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

Lahaina, Maui

3/14/2024 – 3/20/2024

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 1.4 mph in a generally 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 (March 14-March 20), WW Pump Station #4 March 14-March 20), Lahaina Intermediate School (March 14-March 20), Lahaina Boys & Girls Club (March 14-March 20).

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 taken at Leialii Hawaiian Homelands on 3/15 was voided as a result of a greater than 10% discrepancy between the pre and post calibration 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 all monitoring stations from March 7-March 13, except the samples taken at Leialii Hawaiian Homelands on March 14 and 16-18, WW Pump Station #4 on March 15, 17, and 20, Lahaina Intermediate School on March 15-19,

and at Lahaina Boys & Girls Club on March 15, 16, and 18. 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
3/14/2024-3/20/2024

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
3/14/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.0000739	0.000205	0.00499	0.00000549	ND	ND	0.000227	0.0525	0.000306	0.00632	0.00202	0.00140	0.000149	0.00000103	0.000811	ND
	WW Pump Station #4 (AM-02)	<0.0025	0.000179	0.000526	0.00450	0.0000119	ND	0.00190	0.000355	0.0605	0.00124	0.0116	0.00166	0.00145	0.000190	0.00000119	0.00140	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000951	0.000286	0.00470	0.0000378	ND	0.00318	0.000786	0.0518	0.000647	0.0196	0.00224	0.00236	0.000243	0.00000145	0.00213	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.000139	0.000464	0.00437	0.0000111	ND	0.00208	0.000364	0.0406	0.00121	0.0110	0.00191	0.00136	0.000190	0.00000110	0.00119	ND
3/15/2024	Leialii Hawaiian Homelands (AM-01)		0.0000506	0.000338	0.00609	0.00000966	ND	0.00203	0.000340	0.0349	0.000676	0.0114	0.00118	0.00143	0.000133	0.00000241	0.000900	ND
	WW Pump Station #4 (AM-02)	<0.0025	0.000177	0.00103	0.00755	0.0000262	ND	0.00298	0.000715	0.0667	0.00283	0.0229	0.00156	0.00220	0.000185	0.00000287	0.00225	ND
	Lahaina Intermediate School (AM-03)	<0.0028	0.0000640	0.000264	0.00414	0.0000240	ND	0.00277	0.000519	0.0681	0.000885	0.0138	0.00217	0.00255	0.000117	0.00000124	0.00141	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.000147	0.00134	0.00702	0.0000231	ND	0.00369	0.000814	0.0297	0.00205	0.0231	0.00120	0.00232	0.000131	0.00000155	0.00184	ND
3/16/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.0000386	0.000195	0.00345	0.00000564	ND	ND	0.000211	0.0523	0.000227	0.00669	0.00176	0.00145	0.0000698	0.000000639	0.000583	ND
	WW Pump Station #4 (AM-02)	<0.0025	0.000221	0.000579	0.00647	0.0000108	ND	0.00190	0.000365	0.0319	0.000962	0.0115	0.00110	0.00112	0.0000935	0.00000102	0.00107	ND
	Lahaina Intermediate School (AM-03)	<0.0026	0.0000584	0.000201	0.00225	0.00000688	ND	ND	0.000178	0.0309	0.000309	0.00472	0.00106	0.000785	0.0000688	0.000000598	0.000448	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.000117	0.000447	0.00439	0.00000866	ND	0.00195	0.000311	0.0382	0.00102	0.00948	0.00124	0.00107	0.0000883	0.000000763	0.000814	ND
3/17/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.0000997	0.000423	0.00386	0.00000503	ND	ND	0.000198	0.0305	0.00105	0.00601	0.00102	0.000659	0.000102	0.00000104	0.000566	ND
	WW Pump Station #4 (AM-02)	<0.0026	0.000160	0.000460	0.00363	0.00000827	ND	ND	0.000248	0.0326	0.00110	0.00823	0.00114	0.000931	0.000117	0.00000112	0.000848	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000556	0.000266	0.00175	0.0000100	ND	ND	0.000203	0.0348	0.000321	0.00527	0.00113	0.000618	0.000117	0.00000122	0.000557	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.000161	0.000420	0.00451	0.00000817	ND	0.00199	0.000278	0.0490	0.000982	0.00860	0.00148	0.000897	0.000130	0.00000111	0.000821	ND
3/18/2024	Leialii Hawaiian Homelands (AM-01)	<0.0026	0.0000679	0.000429	0.00267	0.00000589	ND	0.00208	0.000213	0.0358	0.000589	0.00664	0.00148	0.000827	0.000123	0.00000120	0.000686	ND
	WW Pump Station #4 (AM-02)	<0.0025	0.000129	0.000508	0.00482	0.0000135	ND	0.00243	0.000528	0.0299	0.000898	0.0132	0.00101	0.00190	0.000154	0.00000159	0.00142	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000569	0.000242	0.00277	0.0000183	ND	0.00201	0.000396	0.0374	0.000611	0.00957	0.00118	0.00124	0.000148	0.00000136	0.000982	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.000144	0.00103	0.00414	0.00000884	ND	0.00201	0.000299	0.0459	0.00113	0.00906	0.00148	0.000988	0.000143	0.00000142	0.000831	ND
3/19/2024	Leialii Hawaiian Homelands (AM-01)	<0.0026	0.0000862	0.000581	0.00435	0.00000923	ND	0.00243	0.000314	0.0401	0.000874	0.00894	0.00179	0.00118	0.000135	0.00000203	0.000926	ND
	WW Pump Station #4 (AM-02)	<0.0025	0.000348	0.00275	0.00904	0.0000173	ND	0.00436	0.000623	0.0414	0.0129	0.0176	0.00115	0.00210	0.000196	0.00000285	0.00181	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000720	0.000310	0.00339	0.0000191	ND	0.00198	0.000365	0.0411	0.000601	0.00907	0.00131	0.00110	0.000154	0.00000223	0.000939	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.000116	0.000507	0.00411	0.00000962	ND	0.00189	0.000315	0.0524	0.00122	0.00987	0.00199	0.000975	0.000142	0.00000208	0.000894	ND
3/20/2024	Leialii Hawaiian Homelands (AM-01)	<0.0025	0.0000576	0.000403	0.00308	0.00000895	ND	0.00230	0.000324	0.0245	0.000576	0.0108	0.00140	0.00105	0.000157	0.00000229	0.000952	ND
	WW Pump Station #4 (AM-02)	<0.0026	0.000232	0.000681	0.0112	0.0000282	ND	0.00622	0.00167	0.0366	0.00178	0.0379	0.00122	0.00695	0.000252	0.00000315	0.00381	ND
	Lahaina Intermediate School (AM-03)	<0.0025	0.0000536	0.000246	0.00302	0.0000236	ND	0.00206	0.000438	0.0392	0.000445	0.0116	0.00129	0.00114	0.000190	0.00000230	0.00116	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0025	0.000377	0.000753	0.00648	0.0000193	ND	0.00272	0.000551	0.0457	0.00144	0.0204	0.00204	0.00162	0.000208	0.00000250	0.00136	ND
95% Upper Confidence Limit[2]		NA	0.000160	0.000700	0.00550	0.0000170	NA	0.00291	0.000520	0.0458	0.00171	0.0146	0.00160	0.00183	0.000170	0.00000190	0.00141	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 3/15 due to the sampling pump providing inconsistent air flow through the filter and not maintaining flow rate within 10% of the initial measurement throughout the sampling period.

Table 2
HDOH CAB Ambient Community Monitoring and Sampling
Particulate Monitoring Results for PM_{10}
Maui Wildfire, Lahaina
3/14/2024 - 3/20/2024

Screening Level		**150 µg/m^3**
3/14/2024	Leialii Hawaiian Homelands (AM-01)	6.0
	WW Pump Station #4 (AM-02)	7.0
	Lahaina Intermediate School (AM-03)	6.4
	Lahaina Boys & Girls Club (AM-04)	6.6
3/15/2024	Leialii Hawaiian Homelands (AM-01)	6.0
	WW Pump Station #4 (AM-02)	6.2
	Lahaina Intermediate School (AM-03)	11
	Lahaina Boys & Girls Club (AM-04)	5.1
3/16/2024	Leialii Hawaiian Homelands (AM-01)	5.4
	WW Pump Station #4 (AM-02)	5.5
	Lahaina Intermediate School (AM-03)	5.1
	Lahaina Boys & Girls Club (AM-04)	4.5
3/17/2024	Leialii Hawaiian Homelands (AM-01)	6.2
	WW Pump Station #4 (AM-02)	6.5
	Lahaina Intermediate School (AM-03)	6.5
	Lahaina Boys & Girls Club (AM-04)	5.4
3/18/2024	Leialii Hawaiian Homelands (AM-01)	6.8
	WW Pump Station #4 (AM-02)	7.5
	Lahaina Intermediate School (AM-03)	5.7
	Lahaina Boys & Girls Club (AM-04)	4.0
3/19/2024	Leialii Hawaiian Homelands (AM-01)	6.1
	WW Pump Station #4 (AM-02)	9.5
	Lahaina Intermediate School (AM-03)	6.4
	Lahaina Boys & Girls Club (AM-04)	9.2
3/20/2024	Leialii Hawaiian Homelands (AM-01)	7.0
	WW Pump Station #4 (AM-02)	11
	Lahaina Intermediate School (AM-03)	8.0
	Lahaina Boys & Girls Club (AM-04)	8.7

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

Table 3
Maui Wildfire - Lahaina
Meteorological Data
3/14/2024-3/20/2024

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
3/14/2024	AM-01	Leialii Hawaiian Homelands	1.9	SSW	74	72	759.6
3/14/2024	AM-02	WW Pump Station #4	1.7	SE	75	74	761.7
3/14/2024	AM-03	Lahaina Intermediate School	1.8	SSW	72	76	752.2
3/14/2024	AM-04	Lahaina Boys & Girls Club	1.8	SW	74	71	761.3
3/15/2024	AM-01	Leialii Hawaiian Homelands	2.2	SW	70	76	758.7
3/15/2024	AM-02	WW Pump Station #4	1.7	SE	71	77	761.0
3/15/2024	AM-03	Lahaina Intermediate School	1.3	SSW	70	77	751.5
3/15/2024	AM-04	Lahaina Boys & Girls Club	1.5	WSW	72	72	760.7
3/16/2024	AM-01	Leialii Hawaiian Homelands	1.5	SSE	74	65	758.7
3/16/2024	AM-02	WW Pump Station #4	1.1	SE	74	67	761.0
3/16/2024	AM-03	Lahaina Intermediate School	1.1	ESE	71	70	751.5
3/16/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	72	68	760.7
3/17/2024	AM-01	Leialii Hawaiian Homelands	1.3	SSE	76	60	760.1
3/17/2024	AM-02	WW Pump Station #4	1.2	SSE	75	63	762.4
3/17/2024	AM-03	Lahaina Intermediate School	1.3	ESE	72	64	752.9
3/17/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	72	65	762.1
3/18/2024	AM-01	Leialii Hawaiian Homelands	1.0	SSE	76	57	760.9
3/18/2024	AM-02	WW Pump Station #4	1.0	SSE	76	61	763.2
3/18/2024	AM-03	Lahaina Intermediate School	1.1	SE	72	63	753.7
3/18/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	73	62	762.9
3/19/2024	AM-01	Leialii Hawaiian Homelands	1.3	ESE	74	54	761.1
3/19/2024	AM-02	WW Pump Station #4	1.1	SE	75	56	763.3
3/19/2024	AM-03	Lahaina Intermediate School	1.2	ESE	71	60	753.8
3/19/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	72	57	763.0
3/20/2024	AM-01	Leialii Hawaiian Homelands	1.8	SE	73	60	761.5
3/20/2024	AM-02	WW Pump Station #4	1.5	E	74	60	763.7
3/20/2024	AM-03	Lahaina Intermediate School	1.4	E	71	62	754.1
3/20/2024	AM-04	Lahaina Boys & Girls Club	1.1	S	72	59	763.3

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

Appendix 1

Please note, comments pertaining to gypsum may be mentioned in the lab reports below. Gypsum is a common 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:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-031424-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7338.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment


Approved Signatory

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

EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0001 **Customer Sample:** MFL-AM01-031424-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					
B3	J4	None Detected									
B3	G2	None Detected									
B3	D3	None Detected									
B4	H3	None Detected									
B4	C6	None Detected									

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

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EMSL Order:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-031424-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7228.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0002 **Customer Sample:** MFL-AM02-031424-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	A6	None Detected									
B5	D7	None Detected									
B5	G9	None Detected									
B6	C8	None Detected									
B6	I7	None Detected									

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

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EMSL Order:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-031424-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7167.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0003 **Customer Sample:** MFL-AM03-031424-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	B6	None Detected									
C2	E8	None Detected									
C2	H7	None Detected									
C3	B6	None Detected									
C3	H4	None Detected									

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

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EMSL Order:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-031424-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7249.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0004 **Customer Sample:** MFL-AM04-031424-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	J7	None Detected									
C5	G6	None Detected									
C5	C3	None Detected									
C6	C6	None Detected									
C6	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:	042405791
Customer ID:	TTDC42
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Analysis Date:	03/21/2024
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-031424-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0005		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² 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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment


Approved Signatory

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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0005 **Customer Sample:** MFL-FB01-031424-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	A6	None Detected									
D2	C5	None Detected									
D2	E4	None Detected									
D2	G5	None Detected									
D2	H6	None Detected									
D3	A3	None Detected									
D3	C4	None Detected									
D3	E3	None Detected									
D3	G1	None Detected									
D3	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:	042405791
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Project ID:	

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Analysis Date:	03/21/2024
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-031524-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7374.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment

Approved Signatory

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

EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0006 **Customer Sample:** MFL-AM02-031524-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	A2	None Detected									
D5	E3	None Detected									
D5	I6	None Detected									
D6	H5	None Detected									
D6	C7	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:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-031524-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7414.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	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		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**- 0.0024**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**- 0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**- 0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**- 0.0024**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**- 0.0024**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**- 0.0024**
Actinolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Amosite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Anthophyllite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Crocidolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Tremolite	ADX	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**- 0.0024**
Other Minerals	-	0	0	< 47.09	< 0.0024	Not Applicable	- 0.0024
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0024**	**Not Applicable**	**- 0.0024**

Comment


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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0007 **Customer Sample:** MFL-AM04-031524-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	I5	None Detected									
E2	F4	None Detected									
E2	C2	None Detected									
E3	J2	None Detected									
E3	E3	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:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-031524-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² 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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment


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

EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0008 **Customer Sample:** MFL-FB01-031524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
E5	J4	None Detected									
E5	H2	None Detected									
E5	F3	None Detected									
E5	D2	None Detected									
E5	B4	None Detected									
E6	J5	None Detected									
E6	H3	None Detected									
E6	F4	None Detected									
E6	D2	None Detected									
E6	B4	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:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-031624-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7261.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment

Approved Signatory

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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0009 **Customer Sample:** MFL-AM01-031624-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	A7	None Detected									
F2	D8	None Detected									
F2	H10	None Detected									
F3	G2	None Detected									
F3	A4	None Detected									

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

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EMSL Order:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-031624-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7223.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0010 **Customer Sample:** MFL-AM02-031624-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	J5	None Detected									
F5	F4	None Detected									
F5	B3	None Detected									
F6	C7	None Detected									
F6	I5	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:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-031624-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6954.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment


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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0011 **Customer Sample:** MFL-AM03-031624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G2	A9	None Detected									
G2	D7	None Detected									
G2	G6	None Detected									
G3	C6	None Detected									
G3	H7	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:	

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Tetra Tech
1560 Broadway, Suite 1400
Denver, CO, 80202

Project: **Maui Fires - Lahaina / 103S9230**

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Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-031624-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6784.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Actinolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Amosite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Anthophyllite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Crocidolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Tremolite	ADX	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**
Other Minerals	-	0	0	< 47.09	< 0.0027	Not Applicable	- 0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0027**	**Not Applicable**	**- 0.0027**

Comment


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Concentrations and 95% Confidence Intervals are based on a Poissonian distribution. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to the cost of analysis. This report relates only to the samples reported above and may not be reproduced except in full without the written approval of EMSL. EMSL is not responsible for sample collection activities or analytical limitations. Interpretation and use of results are the responsibility of the client.

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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0012 **Customer Sample:** MFL-AM04-031624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G5	I6	None Detected									
G5	F4	None Detected									
G5	C5	None Detected									
G6	I4	None Detected									
G6	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:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/22/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-031624-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² 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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment


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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0013 **Customer Sample:** MFL-FB01-031624-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	J3	None Detected									
H2	H5	None Detected									
H2	F8	None Detected									
H2	D7	None Detected									
H2	B6	None Detected									
H3	J6	None Detected									
H3	H5	None Detected									
H3	F3	None Detected									
H3	D5	None Detected									
H3	B4	None Detected									

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

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-031724-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7215.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	2			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment

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EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0014 **Customer Sample:** MFL-AM01-031724-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	A5	None Detected									
H5	C7	None Detected									
H5	E2	None Detected									
H6	A7	None Detected									
H6	D4	None Detected									

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

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Analysis Date:	03/22/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-031724-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7093.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 47.09	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment


Approved Signatory

Concentrations and 95% Confidence Intervals are based on a Poissonian distribution. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to the cost of analysis. This report relates only to the samples reported above and may not be reproduced except in full without the written approval of EMSL. EMSL is not responsible for sample collection activities or analytical limitations. Interpretation and use of results are the responsibility of the client.

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:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0015 **Customer Sample:** MFL-AM02-031724-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	J6	None Detected									
I2	G4	None Detected									
I2	D5	None Detected									
I3	G3	None Detected									
I3	B1	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:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/22/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-031724-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7200.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment


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

EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0016 **Customer Sample:** MFL-AM03-031724-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I5	J3	None Detected									
I5	G1	None Detected									
I5	D3	None Detected									
I6	J3	None Detected									
I6	H6	None Detected									

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

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EMSL Order:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/22/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-031724-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7134.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 47.09	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 47.09**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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

EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0017 **Customer Sample:** MFL-AM04-031724-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					
J2	A6	None Detected									
J2	D7	None Detected									
J2	G9	None Detected									
J3	H2	None Detected									
J3	C4	None Detected									

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

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EMSL Order:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

Attn: **Chelsea Saber**
Tetra Tech
1560 Broadway, Suite 1400
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Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/22/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-031724-AB**		**Sample Description:**	
EMSL Sample Number:	042405791-0018		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² 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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment


Approved Signatory

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

EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0018 **Customer Sample:** MFL-FB01-031724-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	J4	None Detected									
J5	H8	None Detected									
J5	F8	None Detected									
J5	D7	None Detected									
J5	B6	None Detected									
J6	J6	None Detected									
J6	H5	None Detected									
J6	F4	None Detected									
J6	D7	None Detected									
J6	B3	None Detected									

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

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EMSL Order:	042405791
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/20/2024 09:35 AM
Analysis Date:	03/21/2024
Report Date:	03/25/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042405791-0019		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0127
Chi² 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/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration S / mm²	95 % Confidence Interval (S/cc) Lower		Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Actinolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Amosite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Anthophyllite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Crocidolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Tremolite	ADX	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**
Other Minerals	-	0	0	< 23.54	< N/A	Not Applicable	-	Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.54**	**< N/A**	**Not Applicable**	**-**	**Not Applicable**

Comment

Approved Signatory

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

EMSL Order ID:	**042405791**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042405791-0019 **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	J3	None Detected									
A1	H1	None Detected									
A1	F3	None Detected									
A1	D2	None Detected									
A1	B1	None Detected									
A2	A7	None Detected									
A2	C10	None Detected									
A2	E9	None Detected									
A2	G8	None Detected									
A2	I10	None Detected									

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

OrderID: 042405791

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042405791

200 Route 130 North
Cinnaminson, NJ 08077

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

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2024 MAR 20 A 11:15

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 Country: USA	City, State, Zip:	Country:
Phone:	703-489-2674	Phone:	
Email(s) for Report:	CHELSEA.SABER@TETRATECH.COM	Email(s) for Invoice:	

Project Information

Project Name/No: MAUI FIRES-LAHAINA / 10359230	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: MITCH PETERS	Sampled By Signature: [signature]
No. of Samples in Shipment: 20 RH 18	

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-AM01-031424-AB		7338.918	03/14/24 1100
MFL-AM02-031424-AB		7228.397	03/14/24 1126
MFL-AM03-031424-AB		7167.600	03/14/24 1312
MFL-AM04-031424-AB		7248.974	03/14/24 1336
MFL-FB01-031424-AB		0	03/14/24 1200
MFL-AM01-031524-AB		7896.489 (VOID)	3/14/24 1101
MFL-AM02-031524-AB		7373.952	03/15/24 1130
~~MFL-AM03-031524-AB~~		~~2944.717~~	~~03/15/24 2312 (3/14)~~ RH

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

All samples received acceptable for analysis.

18 [initials]

Method of Shipment: FED EX	03/18/24 1100	Sample Condition Upon Receipt:	
Relinquished by: [signature]	Date/Time: ~~03/21/24 1100~~ RH	Received by: [signature] FX	Date/Time 3/20/24 935
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.)

OrderID: 042405791

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042405791

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-AM04-031524-AB		7414.560	03/15/24 1341
MFL-FB01-031524-AB		0	03/15/24 1200
MFL-AM01-031624-AB		7261.111	03/16/24 1059
MFL-AM02-031624-AB		7223.832	03/16/24 1138
MFL-AM03-031624-AB		6954.261	03/16/24 1307
MFL-AM04-031624-AB		6784.542	03/16/24 1336
MFL-FB01-031624-AB		0	03/16/24 1200
MFL-AM01-031724-AB		7214.989	03/17/24 1056
MFL-AM02-031724-AB		7093.428	03/17/24 1112
MFL-AM03-031724-AB		7200.526	03/17/24 1302
MFL-AM04-031724-AB		7134.780	03/17/24 1323
MFL-FB01-031724-AB		0	03/17/24 1200

Method of Shipment: FedEx	03/18/24 11:00	Sample Condition Upon Receipt:	
Relinquished by: [signature]	Date/Time: ~~03/21/24~~ (AB)	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 3/25/2024 and Shanna Vasser 3/26/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 3/14/2024 - 3/17/2024
Report No: 42405791

√	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-AM01-031524-AB was listed on the CoC with a not that it was void. MFL-AM03-031524-AB was listed on the CoC, crossed off, voided, and not shipped to the laboratory. No results were present in the laboratory report for either sample because they were not shipped.

Notes: None

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

EMSL Order:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-031824-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7008.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm²)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment


Approved Signatory

Concentrations and 95% Confidence Intervals are based on a Poissonian distribution. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to the cost of analysis. This report relates only to the samples reported above and may not be reproduced except in full without the written approval of EMSL. EMSL is not responsible for sample collection activities or analytical limitations. Interpretation and use of results are the responsibility of the client.

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:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0001 **Customer Sample:** MFL-AM01-031824-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	J2	None Detected									
B2	F4	None Detected									
B2	C2	None Detected									
B3	I2	None Detected									
B3	A5	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:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-031824-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7328.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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

EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0002 **Customer Sample:** MFL-AM02-031824-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B5	A5	None Detected									
B5	D7	None Detected									
B5	G6	None Detected									
B6	C8	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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http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-031824-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7339.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment


Approved Signatory

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

EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0003 **Customer Sample:** MFL-AM03-031824-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	A5	None Detected									
C2	C7	None Detected									
C2	H5	None Detected									
C3	H5	None Detected									
C3	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:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-031824-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7265.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment


Approved Signatory

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0004 **Customer Sample:** MFL-AM04-031824-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	J4	None Detected									
C5	F7	None Detected									
C5	B7	None Detected									
C6	G8	None Detected									
C6	C4	None Detected									

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

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EMSL Order: 042406118
Customer ID: TTDC42
Customer PO: 1207085
Project ID:

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

Phone: (703) 489-2674
Fax:
Received Date: 03/25/2024 08:32 AM
Analysis Date: 03/26/2024
Report Date: 03/28/2024

Project: **Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-031824-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0005		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	S / mm²	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0005 **Customer Sample:** MFL-FB01-031824-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	A9	None Detected									
D2	C8	None Detected									
D2	E10	None Detected									
D2	G7	None Detected									
D2	I5	None Detected									
D3	A6	None Detected									
D3	C3	None Detected									
D3	E4	None Detected									
D3	G6	None Detected									
D3	I7	None Detected									

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

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EMSL Order:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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Project: **Maui Fires - Lahaina / 103S9230**

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Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-031924-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6899.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0006 **Customer Sample:** MFL-AM01-031924-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	A7	None Detected									
D5	D5	None Detected									
D5	H4	None Detected									
D6	B3	None Detected									
D6	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:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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Denver, CO, 80202

Project: **Maui Fires - Lahaina / 103S9230**

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Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-031924-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7136.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	10			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0007 **Customer Sample:** MFL-AM02-031924-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	A6	None Detected									
E2	E4	None Detected									
E2	H8	None Detected									
E3	D8	None Detected									
E3	J5	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:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-031924-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7139.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment


Approved Signatory

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

EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0008 **Customer Sample:** MFL-AM03-031924-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	I6	None Detected									
E5	F4	None Detected									
E5	B2	None Detected									
E6	H3	None Detected									
E6	C4	None Detected									

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

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EMSL Order:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-031924-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7207.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0009 **Customer Sample:** MFL-AM04-031924-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	B5	None Detected									
F2	E4	None Detected									
F2	J3	None Detected									
F3	H7	None Detected									
F3	B5	None Detected									

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

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EMSL Order:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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Denver, CO, 80202

Project: **Maui Fires - Lahaina / 103S9230**

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Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-031924-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0010		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	S / mm²	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0010 **Customer Sample:** MFL-FB01-031924-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	A5	None Detected									
F5	C7	None Detected									
F5	E4	None Detected									
F5	G2	None Detected									
F5	I3	None Detected									
F6	J7	None Detected									
F6	H6	None Detected									
F6	F4	None Detected									
F6	D3	None Detected									
F6	B2	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:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

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Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-031524-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	2944.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	11
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):**	**0.0028**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 21.24**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Total Amphibole	**ADX**	**0**	**0**	**< 21.24**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Actinolite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Amosite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Anthophyllite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Crocidolite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Tremolite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 21.24**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Other Minerals	-	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Total All Structures	**-**	**0**	**0**	**< 21.24**	**< 0.0028**	**Not Applicable**	**- 0.0028**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 21.24**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 21.24**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Actinolite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Amosite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Anthophyllite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Crocidolite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Tremolite	ADX	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 21.24**	**< 0.0028**	**Not Applicable**	**- 0.0028**
Other Minerals	-	0	0	< 21.24	< 0.0028	Not Applicable	- 0.0028
Total All Structures (PCMe)	**-**	**0**	**0**	**< 21.24**	**< 0.0028**	**Not Applicable**	**- 0.0028**

Comment


Approved Signatory

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0011 **Customer Sample:** MFL-AM03-031524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G2	A9	None Detected									
G2	C7	None Detected									
G2	F9	None Detected									
G2	H10	None Detected									
G2	J7	None Detected									
G3	J4	None Detected									
G3	H3	None Detected									
G3	F2	None Detected									
G3	D5	None Detected									
G3	B6	None Detected									
G4	C7	None Detected									

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

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EMSL Order:	042406118
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Customer PO:	1207085
Project ID:	

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Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
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Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-032024-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7231.5
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0012 **Customer Sample:** MFL-AM01-032024-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G5	I6	None Detected									
G5	G3	None Detected									
G5	C3	None Detected									
G6	D9	None Detected									
G6	J6	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: 042406118
Customer ID: TTDC42
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Project ID:

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone: (703) 489-2674
Fax:
Received Date: 03/25/2024 08:32 AM
Analysis Date: 03/26/2024
Report Date: 03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-032024-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7000.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	10			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0026**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Actinolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Amosite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Anthophyllite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Crocidolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Tremolite	ADX	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**
Other Minerals	-	0	0	< 46.72	< 0.0026	Not Applicable	- 0.0026
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0026**	**Not Applicable**	**- 0.0026**

Comment


Approved Signatory

Concentrations and 95% Confidence Intervals are based on a Poissonian distribution. Structure counts above 31 may be better expressed with a Gaussian distribution. EMSL maintains liability limited to the cost of analysis. This report relates only to the samples reported above and may not be reproduced except in full without the written approval of EMSL. EMSL is not responsible for sample collection activities or analytical limitations. Interpretation and use of results are the responsibility of the client.

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

EMSL Order ID: 042406118
Client: Tetra Tech
Project ID: Maui Fires - Lahaina / 103S9230

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0013 **Customer Sample:** MFL-AM02-032024-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	A5	None Detected									
H2	E9	None Detected									
H2	G6	None Detected									
H3	C8	None Detected									
H3	H10	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:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-032024-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7210.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	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 %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.

Approved Signatory

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0014 **Customer Sample:** MFL-AM03-032024-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	C4	None Detected									
H5	I3	None Detected									
H6	I8	None Detected									
H6	B7	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:	042406118
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone:	(703) 489-2674
Fax:	
Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-032024-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7097.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² Test for Random Distribution on Filter:	Random	*(4.00)*	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):**	**0.0025**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**1**	**2**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0053**
Total Amphibole	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures	**CD/ADX**	**1**	**2**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0053**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures	**-**	**1**	**2**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0053**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**1**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Actinolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Amosite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Anthophyllite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Crocidolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Tremolite	ADX	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total Asbestos Structures (PCMe)	**CD/ADX**	**1**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**
Other Minerals	-	0	0	< 46.72	< 0.0025	Not Applicable	- 0.0025
Total All Structures (PCMe)	**-**	**1**	**0**	**< 46.72**	**< 0.0025**	**Not Applicable**	**- 0.0025**

Comment
Numerous gypsum fibers present.


Approved Signatory

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EMSL Order ID: 042406118
Client: Tetra Tech
Project ID: Maui Fires - Lahaina / 103S9230

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0015 **Customer Sample:** MFL-AM04-032024-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	B3	None Detected									
I2	E8	None Detected									
I2	H5	None Detected									
I3	E3	None Detected									
I3	H6	MD22	1		11.65	2.2	CD	Chrysotile			
I3	H6	MF		1	11.65	0.07	CD	Chrysotile		MG_28	
I3	H6	MF		2	8.09	0.09	CD	Chrysotile			

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:	

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Project: **Maui Fires - Lahaina / 103S9230**

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Received Date:	03/25/2024 08:32 AM
Analysis Date:	03/26/2024
Report Date:	03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-032024-AB**		**Sample Description:**	
EMSL Sample Number:	042406118-0016		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	S / mm²	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

Approved Signatory

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EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0016 **Customer Sample:** MFL-FB01-032024-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	A6	None Detected									
I5	C9	None Detected									
I5	E7	None Detected									
I6	G5	None Detected									
I6	I5	None Detected									
I7	A3	None Detected									
I7	C4	None Detected									
I7	E2	None Detected									
I7	H3	None Detected									
I7	J2	None Detected									

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

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EMSL Order: 042406118
Customer ID: TTDC42
Customer PO: 1207085
Project ID:

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

Project: **Maui Fires - Lahaina / 103S9230**

Phone: (703) 489-2674
Fax:
Received Date: 03/25/2024 08:32 AM
Analysis Date: 03/26/2024
Report Date: 03/28/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**Lab Blank**		**Sample Description:**	**Lab Blank**
EMSL Sample Number:	042406118-0017		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 (mm²):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm²):	0.0128
Chi² 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		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	(S/cc)	Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

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

	Minimum ID Level	Structures Detected		Density	Concentration	95 % Confidence Interval (S/cc)	
		Primary	Total	(S/mm²)	S / mm²	Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Actinolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Amosite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Anthophyllite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Crocidolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Tremolite	ADX	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**
Other Minerals	-	0	0	< 23.36	< N/A	Not Applicable	- Not Applicable
Total All Structures (PCMe)	**-**	**0**	**0**	**< 23.36**	**< N/A**	**Not Applicable**	**- Not Applicable**

Comment

Approved Signatory

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

EMSL Order ID:	**042406118**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina / 103S9230**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042406118-0017 **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	J8	None Detected									
A1	H9	None Detected									
A1	F10	None Detected									
A1	D8	None Detected									
A1	B7	None Detected									
A2	A4	None Detected									
A2	C5	None Detected									
A2	E7	None Detected									
A2	G9	None Detected									
A2	I6	None Detected									

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

OrderID: 042406118

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042406118

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

RECEIVED
EMSL
CINNAMINSON, NJ
24 MAR 25 AM 11:40

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:	

Project Information

Project Name/No: MAUI FIRES - LAHAINA / 103S9230
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: MITCH PETERS

Sampled By Signature:

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)
MFL-AM01-031824-AB		7008.037	03/18/24 1103
MFL-AM02-031824-AB		7328.490	03/18/24 1125
MFL-AM03-031824-AB		7339.763	03/18/24 1304
MFL-AM04-031824-AB		7265.783	03/18/24 1323
MFL-FB01-031824-AB		0	03/18/24 1200
MFL-AM01-031924-AB		6899.101	03/19/24 1104
MFL-AM02-031924-AB		7136.014	03/19/24 1124
MFL-AM03-031924-AB		7139.505	03/19/24 1305

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

* PLEASE CONTACT CHELSEA SABER DIRECTLY BEFORE ADDITIONAL GRIDS ARE OPENED.

All samples received acceptable for analysis.

16 SB

Method of Shipment:	FED EX		Sample Condition Upon Receipt:		
Relinquished by:		Date/Time: 03/21/24 1100	Received by: FedEx	Date/Time	3/25/24 8:32A
Relinquished by:		Date/Time:	Received by:	Date/Time	

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

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

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

OrderID: 042406118

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042406118

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-AM04-031924-AB		7207.344	03/19/24 1327
MFL-FB01-031924-AB		0	03/19/24 1200
* MFL-AM03-031524-AB		2944.717 m/a	03/15/24 ~~03/19/24~~ 2312
MFL-AM01-032024-AB		7231.539	03/20/24 1103
MFL-AM02-032024-AB		7000.367	03/20/24 1123
MFL-AM03-032024-AB		7210.707	03/20/24 1307
MFL-AM04-032024-AB		7097.143	03/20/24 1328
MFL-FB01-032024-AB		0	03/20/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 MAR 25 AM 11:40

Method of Shipment: FEDEX		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 03/21/24 1100	Received by:	Date/Time
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 3/29/2024 and Shanna Vasser 3/31/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 3/15/2024 and 3/18/2024 – 3/20/2024
Report No: 42406118

√	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 02, 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 03/25/24 14:46.

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: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-031424-HM	4032536-01	Air	03/14/24 23:59	03/25/24 14:46
MFL-AM02-031424-HM	4032536-02	Air	03/14/24 23:59	03/25/24 14:46
MFL-AM03-031424-HM	4032536-03	Air	03/14/24 23:59	03/25/24 14:46
MFL-AM04-031424-HM	4032536-04	Air	03/14/24 23:59	03/25/24 14:46
MFL-FB01-031424-HM	4032536-05	Air	03/14/24 00:00	03/25/24 14:46
MFL-AM01-031524-HM	4032536-06	Air	03/15/24 23:59	03/25/24 14:46
MFL-AM02-031524-HM	4032536-07	Air	03/15/24 23:59	03/25/24 14:46
MFL-AM03-031524-HM	4032536-08	Air	03/15/24 23:59	03/25/24 14:46
MFL-AM04-031524-HM	4032536-09	Air	03/15/24 23:59	03/25/24 14:46
MFL-AM01-031624-HM	4032536-10	Air	03/16/24 23:59	03/25/24 14:46
MFL-AM02-031624-HM	4032536-11	Air	03/16/24 23:59	03/25/24 14:46
MFL-AM03-031624-HM	4032536-12	Air	03/16/24 23:59	03/25/24 14:46
MFL-AM04-031624-HM	4032536-13	Air	03/16/24 23:59	03/25/24 14:46
MFL-FB01-031624-HM	4032536-14	Air	03/16/24 00:00	03/25/24 14:46
MFL-AM01-031724-HM/MS/I	4032536-15	Air	03/17/24 23:59	03/25/24 14:46
MFL-AM02-031724-HM	4032536-16	Air	03/17/24 23:59	03/25/24 14:46
MFL-AM03-031724-HM	4032536-17	Air	03/17/24 23:59	03/25/24 14:46
MFL-AM04-031724-HM	4032536-18	Air	03/17/24 23:59	03/25/24 14:46
MFL-AM01-031824-HM	4032536-19	Air	03/18/24 23:59	03/25/24 14:46
MFL-AM02-031824-HM	4032536-20	Air	03/18/24 23:59	03/25/24 14:46
MFL-AM03-031824-HM	4032536-21	Air	03/18/24 23:59	03/25/24 14:46

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: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM04-031824-HM	4032536-22	Air	03/18/24 23:59	03/25/24 14:46
MFL-FB01-031824-HM	4032536-23	Air	03/18/24 00:00	03/25/24 14:46
MFL-AM01-031924-HM	4032536-24	Air	03/19/24 23:59	03/25/24 14:46
MFL-AM02-031924-HM	4032536-25	Air	03/19/24 23:59	03/25/24 14:46
MFL-AM03-031924-HM	4032536-26	Air	03/19/24 23:59	03/25/24 14:46
MFL-AM04-031924-HM	4032536-27	Air	03/19/24 23:59	03/25/24 14:46
MFL-AM01-032024-HM	4032536-28	Air	03/20/24 23:59	03/25/24 14:46
MFL-AM02-032024-HM	4032536-29	Air	03/20/24 23:59	03/25/24 14:46
MFL-AM03-032024-HM	4032536-30	Air	03/20/24 23:59	03/25/24 14:46
MFL-AM04-032024-HM	4032536-31	Air	03/20/24 23:59	03/25/24 14:46
MFL-FB01-032024-HM	4032536-32	Air	03/20/24 00:00	03/25/24 14:46

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: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-031424-HM
Matrix: Air
Lab ID: 4032536-01
Sample Volume: 2049.341 m³
Filter ID:
Sampled: 03/14/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 00:04

Comments: Q9516943 - Received in good condition. - Nonhomogenous sample

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0739**	SL	**0.0306**
Arsenic	**7440-38-2**	**0.205**		**0.00744**
Barium	**7440-39-3**	**4.99**	QB-01	**0.849**
Beryllium	**7440-41-7**	**0.00549**		**0.00254**
Cadmium	7440-43-9	0.00902	U	0.0588
Chromium	7440-47-3	1.51	U	1.75
Cobalt	**7440-48-4**	**0.227**		**0.0346**
Copper	**7440-50-8**	**52.5**		**2.09**
Lead	**7439-92-1**	**0.306**		**0.170**
Manganese	**7439-96-5**	**6.32**		**1.50**
Molybdenum	**7439-98-7**	**2.02**		**0.285**
Nickel	**7440-02-0**	**1.40**		**0.518**
Selenium	**7782-49-2**	**0.149**		**0.00711**
Thallium	**7440-28-0**	**0.00103**	QB-01	**4.68E-4**
Vanadium	**7440-62-2**	**0.811**		**0.0420**
Zinc	7440-66-6	22.0	U	61.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-031424-HM
Matrix: Air
Lab ID: 4032536-02
Sample Volume: 2130.263 m³
Filter ID:
Sampled: 03/14/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/27/24 21:19

Comments: Q9516942 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.179**	SL	**0.0295**
Arsenic	**7440-38-2**	**0.526**		**0.00716**
Barium	**7440-39-3**	**4.50**	QB-01	**0.817**
Beryllium	**7440-41-7**	**0.0119**		**0.00244**
Cadmium	7440-43-9	0.0172	U	0.0566
Chromium	**7440-47-3**	**1.90**		**1.69**
Cobalt	**7440-48-4**	**0.355**		**0.0333**
Copper	**7440-50-8**	**60.5**		**2.01**
Lead	**7439-92-1**	**1.24**		**0.163**
Manganese	**7439-96-5**	**11.6**		**1.44**
Molybdenum	**7439-98-7**	**1.66**		**0.274**
Nickel	**7440-02-0**	**1.45**		**0.498**
Selenium	**7782-49-2**	**0.190**	SRD-01	**0.00684**
Thallium	**7440-28-0**	**0.00119**	QB-01	**4.50E-4**
Vanadium	**7440-62-2**	**1.40**		**0.0404**
Zinc	7440-66-6	32.6	U	58.7

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-031424-HM
Matrix: Air
Lab ID: 4032536-03
Sample Volume: 2114.219 m³
Filter ID:
Sampled: 03/14/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 00:20

Comments: Q9516941 - 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**	**0.0951**	SL	**0.0297**
Arsenic	**7440-38-2**	**0.286**		**0.00721**
Barium	**7440-39-3**	**4.70**	QB-01	**0.823**
Beryllium	**7440-41-7**	**0.0378**		**0.00246**
Cadmium	7440-43-9	0.0101	U	0.0570
Chromium	**7440-47-3**	**3.18**		**1.70**
Cobalt	**7440-48-4**	**0.786**		**0.0336**
Copper	**7440-50-8**	**51.8**		**2.02**
Lead	**7439-92-1**	**0.647**		**0.165**
Manganese	**7439-96-5**	**19.6**		**1.45**
Molybdenum	**7439-98-7**	**2.24**		**0.276**
Nickel	**7440-02-0**	**2.36**		**0.502**
Selenium	**7782-49-2**	**0.243**		**0.00690**
Thallium	**7440-28-0**	**0.00145**	QB-01	**4.53E-4**
Vanadium	**7440-62-2**	**2.13**		**0.0407**
Zinc	7440-66-6	25.5	U	59.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-031424-HM
Matrix: Air
Lab ID: 4032536-04
Sample Volume: 1912.061 m³
Filter ID:
Sampled: 03/14/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 00:36

Comments: Q9516940 - 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**	**0.139**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.464**		**0.00797**
Barium	**7440-39-3**	**4.37**	QB-01	**0.910**
Beryllium	**7440-41-7**	**0.0111**		**0.00272**
Cadmium	7440-43-9	0.0193	U	0.0631
Chromium	**7440-47-3**	**2.08**		**1.88**
Cobalt	**7440-48-4**	**0.364**		**0.0371**
Copper	**7440-50-8**	**40.6**		**2.24**
Lead	**7439-92-1**	**1.21**		**0.182**
Manganese	**7439-96-5**	**11.0**		**1.61**
Molybdenum	**7439-98-7**	**1.91**		**0.305**
Nickel	**7440-02-0**	**1.36**		**0.555**
Selenium	**7782-49-2**	**0.190**		**0.00762**
Thallium	**7440-28-0**	**0.00110**	QB-01	**5.01E-4**
Vanadium	**7440-62-2**	**1.19**		**0.0450**
Zinc	7440-66-6	25.0	U	65.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-031424-HM
Matrix: Air
Lab ID: 4032536-05
Sample Volume: 2049.341 m³
Filter ID:
Sampled: 03/14/24 00:00
Received: 03/25/24 14:46
Analysis Date: 03/28/24 00:52

Comments: Q9516936 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0139	SL, U	0.0306
Arsenic	7440-38-2	0.00489	U	0.00744
Barium	7440-39-3	0.505	QB-01, U	0.849
Beryllium	7440-41-7	5.56E-4	U	0.00254
Cadmium	7440-43-9	6.08E-4	U	0.0588
Chromium	7440-47-3	0.671	U	1.75
Cobalt	7440-48-4	0.00889	U	0.0346
Copper	7440-50-8	0.415	U	2.09
Lead	7439-92-1	0.0445	U	0.170
Manganese	7439-96-5	0.191	U	1.50
Molybdenum	7439-98-7	0.0898	U	0.285
Nickel	7440-02-0	0.189	U	0.518
Selenium	7782-49-2	0.00383	U	0.00711
Thallium	7440-28-0	2.02E-4	QB-01, U	4.68E-4
Vanadium	7440-62-2	0.0173	U	0.0420
Zinc	7440-66-6	12.9	U	61.0

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-031524-HM
Matrix: Air
Lab ID: 4032536-06
Sample Volume: 1940.062 m³
Filter ID:
Sampled: 03/15/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 01:06

Comments: Q9516939 - 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**	**0.0506**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.338**		**0.00786**
Barium	**7440-39-3**	**6.09**	QB-01	**0.897**
Beryllium	**7440-41-7**	**0.00966**		**0.00268**
Cadmium	7440-43-9	0.0222	U	0.0621
Chromium	**7440-47-3**	**2.03**		**1.85**
Cobalt	**7440-48-4**	**0.340**		**0.0366**
Copper	**7440-50-8**	**34.9**		**2.21**
Lead	**7439-92-1**	**0.676**		**0.179**
Manganese	**7439-96-5**	**11.4**		**1.59**
Molybdenum	**7439-98-7**	**1.18**		**0.301**
Nickel	**7440-02-0**	**1.43**		**0.547**
Selenium	**7782-49-2**	**0.133**		**0.00751**
Thallium	**7440-28-0**	**0.00241**	QB-01	**4.94E-4**
Vanadium	**7440-62-2**	**0.900**		**0.0444**
Zinc	7440-66-6	24.5	U	64.4

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-031524-HM
Matrix: Air
Lab ID: 4032536-07
Sample Volume: 2206.377 m³
Filter ID:
Sampled: 03/15/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 01:21

Comments: Q9516938 - 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**	**0.177**	SL	**0.0285**
Arsenic	**7440-38-2**	**1.03**		**0.00691**
Barium	**7440-39-3**	**7.55**	QB-01	**0.789**
Beryllium	**7440-41-7**	**0.0262**		**0.00236**
Cadmium	7440-43-9	0.0476	U	0.0546
Chromium	**7440-47-3**	**2.98**		**1.63**
Cobalt	**7440-48-4**	**0.715**		**0.0322**
Copper	**7440-50-8**	**66.7**		**1.94**
Lead	**7439-92-1**	**2.83**		**0.158**
Manganese	**7439-96-5**	**22.9**		**1.39**
Molybdenum	**7439-98-7**	**1.56**		**0.265**
Nickel	**7440-02-0**	**2.20**		**0.481**
Selenium	**7782-49-2**	**0.185**		**0.00661**
Thallium	**7440-28-0**	**0.00287**	QB-01	**4.34E-4**
Vanadium	**7440-62-2**	**2.25**		**0.0390**
Zinc	7440-66-6	48.1	U	56.6

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-031524-HM
Matrix: Air
Lab ID: 4032536-08
Sample Volume: 2131.097 m³
Filter ID:
Sampled: 03/15/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 01:38

Comments: Q9516937 - 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**	**0.0640**	SL	**0.0295**
Arsenic	**7440-38-2**	**0.264**		**0.00715**
Barium	**7440-39-3**	**4.14**	QB-01	**0.817**
Beryllium	**7440-41-7**	**0.0240**		**0.00244**
Cadmium	7440-43-9	0.0166	U	0.0566
Chromium	**7440-47-3**	**2.77**		**1.69**
Cobalt	**7440-48-4**	**0.519**		**0.0333**
Copper	**7440-50-8**	**68.1**		**2.01**
Lead	**7439-92-1**	**0.885**		**0.163**
Manganese	**7439-96-5**	**13.8**		**1.44**
Molybdenum	**7439-98-7**	**2.17**		**0.274**
Nickel	**7440-02-0**	**2.55**		**0.498**
Selenium	**7782-49-2**	**0.117**		**0.00684**
Thallium	**7440-28-0**	**0.00124**	QB-01	**4.50E-4**
Vanadium	**7440-62-2**	**1.41**		**0.0404**
Zinc	7440-66-6	29.0	U	58.6

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-031524-HM
Matrix: Air
Lab ID: 4032536-09
Sample Volume: 2048.862 m³
Filter ID:
Sampled: 03/15/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 02:10

Comments: Q9516935 - 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**	**0.147**	SL	**0.0307**
Arsenic	**7440-38-2**	**1.34**		**0.00744**
Barium	**7440-39-3**	**7.02**	QB-01	**0.850**
Beryllium	**7440-41-7**	**0.0231**		**0.00254**
Cadmium	7440-43-9	0.0430	U	0.0588
Chromium	**7440-47-3**	**3.69**		**1.75**
Cobalt	**7440-48-4**	**0.814**		**0.0346**
Copper	**7440-50-8**	**29.7**		**2.09**
Lead	**7439-92-1**	**2.05**		**0.170**
Manganese	**7439-96-5**	**23.1**		**1.50**
Molybdenum	**7439-98-7**	**1.20**		**0.285**
Nickel	**7440-02-0**	**2.32**		**0.518**
Selenium	**7782-49-2**	**0.131**		**0.00712**
Thallium	**7440-28-0**	**0.00155**	QB-01	**4.68E-4**
Vanadium	**7440-62-2**	**1.84**		**0.0420**
Zinc	7440-66-6	34.1	U	61.0

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FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-031624-HM
Matrix: Air
Lab ID: 4032536-10
Sample Volume: 2064.185 m³
Filter ID:
Sampled: 03/16/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 02:27

Comments: Q9516925 - 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**	**0.0386**	SL	**0.0304**
Arsenic	**7440-38-2**	**0.195**		**0.00739**
Barium	**7440-39-3**	**3.45**	QB-01	**0.843**
Beryllium	**7440-41-7**	**0.00564**		**0.00252**
Cadmium	7440-43-9	0.00570	U	0.0584
Chromium	7440-47-3	1.65	U	1.74
Cobalt	**7440-48-4**	**0.211**		**0.0344**
Copper	**7440-50-8**	**52.3**		**2.07**
Lead	**7439-92-1**	**0.227**		**0.169**
Manganese	**7439-96-5**	**6.69**		**1.49**
Molybdenum	**7439-98-7**	**1.76**		**0.283**
Nickel	**7440-02-0**	**1.45**		**0.514**
Selenium	**7782-49-2**	**0.0698**		**0.00706**
Thallium	**7440-28-0**	**6.39E-4**	QB-01	**4.64E-4**
Vanadium	**7440-62-2**	**0.583**		**0.0417**
Zinc	7440-66-6	22.2	U	60.5

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-031624-HM
Matrix: Air
Lab ID: 4032536-11
Sample Volume: 2069.028 m³
Filter ID:
Sampled: 03/16/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 03:36

Comments: Q9516934 - 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**	**0.221**	SL	**0.0304**
Arsenic	**7440-38-2**	**0.579**		**0.00737**
Barium	**7440-39-3**	**6.47**	QB-01	**0.841**
Beryllium	**7440-41-7**	**0.0108**		**0.00252**
Cadmium	7440-43-9	0.0485	U	0.0583
Chromium	**7440-47-3**	**1.90**		**1.74**
Cobalt	**7440-48-4**	**0.365**		**0.0343**
Copper	**7440-50-8**	**31.9**		**2.07**
Lead	**7439-92-1**	**0.962**		**0.168**
Manganese	**7439-96-5**	**11.5**		**1.49**
Molybdenum	**7439-98-7**	**1.10**		**0.282**
Nickel	**7440-02-0**	**1.12**		**0.513**
Selenium	**7782-49-2**	**0.0935**		**0.00705**
Thallium	**7440-28-0**	**0.00102**	QB-01	**4.63E-4**
Vanadium	**7440-62-2**	**1.07**		**0.0416**
Zinc	7440-66-6	32.6	U	60.4

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-031624-HM
Matrix: Air
Lab ID: 4032536-12
Sample Volume: 2076.181 m³
Filter ID:
Sampled: 03/16/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 03:53

Comments: Q9516933 - 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**	**0.0584**	SL	**0.0302**
Arsenic	**7440-38-2**	**0.201**		**0.00734**
Barium	**7440-39-3**	**2.25**	QB-01	**0.839**
Beryllium	**7440-41-7**	**0.00688**		**0.00251**
Cadmium	7440-43-9	0.0160	U	0.0581
Chromium	7440-47-3	1.46	U	1.73
Cobalt	**7440-48-4**	**0.178**		**0.0342**
Copper	**7440-50-8**	**30.9**		**2.06**
Lead	**7439-92-1**	**0.309**		**0.168**
Manganese	**7439-96-5**	**4.72**		**1.48**
Molybdenum	**7439-98-7**	**1.06**		**0.281**
Nickel	**7440-02-0**	**0.785**		**0.511**
Selenium	**7782-49-2**	**0.0688**		**0.00702**
Thallium	**7440-28-0**	**5.98E-4**	QB-01	**4.62E-4**
Vanadium	**7440-62-2**	**0.448**		**0.0415**
Zinc	7440-66-6	25.7	U	60.2

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Tetra Tech, Inc.
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PHONE: (703) 885-5495 **FAX:**

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-031624-HM
Matrix: Air
Lab ID: 4032536-13
Sample Volume: 1884.501 m³
Filter ID:
Sampled: 03/16/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 04:08

Comments: Q9516932 - 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**	**0.117**	SL	**0.0333**
Arsenic	**7440-38-2**	**0.447**		**0.00809**
Barium	**7440-39-3**	**4.39**	QB-01	**0.924**
Beryllium	**7440-41-7**	**0.00866**		**0.00276**
Cadmium	7440-43-9	0.0314	U	0.0640
Chromium	**7440-47-3**	**1.95**		**1.91**
Cobalt	**7440-48-4**	**0.311**		**0.0376**
Copper	**7440-50-8**	**38.2**		**2.27**
Lead	**7439-92-1**	**1.02**		**0.185**
Manganese	**7439-96-5**	**9.48**		**1.63**
Molybdenum	**7439-98-7**	**1.24**		**0.310**
Nickel	**7440-02-0**	**1.07**		**0.563**
Selenium	**7782-49-2**	**0.0883**		**0.00774**
Thallium	**7440-28-0**	**7.63E-4**	QB-01	**5.09E-4**
Vanadium	**7440-62-2**	**0.814**		**0.0457**
Zinc	7440-66-6	26.8	U	66.3

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Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-031624-HM
Matrix: Air
Lab ID: 4032536-14
Sample Volume: 2064.185 m³
Filter ID:
Sampled: 03/16/24 00:00
Received: 03/25/24 14:46
Analysis Date: 03/28/24 04:24

Comments: Q9516927 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0173	SL, U	0.0304
Arsenic	**7440-38-2**	**0.00950**	FB-01	**0.00739**
Barium	7440-39-3	0.549	QB-01, U	0.843
Beryllium	7440-41-7	6.94E-4	U	0.00252
Cadmium	7440-43-9	0.0137	U	0.0584
Chromium	7440-47-3	0.690	U	1.74
Cobalt	7440-48-4	0.0130	U	0.0344
Copper	7440-50-8	1.28	U	2.07
Lead	7439-92-1	0.0638	U	0.169
Manganese	7439-96-5	0.350	U	1.49
Molybdenum	7439-98-7	0.112	U	0.283
Nickel	7440-02-0	0.224	U	0.514
Selenium	7782-49-2	0.00257	U	0.00706
Thallium	7440-28-0	1.93E-4	QB-01, U	4.64E-4
Vanadium	7440-62-2	0.0293	U	0.0417
Zinc	7440-66-6	12.5	U	60.5

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-031724-HM/MS/MS **Lab ID:** 4032536-15 **Sampled:** 03/17/24 23:59
Matrix: Air **Sample Volume:** 2062.105 m³ **Received:** 03/25/24 14:46
Filter ID: **Analysis Date:** 03/27/24 17:21

Comments: Q9516931 - 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**	**0.0997**	SL	**0.0305**
Arsenic	**7440-38-2**	**0.423**		**0.00739**
Barium	**7440-39-3**	**3.86**	QB-01	**0.844**
Beryllium	**7440-41-7**	**0.00503**		**0.00252**
Cadmium	7440-43-9	0.0383	U	0.0585
Chromium	7440-47-3	1.67	U	1.74
Cobalt	**7440-48-4**	**0.198**		**0.0344**
Copper	**7440-50-8**	**30.5**		**2.08**
Lead	**7439-92-1**	**1.05**		**0.169**
Manganese	**7439-96-5**	**6.01**		**1.49**
Molybdenum	**7439-98-7**	**1.02**		**0.283**
Nickel	**7440-02-0**	**0.659**		**0.514**
Selenium	**7782-49-2**	**0.102**		**0.00707**
Thallium	**7440-28-0**	**0.00104**	QB-01, QB-04	**4.65E-4**
Vanadium	**7440-62-2**	**0.566**		**0.0417**
Zinc	7440-66-6	25.5	U	60.6

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-031724-HM
Matrix: Air
Lab ID: 4032536-16
Sample Volume: 2022.799 m³
Filter ID:
Sampled: 03/17/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 04:38

Comments: Q9516930 - 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**	**0.160**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.460**		**0.00754**
Barium	**7440-39-3**	**3.63**	QB-01	**0.861**
Beryllium	**7440-41-7**	**0.00827**		**0.00257**
Cadmium	7440-43-9	0.0495	U	0.0596
Chromium	7440-47-3	1.57	U	1.78
Cobalt	**7440-48-4**	**0.248**		**0.0351**
Copper	**7440-50-8**	**32.6**		**2.12**
Lead	**7439-92-1**	**1.10**		**0.172**
Manganese	**7439-96-5**	**8.23**		**1.52**
Molybdenum	**7439-98-7**	**1.14**		**0.289**
Nickel	**7440-02-0**	**0.931**		**0.524**
Selenium	**7782-49-2**	**0.117**		**0.00721**
Thallium	**7440-28-0**	**0.00112**	QB-01	**4.74E-4**
Vanadium	**7440-62-2**	**0.848**		**0.0425**
Zinc	7440-66-6	24.6	U	61.8

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-031724-HM
Matrix: Air
Lab ID: 4032536-17
Sample Volume: 2152.138 m³
Filter ID:
Sampled: 03/17/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 04:54

Comments: Q9516929 - 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**	**0.0556**	SL	**0.0292**
Arsenic	**7440-38-2**	**0.266**		**0.00708**
Barium	**7440-39-3**	**1.75**	QB-01	**0.809**
Beryllium	**7440-41-7**	**0.0100**		**0.00242**
Cadmium	7440-43-9	0.0106	U	0.0560
Chromium	7440-47-3	1.38	U	1.67
Cobalt	**7440-48-4**	**0.203**		**0.0330**
Copper	**7440-50-8**	**34.8**		**1.99**
Lead	**7439-92-1**	**0.321**		**0.162**
Manganese	**7439-96-5**	**5.27**		**1.43**
Molybdenum	**7439-98-7**	**1.13**		**0.271**
Nickel	**7440-02-0**	**0.618**		**0.493**
Selenium	**7782-49-2**	**0.117**		**0.00677**
Thallium	**7440-28-0**	**0.00122**	QB-01	**4.45E-4**
Vanadium	**7440-62-2**	**0.557**		**0.0400**
Zinc	7440-66-6	14.1	U	58.1

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-031724-HM
Matrix: Air
Lab ID: 4032536-18
Sample Volume: 1953.424 m³
Filter ID:
Sampled: 03/17/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 05:09

Comments: Q9516928 - 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**	**0.161**	SL	**0.0321**
Arsenic	**7440-38-2**	**0.420**		**0.00780**
Barium	**7440-39-3**	**4.51**	QB-01	**0.891**
Beryllium	**7440-41-7**	**0.00817**		**0.00267**
Cadmium	7440-43-9	0.0341	U	0.0617
Chromium	**7440-47-3**	**1.99**		**1.84**
Cobalt	**7440-48-4**	**0.278**		**0.0363**
Copper	**7440-50-8**	**49.0**		**2.19**
Lead	**7439-92-1**	**0.982**		**0.178**
Manganese	**7439-96-5**	**8.60**		**1.57**
Molybdenum	**7439-98-7**	**1.48**		**0.299**
Nickel	**7440-02-0**	**0.897**		**0.543**
Selenium	**7782-49-2**	**0.130**		**0.00746**
Thallium	**7440-28-0**	**0.00111**	QB-01	**4.91E-4**
Vanadium	**7440-62-2**	**0.821**		**0.0441**
Zinc	7440-66-6	21.3	U	64.0

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-031824-HM
Matrix: Air
Lab ID: 4032536-19
Sample Volume: 2122.235 m³
Filter ID:
Sampled: 03/18/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 05:25

Comments: Q9516926 - Received in good condition.- Nonhomogenous sample

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0679**	SL	**0.0296**
Arsenic	**7440-38-2**	**0.429**		**0.00718**
Barium	**7440-39-3**	**2.67**	QB-01	**0.820**
Beryllium	**7440-41-7**	**0.00589**		**0.00245**
Cadmium	7440-43-9	0.0130	U	0.0568
Chromium	**7440-47-3**	**2.08**		**1.69**
Cobalt	**7440-48-4**	**0.213**		**0.0334**
Copper	**7440-50-8**	**35.8**		**2.02**
Lead	**7439-92-1**	**0.589**		**0.164**
Manganese	**7439-96-5**	**6.64**		**1.45**
Molybdenum	**7439-98-7**	**1.48**		**0.275**
Nickel	**7440-02-0**	**0.827**		**0.500**
Selenium	**7782-49-2**	**0.123**		**0.00687**
Thallium	**7440-28-0**	**0.00120**	QB-01	**4.52E-4**
Vanadium	**7440-62-2**	**0.686**		**0.0406**
Zinc	7440-66-6	18.3	U	58.9

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-031824-HM
Matrix: Air
Lab ID: 4032536-20
Sample Volume: 2115.474 m³
Filter ID:
Sampled: 03/18/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 05:39

Comments: Q9516924 - Received in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.129**	SL	**0.0297**
Arsenic	**7440-38-2**	**0.508**		**0.00721**
Barium	**7440-39-3**	**4.82**	QB-01	**0.823**
Beryllium	**7440-41-7**	**0.0135**		**0.00246**
Cadmium	7440-43-9	0.0277	U	0.0570
Chromium	**7440-47-3**	**2.43**		**1.70**
Cobalt	**7440-48-4**	**0.528**		**0.0335**
Copper	**7440-50-8**	**29.9**		**2.02**
Lead	**7439-92-1**	**0.898**		**0.165**
Manganese	**7439-96-5**	**13.2**		**1.45**
Molybdenum	**7439-98-7**	**1.01**		**0.276**
Nickel	**7440-02-0**	**1.90**		**0.501**
Selenium	**7782-49-2**	**0.154**		**0.00689**
Thallium	**7440-28-0**	**0.00159**	QB-01	**4.53E-4**
Vanadium	**7440-62-2**	**1.42**		**0.0407**
Zinc	7440-66-6	22.4	U	59.1

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-031824-HM
Matrix: Air
Lab ID: 4032536-21
Sample Volume: 2163.894 m³
Filter ID:
Sampled: 03/18/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 05:56

Comments: Q9516923 - 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**	**0.0569**	SL	**0.0290**
Arsenic	**7440-38-2**	**0.242**		**0.00705**
Barium	**7440-39-3**	**2.77**	QB-01	**0.805**
Beryllium	**7440-41-7**	**0.0183**		**0.00241**
Cadmium	7440-43-9	0.0138	U	0.0557
Chromium	**7440-47-3**	**2.01**		**1.66**
Cobalt	**7440-48-4**	**0.396**		**0.0328**
Copper	**7440-50-8**	**37.4**		**1.98**
Lead	**7439-92-1**	**0.611**		**0.161**
Manganese	**7439-96-5**	**9.57**		**1.42**
Molybdenum	**7439-98-7**	**1.18**		**0.270**
Nickel	**7440-02-0**	**1.24**		**0.490**
Selenium	**7782-49-2**	**0.148**		**0.00674**
Thallium	**7440-28-0**	**0.00136**	QB-01	**4.43E-4**
Vanadium	**7440-62-2**	**0.982**		**0.0398**
Zinc	7440-66-6	18.6	U	57.7

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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: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-031824-HM
Matrix: Air
Lab ID: 4032536-22
Sample Volume: 1956.388 m³
Filter ID:
Sampled: 03/18/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 07:05

Comments: Q9516922 - 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**	**0.144**	SL	**0.0321**
Arsenic	**7440-38-2**	**1.03**		**0.00779**
Barium	**7440-39-3**	**4.14**	QB-01	**0.890**
Beryllium	**7440-41-7**	**0.00884**		**0.00266**
Cadmium	7440-43-9	0.0227	U	0.0616
Chromium	**7440-47-3**	**2.01**		**1.84**
Cobalt	**7440-48-4**	**0.299**		**0.0363**
Copper	**7440-50-8**	**45.9**		**2.19**
Lead	**7439-92-1**	**1.13**		**0.178**
Manganese	**7439-96-5**	**9.06**		**1.57**
Molybdenum	**7439-98-7**	**1.48**		**0.299**
Nickel	**7440-02-0**	**0.988**		**0.542**
Selenium	**7782-49-2**	**0.143**		**0.00745**
Thallium	**7440-28-0**	**0.00142**	QB-01	**4.90E-4**
Vanadium	**7440-62-2**	**0.831**		**0.0440**
Zinc	7440-66-6	22.3	U	63.9

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-031824-HM
Matrix: Air
Lab ID: 4032536-23
Sample Volume: 2122.235 m³
Filter ID:
Sampled: 03/18/24 00:00
Received: 03/25/24 14:46
Analysis Date: 03/28/24 07:21

Comments: Q9516920 - 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	0.0170	SL, U	0.0296
Arsenic	**7440-38-2**	**0.00909**	FB-01	**0.00718**
Barium	**7440-39-3**	**1.07**	FB-01, QB-01	**0.820**
Beryllium	7440-41-7	5.65E-4	U	0.00245
Cadmium	7440-43-9	0.00452	U	0.0568
Chromium	7440-47-3	0.695	U	1.69
Cobalt	7440-48-4	0.0121	U	0.0334
Copper	**7440-50-8**	**11.8**	FB-01	**2.02**
Lead	**7439-92-1**	**0.304**	FB-01	**0.164**
Manganese	7439-96-5	0.274	U	1.45
Molybdenum	7439-98-7	0.159	U	0.275
Nickel	7440-02-0	0.229	U	0.500
Selenium	7782-49-2	0.00116	U	0.00687
Thallium	7440-28-0	1.75E-4	QB-01, U	4.52E-4
Vanadium	7440-62-2	0.0227	U	0.0406
Zinc	7440-66-6	13.2	U	58.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-031924-HM
Matrix: Air
Lab ID: 4032536-24
Sample Volume: 2092.456 m³
Filter ID:
Sampled: 03/19/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 07:36

Comments: Q9516921 - 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**	**0.0862**	SL	**0.0300**
Arsenic	**7440-38-2**	**0.581**		**0.00729**
Barium	**7440-39-3**	**4.35**	QB-01	**0.832**
Beryllium	**7440-41-7**	**0.00923**		**0.00249**
Cadmium	7440-43-9	0.0181	U	0.0576
Chromium	**7440-47-3**	**2.43**		**1.72**
Cobalt	**7440-48-4**	**0.314**		**0.0339**
Copper	**7440-50-8**	**40.1**		**2.04**
Lead	**7439-92-1**	**0.874**		**0.166**
Manganese	**7439-96-5**	**8.94**		**1.47**
Molybdenum	**7439-98-7**	**1.79**		**0.279**
Nickel	**7440-02-0**	**1.18**		**0.507**
Selenium	**7782-49-2**	**0.135**		**0.00697**
Thallium	**7440-28-0**	**0.00203**	QB-01	**4.58E-4**
Vanadium	**7440-62-2**	**0.926**		**0.0411**
Zinc	7440-66-6	19.0	U	59.7

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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: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-031924-HM
Matrix: Air
Lab ID: 4032536-25
Sample Volume: 2074.978 m³
Filter ID:
Sampled: 03/19/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 07:52

Comments: Q9516919 - 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**	**0.348**	SL	**0.0303**
Arsenic	**7440-38-2**	**2.75**		**0.00735**
Barium	**7440-39-3**	**9.04**	QB-01	**0.839**
Beryllium	**7440-41-7**	**0.0173**		**0.00251**
Cadmium	7440-43-9	0.0330	U	0.0581
Chromium	**7440-47-3**	**4.36**		**1.73**
Cobalt	**7440-48-4**	**0.623**		**0.0342**
Copper	**7440-50-8**	**41.4**		**2.06**
Lead	**7439-92-1**	**12.9**		**0.168**
Manganese	**7439-96-5**	**17.6**		**1.48**
Molybdenum	**7439-98-7**	**1.15**		**0.281**
Nickel	**7440-02-0**	**2.10**		**0.511**
Selenium	**7782-49-2**	**0.196**		**0.00703**
Thallium	**7440-28-0**	**0.00285**	QB-01	**4.62E-4**
Vanadium	**7440-62-2**	**1.81**		**0.0415**
Zinc	7440-66-6	42.0	U	60.2

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-031924-HM
Matrix: Air
Lab ID: 4032536-26
Sample Volume: 2140.687 m³
Filter ID:
Sampled: 03/19/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 08:12

Comments: Q9516918 - 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	**0.0293**
Arsenic	**7440-38-2**	**0.310**		**0.00712**
Barium	**7440-39-3**	**3.39**	QB-01	**0.813**
Beryllium	**7440-41-7**	**0.0191**		**0.00243**
Cadmium	7440-43-9	0.0160	U	0.0563
Chromium	**7440-47-3**	**1.98**		**1.68**
Cobalt	**7440-48-4**	**0.365**		**0.0331**
Copper	**7440-50-8**	**41.1**		**2.00**
Lead	**7439-92-1**	**0.601**		**0.163**
Manganese	**7439-96-5**	**9.07**		**1.44**
Molybdenum	**7439-98-7**	**1.31**		**0.273**
Nickel	**7440-02-0**	**1.10**		**0.496**
Selenium	**7782-49-2**	**0.154**		**0.00681**
Thallium	**7440-28-0**	**0.00223**	QB-01	**4.48E-4**
Vanadium	**7440-62-2**	**0.939**		**0.0402**
Zinc	7440-66-6	14.2	U	58.4

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-031924-HM
Matrix: Air
Lab ID: 4032536-27
Sample Volume: 1960.477 m³
Filter ID:
Sampled: 03/19/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 08:28

Comments: Q9516917 - Received in good condition. - Nonhomogenous sample

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.116**	SL	**0.0320**
Arsenic	**7440-38-2**	**0.507**		**0.00778**
Barium	**7440-39-3**	**4.11**	QB-01	**0.888**
Beryllium	**7440-41-7**	**0.00962**		**0.00266**
Cadmium	7440-43-9	0.0229	U	0.0615
Chromium	**7440-47-3**	**1.89**		**1.83**
Cobalt	**7440-48-4**	**0.315**		**0.0362**
Copper	**7440-50-8**	**52.4**		**2.18**
Lead	**7439-92-1**	**1.22**		**0.178**
Manganese	**7439-96-5**	**9.87**		**1.57**
Molybdenum	**7439-98-7**	**1.99**		**0.298**
Nickel	**7440-02-0**	**0.975**		**0.541**
Selenium	**7782-49-2**	**0.142**		**0.00744**
Thallium	**7440-28-0**	**0.00208**	QB-01	**4.89E-4**
Vanadium	**7440-62-2**	**0.894**		**0.0439**
Zinc	7440-66-6	21.9	U	63.7

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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: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-032024-HM
Matrix: Air
Lab ID: 4032536-28
Sample Volume: 2130.756 m³
Filter ID:
Sampled: 03/20/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 09:00

Comments: Q9516916 - 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**	**0.0576**	SL	**0.0295**
Arsenic	**7440-38-2**	**0.403**		**0.00715**
Barium	**7440-39-3**	**3.08**	QB-01	**0.817**
Beryllium	**7440-41-7**	**0.00895**		**0.00244**
Cadmium	7440-43-9	0.0165	U	0.0566
Chromium	**7440-47-3**	**2.30**		**1.69**
Cobalt	**7440-48-4**	**0.324**		**0.0333**
Copper	**7440-50-8**	**24.5**		**2.01**
Lead	**7439-92-1**	**0.576**		**0.163**
Manganese	**7439-96-5**	**10.8**		**1.44**
Molybdenum	**7439-98-7**	**1.40**		**0.274**
Nickel	**7440-02-0**	**1.05**		**0.498**
Selenium	**7782-49-2**	**0.157**		**0.00684**
Thallium	**7440-28-0**	**0.00229**	QB-01	**4.50E-4**
Vanadium	**7440-62-2**	**0.952**		**0.0404**
Zinc	7440-66-6	13.8	U	58.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-032024-HM
Matrix: Air
Lab ID: 4032536-29
Sample Volume: 2106.012 m³
Filter ID:
Sampled: 03/20/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 09:16

Comments: Q9516915 - 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**	**0.232**	SL	**0.0298**
Arsenic	**7440-38-2**	**0.681**		**0.00724**
Barium	**7440-39-3**	**11.2**	QB-01	**0.827**
Beryllium	**7440-41-7**	**0.0282**		**0.00247**
Cadmium	7440-43-9	0.0473	U	0.0572
Chromium	**7440-47-3**	**6.22**		**1.71**
Cobalt	**7440-48-4**	**1.67**		**0.0337**
Copper	**7440-50-8**	**36.6**		**2.03**
Lead	**7439-92-1**	**1.78**		**0.165**
Manganese	**7439-96-5**	**37.9**		**1.46**
Molybdenum	**7439-98-7**	**1.22**		**0.277**
Nickel	**7440-02-0**	**6.95**		**0.504**
Selenium	**7782-49-2**	**0.252**		**0.00692**
Thallium	**7440-28-0**	**0.00315**	QB-01	**4.55E-4**
Vanadium	**7440-62-2**	**3.81**		**0.0409**
Zinc	7440-66-6	32.6	U	59.3

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
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FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-032024-HM
Matrix: Air
Lab ID: 4032536-30
Sample Volume: 2178.954 m³
Filter ID:
Sampled: 03/20/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 09:34

Comments: Q9516914 - 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**	**0.0536**	SL	**0.0288**
Arsenic	**7440-38-2**	**0.246**		**0.00700**
Barium	**7440-39-3**	**3.02**	QB-01	**0.799**
Beryllium	**7440-41-7**	**0.0236**		**0.00239**
Cadmium	7440-43-9	0.0221	U	0.0553
Chromium	**7440-47-3**	**2.06**		**1.65**
Cobalt	**7440-48-4**	**0.438**		**0.0326**
Copper	**7440-50-8**	**39.2**		**1.96**
Lead	**7439-92-1**	**0.445**		**0.160**
Manganese	**7439-96-5**	**11.6**		**1.41**
Molybdenum	**7439-98-7**	**1.29**		**0.268**
Nickel	**7440-02-0**	**1.14**		**0.487**
Selenium	**7782-49-2**	**0.190**		**0.00669**
Thallium	**7440-28-0**	**0.00230**	QB-01	**4.40E-4**
Vanadium	**7440-62-2**	**1.16**		**0.0395**
Zinc	7440-66-6	11.3	U	57.3

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FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-032024-HM
Matrix: Air
Lab ID: 4032536-31
Sample Volume: 1977.428 m³
Filter ID:
Sampled: 03/20/24 23:59
Received: 03/25/24 14:46
Analysis Date: 03/28/24 10:43

Comments: Q9516913 - 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**	**0.377**	SL	**0.0318**
Arsenic	**7440-38-2**	**0.753**		**0.00771**
Barium	**7440-39-3**	**6.48**	QB-01	**0.880**
Beryllium	**7440-41-7**	**0.0193**		**0.00263**
Cadmium	7440-43-9	0.0300	U	0.0610
Chromium	**7440-47-3**	**2.72**		**1.82**
Cobalt	**7440-48-4**	**0.551**		**0.0359**
Copper	**7440-50-8**	**45.7**		**2.16**
Lead	**7439-92-1**	**1.44**		**0.176**
Manganese	**7439-96-5**	**20.4**		**1.56**
Molybdenum	**7439-98-7**	**2.04**		**0.295**
Nickel	**7440-02-0**	**1.62**		**0.536**
Selenium	**7782-49-2**	**0.208**		**0.00737**
Thallium	**7440-28-0**	**0.00250**	QB-01	**4.85E-4**
Vanadium	**7440-62-2**	**1.36**		**0.0435**
Zinc	7440-66-6	25.2	U	63.2

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REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-032024-HM
Matrix: Air
Lab ID: 4032536-32
Sample Volume: 2130.756 m³
Filter ID:
Sampled: 03/20/24 00:00
Received: 03/25/24 14:46
Analysis Date: 03/28/24 11:01

Comments: Q9516912 - 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	0.0178	SL, U	0.0295
Arsenic	**7440-38-2**	**0.0105**	FB-01	**0.00715**
Barium	7440-39-3	0.795	QB-01, U	0.817
Beryllium	7440-41-7	5.72E-4	U	0.00244
Cadmium	7440-43-9	0.00146	U	0.0566
Chromium	7440-47-3	0.912	U	1.69
Cobalt	7440-48-4	0.0116	U	0.0333
Copper	7440-50-8	1.15	U	2.01
Lead	7439-92-1	0.0834	U	0.163
Manganese	7439-96-5	0.262	U	1.44
Molybdenum	7439-98-7	0.103	U	0.274
Nickel	7440-02-0	0.249	U	0.498
Selenium	7782-49-2	ND	U	0.00684
Thallium	7440-28-0	1.70E-4	QB-01, U	4.50E-4
Vanadium	7440-62-2	0.0249	U	0.0404
Zinc	7440-66-6	7.26	U	58.6

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FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
SUBMITTED: 03/25/24
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 2403081 - B4C2609										
Calibration Blank (2403081-CCB1)				Prepared & Analyzed: 03/27/24						
Antimony	0.621		ng/l							
Arsenic	2.16		ng/l							
Barium	0.550		ng/l							
Beryllium	0.280		ng/l							
Cadmium	0.0116		ng/l							
Chromium	0.987		ng/l							
Cobalt	0.0917		ng/l							
Copper	56.4		ng/l							
Lead	16.7		ng/l							
Manganese	4.19		ng/l							
Molybdenum	8.61		ng/l							
Nickel	0.746		ng/l							
Selenium	-12.2		ng/l							U
Thallium	1.48		ng/l							QB-04
Vanadium	-25.9		ng/l							U
Zinc	10.7		ng/l							
Calibration Blank (2403081-CCB2)				Prepared & Analyzed: 03/27/24						
Antimony	0.179		ng/l							
Arsenic	-2.24		ng/l							U
Barium	1.98		ng/l							
Beryllium	0.00129		ng/l							
Cadmium	0.0674		ng/l							
Chromium	2.10		ng/l							
Cobalt	0.268		ng/l							
Copper	44.7		ng/l							
Lead	3.98		ng/l							
Manganese	4.05		ng/l							
Molybdenum	1.80		ng/l							
Nickel	0.393		ng/l							
Selenium	-3.00		ng/l							U
Thallium	0.931		ng/l							
Vanadium	-28.2		ng/l							U
Zinc	-12.6		ng/l							U
Calibration Blank (2403081-CCB3)				Prepared & Analyzed: 03/27/24						
Antimony	0.234		ng/l							
Arsenic	2.34		ng/l							
Barium	1.06		ng/l							
Beryllium	0.0875		ng/l							

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AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403081 - B4C2609										
Calibration Blank (2403081-CCB3) Contin				Prepared & Analyzed: 03/27/24						
Cadmium	-0.0625		ng/l							U
Chromium	1.67		ng/l							
Cobalt	0.275		ng/l							
Copper	42.7		ng/l							
Lead	3.03		ng/l							
Manganese	2.38		ng/l							
Molybdenum	1.90		ng/l							
Nickel	0.352		ng/l							
Selenium	0.756		ng/l							
Thallium	1.01		ng/l							
Vanadium	-31.6		ng/l							U
Zinc	62.9		ng/l							
Calibration Blank (2403081-CCB4)				Prepared: 03/27/24 Analyzed: 03/28/24						
Antimony	0.197		ng/l							
Arsenic	5.69		ng/l							
Barium	0.663		ng/l							
Beryllium	0.0520		ng/l							
Cadmium	-0.0237		ng/l							U
Chromium	2.44		ng/l							
Cobalt	0.229		ng/l							
Copper	27.4		ng/l							
Lead	2.62		ng/l							
Manganese	1.82		ng/l							
Molybdenum	2.26		ng/l							
Nickel	0.457		ng/l							
Selenium	-0.723		ng/l							U
Thallium	0.844		ng/l							
Vanadium	-35.5		ng/l							U
Zinc	-10.4		ng/l							U
Calibration Blank (2403081-CCB5)				Prepared: 03/27/24 Analyzed: 03/28/24						
Antimony	0.453		ng/l							
Arsenic	5.28		ng/l							
Barium	2.08		ng/l							
Beryllium	0.124		ng/l							
Cadmium	-0.0214		ng/l							U
Chromium	3.40		ng/l							
Cobalt	0.367		ng/l							
Copper	42.2		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 2403081 - B4C2609										
Calibration Blank (2403081-CCB5) Contin				Prepared: 03/27/24 Analyzed: 03/28/24						
Lead	3.67		ng/l							
Manganese	4.73		ng/l							
Molybdenum	2.10		ng/l							
Nickel	1.91		ng/l							
Selenium	-6.87		ng/l							U
Thallium	0.835		ng/l							
Vanadium	-29.9		ng/l							U
Zinc	2.09		ng/l							
Calibration Blank (2403081-CCB6)				Prepared: 03/27/24 Analyzed: 03/28/24						
Antimony	0.430		ng/l							
Arsenic	6.24		ng/l							
Barium	0.731		ng/l							
Beryllium	0.0655		ng/l							
Cadmium	0.0166		ng/l							
Chromium	3.86		ng/l							
Cobalt	0.374		ng/l							
Copper	35.3		ng/l							
Lead	3.01		ng/l							
Manganese	4.91		ng/l							
Molybdenum	1.80		ng/l							
Nickel	0.365		ng/l							
Selenium	3.47		ng/l							
Thallium	0.700		ng/l							
Vanadium	-29.3		ng/l							U
Zinc	3.86		ng/l							
Calibration Blank (2403081-CCB7)				Prepared: 03/27/24 Analyzed: 03/28/24						
Antimony	0.341		ng/l							
Arsenic	4.32		ng/l							
Barium	0.355		ng/l							
Beryllium	0.0131		ng/l							
Cadmium	0.0118		ng/l							
Chromium	2.39		ng/l							
Cobalt	0.301		ng/l							
Copper	45.2		ng/l							
Lead	3.60		ng/l							
Manganese	5.25		ng/l							
Molybdenum	3.49		ng/l							
Nickel	0.408		ng/l							

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REPORTED: 04/02/24 09:21
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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 2403081 - B4C2609										
Calibration Blank (2403081-CCB7) Contin				Prepared: 03/27/24 Analyzed: 03/28/24						
Selenium	5.25		ng/l							
Thallium	1.10		ng/l							
Vanadium	-34.9		ng/l							U
Zinc	-7.55		ng/l							U
Calibration Check (2403081-CCV1)				Prepared & Analyzed: 03/27/24						
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	208000		ng/l	200000		104	90-110			
Beryllium	5230		ng/l	5000.0		105	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	258000		ng/l	240000		107	90-110			
Cobalt	51500		ng/l	50000		103	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	493000		ng/l	500000		98.6	90-110			
Molybdenum	51400		ng/l	50000		103	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20500		ng/l	20000		102	90-110			
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	19800		ng/l	20000		98.9	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2403081-CCV2)				Prepared & Analyzed: 03/27/24						
Antimony	19700		ng/l	20000		98.3	90-110			
Arsenic	20000		ng/l	20000		99.8	90-110			
Barium	206000		ng/l	200000		103	90-110			
Beryllium	4800		ng/l	5000.0		96.0	90-110			
Cadmium	20000		ng/l	20000		99.9	90-110			
Chromium	254000		ng/l	240000		106	90-110			
Cobalt	50300		ng/l	50000		101	90-110			
Copper	2.05E6		ng/l	2.0000E6		102	90-110			
Lead	199000		ng/l	200000		99.3	90-110			
Manganese	491000		ng/l	500000		98.2	90-110			
Molybdenum	51000		ng/l	50000		102	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	488		ng/l	500.00		97.7	90-110			
Vanadium	19900		ng/l	20000		99.7	90-110			
Zinc	503000		ng/l	500000		101	90-110			

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AQS SITE CODE:
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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403081 - B4C2609										
Calibration Check (2403081-CCV3)				Prepared & Analyzed: 03/27/24						
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	210000		ng/l	200000		105	90-110			
Beryllium	4980		ng/l	5000.0		99.6	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	256000		ng/l	240000		106	90-110			
Cobalt	51100		ng/l	50000		102	90-110			
Copper	2.09E6		ng/l	2.0000E6		104	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	497000		ng/l	500000		99.5	90-110			
Molybdenum	52000		ng/l	50000		104	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20500		ng/l	20000		103	90-110			
Thallium	495		ng/l	500.00		99.0	90-110			
Vanadium	19900		ng/l	20000		99.7	90-110			
Zinc	512000		ng/l	500000		102	90-110			
Calibration Check (2403081-CCV4)				Prepared: 03/27/24 Analyzed: 03/28/24						
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20600		ng/l	20000		103	90-110			
Barium	212000		ng/l	200000		106	90-110			
Beryllium	5100		ng/l	5000.0		102	90-110			
Cadmium	20900		ng/l	20000		104	90-110			
Chromium	263000		ng/l	240000		110	90-110			
Cobalt	52100		ng/l	50000		104	90-110			
Copper	2.15E6		ng/l	2.0000E6		108	90-110			
Lead	206000		ng/l	200000		103	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	53600		ng/l	50000		107	90-110			
Nickel	125000		ng/l	120000		104	90-110			
Selenium	20800		ng/l	20000		104	90-110			
Thallium	497		ng/l	500.00		99.4	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	524000		ng/l	500000		105	90-110			
Calibration Check (2403081-CCV5)				Prepared: 03/27/24 Analyzed: 03/28/24						
Antimony	20700		ng/l	20000		104	90-110			
Arsenic	21000		ng/l	20000		105	90-110			
Barium	214000		ng/l	200000		107	90-110			
Beryllium	4830		ng/l	5000.0		96.7	90-110			

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REPORTED: 04/02/24 09:21
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AQS SITE CODE:
SITE CODE: Lahaina fires

Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403081 - B4C2609										
Calibration Check (2403081-CCV5) Contin					Prepared: 03/27/24 Analyzed: 03/28/24					
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	263000		ng/l	240000		110	90-110			
Cobalt	52400		ng/l	50000		105	90-110			
Copper	2.18E6		ng/l	2.0000E6		109	90-110			
Lead	206000		ng/l	200000		103	90-110			
Manganese	512000		ng/l	500000		102	90-110			
Molybdenum	53700		ng/l	50000		107	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	21200		ng/l	20000		106	90-110			
Thallium	493		ng/l	500.00		98.6	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	527000		ng/l	500000		105	90-110			
Calibration Check (2403081-CCV6)					Prepared: 03/27/24 Analyzed: 03/28/24					
Antimony	20600		ng/l	20000		103	90-110			
Arsenic	20800		ng/l	20000		104	90-110			
Barium	210000		ng/l	200000		105	90-110			
Beryllium	4970		ng/l	5000.0		99.3	90-110			
Cadmium	21000		ng/l	20000		105	90-110			
Chromium	262000		ng/l	240000		109	90-110			
Cobalt	52500		ng/l	50000		105	90-110			
Copper	2.18E6		ng/l	2.0000E6		109	90-110			
Lead	207000		ng/l	200000		104	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	53800		ng/l	50000		108	90-110			
Nickel	126000		ng/l	120000		105	90-110			
Selenium	20900		ng/l	20000		104	90-110			
Thallium	496		ng/l	500.00		99.3	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	526000		ng/l	500000		105	90-110			
Calibration Check (2403081-CCV7)					Prepared: 03/27/24 Analyzed: 03/28/24					
Antimony	20800		ng/l	20000		104	90-110			
Arsenic	20700		ng/l	20000		104	90-110			
Barium	206000		ng/l	200000		103	90-110			
Beryllium	5040		ng/l	5000.0		101	90-110			
Cadmium	21100		ng/l	20000		106	90-110			
Chromium	264000		ng/l	240000		110	90-110			
Cobalt	51600		ng/l	50000		103	90-110			
Copper	2.13E6		ng/l	2.0000E6		107	90-110			

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: 04/02/24 09:21
SUBMITTED: 03/25/24
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 2403081 - B4C2609										
Calibration Check (2403081-CCV7) Contin				Prepared: 03/27/24 Analyzed: 03/28/24						
Lead	207000		ng/l	200000		104	90-110			
Manganese	522000		ng/l	500000		104	90-110			
Molybdenum	52700		ng/l	50000		105	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	21000		ng/l	20000		105	90-110			
Thallium	497		ng/l	500.00		99.4	90-110			
Vanadium	20900		ng/l	20000		105	90-110			
Zinc	527000		ng/l	500000		105	90-110			
High Cal Check (2403081-HCV1)				Prepared & Analyzed: 03/27/24						
Antimony	39500		ng/l	40000		98.8	95-105			
Arsenic	39900		ng/l	40000		99.8	95-105			
Barium	408000		ng/l	400000		102	95-105			
Beryllium	9950		ng/l	10000		99.5	95-105			
Cadmium	39400		ng/l	40000		98.5	95-105			
Chromium	467000		ng/l	480000		97.3	95-105			
Cobalt	98800		ng/l	100000		98.8	95-105			
Copper	3.94E6		ng/l	4.0000E6		98.5	95-105			
Lead	399000		ng/l	400000		99.8	95-105			
Manganese	983000		ng/l	1.0000E6		98.3	95-105			
Molybdenum	101000		ng/l	100000		101	95-105			
Nickel	236000		ng/l	240000		98.1	95-105			
Selenium	40000		ng/l	40000		100	95-105			
Thallium	989		ng/l	1000.0		98.9	95-105			
Vanadium	39800		ng/l	40000		99.5	95-105			
Zinc	993000		ng/l	1.0000E6		99.3	95-105			
Initial Cal Blank (2403081-ICB1)				Prepared & Analyzed: 03/27/24						
Antimony	0.397		ng/l							
Arsenic	0.0366		ng/l							
Barium	0.802		ng/l							
Beryllium	-0.00944		ng/l							U
Cadmium	0.0907		ng/l							
Chromium	1.26		ng/l							
Cobalt	0.105		ng/l							
Copper	57.0		ng/l							
Lead	4.21		ng/l							
Manganese	3.92		ng/l							
Molybdenum	2.50		ng/l							
Nickel	0.862		ng/l							

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403081 - B4C2609										
Initial Cal Blank (2403081-ICB1) Continu				Prepared & Analyzed: 03/27/24						
Selenium	-4.13		ng/l							U
Thallium	0.942		ng/l							
Vanadium	-29.2		ng/l							U
Zinc	1.10		ng/l							
Initial Cal Check (2403081-ICV1)				Prepared & Analyzed: 03/27/24						
Antimony	19300		ng/l	20000		96.7	90-110			
Arsenic	19700		ng/l	20000		98.3	90-110			
Barium	197000		ng/l	200000		98.5	90-110			
Beryllium	4990		ng/l	5000.0		99.8	90-110			
Cadmium	20200		ng/l	20000		101	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	48600		ng/l	50000		97.3	90-110			
Copper	1.98E6		ng/l	2.0000E6		98.8	90-110			
Lead	194000		ng/l	200000		96.8	90-110			
Manganese	482000		ng/l	500000		96.5	90-110			
Molybdenum	49500		ng/l	50000		99.0	90-110			
Nickel	118000		ng/l	120000		98.5	90-110			
Selenium	20100		ng/l	20000		101	90-110			
Thallium	501		ng/l	500.00		100	90-110			
Vanadium	19900		ng/l	20000		99.6	90-110			
Zinc	501000		ng/l	500000		100	90-110			
Interference Check A (2403081-IFA1)				Prepared & Analyzed: 03/27/24						
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	311000		ng/l	300000		104	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2403081 - B4C2609										
Interference Check B (2403081-IFB1)					Prepared & Analyzed: 03/27/24					
Antimony	20400		ng/l	20000		102	80-120			
Arsenic	20700		ng/l	20000		103	80-120			
Barium	211000		ng/l	200000		106	80-120			
Beryllium	4840		ng/l	5000.0		96.8	80-120			
Cadmium	19800		ng/l	20000		98.9	80-120			
Chromium	244000		ng/l	240000		102	80-120			
Cobalt	50600		ng/l	50000		101	80-120			
Copper	1.94E6		ng/l	2.0000E6		96.9	80-120			
Lead	207000		ng/l	200000		104	80-120			
Manganese	486000		ng/l	500000		97.1	80-120			
Molybdenum	364000		ng/l	350000		104	80-120			
Nickel	118000		ng/l	120000		98.5	80-120			
Selenium	19500		ng/l	20000		97.6	80-120			
Thallium	526		ng/l	500.00		105	80-120			
Vanadium	18300		ng/l	20000		91.4	80-120			
Zinc	472000		ng/l	500000		94.5	80-120			
Batch B4C2609 - ICP-MS Extraction										
Blank (B4C2609-BLK1)					Prepared: 03/26/24 Analyzed: 03/28/24					
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							QB-01, U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							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 (B4C2609-BS1)					Prepared: 03/26/24 Analyzed: 03/27/24					
Antimony	0.708	0.0386	ng/m³ Air	1.3829		51.2	80-120			SL
Arsenic	2.68	0.00937	ng/m³ Air	2.7658		96.7	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4C2609 - ICP-MS Extraction										
LCS (B4C2609-BS1) Continued				Prepared: 03/26/24 Analyzed: 03/27/24						
Barium	28.7	1.07	ng/m³ Air	27.658		104	80-120			QB-01
Beryllium	1.31	0.00320	ng/m³ Air	1.3829		94.8	80-120			
Cadmium	1.37	0.0741	ng/m³ Air	1.3829		99.1	80-120			
Chromium	15.7	2.21	ng/m³ Air	13.829		114	80-120			
Cobalt	1.37	0.0436	ng/m³ Air	1.3829		98.8	80-120			
Copper	30.1	2.63	ng/m³ Air	27.658		109	80-120			
Lead	13.5	0.214	ng/m³ Air	13.829		97.7	80-120			
Manganese	8.64	1.89	ng/m³ Air	8.2975		104	80-120			
Molybdenum	1.52	0.359	ng/m³ Air	1.3829		110	80-120			
Nickel	3.20	0.652	ng/m³ Air	2.7658		116	80-120			
Selenium	2.72	0.00896	ng/m³ Air	2.7658		98.3	80-120			
Thallium	0.137	5.89E-4	ng/m³ Air	0.13829		99.0	80-120			QB-01, QB-04
Vanadium	2.76	0.0529	ng/m³ Air	2.7658		99.9	80-120			
Zinc	113	76.8	ng/m³ Air	82.975		137	80-120			
LCS (B4C2609-BS2)				Prepared: 03/26/24 Analyzed: 03/27/24						
Antimony	0.734	0.0386	ng/m³ Air	1.3829		53.1	80-120			SL
Arsenic	2.74	0.00937	ng/m³ Air	2.7658		99.2	80-120			
Barium	30.2	1.07	ng/m³ Air	27.658		109	80-120			QB-01
Beryllium	1.36	0.00320	ng/m³ Air	1.3829		98.2	80-120			
Cadmium	1.42	0.0741	ng/m³ Air	1.3829		103	80-120			
Chromium	16.1	2.21	ng/m³ Air	13.829		117	80-120			
Cobalt	1.40	0.0436	ng/m³ Air	1.3829		101	80-120			
Copper	30.9	2.63	ng/m³ Air	27.658		112	80-120			
Lead	13.9	0.214	ng/m³ Air	13.829		101	80-120			
Manganese	8.96	1.89	ng/m³ Air	8.2975		108	80-120			
Molybdenum	1.61	0.359	ng/m³ Air	1.3829		116	80-120			
Nickel	3.29	0.652	ng/m³ Air	2.7658		119	80-120			
Selenium	2.79	0.00896	ng/m³ Air	2.7658		101	80-120			
Thallium	0.140	5.89E-4	ng/m³ Air	0.13829		101	80-120			QB-01
Vanadium	2.86	0.0529	ng/m³ Air	2.7658		104	80-120			
Zinc	114	76.8	ng/m³ Air	82.975		138	80-120			
Duplicate (B4C2609-DUP1)		**Source: 4032536-15**		Prepared: 03/26/24 Analyzed: 03/27/24						
Antimony	0.0977	0.0305	ng/m³ Air		0.0997			1.97	10	SL
Arsenic	0.432	0.00739	ng/m³ Air		0.423			2.11	10	
Barium	3.85	0.844	ng/m³ Air		3.86			0.453	10	QB-01
Beryllium	0.00481	0.00252	ng/m³ Air		0.00503			4.57	10	
Cadmium	ND	0.0585	ng/m³ Air		ND				10	U
Chromium	ND	1.74	ng/m³ Air		ND				10	U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4C2609 - ICP-MS Extraction										
Duplicate (B4C2609-DUP1) Continued			**Source: 4032536-15**		Prepared: 03/26/24		Analyzed: 03/27/24			
Cobalt	0.202	0.0344	ng/m³ Air		0.198			1.95	10	
Copper	28.0	2.08	ng/m³ Air		30.5			8.51	10	
Lead	1.01	0.169	ng/m³ Air		1.05			3.15	10	
Manganese	5.93	1.49	ng/m³ Air		6.01			1.37	10	
Molybdenum	1.01	0.283	ng/m³ Air		1.02			0.455	10	
Nickel	0.628	0.514	ng/m³ Air		0.659			4.89	10	
Selenium	0.0997	0.00707	ng/m³ Air		0.102			2.78	10	
Thallium	9.19E-4	4.65E-4	ng/m³ Air		0.00104			12.3	10	QB-01, QB-04
Vanadium	0.575	0.0417	ng/m³ Air		0.566			1.46	10	
Zinc	ND	60.6	ng/m³ Air		ND				10	U
Duplicate (B4C2609-DUP2)			**Source: 4032536-02**		Prepared: 03/26/24		Analyzed: 03/27/24			
Antimony	0.167	0.0295	ng/m³ Air		0.179			7.24	10	SL
Arsenic	0.524	0.00716	ng/m³ Air		0.526			0.381	10	
Barium	4.63	0.817	ng/m³ Air		4.50			2.77	10	QB-01
Beryllium	0.0125	0.00244	ng/m³ Air		0.0119			5.55	10	
Cadmium	ND	0.0566	ng/m³ Air		ND				10	U
Chromium	1.83	1.69	ng/m³ Air		1.90			3.64	10	
Cobalt	0.343	0.0333	ng/m³ Air		0.355			3.45	10	
Copper	59.9	2.01	ng/m³ Air		60.5			0.960	10	
Lead	1.12	0.163	ng/m³ Air		1.24			9.43	10	
Manganese	11.2	1.44	ng/m³ Air		11.6			4.13	10	
Molybdenum	1.66	0.274	ng/m³ Air		1.66			0.0978	10	
Nickel	1.36	0.498	ng/m³ Air		1.45			6.54	10	
Selenium	0.183	0.00684	ng/m³ Air		0.190			3.86	10	
Thallium	0.00120	4.50E-4	ng/m³ Air		0.00119			0.0552	10	QB-01
Vanadium	1.34	0.0404	ng/m³ Air		1.40			4.31	10	
Zinc	ND	58.7	ng/m³ Air		ND				10	U
Duplicate (B4C2609-DUP3)			**Source: 4032536-08**		Prepared: 03/26/24		Analyzed: 03/28/24			
Antimony	0.0622	0.0295	ng/m³ Air		0.0640			2.72	10	SL
Arsenic	0.264	0.00715	ng/m³ Air		0.264			0.0220	10	
Barium	4.07	0.817	ng/m³ Air		4.14			1.68	10	QB-01
Beryllium	0.0252	0.00244	ng/m³ Air		0.0240			4.98	10	
Cadmium	ND	0.0566	ng/m³ Air		ND				10	U
Chromium	2.74	1.69	ng/m³ Air		2.77			1.05	10	
Cobalt	0.514	0.0333	ng/m³ Air		0.519			0.969	10	
Copper	67.3	2.01	ng/m³ Air		68.1			1.12	10	
Lead	0.875	0.163	ng/m³ Air		0.885			1.14	10	
Manganese	13.7	1.44	ng/m³ Air		13.8			1.11	10	

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4C2609 - ICP-MS Extraction										
Duplicate (B4C2609-DUP3) Continued		**Source: 4032536-08**		Prepared: 03/26/24	Analyzed: 03/28/24					
Molybdenum	2.16	0.274	ng/m³ Air		2.17			0.363	10	
Nickel	2.52	0.498	ng/m³ Air		2.55			1.15	10	
Selenium	0.128	0.00684	ng/m³ Air		0.117			8.92	10	
Thallium	0.00122	4.50E-4	ng/m³ Air		0.00124			1.29	10	QB-01
Vanadium	1.39	0.0404	ng/m³ Air		1.41			0.884	10	
Zinc	ND	58.6	ng/m³ Air		ND				10	U
Duplicate (B4C2609-DUP4)		**Source: 4032536-27**		Prepared: 03/26/24	Analyzed: 03/28/24					
Antimony	0.114	0.0320	ng/m³ Air		0.116			1.54	10	SL
Arsenic	0.499	0.00778	ng/m³ Air		0.507			1.62	10	
Barium	4.03	0.888	ng/m³ Air		4.11			2.03	10	QB-01
Beryllium	0.00992	0.00266	ng/m³ Air		0.00962			3.09	10	
Cadmium	ND	0.0615	ng/m³ Air		ND				10	U
Chromium	1.89	1.83	ng/m³ Air		1.89			0.176	10	
Cobalt	0.314	0.0362	ng/m³ Air		0.315			0.330	10	
Copper	51.5	2.18	ng/m³ Air		52.4			1.66	10	
Lead	1.21	0.178	ng/m³ Air		1.22			1.36	10	
Manganese	9.75	1.57	ng/m³ Air		9.87			1.24	10	
Molybdenum	1.97	0.298	ng/m³ Air		1.99			1.19	10	
Nickel	0.973	0.541	ng/m³ Air		0.975			0.207	10	
Selenium	0.147	0.00744	ng/m³ Air		0.142			3.72	10	
Thallium	0.00206	4.89E-4	ng/m³ Air		0.00208			0.808	10	QB-01
Vanadium	0.893	0.0439	ng/m³ Air		0.894			0.0997	10	
Zinc	ND	63.7	ng/m³ Air		ND				10	U
Matrix Spike (B4C2609-MS1)		**Source: 4032536-15**		Prepared: 03/26/24	Analyzed: 03/27/24					
Antimony	0.814	0.0305	ng/m³ Air	1.0911	0.0997	65.5	80-120			SL
Arsenic	2.53	0.00739	ng/m³ Air	2.1822	0.423	96.5	80-120			
Barium	26.4	0.844	ng/m³ Air	21.822	3.86	103	80-120			QB-01
Beryllium	1.06	0.00252	ng/m³ Air	1.0911	0.00503	97.0	80-120			
Cadmium	1.13	0.0585	ng/m³ Air	1.0911	ND	104	80-120			
Chromium	13.1	1.74	ng/m³ Air	10.911	ND	120	80-120			
Cobalt	1.29	0.0344	ng/m³ Air	1.0911	0.198	99.8	80-120			
Copper	52.8	2.08	ng/m³ Air	21.822	30.5	102	80-120			
Lead	12.0	0.169	ng/m³ Air	10.911	1.05	100	80-120			
Manganese	12.8	1.49	ng/m³ Air	6.5467	6.01	104	80-120			
Molybdenum	2.09	0.283	ng/m³ Air	1.0911	1.02	98.2	80-120			
Nickel	2.86	0.514	ng/m³ Air	2.1822	0.659	101	80-120			
Selenium	2.24	0.00707	ng/m³ Air	2.1822	0.102	98.1	80-120			
Thallium	0.110	4.65E-4	ng/m³ Air	0.10911	0.00104	99.5	80-120			QB-01, QB-04

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

FILE #: 4205.00.003.001
REPORTED: 04/02/24 09:21
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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 B4C2609 - ICP-MS Extraction										
Matrix Spike (B4C2609-MS1) Continued Source: 4032536-15 Prepared: 03/26/24 Analyzed: 03/27/24										
Vanadium	2.75	0.0417	ng/m³ Air	2.1822	0.566	99.9	80-120			
Zinc	94.7	60.6	ng/m³ Air	65.467	ND	145	80-120			
Matrix Spike (B4C2609-MS2) Source: 4032536-02 Prepared: 03/26/24 Analyzed: 03/27/24										
Antimony	0.777	0.0295	ng/m³ Air	1.0562	0.179	56.6	80-120			SL
Arsenic	2.54	0.00716	ng/m³ Air	2.1124	0.526	95.2	80-120			
Barium	26.2	0.817	ng/m³ Air	21.124	4.50	103	80-120			QB-01
Beryllium	1.05	0.00244	ng/m³ Air	1.0562	0.0119	98.3	80-120			
Cadmium	1.05	0.0566	ng/m³ Air	1.0562	ND	99.8	80-120			
Chromium	12.7	1.69	ng/m³ Air	10.562	1.90	103	80-120			
Cobalt	1.40	0.0333	ng/m³ Air	1.0562	0.355	98.5	80-120			
Copper	81.2	2.01	ng/m³ Air	21.124	60.5	98.3	80-120			
Lead	11.7	0.163	ng/m³ Air	10.562	1.24	99.1	80-120			
Manganese	17.9	1.44	ng/m³ Air	6.3372	11.6	98.7	80-120			
Molybdenum	2.68	0.274	ng/m³ Air	1.0562	1.66	95.7	80-120			
Nickel	3.48	0.498	ng/m³ Air	2.1124	1.45	96.1	80-120			
Selenium	2.26	0.00684	ng/m³ Air	2.1124	0.190	98.0	80-120			
Thallium	0.104	4.50E-4	ng/m³ Air	0.10562	0.00119	97.4	80-120			QB-01
Vanadium	3.41	0.0404	ng/m³ Air	2.1124	1.40	95.3	80-120			
Zinc	88.8	58.7	ng/m³ Air	63.372	ND	140	80-120			
Matrix Spike Dup (B4C2609-MSD1) Source: 4032536-15 Prepared: 03/26/24 Analyzed: 03/27/24										
Antimony	0.795	0.0305	ng/m³ Air	1.0911	0.0997	63.8	80-120	2.30	20	SL
Arsenic	2.50	0.00739	ng/m³ Air	2.1822	0.423	95.0	80-120	1.29	20	
Barium	26.0	0.844	ng/m³ Air	21.822	3.86	101	80-120	1.71	20	QB-01
Beryllium	1.08	0.00252	ng/m³ Air	1.0911	0.00503	98.3	80-120	1.31	20	
Cadmium	1.10	0.0585	ng/m³ Air	1.0911	ND	101	80-120	3.24	20	
Chromium	12.8	1.74	ng/m³ Air	10.911	ND	117	80-120	2.44	20	
Cobalt	1.26	0.0344	ng/m³ Air	1.0911	0.198	97.6	80-120	1.85	20	
Copper	50.4	2.08	ng/m³ Air	21.822	30.5	91.2	80-120	4.69	20	
Lead	11.7	0.169	ng/m³ Air	10.911	1.05	97.8	80-120	2.18	20	
Manganese	12.4	1.49	ng/m³ Air	6.5467	6.01	97.3	80-120	3.55	20	
Molybdenum	2.09	0.283	ng/m³ Air	1.0911	1.02	98.0	80-120	0.0614	20	
Nickel	2.75	0.514	ng/m³ Air	2.1822	0.659	95.7	80-120	3.99	20	
Selenium	2.24	0.00707	ng/m³ Air	2.1822	0.102	97.9	80-120	0.165	20	
Thallium	0.107	4.65E-4	ng/m³ Air	0.10911	0.00104	97.0	80-120	2.44	20	QB-01, QB-04
Vanadium	2.70	0.0417	ng/m³ Air	2.1822	0.566	97.7	80-120	1.69	20	
Zinc	93.7	60.6	ng/m³ Air	65.467	ND	143	80-120	1.08	20	
Matrix Spike Dup (B4C2609-MSD2) Source: 4032536-02 Prepared: 03/26/24 Analyzed: 03/27/24										
Antimony	0.784	0.0295	ng/m³ Air	1.0562	0.179	57.3	80-120	0.917	20	SL

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4C2609 - ICP-MS Extraction										
Matrix Spike Dup (B4C2609-MSD2) Conti			**Source: 4032536-02**			Prepared: 03/26/24		Analyzed: 03/27/24		
Arsenic	2.53	0.00716	ng/m³ Air	2.1124	0.526	94.6	80-120	0.487	20	
Barium	26.2	0.817	ng/m³ Air	21.124	4.50	103	80-120	0.164	20	QB-01
Beryllium	1.04	0.00244	ng/m³ Air	1.0562	0.0119	97.0	80-120	1.40	20	
Cadmium	1.06	0.0566	ng/m³ Air	1.0562	ND	101	80-120	0.894	20	
Chromium	12.8	1.69	ng/m³ Air	10.562	1.90	103	80-120	0.164	20	
Cobalt	1.40	0.0333	ng/m³ Air	1.0562	0.355	99.0	80-120	0.408	20	
Copper	85.5	2.01	ng/m³ Air	21.124	60.5	119	80-120	5.13	20	
Lead	11.7	0.163	ng/m³ Air	10.562	1.24	99.2	80-120	0.0263	20	
Manganese	17.7	1.44	ng/m³ Air	6.3372	11.6	95.8	80-120	1.05	20	
Molybdenum	2.80	0.274	ng/m³ Air	1.0562	1.66	107	80-120	4.39	20	
Nickel	3.52	0.498	ng/m³ Air	2.1124	1.45	97.9	80-120	1.07	20	
Selenium	2.25	0.00684	ng/m³ Air	2.1124	0.190	97.6	80-120	0.372	20	
Thallium	0.105	4.50E-4	ng/m³ Air	0.10562	0.00119	97.9	80-120	0.571	20	QB-01
Vanadium	3.41	0.0404	ng/m³ Air	2.1124	1.40	95.1	80-120	0.135	20	
Zinc	88.8	58.7	ng/m³ Air	63.372	ND	140	80-120	0.0262	20	
Post Spike (B4C2609-PS1)			**Source: 4032536-15**			Prepared: 03/26/24		Analyzed: 03/27/24		
Antimony	0.309	0.0305	ng/m³ Air	0.21822	0.0997	95.8	75-125			SL
Arsenic	1.47	0.00739	ng/m³ Air	1.0911	0.423	95.9	75-125			
Barium	6.08	0.844	ng/m³ Air	2.1822	3.86	101	75-125			QB-01
Beryllium	0.215	0.00252	ng/m³ Air	0.21822	0.00503	96.0	75-125			
Cadmium	0.145	0.0585	ng/m³ Air	0.10911	ND	133	75-125			
Chromium	2.77	1.74	ng/m³ Air	1.0911	ND	254	75-125			
Cobalt	0.410	0.0344	ng/m³ Air	0.21822	0.198	96.9	75-125			
Copper	42.3	2.08	ng/m³ Air	10.911	30.5	109	75-125			
Lead	22.2	0.169	ng/m³ Air	21.822	1.05	96.7	75-125			
Manganese	8.18	1.49	ng/m³ Air	2.1822	6.01	99.4	75-125			
Molybdenum	2.08	0.283	ng/m³ Air	1.0911	1.02	97.6	75-125			
Nickel	2.78	0.514	ng/m³ Air	2.1822	0.659	97.1	75-125			
Selenium	1.16	0.00707	ng/m³ Air	1.0911	0.102	96.9	75-125			
Thallium	0.0552	4.65E-4	ng/m³ Air	5.4556E-2	0.00104	99.3	75-125			QB-01, QB-04
Vanadium	1.63	0.0417	ng/m³ Air	1.0911	0.566	97.3	75-125			
Zinc	ND	60.6	ng/m³ Air	21.822	ND		75-125			U
Post Spike (B4C2609-PS2)			**Source: 4032536-02**			Prepared: 03/26/24		Analyzed: 03/27/24		
Antimony	0.378	0.0295	ng/m³ Air	0.21124	0.179	94.4	75-125			SL
Arsenic	1.53	0.00716	ng/m³ Air	1.0562	0.526	94.7	75-125			
Barium	6.54	0.817	ng/m³ Air	2.1124	4.50	96.6	75-125			QB-01
Beryllium	0.225	0.00244	ng/m³ Air	0.21124	0.0119	101	75-125			
Cadmium	0.120	0.0566	ng/m³ Air	0.10562	ND	113	75-125			

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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 B4C2609 - ICP-MS Extraction										
Post Spike (B4C2609-PS2) Continued		**Source: 4032536-02**		Prepared: 03/26/24 Analyzed: 03/27/24						
Chromium	2.90	1.69	ng/m³ Air	1.0562	1.90	95.0	75-125			
Cobalt	0.561	0.0333	ng/m³ Air	0.21124	0.355	97.5	75-125			
Copper	69.7	2.01	ng/m³ Air	10.562	60.5	87.5	75-125			
Lead	21.7	0.163	ng/m³ Air	21.124	1.24	97.0	75-125			
Manganese	13.5	1.44	ng/m³ Air	2.1124	11.6	87.8	75-125			
Molybdenum	2.66	0.274	ng/m³ Air	1.0562	1.66	94.6	75-125			
Nickel	3.50	0.498	ng/m³ Air	2.1124	1.45	97.3	75-125			
Selenium	1.19	0.00684	ng/m³ Air	1.0562	0.190	94.6	75-125			
Thallium	0.0535	4.50E-4	ng/m³ Air	5.2810E-2	0.00119	99.0	75-125			QB-01
Vanadium	2.34	0.0404	ng/m³ Air	1.0562	1.40	89.0	75-125			
Zinc	ND	58.7	ng/m³ Air	21.124	ND		75-125			U
Dilution Check (B4C2609-SRL1)		**Source: 4032536-15**		Prepared: 03/26/24 Analyzed: 03/27/24						
Antimony	ND	0.152	ng/m³ Air		ND				10	SL, U
Arsenic	0.431	0.0370	ng/m³ Air		0.423			1.99	10	
Barium	ND	4.22	ng/m³ Air		ND				10	QB-01, U
Beryllium	ND	0.0126	ng/m³ Air		ND				10	U
Cadmium	ND	0.292	ng/m³ Air		ND				10	U
Chromium	ND	8.72	ng/m³ Air		ND				10	U
Cobalt	0.198	0.172	ng/m³ Air		0.198			0.0245	10	
Copper	30.7	10.4	ng/m³ Air		30.5			0.786	10	
Lead	1.04	0.844	ng/m³ Air		1.05			1.02	10	
Manganese	ND	7.46	ng/m³ Air		ND				10	U
Molybdenum	ND	1.42	ng/m³ Air		ND				10	U
Nickel	ND	2.57	ng/m³ Air		ND				10	U
Selenium	0.108	0.0353	ng/m³ Air		0.102			5.05	10	
Thallium	ND	0.00232	ng/m³ Air		ND				10	QB-01, QB-04 U
Vanadium	0.584	0.209	ng/m³ Air		0.566			3.09	10	
Zinc	ND	303	ng/m³ Air		ND				10	U
Dilution Check (B4C2609-SRL2)		**Source: 4032536-02**		Prepared: 03/26/24 Analyzed: 03/27/24						
Antimony	0.179	0.147	ng/m³ Air		0.179			0.205	10	SL
Arsenic	0.545	0.0358	ng/m³ Air		0.526			3.49	10	
Barium	4.55	4.09	ng/m³ Air		4.50			1.18	10	QB-01
Beryllium	ND	0.0122	ng/m³ Air		ND				10	U
Cadmium	ND	0.283	ng/m³ Air		ND				10	U
Chromium	ND	8.44	ng/m³ Air		ND				10	U
Cobalt	0.366	0.166	ng/m³ Air		0.355			2.93	10	
Copper	63.0	10.0	ng/m³ Air		60.5			4.13	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 B4C2609 - ICP-MS Extraction										
Dilution Check (B4C2609-SRL2) Continue Source: 4032536-02 Prepared: 03/26/24 Analyzed: 03/27/24										
Lead	1.22	0.817	ng/m³ Air		1.24			1.27	10	
Manganese	11.9	7.22	ng/m³ Air		11.6			2.09	10	
Molybdenum	1.70	1.37	ng/m³ Air		1.66			2.06	10	
Nickel	ND	2.49	ng/m³ Air		ND				10	U
Selenium	0.216	0.0342	ng/m³ Air		0.190			12.8	10	SRD-01
Thallium	0.00236	0.00225	ng/m³ Air		ND			65.6	10	QB-01
Vanadium	1.40	0.202	ng/m³ Air		1.40			0.0847	10	
Zinc	ND	293	ng/m³ Air		ND				10	U

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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.
QB-04	Analyte exceeds continuing calibration blank criteria
QB-01	Analyte exceeds method blank criteria
FB-01	Analyte exceeds Field Blank criteria.
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

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

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 4/3/2024 and Shanna Vasser 4/3/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 3/14/2024 – 3/20/2024
Report No: 4032536

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

Discrepancies:

13. Field blank detections above the method detection limit were reported for arsenic, barium, copper, and lead in MFL-FB01-031824-HM, and for arsenic in MFL-FB01-031624-HM and MFL-FB01-032024-HM.

Notes:

2. The laboratory noted that MFL-AM01-031424-HM, MFL-AM01-031824-HM, and MFL-AM04-031924-HM were nonhomogeneous samples.