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

August 22 through August 28, 2024
[Report Updated: October 18, 2024]

Tetra Tech, Inc. (Tetra Tech) prepared a Community Air Monitoring and Sampling Plan (CAMSP) to address the evaluation and documentation of air quality and inhalation exposure risks during debris removal operations performed in response to the 2023 Maui Wildfires.

At the request of the State of Hawaii Department of Health, Clean Air Branch (HDOH), two air monitoring and sampling stations were moved to better encompass the active work area. To accommodate a change in removal activities from residential to commercial, and to close any gaps in sampling between the previous stations, HDOH presented two additional locations. The monitoring and sampling stations previously located at Leialii Hawaiian Homelands (AM-01) was relocated August 23 to Opukea Townhomes (AM-05). The station previously located at Lahaina Boys & Girls Club (AM-04) was relocated on August 24 to Lahaina Skate Park (AM-06). Particulate monitoring and air sampling occurred from August 22 through August 28, 2024, on the dates and at the community locations listed below and shown on **Figure 1**:

Community Location	Location ID	Dates
Leialii Hawaiian Homelands	AM-01	8/22/2024-8/23/2024
WW Pump Station #4	AM-02	8/22/2024-8/28/2024
Lahaina Intermediate School	AM-03	8/22/2024-8/28/2024
Lahaina Boys & Girls Club	AM-04	8/22/2024-8/24/2024
Opukea Townhomes	AM-05	8/23/2024-8/28/2024
Lahaina Skate Park	AM-06	8/24/2024-8/28/2024

The CAMSP addressed ambient community air monitoring and sampling that would be performed to assess conditions and determine whether debris removal activities, (managed by the U.S. Army Corps of Engineers (USACE), and private contractors) significantly impacted air quality in Lahaina. Data collected was made available to HDOH through an online shared site and by the information presented in weekly reports. Air monitoring and sampling as prescribed in the CAMSP will continue until debris removal activities are complete or until HDOH advises otherwise.

Real-time air quality monitoring for particulate matter was collected at each community location over a 24-hour period each day in accordance with the CAMSP. Ambient air monitoring was performed to assess the presence of airborne particulates with a particle size diameter of 10 micrometers (µm), which is the size that is recognized as being small enough to be inhaled into a person's lungs. This particle size diameter is recognized for health evaluations and is identified as "PM_{10}". Monitoring for PM_{10} was conducted 24 hours a day, 7 days a week from August 22 through August 28 at the community locations and dates listed above. Ambient air monitoring results were compared to the National Ambient Air Quality Standard (NAAQS) for PM_{10}, 24-hour time-weighted average of 150 micrograms per cubic meter (µg/m^3), which was selected as the screening level for this activity.

This weekly report does not address air quality monitoring results for fine particulate matter (particle size diameter of 2.5 µm or less [$PM_{2.5}$]). This was not necessary because the Department of Health/U.S. Environmental Protection Agency (EPA) monitors for this parameter at six locations in Lahaina, and the results from that monitoring are accessible at https://fire.airnow.gov/.

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

Air Monitoring Results

In addition to the air sampling activities, real-time PM_{10} concentrations were collected at each of the six monitoring locations throughout this reporting period. Monitoring was conducted for 24 hours a day at each station with the exceptions of periods when sampling locations were relocated, and during instances of equipment faults, as described below:

- On August 23, the air monitoring and sampling station located at Leialii Hawaiian Homelands (Location ID AM-01) was relocated to Opukea Townhomes (Location ID AM-05). As a result of the time needed for station teardown and set up, only 10 hours of monitoring was conducted at Leialii Hawaiian Homelands and 12 hours of monitoring was conducted at Opukea Townhomes on August 23.
- On August 24, the air monitoring and sampling station located at Lahaina Boys & Girls Club (Location ID AM-04) was relocated to Lahaina Skate Park (Location ID AM-06). As a result of the time needed for station teardown and set up, only 8 hours of monitoring was conducted at Lahaina Boys & Girls Club and 14 hours of monitoring at Lahaina Skate Park on August 24.
- Because of equipment faults, air monitoring periods were interrupted as described below:
    - On August 24, air monitoring was conducted at WW Pump Station #4 for 21 hours
    - On August 25, air monitoring was conducted at WW Pump Station #4 for 23 hours.
    - On August 25, air monitoring was conducted at Opukea Townhomes for 23 hours.
    - On August 27, air monitoring was conducted at Lahaina Skate Park for 21 hours.

The equipment fault code at Opukea Townhomes, WW Pump Station #4, and Lahaina Skate Park were the result of a disruption during the one-hour sampling interval within the 24-hour sampling period. This disruption causes the run to not have gone long enough to have a calculated value available for that hour.

The PM_{10} monitoring results were found to have exceeded the screening level at Lahaina Skate Park on August 24 through August 28 and at Lahaina Intermediate School on August 25 as shown in **Table 1**.

The air monitoring and sampling station at Lahaina Skate Park was deployed on August 24, with the station located approximately 55 feet east of the highway. Tetra Tech observed county crews working approximately 300 yards north of the monitoring station at the aquatic center. Tetra Tech observed county crews conducting activities including breaking up concrete and working in the pool area. The county workers were observed applying water as a dust suppression although dust was still visibly observed originating from the site. Elevated particulate readings occurred during the 19:00 through 20:00 time blocks. Field observations are not available because the timeframe of these readings was outside of normal working hours. It is unlikely that the readings were related to USACE operations or county crew activities because debris removal operations were not being conducted at those times. Exceedances could have been attributable to the proximity to the nearby highway.

On August 25 at the Lahaina Skate Park, consistent elevated readings occurred throughout the day in the early morning and late-night hours. No USACE debris crews were observed working in the area on August 25. Increased winds from Hurricane Hone were observed on August 25, creating a dust plume originating from the work area at the aquatic center. Elevated particulate readings occurred during the 02:00 through 05:00, 07:00, 15:00 through 16:00 and 20:00 through 23:00 time blocks. Field observations are not available because the timeframe of these readings was outside of normal working hours. It is unlikely that the readings were related to USACE operations or county crew activities

because debris removal operations were not being conducted at those times. The exceedance could have been attributed to the increased winds caused by Hurricane Hone.

Winds at Lahaina Intermediate School on August 25 averaged about 1.5 miles per hour (mph) with gusts reaching 8.5 mph throughout the day as Hurricane Hone passed through the south of Maui. USACE operations did not contribute to elevated PM_{10} concentrations as no debris crews were working and visible dust was not observed in the area during this time. The exceedance is most likely attributed to the increased winds caused by Hurricane Hone.

On August 26 at Lahaina Skate Park, elevated particulate readings occurred during the 06:00 through 07:00, 13:00, and 19:00 through 22:00 time blocks. With the exception of the 13:00 time blocks, field observations are not available because the timeframe of these readings was outside of normal working hours. No activities were observed near the station during the station check at 13:20. It is unlikely that the readings were related to USACE operations or county crew activities because debris removal operations were not being conducted at those times. No USACE debris crews were observed working in the area on August 26. Exceedances could have been attributable to the proximity to the nearby highway.

On August 27 at Lahaina Skate Park, elevated particulate readings occurred during the 12:00 through 13:00 and 18:00 through 23:00 time blocks. With the exception of the 12:00 and 13:00 time blocks, field observations are not available because the timeframe of these readings was outside of normal working hours. No activities were observed near the station during the station check at 13:30. It is unlikely that the readings were related to USACE operations or county crew activities because debris removal operations were not being conducted at those times. No USACE debris crews were observed working in the area on August 27. Exceedances could have been attributable to the proximity to the nearby highway.

On August 28 at the Lahaina Skate Park, Tetra Tech observed a county crew conducting activities near the monitoring station including breaking up concrete at the aquatic center. Visible dust was observed originating from the county crew activities with no dust suppression methods being used. Elevated particulate readings occurred during the 00:00, 02:00 through 03:00, 5:00 through 08:00 and 19:00 through 23:00 time blocks. With the exception of the 07:00 and 08:00 time blocks, field observations are not available because the timeframe of these readings was outside of normal working hours. No activities were observed near the station during the station check at 07:30. It is unlikely that the readings were related to USACE operations or county crew activities because debris removal operations were not being conducted at those times. Exceedances could have been attributable to the proximity to the nearby highway.

Air Sampling Results

A total of 28 samples for asbestos fibers were collected during this reporting period. All analytical results were below the SSAL of 0.003 structures per cubic centimeter (s/cc) and below the laboratory's analytical sensitivity (see **Table 2**).

The heavy metal sample collected on August 25, 2024 from Opukea Townhomes showed an exceedance of manganese with a concentration of 0.165 $\mu g/m^3$ (as compared to the SSAL of 0.12 $\mu g/m^3$) and an exceedance of nickel with a concentration of 0.0253 $\mu g/m^3$ (SSAL 0.02 $\mu g/m^3$). These results were obtained from a single sample that was collected over an approximate 24-hour sampling period between August 24 and August 25, 2024. On these dates, Hurricane Hone was approaching the area to the south of Maui. The average windspeed at this location during the sampling period was 2.4 mph with gusts up to 12.3 mph, and generally originating from a southeast direction.

USACE debris crews were observed working throughout the burn zone on August 24, however no debris crews were within sight of Opukea Townhomes. Field teams observed visible dust all around Lahaina

during that day as a result of increased winds from the approaching hurricane. On August 25, Hurricane Hone was passing south of Maui. No debris crews were observed working on this day. Weather conditions were windy and rainy on that day, and field crews did not record any observations of visible dust. General environmental factors which may have caused or contributed to the manganese exceedance include use of fuel additives or paints, the application of pesticides or fertilizers, or operations that may have been performed by others such as grinding/cutting metal construction materials. General contributing factors which may have caused or contributed to the nickel exceedance include grinding/cutting any metal construction materials, use of fertilizers, burning of waste, and tobacco smoke.

The heavy metal sample collected on August 25, 2024, from WW Pump Station #4 showed an exceedance of manganese with a concentration of 0.123 $\mu g/m^3$ (above the SSAL of 0.12 $\mu g/m^3$). This sample was collected over an approximate 24-hour sampling period between August 24 and August 25, 2024. As previously discussed, Hurricane Hone was approaching the area to the south of Maui. The average windspeed at this location during the sampling period was 2.3 mph with gusts up to 7.5 mph, and generally originating from a south-southeast direction. USACE debris crews were observed working throughout the burn zone on August 24, however no debris crews were within sight of WW Pump Station #4. Field teams observed visible dust all around Lahaina during the day as a result of increased winds from the approaching hurricane. On August 25, Hurricane Hone was passing south of Maui. No debris crews were observed working on this day. Weather conditions were windy and rainy on that day, and field crews did not record any observations of visible dust.

The heavy metal sample collected on August 23, 2024, from WW Pump Station #4 was voided due to equipment pump malfunction resulting in insufficient sample duration and sample volume.

The monitoring stations located at Opukea Townhomes and WW Pumps Station #4 are located north of the burn zone. Given their location relative to the burn zone and the southerly originating winds from Hurricane Hone, these stations were likely more impacted than the stations located at Lahaina Skate Park and Lahaina intermediate School. Based on the increased winds caused by Hurricane Hone and field observations indicating no debris crews working within sight of the community monitoring stations on August 24 and August 25, it is likely that the nickel and manganese exceedances were not attributable to active USACE debris removal activities. For all other heavy metals, low levels, below the respective SSALs, were detected in ambient air samples at all community sampling locations (see **Table 2**).

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

Meteorological Summary

Overall wind conditions during this weekly event averaged 1.3 miles per hour and were generally from a south-southeast direction. Hurricane Hone was approaching Maui on August 24, passed to the south of Maui on August 25 and had fully cleared Maui on the 26. As a result of the Hurricane, winds gusts reached up to 12.3 mph on August 25. Please note given the lack of sustained high winds the overall weekly average and the daily averages while Hurricane Hone was in the area August 24 through 26 remained relatively low. **Table 3** summarizes the collected meteorological data**.**

Quality Control Summary

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

Air monitoring was performed using Met One Instruments, Inc., environmental beta attenuation mass monitors (E-BAM) to allow comparison to NAAQS for particulates. E-BAMs are factory-calibrated annually and do not require daily calibrations. Leak checks and a flow audit were performed before each monitoring activity, in accordance with the manufacturer's procedures.

Asbestos sampling was performed using Casella Vortex 3 (or similar) air sampling pumps. Sampling flow rates were determined and documented by pre- and post-calibration of each sampling pump, using a primary calibration standard. Pump calibration and sampling were performed according to Tetra Tech SOPs 064-2 “Calibration of Air Sampling Pump” 073-3 “Air Quality Monitoring” and EPA Environmental Response Team (ERT) SOPs 2008 “General Air Monitoring and Sampling Guidelines” and 2015 “Asbestos Air Sampling," which were included in the CAMSP.

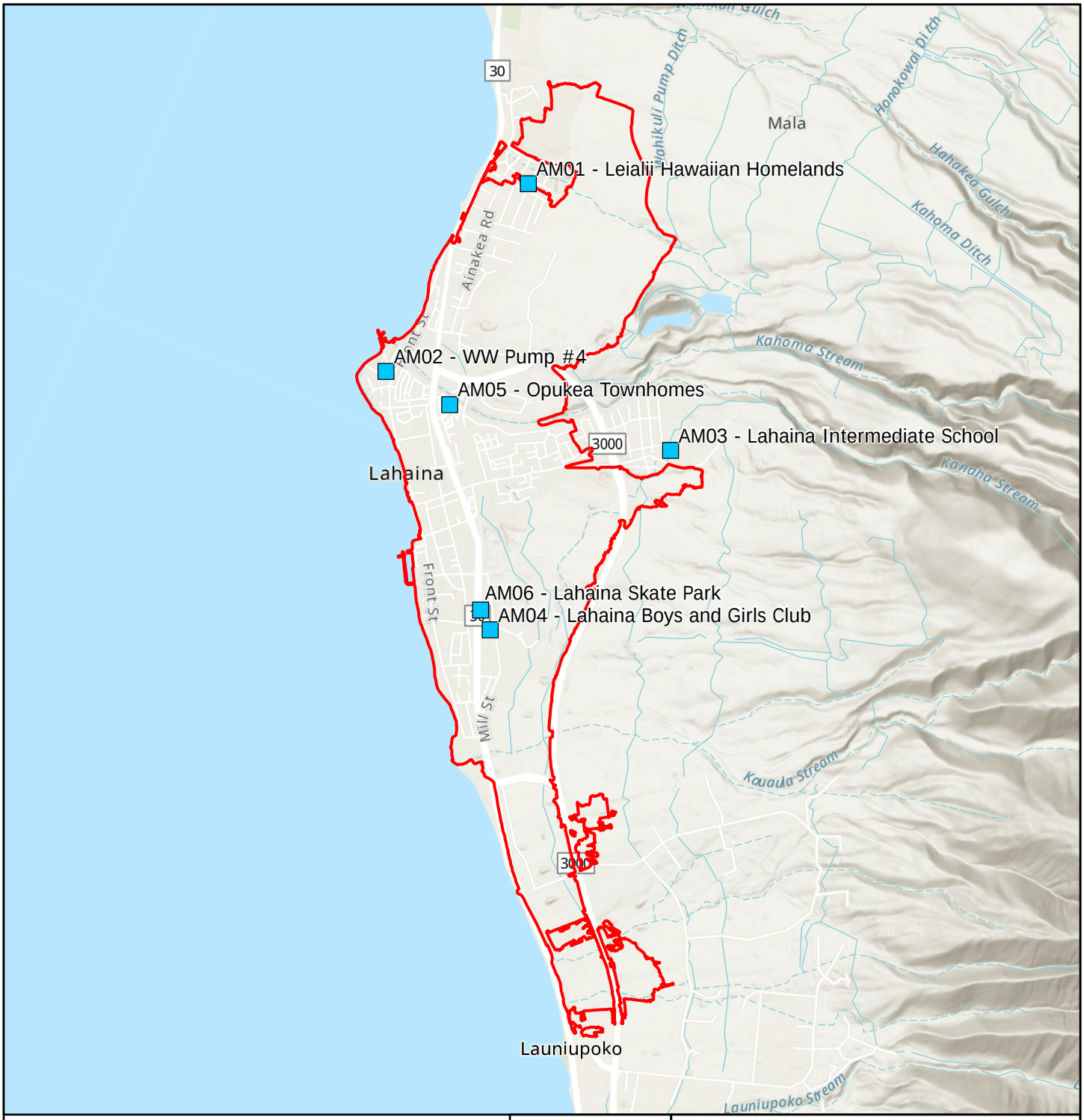
Sampling for metals occurred using Tisch Environmental High Volume Air Samplers (or equivalent) in accordance with the following methods:

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

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

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

Attachments



Air Sampling Locations

Lahaina Fire Perimeter

N

0 0.3 0.6
Miles

TETRA TECH

Figure 1
Air Sampling Locations

Hawaii DOH
2023 Lahaina Wildfire

Basemap: ESRI ArcGIS World Street Map

Table 1
State of Hawaii, Department of Health, Clean Air Branch
Particulate Monitoring Results for PM_{10}
Maui Wildfires, Lahaina
August 22 through August 28, 2024
[Report Updated: October 18, 2024]

Screening Level		TWA Results 150 ($\mu g/m^3$)
8/22/2024	Leialii Hawaiian Homelands (AM-01)	9.4
	WW Pump Station #4 (AM-02)	8.8
	Lahaina Intermediate School (AM-03)	7.2
	Lahaina Boys & Girls Club (AM-04)	19
8/23/2024	Leialii Hawaiian Homelands (AM-01)	4.4*
	WW Pump Station #4 (AM-02)	4.6
	Lahaina Intermediate School (AM-03)	7.3
	Lahaina Boys & Girls Club (AM-04)	13
	Opukea Townhomes (AM-05)	8.4*
8/24/2024	Opukea Townhomes (AM-05)	36
	WW Pump Station #4 (AM-02)	20***
	Lahaina Intermediate School (AM-03)	42
	Lahaina Boys & Girls Club (AM-04)	9.1**
	Lahaina Skate Park (AM-06)	243**
8/25/2024	Opukea Townhomes (AM-05)	8.3***
	WW Pump Station #4 (AM-02)	8.8***
	Lahaina Intermediate School (AM-03)	264
	Lahaina Skate Park (AM-06)	321
8/26/2024	Opukea Townhomes (AM-05)	7.7
	WW Pump Station #4 (AM-02)	9.1
	Lahaina Intermediate School (AM-03)	7.8
	Lahaina Skate Park (AM-06)	240
8/27/2024	Opukea Townhomes (AM-05)	8.9
	WW Pump Station #4 (AM-02)	9.7
	Lahaina Intermediate School (AM-03)	8.4
	Lahaina Skate Park (AM-06)	236***
8/28/2024	Opukea Townhomes (AM-05)	9.7
	WW Pump Station #4 (AM-02)	7.7
	Lahaina Intermediate School (AM-03)	8.4
	Lahaina Skate Park (AM-06)	220

Notes:

$\mu g/m^3$ = micrograms per cubic meter

TWA = 24 Hour Time-Weighted Average

TWA calculation results are shown in two significant figures

*Data provided for the Leialii Hawaiian Homelands and Opukea Townhomes locations were from reduced TWA calculations because the monitoring period was interrupted because the stations were relocated to a new site

**Data provided from Lahaina Boys & Girls Club and Lahaina Skate Park locations were from reduced TWA calculations because the monitoring period was interrupted because the stations were relocated to a new site

***Data provided were from a reduced TWA calculation because of an equipment fault code which resulted in the sample duration being less than one hour

Table 1
State of Hawaii, Department of Health, Clean Air Branch
Particulate Monitoring Results for PM_{10}
Maui Wildfires, Lahaina
August 22 through August 28, 2024
[Report Updated: October 18, 2024]

Shaded entries indicate TWA screening level exceedances

Table 2
State of Hawaii, Department of Health, Clean Air Branch
Asbestos and Metals Sampling Results
Maui Wildfires, Lahaina
August 22 through August 28, 2024
[Report Updated: October 18, 2024]

Analyte		Asbestos	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Thallium	Vanadium	Zinc
Units*		s/cc	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	µg/m³
Site Screening Action Level		0.003 [1]	0.7	0.05	1.2	0.05	0.02	12	0.01	240	1.5	0.12	4.8	0.02	48	24	0.24	1200
8/22/2024	Leialii Hawaiian Homelands (AM-01)	<0.0024	0.0000501	0.000774	0.00790	0.0000369	ND	0.00591	0.00140	0.278	0.000695	0.0429	0.0107	0.00307	0.000297	0.00000229	0.00461	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000128	0.000641	0.00846	0.0000289	0.000139	0.00444	0.00114	0.163	0.00409	0.0330	0.00266	0.00244	0.000294	0.00000189	0.00362	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000421	0.000229	0.00295	0.0000276	ND	0.00273	0.000460	0.0355	0.000357	0.0119	0.00248	0.00117	0.000161	0.000000825	0.00125	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000678	0.000184	0.00499	0.00000980	ND	0.00234	0.000336	0.0285	0.000310	0.0104	0.00152	0.00106	0.000149	0.000000660	0.00101	ND
8/23/2024	Leialii Hawaiian Homelands (AM-01)	<0.0027	0.000101	0.00192	0.00879	0.0000291	ND	0.00652	0.00130	0.269	0.000556	0.0326	0.00874	0.00324	0.000252	0.00000176	0.00376	ND
	WW Pump Station #4 (AM-02)	<0.0024																
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000524	0.000220	0.00379	0.0000269	ND	0.00366	0.000570	0.0498	0.000433	0.0142	0.00315	0.00159	0.000180	0.000000921	0.00149	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0024	0.0000619	0.000263	0.00376	0.0000130	ND	0.00366	0.000464	0.0252	0.000452	0.0126	0.00164	0.00136	0.000175	0.000000735	0.00123	ND
8/24/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000710	0.000561	0.00717	0.0000285	ND	0.00607	0.00141	0.0689	0.000866	0.0318	0.00247	0.00463	0.000260	0.00000181	0.00355	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000117	0.000601	0.00870	0.0000418	ND	0.00535	0.00115	0.0575	0.00205	0.0332	0.00318	0.00316	0.000280	0.00000207	0.00366	ND
	Lahaina Intermediate School (AM-03)	<0.0024	ND	0.000166	0.00252	0.0000162	ND	0.00289	0.000415	0.0413	0.000362	0.00971	0.00220	0.00131	0.000138	0.000000855	0.00105	ND
	Lahaina Boys & Girls Club (AM-04)	<0.0027	0.0001050	0.000160	0.00318	0.00000808	ND	0.00801	0.000324	0.0313	0.000439	0.00822	0.00225	0.00280	0.000172	0.00000124	0.000734	ND
8/25/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000782	0.00178	0.0308	0.000147	0.000301	0.0271	0.00775	0.0607	0.00237	**0.165**	0.00127	**0.0253**	0.000617	0.00000618	0.0195	ND
	WW Pump Station #4 (AM-02)	<0.0027	0.000181	0.00222	0.0307	0.000131	0.000244	0.0155	0.00409	0.0943	0.00987	**0.123**	0.00230	0.00952	0.000615	0.00000511	0.0139	0.0966
	Lahaina Intermediate School (AM-03)	<0.0027	ND	0.000241	0.00422	0.0000400	0.000129	0.00534	0.00107	0.0600	0.000417	0.0253	0.00315	0.00384	0.000208	0.00000151	0.00220	ND
	Lahaina Skate Park (AM-06)	<0.0027	0.000168	0.00112	0.0107	0.0000557	ND	0.0104	0.00224	0.0275	0.00292	0.0581	0.00141	0.00520	0.000328	0.00000284	0.00526	ND
8/26/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000644	0.000347	0.00370	0.00000399	ND	0.00226	0.000158	0.0640	0.000505	0.00355	0.00252	0.000756	0.000195	0.00000129	0.000400	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.0000792	0.000570	0.00425	0.00000532	ND	0.00199	0.000178	0.0454	0.000468	0.00510	0.00398	0.000664	0.000196	0.00000135	0.000580	ND
	Lahaina Intermediate School (AM-03)	<0.0030	ND	0.000138	0.00183	0.0000137	ND	0.00235	0.000203	0.0905	0.000199	0.00495	0.00380	0.00123	0.000171	0.00000129	0.000443	ND
	Lahaina Skate Park (AM-06)	<0.0024	0.000109	0.000261	0.00309	0.00000543	ND	0.00217	0.000165	0.0355	0.000535	0.00457	0.00189	0.000816	0.000153	0.00000127	0.000448	ND
8/27/2024	Opukea Townhomes (AM-05)	<0.0024	0.0000549	0.000221	0.00264	0.00000585	ND	0.00302	0.000235	0.0693	0.000468	0.00547	0.00204	0.00138	0.000203	0.00000762	0.000664	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000107	0.000316	0.00445	0.00000962	0.0000742	0.00236	0.000302	0.0389	0.000716	0.00870	0.00288	0.00111	0.000251	0.00000784	0.00102	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000339	0.000167	0.00235	0.0000166	ND	0.00243	0.000292	0.0756	0.000333	0.00678	0.00338	0.00103	0.000206	0.00000730	0.000843	ND
	Lahaina Skate Park (AM-06)	<0.0024	0.000106	0.000204	0.00947	0.00000671	ND	0.00276	0.000219	0.0371	0.000675	0.00567	0.00194	0.000991	0.000179	0.00000611	0.000762	ND
8/28/2024	Opukea Townhomes (AM-05)	<0.0024	0.000143	0.000578	0.00602	0.0000158	ND	0.00322	0.000558	0.0927	0.00116	0.0167	0.00271	0.00184	0.000249	0.00000565	0.00203	ND
	WW Pump Station #4 (AM-02)	<0.0024	0.000118	0.000329	0.00521	0.0000122	ND	0.00252	0.000441	0.0496	0.000930	0.0123	0.00401	0.00146	0.000247	0.00000513	0.00169	ND
	Lahaina Intermediate School (AM-03)	<0.0024	0.0000770	0.000312	0.00315	0.0000177	ND	0.00279	0.000415	0.0712	0.000367	0.00991	0.00252	0.00144	0.000162	0.00000365	0.00117	ND
	Lahaina Skate Park (AM-06)	<0.0024	0.000245	0.000325	0.00738	0.0000102	ND	0.00634	0.000455	0.0764	0.000918	0.0118	0.00228	0.00489	0.000204	0.00000458	0.00115	ND
95% Upper Confidence Limit[2]		NA	0.000120	0.000740	0.00907	0.0000420	0.000440	0.00662	0.00149	0.0938	0.00163	0.0391	0.00360	0.00423	0.000270	0.00000450	0.00427	NA

Notes:
[1] Asbestos result determined by transmission electron microscopy (TEM) in accordance with ISO Method 10312. PCMe results are presented.
[2] 95% UCL determined through 'best fit' lognormal or normal parametric statistics via W test
s/cc = structures per cubic centimeter
µg/m³ = micrograms per cubic meter
NA = Not Applicable
ND = Not detected at or above the laboratory reporting limit
* Laboratory data provided in nanograms per cubic meter, however data presented has been converted to micrograms per cubic meter so data was comparable to the Site Screening Action Levels presented in the CAMSP
HM Sample voided because of equipment malfunction
Screening Level exceedance

Table 3
State of Hawaii, Department of Health, Clean Air Branch
Averaged Meteorological Data
Maui Wildfires, Lahaina
August 22 through August 28, 2024
[Report Updated: October 18, 2024]

Date	Station ID	Weather Station Name	Wind Speed (mph)	Wind Direction (angle)	Temperature (°F)	Rel Humidity (%)	Baro Pressure (mBar)
8/22/2024	AM-01	Leialii Hawaiian Homelands	1.4	SSE	86	56	760.7
8/22/2024	AM-02	WW Pump Station #4	1.0	SSE	82	62	763.2
8/22/2024	AM-03	Lahaina Intermediate School	1.1	ESE	82	59	753.7
8/22/2024	AM-04	Lahaina Boys & Girls Club	1.2	SSW	81	62	762.7
8/23/2024	AM-01	Leialii Hawaiian Homelands	1.2	SE	83	67	760.0
8/23/2024	AM-02	WW Pump Station #4	0.8	S	83	65	762.0
8/23/2024	AM-03	Lahaina Intermediate School	1.2	SSE	83	63	752.5
8/23/2024	AM-04	Lahaina Boys & Girls Club	1.2	SW	83	65	761.5
8/23/2024	AM-05	Opukea Townhomes	1.3	SSE	88	60	760.8
8/24/2024	AM-02	WW Pump Station #4	1.9	SSE	82	70	761.0
8/24/2024	AM-03	Lahaina Intermediate School	2.5	S	82	67	751.5
8/24/2024	AM-04	Lahaina Boys & Girls Club	0.6	S	78	72	761.0
8/24/2024	AM-05	Opukea Townhomes	2.2	ESE	85	66	760.1
8/24/2024	AM-06	Lahaina Skate Park	3.6	SSE	85	66	760.2
8/25/2024	AM-02	WW Pump Station #4	1.3	S	80	76	760.5
8/25/2024	AM-03	Lahaina Intermediate School	1.5	S	81	72	751.0
8/25/2024	AM-05	Opukea Townhomes	1.1	SE	84	72	750.1
8/25/2024	AM-06	Lahaina Skate Park	1.8	SSW	80	75	760.2
8/26/2024	AM-02	WW Pump Station #4	1.1	SSE	81	68	762.1
8/26/2024	AM-03	Lahaina Intermediate School	1.1	ESE	82	63	752.5
8/26/2024	AM-05	Opukea Townhomes	1.2	SSE	84	65	761.2
8/26/2024	AM-06	Lahaina Skate Park	1.3	SSE	81	67	761.8
8/27/2024	AM-02	WW Pump Station #4	1.1	SSE	80	66	762.2
8/27/2024	AM-03	Lahaina Intermediate School	1.1	ESE	80	64	752.6
8/27/2024	AM-05	Opukea Townhomes	1.2	SSE	83	63	761.4
8/27/2024	AM-06	Lahaina Skate Park	1.2	SSE	79	67	762.0
8/28/2024	AM-02	WW Pump Station #4	0.9	S	81	71	762.1
8/28/2024	AM-03	Lahaina Intermediate School	1.0	SE	81	66	752.6
8/28/2024	AM-05	Opukea Townhomes	1.1	SSE	84	66	761.3
8/28/2024	AM-06	Lahaina Skate Park	1.1	S	81	70	761.9

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

Appendix 1

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

EMSL Order:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-082224-AB**	**Sample Description:**	**DL274989**
EMSL Sample Number:	042417968-0001	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7198.8
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0001 **Customer Sample:** MFL-AM01-082224-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					
A2	J4	None Detected									
A2	F7	None Detected									
A2	C8	None Detected									
A3	B5	None Detected									
A3	H8	None Detected									

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

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EMSL Order:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-082224-AB**		**Sample Description:**	**DL274904**
EMSL Sample Number:	042417968-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7129.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0002 **Customer Sample:** MFL-AM02-082224-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	B10	None Detected									
A5	E8	None Detected									
A5	H5	None Detected									
A6	I8	None Detected									
A6	C8	None Detected									

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

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

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-082224-AB**		**Sample Description:**	**DL274950**
EMSL Sample Number:	042417968-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7114.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0003 **Customer Sample:** MFL-AM03-082224-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	A3	None Detected									
B2	D5	None Detected									
B2	F7	None Detected									
B3	G6	None Detected									
B3	D4	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
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Project ID:	N/A

Attn: **Chelsea Saber**
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Phone:	(703) 489-2674
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Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-082224-AB**	**Sample Description:**	**DL275054**
EMSL Sample Number:	042417968-0004	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7048.9
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	3		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
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ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0004 **Customer Sample:** MFL-AM04-082224-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	A10	None Detected									
B5	C8	None Detected									
B5	G9	None Detected									
B6	I3	None Detected									
B6	D3	None Detected									

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

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Project: **Maui Fires - Lahaina**

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Fax:	N/A
Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-082224-AB**		**Sample Description:**	**DL274897**
EMSL Sample Number:	042417968-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0005 **Customer Sample:** MFL-FB01-082224-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	J2	None Detected									
C2	H3	None Detected									
C2	E7	None Detected									
C2	C7	None Detected									
C2	A5	None Detected									
C3	J2	None Detected									
C3	H4	None Detected									
C3	F4	None Detected									
C3	D5	None Detected									
C3	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:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

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Fax:	N/A
Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM01-082324-AB**		**Sample Description:**	**DL274958**
EMSL Sample Number:	042417968-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6875.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0006 **Customer Sample:** MFL-AM01-082324-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
D1	E1	None Detected									
D1	D6	None Detected									
D1	C9	None Detected									
D3	C6	None Detected									
D3	H7	None Detected									

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

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EMSL Order:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires - Lahaina**

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-082324-AB**	**Sample Description:**	**DL274953**
EMSL Sample Number:	042417968-0007	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7179.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0007 **Customer Sample:** MFL-AM02-082324-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	A6	None Detected									
D5	D3	None Detected									
D5	G5	None Detected									
D6	C6	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:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-082324-AB**		**Sample Description:**	**DL274895**
EMSL Sample Number:	042417968-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7221.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0008 **Customer Sample:** MFL-AM03-082324-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	I4	None Detected									
E2	F2	None Detected									
E2	D3	None Detected									
E3	B10	None Detected									
E3	I8	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:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-082324-AB**		**Sample Description:**	**DL274930**
EMSL Sample Number:	042417968-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7197.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0009 **Customer Sample:** MFL-AM04-082324-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	A2	None Detected									
E5	F8	None Detected									
E5	H10	None Detected									
E6	B6	None Detected									
E6	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:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

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Fax:	N/A
Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-FB01-082324-AB**		**Sample Description:**	**DL274942**
EMSL Sample Number:	042417968-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**N/A**		**Limit of Detection (Structures/cc):**	**N/A**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0010 **Customer Sample:** MFL-FB01-082324-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					
F3	J6	None Detected									
F3	H3	None Detected									
F3	F3	None Detected									
F3	D5	None Detected									
F3	B3	None Detected									
F4	J4	None Detected									
F4	H3	None Detected									
F4	F2	None Detected									
F4	D4	None Detected									
F4	B3	None Detected									

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

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-082424-AB**		**Sample Description:**	**DL275025**
EMSL Sample Number:	042417968-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7128.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0011 **Customer Sample:** MFL-AM05-082424-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	A7	None Detected									
F5	D4	None Detected									
F5	G7	None Detected									
F6	G2	None Detected									
F6	C6	None Detected									

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

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

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-082424-AB**		**Sample Description:**	**DL275077**
EMSL Sample Number:	042417968-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7198.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0012 **Customer Sample:** MFL-AM02-082424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
G1	B7	None Detected									
G1	D9	None Detected									
G1	G10	None Detected									
G2	H1	None Detected									
G2	A3	None Detected									

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

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-082424-AB**		**Sample Description:**	**DL274898**
EMSL Sample Number:	042417968-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7122.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0013 **Customer Sample:** MFL-AM03-082424-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	A7	None Detected									
G5	D9	None Detected									
G5	G8	None Detected									
G6	F2	None Detected									
G6	A5	None Detected									

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

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM04-082424-AB**		**Sample Description:**	**DL274967**
EMSL Sample Number:	042417968-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	5531.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	6
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 38.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 38.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 38.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 38.63**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 38.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 38.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 38.63**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 38.63	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 38.63**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0014 **Customer Sample:** MFL-AM04-082424-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
H1	G3	None Detected									
H1	E2	None Detected									
H1	B4	None Detected									
H2	B8	None Detected									
H2	E9	None Detected									
H2	G6	None Detected									

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

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EMSL Order:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-082424-AB** **Sample Description:** **DL274955**

EMSL Sample Number:	042417968-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0015 **Customer Sample:** MFL-FB01-082424-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	A4	None Detected									
H5	C4	None Detected									
H5	E2	None Detected									
H5	G4	None Detected									
H5	I5	None Detected									
H6	A5	None Detected									
H6	C6	None Detected									
H6	E9	None Detected									
H6	G5	None Detected									
H6	I6	None Detected									

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

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

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-082524-AB**	**Sample Description:**	**DL274944**
EMSL Sample Number:	042417968-0016	Sample Matrix:	Air
Magnification used for fiber counting:	20,000	Volume (L) :	7199.0
Aspect ratio for fiber definition:	3:1	Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5	Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A *(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD	Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX		
Estimated Particulate Loading on Filter %:	5		
Target Analytical Sensitivity (Structures/cc):	0.001		
Analytical Sensitivity (Structures/cc):	**0.0008**	**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0016 **Customer Sample:** MFL-AM05-082524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
I1	F8	None Detected									
I1	D6	None Detected									
I1	B4	None Detected									
I2	C8	None Detected									
I2	G6	None Detected									

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

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

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

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Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-082524-AB**		**Sample Description:**	**DL274954**
EMSL Sample Number:	042417968-0017		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7008.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

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EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0017 **Customer Sample:** MFL-AM02-082524-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	B6	None Detected									
I5	E8	None Detected									
I5	G6	None Detected									
I6	H4	None Detected									
I6	C2	None Detected									

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

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EMSL Order:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-082524-AB**		**Sample Description:**	**DL274962**
EMSL Sample Number:	042417968-0018		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6790.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

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Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0018 **Customer Sample:** MFL-AM03-082524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
J1	J5	None Detected									
J1	G3	None Detected									
J1	D5	None Detected									
J2	G7	None Detected									
J2	B5	None Detected									

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

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

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Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM06-082524-AB**		**Sample Description:**	**DL275032**
EMSL Sample Number:	042417968-0019		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	6790.3
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	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):	**0.0009**		**Limit of Detection (Structures/cc):**	**0.0027**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Actinolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Amosite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Anthophyllite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Crocidolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Tremolite	ADX	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**
Other Minerals	-	0	0	< 46.36	< 0.0027	Not Applicable	0.0027
Total All Structures (PCMe)	**-**	**0**	**0**	**< 46.36**	**< 0.0027**	**Not Applicable**	**0.0027**

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0019 **Customer Sample:** MFL-AM06-082524-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	A5	None Detected									
J5	D7	None Detected									
J5	H5	None Detected									
J6	D5	None Detected									
J6	A1	None Detected									

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

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

EMSL Order:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-082524-AB** **Sample Description: DL275113**

EMSL Sample Number:	042417968-0020		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0020 **Customer Sample:** MFL-FB01-082524-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K1	I1	None Detected									
K1	G1	None Detected									
K1	E5	None Detected									
K1	C1	None Detected									
K1	A2	None Detected									
K2	A7	None Detected									
K2	C9	None Detected									
K2	E8	None Detected									
K2	G10	None Detected									
K2	I8	None Detected									

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

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

EMSL Order:	042417968
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	08/28/2024 09:30 AM
Analysis Date:	09/03/2024
Report Date:	09/04/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

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

EMSL Sample Number:	042417968-0021		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment


Approved Signatory

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

EMSL Order ID: 042417968
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042417968-0021 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
K5	A7	None Detected									
K5	C7	None Detected									
K5	D9	None Detected									
K5	F10	None Detected									
K5	H8	None Detected									
K6	A5	None Detected									
K6	C8	None Detected									
K6	E7	None Detected									
K6	G10	None Detected									
K6	I7	None Detected									

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

OrderID: 042417968

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

EMSL Order Number / Lab Use Only

#042417968

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

RECEIVED EMSL CINNAMINSON, NJ 24 AUG 28 AM 10:22

Customer Information

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

Billing Information

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

Project Information

Project Name/No: MAUI FIRES - LAHAINA
Purchase Order: 1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: E. Karyen Saldaña
Sampled By Signature:
No. of Samples in Shipment

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

*Please call with your project-specific requirements.

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☒ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM01-082224-AB	DL274989	7,198.819	08/22/24 1102
MFL-AM02-082224-AB	DL274904	7,129.740	08/22/24 1118
MFL-AM03-082224-AB	DL274950	7,114.731	08/22/24 1300
MFL-AM04-082224-AB	DL275054	7,048.877	08/22/24 1319
MFL-FB01-082224-AB	DL274897	0	08/22/24 1200
MFL-AM01-082324-AB	DL274958	6,875.364	08/23/24 0946
MFL-AM02-082324-AB	DL274953	7,178.982	08/23/24 1134
MFL-AM03-082324-AB	DL274895	7,221.782	08/23/24 1307

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

All samples received acceptable for analysis.
Revised report sent 9/10/24 reflecting updated sample IDs.

20

Method of Shipment: FedEx
Sample Condition Upon Receipt:

Relinquished by: Date/Time: 08/26/24 1100
Received by: FedEx Date/Time: 8/28/24 9:30A

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

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

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

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

OrderID: 042417968

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042417968

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.)

* MFL-AM04-082424-AB had a shorter sample run time & lower volume collected. Contact Chelsea Suber before opening more grids.
** MFL-AM03/AM04-082524-AB SEE NOTE ABOVE

	Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
	MFL-AM04-082324-AB	DL274930	7,197.696	08/23/24 1322
	MFL-FB01-082324-AB	DL274942	0	08/23/24 1200
	MFL-AM01-082424-AB	DL275025	7,128.150	08/24/24 1105
	MFL-AM02-082424-AB	DL275077	7,198.077	08/24/24 1134
	MFL-AM03-082424-AB	DL274898	7,122.279	08/24/24 1258
*	MFL-AM04-082424-AB	DL274967	5,531.422	08/24/24 0807
	MFL-FB01-082424-AB	DL274955	0	08/24/24 1200
	MFL-AM01-082524-AB	DL274944	7,198.967	08/25/24 1102
	MFL-AM02-082524-AB	DL274954	7,008.702	08/25/24 1121
**	MFL-AM03-082524-AB	DL274962	6,790.810	08/25/24 1145
**	MFL-AM04-082524-AB	DL275032	6,790.272	08/25/24 1206
	MFL-FB01-082524-AB	DL275113	0	08/25/24 1200

RECEIVED
EMSL
CINNAMINSON, NJ
24 AUG 28 AM 10:22

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 08/26/24 1100	Received by: FedEx	Date/Time: 8/28/24 9:30A
Relinquished by:	Date/Time:	Received by:	Date/Time

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

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

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EMSL ANALYTICAL INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only: 042417968

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

Customer Information

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

Billing Information

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

Project Information

Project Name/No: MAUI FIRES - LAHAINA
Purchase Order: 1207085
EMSL LMS Project ID: (if applicable, EMSL will provide)
US State where samples collected: HI
State of Connecticut (CT) must select project location: ☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name: E. Karyn Saldana
Sampled By Signature:
No. of Samples in Shipment:

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

RECEIVED SEP 10 2024

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-AM01-082224-AB	DL274989	7,198.819	08/22/24 1102
MFL-AM02-082224-AB	DL274904	7,129.740	08/22/24 1118
MFL-AM03-082224-AB	DL274950	7,114.731	08/22/24 1300
MFL-AM04-082224-AB	DL275054	7,048.877	08/22/24 1319
MFL-FB01-082224-AB	DL274897	0	08/22/24 1200
MFL-AM01-082324-AB	DL274958	6,875.364	08/23/24 0946
MFL-AM02-082324-AB	DL274953	7,178.982	08/23/24 1134
MFL-AM03-082324-AB	DL274895	7,221.782	08/23/24 1307

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

* MFL-AM01-082424-AB new sample ID is MFL-AM05-082424-AB
MFL-AM01-082524-AB new sample ID is MFL-AM05-082524-AB
MFL-AM04-082524-AB new sample ID is MFL-AM06-082524-AB

Method of Shipment: FedEx
Sample Condition Upon Receipt:

Relinquished by: Date/Time: 08/26/24 1100
Received by: email Date/Time 9/10/24 11:42 AM
Relinquished by: Date/Time:
Received by: Date/Time

Controlled Document - COC-01 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.

Revised COC recv'd 9/10/24 for updated sample volumes

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

042417968

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

PHONE (800) 220-3675
EMAIL · CinnAblab@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.)

* MFL-AM04-082424-AB had a shorter sample run time & lower volume collected. Content Chelsea Salon before giving more guids.
** MFL-AM03/AM04-082524-AB SEE NOTE ABOVE

	Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
	MFL-AM04-082324-AB	DL274930	7,197.696	08/23/24 1322
	MFL-FB01-082324-AB	DL274942	0	08/23/24 1200
*	~~MFL-AM01-082424-AB~~ (VOID)	DL275025	7,128.150	08/24/24 1105
	MFL-AM02-082424-AB	DL275077	7,198.077	08/24/24 1134
	MFL-AM03-082424-AB	DL274898	7,122.279	08/24/24 1258
*	MFL-AM04-082424-AB	DL274967	5,531.422	08/24/24 0807
	MFL-FB01-082424-AB	DL274955	0	08/24/24 1200
**	~~MFL-AM01-082524-AB~~ (VOID)	DL274944	7,198.967	08/25/24 1102
	MFL-AM02-082524-AB	DL274954	7,008.702	08/25/24 1121
**	MFL-AM03-082524-AB	DL274962	6,790.810	08/25/24 1145
**	~~MFL-AM04-082524-AB~~ (VOID)	DL275032	6,790.272	08/25/24 1206
	MFL-FB01-082524-AB	DL275113	0	08/25/24 1200

RECEIVED SEP 10 2024

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 08/26/24 1100	Received by: email	Date/Time: 9/10/24 11:42 AM
Relinquished by:	Date/Time:	Received by:	Date/Time:

Controlled Document - COC-01 Asbestos R No 10/29/2021

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

Stage 1 Data Verification Checklist – Asbestos

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 09/04/2024 and Shanna Vasser 09/10/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 08/22/2024 – 08/25/2024
Report No: 42417968

√	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:

1. MFL-AM04-082424-AB, MFL-AM03-082524-AB, and MFL-AM04-082524-AB (original ID)/MFL-AM06-082524-AB (revised ID) had shorter sample run times and lower volumes collected.

2. The laboratory report was reissued on 09/10/2024 to update sample IDs to be consistent with the revised CoC as shown in the table below:

Original Sample ID	Revised Sample ID
MFL-AM01-082424-AB	MFL-AM05-082424-AB
MFL-AM01-082524-AB	MFL-AM05-082524-AB
MFL-AM04-082524-AB	MFL-AM06-082524-AB

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:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/06/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-082624-AB**		**Sample Description:**	**DL274940**
EMSL Sample Number:	042418282-0001		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7185.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0001 **Customer Sample:** MFL-AM05-082624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A5	A6	None Detected									
A5	G9	None Detected									
A5	J6	None Detected									
A6	A4	None Detected									
A6	H7	None Detected									

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

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EMSL Order:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/06/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-082624-AB**		**Sample Description:**	**DL275059**
EMSL Sample Number:	042418282-0002		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7226.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
Approved Signatory

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

EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0002 **Customer Sample:** MFL-AM02-082624-AB

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
B1	F4	None Detected									
B1	D2	None Detected									
B1	B5	None Detected									
B2	C3	None Detected									
B2	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:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/06/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-082624-AB** **Sample Description: DL275000**

EMSL Sample Number:	042418282-0003		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7619.4
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	4
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):	**0.0010**		**Limit of Detection (Structures/cc):**	**0.0030**

TOTAL STRUCTURES (All Sizes)

	Minimum ID Level	Structures Detected Primary	Structures Detected Total	Density (S/mm^2)	Concentration (S/cc)	95 % Confidence Interval (S/cc) Lower	Upper
Total Chrysotile	**CD**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole	**ADX**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures	**CD/ADX**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Total All Structures	**-**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**0.0030**

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

	Minimum ID Level	Fibers Detected Primary	Fibers Detected Total	Density (F/mm^2)	Concentration (F/cc)	95 % Confidence Interval (F/cc) Lower	Upper
Total Chrysotile (PCMe)	**CD**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**0.0030**
Total Amphibole (PCMe)	**ADX**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**0.0030**
Actinolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Amosite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Anthophyllite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Crocidolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Tremolite	ADX	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Total Asbestos Structures (PCMe)	**CD/ADX**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**0.0030**
Other Minerals	-	0	0	< 57.95	< 0.0030	Not Applicable	0.0030
Total All Structures (PCMe)	**-**	**0**	**0**	**< 57.95**	**< 0.0030**	**Not Applicable**	**0.0030**

Comment

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Approved Signatory

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0003 **Customer Sample:** MFL-AM03-082624-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	E3	None Detected									
B5	H6	None Detected									
B6	H4	None Detected									
B6	C4	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
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Phone:	(703) 489-2674
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Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM06-082624-AB**		**Sample Description:**	**DL275041**
EMSL Sample Number:	042418282-0004		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7229.7
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0004 **Customer Sample:** MFL-AM06-082624-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	J8	None Detected									
C2	H6	None Detected									
C2	C5	None Detected									
C3	B7	None Detected									
C3	F10	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-FB01-082624-AB** **Sample Description: DL274902**

EMSL Sample Number:	042418282-0005		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Approved Signatory

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

EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0005 **Customer Sample:** MFL-FB01-082624-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	A10	None Detected									
C5	C8	None Detected									
C5	E7	None Detected									
C5	G5	None Detected									
C5	I4	None Detected									
C6	J2	None Detected									
C6	H4	None Detected									
C6	F2	None Detected									
C6	D5	None Detected									
C6	B5	None Detected									

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

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EMSL Order:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/06/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM05-082724-AB**		**Sample Description:**	**DL274952**
EMSL Sample Number:	042418282-0006		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7233.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0006 **Customer Sample:** MFL-AM05-082724-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	J6	None Detected									
D2	H4	None Detected									
D2	C4	None Detected									
D3	A8	None Detected									
D3	H5	None Detected									

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

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EMSL Order:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Project: **Maui Fires - Lahaina**

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Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/06/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-082724-AB**		**Sample Description:**	**DL275118**
EMSL Sample Number:	042418282-0007		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7198.2
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID:	**042418282**
Client:	**Tetra Tech**
Project ID:	**Maui Fires - Lahaina**

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0007 **Customer Sample:** MFL-AM02-082724-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	J6	None Detected									
D5	G3	None Detected									
D5	C6	None Detected									
D6	I3	None Detected									
D6	C8	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:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/09/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM03-082724-AB**		**Sample Description:**	**DL274984**
EMSL Sample Number:	042418282-0008		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7195.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0008 **Customer Sample:** MFL-AM03-082724-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	J4	None Detected									
E2	G6	None Detected									
E2	D4	None Detected									
E3	H3	None Detected									
E3	B1	None Detected									

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

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EMSL Order:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/09/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM06-082724-AB**		**Sample Description:**	**DL274907**
EMSL Sample Number:	042418282-0009		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7083.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0009 **Customer Sample:** MFL-AM06-082724-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	C8	None Detected									
E5	F4	None Detected									
E5	I6	None Detected									
E6	D6	None Detected									
E6	G3	None Detected									

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

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EMSL Order:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

Attn: **Chelsea Saber**
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Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/09/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-082724-AB** **Sample Description: DL275014**

EMSL Sample Number:	042418282-0010		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Approved Signatory

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0010 **Customer Sample:** MFL-FB01-082724-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	J5	None Detected									
F2	H3	None Detected									
F2	F2	None Detected									
F2	D4	None Detected									
F2	B5	None Detected									
F3	J4	None Detected									
F3	H2	None Detected									
F3	F3	None Detected									
F3	D5	None Detected									
F3	B6	None Detected									

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

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EMSL Order:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/09/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM05-082824-AB** **Sample Description: DL275001**

EMSL Sample Number:	042418282-0011		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7245.6
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	5			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

Robyn Ray
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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0011 **Customer Sample:** MFL-AM05-082824-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	I6	None Detected									
F5	F4	None Detected									
F5	C5	None Detected									
F6	F3	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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Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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Analysis Date:	09/09/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM02-082824-AB**		**Sample Description:**	**DL274993**
EMSL Sample Number:	042418282-0012		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7205.1
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0012 **Customer Sample:** MFL-AM02-082824-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	H5	None Detected									
G2	E4	None Detected									
G2	B7	None Detected									
G3	B6	None Detected									
G3	I6	None Detected									

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

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Customer PO:	1207085
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Analysis Date:	09/09/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-AM03-082824-AB** **Sample Description: DL275104**

EMSL Sample Number:	042418282-0013		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7130.9
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0013 **Customer Sample:** MFL-AM03-082824-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	J5	None Detected									
G5	G2	None Detected									
G5	B3	None Detected									
G6	B8	None Detected									
G6	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:	042418282
Customer ID:	TTDC42
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Project ID:	N/A

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

Phone:	(703) 489-2674
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Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/09/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number:	**MFL-AM06-082824-AB**		**Sample Description:**	**DL274982**
EMSL Sample Number:	042418282-0014		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	7071.8
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	5
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	3			
Target Analytical Sensitivity (Structures/cc):	0.001			
Analytical Sensitivity (Structures/cc):	**0.0008**		**Limit of Detection (Structures/cc):**	**0.0024**

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment

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EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0014 **Customer Sample:** MFL-AM06-082824-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	B6	None Detected									
H2	E4	None Detected									
H2	H4	None Detected									
H3	B5	None Detected									
H3	H7	None Detected									

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

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

EMSL Order:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/09/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Customer Sample Number: **MFL-FB01-082824-AB** **Sample Description: DL275013**

EMSL Sample Number:	042418282-0015		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment


Approved Signatory

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

EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0015 **Customer Sample:** MFL-FB01-082824-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	J4	None Detected									
H5	H6	None Detected									
H5	F4	None Detected									
H5	D6	None Detected									
H5	B5	None Detected									
H6	J7	None Detected									
H6	H7	None Detected									
H6	F6	None Detected									
H6	D5	None Detected									
H6	B5	None Detected									

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

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

EMSL Order:	042418282
Customer ID:	TTDC42
Customer PO:	1207085
Project ID:	N/A

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

Project: **Maui Fires - Lahaina**

Phone:	(703) 489-2674
Fax:	N/A
Received Date:	09/03/2024 09:30 AM
Analysis Date:	09/06/2024
Report Date:	09/10/2024

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

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

EMSL Sample Number:	042418282-0016		Sample Matrix:	Air
Magnification used for fiber counting:	20,000		Volume (L) :	0.0
Aspect ratio for fiber definition:	3:1		Area of original collection filter (mm^2):	385
Minimum Length (µm):	≥ 0.5		Grid Opening Area (mm^2):	0.0129
Chi^2 Test for Random Distribution on Filter:	N/A	*(N/A)*	Grid Openings Analyzed:	10
Minimum Level of analysis (chrysotile):	CD		Analyst:	P. Harrison
Minimum Level of analysis (amphibole):	ADX			
Estimated Particulate Loading on Filter %:	1			
Target Analytical Sensitivity (Structures/cc):	0.001			

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

TOTAL STRUCTURES (All Sizes)

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

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

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

Comment


Approved Signatory

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

EMSL Order ID: 042418282
Client: Tetra Tech
Project ID: Maui Fires - Lahaina

ISO 10312 Determination of Asbestos Fibers
Direct Transfer Transmission Electron Microscopy

Analytical Bench Sheet Data

EMSL Sample ID: 042418282-0016 **Customer Sample:** Lab Blank

Grid ID	Grid Opening	Structure Type	Structure Number		Dimensions (µm)		Level of ID	Mineral Type	Additional Mineral ID	Image Number	Structure Comments
			Primary	Total	Length	Width					
A2	J9	None Detected									
A2	H2	None Detected									
A2	E1	None Detected									
A2	C3	None Detected									
A2	A8	None Detected									
A3	A10	None Detected									
A3	C7	None Detected									
A3	E8	None Detected									
A3	G10	None Detected									
A3	I7	None Detected									

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

OrderID: 042418282

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042418282

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

RECEIVED EPHS CINNAMINSON, N.J.
2024 SEP -3 A 10:23

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	Purchase Order:	1207085
EMSL LIMS Project ID: (If applicable, EMSL will provide)	US State where samples collected: HI	State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)
Sampled By Name:	E. Kargen Saldaña	Sampled By Signature: [signature]	No. of Samples in Shipment:

Turn-Around-Time (TAT)

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

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

Test Selection

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

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

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

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

Other Test (please specify)

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

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

Please call with your project-specific requirements.

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA)

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

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
MFL-AM05-082624-AB	DL274940	7,185.575	08/26/24 1101
MFL-AM02-082624-AB	DL ~~25~~275059 (EKS)	7,226.946	08/26/24 1123
MFL-AM03-082624-AB	DL275000	7,619.390	08/26/24 1302
MFL-AM06-082624-AB	DL275041	7,229.664	08/26/24 1209
MFL-FB01-082624-AB	DL274902	0	08/26/24 1200
MFL-AM05-082724-AB	DL274952	7,233.239	08/27/24 1059
MFL-AM02-082724-AB	DL275118	7,198.245	08/27/24 1113
MFL-AM03-082724-AB	DL274984	7,195.634	08/27/24 1303

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

All samples received acceptable for analysis.

Method of Shipment: FedEx		Sample Condition Upon Receipt: 15 [initials]	
Relinquished by: [signature]	Date/Time: 08/29/24 1100	Received by: Chelsea FX	Date/Time: 9/3/24 930
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: 042418282

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)

EMSL Order Number / Lab Use Only

#042418282

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-AM06-082724-AB	DL 274907	7,083.032	08/27/24 1326
MFL-FB01-082724-AB	DL 275014	0	08/27/24 1200
MFL-AM05-082824-AB	DL275001	7,245.592	08/28/24 1106
MFL-AM02-082824-AB	DL274993	7,205.059	08/28/24 1116
MFL-AM03-082824-AB	DL275104	7,130.946	08/28/24 1303
MFL-AM06-082824-AB	DL274982	7,071.790	08/28/24 1323
MFL-FB01-082824-AB	DL275013	0	08/28/24 1200

RECEIVED
EMSL
CINNAMINSON, N.J.
2024 SEP -3 A 10: 23

Method of Shipment: FedEx		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 08/29/24 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 09/10/2024 and Shanna Vasser 09/11/2024
Laboratory: EMSL Analytical, Inc. – North Cinnaminson, NJ
Collection date(s): 08/26/2024 – 08/28/2024
Report No: 42418282

√	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

September 10, 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 09/03/24 13:44.

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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

ANALYTICAL REPORT FOR SAMPLES

SampleName	LabNumber	Matrix	Sampled	Received
MFL-AM01-082224-HM	4090357-01	Air	08/22/24 23:59	09/03/24 13:44
MFL-AM02-082224-HM	4090357-02	Air	08/22/24 23:59	09/03/24 13:44
MFL-AM03-082224-HM	4090357-03	Air	08/22/24 23:59	09/03/24 13:44
MFL-AM04-082224-HM	4090357-04	Air	08/22/24 23:59	09/03/24 13:44
MFL-AM01-082324-HM	4090357-05	Air	08/23/24 23:59	09/03/24 13:44
MFL-AM03-082324-HM	4090357-06	Air	08/23/24 23:59	09/03/24 13:44
MFL-AM04-082324-HM	4090357-07	Air	08/23/24 23:59	09/03/24 13:44
MFL-FB01-082324-HM	4090357-08	Air	08/23/24 00:00	09/03/24 13:44
MFL-AM05-082424-HM	4090357-09	Air	08/24/24 23:59	09/03/24 13:44
MFL-AM02-082424-HM	4090357-10	Air	08/24/24 23:59	09/03/24 13:44
MFL-AM03-082424-HM	4090357-11	Air	08/24/24 23:59	09/03/24 13:44
MFL-AM04-082424-HM	4090357-12	Air	08/24/24 23:59	09/03/24 13:44
MFL-AM05-082524-HM	4090357-13	Air	08/25/24 23:59	09/03/24 13:44
MFL-AM02-082524-HM	4090357-14	Air	08/25/24 23:59	09/03/24 13:44
MFL-AM03-082524-HM	4090357-15	Air	08/25/24 23:59	09/03/24 13:44
MFL-AM06-082524-HM	4090357-16	Air	08/25/24 23:59	09/03/24 13:44
MFL-FB01-082524-HM	4090357-17	Air	08/25/24 00:00	09/03/24 13:44
MFL-AM05-082624-HM	4090357-18	Air	08/26/24 23:59	09/03/24 13:44
MFL-AM02-082624-HM	4090357-19	Air	08/26/24 23:59	09/03/24 13:44
MFL-AM03-082624-HM	4090357-20	Air	08/26/24 23:59	09/03/24 13:44
MFL-AM06-082624-HM	4090357-21	Air	08/26/24 23:59	09/03/24 13:44

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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

MFL-AM05-082724-HM	4090357-22	Air	08/27/24 23:59	09/03/24 13:44
MFL-AM02-082724-HM	4090357-23	Air	08/27/24 23:59	09/03/24 13:44
MFL-AM03-082724-HM	4090357-24	Air	08/27/24 23:59	09/03/24 13:44
MFL-AM06-082724-HM	4090357-25	Air	08/27/24 23:59	09/03/24 13:44
MFL-FB01-082724-HM	4090357-26	Air	08/27/24 00:00	09/03/24 13:44
MFL-AM05-082824-HM	4090357-27	Air	08/28/24 23:59	09/03/24 13:44
MFL-AM02-082824-HM	4090357-28	Air	08/28/24 23:59	09/03/24 13:44
MFL-AM03-082824-HM	4090357-29	Air	08/28/24 23:59	09/03/24 13:44
MFL-AM06-082824-HM	4090357-30	Air	08/28/24 23:59	09/03/24 13:44
MFL-LB01-082324-HM	4090357-31	Air	08/23/24 00:00	09/03/24 13:44

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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-082224-HM
Matrix: Air
Lab ID: 4090357-01
Sample Volume: 1933.681 m³
Filter ID:
Sampled: 08/22/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 04:13

Comments: Q9553126 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0501**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.774**		**0.00788**
Barium	**7440-39-3**	**7.90**		**0.900**
Beryllium	**7440-41-7**	**0.0369**		**0.00269**
Cadmium	7440-43-9	0.0181	U	0.0623
Chromium	**7440-47-3**	**5.91**		**1.86**
Cobalt	**7440-48-4**	**1.40**	QB-01	**0.0367**
Copper	**7440-50-8**	**278**		**2.21**
Lead	**7439-92-1**	**0.695**		**0.180**
Manganese	**7439-96-5**	**42.9**		**1.59**
Molybdenum	**7439-98-7**	**10.7**		**0.302**
Nickel	**7440-02-0**	**3.07**		**0.549**
Selenium	**7782-49-2**	**0.297**		**0.00754**
Thallium	**7440-28-0**	**0.00229**		**4.96E-4**
Vanadium	**7440-62-2**	**4.61**		**0.0445**
Zinc	7440-66-6	11.1	U	64.6

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-082224-HM
Matrix: Air
Lab ID: 4090357-02
Sample Volume: 1988.887 m³
Filter ID:
Sampled: 08/22/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 04:32

Comments: Q9553125 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.128**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.641**		**0.00767**
Barium	**7440-39-3**	**8.46**		**0.875**
Beryllium	**7440-41-7**	**0.0289**		**0.00262**
Cadmium	**7440-43-9**	**0.139**		**0.0606**
Chromium	**7440-47-3**	**4.44**		**1.81**
Cobalt	**7440-48-4**	**1.14**	QB-01	**0.0357**
Copper	**7440-50-8**	**163**		**2.15**
Lead	**7439-92-1**	**4.09**		**0.175**
Manganese	**7439-96-5**	**33.0**		**1.55**
Molybdenum	**7439-98-7**	**2.66**		**0.294**
Nickel	**7440-02-0**	**2.44**		**0.533**
Selenium	**7782-49-2**	**0.294**		**0.00733**
Thallium	**7440-28-0**	**0.00189**		**4.82E-4**
Vanadium	**7440-62-2**	**3.62**		**0.0433**
Zinc	7440-66-6	16.8	U	62.8

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-082224-HM
Matrix: Air
Lab ID: 4090357-03
Sample Volume: 1952.574 m³
Filter ID:
Sampled: 08/22/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 04:50

Comments: Q9553124 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0421**	SL	**0.0322**
Arsenic	**7440-38-2**	**0.229**		**0.00781**
Barium	**7440-39-3**	**2.95**		**0.892**
Beryllium	**7440-41-7**	**0.0276**		**0.00267**
Cadmium	7440-43-9	0.00869	U	0.0617
Chromium	**7440-47-3**	**2.73**		**1.84**
Cobalt	**7440-48-4**	**0.460**	QB-01	**0.0363**
Copper	**7440-50-8**	**35.5**		**2.19**
Lead	**7439-92-1**	**0.357**		**0.178**
Manganese	**7439-96-5**	**11.9**		**1.57**
Molybdenum	**7439-98-7**	**2.48**		**0.299**
Nickel	**7440-02-0**	**1.17**		**0.543**
Selenium	**7782-49-2**	**0.161**		**0.00747**
Thallium	**7440-28-0**	**8.25E-4**		**4.91E-4**
Vanadium	**7440-62-2**	**1.25**		**0.0441**
Zinc	7440-66-6	10.0	U	64.0

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-082224-HM
Matrix: Air
Lab ID: 4090357-04
Sample Volume: 1724.969 m³
Filter ID:
Sampled: 08/22/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 05:04

Comments: Q9553122 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0678**	SL	**0.0364**
Arsenic	**7440-38-2**	**0.184**		**0.00884**
Barium	**7440-39-3**	**4.99**		**1.01**
Beryllium	**7440-41-7**	**0.00980**		**0.00302**
Cadmium	7440-43-9	0.0198	U	0.0699
Chromium	**7440-47-3**	**2.34**		**2.08**
Cobalt	**7440-48-4**	**0.336**	QB-01	**0.0411**
Copper	**7440-50-8**	**28.5**		**2.48**
Lead	**7439-92-1**	**0.310**		**0.202**
Manganese	**7439-96-5**	**10.4**		**1.78**
Molybdenum	**7439-98-7**	**1.52**		**0.339**
Nickel	**7440-02-0**	**1.06**		**0.615**
Selenium	**7782-49-2**	**0.149**		**0.00845**
Thallium	**7440-28-0**	**6.60E-4**		**5.56E-4**
Vanadium	**7440-62-2**	**1.01**		**0.0499**
Zinc	7440-66-6	7.52	U	72.4

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM01-082324-HM
Matrix: Air
Lab ID: 4090357-05
Sample Volume: 1807.987 m³
Filter ID:
Sampled: 08/23/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/04/24 21:39

Comments: Q9553121 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.101**	SL	**0.0347**
Arsenic	**7440-38-2**	**1.92**		**0.00843**
Barium	**7440-39-3**	**8.79**		**0.963**
Beryllium	**7440-41-7**	**0.0291**		**0.00288**
Cadmium	7440-43-9	0.0486	U	0.0667
Chromium	**7440-47-3**	**6.52**		**1.99**
Cobalt	**7440-48-4**	**1.30**	QB-01	**0.0392**
Copper	**7440-50-8**	**269**	QM-4X	**2.37**
Lead	**7439-92-1**	**0.556**		**0.193**
Manganese	**7439-96-5**	**32.6**		**1.70**
Molybdenum	**7439-98-7**	**8.74**	QM-4X	**0.323**
Nickel	**7440-02-0**	**3.24**		**0.587**
Selenium	**7782-49-2**	**0.252**	SRD-01	**0.00806**
Thallium	**7440-28-0**	**0.00176**		**5.30E-4**
Vanadium	**7440-62-2**	**3.76**		**0.0476**
Zinc	7440-66-6	15.7	U	69.1

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-082324-HM
Matrix: Air
Lab ID: 4090357-06
Sample Volume: 1986.686 m³
Filter ID:
Sampled: 08/23/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 05:20

Comments: Q9555459 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0524**	SL	**0.0316**
Arsenic	**7440-38-2**	**0.220**		**0.00767**
Barium	**7440-39-3**	**3.79**		**0.876**
Beryllium	**7440-41-7**	**0.0269**		**0.00262**
Cadmium	7440-43-9	0.0108	U	0.0607
Chromium	**7440-47-3**	**3.66**		**1.81**
Cobalt	**7440-48-4**	**0.570**	QB-01	**0.0357**
Copper	**7440-50-8**	**49.8**		**2.15**
Lead	**7439-92-1**	**0.433**		**0.175**
Manganese	**7439-96-5**	**14.2**		**1.55**
Molybdenum	**7439-98-7**	**3.15**		**0.294**
Nickel	**7440-02-0**	**1.59**		**0.534**
Selenium	**7782-49-2**	**0.180**		**0.00734**
Thallium	**7440-28-0**	**9.21E-4**		**4.82E-4**
Vanadium	**7440-62-2**	**1.49**		**0.0433**
Zinc	7440-66-6	9.77	U	62.9

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-082324-HM
Matrix: Air
Lab ID: 4090357-07
Sample Volume: 1742.312 m³
Filter ID:
Sampled: 08/23/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 05:34

Comments: Q9555457 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0619**	SL	**0.0360**
Arsenic	**7440-38-2**	**0.263**		**0.00875**
Barium	**7440-39-3**	**3.76**		**0.999**
Beryllium	**7440-41-7**	**0.0130**		**0.00299**
Cadmium	7440-43-9	0.0138	U	0.0692
Chromium	**7440-47-3**	**3.66**		**2.06**
Cobalt	**7440-48-4**	**0.464**	QB-01	**0.0407**
Copper	**7440-50-8**	**25.2**		**2.46**
Lead	**7439-92-1**	**0.452**		**0.200**
Manganese	**7439-96-5**	**12.6**		**1.76**
Molybdenum	**7439-98-7**	**1.64**		**0.335**
Nickel	**7440-02-0**	**1.36**		**0.609**
Selenium	**7782-49-2**	**0.175**		**0.00837**
Thallium	**7440-28-0**	**7.35E-4**		**5.50E-4**
Vanadium	**7440-62-2**	**1.23**		**0.0494**
Zinc	7440-66-6	8.35	U	71.7

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-082324-HM
Matrix: Air
Lab ID: 4090357-08
Sample Volume: 1807.987 m³
Filter ID:
Sampled: 08/23/24 00:00
Received: 09/03/24 13:44
Analysis Date: 09/05/24 05:50

Comments: Q9555451 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00470	SL, U	0.0347
Arsenic	7440-38-2	0.00793	U	0.00843
Barium	7440-39-3	0.629	U	0.963
Beryllium	7440-41-7	0.00116	U	0.00288
Cadmium	7440-43-9	0.00251	U	0.0667
Chromium	7440-47-3	1.56	U	1.99
Cobalt	7440-48-4	0.0328	QB-01, U	0.0392
Copper	7440-50-8	0.707	U	2.37
Lead	7439-92-1	0.0599	U	0.193
Manganese	7439-96-5	0.363	U	1.70
Molybdenum	7439-98-7	0.287	U	0.323
Nickel	7440-02-0	0.420	U	0.587
Selenium	7782-49-2	0.00462	U	0.00806
Thallium	7440-28-0	9.08E-5	U	5.30E-4
Vanadium	7440-62-2	0.0430	U	0.0476
Zinc	7440-66-6	3.04	U	69.1

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-082424-HM
Matrix: Air
Lab ID: 4090357-09
Sample Volume: 1915.127 m³
Filter ID:
Sampled: 08/24/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 06:03

Comments: Q9555456 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0710**	SL	**0.0328**
Arsenic	**7440-38-2**	**0.561**		**0.00796**
Barium	**7440-39-3**	**7.17**		**0.909**
Beryllium	**7440-41-7**	**0.0285**		**0.00272**
Cadmium	7440-43-9	0.0424	U	0.0630
Chromium	**7440-47-3**	**6.07**		**1.88**
Cobalt	**7440-48-4**	**1.41**	QB-01	**0.0370**
Copper	**7440-50-8**	**68.9**		**2.23**
Lead	**7439-92-1**	**0.866**		**0.182**
Manganese	**7439-96-5**	**31.8**		**1.61**
Molybdenum	**7439-98-7**	**2.47**		**0.305**
Nickel	**7440-02-0**	**4.63**		**0.554**
Selenium	**7782-49-2**	**0.260**		**0.00761**
Thallium	**7440-28-0**	**0.00181**		**5.00E-4**
Vanadium	**7440-62-2**	**3.55**		**0.0449**
Zinc	7440-66-6	15.4	U	65.2

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-082424-HM
Matrix: Air
Lab ID: 4090357-10
Sample Volume: 2114.574 m³
Filter ID:
Sampled: 08/24/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 06:20

Comments: Q9555455 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.117**	SL	**0.0297**
Arsenic	**7440-38-2**	**0.601**		**0.00721**
Barium	**7440-39-3**	**8.70**		**0.823**
Beryllium	**7440-41-7**	**0.0418**		**0.00246**
Cadmium	7440-43-9	0.0339	U	0.0570
Chromium	**7440-47-3**	**5.35**		**1.70**
Cobalt	**7440-48-4**	**1.15**	QB-01	**0.0335**
Copper	**7440-50-8**	**57.5**		**2.02**
Lead	**7439-92-1**	**2.05**		**0.165**
Manganese	**7439-96-5**	**33.2**		**1.45**
Molybdenum	**7439-98-7**	**3.18**		**0.276**
Nickel	**7440-02-0**	**3.16**		**0.502**
Selenium	**7782-49-2**	**0.280**		**0.00689**
Thallium	**7440-28-0**	**0.00207**		**4.53E-4**
Vanadium	**7440-62-2**	**3.66**		**0.0407**
Zinc	7440-66-6	24.7	U	59.1

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-082424-HM
Matrix: Air
Lab ID: 4090357-11
Sample Volume: 1910.021 m³
Filter ID:
Sampled: 08/24/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 06:39

Comments: Q9555454 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0245	SL, U	0.0329
Arsenic	**7440-38-2**	**0.166**		**0.00798**
Barium	**7440-39-3**	**2.52**		**0.911**
Beryllium	**7440-41-7**	**0.0162**		**0.00273**
Cadmium	7440-43-9	0.0144	U	0.0631
Chromium	**7440-47-3**	**2.89**		**1.88**
Cobalt	**7440-48-4**	**0.415**	QB-01	**0.0371**
Copper	**7440-50-8**	**41.3**		**2.24**
Lead	**7439-92-1**	**0.362**		**0.182**
Manganese	**7439-96-5**	**9.71**		**1.61**
Molybdenum	**7439-98-7**	**2.20**		**0.306**
Nickel	**7440-02-0**	**1.31**		**0.555**
Selenium	**7782-49-2**	**0.138**		**0.00763**
Thallium	**7440-28-0**	**8.55E-4**		**5.02E-4**
Vanadium	**7440-62-2**	**1.05**		**0.0451**
Zinc	7440-66-6	7.19	U	65.4

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM04-082424-HM
Matrix: Air
Lab ID: 4090357-12
Sample Volume: 1199.348 m³
Filter ID:
Sampled: 08/24/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 01:42

Comments: Q9555453 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.105**	SL	**0.0524**
Arsenic	**7440-38-2**	**0.160**		**0.0127**
Barium	**7440-39-3**	**3.18**		**1.45**
Beryllium	**7440-41-7**	**0.00808**		**0.00434**
Cadmium	7440-43-9	0.0160	U	0.101
Chromium	**7440-47-3**	**8.01**	QM-07	**3.00**
Cobalt	**7440-48-4**	**0.324**	QB-01	**0.0591**
Copper	**7440-50-8**	**31.3**		**3.57**
Lead	**7439-92-1**	**0.439**		**0.290**
Manganese	**7439-96-5**	**8.22**		**2.56**
Molybdenum	**7439-98-7**	**2.25**		**0.487**
Nickel	**7440-02-0**	**2.80**	QM-07	**0.884**
Selenium	**7782-49-2**	**0.172**		**0.0122**
Thallium	**7440-28-0**	**0.00124**		**7.99E-4**
Vanadium	**7440-62-2**	**0.734**		**0.0718**
Zinc	7440-66-6	12.5	U	104

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-082524-HM
Matrix: Air
Lab ID: 4090357-13
Sample Volume: 1900.897 m³
Filter ID:
Sampled: 08/25/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 07:47

Comments: Q9555450 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0782**	SL	**0.0330**
Arsenic	**7440-38-2**	**1.78**		**0.00802**
Barium	**7440-39-3**	**30.8**		**0.916**
Beryllium	**7440-41-7**	**0.147**		**0.00274**
Cadmium	**7440-43-9**	**0.301**		**0.0634**
Chromium	**7440-47-3**	**27.1**		**1.89**
Cobalt	**7440-48-4**	**7.75**	QB-01	**0.0373**
Copper	**7440-50-8**	**60.7**		**2.25**
Lead	**7439-92-1**	**2.37**		**0.183**
Manganese	**7439-96-5**	**165**		**1.62**
Molybdenum	**7439-98-7**	**1.27**		**0.307**
Nickel	**7440-02-0**	**25.3**		**0.558**
Selenium	**7782-49-2**	**0.617**		**0.00767**
Thallium	**7440-28-0**	**0.00618**		**5.04E-4**
Zinc	7440-66-6	43.5	U	65.7

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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-082524-HM
Matrix: Air
Lab ID: 4090357-13RE1
Sample Volume: 1900.897 m³
Filter ID:
Sampled: 08/25/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 15:16

Comments: Q9555450 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Vanadium	**7440-62-2**	**19.5**	D	**0.181**

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-082524-HM
Matrix: Air
Lab ID: 4090357-14
Sample Volume: 2108.108 m³
Filter ID:
Sampled: 08/25/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 08:04

Comments: Q9555448 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.181	SL	0.0298
Arsenic	7440-38-2	2.22		0.00723
Barium	7440-39-3	30.7		0.826
Beryllium	7440-41-7	0.131		0.00247
Cadmium	7440-43-9	0.244		0.0572
Chromium	7440-47-3	15.5		1.71
Cobalt	7440-48-4	4.09	QB-01	0.0336
Copper	7440-50-8	94.3		2.03
Lead	7439-92-1	9.87		0.165
Manganese	7439-96-5	123		1.46
Molybdenum	7439-98-7	2.30		0.277
Nickel	7440-02-0	9.52		0.503
Selenium	7782-49-2	0.615		0.00692
Thallium	7440-28-0	0.00511		4.55E-4
Zinc	7440-66-6	96.6		59.3

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-082524-HM
Matrix: Air
Lab ID: 4090357-14RE1
Sample Volume: 2108.108 m³
Filter ID:
Sampled: 08/25/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 15:33

Comments: Q9555448 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Vanadium	**7440-62-2**	**13.9**	D	**0.163**

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-082524-HM
Matrix: Air
Lab ID: 4090357-15
Sample Volume: 1895.767 m³
Filter ID:
Sampled: 08/25/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 08:24

Comments: Q9555447 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0256	U, SL	0.0331
Arsenic	**7440-38-2**	**0.241**		**0.00804**
Barium	**7440-39-3**	**4.22**		**0.918**
Beryllium	**7440-41-7**	**0.0400**		**0.00275**
Cadmium	**7440-43-9**	**0.129**		**0.0636**
Chromium	**7440-47-3**	**5.34**		**1.90**
Cobalt	**7440-48-4**	**1.07**	QB-01	**0.0374**
Copper	**7440-50-8**	**60.0**		**2.26**
Lead	**7439-92-1**	**0.417**		**0.184**
Manganese	**7439-96-5**	**25.3**		**1.62**
Molybdenum	**7439-98-7**	**3.15**		**0.308**
Nickel	**7440-02-0**	**3.84**		**0.560**
Selenium	**7782-49-2**	**0.208**		**0.00769**
Thallium	**7440-28-0**	**0.00151**		**5.05E-4**
Vanadium	**7440-62-2**	**2.20**		**0.0454**
Zinc	7440-66-6	16.1	U	65.9

CERTIFICATE OF ANALYSIS

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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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM06-082524-HM
Matrix: Air
Lab ID: 4090357-16
Sample Volume: 1470.711 m³
Filter ID:
Sampled: 08/25/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 08:41

Comments: Q9555445 - Filter nonhomogeneous, appears to have water damage. MS/MSD

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.168**	SL	**0.0427**
Arsenic	**7440-38-2**	**1.12**		**0.0104**
Barium	**7440-39-3**	**10.7**		**1.18**
Beryllium	**7440-41-7**	**0.0557**		**0.00354**
Cadmium	7440-43-9	0.0537	U	0.0820
Chromium	**7440-47-3**	**10.4**		**2.44**
Cobalt	**7440-48-4**	**2.24**	QB-01	**0.0482**
Copper	**7440-50-8**	**27.5**		**2.91**
Lead	**7439-92-1**	**2.92**		**0.237**
Manganese	**7439-96-5**	**58.1**		**2.09**
Molybdenum	**7439-98-7**	**1.41**		**0.397**
Nickel	**7440-02-0**	**5.20**		**0.721**
Selenium	**7782-49-2**	**0.328**		**0.00991**
Thallium	**7440-28-0**	**0.00284**		**6.52E-4**
Vanadium	**7440-62-2**	**5.26**		**0.0585**
Zinc	7440-66-6	29.7	U	85.0

CERTIFICATE OF ANALYSIS

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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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-082524-HM
Matrix: Air
Lab ID: 4090357-17
Sample Volume: 2108.108 m³
Filter ID:
Sampled: 08/25/24 00:00
Received: 09/03/24 13:44
Analysis Date: 09/05/24 09:00

Comments: Q9555442 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00653	U, SL	0.0298
Arsenic	**7440-38-2**	**0.0152**	FB-01	**0.00723**
Barium	7440-39-3	0.708	U	0.826
Beryllium	7440-41-7	0.00115	U	0.00247
Cadmium	7440-43-9	0.00346	U	0.0572
Chromium	7440-47-3	1.39	U	1.71
Cobalt	**7440-48-4**	**0.0408**	FB-01, QB-01	**0.0336**
Copper	7440-50-8	1.16	U	2.03
Lead	7439-92-1	0.0700	U	0.165
Manganese	7439-96-5	0.572	U	1.46
Molybdenum	**7439-98-7**	**0.293**	FB-01	**0.277**
Nickel	7440-02-0	0.390	U	0.503
Selenium	7782-49-2	0.00440	U	0.00692
Thallium	7440-28-0	9.25E-5	U	4.55E-4
Vanadium	**7440-62-2**	**0.0718**	FB-01	**0.0408**
Zinc	7440-66-6	4.52	U	59.3

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-082624-HM
Matrix: Air
Lab ID: 4090357-18
Sample Volume: 1939.664 m³
Filter ID:
Sampled: 08/26/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 09:15

Comments: Q9555443 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0644**	SL	**0.0324**
Arsenic	**7440-38-2**	**0.347**		**0.00786**
Barium	**7440-39-3**	**3.70**		**0.898**
Beryllium	**7440-41-7**	**0.00399**		**0.00268**
Cadmium	7440-43-9	0.0320	U	0.0622
Chromium	**7440-47-3**	**2.26**		**1.85**
Cobalt	**7440-48-4**	**0.158**	QB-01	**0.0366**
Copper	**7440-50-8**	**64.0**		**2.21**
Lead	**7439-92-1**	**0.505**		**0.180**
Manganese	**7439-96-5**	**3.55**		**1.59**
Molybdenum	**7439-98-7**	**2.52**		**0.301**
Nickel	**7440-02-0**	**0.756**		**0.547**
Selenium	**7782-49-2**	**0.195**		**0.00752**
Thallium	**7440-28-0**	**0.00129**		**4.94E-4**
Vanadium	**7440-62-2**	**0.400**		**0.0444**
Zinc	7440-66-6	11.3	U	64.4

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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-082624-HM
Matrix: Air
Lab ID: 4090357-19
Sample Volume: 2115.456 m³
Filter ID:
Sampled: 08/26/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 09:30

Comments: Q9555441 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0792**	SL	**0.0297**
Arsenic	**7440-38-2**	**0.570**		**0.00721**
Barium	**7440-39-3**	**4.25**		**0.823**
Beryllium	**7440-41-7**	**0.00532**		**0.00246**
Cadmium	7440-43-9	0.0164	U	0.0570
Chromium	**7440-47-3**	**1.99**		**1.70**
Cobalt	**7440-48-4**	**0.178**	QB-01	**0.0335**
Copper	**7440-50-8**	**45.4**		**2.02**
Lead	**7439-92-1**	**0.468**		**0.165**
Manganese	**7439-96-5**	**5.10**		**1.45**
Molybdenum	**7439-98-7**	**3.98**		**0.276**
Nickel	**7440-02-0**	**0.664**		**0.501**
Selenium	**7782-49-2**	**0.196**		**0.00689**
Thallium	**7440-28-0**	**0.00135**		**4.53E-4**
Vanadium	**7440-62-2**	**0.580**		**0.0407**
Zinc	7440-66-6	10.6	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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-082624-HM
Matrix: Air
Lab ID: 4090357-20
Sample Volume: 1895.767 m³
Filter ID:
Sampled: 08/26/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 09:45

Comments: Q9555440 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0222	U, SL	0.0331
Arsenic	**7440-38-2**	**0.138**		**0.00804**
Barium	**7440-39-3**	**1.83**		**0.918**
Beryllium	**7440-41-7**	**0.0137**		**0.00275**
Cadmium	7440-43-9	0.0337	U	0.0636
Chromium	**7440-47-3**	**2.35**		**1.90**
Cobalt	**7440-48-4**	**0.203**	QB-01	**0.0374**
Copper	**7440-50-8**	**90.5**		**2.26**
Lead	**7439-92-1**	**0.199**		**0.184**
Manganese	**7439-96-5**	**4.95**		**1.62**
Molybdenum	**7439-98-7**	**3.80**		**0.308**
Nickel	**7440-02-0**	**1.23**		**0.560**
Selenium	**7782-49-2**	**0.171**		**0.00769**
Thallium	**7440-28-0**	**0.00129**		**5.05E-4**
Vanadium	**7440-62-2**	**0.443**		**0.0454**
Zinc	7440-66-6	8.44	U	65.9

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM06-082624-HM
Matrix: Air
Lab ID: 4090357-21
Sample Volume: 2073.816 m³
Filter ID:
Sampled: 08/26/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 10:14

Comments: Q9555439 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.109**	SL	**0.0303**
Arsenic	**7440-38-2**	**0.261**		**0.00735**
Barium	**7440-39-3**	**3.09**		**0.839**
Beryllium	**7440-41-7**	**0.00543**		**0.00251**
Cadmium	7440-43-9	0.0140	U	0.0581
Chromium	**7440-47-3**	**2.17**		**1.73**
Cobalt	**7440-48-4**	**0.165**	QB-01	**0.0342**
Copper	**7440-50-8**	**35.5**		**2.06**
Lead	**7439-92-1**	**0.535**		**0.168**
Manganese	**7439-96-5**	**4.57**		**1.48**
Molybdenum	**7439-98-7**	**1.89**		**0.282**
Nickel	**7440-02-0**	**0.816**		**0.512**
Selenium	**7782-49-2**	**0.153**		**0.00703**
Thallium	**7440-28-0**	**0.00127**		**4.62E-4**
Vanadium	**7440-62-2**	**0.448**		**0.0415**
Zinc	7440-66-6	12.5	U	60.3

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-082724-HM
Matrix: Air
Lab ID: 4090357-22
Sample Volume: 1993.889 m³
Filter ID:
Sampled: 08/27/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 11:21

Comments: Q9555436 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0549**	SL	**0.0315**
Arsenic	**7440-38-2**	**0.221**		**0.00765**
Barium	**7440-39-3**	**2.64**		**0.873**
Beryllium	**7440-41-7**	**0.00585**		**0.00261**
Cadmium	7440-43-9	0.0173	U	0.0605
Chromium	**7440-47-3**	**3.02**		**1.80**
Cobalt	**7440-48-4**	**0.235**	QB-01	**0.0356**
Copper	**7440-50-8**	**69.3**		**2.15**
Lead	**7439-92-1**	**0.468**		**0.175**
Manganese	**7439-96-5**	**5.47**		**1.54**
Molybdenum	**7439-98-7**	**2.04**		**0.293**
Nickel	**7440-02-0**	**1.38**		**0.532**
Selenium	**7782-49-2**	**0.203**		**0.00731**
Thallium	**7440-28-0**	**0.00762**		**4.81E-4**
Vanadium	**7440-62-2**	**0.664**		**0.0432**
Zinc	7440-66-6	9.68	U	62.7

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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-082724-HM
Matrix: Air
Lab ID: 4090357-23
Sample Volume: 2093.393 m³
Filter ID:
Sampled: 08/27/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 11:36

Comments: Q9555435 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.107**	SL	**0.0300**
Arsenic	**7440-38-2**	**0.316**		**0.00728**
Barium	**7440-39-3**	**4.45**		**0.832**
Beryllium	**7440-41-7**	**0.00962**		**0.00249**
Cadmium	**7440-43-9**	**0.0742**		**0.0576**
Chromium	**7440-47-3**	**2.36**		**1.72**
Cobalt	**7440-48-4**	**0.302**	QB-01	**0.0339**
Copper	**7440-50-8**	**38.9**		**2.04**
Lead	**7439-92-1**	**0.716**		**0.166**
Manganese	**7439-96-5**	**8.70**		**1.47**
Molybdenum	**7439-98-7**	**2.88**		**0.279**
Nickel	**7440-02-0**	**1.11**		**0.507**
Selenium	**7782-49-2**	**0.251**		**0.00696**
Thallium	**7440-28-0**	**0.00784**		**4.58E-4**
Vanadium	**7440-62-2**	**1.02**		**0.0411**
Zinc	7440-66-6	15.4	U	59.7

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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-082724-HM
Matrix: Air
Lab ID: 4090357-24
Sample Volume: 2009.16 m³
Filter ID:
Sampled: 08/27/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 11:52

Comments: Q9555434 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0339**	SL	**0.0313**
Arsenic	**7440-38-2**	**0.167**		**0.00759**
Barium	**7440-39-3**	**2.35**		**0.866**
Beryllium	**7440-41-7**	**0.0166**		**0.00259**
Cadmium	7440-43-9	0.0155	U	0.0600
Chromium	**7440-47-3**	**2.43**		**1.79**
Cobalt	**7440-48-4**	**0.292**	QB-01	**0.0353**
Copper	**7440-50-8**	**75.6**		**2.13**
Lead	**7439-92-1**	**0.333**		**0.173**
Manganese	**7439-96-5**	**6.78**		**1.53**
Molybdenum	**7439-98-7**	**3.38**		**0.291**
Nickel	**7440-02-0**	**1.03**		**0.528**
Selenium	**7782-49-2**	**0.206**		**0.00726**
Thallium	**7440-28-0**	**0.00730**		**4.77E-4**
Vanadium	**7440-62-2**	**0.843**		**0.0428**
Zinc	7440-66-6	8.69	U	62.2

CERTIFICATE OF ANALYSIS

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM06-082724-HM
Matrix: Air
Lab ID: 4090357-25
Sample Volume: 1738.037 m³
Filter ID:
Sampled: 08/27/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 12:08

Comments: Q9555433 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.106**	SL	**0.0361**
Arsenic	**7440-38-2**	**0.204**		**0.00877**
Barium	**7440-39-3**	**9.47**		**1.00**
Beryllium	**7440-41-7**	**0.00671**		**0.00300**
Cadmium	7440-43-9	0.0131	U	0.0694
Chromium	**7440-47-3**	**2.76**		**2.07**
Cobalt	**7440-48-4**	**0.219**	QB-01	**0.0408**
Copper	**7440-50-8**	**37.1**		**2.46**
Lead	**7439-92-1**	**0.675**		**0.200**
Manganese	**7439-96-5**	**5.67**		**1.77**
Molybdenum	**7439-98-7**	**1.94**		**0.336**
Nickel	**7440-02-0**	**0.991**		**0.610**
Selenium	**7782-49-2**	**0.179**		**0.00839**
Thallium	**7440-28-0**	**0.00611**		**5.51E-4**
Vanadium	**7440-62-2**	**0.762**		**0.0495**
Zinc	7440-66-6	14.1	U	71.9

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FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-FB01-082724-HM
Matrix: Air
Lab ID: 4090357-26
Sample Volume: 2093.393 m³
Filter ID:
Sampled: 08/27/24 00:00
Received: 09/03/24 13:44
Analysis Date: 09/05/24 12:23

Comments: Q9555428 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.0103	SL, U	0.0300
Arsenic	**7440-38-2**	**0.00883**	FB-01	**0.00728**
Barium	7440-39-3	0.448	U	0.832
Beryllium	7440-41-7	7.71E-4	U	0.00249
Cadmium	7440-43-9	0.00253	U	0.0576
Chromium	7440-47-3	1.20	U	1.72
Cobalt	7440-48-4	0.0280	QB-01, U	0.0339
Copper	7440-50-8	0.510	U	2.04
Lead	7439-92-1	0.0354	U	0.166
Manganese	7439-96-5	0.274	U	1.47
Molybdenum	7439-98-7	0.188	U	0.279
Nickel	7440-02-0	0.261	U	0.507
Selenium	7782-49-2	0.00311	U	0.00696
Thallium	7440-28-0	9.79E-5	U	4.58E-4
Vanadium	7440-62-2	0.0367	U	0.0411
Zinc	7440-66-6	2.41	U	59.7

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FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM05-082824-HM
Matrix: Air
Lab ID: 4090357-27
Sample Volume: 1931.452 m³
Filter ID:
Sampled: 08/28/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 12:36

Comments: Q9555431 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.143**	SL	**0.0325**
Arsenic	**7440-38-2**	**0.578**		**0.00789**
Barium	**7440-39-3**	**6.02**		**0.901**
Beryllium	**7440-41-7**	**0.0158**		**0.00270**
Cadmium	7440-43-9	0.0344	U	0.0624
Chromium	**7440-47-3**	**3.22**		**1.86**
Cobalt	**7440-48-4**	**0.558**	QB-01	**0.0367**
Copper	**7440-50-8**	**92.7**		**2.22**
Lead	**7439-92-1**	**1.16**		**0.180**
Manganese	**7439-96-5**	**16.7**		**1.59**
Molybdenum	**7439-98-7**	**2.71**		**0.302**
Nickel	**7440-02-0**	**1.84**		**0.549**
Selenium	**7782-49-2**	**0.249**		**0.00755**
Thallium	**7440-28-0**	**0.00565**		**4.96E-4**
Vanadium	**7440-62-2**	**2.03**		**0.0446**
Zinc	7440-66-6	21.1	U	64.7

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

FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM02-082824-HM **Lab ID:** 4090357-28 **Sampled:** 08/28/24 23:59
Matrix: Air **Sample Volume:** 2120.752 m³ **Received:** 09/03/24 13:44
Filter ID: **Analysis Date:** 09/05/24 12:54
Comments: Q9555427 - Recieved in good condition. - Duplicate FIlter ID, Use Sample ID to d

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.118**	SL	**0.0296**
Arsenic	**7440-38-2**	**0.329**		**0.00719**
Barium	**7440-39-3**	**5.21**		**0.821**
Beryllium	**7440-41-7**	**0.0122**		**0.00245**
Cadmium	7440-43-9	0.0515	U	0.0568
Chromium	**7440-47-3**	**2.52**		**1.70**
Cobalt	**7440-48-4**	**0.441**	QB-01	**0.0334**
Copper	**7440-50-8**	**49.6**		**2.02**
Lead	**7439-92-1**	**0.930**		**0.164**
Manganese	**7439-96-5**	**12.3**		**1.45**
Molybdenum	**7439-98-7**	**4.01**		**0.275**
Nickel	**7440-02-0**	**1.46**		**0.500**
Selenium	**7782-49-2**	**0.247**		**0.00687**
Thallium	**7440-28-0**	**0.00513**		**4.52E-4**
Vanadium	**7440-62-2**	**1.69**		**0.0406**
Zinc	7440-66-6	14.3	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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM03-082824-HM **Lab ID:** 4090357-29 **Sampled:** 08/28/24 23:59
Matrix: Air **Sample Volume:** 2026.84 m³ **Received:** 09/03/24 13:44
Filter ID: **Analysis Date:** 09/05/24 13:26

Comments: Q9555427 - Recieved in good condition. - Duplicate FIlter ID, Use Sample ID to d

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.0770**	SL	**0.0310**
Arsenic	**7440-38-2**	**0.312**		**0.00752**
Barium	**7440-39-3**	**3.15**		**0.859**
Beryllium	**7440-41-7**	**0.0177**		**0.00257**
Cadmium	7440-43-9	0.0103	U	0.0595
Chromium	**7440-47-3**	**2.79**		**1.77**
Cobalt	**7440-48-4**	**0.415**	QB-01	**0.0350**
Copper	**7440-50-8**	**71.2**		**2.11**
Lead	**7439-92-1**	**0.367**		**0.172**
Manganese	**7439-96-5**	**9.91**		**1.52**
Molybdenum	**7439-98-7**	**2.52**		**0.288**
Nickel	**7440-02-0**	**1.44**		**0.523**
Selenium	**7782-49-2**	**0.162**		**0.00719**
Thallium	**7440-28-0**	**0.00365**		**4.73E-4**
Vanadium	**7440-62-2**	**1.17**		**0.0425**
Zinc	7440-66-6	8.65	U	61.6

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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: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-AM06-082824-HM
Matrix: Air
Lab ID: 4090357-30
Sample Volume: 1403.89 m³
Filter ID:
Sampled: 08/28/24 23:59
Received: 09/03/24 13:44
Analysis Date: 09/05/24 13:40

Comments: Q9555425 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	**7440-36-0**	**0.245**	SL	**0.0447**
Arsenic	**7440-38-2**	**0.325**		**0.0109**
Barium	**7440-39-3**	**7.38**		**1.24**
Beryllium	**7440-41-7**	**0.0102**		**0.00371**
Cadmium	7440-43-9	0.0222	U	0.0859
Chromium	**7440-47-3**	**6.34**		**2.56**
Cobalt	**7440-48-4**	**0.455**	QB-01	**0.0505**
Copper	**7440-50-8**	**76.4**		**3.05**
Lead	**7439-92-1**	**0.918**		**0.248**
Manganese	**7439-96-5**	**11.8**		**2.19**
Molybdenum	**7439-98-7**	**2.28**		**0.416**
Nickel	**7440-02-0**	**4.89**		**0.756**
Selenium	**7782-49-2**	**0.204**		**0.0104**
Thallium	**7440-28-0**	**0.00458**		**6.83E-4**
Vanadium	**7440-62-2**	**1.15**		**0.0613**
Zinc	7440-66-6	22.9	U	89.0

CERTIFICATE OF ANALYSIS

Tetra Tech, Inc.
1777 Sentry Pkwy, Bldg 12
Blue Bell, PA 19422
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FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
AQS SITE CODE:
SITE CODE: Lahaina fires

Description: MFL-LB01-082324-HM
Matrix: Air
Lab ID: 4090357-31
Sample Volume: 2120.752 m³
Filter ID:
Sampled: 08/23/24 00:00
Received: 09/03/24 13:44
Analysis Date: 09/05/24 14:49

Comments: Q9555452 - Recieved in good condition.

Inorganics by Compendium Method IO-3.5

Analyte	CAS Number	Results ng/m³ Air	Flag	MDL ng/m³ Air
Antimony	7440-36-0	0.00419	SL, U	0.0296
Arsenic	7440-38-2	0.00647	U	0.00719
Barium	7440-39-3	0.589	U	0.821
Beryllium	7440-41-7	7.25E-4	U	0.00245
Cadmium	7440-43-9	0.00206	U	0.0568
Chromium	7440-47-3	1.42	U	1.70
Cobalt	7440-48-4	0.0242	QB-01, U	0.0334
Copper	7440-50-8	0.428	U	2.02
Lead	7439-92-1	0.0529	U	0.164
Manganese	7439-96-5	0.293	U	1.45
Molybdenum	7439-98-7	0.262	U	0.275
Nickel	7440-02-0	0.306	U	0.500
Selenium	7782-49-2	0.00388	U	0.00687
Thallium	7440-28-0	1.36E-4	U	4.52E-4
Vanadium	7440-62-2	0.0260	U	0.0406
Zinc	7440-66-6	2.23	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: 09/10/24 14:12
SUBMITTED: 09/03/24
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 2409021 - B4I0409										
Calibration Blank (2409021-CCB1)				Prepared & Analyzed: 09/04/24						
Antimony	0.276		ng/l							
Arsenic	-3.02		ng/l							U
Barium	0.108		ng/l							
Beryllium	0.0244		ng/l							
Cadmium	0.247		ng/l							
Chromium	1.84		ng/l							
Cobalt	-0.215		ng/l							U
Copper	38.1		ng/l							
Lead	3.52		ng/l							
Manganese	2.95		ng/l							
Molybdenum	27.0		ng/l							
Nickel	4.56		ng/l							
Selenium	-4.52		ng/l							U
Thallium	1.34		ng/l							
Vanadium	-28.6		ng/l							U
Zinc	-26.1		ng/l							U
Calibration Blank (2409021-CCB2)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.143		ng/l							
Arsenic	-2.99		ng/l							U
Barium	2.70		ng/l							
Beryllium	-0.733		ng/l							U
Cadmium	0.158		ng/l							
Chromium	2.14		ng/l							
Cobalt	-0.208		ng/l							U
Copper	56.0		ng/l							
Lead	2.00		ng/l							
Manganese	1.75		ng/l							
Molybdenum	5.65		ng/l							
Nickel	2.91		ng/l							
Selenium	10.3		ng/l							
Thallium	1.11		ng/l							
Vanadium	-29.2		ng/l							U
Zinc	-58.6		ng/l							U
Calibration Blank (2409021-CCB3)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.455		ng/l							
Arsenic	-2.64		ng/l							U
Barium	-0.354		ng/l							U
Beryllium	-0.448		ng/l							U

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REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
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 2409021 - B4I0409										
Calibration Blank (2409021-CCB3) Contin				Prepared: 09/04/24 Analyzed: 09/05/24						
Cadmium	0.275		ng/l							
Chromium	1.48		ng/l							
Cobalt	-0.158		ng/l							U
Copper	52.2		ng/l							
Lead	2.37		ng/l							
Manganese	1.94		ng/l							
Molybdenum	7.15		ng/l							
Nickel	1.95		ng/l							
Selenium	17.6		ng/l							
Thallium	1.18		ng/l							
Vanadium	-31.7		ng/l							U
Zinc	1040		ng/l							
Calibration Blank (2409021-CCB4)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.953		ng/l							
Arsenic	-0.358		ng/l							U
Barium	1.15		ng/l							
Beryllium	-0.587		ng/l							U
Cadmium	0.436		ng/l							
Chromium	2.82		ng/l							
Cobalt	-0.293		ng/l							U
Copper	56.7		ng/l							
Lead	1.40		ng/l							
Manganese	1.32		ng/l							
Molybdenum	5.12		ng/l							
Nickel	5.27		ng/l							
Selenium	6.39		ng/l							
Thallium	0.740		ng/l							
Vanadium	-31.3		ng/l							U
Zinc	-65.0		ng/l							U
Calibration Blank (2409021-CCB5)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.434		ng/l							
Arsenic	0.682		ng/l							
Barium	1.71		ng/l							
Beryllium	-1.29		ng/l							U
Cadmium	0.571		ng/l							
Chromium	2.06		ng/l							
Cobalt	-0.0361		ng/l							U
Copper	43.5		ng/l							

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FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
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 2409021 - B4I0409										
Calibration Blank (2409021-CCB5) Contin				Prepared: 09/04/24 Analyzed: 09/05/24						
Lead	1.39		ng/l							
Manganese	3.27		ng/l							
Molybdenum	6.09		ng/l							
Nickel	5.75		ng/l							
Selenium	7.79		ng/l							
Thallium	1.03		ng/l							
Vanadium	-29.2		ng/l							U
Zinc	-70.4		ng/l							U
Calibration Blank (2409021-CCB6)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.713		ng/l							
Arsenic	0.0191		ng/l							
Barium	3.90		ng/l							
Beryllium	-1.25		ng/l							U
Cadmium	-6.48E-4		ng/l							U
Chromium	6.82		ng/l							
Cobalt	0.191		ng/l							
Copper	37.2		ng/l							
Lead	1.82		ng/l							
Manganese	5.57		ng/l							
Molybdenum	6.66		ng/l							
Nickel	6.93		ng/l							
Selenium	2.91		ng/l							
Thallium	1.12		ng/l							
Vanadium	-30.3		ng/l							U
Zinc	195		ng/l							
Calibration Blank (2409021-CCB7)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.744		ng/l							
Arsenic	0.836		ng/l							
Barium	8.80		ng/l							
Beryllium	-1.26		ng/l							U
Cadmium	0.226		ng/l							
Chromium	5.93		ng/l							
Cobalt	0.0841		ng/l							
Copper	46.1		ng/l							
Lead	2.82		ng/l							
Manganese	8.45		ng/l							
Molybdenum	6.85		ng/l							
Nickel	9.33		ng/l							

CERTIFICATE OF ANALYSIS

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FILE #: 4205.00.003.001
REPORTED: 09/10/24 14:12
SUBMITTED: 09/03/24
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 2409021 - B4I0409										
Calibration Blank (2409021-CCB7) Contin				Prepared: 09/04/24 Analyzed: 09/05/24						
Selenium	11.5		ng/l							
Thallium	1.12		ng/l							
Vanadium	-36.2		ng/l							U
Zinc	-53.2		ng/l							U
Calibration Check (2409021-CCV1)				Prepared & Analyzed: 09/04/24						
Antimony	19400		ng/l	20000		97.2	90-110			
Arsenic	19500		ng/l	20000		97.7	90-110			
Barium	195000		ng/l	200000		97.5	90-110			
Beryllium	4960		ng/l	5000.0		99.1	90-110			
Cadmium	19600		ng/l	20000		98.0	90-110			
Chromium	235000		ng/l	240000		97.8	90-110			
Cobalt	49500		ng/l	50000		99.0	90-110			
Copper	2.00E6		ng/l	2.0000E6		99.9	90-110			
Lead	194000		ng/l	200000		97.1	90-110			
Manganese	492000		ng/l	500000		98.5	90-110			
Molybdenum	48800		ng/l	50000		97.5	90-110			
Nickel	119000		ng/l	120000		99.5	90-110			
Selenium	19100		ng/l	20000		95.4	90-110			
Thallium	479		ng/l	500.00		95.8	90-110			
Vanadium	19300		ng/l	20000		96.5	90-110			
Zinc	497000		ng/l	500000		99.3	90-110			
Calibration Check (2409021-CCV2)				Prepared & Analyzed: 09/04/24						
Antimony	20100		ng/l	20000		100	90-110			
Arsenic	19900		ng/l	20000		99.5	90-110			
Barium	202000		ng/l	200000		101	90-110			
Beryllium	4880		ng/l	5000.0		97.7	90-110			
Cadmium	20100		ng/l	20000		101	90-110			
Chromium	240000		ng/l	240000		100	90-110			
Cobalt	49800		ng/l	50000		99.5	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	199000		ng/l	200000		99.7	90-110			
Manganese	496000		ng/l	500000		99.2	90-110			
Molybdenum	50200		ng/l	50000		100	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	19900		ng/l	20000		99.5	90-110			
Thallium	487		ng/l	500.00		97.3	90-110			
Vanadium	19900		ng/l	20000		99.4	90-110			
Zinc	503000		ng/l	500000		101	90-110			

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REPORTED: 09/10/24 14:12
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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 2409021 - B4I0409										
Calibration Check (2409021-CCV3)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	20200		ng/l	20000		101	90-110			
Arsenic	19900		ng/l	20000		99.7	90-110			
Barium	203000		ng/l	200000		101	90-110			
Beryllium	4910		ng/l	5000.0		98.1	90-110			
Cadmium	20300		ng/l	20000		102	90-110			
Chromium	243000		ng/l	240000		101	90-110			
Cobalt	49800		ng/l	50000		99.6	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	200000		ng/l	200000		100	90-110			
Manganese	497000		ng/l	500000		99.3	90-110			
Molybdenum	50500		ng/l	50000		101	90-110			
Nickel	120000		ng/l	120000		100	90-110			
Selenium	19900		ng/l	20000		99.5	90-110			
Thallium	479		ng/l	500.00		95.8	90-110			
Vanadium	20100		ng/l	20000		101	90-110			
Zinc	507000		ng/l	500000		101	90-110			
Calibration Check (2409021-CCV4)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	20400		ng/l	20000		102	90-110			
Arsenic	20200		ng/l	20000		101	90-110			
Barium	206000		ng/l	200000		103	90-110			
Beryllium	4980		ng/l	5000.0		99.6	90-110			
Cadmium	20400		ng/l	20000		102	90-110			
Chromium	244000		ng/l	240000		102	90-110			
Cobalt	50400		ng/l	50000		101	90-110			
Copper	2.07E6		ng/l	2.0000E6		103	90-110			
Lead	202000		ng/l	200000		101	90-110			
Manganese	509000		ng/l	500000		102	90-110			
Molybdenum	50900		ng/l	50000		102	90-110			
Nickel	121000		ng/l	120000		101	90-110			
Selenium	20300		ng/l	20000		101	90-110			
Thallium	481		ng/l	500.00		96.1	90-110			
Vanadium	20300		ng/l	20000		101	90-110			
Zinc	511000		ng/l	500000		102	90-110			
Calibration Check (2409021-CCV5)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	20500		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		102	90-110			
Barium	204000		ng/l	200000		102	90-110			
Beryllium	4850		ng/l	5000.0		97.0	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2409021 - B4I0409										
Calibration Check (2409021-CCV5) Contin				Prepared: 09/04/24 Analyzed: 09/05/24						
Cadmium	20500		ng/l	20000		103	90-110			
Chromium	245000		ng/l	240000		102	90-110			
Cobalt	50700		ng/l	50000		101	90-110			
Copper	2.08E6		ng/l	2.0000E6		104	90-110			
Lead	203000		ng/l	200000		101	90-110			
Manganese	510000		ng/l	500000		102	90-110			
Molybdenum	51100		ng/l	50000		102	90-110			
Nickel	122000		ng/l	120000		102	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	479		ng/l	500.00		95.7	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	515000		ng/l	500000		103	90-110			
Calibration Check (2409021-CCV6)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	20500		ng/l	20000		103	90-110			
Arsenic	20400		ng/l	20000		102	90-110			
Barium	214000		ng/l	200000		107	90-110			
Beryllium	4910		ng/l	5000.0		98.1	90-110			
Cadmium	20700		ng/l	20000		103	90-110			
Chromium	247000		ng/l	240000		103	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.09E6		ng/l	2.0000E6		105	90-110			
Lead	204000		ng/l	200000		102	90-110			
Manganese	509000		ng/l	500000		102	90-110			
Molybdenum	52800		ng/l	50000		106	90-110			
Nickel	123000		ng/l	120000		103	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	478		ng/l	500.00		95.6	90-110			
Vanadium	20300		ng/l	20000		102	90-110			
Zinc	519000		ng/l	500000		104	90-110			
Calibration Check (2409021-CCV7)				Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	20500		ng/l	20000		102	90-110			
Arsenic	20300		ng/l	20000		102	90-110			
Barium	213000		ng/l	200000		106	90-110			
Beryllium	4660		ng/l	5000.0		93.2	90-110			
Cadmium	20600		ng/l	20000		103	90-110			
Chromium	249000		ng/l	240000		104	90-110			
Cobalt	50800		ng/l	50000		102	90-110			
Copper	2.12E6		ng/l	2.0000E6		106	90-110			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2409021 - B4I0409										
Calibration Check (2409021-CCV7) Contin					Prepared: 09/04/24 Analyzed: 09/05/24					
Lead	205000		ng/l	200000		102	90-110			
Manganese	505000		ng/l	500000		101	90-110			
Molybdenum	53300		ng/l	50000		107	90-110			
Nickel	124000		ng/l	120000		103	90-110			
Selenium	19900		ng/l	20000		99.6	90-110			
Thallium	480		ng/l	500.00		96.1	90-110			
Vanadium	20600		ng/l	20000		103	90-110			
Zinc	517000		ng/l	500000		103	90-110			
High Cal Check (2409021-HCV1)					Prepared & Analyzed: 09/04/24					
Antimony	40200		ng/l	40000		100	95-105			
Arsenic	40200		ng/l	40000		101	95-105			
Barium	402000		ng/l	400000		101	95-105			
Beryllium	9990		ng/l	10000		99.9	95-105			
Cadmium	39900		ng/l	40000		99.8	95-105			
Chromium	482000		ng/l	480000		100	95-105			
Cobalt	99700		ng/l	100000		99.7	95-105			
Copper	3.99E6		ng/l	4.0000E6		99.7	95-105			
Lead	401000		ng/l	400000		100	95-105			
Manganese	1.01E6		ng/l	1.0000E6		101	95-105			
Molybdenum	101000		ng/l	100000		101	95-105			
Nickel	238000		ng/l	240000		99.3	95-105			
Selenium	40300		ng/l	40000		101	95-105			
Thallium	994		ng/l	1000.0		99.4	95-105			
Vanadium	40300		ng/l	40000		101	95-105			
Zinc	995000		ng/l	1.0000E6		99.5	95-105			
Initial Cal Blank (2409021-ICB1)					Prepared & Analyzed: 09/04/24					
Antimony	0.737		ng/l							
Arsenic	-6.63		ng/l							U
Barium	-0.613		ng/l							U
Beryllium	-0.207		ng/l							U
Cadmium	0.293		ng/l							
Chromium	1.62		ng/l							
Cobalt	-0.00691		ng/l							U
Copper	60.8		ng/l							
Lead	4.36		ng/l							
Manganese	5.17		ng/l							
Molybdenum	8.61		ng/l							
Nickel	-0.289		ng/l							U

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch 2409021 - B4I0409										
Initial Cal Blank (2409021-ICB1) Continu				Prepared & Analyzed: 09/04/24						
Selenium	6.24		ng/l							
Thallium	1.07		ng/l							
Vanadium	-17.2		ng/l							U
Zinc	-40.1		ng/l							U
Initial Cal Check (2409021-ICV1)				Prepared & Analyzed: 09/04/24						
Antimony	19400		ng/l	20000		97.1	90-110			
Arsenic	19600		ng/l	20000		97.9	90-110			
Barium	195000		ng/l	200000		97.4	90-110			
Beryllium	4910		ng/l	5000.0		98.3	90-110			
Cadmium	20000		ng/l	20000		99.8	90-110			
Chromium	238000		ng/l	240000		99.2	90-110			
Cobalt	48300		ng/l	50000		96.7	90-110			
Copper	2.02E6		ng/l	2.0000E6		101	90-110			
Lead	199000		ng/l	200000		99.4	90-110			
Manganese	491000		ng/l	500000		98.2	90-110			
Molybdenum	49600		ng/l	50000		99.1	90-110			
Nickel	123000		ng/l	120000		102	90-110			
Selenium	20200		ng/l	20000		101	90-110			
Thallium	493		ng/l	500.00		98.5	90-110			
Vanadium	19500		ng/l	20000		97.3	90-110			
Zinc	503000		ng/l	500000		101	90-110			
Interference Check A (2409021-IFA1)				Prepared & Analyzed: 09/04/24						
Antimony	0.00		ng/l				80-120			U
Arsenic	0.00		ng/l				80-120			U
Barium	0.00		ng/l				80-120			U
Beryllium	0.00		ng/l				80-120			U
Cadmium	0.00		ng/l				80-120			U
Chromium	0.00		ng/l				80-120			U
Cobalt	0.00		ng/l				80-120			U
Copper	0.00		ng/l				80-120			U
Lead	0.00		ng/l				80-120			U
Manganese	0.00		ng/l				80-120			U
Molybdenum	316000		ng/l	300000		105	80-120			
Nickel	0.00		ng/l				80-120			U
Selenium	0.00		ng/l				80-120			U
Thallium	0.00		ng/l				80-120			U
Vanadium	0.00		ng/l				80-120			U
Zinc	0.00		ng/l				80-120			U

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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 2409021 - B4I0409										
Interference Check B (2409021-IFB1)					Prepared & Analyzed: 09/04/24					
Antimony	20400		ng/l	20000		102	80-120			
Arsenic	20300		ng/l	20000		102	80-120			
Barium	205000		ng/l	200000		102	80-120			
Beryllium	5100		ng/l	5000.0		102	80-120			
Cadmium	19700		ng/l	20000		98.4	80-120			
Chromium	231000		ng/l	240000		96.4	80-120			
Cobalt	48900		ng/l	50000		97.9	80-120			
Copper	1.90E6		ng/l	2.0000E6		94.8	80-120			
Lead	204000		ng/l	200000		102	80-120			
Manganese	505000		ng/l	500000		101	80-120			
Molybdenum	367000		ng/l	350000		105	80-120			
Nickel	115000		ng/l	120000		95.8	80-120			
Selenium	19400		ng/l	20000		96.9	80-120			
Thallium	512		ng/l	500.00		102	80-120			
Vanadium	18800		ng/l	20000		94.2	80-120			
Zinc	468000		ng/l	500000		93.7	80-120			
Batch B4I0409 - ICP-MS Extraction										
Blank (B4I0409-BLK1)					Prepared & Analyzed: 09/04/24					
Antimony	ND	0.0386	ng/m³ Air							SL, U
Arsenic	ND	0.00937	ng/m³ Air							U
Barium	ND	1.07	ng/m³ Air							U
Beryllium	ND	0.00320	ng/m³ Air							U
Cadmium	ND	0.0741	ng/m³ Air							U
Chromium	ND	2.21	ng/m³ Air							U
Cobalt	ND	0.0436	ng/m³ Air							QB-01, U
Copper	ND	2.63	ng/m³ Air							U
Lead	ND	0.214	ng/m³ Air							U
Manganese	ND	1.89	ng/m³ Air							U
Molybdenum	ND	0.359	ng/m³ Air							U
Nickel	ND	0.652	ng/m³ Air							U
Selenium	ND	0.00896	ng/m³ Air							U
Thallium	ND	5.89E-4	ng/m³ Air							U
Vanadium	ND	0.0529	ng/m³ Air							U
Zinc	ND	76.8	ng/m³ Air							U
LCS (B4I0409-BS1)					Prepared & Analyzed: 09/04/24					
Antimony	0.585	0.0386	ng/m³ Air	1.3829		42.3	80-120			SL
Arsenic	2.72	0.00937	ng/m³ Air	2.7658		98.4	80-120			
Barium	28.7	1.07	ng/m³ Air	27.658		104	80-120			

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4I0409 - ICP-MS Extraction										
LCS (B4I0409-BS1) Continued				Prepared & Analyzed: 09/04/24						
Beryllium	1.33	0.00320	ng/m³ Air	1.3829		96.2	80-120			
Cadmium	1.40	0.0741	ng/m³ Air	1.3829		101	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		99.1	80-120			QB-01
Copper	28.6	2.63	ng/m³ Air	27.658		103	80-120			
Lead	13.7	0.214	ng/m³ Air	13.829		99.4	80-120			
Manganese	8.34	1.89	ng/m³ Air	8.2975		101	80-120			
Molybdenum	1.64	0.359	ng/m³ Air	1.3829		118	80-120			
Nickel	3.11	0.652	ng/m³ Air	2.7658		113	80-120			
Selenium	2.69	0.00896	ng/m³ Air	2.7658		97.2	80-120			
Thallium	0.137	5.89E-4	ng/m³ Air	0.13829		99.2	80-120			
Vanadium	2.80	0.0529	ng/m³ Air	2.7658		101	80-120			
Zinc	88.9	76.8	ng/m³ Air	82.975		107	80-120			
Duplicate (B4I0409-DUP1)		**Source: 4090357-05**		Prepared & Analyzed: 09/04/24						
Antimony	0.0791	0.0347	ng/m³ Air		0.101			24.1	10	SL
Arsenic	1.96	0.00843	ng/m³ Air		1.92			1.92	10	
Barium	7.56	0.963	ng/m³ Air		8.79			15.1	10	
Beryllium	0.0297	0.00288	ng/m³ Air		0.0291			2.13	10	
Cadmium	ND	0.0667	ng/m³ Air		ND				10	U
Chromium	6.25	1.99	ng/m³ Air		6.52			4.18	10	
Cobalt	1.34	0.0392	ng/m³ Air		1.30			2.72	10	QB-01
Copper	272	2.37	ng/m³ Air		269			1.16	10	
Lead	0.484	0.193	ng/m³ Air		0.556			13.7	10	
Manganese	32.8	1.70	ng/m³ Air		32.6			0.688	10	
Molybdenum	8.95	0.323	ng/m³ Air		8.74			2.31	10	
Nickel	3.27	0.587	ng/m³ Air		3.24			0.783	10	
Selenium	0.263	0.00806	ng/m³ Air		0.252			4.36	10	
Thallium	0.00174	5.30E-4	ng/m³ Air		0.00176			1.26	10	
Vanadium	3.83	0.0476	ng/m³ Air		3.76			1.90	10	
Zinc	ND	69.1	ng/m³ Air		ND				10	U
Duplicate (B4I0409-DUP2)		**Source: 4090357-12**		Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.0751	0.0524	ng/m³ Air		0.105			33.3	10	SL
Arsenic	0.155	0.0127	ng/m³ Air		0.160			3.31	10	
Barium	3.36	1.45	ng/m³ Air		3.18			5.51	10	
Beryllium	0.00813	0.00434	ng/m³ Air		0.00808			0.573	10	
Cadmium	ND	0.101	ng/m³ Air		ND				10	U
Chromium	5.51	3.00	ng/m³ Air		8.01			36.9	10	
Cobalt	0.309	0.0591	ng/m³ Air		0.324			4.87	10	QB-01

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Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4I0409 - ICP-MS Extraction										
Duplicate (B4I0409-DUP2) Continued			**Source: 4090357-12**		Prepared: 09/04/24 Analyzed: 09/05/24					
Copper	28.1	3.57	ng/m³ Air		31.3			10.6	10	
Lead	0.389	0.290	ng/m³ Air		0.439			12.0	10	
Manganese	7.42	2.56	ng/m³ Air		8.22			10.3	10	
Molybdenum	2.16	0.487	ng/m³ Air		2.25			3.92	10	
Nickel	2.28	0.884	ng/m³ Air		2.80			20.5	10	
Selenium	0.155	0.0122	ng/m³ Air		0.172			10.3	10	
Thallium	0.00107	7.99E-4	ng/m³ Air		0.00124			14.6	10	
Vanadium	0.685	0.0718	ng/m³ Air		0.734			6.86	10	
Zinc	ND	104	ng/m³ Air		ND				10	U
Duplicate (B4I0409-DUP3)			**Source: 4090357-20**		Prepared: 09/04/24 Analyzed: 09/05/24					
Antimony	ND	0.0331	ng/m³ Air		ND				10	SL, U
Arsenic	0.140	0.00804	ng/m³ Air		0.138			1.20	10	
Barium	1.80	0.918	ng/m³ Air		1.83			1.43	10	
Beryllium	0.0147	0.00275	ng/m³ Air		0.0137			7.35	10	
Cadmium	ND	0.0636	ng/m³ Air		ND				10	U
Chromium	2.30	1.90	ng/m³ Air		2.35			1.90	10	
Cobalt	0.202	0.0374	ng/m³ Air		0.203			0.786	10	QB-01
Copper	89.2	2.26	ng/m³ Air		90.5			1.44	10	
Lead	0.195	0.184	ng/m³ Air		0.199			1.81	10	
Manganese	4.87	1.62	ng/m³ Air		4.95			1.50	10	
Molybdenum	3.77	0.308	ng/m³ Air		3.80			0.731	10	
Nickel	1.21	0.560	ng/m³ Air		1.23			1.25	10	
Selenium	0.165	0.00769	ng/m³ Air		0.171			3.86	10	
Thallium	0.00123	5.05E-4	ng/m³ Air		0.00129			4.56	10	
Vanadium	0.434	0.0454	ng/m³ Air		0.443			2.06	10	
Zinc	ND	65.9	ng/m³ Air		ND				10	U
Duplicate (B4I0409-DUP4)			**Source: 4090357-28**		Prepared: 09/04/24 Analyzed: 09/05/24					
Antimony	0.114	0.0296	ng/m³ Air		0.118			2.96	10	SL
Arsenic	0.316	0.00719	ng/m³ Air		0.329			4.08	10	
Barium	5.07	0.821	ng/m³ Air		5.21			2.71	10	
Beryllium	0.0123	0.00245	ng/m³ Air		0.0122			0.359	10	
Cadmium	ND	0.0568	ng/m³ Air		ND				10	U
Chromium	2.46	1.70	ng/m³ Air		2.52			2.36	10	
Cobalt	0.431	0.0334	ng/m³ Air		0.441			2.29	10	QB-01
Copper	48.4	2.02	ng/m³ Air		49.6			2.45	10	
Lead	0.917	0.164	ng/m³ Air		0.930			1.44	10	
Manganese	12.1	1.45	ng/m³ Air		12.3			1.33	10	
Molybdenum	3.92	0.275	ng/m³ Air		4.01			2.26	10	

CERTIFICATE OF ANALYSIS

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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: 09/10/24 14:12
SUBMITTED: 09/03/24
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 B4I0409 - ICP-MS Extraction										
Duplicate (B4I0409-DUP4) Continued		**Source: 4090357-28**		Prepared: 09/04/24 Analyzed: 09/05/24						
Nickel	1.44	0.500	ng/m³ Air		1.46			1.85	10	
Selenium	0.244	0.00687	ng/m³ Air		0.247			1.35	10	
Thallium	0.00502	4.52E-4	ng/m³ Air		0.00513			2.18	10	
Vanadium	1.67	0.0406	ng/m³ Air		1.69			1.47	10	
Zinc	ND	58.9	ng/m³ Air		ND				10	U
Matrix Spike (B4I0409-MS1)		**Source: 4090357-05**		Prepared & Analyzed: 09/04/24						
Antimony	0.690	0.0347	ng/m³ Air	1.2445	0.101	47.4	80-120			SL
Arsenic	4.50	0.00843	ng/m³ Air	2.4890	1.92	103	80-120			
Barium	32.9	0.963	ng/m³ Air	24.890	8.79	96.7	80-120			
Beryllium	1.23	0.00288	ng/m³ Air	1.2445	0.0291	96.1	80-120			
Cadmium	1.28	0.0667	ng/m³ Air	1.2445	ND	103	80-120			
Chromium	18.6	1.99	ng/m³ Air	12.445	6.52	96.7	80-120			
Cobalt	2.53	0.0392	ng/m³ Air	1.2445	1.30	99.0	80-120			QB-01
Copper	296	2.37	ng/m³ Air	24.890	269	108	80-120			
Lead	12.9	0.193	ng/m³ Air	12.445	0.556	98.9	80-120			
Manganese	40.8	1.70	ng/m³ Air	7.4669	32.6	109	80-120			
Molybdenum	10.1	0.323	ng/m³ Air	1.2445	8.74	113	80-120			
Nickel	5.71	0.587	ng/m³ Air	2.4890	3.24	99.0	80-120			
Selenium	2.62	0.00806	ng/m³ Air	2.4890	0.252	95.0	80-120			
Thallium	0.117	5.30E-4	ng/m³ Air	0.12445	0.00176	92.5	80-120			
Vanadium	6.22	0.0476	ng/m³ Air	2.4890	3.76	98.8	80-120			
Zinc	88.1	69.1	ng/m³ Air	74.669	ND	118	80-120			
Matrix Spike (B4I0409-MS2)		**Source: 4090357-12**		Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.882	0.0524	ng/m³ Air	1.8760	0.105	41.4	80-120			SL
Arsenic	3.88	0.0127	ng/m³ Air	3.7520	0.160	99.0	80-120			
Barium	42.4	1.45	ng/m³ Air	37.520	3.18	105	80-120			
Beryllium	1.78	0.00434	ng/m³ Air	1.8760	0.00808	94.7	80-120			
Cadmium	1.91	0.101	ng/m³ Air	1.8760	ND	102	80-120			
Chromium	22.2	3.00	ng/m³ Air	18.760	8.01	75.5	80-120			QM-07
Cobalt	2.09	0.0591	ng/m³ Air	1.8760	0.324	94.2	80-120			QB-01
Copper	67.5	3.57	ng/m³ Air	37.520	31.3	96.5	80-120			
Lead	19.3	0.290	ng/m³ Air	18.760	0.439	100	80-120			
Manganese	18.7	2.56	ng/m³ Air	11.256	8.22	92.9	80-120			
Molybdenum	4.06	0.487	ng/m³ Air	1.8760	2.25	96.5	80-120			
Nickel	4.77	0.884	ng/m³ Air	3.7520	2.80	52.4	80-120			QM-07
Selenium	3.79	0.0122	ng/m³ Air	3.7520	0.172	96.4	80-120			
Thallium	0.187	7.99E-4	ng/m³ Air	0.18760	0.00124	98.8	80-120			
Vanadium	4.45	0.0718	ng/m³ Air	3.7520	0.734	99.0	80-120			

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Analyte	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Inorganics by Compendium Method IO-3.5 - Quality Control										
Batch B4I0409 - ICP-MS Extraction										
Matrix Spike (B4I0409-MS2) Continued	**Source: 4090357-12**			Prepared: 09/04/24	Analyzed: 09/05/24					
Zinc	126	104	ng/m³ Air	112.56	ND	112	80-120			
Matrix Spike Dup (B4I0409-MSD1)	**Source: 4090357-05**			Prepared & Analyzed: 09/04/24						
Antimony	0.693	0.0347	ng/m³ Air	1.2445	0.101	47.6	80-120	0.352	20	SL
Arsenic	4.41	0.00843	ng/m³ Air	2.4890	1.92	99.7	80-120	2.09	20	
Barium	32.9	0.963	ng/m³ Air	24.890	8.79	96.8	80-120	0.0744	20	
Beryllium	1.23	0.00288	ng/m³ Air	1.2445	0.0291	96.4	80-120	0.264	20	
Cadmium	1.27	0.0667	ng/m³ Air	1.2445	ND	102	80-120	0.522	20	
Chromium	18.5	1.99	ng/m³ Air	12.445	6.52	96.1	80-120	0.419	20	
Cobalt	2.51	0.0392	ng/m³ Air	1.2445	1.30	97.5	80-120	0.706	20	QB-01
Copper	306	2.37	ng/m³ Air	24.890	269	150	80-120	3.41	20	QM-4X
Lead	12.8	0.193	ng/m³ Air	12.445	0.556	98.3	80-120	0.628	20	
Manganese	40.9	1.70	ng/m³ Air	7.4669	32.6	112	80-120	0.410	20	
Molybdenum	10.3	0.323	ng/m³ Air	1.2445	8.74	128	80-120	1.83	20	QM-4X
Nickel	5.65	0.587	ng/m³ Air	2.4890	3.24	96.8	80-120	0.983	20	
Selenium	2.67	0.00806	ng/m³ Air	2.4890	0.252	97.0	80-120	1.88	20	
Thallium	0.117	5.30E-4	ng/m³ Air	0.12445	0.00176	92.5	80-120	0.0147	20	
Vanadium	6.19	0.0476	ng/m³ Air	2.4890	3.76	97.8	80-120	0.408	20	
Zinc	85.8	69.1	ng/m³ Air	74.669	ND	115	80-120	2.64	20	
Matrix Spike Dup (B4I0409-MSD2)	**Source: 4090357-12**			Prepared: 09/04/24	Analyzed: 09/05/24					
Antimony	0.796	0.0524	ng/m³ Air	1.8760	0.105	36.8	80-120	10.2	20	SL
Arsenic	3.81	0.0127	ng/m³ Air	3.7520	0.160	97.2	80-120	1.80	20	
Barium	40.8	1.45	ng/m³ Air	37.520	3.18	100	80-120	3.81	20	
Beryllium	1.82	0.00434	ng/m³ Air	1.8760	0.00808	96.8	80-120	2.27	20	
Cadmium	1.86	0.101	ng/m³ Air	1.8760	ND	99.0	80-120	2.63	20	
Chromium	22.2	3.00	ng/m³ Air	18.760	8.01	75.8	80-120	0.300	20	QM-07
Cobalt	2.10	0.0591	ng/m³ Air	1.8760	0.324	94.8	80-120	0.531	20	QB-01
Copper	63.8	3.57	ng/m³ Air	37.520	31.3	86.7	80-120	5.61	20	
Lead	19.0	0.290	ng/m³ Air	18.760	0.439	98.9	80-120	1.40	20	
Manganese	18.3	2.56	ng/m³ Air	11.256	8.22	89.3	80-120	2.25	20	
Molybdenum	4.30	0.487	ng/m³ Air	1.8760	2.25	109	80-120	5.82	20	
Nickel	4.96	0.884	ng/m³ Air	3.7520	2.80	57.7	80-120	4.07	20	QM-07
Selenium	3.74	0.0122	ng/m³ Air	3.7520	0.172	95.2	80-120	1.16	20	
Thallium	0.184	7.99E-4	ng/m³ Air	0.18760	0.00124	97.3	80-120	1.56	20	
Vanadium	4.40	0.0718	ng/m³ Air	3.7520	0.734	97.8	80-120	1.04	20	
Zinc	123	104	ng/m³ Air	112.56	ND	109	80-120	2.18	20	
Post Spike (B4I0409-PS1)	**Source: 4090357-05**			Prepared & Analyzed: 09/04/24						
Antimony	0.347	0.0347	ng/m³ Air	0.24890	0.101	98.7	75-125			SL
Arsenic	3.10	0.00843	ng/m³ Air	1.2445	1.92	94.2	75-125			

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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 B4I0409 - ICP-MS Extraction										
Post Spike (B4I0409-PS1) Continued		**Source: 4090357-05**		Prepared & Analyzed: 09/04/24						
Barium	11.2	0.963	ng/m³ Air	2.4890	8.79	94.9	75-125			
Beryllium	0.267	0.00288	ng/m³ Air	0.24890	0.0291	95.7	75-125			
Cadmium	0.171	0.0667	ng/m³ Air	0.12445	ND	137	75-125			
Chromium	7.67	1.99	ng/m³ Air	1.2445	6.52	92.6	75-125			
Cobalt	1.55	0.0392	ng/m³ Air	0.24890	1.30	99.3	75-125			QB-01
Copper	282	2.37	ng/m³ Air	12.445	269	105	75-125			
Lead	25.3	0.193	ng/m³ Air	24.890	0.556	99.3	75-125			
Manganese	35.3	1.70	ng/m³ Air	2.4890	32.6	109	75-125			
Molybdenum	9.91	0.323	ng/m³ Air	1.2445	8.74	93.5	75-125			
Nickel	5.72	0.587	ng/m³ Air	2.4890	3.24	99.7	75-125			
Selenium	1.42	0.00806	ng/m³ Air	1.2445	0.252	94.3	75-125			
Thallium	0.0586	5.30E-4	ng/m³ Air	6.2224E-2	0.00176	91.4	75-125			
Vanadium	4.93	0.0476	ng/m³ Air	1.2445	3.76	94.4	75-125			
Zinc	ND	69.1	ng/m³ Air	24.890	ND		75-125			U
Post Spike (B4I0409-PS2)		**Source: 4090357-12**		Prepared: 09/04/24 Analyzed: 09/05/24						
Antimony	0.472	0.0524	ng/m³ Air	0.37520	0.105	97.7	75-125			SL
Arsenic	1.95	0.0127	ng/m³ Air	1.8760	0.160	95.5	75-125			
Barium	6.82	1.45	ng/m³ Air	3.7520	3.18	97.1	75-125			
Beryllium	0.366	0.00434	ng/m³ Air	0.37520	0.00808	95.5	75-125			
Cadmium	0.205	0.101	ng/m³ Air	0.18760	ND	109	75-125			
Chromium	9.84	3.00	ng/m³ Air	1.8760	8.01	97.7	75-125			
Cobalt	0.687	0.0591	ng/m³ Air	0.37520	0.324	96.6	75-125			QB-01
Copper	50.4	3.57	ng/m³ Air	18.760	31.3	102	75-125			
Lead	38.3	0.290	ng/m³ Air	37.520	0.439	101	75-125			
Manganese	11.8	2.56	ng/m³ Air	3.7520	8.22	95.7	75-125			
Molybdenum	4.10	0.487	ng/m³ Air	1.8760	2.25	98.4	75-125			
Nickel	6.57	0.884	ng/m³ Air	3.7520	2.80	101	75-125			
Selenium	2.01	0.0122	ng/m³ Air	1.8760	0.172	98.0	75-125			
Thallium	0.0925	7.99E-4	ng/m³ Air	9.3801E-2	0.00124	97.3	75-125			
Vanadium	2.56	0.0718	ng/m³ Air	1.8760	0.734	97.5	75-125			
Zinc	ND	104	ng/m³ Air	37.520	ND		75-125			U
Dilution Check (B4I0409-SRL1)		**Source: 4090357-05**		Prepared & Analyzed: 09/04/24						
Antimony	ND	0.174	ng/m³ Air		ND				10	SL, U
Arsenic	1.91	0.0422	ng/m³ Air		1.92			0.561	10	
Barium	8.68	4.81	ng/m³ Air		8.79			1.25	10	
Beryllium	0.0275	0.0144	ng/m³ Air		0.0291			5.65	10	
Cadmium	ND	0.333	ng/m³ Air		ND				10	U
Chromium	ND	9.94	ng/m³ Air		ND				10	U

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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 B4I0409 - ICP-MS Extraction										
Dilution Check (B4I0409-SRL1) Continued			**Source: 4090357-05**		Prepared & Analyzed: 09/04/24					
Cobalt	1.32	0.196	ng/m³ Air		1.30			1.66	10	QB-01
Copper	267	11.8	ng/m³ Air		269			0.854	10	
Lead	ND	0.963	ng/m³ Air		ND				10	U
Manganese	33.1	8.50	ng/m³ Air		32.6			1.55	10	
Molybdenum	8.94	1.62	ng/m³ Air		8.74			2.25	10	
Nickel	3.31	2.93	ng/m³ Air		3.24			2.22	10	
Selenium	0.298	0.0403	ng/m³ Air		0.252			17.0	10	SRD-01
Thallium	0.00555	0.00265	ng/m³ Air		ND			104	10	
Vanadium	3.76	0.238	ng/m³ Air		3.76			0.192	10	
Zinc	ND	346	ng/m³ Air		ND				10	U
Dilution Check (B4I0409-SRL2)			**Source: 4090357-12**		Prepared: 09/04/24 Analyzed: 09/05/24					
Antimony	ND	0.262	ng/m³ Air		ND				10	SL, U
Arsenic	0.161	0.0636	ng/m³ Air		0.160			0.533	10	
Barium	ND	7.26	ng/m³ Air		ND				10	U
Beryllium	ND	0.0217	ng/m³ Air		ND				10	U
Cadmium	ND	0.503	ng/m³ Air		ND				10	U
Chromium	ND	15.0	ng/m³ Air		ND				10	U
Cobalt	0.337	0.296	ng/m³ Air		0.324			3.88	10	QB-01
Copper	32.2	17.8	ng/m³ Air		31.3			2.79	10	
Lead	ND	1.45	ng/m³ Air		ND				10	U
Manganese	ND	12.8	ng/m³ Air		ND				10	U
Molybdenum	ND	2.44	ng/m³ Air		ND				10	U
Nickel	ND	4.42	ng/m³ Air		ND				10	U
Selenium	0.155	0.0608	ng/m³ Air		0.172			10.2	10	
Thallium	ND	0.00400	ng/m³ Air		ND				10	U
Vanadium	0.778	0.359	ng/m³ Air		0.734			5.89	10	
Zinc	ND	521	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.
QM-4X	The MS/MSD recovery exceeds criteria because the parent sample concentration is greater than 4x the spike concentration.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD.
QB-01	Analyte exceeds method blank criteria
FB-01	Analyte exceeds Field Blank criteria.
D	This result obtained by dilution.
ND	Analyte NOT DETECTED
NR	Not Reported
MDL	Method Detection Limit
RPD	Relative Percent Difference

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

Stage 1 Data Verification Checklist – Metals

HDOH CAB – Ambient Community Air Sampling – Lahaina

Task Order No. 23141

Reviewed by:
Kierra Johnson 09/11/2024 and Shanna Vasser 09/12/2024
Laboratory: Eastern Research Group – Morrisville, NC
Collection date(s): 08/22/2024 – 08/28/2024
Report No: 4090357

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

Discrepancies:

2. The laboratory stated that all samples were received in acceptable condition unless otherwise noted. The sample time for MFL-AM06-082524-HM was cut short due to inclement weather and the laboratory noted that it appeared to have water damage. MFL-AM02-082824-HM and MFL-AM03-082824-HM had the same filter IDs; therefore, the sample IDs were used to differentiate the samples.
4. MFL-AM02-082324-HM was listed on the CoC, but crossed off, voided (due to runtime uncertainty), and not shipped to the laboratory.
13. Field blank detections above the method detection limit were reported for arsenic, cobalt, molybdenum, and vanadium in MFL-FB01-082524-HM and for arsenic in MFL-FB01-082724-HM.

Notes:

1. MFL-AM05-082524-HM and MFL-AM02-082524-HM were analyzed at a four-fold dilution for vanadium.