.22**
Lead	**7439-92-1**	**1.04**		**0.181**
Manganese	**7439-96-5**	**17.5**		**1.60**
Molybdenum	**7439-98-7**	**2.29**		**0.303**
Selenium	**7782-49-2**	**0.287**		**0.00756**
Thallium	**7440-28-0**	**0.00218**	QB-01, QB-04	**4.97E-4**
Vanadium	**7440-62-2**	**2.00**		**0.0446**
Zinc	7440-66-6	25.8	U	64.8

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-041024-HM
Matrix: Air
Lab ID: 4041535-30RE1
Sample Volume: 1927.82 m³
Filter ID:
Sampled: 04/10/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/19/24 02:51

Comments: Q9516839 - Received in good condition. - Nonhomogenous

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**0.483**		**0.00791**
Nickel	**7440-02-0**	**1.54**	GC-BS	**0.550**

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041024-HM
Matrix: Air
Lab ID: 4041535-31
Sample Volume: 1958.661 m³
Filter ID:
Sampled: 04/10/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/17/24 15:17

Comments: Q9516838 - 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	**0.0321**
Barium	**7440-39-3**	**3.98**	QB-01	**0.889**
Beryllium	**7440-41-7**	**0.0109**		**0.00266**
Cadmium	7440-43-9	0.0119	U	0.0616
Chromium	**7440-47-3**	**1.93**		**1.84**
Cobalt	**7440-48-4**	**0.336**		**0.0362**
Copper	**7440-50-8**	**28.1**		**2.18**
Lead	**7439-92-1**	**0.909**		**0.178**
Manganese	**7439-96-5**	**11.5**		**1.57**
Molybdenum	**7439-98-7**	**2.14**		**0.298**
Selenium	**7782-49-2**	**0.242**		**0.00744**
Thallium	**7440-28-0**	**0.00213**	QB-01, QB-04	**4.89E-4**
Vanadium	**7440-62-2**	**1.39**		**0.0439**
Zinc	7440-66-6	20.8	U	63.8

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-041024-HM
Matrix: Air
Lab ID: 4041535-31RE1
Sample Volume: 1958.661 m³
Filter ID:
Sampled: 04/10/24 23:59
Received: 04/15/24 14:36
Analysis Date: 04/19/24 03:08

Comments: Q9516838 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Arsenic	**7440-38-2**	**0.309**		**0.00778**
Nickel	**7440-02-0**	**1.04**	GC-BS	**0.542**

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
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 2404050 - B4D1605										
Calibration Blank (2404050-CCB1)				Prepared & Analyzed: 04/16/24						
Antimony	0.813		ng/l							
Arsenic	10.8		ng/l							
Barium	1.60		ng/l							
Beryllium	-0.490		ng/l							U
Cadmium	0.0563		ng/l							
Chromium	0.580		ng/l							
Cobalt	0.487		ng/l							
Copper	118		ng/l							
Lead	3.86		ng/l							
Manganese	5.32		ng/l							
Molybdenum	13.7		ng/l							
Nickel	1.54		ng/l							
Selenium	10.3		ng/l							
Thallium	1.90		ng/l							QB-04
Vanadium	-64.2		ng/l							U
Zinc	-57.4		ng/l							U
Calibration Blank (2404050-CCB2)				Prepared & Analyzed: 04/16/24						
Antimony	0.875		ng/l							
Arsenic	15.0		ng/l							
Barium	3.48		ng/l							
Beryllium	-1.12		ng/l							U
Cadmium	0.268		ng/l							
Chromium	3.08		ng/l							
Cobalt	0.820		ng/l							
Copper	86.3		ng/l							
Lead	3.43		ng/l							
Manganese	5.33		ng/l							
Molybdenum	3.50		ng/l							
Nickel	2.29		ng/l							
Selenium	5.15		ng/l							
Thallium	1.61		ng/l							QB-04
Vanadium	-66.2		ng/l							U
Zinc	-51.4		ng/l							U
Calibration Blank (2404050-CCB3)				Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	0.353		ng/l							
Arsenic	14.0		ng/l							
Barium	1.06		ng/l							
Beryllium	-1.45		ng/l							U

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FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
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 2404050 - B4D1605										
Calibration Blank (2404050-CCB3) Contin				Prepared: 04/16/24 Analyzed: 04/17/24						
Cadmium	0.0914		ng/l							
Chromium	1.85		ng/l							
Cobalt	0.553		ng/l							
Copper	57.6		ng/l							
Lead	2.13		ng/l							
Manganese	3.18		ng/l							
Molybdenum	2.72		ng/l							
Nickel	2.45		ng/l							
Selenium	-10.8		ng/l							U
Thallium	1.68		ng/l							QB-04
Vanadium	-67.5		ng/l							U
Zinc	-50.2		ng/l							U
Calibration Blank (2404050-CCB4)				Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	0.668		ng/l							
Arsenic	17.8		ng/l							QB-04
Barium	0.326		ng/l							
Beryllium	-1.61		ng/l							U
Cadmium	0.232		ng/l							
Chromium	0.866		ng/l							
Cobalt	0.403		ng/l							
Copper	67.0		ng/l							
Lead	2.16		ng/l							
Manganese	4.11		ng/l							
Molybdenum	4.14		ng/l							
Nickel	3.49		ng/l							
Selenium	-4.13		ng/l							U
Thallium	2.26		ng/l							QB-04
Vanadium	-75.8		ng/l							U
Zinc	-34.1		ng/l							U
Calibration Blank (2404050-CCB5)				Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	0.634		ng/l							
Arsenic	16.6		ng/l							
Barium	1.56		ng/l							
Beryllium	-1.69		ng/l							U
Cadmium	0.180		ng/l							
Chromium	3.40		ng/l							
Cobalt	0.586		ng/l							
Copper	76.8		ng/l							

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404050 - B4D1605										
Calibration Blank (2404050-CCB5) Contin				Prepared: 04/16/24 Analyzed: 04/17/24						
Lead	2.26		ng/l							
Manganese	6.01		ng/l							
Molybdenum	4.85		ng/l							
Nickel	3.83		ng/l							
Selenium	-13.5		ng/l							U
Thallium	2.54		ng/l							QB-04
Vanadium	-76.9		ng/l							U
Zinc	-38.2		ng/l							U
Calibration Blank (2404050-CCB6)				Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	0.726		ng/l							
Arsenic	17.5		ng/l							QB-04
Barium	2.49		ng/l							
Beryllium	-1.82		ng/l							U
Cadmium	0.280		ng/l							
Chromium	5.32		ng/l							
Cobalt	0.864		ng/l							
Copper	82.8		ng/l							
Lead	2.74		ng/l							
Manganese	7.19		ng/l							
Molybdenum	5.29		ng/l							
Nickel	4.12		ng/l							
Selenium	-3.13		ng/l							U
Thallium	2.67		ng/l							QB-04
Vanadium	-82.3		ng/l							U
Zinc	-39.5		ng/l							U
Calibration Blank (2404050-CCB7)				Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	0.788		ng/l							
Arsenic	15.7		ng/l							
Barium	5.52		ng/l							
Beryllium	-1.78		ng/l							U
Cadmium	0.427		ng/l							
Chromium	9.28		ng/l							
Cobalt	1.48		ng/l							
Copper	132		ng/l							
Lead	6.09		ng/l							
Manganese	15.8		ng/l							
Molybdenum	5.45		ng/l							
Nickel	6.60		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404050 - B4D1605										
Calibration Blank (2404050-CCB7) Contin				Prepared: 04/16/24 Analyzed: 04/17/24						
Selenium	4.33		ng/l							
Thallium	2.99		ng/l							QB-04
Vanadium	-81.9		ng/l							U
Zinc	-33.5		ng/l							U
Calibration Check (2404050-CCV1)				Prepared & Analyzed: 04/16/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	20100		ng/l	20000		100	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	5070		ng/l	5000.0		101	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	52800		ng/l	50000		106	90-110			
Copper	2.05E6		ng/l	2.0000E6		102	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	509000		ng/l	500000		102	90-110			
Molybdenum	50400		ng/l	50000		101	90-110			
Nickel	128000		ng/l	120000		107	90-110			
Selenium	19900		ng/l	20000		99.3	90-110			
Thallium	494		ng/l	500.00		98.9	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	538000		ng/l	500000		108	90-110			
Calibration Check (2404050-CCV2)				Prepared & Analyzed: 04/16/24						
Antimony	20300		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	203000		ng/l	200000		102	90-110			
Beryllium	5060		ng/l	5000.0		101	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	52100		ng/l	50000		104	90-110			
Copper	2.05E6		ng/l	2.0000E6		103	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	508000		ng/l	500000		102	90-110			
Molybdenum	50800		ng/l	50000		102	90-110			
Nickel	128000		ng/l	120000		107	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	488		ng/l	500.00		97.7	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	537000		ng/l	500000		107	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404050 - B4D1605										
Calibration Check (2404050-CCV3)				Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		102	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	5080		ng/l	5000.0		102	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	52200		ng/l	50000		104	90-110			
Copper	2.05E6		ng/l	2.0000E6		102	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	514000		ng/l	500000		103	90-110			
Molybdenum	51000		ng/l	50000		102	90-110			
Nickel	127000		ng/l	120000		106	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	477		ng/l	500.00		95.4	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	536000		ng/l	500000		107	90-110			
Calibration Check (2404050-CCV4)				Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	20700		ng/l	20000		104	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	209000		ng/l	200000		104	90-110			
Beryllium	5140		ng/l	5000.0		103	90-110			
Cadmium	20800		ng/l	20000		104	90-110			
Chromium	250000		ng/l	240000		104	90-110			
Cobalt	53300		ng/l	50000		107	90-110			
Copper	2.10E6		ng/l	2.0000E6		105	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	528000		ng/l	500000		106	90-110			
Molybdenum	52100		ng/l	50000		104	90-110			
Nickel	131000		ng/l	120000		109	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	480		ng/l	500.00		96.0	90-110			
Vanadium	20400		ng/l	20000		102	90-110			
Zinc	547000		ng/l	500000		109	90-110			
Calibration Check (2404050-CCV5)				Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20500		ng/l	20000		103	90-110			
Barium	212000		ng/l	200000		106	90-110			
Beryllium	5190		ng/l	5000.0		104	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 2404050 - B4D1605										
Calibration Check (2404050-CCV5) Contin					Prepared: 04/16/24 Analyzed: 04/17/24					
Cadmium	20900		ng/l	20000		105	90-110			
Chromium	252000		ng/l	240000		105	90-110			
Cobalt	53900		ng/l	50000		108	90-110			
Copper	2.13E6		ng/l	2.0000E6		106	90-110			
Lead	205000		ng/l	200000		102	90-110			
Manganese	532000		ng/l	500000		106	90-110			
Molybdenum	53700		ng/l	50000		107	90-110			
Nickel	131000		ng/l	120000		109	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	475		ng/l	500.00		95.1	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	546000		ng/l	500000		109	90-110			
Calibration Check (2404050-CCV6)					Prepared: 04/16/24 Analyzed: 04/17/24					
Antimony	20700		ng/l	20000		104	90-110			
Arsenic	20700		ng/l	20000		103	90-110			
Barium	213000		ng/l	200000		107	90-110			
Beryllium	5130		ng/l	5000.0		103	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	255000		ng/l	240000		106	90-110			
Cobalt	54300		ng/l	50000		109	90-110			
Copper	2.15E6		ng/l	2.0000E6		108	90-110			
Lead	205000		ng/l	200000		102	90-110			
Manganese	534000		ng/l	500000		107	90-110			
Molybdenum	54500		ng/l	50000		109	90-110			
Nickel	133000		ng/l	120000		111	90-110			LJ, QX
Selenium	20100		ng/l	20000		101	90-110			
Thallium	470		ng/l	500.00		94.0	90-110			
Vanadium	20800		ng/l	20000		104	90-110			
Zinc	552000		ng/l	500000		110	90-110			
Calibration Check (2404050-CCV7)					Prepared: 04/16/24 Analyzed: 04/17/24					
Antimony	20700		ng/l	20000		104	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	213000		ng/l	200000		106	90-110			
Beryllium	5020		ng/l	5000.0		100	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	253000		ng/l	240000		105	90-110			
Cobalt	53000		ng/l	50000		106	90-110			
Copper	2.13E6		ng/l	2.0000E6		106	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 2404050 - B4D1605										
Calibration Check (2404050-CCV7) Contin					Prepared: 04/16/24 Analyzed: 04/17/24					
Lead	206000		ng/l	200000		103	90-110			
Manganese	516000		ng/l	500000		103	90-110			
Molybdenum	54400		ng/l	50000		109	90-110			
Nickel	130000		ng/l	120000		109	90-110			
Selenium	20000		ng/l	20000		100	90-110			
Thallium	470		ng/l	500.00		94.0	90-110			
Vanadium	20900		ng/l	20000		104	90-110			
Zinc	548000		ng/l	500000		110	90-110			
High Cal Check (2404050-HCV1)					Prepared & Analyzed: 04/16/24					
Antimony	40200		ng/l	40000		100	95-105			
Arsenic	40300		ng/l	40000		101	95-105			
Barium	406000		ng/l	400000		101	95-105			
Beryllium	10000		ng/l	10000		100	95-105			
Cadmium	39700		ng/l	40000		99.2	95-105			
Chromium	468000		ng/l	480000		97.6	95-105			
Cobalt	97300		ng/l	100000		97.3	95-105			
Copper	3.91E6		ng/l	4.0000E6		97.7	95-105			
Lead	402000		ng/l	400000		101	95-105			
Manganese	974000		ng/l	1.0000E6		97.4	95-105			
Molybdenum	101000		ng/l	100000		101	95-105			
Nickel	241000		ng/l	240000		100	95-105			
Selenium	40100		ng/l	40000		100	95-105			
Thallium	1000		ng/l	1000.0		100	95-105			
Vanadium	39800		ng/l	40000		99.6	95-105			
Zinc	971000		ng/l	1.0000E6		97.1	95-105			
Initial Cal Blank (2404050-ICB1)					Prepared & Analyzed: 04/16/24					
Antimony	0.910		ng/l							
Arsenic	3.16		ng/l							
Barium	1.92		ng/l							
Beryllium	-0.532		ng/l							U
Cadmium	0.181		ng/l							
Chromium	-0.0760		ng/l							U
Cobalt	0.370		ng/l							
Copper	121		ng/l							
Lead	3.75		ng/l							
Manganese	6.11		ng/l							
Molybdenum	6.55		ng/l							
Nickel	0.472		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404050 - B4D1605										
Initial Cal Blank (2404050-ICB1) Continu				Prepared & Analyzed: 04/16/24						
Selenium	5.02		ng/l							
Thallium	0.836		ng/l							
Vanadium	-60.3		ng/l							U
Zinc	-44.8		ng/l							U
Initial Cal Check (2404050-ICV1)				Prepared & Analyzed: 04/16/24						
Antimony	19600		ng/l	20000		98.0	90-110			
Arsenic	19900		ng/l	20000		99.4	90-110			
Barium	198000		ng/l	200000		98.9	90-110			
Beryllium	5070		ng/l	5000.0		101	90-110			
Cadmium	20500		ng/l	20000		102	90-110			
Chromium	233000		ng/l	240000		97.2	90-110			
Cobalt	50000		ng/l	50000		99.9	90-110			
Copper	1.98E6		ng/l	2.0000E6		99.2	90-110			
Lead	196000		ng/l	200000		98.2	90-110			
Manganese	476000		ng/l	500000		95.2	90-110			
Molybdenum	49800		ng/l	50000		99.7	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20700		ng/l	20000		103	90-110			
Thallium	515		ng/l	500.00		103	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	528000		ng/l	500000		106	90-110			
Interference Check A (2404050-IFA1)				Prepared & Analyzed: 04/16/24						
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	305000		ng/l	300000		102	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404050 - B4D1605										
Interference Check B (2404050-IFB1)				Prepared & Analyzed: 04/16/24						
Antimony	20400		ng/l	20000		102	80-120			
Arsenic	20600		ng/l	20000		103	80-120			
Barium	204000		ng/l	200000		102	80-120			
Beryllium	4820		ng/l	5000.0		96.3	80-120			
Cadmium	19500		ng/l	20000		97.6	80-120			
Chromium	248000		ng/l	240000		103	80-120			
Cobalt	54900		ng/l	50000		110	80-120			
Copper	2.01E6		ng/l	2.0000E6		100	80-120			
Lead	208000		ng/l	200000		104	80-120			
Manganese	579000		ng/l	500000		116	80-120			
Molybdenum	354000		ng/l	350000		101	80-120			
Nickel	130000		ng/l	120000		108	80-120			
Selenium	19000		ng/l	20000		95.0	80-120			
Thallium	517		ng/l	500.00		103	80-120			
Vanadium	20500		ng/l	20000		102	80-120			
Zinc	505000		ng/l	500000		101	80-120			
Batch 2404060 - B4D1605										
Calibration Blank (2404060-CCB1)				Prepared & Analyzed: 04/18/24						
Antimony	4.37		ng/l							
Arsenic	0.0495		ng/l							
Barium	5.74		ng/l							
Beryllium	0.355		ng/l							
Cadmium	0.358		ng/l							
Chromium	5.51		ng/l							
Cobalt	1.22		ng/l							
Copper	137		ng/l							
Lead	14.5		ng/l							
Manganese	14.5		ng/l							
Molybdenum	41.8		ng/l							
Nickel	8.48		ng/l							
Selenium	2.26		ng/l							
Thallium	0.673		ng/l							
Vanadium	-24.4		ng/l							U
Zinc	83.1		ng/l							
Calibration Blank (2404060-CCB2)				Prepared & Analyzed: 04/18/24						
Antimony	4.05		ng/l							
Arsenic	3.47		ng/l							
Barium	5.01		ng/l							

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404060 - B4D1605										
Calibration Blank (2404060-CCB2) Contin				Prepared & Analyzed: 04/18/24						
Beryllium	-0.277		ng/l							U
Cadmium	0.456		ng/l							
Chromium	6.66		ng/l							
Cobalt	0.896		ng/l							
Copper	118		ng/l							
Lead	8.14		ng/l							
Manganese	9.55		ng/l							
Molybdenum	12.6		ng/l							
Nickel	7.44		ng/l							
Selenium	-4.64		ng/l							U
Thallium	0.157		ng/l							
Vanadium	-25.9		ng/l							U
Zinc	-13.1		ng/l							U
Calibration Blank (2404060-CCB3)				Prepared & Analyzed: 04/18/24						
Antimony	3.30		ng/l							
Arsenic	6.99		ng/l							
Barium	3.19		ng/l							
Beryllium	-0.478		ng/l							U
Cadmium	0.251		ng/l							
Chromium	5.25		ng/l							
Cobalt	0.712		ng/l							
Copper	85.7		ng/l							
Lead	5.88		ng/l							
Manganese	6.75		ng/l							
Molybdenum	11.8		ng/l							
Nickel	7.66		ng/l							
Selenium	14.3		ng/l							
Thallium	0.213		ng/l							
Vanadium	-27.6		ng/l							U
Zinc	1.93		ng/l							
Calibration Blank (2404060-CCB4)				Prepared: 04/18/24 Analyzed: 04/19/24						
Antimony	4.17		ng/l							
Arsenic	7.71		ng/l							
Barium	7.76		ng/l							
Beryllium	-0.691		ng/l							U
Cadmium	0.822		ng/l							
Chromium	11.3		ng/l							
Cobalt	1.47		ng/l							

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/23/24 16:08
SUBMITTED: 04/15/24
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 2404060 - B4D1605										
Calibration Blank (2404060-CCB4) Contin				Prepared: 04/18/24 Analyzed: 04/19/24						
Copper	140		ng/l							
Lead	10.9		ng/l							
Manganese	18.6		ng/l							
Molybdenum	19.8		ng/l							
Nickel	11.1		ng/l							
Selenium	-2.82		ng/l							U
Thallium	0.453		ng/l							
Vanadium	-35.4		ng/l							U
Zinc	191		ng/l							
Calibration Blank (2404060-CCB5)				Prepared: 04/18/24 Analyzed: 04/19/24						
Antimony	3.76		ng/l							
Arsenic	8.90		ng/l							
Barium	8.09		ng/l							
Beryllium	-0.453		ng/l							U
Cadmium	0.610		ng/l							
Chromium	12.4		ng/l							
Cobalt	1.78		ng/l							
Copper	130		ng/l							
Lead	10.6		ng/l							
Manganese	19.6		ng/l							
Molybdenum	17.8		ng/l							
Nickel	8.94		ng/l							
Selenium	-14.3		ng/l							U
Thallium	0.299		ng/l							
Vanadium	-40.1		ng/l							U
Zinc	-1.77		ng/l							U
Calibration Check (2404060-CCV1)				Prepared & Analyzed: 04/18/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	19900		ng/l	20000		99.7	90-110			
Barium	205000		ng/l	200000		102	90-110			
Beryllium	4770		ng/l	5000.0		95.3	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	236000		ng/l	240000		98.2	90-110			
Cobalt	51900		ng/l	50000		104	90-110			
Copper	2.04E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	499000		ng/l	500000		99.7	90-110			
Molybdenum	50200		ng/l	50000		100	90-110			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404060 - B4D1605										
Calibration Check (2404060-CCV1) Contin				Prepared & Analyzed: 04/18/24						
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	495		ng/l	500.00		98.9	90-110			
Vanadium	19400		ng/l	20000		97.2	90-110			
Zinc	531000		ng/l	500000		106	90-110			
Calibration Check (2404060-CCV2)				Prepared & Analyzed: 04/18/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	207000		ng/l	200000		103	90-110			
Beryllium	4620		ng/l	5000.0		92.4	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	52300		ng/l	50000		105	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	507000		ng/l	500000		101	90-110			
Molybdenum	50800		ng/l	50000		102	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20300		ng/l	20000		102	90-110			
Thallium	490		ng/l	500.00		97.9	90-110			
Vanadium	19600		ng/l	20000		98.2	90-110			
Zinc	537000		ng/l	500000		107	90-110			
Calibration Check (2404060-CCV3)				Prepared & Analyzed: 04/18/24						
Antimony	20500		ng/l	20000		103	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	205000		ng/l	200000		103	90-110			
Beryllium	4570		ng/l	5000.0		91.4	90-110			
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	240000		ng/l	240000		99.8	90-110			
Cobalt	52100		ng/l	50000		104	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	511000		ng/l	500000		102	90-110			
Molybdenum	50900		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		101	90-110			
Selenium	19900		ng/l	20000		99.6	90-110			
Thallium	486		ng/l	500.00		97.2	90-110			
Vanadium	19200		ng/l	20000		95.9	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404060 - B4D1605										
Calibration Check (2404060-CCV3) Contin					Prepared & Analyzed: 04/18/24					
Zinc	533000		ng/l	500000		107	90-110			
Calibration Check (2404060-CCV4)					Prepared: 04/18/24 Analyzed: 04/19/24					
Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20100		ng/l	20000		101	90-110			
Barium	215000		ng/l	200000		108	90-110			
Beryllium	4530		ng/l	5000.0		90.6	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	240000		ng/l	240000		99.9	90-110			
Cobalt	52100		ng/l	50000		104	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	508000		ng/l	500000		102	90-110			
Molybdenum	52400		ng/l	50000		105	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	487		ng/l	500.00		97.5	90-110			
Vanadium	19700		ng/l	20000		98.3	90-110			
Zinc	535000		ng/l	500000		107	90-110			
Calibration Check (2404060-CCV5)					Prepared: 04/18/24 Analyzed: 04/19/24					
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20000		ng/l	20000		100	90-110			
Barium	210000		ng/l	200000		105	90-110			
Beryllium	4520		ng/l	5000.0		90.3	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	239000		ng/l	240000		99.7	90-110			
Cobalt	52000		ng/l	50000		104	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	201000		ng/l	200000		100	90-110			
Manganese	508000		ng/l	500000		102	90-110			
Molybdenum	51900		ng/l	50000		104	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	20100		ng/l	20000		100	90-110			
Thallium	485		ng/l	500.00		97.0	90-110			
Vanadium	19400		ng/l	20000		97.2	90-110			
Zinc	532000		ng/l	500000		106	90-110			
High Cal Check (2404060-HCV1)					Prepared & Analyzed: 04/18/24					
Antimony	40700		ng/l	40000		102	95-105			
Arsenic	39900		ng/l	40000		99.8	95-105			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404060 - B4D1605										
High Cal Check (2404060-HCV1) Continue				Prepared & Analyzed: 04/18/24						
Barium	408000		ng/l	400000		102	95-105			
Beryllium	10300		ng/l	10000		103	95-105			
Cadmium	40100		ng/l	40000		100	95-105			
Chromium	478000		ng/l	480000		99.6	95-105			
Cobalt	99300		ng/l	100000		99.3	95-105			
Copper	3.91E6		ng/l	4.0000E6		97.8	95-105			
Lead	401000		ng/l	400000		100	95-105			
Manganese	997000		ng/l	1.0000E6		99.7	95-105			
Molybdenum	100000		ng/l	100000		100	95-105			
Nickel	235000		ng/l	240000		97.8	95-105			
Selenium	40400		ng/l	40000		101	95-105			
Thallium	993		ng/l	1000.0		99.3	95-105			
Vanadium	40500		ng/l	40000		101	95-105			
Zinc	981000		ng/l	1.0000E6		98.1	95-105			
Initial Cal Blank (2404060-ICB1)				Prepared & Analyzed: 04/18/24						
Antimony	3.23		ng/l							
Arsenic	-4.20		ng/l							U
Barium	2.79		ng/l							
Beryllium	-0.00251		ng/l							U
Cadmium	0.0568		ng/l							
Chromium	3.36		ng/l							
Cobalt	0.375		ng/l							
Copper	81.0		ng/l							
Lead	5.94		ng/l							
Manganese	5.31		ng/l							
Molybdenum	13.4		ng/l							
Nickel	5.33		ng/l							
Selenium	-0.547		ng/l							U
Thallium	0.743		ng/l							
Vanadium	-19.8		ng/l							U
Zinc	26.5		ng/l							
Initial Cal Check (2404060-ICV1)				Prepared & Analyzed: 04/18/24						
Antimony	19700		ng/l	20000		98.4	90-110			
Arsenic	19500		ng/l	20000		97.5	90-110			
Barium	197000		ng/l	200000		98.6	90-110			
Beryllium	5120		ng/l	5000.0		102	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	232000		ng/l	240000		96.8	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 2404060 - B4D1605										
Initial Cal Check (2404060-ICV1) Continu				Prepared & Analyzed: 04/18/24						
Cobalt	48900		ng/l	50000		97.9	90-110			
Copper	1.95E6		ng/l	2.0000E6		97.7	90-110			
Lead	193000		ng/l	200000		96.4	90-110			
Manganese	479000		ng/l	500000		95.8	90-110			
Molybdenum	48900		ng/l	50000		97.7	90-110			
Nickel	116000		ng/l	120000		96.7	90-110			
Selenium	20400		ng/l	20000		102	90-110			
Thallium	477		ng/l	500.00		95.4	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	521000		ng/l	500000		104	90-110			
Interference Check A (2404060-IFA1)				Prepared & Analyzed: 04/18/24						
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	291000		ng/l	300000		97.1	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U
Interference Check B (2404060-IFB1)				Prepared & Analyzed: 04/18/24						
Antimony	20300		ng/l	20000		101	80-120			
Arsenic	20100		ng/l	20000		101	80-120			
Barium	206000		ng/l	200000		103	80-120			
Beryllium	4450		ng/l	5000.0		88.9	80-120			
Cadmium	19400		ng/l	20000		96.9	80-120			
Chromium	227000		ng/l	240000		94.5	80-120			
Cobalt	51200		ng/l	50000		102	80-120			
Copper	1.91E6		ng/l	2.0000E6		95.3	80-120			
Lead	206000		ng/l	200000		103	80-120			
Manganese	516000		ng/l	500000		103	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2404060 - B4D1605										
Interference Check B (2404060-IFB1) Co					Prepared & Analyzed: 04/18/24					
Molybdenum	352000		ng/l	350000		101	80-120			
Nickel	114000		ng/l	120000		95.3	80-120			
Selenium	18800		ng/l	20000		94.0	80-120			
Thallium	495		ng/l	500.00		99.1	80-120			
Vanadium	17700		ng/l	20000		88.6	80-120			
Zinc	481000		ng/l	500000		96.3	80-120			
Batch B4D1605 - ICP-MS Extraction										
Blank (B4D1605-BLK1)					Prepared & Analyzed: 04/16/24					
Antimony	ND	0.0386	ng/m³ Air							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							GC-BS, U
Selenium	ND	0.00896	ng/m³ Air							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
Blank (B4D1605-BLK2)					Prepared & Analyzed: 04/16/24					
Antimony	ND	0.0386	ng/m³ Air							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							GC-BS, U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D1605 - ICP-MS Extraction										
Blank (B4D1605-BLK2) Continued				Prepared & Analyzed: 04/16/24						
Selenium	ND	0.00896	ng/m³ Air							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 (B4D1605-BS1)				Prepared & Analyzed: 04/16/24						
Antimony	0.759	0.0386	ng/m³ Air	1.3829		54.9	80-120			SL
Arsenic	2.62	0.00937	ng/m³ Air	2.7658		94.7	80-120			
Barium	27.7	1.07	ng/m³ Air	27.658		100	80-120			QB-01
Beryllium	1.27	0.00320	ng/m³ Air	1.3829		92.2	80-120			
Cadmium	1.43	0.0741	ng/m³ Air	1.3829		104	80-120			
Chromium	15.0	2.21	ng/m³ Air	13.829		109	80-120			
Cobalt	1.38	0.0436	ng/m³ Air	1.3829		99.4	80-120			
Copper	28.6	2.63	ng/m³ Air	27.658		104	80-120			
Lead	13.3	0.214	ng/m³ Air	13.829		96.4	80-120			
Manganese	7.77	1.89	ng/m³ Air	8.2975		93.6	80-120			
Molybdenum	1.47	0.359	ng/m³ Air	1.3829		106	80-120			
Nickel	3.88	0.652	ng/m³ Air	2.7658		140	80-120			GC-BS
Selenium	2.62	0.00896	ng/m³ Air	2.7658		94.9	80-120			
Thallium	0.133	5.89E-4	ng/m³ Air	0.13829		96.2	80-120			QB-01, QB-04
Vanadium	2.74	0.0529	ng/m³ Air	2.7658		98.9	80-120			
Zinc	133	76.8	ng/m³ Air	82.975		160	80-120			
LCS (B4D1605-BS2)				Prepared & Analyzed: 04/16/24						
Antimony	0.740	0.0386	ng/m³ Air	1.3829		53.5	80-120			SL
Arsenic	2.58	0.00937	ng/m³ Air	2.7658		93.2	80-120			
Barium	27.2	1.07	ng/m³ Air	27.658		98.4	80-120			QB-01
Beryllium	1.27	0.00320	ng/m³ Air	1.3829		91.6	80-120			
Cadmium	1.35	0.0741	ng/m³ Air	1.3829		97.4	80-120			
Chromium	14.5	2.21	ng/m³ Air	13.829		105	80-120			
Cobalt	1.33	0.0436	ng/m³ Air	1.3829		95.9	80-120			
Copper	27.6	2.63	ng/m³ Air	27.658		99.6	80-120			
Lead	13.0	0.214	ng/m³ Air	13.829		94.1	80-120			
Manganese	7.60	1.89	ng/m³ Air	8.2975		91.6	80-120			
Molybdenum	1.44	0.359	ng/m³ Air	1.3829		104	80-120			
Nickel	3.10	0.652	ng/m³ Air	2.7658		112	80-120			GC-BS
Selenium	2.57	0.00896	ng/m³ Air	2.7658		92.9	80-120			
Thallium	0.130	5.89E-4	ng/m³ Air	0.13829		94.1	80-120			QB-01, QB-04
Vanadium	2.64	0.0529	ng/m³ Air	2.7658		95.6	80-120			

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REPORTED: 04/23/24 16:08
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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D1605 - ICP-MS Extraction										
LCS (B4D1605-BS2) Continued				Prepared & Analyzed: 04/16/24						
Zinc	133	76.8	ng/m³ Air	82.975		160	80-120			
Duplicate (B4D1605-DUP1)		**Source: 4041535-01**		Prepared & Analyzed: 04/16/24						
Antimony	0.196	0.0330	ng/m³ Air		0.209			6.23	10	SL
Arsenic	2.10	0.00800	ng/m³ Air		1.78			16.4	10	
Barium	7.08	0.914	ng/m³ Air		6.85			3.26	10	QB-01
Beryllium	0.0233	0.00273	ng/m³ Air		0.0216			7.56	10	
Cadmium	ND	0.0633	ng/m³ Air		ND				10	U
Chromium	4.48	1.89	ng/m³ Air		4.51			0.756	10	
Cobalt	0.810	0.0372	ng/m³ Air		0.780			3.77	10	
Copper	56.5	2.25	ng/m³ Air		58.4			3.38	10	
Lead	0.832	0.183	ng/m³ Air		0.930			11.1	10	
Manganese	24.6	1.61	ng/m³ Air		23.7			3.57	10	
Molybdenum	2.25	0.307	ng/m³ Air		2.25			0.148	10	
Nickel	2.24	0.557	ng/m³ Air		2.26			1.16	10	GC-BS
Selenium	0.219	0.00765	ng/m³ Air		0.202			8.05	10	
Thallium	0.00183	5.03E-4	ng/m³ Air		0.00183			0.105	10	QB-01, QB-04
Vanadium	2.68	0.0452	ng/m³ Air		2.71			1.20	10	
Zinc	ND	65.6	ng/m³ Air		ND				10	U
Duplicate (B4D1605-DUP2)		**Source: 4041535-21**		Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	0.0829	0.0323	ng/m³ Air		0.0857			3.30	10	SL
Arsenic	0.481	0.00784	ng/m³ Air		0.428			11.7	10	
Barium	3.25	0.895	ng/m³ Air		3.30			1.68	10	QB-01
Beryllium	0.0292	0.00268	ng/m³ Air		0.0285			2.74	10	
Cadmium	ND	0.0620	ng/m³ Air		ND				10	U
Chromium	2.56	1.85	ng/m³ Air		2.61			1.89	10	
Cobalt	0.527	0.0365	ng/m³ Air		0.512			2.91	10	
Copper	37.7	2.20	ng/m³ Air		41.4			9.44	10	
Lead	0.517	0.179	ng/m³ Air		0.969			60.8	10	D-F
Manganese	12.7	1.58	ng/m³ Air		12.5			2.03	10	
Molybdenum	2.34	0.300	ng/m³ Air		2.35			0.392	10	
Nickel	1.49	0.545	ng/m³ Air		1.49			0.100	10	GC-BS
Selenium	0.220	0.00750	ng/m³ Air		0.211			3.83	10	
Thallium	0.00161	4.93E-4	ng/m³ Air		0.00165			2.58	10	QB-01, QB-04
Vanadium	1.39	0.0443	ng/m³ Air		1.36			1.87	10	
Zinc	ND	64.2	ng/m³ Air		ND				10	U
Duplicate (B4D1605-DUP3)		**Source: 4041535-06**		Prepared: 04/16/24 Analyzed: 04/17/24						
Antimony	0.505	0.0299	ng/m³ Air		0.507			0.548	10	SL
Arsenic	1.09	0.00726	ng/m³ Air		1.09			0.108	10	QB-04

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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 B4D1605 - ICP-MS Extraction										
Duplicate (B4D1605-DUP3) Continued			**Source: 4041535-06**		Prepared: 04/16/24 Analyzed: 04/17/24					
Barium	11.7	0.829	ng/m³ Air		11.7			0.287	10	QB-01
Beryllium	0.0285	0.00248	ng/m³ Air		0.0282			1.19	10	
Cadmium	0.0691	0.0574	ng/m³ Air		0.0692			0.124	10	
Chromium	3.52	1.71	ng/m³ Air		3.50			0.730	10	
Cobalt	0.956	0.0338	ng/m³ Air		0.943			1.35	10	
Copper	54.8	2.04	ng/m³ Air		54.2			1.09	10	
Lead	3.33	0.166	ng/m³ Air		3.32			0.324	10	
Manganese	33.8	1.47	ng/m³ Air		33.3			1.44	10	
Molybdenum	1.96	0.278	ng/m³ Air		1.96			0.349	10	
Nickel	2.68	0.505	ng/m³ Air		2.64			1.49	10	GC-BS
Selenium	0.271	0.00695	ng/m³ Air		0.259			4.61	10	
Thallium	0.00281	4.57E-4	ng/m³ Air		0.00272			3.18	10	QB-01, QB-04
Vanadium	2.80	0.0410	ng/m³ Air		2.79			0.325	10	
Zinc	ND	59.5	ng/m³ Air		ND				10	U
Duplicate (B4D1605-DUP4)			**Source: 4041535-26**		Prepared: 04/16/24 Analyzed: 04/17/24					
Antimony	0.107	0.0312	ng/m³ Air		0.105			1.11	10	SL
Arsenic	0.377	0.00758	ng/m³ Air		0.382			1.35	10	QB-04
Barium	3.28	0.866	ng/m³ Air		3.26			0.470	10	QB-01
Beryllium	0.00885	0.00259	ng/m³ Air		0.00948			6.92	10	
Cadmium	ND	0.0599	ng/m³ Air		ND				10	U
Chromium	ND	1.79	ng/m³ Air		ND				10	U
Cobalt	0.298	0.0353	ng/m³ Air		0.298			0.104	10	
Copper	25.9	2.13	ng/m³ Air		25.9			0.0650	10	
Lead	0.727	0.173	ng/m³ Air		0.729			0.304	10	
Manganese	9.74	1.53	ng/m³ Air		9.68			0.562	10	
Molybdenum	1.83	0.290	ng/m³ Air		1.84			0.643	10	
Nickel	0.972	0.527	ng/m³ Air		0.964			0.878	10	GC-BS, LJ, QX
Selenium	0.181	0.00725	ng/m³ Air		0.183			0.820	10	
Thallium	0.00129	4.76E-4	ng/m³ Air		0.00132			1.98	10	QB-01, QB-04
Vanadium	1.05	0.0428	ng/m³ Air		1.04			0.462	10	
Zinc	ND	62.1	ng/m³ Air		ND				10	U
Duplicate (B4D1605-DUP5)			**Source: 4041535-06R**		Prepared: 04/16/24 Analyzed: 04/18/24					
Antimony	0.493	0.0299	ng/m³ Air		0.494			0.0487	10	
Arsenic	1.06	0.00726	ng/m³ Air		1.06			0.120	10	
Barium	11.6	0.829	ng/m³ Air		11.5			0.619	10	
Beryllium	0.0252	0.00248	ng/m³ Air		0.0253			0.482	10	
Cadmium	0.0667	0.0574	ng/m³ Air		0.0678			1.61	10	
Chromium	3.36	1.71	ng/m³ Air		3.33			0.926	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 B4D1605 - ICP-MS Extraction										
Duplicate (B4D1605-DUP5) Continued			**Source: 4041535-06R**		Prepared: 04/16/24 Analyzed: 04/18/24					
Cobalt	0.916	0.0338	ng/m³ Air		0.906			1.01	10	
Copper	53.4	2.04	ng/m³ Air		52.5			1.57	10	
Lead	3.26	0.166	ng/m³ Air		3.27			0.355	10	
Manganese	31.0	1.47	ng/m³ Air		30.7			1.09	10	
Molybdenum	1.92	0.278	ng/m³ Air		1.91			0.923	10	
Nickel	2.44	0.505	ng/m³ Air		2.42			0.713	10	
Selenium	0.228	0.00695	ng/m³ Air		0.228			0.223	10	
Thallium	0.00265	4.57E-4	ng/m³ Air		0.00258			2.52	10	
Vanadium	2.54	0.0410	ng/m³ Air		2.54			0.190	10	
Zinc	ND	59.5	ng/m³ Air		ND				10	U
Duplicate (B4D1605-DUP6)			**Source: 4041535-26R**		Prepared: 04/16/24 Analyzed: 04/19/24					
Antimony	0.105	0.0312	ng/m³ Air		0.106			0.839	10	
Arsenic	0.377	0.00758	ng/m³ Air		0.372			1.36	10	
Barium	3.34	0.866	ng/m³ Air		3.33			0.0358	10	
Beryllium	0.00846	0.00259	ng/m³ Air		0.00834			1.40	10	
Cadmium	ND	0.0599	ng/m³ Air		ND				10	U
Chromium	ND	1.79	ng/m³ Air		ND				10	U
Cobalt	0.288	0.0353	ng/m³ Air		0.290			0.837	10	
Copper	25.4	2.13	ng/m³ Air		25.4			0.0450	10	
Lead	0.729	0.173	ng/m³ Air		0.728			0.0748	10	
Manganese	9.00	1.53	ng/m³ Air		9.06			0.660	10	
Molybdenum	1.81	0.290	ng/m³ Air		1.80			0.581	10	
Nickel	0.887	0.527	ng/m³ Air		0.893			0.777	10	GC-BS
Selenium	0.167	0.00725	ng/m³ Air		0.172			2.58	10	
Thallium	0.00105	4.76E-4	ng/m³ Air		0.00104			0.898	10	
Vanadium	0.940	0.0428	ng/m³ Air		0.946			0.685	10	
Zinc	ND	62.1	ng/m³ Air		ND				10	U
Matrix Spike (B4D1605-MS1)			**Source: 4041535-01**		Prepared & Analyzed: 04/16/24					
Antimony	0.875	0.0330	ng/m³ Air	1.1809	0.209	56.4	80-120			SL
Arsenic	3.97	0.00800	ng/m³ Air	2.3618	1.78	93.0	80-120			
Barium	30.6	0.914	ng/m³ Air	23.618	6.85	101	80-120			QB-01
Beryllium	1.17	0.00273	ng/m³ Air	1.1809	0.0216	97.3	80-120			
Cadmium	1.19	0.0633	ng/m³ Air	1.1809	ND	101	80-120			
Chromium	16.9	1.89	ng/m³ Air	11.809	4.51	105	80-120			
Cobalt	2.02	0.0372	ng/m³ Air	1.1809	0.780	105	80-120			
Copper	82.2	2.25	ng/m³ Air	23.618	58.4	101	80-120			
Lead	12.9	0.183	ng/m³ Air	11.809	0.930	101	80-120			
Manganese	31.9	1.61	ng/m³ Air	7.0855	23.7	116	80-120			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D1605 - ICP-MS Extraction										
Matrix Spike (B4D1605-MS1) Continued Source: 4041535-01 Prepared & Analyzed: 04/16/24										
Molybdenum	3.40	0.307	ng/m³ Air	1.1809	2.25	97.2	80-120			
Nickel	4.79	0.557	ng/m³ Air	2.3618	2.26	107	80-120			GC-BS
Selenium	2.39	0.00765	ng/m³ Air	2.3618	0.202	92.8	80-120			
Thallium	0.113	5.03E-4	ng/m³ Air	0.11809	0.00183	93.9	80-120			QB-01, QB-04
Vanadium	5.06	0.0452	ng/m³ Air	2.3618	2.71	99.5	80-120			
Zinc	119	65.6	ng/m³ Air	70.855	ND	167	80-120			
Matrix Spike (B4D1605-MS2) Source: 4041535-21 Prepared: 04/16/24 Analyzed: 04/17/24										
Antimony	0.795	0.0323	ng/m³ Air	1.1569	0.0857	61.3	80-120			SL
Arsenic	2.64	0.00784	ng/m³ Air	2.3138	0.428	95.8	80-120			
Barium	26.3	0.895	ng/m³ Air	23.138	3.30	99.4	80-120			QB-01
Beryllium	1.16	0.00268	ng/m³ Air	1.1569	0.0285	97.8	80-120			
Cadmium	1.18	0.0620	ng/m³ Air	1.1569	ND	102	80-120			
Chromium	14.8	1.85	ng/m³ Air	11.569	2.61	105	80-120			
Cobalt	1.71	0.0365	ng/m³ Air	1.1569	0.512	103	80-120			
Copper	64.7	2.20	ng/m³ Air	23.138	41.4	101	80-120			
Lead	12.2	0.179	ng/m³ Air	11.569	0.969	97.1	80-120			
Manganese	19.7	1.58	ng/m³ Air	6.9414	12.5	103	80-120			
Molybdenum	3.35	0.300	ng/m³ Air	1.1569	2.35	86.8	80-120			
Nickel	3.93	0.545	ng/m³ Air	2.3138	1.49	105	80-120			GC-BS
Selenium	2.42	0.00750	ng/m³ Air	2.3138	0.211	95.5	80-120			
Thallium	0.113	4.93E-4	ng/m³ Air	0.11569	0.00165	96.4	80-120			QB-01, QB-04
Vanadium	3.68	0.0443	ng/m³ Air	2.3138	1.36	100	80-120			
Zinc	99.4	64.2	ng/m³ Air	69.414	ND	143	80-120			
Matrix Spike Dup (B4D1605-MSD1) Source: 4041535-01 Prepared & Analyzed: 04/16/24										
Antimony	0.858	0.0330	ng/m³ Air	1.1809	0.209	55.0	80-120	1.91	20	SL
Arsenic	4.12	0.00800	ng/m³ Air	2.3618	1.78	99.2	80-120	3.62	20	
Barium	30.7	0.914	ng/m³ Air	23.618	6.85	101	80-120	0.183	20	QB-01
Beryllium	1.16	0.00273	ng/m³ Air	1.1809	0.0216	96.1	80-120	1.17	20	
Cadmium	1.21	0.0633	ng/m³ Air	1.1809	ND	102	80-120	1.18	20	
Chromium	16.9	1.89	ng/m³ Air	11.809	4.51	105	80-120	0.0606	20	
Cobalt	1.99	0.0372	ng/m³ Air	1.1809	0.780	103	80-120	1.30	20	
Copper	80.7	2.25	ng/m³ Air	23.618	58.4	94.4	80-120	1.85	20	
Lead	12.5	0.183	ng/m³ Air	11.809	0.930	98.2	80-120	2.96	20	
Manganese	31.1	1.61	ng/m³ Air	7.0855	23.7	104	80-120	2.71	20	
Molybdenum	3.46	0.307	ng/m³ Air	1.1809	2.25	102	80-120	1.70	20	
Nickel	4.71	0.557	ng/m³ Air	2.3618	2.26	104	80-120	1.58	20	GC-BS
Selenium	2.40	0.00765	ng/m³ Air	2.3618	0.202	93.0	80-120	0.181	20	
Thallium	0.112	5.03E-4	ng/m³ Air	0.11809	0.00183	93.5	80-120	0.441	20	QB-04, QB-01

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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 B4D1605 - ICP-MS Extraction										
Matrix Spike Dup (B4D1605-MSD1) Conti				**Source: 4041535-01**		Prepared & Analyzed: 04/16/24				
Vanadium	4.94	0.0452	ng/m³ Air	2.3618	2.71	94.6	80-120	2.34	20	
Zinc	123	65.6	ng/m³ Air	70.855	ND	174	80-120	3.56	20	
Matrix Spike Dup (B4D1605-MSD2)				**Source: 4041535-21**		Prepared: 04/16/24	Analyzed: 04/17/24			
Antimony	0.762	0.0323	ng/m³ Air	1.1569	0.0857	58.5	80-120	4.26	20	SL
Arsenic	2.54	0.00784	ng/m³ Air	2.3138	0.428	91.1	80-120	4.19	20	
Barium	25.9	0.895	ng/m³ Air	23.138	3.30	97.7	80-120	1.58	20	QB-01
Beryllium	1.13	0.00268	ng/m³ Air	1.1569	0.0285	95.5	80-120	2.39	20	
Cadmium	1.14	0.0620	ng/m³ Air	1.1569	ND	98.3	80-120	4.01	20	
Chromium	14.0	1.85	ng/m³ Air	11.569	2.61	98.6	80-120	5.13	20	
Cobalt	1.67	0.0365	ng/m³ Air	1.1569	0.512	100	80-120	2.30	20	
Copper	63.6	2.20	ng/m³ Air	23.138	41.4	95.7	80-120	1.84	20	
Lead	11.7	0.179	ng/m³ Air	11.569	0.969	93.0	80-120	3.96	20	
Manganese	19.2	1.58	ng/m³ Air	6.9414	12.5	97.3	80-120	2.17	20	
Molybdenum	3.40	0.300	ng/m³ Air	1.1569	2.35	90.9	80-120	1.40	20	
Nickel	3.78	0.545	ng/m³ Air	2.3138	1.49	99.0	80-120	3.80	20	GC-BS
Selenium	2.36	0.00750	ng/m³ Air	2.3138	0.211	93.0	80-120	2.43	20	
Thallium	0.108	4.93E-4	ng/m³ Air	0.11569	0.00165	92.1	80-120	4.57	20	QB-01, QB-04
Vanadium	3.56	0.0443	ng/m³ Air	2.3138	1.36	95.0	80-120	3.38	20	
Zinc	94.9	64.2	ng/m³ Air	69.414	ND	137	80-120	4.65	20	
Post Spike (B4D1605-PS1)				**Source: 4041535-01**		Prepared & Analyzed: 04/16/24				
Antimony	0.445	0.0330	ng/m³ Air	0.23618	0.209	99.9	75-125			SL
Arsenic	2.95	0.00800	ng/m³ Air	1.1809	1.78	99.5	75-125			
Barium	9.15	0.914	ng/m³ Air	2.3618	6.85	97.4	75-125			QB-01
Beryllium	0.255	0.00273	ng/m³ Air	0.23618	0.0216	98.9	75-125			
Cadmium	0.139	0.0633	ng/m³ Air	0.11809	ND	117	75-125			
Chromium	5.78	1.89	ng/m³ Air	1.1809	4.51	107	75-125			
Cobalt	1.04	0.0372	ng/m³ Air	0.23618	0.780	112	75-125			
Copper	71.6	2.25	ng/m³ Air	11.809	58.4	112	75-125			
Lead	24.4	0.183	ng/m³ Air	23.618	0.930	99.3	75-125			
Manganese	27.4	1.61	ng/m³ Air	2.3618	23.7	157	75-125			A-01
Molybdenum	3.37	0.307	ng/m³ Air	1.1809	2.25	94.6	75-125			
Nickel	4.79	0.557	ng/m³ Air	2.3618	2.26	107	75-125			GC-BS
Selenium	1.33	0.00765	ng/m³ Air	1.1809	0.202	95.7	75-125			
Thallium	0.0589	5.03E-4	ng/m³ Air	5.9045E-2	0.00183	96.7	75-125			QB-01, QB-04
Vanadium	3.89	0.0452	ng/m³ Air	1.1809	2.71	100	75-125			
Zinc	78.0	65.6	ng/m³ Air	23.618	ND	330	75-125			
Post Spike (B4D1605-PS2)				**Source: 4041535-21**		Prepared: 04/16/24	Analyzed: 04/17/24			
Antimony	0.319	0.0323	ng/m³ Air	0.23138	0.0857	101	75-125			SL

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: 04/23/24 16:08
SUBMITTED: 04/15/24
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 B4D1605 - ICP-MS Extraction										
Post Spike (B4D1605-PS2) Continued			**Source: 4041535-21**		Prepared: 04/16/24		Analyzed: 04/17/24			
Arsenic	1.56	0.00784	ng/m³ Air	1.1569	0.428	98.0	75-125			
Barium	5.66	0.895	ng/m³ Air	2.3138	3.30	102	75-125			QB-01
Beryllium	0.259	0.00268	ng/m³ Air	0.23138	0.0285	99.7	75-125			
Cadmium	0.136	0.0620	ng/m³ Air	0.11569	ND	117	75-125			
Chromium	3.82	1.85	ng/m³ Air	1.1569	2.61	105	75-125			
Cobalt	0.761	0.0365	ng/m³ Air	0.23138	0.512	107	75-125			
Copper	54.5	2.20	ng/m³ Air	11.569	41.4	113	75-125			
Lead	24.2	0.179	ng/m³ Air	23.138	0.969	101	75-125			
Manganese	15.4	1.58	ng/m³ Air	2.3138	12.5	124	75-125			
Molybdenum	3.47	0.300	ng/m³ Air	1.1569	2.35	96.8	75-125			
Nickel	3.94	0.545	ng/m³ Air	2.3138	1.49	106	75-125			GC-BS
Selenium	1.31	0.00750	ng/m³ Air	1.1569	0.211	95.0	75-125			
Thallium	0.0595	4.93E-4	ng/m³ Air	5.7845E-2	0.00165	100	75-125			QB-01, QB-04
Vanadium	2.52	0.0443	ng/m³ Air	1.1569	1.36	99.9	75-125			
Zinc	ND	64.2	ng/m³ Air	23.138	ND		75-125			U
Dilution Check (B4D1605-SRL1)			**Source: 4041535-01**		Prepared & Analyzed: 04/16/24					
Antimony	0.206	0.165	ng/m³ Air		0.209			1.08	10	SL
Arsenic	1.84	0.0400	ng/m³ Air		1.78			3.39	10	
Barium	6.84	4.57	ng/m³ Air		6.85			0.0912	10	QB-01
Beryllium	0.0217	0.0137	ng/m³ Air		0.0216			0.704	10	
Cadmium	ND	0.316	ng/m³ Air		ND				10	U
Chromium	ND	9.44	ng/m³ Air		ND				10	U
Cobalt	0.806	0.186	ng/m³ Air		0.780			3.26	10	
Copper	61.5	11.2	ng/m³ Air		58.4			5.23	10	
Lead	ND	0.914	ng/m³ Air		0.930				10	U
Manganese	24.6	8.07	ng/m³ Air		23.7			3.71	10	
Molybdenum	2.33	1.53	ng/m³ Air		2.25			3.21	10	
Nickel	ND	2.78	ng/m³ Air		ND				10	GC-BS, U
Selenium	0.193	0.0383	ng/m³ Air		0.202			4.68	10	
Thallium	0.00520	0.00251	ng/m³ Air		ND			95.8	10	QB-01, QB-04
Vanadium	2.66	0.226	ng/m³ Air		2.71			1.76	10	
Zinc	ND	328	ng/m³ Air		ND				10	U
Dilution Check (B4D1605-SRL2)			**Source: 4041535-21**		Prepared: 04/16/24		Analyzed: 04/17/24			
Antimony	ND	0.161	ng/m³ Air		ND				10	SL, U
Arsenic	0.455	0.0392	ng/m³ Air		0.428			6.11	10	
Barium	ND	4.48	ng/m³ Air		ND				10	QB-01, U
Beryllium	0.0288	0.0134	ng/m³ Air		0.0285			1.37	10	
Cadmium	ND	0.310	ng/m³ Air		ND				10	U

CERTIFICATE OF ANALYSIS

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FILE #: 4205.00.003.001
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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4D1605 - ICP-MS Extraction										
Dilution Check (B4D1605-SRL2) ContinueSource: 4041535-21 Prepared: 04/16/24 Analyzed: 04/17/24										
Chromium	ND	9.24	ng/m³ Air		ND				10	U
Cobalt	0.522	0.182	ng/m³ Air		0.512			2.00	10	
Copper	43.5	11.0	ng/m³ Air		41.4			4.80	10	
Lead	0.954	0.895	ng/m³ Air		0.969			1.49	10	
Manganese	12.9	7.91	ng/m³ Air		12.5			3.07	10	
Molybdenum	2.38	1.50	ng/m³ Air		2.35			1.24	10	
Nickel	ND	2.73	ng/m³ Air		ND				10	GC-BS, U
Selenium	0.233	0.0375	ng/m³ Air		0.211			9.81	10	SRD-01
Thallium	0.00419	0.00246	ng/m³ Air		ND			87.0	10	QB-01, QB-04
Vanadium	1.35	0.221	ng/m³ Air		1.36			0.958	10	
Zinc	ND	321	ng/m³ Air		ND				10	U
Dilution Check (B4D1605-SRL3) Source: 4041535-06R Prepared: 04/16/24 Analyzed: 04/18/24										
Antimony	0.493	0.150	ng/m³ Air		0.494			0.165	10	
Arsenic	1.07	0.0363	ng/m³ Air		1.06			1.46	10	
Barium	11.5	4.15	ng/m³ Air		11.5			0.0551	10	
Beryllium	0.0242	0.0124	ng/m³ Air		0.0253			4.69	10	
Cadmium	ND	0.287	ng/m³ Air		ND				10	U
Chromium	ND	8.57	ng/m³ Air		ND				10	U
Cobalt	0.928	0.169	ng/m³ Air		0.906			2.32	10	
Copper	55.7	10.2	ng/m³ Air		52.5			5.84	10	
Lead	3.21	0.829	ng/m³ Air		3.27			1.93	10	
Manganese	31.5	7.33	ng/m³ Air		30.7			2.43	10	
Molybdenum	2.01	1.39	ng/m³ Air		1.91			5.37	10	
Nickel	ND	2.53	ng/m³ Air		ND				10	U
Selenium	0.259	0.0347	ng/m³ Air		0.228			12.6	10	
Thallium	0.00272	0.00228	ng/m³ Air		0.00258			5.24	10	
Vanadium	2.63	0.205	ng/m³ Air		2.54			3.45	10	
Zinc	ND	298	ng/m³ Air		ND				10	U

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AQS SITE CODE:
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Notes and Definitions

U	Under Detection Limit
SRD-01	Serial dilution exceeds the control limits.
SL	The spike recovery was outside acceptance limits. Reported value may be biased low.
QX	Compound does not meet QC criteria. Results should be considered an estimate.
QB-04	Analyte exceeds continuing calibration blank criteria
QB-01	Analyte exceeds method blank criteria
LJ	Identification of analyte is acceptable; reported value is an estimate.
GC-BS	Compound exceeds Blank Spike Criteria
FB-01	Analyte exceeds Field Blank criteria.
D-F	Duplicate exceeds DQO criteria.
A-01	Parent sample >4x spike amount
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 4/24/2024 and Shanna Vasser 4/26/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 4/4/2024 – 4/10/2024
Report No: 4041535

√	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.
√	13.	No detections in field QC blanks (lot/media blanks, field blanks, etc).

Discrepancies:

13. Field blank detections above the method detection limit were reported for arsenic in MFL-FB01-040524-HM, MFL-FB01-040724-HM, and MFL-FB01-040924-HM.

Notes:

2. The laboratory stated that all samples were received in acceptable condition unless otherwise noted. MFL-AM01-040424-HM/MS/MS, MFL-AM03-040824-HM/MS/MS, and MFL-AM03-041024-HM were nonhomogeneous samples. There were no additional details; therefore, it is assumed the other samples met method criteria for analysis.
7. MFL-AM01-040424-HM/MS/MSD and MFL-AM03-040824-HM/MS/MSD were analyzed at a five-fold dilution for all analytes. MFL-AM02-040524-HM was analyzed at a five-fold dilution for arsenic.