



Tetra Tech Inc (HI)
737 Bishop St, Suite 2340
Honolulu, Hawaii 96813
Tel: 808-441-6600
Email: Yvonne.parry@Tetrattech.com

RE: DOH Maui Wildfire Ash Sample-LAHAINA ASH DU-1

Work Order No.: 2311115 Rev: 1

Dear Eric Jensen:

Torrent Laboratory, Inc. received 1 sample(s) on November 14, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

A handwritten signature in blue ink that reads "Kathie Evans". The signature is written in a cursive style and is positioned above a horizontal line.

Kathie Evans
Project Manager

December 18, 2023

Date



Date: 12/18/2023

Client: Tetra Tech Inc(HI)

Project: DOH Maui Wildfire Ash Sample-LAHAINA ASH DU-1

Work Order: 2311115

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

Analytical Comments, General: The samples were processed under Incremental Sampling Procedure/Multi Incremental Sampling SOP SVO-2055 but sieved through a 250 micron sieve

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

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Analytical Comments, General: The samples were processed under Incremental Sampling Procedure/Multi Incremental Sampling SOP SVO-2055 but sieved through a 250 micron sieve

Analytical comment for Bioaccessible Arsenic: Extraction procedure matched guidelines detailed in the SBRC method.

SPLP

Note: Extraction of 100 g sample/2000 g SPLP Fluid #2 was performed according to SP Leaching Procedure(SW-846 1312 SPLP) which was rotated in a rotary shaker @ 32 RPM for 18 hours (+/- 2 hours).

Date Prepared: 11/16/23 at 2:00 PM to 11/17/23 at 9:30 AM

Analytical Comments for method 8270C PAHSIM, 2311115001MS, QC Preparation Batch ID 1156131, Note: The % recovery and % RPD for Pyrene are outside of laboratory control limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

Analytical Comments for method 8015B, 2311115001MS/MSD, QC Preparation Batch ID 1156129, Note: The % recoveries for Diesel are outside of laboratory control limits but % RPD is within limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.



Analytical Comments for method 8081, 2311115001MS/MSD, QC Preparation Batch ID 1156201, Note:The % recoveries did not meet acceptance criteria. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

Analytical Comments for method 7471B, 2311115001MS/MSD, QC Preparation Batch ID 1156351, Note:The % recoveries for Mercury are outside of laboratory control limits but % RPD is within limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

Analytical Comments for method 6010B, 2311115001MS/MSD, QC Preparation Batch ID 1156354, Note:The % recoveries for Nickel are outside of laboratory control limits but % RPD is within limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

The spikes in the MS/MSD for Arsenic, Barium, Chromium, Copper, Lead, Aluminum, Calcium, Iron, Magnesium, Manganese, Potassium and Sodium are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comments for method 6010B IVBA, 2311115001MSD, QC Preparation Batch ID 1156340, Note:The % recovery for bioaccessible Arsenic is outside of laboratory control limits; % MS recovery and % RPD are within limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

REVISIONS

Report revised to include TOC data.

Rev. 1 (12/28/23)



Sample Result Summary

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date Received: 11/14/23

Date Reported: 12/18/23

2311115-001

LAHAINA ASH DU-1

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Total Organic Carbon	E9060A	1	20	200	50700	mg/Kg
Barium (SPLP)	SW6010B	1	0.020	0.20	0.208	mg/L
Chromium (SPLP)	SW6010B	1	0.010	0.20	0.948	mg/L
Lead (SPLP)	SW6010B	1	0.050	0.20	0.350	mg/L
Zinc (SPLP)	SW6010B	1	0.080	0.20	0.909	mg/L
Bioaccessible Arsenic	SW6010B	1	0.00200	0.0200	23.1	IVBA %
Antimony	SW6010C	20	0.50	50	25.8	mg/Kg
Arsenic	SW6010C	20	1.5	13	297	mg/Kg
Barium	SW6010C	20	0.54	50	231	mg/Kg
Beryllium	SW6010C	20	0.54	50	0.644	mg/Kg
Cadmium	SW6010C	20	0.99	50	3.17	mg/Kg
Chromium	SW6010C	20	0.74	50	136	mg/Kg
Cobalt	SW6010C	20	0.69	50	27.4	mg/Kg
Copper	SW6010C	20	2.0	50	1400	mg/Kg
Lead	SW6010C	20	0.99	30	383	mg/Kg
Nickel	SW6010C	20	5.0	50	71.3	mg/Kg
Silver	SW6010C	20	1.5	5.0	8.42	mg/Kg
Vanadium	SW6010C	20	0.99	50	55.0	mg/Kg
Zinc	SW6010C	20	3.0	50	2040	mg/Kg
Aluminum	SW6010C	20	210	990	10900	mg/Kg
Calcium	SW6010C	20	120	500	278000	mg/Kg
Iron	SW6010C	20	170	500	8710	mg/Kg
Magnesium	SW6010C	20	50	500	10100	mg/Kg
Manganese	SW6010C	20	8.4	50	299	mg/Kg
Potassium	SW6010C	20	47	500	1470	mg/Kg
Sodium	SW6010C	20	1300	3000	3380	mg/Kg
Antimony	SW6010C	20	0.50	50	24.0	mg/Kg
Arsenic	SW6010C	20	1.5	13	269	mg/Kg
Barium	SW6010C	20	0.55	50	234	mg/Kg
Cadmium	SW6010C	20	1.00	50	3.93	mg/Kg
Chromium	SW6010C	20	0.75	50	157	mg/Kg
Cobalt	SW6010C	20	0.70	50	23.0	mg/Kg
Copper	SW6010C	20	2.0	50	1970	mg/Kg
Lead	SW6010C	20	1.00	30	416	mg/Kg
Nickel	SW6010C	20	5.0	50	79.1	mg/Kg
Silver	SW6010C	20	1.5	5.0	9.70	mg/Kg
Vanadium	SW6010C	20	1.00	50	52.2	mg/Kg
Zinc	SW6010C	20	3.0	50	2370	mg/Kg
Aluminum	SW6010C	20	210	1000	11700	mg/Kg
Calcium	SW6010C	20	120	500	270000	mg/Kg
Iron	SW6010C	20	170	500	9750	mg/Kg
Magnesium	SW6010C	20	50	500	9900	mg/Kg
Manganese	SW6010C	20	8.5	50	311	mg/Kg
Potassium	SW6010C	20	47	500	1570	mg/Kg
Sodium	SW6010C	20	1300	3000	3670	mg/Kg
Antimony	SW6010C	20	0.50	50	25.6	mg/Kg



Sample Result Summary

Report prepared for: Eric Jensen
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Date Received: 11/14/23

Date Reported: 12/18/23

2311115-001

LAHAINA ASH DU-1 Triplicate

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010C	20	1.5	13	275	mg/Kg
Barium	SW6010C	20	0.55	50	207	mg/Kg
Cadmium	SW6010C	20	1.0	50	2.66	mg/Kg
Chromium	SW6010C	20	0.75	50	130	mg/Kg
Cobalt	SW6010C	20	0.70	50	25.7	mg/Kg
Copper	SW6010C	20	2.0	50	1630	mg/Kg
Lead	SW6010C	20	1.0	30	431	mg/Kg
Nickel	SW6010C	20	5.0	50	71.4	mg/Kg
Silver	SW6010C	20	1.5	5.0	10.4	mg/Kg
Vanadium	SW6010C	20	1.0	50	51.8	mg/Kg
Zinc	SW6010C	20	3.0	50	2270	mg/Kg
Aluminum	SW6010C	20	210	1000	11300	mg/Kg
Calcium	SW6010C	20	120	500	262000	mg/Kg
Iron	SW6010C	20	170	500	8790	mg/Kg
Magnesium	SW6010C	20	51	500	9800	mg/Kg
Manganese	SW6010C	20	8.5	50	301	mg/Kg
Potassium	SW6010C	20	47	500	1470	mg/Kg
Sodium	SW6010C	20	1400	3000	3430	mg/Kg
TPH as Diesel	SW8015B	1	1.1	2.7	37.6	mg/Kg
Naphthalene	SW8270CSIM	1	0.23	3.3	45	ug/Kg
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	12	ug/Kg
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	9.8	ug/Kg
Acenaphthylene	SW8270CSIM	1	0.23	3.3	4.0	ug/Kg
Phenanthrene	SW8270CSIM	1	0.24	3.3	32	ug/Kg
Fluoranthene	SW8270CSIM	1	0.23	3.3	12	ug/Kg
Pyrene	SW8270CSIM	1	0.23	3.3	13	ug/Kg
Chrysene	SW8270CSIM	1	0.12	3.3	8.0	ug/Kg
Naphthalene	SW8270CSIM	1	0.23	3.3	37	ug/Kg
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	13	ug/Kg
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	9.7	ug/Kg
Acenaphthylene	SW8270CSIM	1	0.23	3.3	7.9	ug/Kg
Fluorene	SW8270CSIM	1	0.27	3.3	8.8	ug/Kg
Phenanthrene	SW8270CSIM	1	0.24	3.3	41	ug/Kg
Anthracene	SW8270CSIM	1	0.17	3.3	5.0	ug/Kg
Fluoranthene	SW8270CSIM	1	0.23	3.3	17	ug/Kg
Pyrene	SW8270CSIM	1	0.23	3.3	17	ug/Kg
Benz[a]anthracene	SW8270CSIM	1	0.24	3.3	3.7	ug/Kg
Chrysene	SW8270CSIM	1	0.12	3.3	10	ug/Kg



Sample Result Summary

Report prepared for: Eric Jensen
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Date Received: 11/14/23

Date Reported: 12/18/23

LAHAINA ASH DU-1 Triplicate

2311115-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Naphthalene	SW8270CSIM	1	0.23	3.3	31	ug/Kg
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	8.2	ug/Kg
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	7.0	ug/Kg
Acenaphthylene	SW8270CSIM	1	0.23	3.3	4.7	ug/Kg
Phenanthrene	SW8270CSIM	1	0.24	3.3	31	ug/Kg
Anthracene	SW8270CSIM	1	0.17	3.3	3.5	ug/Kg
Fluoranthene	SW8270CSIM	1	0.23	3.3	9.2	ug/Kg
Pyrene	SW8270CSIM	1	0.23	3.3	9.5	ug/Kg
Chrysene	SW8270CSIM	1	0.12	3.3	6.7	ug/Kg
12378-PeCDF	SW8290Mod	1	1.0	5.0	44.7	pg/g
23478-PeCDF	SW8290Mod	1	0.68	5.0	125	pg/g
123478-HxCDF	SW8290Mod	1	0.51	5.0	100	pg/g
123678-HxCDF	SW8290Mod	1	1.1	5.0	60.5	pg/g
234678-HxCDF	SW8290Mod	1	1.5	5.0	107	pg/g
123789-HxCDF	SW8290Mod	1	1.9	5.0	26.8	pg/g
1234789-HpCDF	SW8290Mod	1	1.1	5.0	34.9	pg/g
OCDF	SW8290Mod	1	1.5	25	164	pg/g
12378-PeCDD	SW8290Mod	1	1.1	5.0	16.1	pg/g
123478-HxCDD	SW8290Mod	1	0.94	5.0	24.6	pg/g
123678-HxCDD	SW8290Mod	1	1.3	5.0	26.9	pg/g
123789-HxCDD	SW8290Mod	1	3.3	5.0	16.7	pg/g
1234678-HpCDD	SW8290Mod	1	1.6	5.0	220	pg/g
OCDD	SW8290Mod	1	4.4	25	457	pg/g
Total-Dioxins	SW8290Mod	1	0.21	0.50	761	pg/g
Total-Furans	SW8290Mod	1	0.22	0.50	663	pg/g
Total-TEQ	SW8290Mod	1			93.9	pg/g
1,2,3,7,8-PeCDF	SW8290Mod	1	1.0	5.0	50.4	pg/g
2,3,4,7,8-PeCDF	SW8290Mod	1	0.68	5.0	149	pg/g
1,2,3,4,7,8-HxCDF	SW8290Mod	1	0.50	5.0	116	pg/g
1,2,3,6,7,8-HxCDF	SW8290Mod	1	1.1	5.0	64.2	pg/g
2,3,4,6,7,8-HxCDF	SW8290Mod	1	1.5	5.0	113	pg/g
1,2,3,7,8,9-HxCDF	SW8290Mod	1	1.9	5.0	28.6	pg/g
1,2,3,4,7,8,9-HpCDF	SW8290Mod	1	1.1	5.0	35.8	pg/g
OCDF	SW8290Mod	1	1.5	25	184	pg/g
1,2,3,7,8-PeCDD	SW8290Mod	1	1.1	5.0	14.5	pg/g
1,2,3,4,7,8-HxCDD	SW8290Mod	1	0.93	5.0	24.5	pg/g
1,2,3,6,7,8-HxCDD	SW8290Mod	1	1.3	5.0	29.9	pg/g
1,2,3,7,8,9-HxCDD	SW8290Mod	1	3.2	5.0	17.3	pg/g
1,2,3,4,6,7,8-HpCDD	SW8290Mod	1	1.6	5.0	236	pg/g
OCDD	SW8290Mod	1	4.4	25	464	pg/g
Total-Dioxins	SW8290Mod	1	0.21	0.50	787	pg/g
Total-Furans	SW8290Mod	1	0.22	0.50	741	pg/g
TEQ	SW8290Mod	1			103	pg/g



Sample Result Summary

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date Received: 11/14/23

Date Reported: 12/18/23

LAHAINA ASH DU-1 Triplicate

2311115-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
1,2,3,7,8-PeCDF	SW8290Mod	1	0.98	4.8	50.6	pg/g
2,3,4,7,8-PeCDF	SW8290Mod	1	0.65	4.8	145	pg/g
1,2,3,4,7,8-HxCDF	SW8290Mod	1	0.48	4.8	109	pg/g
1,2,3,6,7,8-HxCDF	SW8290Mod	1	1.1	4.8	62.9	pg/g
2,3,4,6,7,8-HxCDF	SW8290Mod	1	1.4	4.8	108	pg/g
1,2,3,7,8,9-HxCDF	SW8290Mod	1	1.8	4.8	28.2	pg/g
1,2,3,4,7,8,9-HpCDF	SW8290Mod	1	1.1	4.8	35.8	pg/g
OCDF	SW8290Mod	1	1.4	24	180	pg/g
1,2,3,7,8-PeCDD	SW8290Mod	1	1.1	4.8	15.1	pg/g
1,2,3,4,7,8-HxCDD	SW8290Mod	1	0.89	4.8	24.5	pg/g
1,2,3,6,7,8-HxCDD	SW8290Mod	1	1.3	4.8	27.2	pg/g
1,2,3,7,8,9-HxCDD	SW8290Mod	1	3.1	4.8	17.3	pg/g
1,2,3,4,6,7,8-HpCDD	SW8290Mod	1	1.5	4.8	205	pg/g
OCDD	SW8290Mod	1	4.2	24	421	pg/g
Total-Dioxins	SW8290Mod	1	0.20	0.48	710	pg/g
Total-Furans	SW8290Mod	1	0.21	0.48	719	pg/g
TEQ	SW8290Mod	1			100	pg/g



SAMPLE RESULTS

Report prepared for: Eric Jensen
 Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 7471BP	Prep Batch Date/Time: 11/27/23	1:50:00PM
Prep Batch ID: 1156351	Prep Analyst:	GSHMA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.049	0.29	ND		mg/Kg	11/28/23	11:31	BJAY	479879



SAMPLE RESULTS

Report prepared for: Eric Jensen
 Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 1312/7470	Prep Batch Date/Time: 11/17/23 11:30:00AM
Prep Batch ID: 1156202	Prep Analyst: ROME

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury (SPLP)	SW7470A	1	0.00013	0.020	ND		mg/L	11/20/23	11:08	BJAY	479741



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 11/27/23	1:00:00PM
Prep Batch ID: 1156354	Prep Analyst:	GSHMA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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The results shown below are reported using their MDL.

Antimony	SW6010C	20	0.50	50	25.8	J	mg/Kg	11/28/23	19:46	PH	480014
Arsenic	SW6010C	20	1.5	13	297		mg/Kg	11/28/23	19:46	PH	480014
Barium	SW6010C	20	0.54	50	231		mg/Kg	11/28/23	19:46	PH	480014
Beryllium	SW6010C	20	0.54	50	0.644	J	mg/Kg	11/28/23	19:46	PH	480014
Cadmium	SW6010C	20	0.99	50	3.17	J	mg/Kg	11/28/23	19:46	PH	480014
Chromium	SW6010C	20	0.74	50	136		mg/Kg	11/28/23	19:46	PH	480014
Cobalt	SW6010C	20	0.69	50	27.4	J	mg/Kg	11/28/23	19:46	PH	480014
Copper	SW6010C	20	2.0	50	1400		mg/Kg	11/28/23	19:46	PH	480014
Lead	SW6010C	20	0.99	30	383		mg/Kg	11/28/23	19:46	PH	480014
Nickel	SW6010C	20	5.0	50	71.3		mg/Kg	11/28/23	19:46	PH	480014
Selenium	SW6010C	20	3.5	11	ND		mg/Kg	11/28/23	19:46	PH	480014
Silver	SW6010C	20	1.5	5.0	8.42		mg/Kg	11/28/23	19:46	PH	480014
Thallium	SW6010C	20	2.0	50	ND		mg/Kg	11/28/23	19:46	PH	480014
Vanadium	SW6010C	20	0.99	50	55.0		mg/Kg	11/28/23	19:46	PH	480014
Zinc	SW6010C	20	3.0	50	2040		mg/Kg	11/28/23	19:46	PH	480014
Aluminum	SW6010C	20	210	990	10900		mg/Kg	11/28/23	19:46	PH	480014
Calcium	SW6010C	20	120	500	278000		mg/Kg	11/28/23	19:46	PH	480014
Iron	SW6010C	20	170	500	8710		mg/Kg	11/28/23	19:46	PH	480014
Magnesium	SW6010C	20	50	500	10100		mg/Kg	11/28/23	19:46	PH	480014
Manganese	SW6010C	20	8.4	50	299		mg/Kg	11/28/23	19:46	PH	480014
Potassium	SW6010C	20	47	500	1470		mg/Kg	11/28/23	19:46	PH	480014
Sodium	SW6010C	20	1300	3000	3380		mg/Kg	11/28/23	19:46	PH	480014



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 1312/3010A	Prep Batch Date/Time: 11/17/23	11:30:00AM
Prep Batch ID: 1156199	Prep Analyst: ROME	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony (SPLP)	SW6010B	1	0.10	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Arsenic (SPLP)	SW6010B	1	0.20	0.40	ND		mg/L	11/17/23	18:22	ERR	479721
Barium (SPLP)	SW6010B	1	0.020	0.20	0.208		mg/L	11/17/23	18:22	ERR	479721
Beryllium (SPLP)	SW6010B	1	0.010	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Cadmium (SPLP)	SW6010B	1	0.040	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Chromium (SPLP)	SW6010B	1	0.010	0.20	0.948		mg/L	11/17/23	18:22	ERR	479721
Cobalt (SPLP)	SW6010B	1	0.010	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Copper (SPLP)	SW6010B	1	0.020	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Lead (SPLP)	SW6010B	1	0.050	0.20	0.350		mg/L	11/17/23	18:22	ERR	479721
Molybdenum (SPLP)	SW6010B	1	0.020	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Nickel (SPLP)	SW6010B	1	0.010	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Selenium (SPLP)	SW6010B	1	0.090	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Silver (SPLP)	SW6010B	1	0.020	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Thallium (SPLP)	SW6010B	1	0.12	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Vanadium (SPLP)	SW6010B	1	0.020	0.20	ND		mg/L	11/17/23	18:22	ERR	479721
Zinc (SPLP)	SW6010B	1	0.080	0.20	0.909		mg/L	11/17/23	18:22	ERR	479721



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3546_PAHSIM	Prep Batch Date/Time: 11/15/23	2:39:00PM
Prep Batch ID: 1156131	Prep Analyst: MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Naphthalene	SW8270CSIM	1	0.23	3.3	45		ug/Kg	11/15/23	17:19	MT	479659
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	12		ug/Kg	11/15/23	17:19	MT	479659
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	9.8		ug/Kg	11/15/23	17:19	MT	479659
Acenaphthylene	SW8270CSIM	1	0.23	3.3	4.0		ug/Kg	11/15/23	17:19	MT	479659
Acenaphthene	SW8270CSIM	1	0.24	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Fluorene	SW8270CSIM	1	0.27	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Phenanthrene	SW8270CSIM	1	0.24	3.3	32		ug/Kg	11/15/23	17:19	MT	479659
Anthracene	SW8270CSIM	1	0.17	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Fluoranthene	SW8270CSIM	1	0.23	3.3	12		ug/Kg	11/15/23	17:19	MT	479659
Pyrene	SW8270CSIM	1	0.23	3.3	13		ug/Kg	11/15/23	17:19	MT	479659
Benz[a]anthracene	SW8270CSIM	1	0.24	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Chrysene	SW8270CSIM	1	0.12	3.3	8.0		ug/Kg	11/15/23	17:19	MT	479659
Benzo[b]fluoranthene	SW8270CSIM	1	0.41	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Benzo[k]fluoranthene	SW8270CSIM	1	0.48	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Benzo[a]pyrene	SW8270CSIM	1	0.35	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Indeno[1,2,3-cd]pyrene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Dibenz[a,h]anthracene	SW8270CSIM	1	0.55	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Benzo[g,h,i]perylene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	11/15/23	17:19	MT	479659
Acceptance Limits											
2-Fluorobiphenyl (S)	SW8270CSIM		45 - 125		60		%	11/15/23	17:19	MT	479659
p-Terphenyl-d14 (S)	SW8270CSIM		30 - 125		37		%	11/15/23	17:19	MT	479659



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3546_PCB	Prep Batch Date/Time: 11/17/23	11:40:00AM
Prep Batch ID: 1156189	Prep Analyst: AKIZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	11/20/23	14:00	AK	479736
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	11/20/23	14:00	AK	479736
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	11/20/23	14:00	AK	479736
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	11/20/23	14:00	AK	479736
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	11/20/23	14:00	AK	479736
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	11/20/23	14:00	AK	479736
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	11/20/23	14:00	AK	479736
Acceptance Limits											
TCMX (S)	SW8082A		48 - 125		44.0	S	%	11/20/23	14:00	AK	479736
DCBP (S)	SW8082A		48 - 135		46.0	S	%	11/20/23	14:00	AK	479736

NOTE: S-surrogate outside of control limits due to possible matrix interference(Ash matrix)



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3546MI_OCP	Prep Batch Date/Time: 11/17/23	1:05:00PM
Prep Batch ID: 1156201	Prep Analyst: MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.13	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
gamma-BHC (Lindane)	SW8081B	1	0.16	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
beta-BHC	SW8081B	1	0.32	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
delta-BHC	SW8081B	1	0.16	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Heptachlor	SW8081B	1	0.11	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Aldrin	SW8081B	1	0.20	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Heptachlor Epoxide	SW8081B	1	0.078	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
gamma-Chlordane	SW8081B	1	0.16	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
alpha-Chlordane	SW8081B	1	0.17	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
4,4-DDE	SW8081B	1	0.19	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Endosulfan I	SW8081B	1	0.18	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Dieldrin	SW8081B	1	0.15	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Endrin	SW8081B	1	0.19	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
4,4-DDD	SW8081B	1	0.57	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Endosulfan II	SW8081B	1	0.58	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
4,4-DDT	SW8081B	1	0.13	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Endrin Aldehyde	SW8081B	1	0.15	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Methoxychlor	SW8081B	1	0.20	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Endosulfan Sulfate	SW8081B	1	0.12	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Endrin Ketone	SW8081B	1	0.094	2.0	ND		ug/Kg	11/17/23	14:01	MS	479848
Chlordane, Technical	SW8081B	1	2.1	20	ND		ug/Kg	11/17/23	14:01	MS	479848
Toxaphene	SW8081B	1	8.5	50	ND		ug/Kg	11/17/23	14:01	MS	479848
Acceptance Limits											
TCMX (S)	SW8081B		47 - 130		42.4	S	%	11/17/23	14:01	MS	479848
DCBP (S)	SW8081B		54 - 125		45.3	S	%	11/17/23	14:01	MS	479848

NOTE: S-surrogate outside of control limits due to possible matrix interference (ash matrix).



SAMPLE RESULTS

Report prepared for: Eric Jensen
 Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: TOC-S-P	Prep Batch Date/Time: 12/27/23	10:30:00AM
Prep Batch ID: 1157083	Prep Analyst:	BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Total Organic Carbon	E9060A	1	20	200	50700		mg/Kg	12/28/23	10:30	BJAY	480536



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3546_TPHetraMI	Prep Batch Date/Time: 11/15/23	1:07:00PM
Prep Batch ID: 1156129	Prep Analyst:	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel	SW8015B	1	1.1	2.7	37.6	x	mg/Kg	11/15/23	15:52	SN	479660
			Acceptance Limits								
Pentacosane (S)	SW8015B		59 - 129		62.3		%	11/15/23	15:52	SN	479660

NOTE: x- Chromatographic pattern does not resemble typical diesel reference standard; unknown organics slightly heavier than diesel and over-lapping of oil range quantified as diesel.

Prep Method: 8290S-P	Prep Batch Date/Time: 11/21/23	5:10:00PM
Prep Batch ID: 1156332	Prep Analyst:	MSAT
	Units:	pg/g

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2378-TCDF	SW8290Mod	1	0.22	0.50	ND		pg/g	11/28/23	0:33	TT	479871
12378-PeCDF	SW8290Mod	1	1.0	5.0	44.7		pg/g	11/28/23	0:33	TT	479871
23478-PeCDF	SW8290Mod	1	0.68	5.0	125		pg/g	11/28/23	0:33	TT	479871
123478-HxCDF	SW8290Mod	1	0.51	5.0	100		pg/g	11/28/23	0:33	TT	479871
123678-HxCDF	SW8290Mod	1	1.1	5.0	60.5		pg/g	11/28/23	0:33	TT	479871
234678-HxCDF	SW8290Mod	1	1.5	5.0	107		pg/g	11/28/23	0:33	TT	479871
123789-HxCDF	SW8290Mod	1	1.9	5.0	26.8		pg/g	11/28/23	0:33	TT	479871
1234678-HpCDF	SW8290Mod	1	1.9	5.0	ND		pg/g	11/28/23	0:33	TT	479871
1234789-HpCDF	SW8290Mod	1	1.1	5.0	34.9		pg/g	11/28/23	0:33	TT	479871
OCDF	SW8290Mod	1	1.5	25	164		pg/g	11/28/23	0:33	TT	479871
2378-TCDD	SW8290Mod	1	0.21	0.50	ND		pg/g	11/28/23	0:33	TT	479871
12378-PeCDD	SW8290Mod	1	1.1	5.0	16.1		pg/g	11/28/23	0:33	TT	479871
123478-HxCDD	SW8290Mod	1	0.94	5.0	24.6		pg/g	11/28/23	0:33	TT	479871
123678-HxCDD	SW8290Mod	1	1.3	5.0	26.9		pg/g	11/28/23	0:33	TT	479871
123789-HxCDD	SW8290Mod	1	3.3	5.0	16.7		pg/g	11/28/23	0:33	TT	479871
1234678-HpCDD	SW8290Mod	1	1.6	5.0	220		pg/g	11/28/23	0:33	TT	479871
OCDD	SW8290Mod	1	4.4	25	457		pg/g	11/28/23	0:33	TT	479871
Total-Dioxins	SW8290Mod	1	0.21	0.50	761		pg/g	11/28/23	0:33	TT	479871
Total-Furans	SW8290Mod	1	0.22	0.50	663		pg/g	11/28/23	0:33	TT	479871
Total-TEQ	SW8290Mod	1			93.9		pg/g	11/28/23	0:33	TT	479871
			Acceptance Limits								
(LS) 13C-2378-TCDF	SW8290Mod		40 - 135		61.3		%	11/28/23	0:33	TT	479871
(LS) 13C-12378-PeCDF	SW8290Mod		40 - 135		55.0		%	11/28/23	0:33	TT	479871
(LS) 13C-23478-PeCDF	SW8290Mod		40 - 135		73.0		%	11/28/23	0:33	TT	479871
(LS) 13C-123478-HxCDF	SW8290Mod		40 - 135		83.1		%	11/28/23	0:33	TT	479871
(LS) 13C-123678-HxCDF	SW8290Mod		40 - 135		82.8		%	11/28/23	0:33	TT	479871



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1	Lab Sample ID:	2311115-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 8290S-P	Prep Batch Date/Time: 11/21/23	5:10:00PM
Prep Batch ID: 1156332	Prep Analyst:	MSAT
	Units:	pg/g

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
(LS) 13C-234678-HxCDF	SW8290Mod		40 - 135		81.0		%	11/28/23	0:33	TT	479871
(LS) 13C-123789-HxCDF	SW8290Mod		40 - 135		75.2		%	11/28/23	0:33	TT	479871
(LS) 13C-1234678-HpCDF	SW8290Mod		40 - 135		77.1		%	11/28/23	0:33	TT	479871
(LS) 13C-1234789-HpCDF	SW8290Mod		40 - 135		74.1		%	11/28/23	0:33	TT	479871
(LS) 13C-2378-TCDD	SW8290Mod		40 - 135		65.7		%	11/28/23	0:33	TT	479871
(LS) 13C-12378-PeCDD	SW8290Mod		40 - 135		73.0		%	11/28/23	0:33	TT	479871
(LS) 13C-123478-HxCDD	SW8290Mod		40 - 135		89.3		%	11/28/23	0:33	TT	479871
(LS) 13C-123678-HxCDD	SW8290Mod		40 - 135		85.1		%	11/28/23	0:33	TT	479871
(LS) 13C-1234678-HpCDD	SW8290Mod		40 - 135		75.3		%	11/28/23	0:33	TT	479871
(LS) 13C-OCDD	SW8290Mod		40 - 135		65.0		%	11/28/23	0:33	TT	479871
(CRS) 37CI-2378-TCDD	SW8290Mod		40 - 135		105		%	11/28/23	0:33	TT	479871



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Duplicate	Lab Sample ID:	2311115-001B
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: Bioavailable As	Prep Batch Date/Time: 11/27/23	10:45:00AM
Prep Batch ID: 1156340	Prep Analyst: ROME	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Bioaccessible Arsenic	SW6010B	1	0.00200	0.0200	23.1		IVBA %	11/27/23	14:18	AT	479892



SAMPLE RESULTS

Report prepared for: Eric Jensen
 Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Duplicate	Lab Sample ID:	2311115-001B
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 7471BP	Prep Batch Date/Time: 11/27/23	1:50:00PM
Prep Batch ID: 1156351	Prep Analyst: GSHMA	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.050	0.30	ND		mg/Kg	11/28/23	11:37	BJAY	479879



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Duplicate	Lab Sample ID:	2311115-001B
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 11/27/23	1:00:00PM
Prep Batch ID: 1156354	Prep Analyst: GSHMA	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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The results shown below are reported using their MDL.

Antimony	SW6010C	20	0.50	50	24.0	J	mg/Kg	11/28/23	19:51	PH	480014
Arsenic	SW6010C	20	1.5	13	269		mg/Kg	11/28/23	19:51	PH	480014
Barium	SW6010C	20	0.55	50	234		mg/Kg	11/28/23	19:51	PH	480014
Beryllium	SW6010C	20	0.55	50	ND		mg/Kg	11/28/23	19:51	PH	480014
Cadmium	SW6010C	20	1.00	50	3.93	J	mg/Kg	11/28/23	19:51	PH	480014
Chromium	SW6010C	20	0.75	50	157		mg/Kg	11/28/23	19:51	PH	480014
Cobalt	SW6010C	20	0.70	50	23.0	J	mg/Kg	11/28/23	19:51	PH	480014
Copper	SW6010C	20	2.0	50	1970		mg/Kg	11/28/23	19:51	PH	480014
Lead	SW6010C	20	1.00	30	416		mg/Kg	11/28/23	19:51	PH	480014
Nickel	SW6010C	20	5.0	50	79.1		mg/Kg	11/28/23	19:51	PH	480014
Selenium	SW6010C	20	3.5	11	ND		mg/Kg	11/28/23	19:51	PH	480014
Silver	SW6010C	20	1.5	5.0	9.70		mg/Kg	11/28/23	19:51	PH	480014
Thallium	SW6010C	20	2.0	50	ND		mg/Kg	11/28/23	19:51	PH	480014
Vanadium	SW6010C	20	1.00	50	52.2		mg/Kg	11/28/23	19:51	PH	480014
Zinc	SW6010C	20	3.0	50	2370		mg/Kg	11/28/23	19:51	PH	480014
Aluminum	SW6010C	20	210	1000	11700		mg/Kg	11/28/23	19:51	PH	480014
Calcium	SW6010C	20	120	500	270000		mg/Kg	11/28/23	19:51	PH	480014
Iron	SW6010C	20	170	500	9750		mg/Kg	11/28/23	19:51	PH	480014
Magnesium	SW6010C	20	50	500	9900		mg/Kg	11/28/23	19:51	PH	480014
Manganese	SW6010C	20	8.5	50	311		mg/Kg	11/28/23	19:51	PH	480014
Potassium	SW6010C	20	47	500	1570		mg/Kg	11/28/23	19:51	PH	480014
Sodium	SW6010C	20	1300	3000	3670		mg/Kg	11/28/23	19:51	PH	480014



SAMPLE RESULTS

Report prepared for:

Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am

Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Duplicate	Lab Sample ID:	2311115-001B
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3546_PAHSIM	Prep Batch Date/Time: 11/15/23	2:39:00PM
Prep Batch ID: 1156131	Prep Analyst:	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Naphthalene	SW8270CSIM	1	0.23	3.3	37		ug/Kg	11/15/23	17:49	MT	479659
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	13		ug/Kg	11/15/23	17:49	MT	479659
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	9.7		ug/Kg	11/15/23	17:49	MT	479659
Acenaphthylene	SW8270CSIM	1	0.23	3.3	7.9		ug/Kg	11/15/23	17:49	MT	479659
Acenaphthene	SW8270CSIM	1	0.24	3.3	ND		ug/Kg	11/15/23	17:49	MT	479659
Fluorene	SW8270CSIM	1	0.27	3.3	8.8		ug/Kg	11/15/23	17:49	MT	479659
Phenanthrene	SW8270CSIM	1	0.24	3.3	41		ug/Kg	11/15/23	17:49	MT	479659
Anthracene	SW8270CSIM	1	0.17	3.3	5.0		ug/Kg	11/15/23	17:49	MT	479659
Fluoranthene	SW8270CSIM	1	0.23	3.3	17		ug/Kg	11/15/23	17:49	MT	479659
Pyrene	SW8270CSIM	1	0.23	3.3	17		ug/Kg	11/15/23	17:49	MT	479659
Benz[a]anthracene	SW8270CSIM	1	0.24	3.3	3.7		ug/Kg	11/15/23	17:49	MT	479659
Chrysene	SW8270CSIM	1	0.12	3.3	10		ug/Kg	11/15/23	17:49	MT	479659
Benzo[b]fluoranthene	SW8270CSIM	1	0.41	3.3	ND		ug/Kg	11/15/23	17:49	MT	479659
Benzo[k]fluoranthene	SW8270CSIM	1	0.48	3.3	ND		ug/Kg	11/15/23	17:49	MT	479659
Benzo[a]pyrene	SW8270CSIM	1	0.35	3.3	ND		ug/Kg	11/15/23	17:49	MT	479659
Indeno[1,2,3-cd]pyrene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	11/15/23	17:49	MT	479659
Dibenz[a,h]anthracene	SW8270CSIM	1	0.55	3.3	ND		ug/Kg	11/15/23	17:49	MT	479659
Benzo[g,h,i]perylene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	11/15/23	17:49	MT	479659
Acceptance Limits											
2-Fluorobiphenyl (S)	SW8270CSIM		45 - 125		69		%	11/15/23	17:49	MT	479659
p-Terphenyl-d14 (S)	SW8270CSIM		30 - 125		52		%	11/15/23	17:49	MT	479659

Prep Method: 8290S-P	Prep Batch Date/Time: 11/21/23	5:10:00PM
Prep Batch ID: 1156332	Prep Analyst:	MSAT
	Units:	pg/g

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,3,7,8-TCDF	SW8290Mod	1	0.22	0.50	ND		pg/g	11/28/23	2:39	TT	479871
1,2,3,7,8-PeCDF	SW8290Mod	1	1.0	5.0	50.4		pg/g	11/28/23	2:39	TT	479871
2,3,4,7,8-PeCDF	SW8290Mod	1	0.68	5.0	149		pg/g	11/28/23	2:39	TT	479871
1,2,3,4,7,8-HxCDF	SW8290Mod	1	0.50	5.0	116		pg/g	11/28/23	2:39	TT	479871
1,2,3,6,7,8-HxCDF	SW8290Mod	1	1.1	5.0	64.2		pg/g	11/28/23	2:39	TT	479871
2,3,4,6,7,8-HxCDF	SW8290Mod	1	1.5	5.0	113		pg/g	11/28/23	2:39	TT	479871
1,2,3,7,8,9-HxCDF	SW8290Mod	1	1.9	5.0	28.6		pg/g	11/28/23	2:39	TT	479871
1,2,3,4,6,7,8-HpCDF	SW8290Mod	1	1.8	5.0	ND		pg/g	11/28/23	2:39	TT	479871
1,2,3,4,7,8,9-HpCDF	SW8290Mod	1	1.1	5.0	35.8		pg/g	11/28/23	2:39	TT	479871
OCDF	SW8290Mod	1	1.5	25	184		pg/g	11/28/23	2:39	TT	479871



SAMPLE RESULTS

Report prepared for:

Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am

Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Duplicate	Lab Sample ID:	2311115-001B
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 8290S-P	Prep Batch Date/Time: 11/21/23 5:10:00PM
Prep Batch ID: 1156332	Prep Analyst: MSAT
	Units: pg/g

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,3,7,8-TCDD	SW8290Mod	1	0.21	0.50	ND		pg/g	11/28/23	2:39	TT	479871
1,2,3,7,8-PeCDD	SW8290Mod	1	1.1	5.0	14.5		pg/g	11/28/23	2:39	TT	479871
1,2,3,4,7,8-HxCDD	SW8290Mod	1	0.93	5.0	24.5		pg/g	11/28/23	2:39	TT	479871
1,2,3,6,7,8-HxCDD	SW8290Mod	1	1.3	5.0	29.9		pg/g	11/28/23	2:39	TT	479871
1,2,3,7,8,9-HxCDD	SW8290Mod	1	3.2	5.0	17.3		pg/g	11/28/23	2:39	TT	479871
1,2,3,4,6,7,8-HpCDD	SW8290Mod	1	1.6	5.0	236		pg/g	11/28/23	2:39	TT	479871
OCDD	SW8290Mod	1	4.4	25	464		pg/g	11/28/23	2:39	TT	479871
Total-Dioxins	SW8290Mod	1	0.21	0.50	787		pg/g	11/28/23	2:39	TT	479871
Total-Furans	SW8290Mod	1	0.22	0.50	741		pg/g	11/28/23	2:39	TT	479871
TEQ	SW8290Mod	1			103		pg/g	11/28/23	2:39	TT	479871
Acceptance Limits											
(LS) 13C-2,3,7,8-TCDF	SW8290Mod		40 - 135		75.3		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,7,8-PeCDF	SW8290Mod		40 - 135		64.8		%	11/28/23	2:39	TT	479871
(LS) 13C-2,3,4,7,8-PeCDF	SW8290Mod		40 - 135		84.3		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,4,7,8-HxCDF	SW8290Mod		40 - 135		94.9		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,6,7,8-HxCDF	SW8290Mod		40 - 135		93.9		%	11/28/23	2:39	TT	479871
(LS) 13C-2,3,4,6,7,8-HxCDF	SW8290Mod		40 - 135		94.5		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,7,8,9-HxCDF	SW8290Mod		40 - 135		83.6		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,4,6,7,8-HpCDF	SW8290Mod		40 - 135		86.7		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,4,7,8,9-HpCDF	SW8290Mod		40 - 135		84.9		%	11/28/23	2:39	TT	479871
(LS) 13C-2,3,7,8-TCDD	SW8290Mod		40 - 135		75.8		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,7,8-PeCDD	SW8290Mod		40 - 135		87.3		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,4,7,8-HxCDD	SW8290Mod		40 - 135		98.9		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,6,7,8-HxCDD	SW8290Mod		40 - 135		96.6		%	11/28/23	2:39	TT	479871
(LS) 13C-1,2,3,4,6,7,8-HpCDD	SW8290Mod		40 - 135		87.8		%	11/28/23	2:39	TT	479871
(LS) 13C-OCDD	SW8290Mod		40 - 135		71.2		%	11/28/23	2:39	TT	479871
(CRS) 37Cl-2378-TCDD	SW8290Mod		40 - 135		119		%	11/28/23	2:39	TT	479871



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Triplicate	Lab Sample ID:	2311115-001C
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 7471BP	Prep Batch Date/Time: 11/27/23	1:50:00PM
Prep Batch ID: 1156351	Prep Analyst:	GSHMA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.050	0.30	ND		mg/Kg	11/28/23	11:39	BJAY	479879



SAMPLE RESULTS

Report prepared for: Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Triplicate	Lab Sample ID:	2311115-001C
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 11/27/23	1:00:00PM
Prep Batch ID: 1156354	Prep Analyst: GSHMA	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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The results shown below are reported using their MDL.

Antimony	SW6010C	20	0.50	50	25.6	J	mg/Kg	11/28/23	19:53	PH	480014
Arsenic	SW6010C	20	1.5	13	275		mg/Kg	11/28/23	19:53	PH	480014
Barium	SW6010C	20	0.55	50	207		mg/Kg	11/28/23	19:53	PH	480014
Beryllium	SW6010C	20	0.55	50	ND		mg/Kg	11/28/23	19:53	PH	480014
Cadmium	SW6010C	20	1.0	50	2.66	J	mg/Kg	11/28/23	19:53	PH	480014
Chromium	SW6010C	20	0.75	50	130		mg/Kg	11/28/23	19:53	PH	480014
Cobalt	SW6010C	20	0.70	50	25.7	J	mg/Kg	11/28/23	19:53	PH	480014
Copper	SW6010C	20	2.0	50	1630		mg/Kg	11/28/23	19:53	PH	480014
Lead	SW6010C	20	1.0	30	431		mg/Kg	11/28/23	19:53	PH	480014
Nickel	SW6010C	20	5.0	50	71.4		mg/Kg	11/28/23	19:53	PH	480014
Selenium	SW6010C	20	3.5	11	ND		mg/Kg	11/28/23	19:53	PH	480014
Silver	SW6010C	20	1.5	5.0	10.4		mg/Kg	11/28/23	19:53	PH	480014
Thallium	SW6010C	20	2.0	50	ND		mg/Kg	11/28/23	19:53	PH	480014
Vanadium	SW6010C	20	1.0	50	51.8		mg/Kg	11/28/23	19:53	PH	480014
Zinc	SW6010C	20	3.0	50	2270		mg/Kg	11/28/23	19:53	PH	480014
Aluminum	SW6010C	20	210	1000	11300		mg/Kg	11/28/23	19:53	PH	480014
Calcium	SW6010C	20	120	500	262000		mg/Kg	11/28/23	19:53	PH	480014
Iron	SW6010C	20	170	500	8790		mg/Kg	11/28/23	19:53	PH	480014
Magnesium	SW6010C	20	51	500	9800		mg/Kg	11/28/23	19:53	PH	480014
Manganese	SW6010C	20	8.5	50	301		mg/Kg	11/28/23	19:53	PH	480014
Potassium	SW6010C	20	47	500	1470		mg/Kg	11/28/23	19:53	PH	480014
Sodium	SW6010C	20	1400	3000	3430		mg/Kg	11/28/23	19:53	PH	480014



SAMPLE RESULTS

Report prepared for:

Eric Jensen
Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am

Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Triplicate	Lab Sample ID:	2311115-001C
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 3546_PAHSIM	Prep Batch Date/Time: 11/15/23	2:39:00PM
Prep Batch ID: 1156131	Prep Analyst: MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Naphthalene	SW8270CSIM	1	0.23	3.3	31		ug/Kg	11/15/23	18:19	MT	479659
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	8.2		ug/Kg	11/15/23	18:19	MT	479659
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	7.0		ug/Kg	11/15/23	18:19	MT	479659
Acenaphthylene	SW8270CSIM	1	0.23	3.3	4.7		ug/Kg	11/15/23	18:19	MT	479659
Acenaphthene	SW8270CSIM	1	0.24	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Fluorene	SW8270CSIM	1	0.27	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Phenanthrene	SW8270CSIM	1	0.24	3.3	31		ug/Kg	11/15/23	18:19	MT	479659
Anthracene	SW8270CSIM	1	0.17	3.3	3.5		ug/Kg	11/15/23	18:19	MT	479659
Fluoranthene	SW8270CSIM	1	0.23	3.3	9.2		ug/Kg	11/15/23	18:19	MT	479659
Pyrene	SW8270CSIM	1	0.23	3.3	9.5		ug/Kg	11/15/23	18:19	MT	479659
Benz[a]anthracene	SW8270CSIM	1	0.24	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Chrysene	SW8270CSIM	1	0.12	3.3	6.7		ug/Kg	11/15/23	18:19	MT	479659
Benzo[b]fluoranthene	SW8270CSIM	1	0.41	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Benzo[k]fluoranthene	SW8270CSIM	1	0.48	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Benzo[a]pyrene	SW8270CSIM	1	0.35	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Indeno[1,2,3-cd]pyrene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Dibenz[a,h]anthracene	SW8270CSIM	1	0.55	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Benzo[g,h,i]perylene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	11/15/23	18:19	MT	479659
Acceptance Limits											
2-Fluorobiphenyl (S)	SW8270CSIM		45 - 125		45	S	%	11/15/23	18:19	MT	479659
p-Terphenyl-d14 (S)	SW8270CSIM		30 - 125		33		%	11/15/23	18:19	MT	479659

NOTE: S-surrogate outside of control limits due to possible matrix interference

Prep Method: 8290S-P	Prep Batch Date/Time: 11/21/23	5:10:00PM
Prep Batch ID: 1156332	Prep Analyst: MSAT	
	Units: pg/g	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,3,7,8-TCDF	SW8290Mod	1	0.21	0.48	ND		pg/g	11/28/23	3:43	TT	479871
1,2,3,7,8-PeCDF	SW8290Mod	1	0.98	4.8	50.6		pg/g	11/28/23	3:43	TT	479871
2,3,4,7,8-PeCDF	SW8290Mod	1	0.65	4.8	145		pg/g	11/28/23	3:43	TT	479871
1,2,3,4,7,8-HxCDF	SW8290Mod	1	0.48	4.8	109		pg/g	11/28/23	3:43	TT	479871
1,2,3,6,7,8-HxCDF	SW8290Mod	1	1.1	4.8	62.9		pg/g	11/28/23	3:43	TT	479871
2,3,4,6,7,8-HxCDF	SW8290Mod	1	1.4	4.8	108		pg/g	11/28/23	3:43	TT	479871
1,2,3,7,8,9-HxCDF	SW8290Mod	1	1.8	4.8	28.2		pg/g	11/28/23	3:43	TT	479871
1,2,3,4,6,7,8-HpCDF	SW8290Mod	1	1.8	4.8	ND		pg/g	11/28/23	3:43	TT	479871
1,2,3,4,7,8,9-HpCDF	SW8290Mod	1	1.1	4.8	35.8		pg/g	11/28/23	3:43	TT	479871



SAMPLE RESULTS

Report prepared for: Eric Jensen
 Tetra Tech Inc (HI)

Date/Time Received: 11/14/23, 10:05 am
Date Reported: 12/18/23

Client Sample ID:	LAHAINA ASH DU-1 Triplicate	Lab Sample ID:	2311115-001C
Project Name/Location:	DOH Maui Wildfire Ash Sample-LAHAINA A:	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	11/08/23 / 11:00		
SDG:			

Prep Method: 8290S-P	Prep Batch Date/Time: 11/21/23 5:10:00PM
Prep Batch ID: 1156332	Prep Analyst: MSAT
	Units: pg/g

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
OCDF	SW8290Mod	1	1.4	24	180		pg/g	11/28/23	3:43	TT	479871
2,3,7,8-TCDD	SW8290Mod	1	0.20	0.48	ND		pg/g	11/28/23	3:43	TT	479871
1,2,3,4,7,8-PeCDD	SW8290Mod	1	1.1	4.8	15.1		pg/g	11/28/23	3:43	TT	479871
1,2,3,4,7,8-HxCDD	SW8290Mod	1	0.89	4.8	24.5		pg/g	11/28/23	3:43	TT	479871
1,2,3,6,7,8-HxCDD	SW8290Mod	1	1.3	4.8	27.2		pg/g	11/28/23	3:43	TT	479871
1,2,3,7,8,9-HxCDD	SW8290Mod	1	3.1	4.8	17.3		pg/g	11/28/23	3:43	TT	479871
1,2,3,4,6,7,8-HpCDD	SW8290Mod	1	1.5	4.8	205		pg/g	11/28/23	3:43	TT	479871
OCDD	SW8290Mod	1	4.2	24	421		pg/g	11/28/23	3:43	TT	479871
Total-Dioxins	SW8290Mod	1	0.20	0.48	710		pg/g	11/28/23	3:43	TT	479871
Total-Furans	SW8290Mod	1	0.21	0.48	719		pg/g	11/28/23	3:43	TT	479871
TEQ	SW8290Mod	1			100		pg/g	11/28/23	3:43	TT	479871
Acceptance Limits											
(LS) 13C-2,3,7,8-TCDF	SW8290Mod		40 - 135		59.1		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,7,8-PeCDF	SW8290Mod		40 - 135		49.8		%	11/28/23	3:43	TT	479871
(LS) 13C-2,3,4,7,8-PeCDF	SW8290Mod		40 - 135		65.1		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,4,7,8-HxCDF	SW8290Mod		40 - 135		70.8		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,6,7,8-HxCDF	SW8290Mod		40 - 135		67.9		%	11/28/23	3:43	TT	479871
(LS) 13C-2,3,4,6,7,8-HxCDF	SW8290Mod		40 - 135		69.7		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,7,8,9-HxCDF	SW8290Mod		40 - 135		61.2		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,4,6,7,8-HpCDF	SW8290Mod		40 - 135		63.8		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,4,7,8,9-HpCDF	SW8290Mod		40 - 135		61.9		%	11/28/23	3:43	TT	479871
(LS) 13C-2,3,7,8-TCDD	SW8290Mod		40 - 135		60.3		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,7,8-PeCDD	SW8290Mod		40 - 135		65.7		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,4,7,8-HxCDD	SW8290Mod		40 - 135		72.7		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,6,7,8-HxCDD	SW8290Mod		40 - 135		69.7		%	11/28/23	3:43	TT	479871
(LS) 13C-1,2,3,4,6,7,8-HpCDD	SW8290Mod		40 - 135		64.6		%	11/28/23	3:43	TT	479871
(LS) 13C-OCDD	SW8290Mod		40 - 135		50.5		%	11/28/23	3:43	TT	479871
(CRS) 37Cl-2378-TCDD	SW8290Mod		40 - 135		115		%	11/28/23	3:43	TT	479871



MB Summary Report

Work Order:	2311115	Prep Method:	3546_TPHTEtraMI	Prep Date:	11/15/23	Prep Batch:	1156129
Matrix:	Soil	Analytical Method:	SW8015B	Analyzed Date:	11/15/2023	Analytical Batch:	479660
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
TPH as Diesel	1.1	2.7	ND		
TPH as Motor Oil	4.2	13	ND		
Pentacosane (S)			89.1		

Work Order:	2311115	Prep Method:	3546_PAHSIM	Prep Date:	11/15/23	Prep Batch:	1156131
Matrix:	Soil	Analytical Method:	SW8270CSIM	Analyzed Date:	11/15/2023	Analytical Batch:	479659
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Naphthalene	0.43	1.5	0.767		
2-Methylnaphthalene	0.19	1.5	0.257		
1-Methylnaphthalene	0.15	1.5	ND		
Acenaphthylene	0.15	1.5	ND		
Acenaphthene	0.13	1.5	ND		
Fluorene	0.22	1.5	ND		
Phenanthrene	0.49	1.5	ND		
Anthracene	0.44	1.5	ND		
Fluoranthene	0.44	1.5	ND		
Pyrene	0.46	1.5	ND		
Benz[a]anthracene	0.39	1.5	0.544		
Chrysene	0.41	1.5	ND		
Benzo[b]fluoranthene	0.20	1.5	ND		
Benzo[k]fluoranthene	0.19	1.5	ND		
Benzo[a]pyrene	0.24	1.5	ND		
Indeno[1,2,3-cd]pyrene	0.18	1.5	ND		
Dibenz[a,h]anthracene	0.23	1.5	ND		
Benzo[g,h,i]perylene	0.22	1.5	ND		
2-Fluorobiphenyl (S)			83.8		
p-Terphenyl-d14 (S)			92.8		



MB Summary Report

Work Order:	2311115	Prep Method:	3546_PCB	Prep Date:	11/17/23	Prep Batch:	1156189
Matrix:	Soil	Analytical Method:	SW8082A	Analyzed Date:	11/20/2023	Analytical Batch:	479736
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Aroclor1016	35.0	100	ND		
Aroclor1221	5.00	100	ND		
Aroclor1232	17.0	100	ND		
Aroclor1242	3.00	100	ND		
Aroclor1248	2.00	100	ND		
Aroclor1254	14.0	100	ND		
Aroclor1260	24.0	100	ND		
TCMX (S)			107		
DCBP (S)			99.0		

Work Order:	2311115	Prep Method:	1312/3010A	Prep Date:	11/17/23	Prep Batch:	1156199
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	11/17/2023	Analytical Batch:	479721
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Antimony (SPLP)	0.10	0.20	ND		
Arsenic (SPLP)	0.40	0.20	ND		
Barium (SPLP)	0.020	0.20	ND		
Beryllium (SPLP)	0.010	0.20	ND		
Cadmium (SPLP)	0.040	0.20	ND		
Chromium (SPLP)	0.010	0.20	ND		
Cobalt (SPLP)	0.010	0.20	ND		
Copper (SPLP)	0.020	0.20	ND		
Lead (SPLP)	0.050	0.20	ND		
Molybdenum (SPLP)	0.020	0.20	ND		
Nickel (SPLP)	0.010	0.20	ND		
Selenium (SPLP)	0.090	0.20	ND		
Silver (SPLP)	0.020	0.20	ND		
Thallium (SPLP)	0.12	0.20	ND		
Vanadium (SPLP)	0.020	0.20	ND		
Zinc (SPLP)	0.080	0.20	ND		



MB Summary Report

Work Order:	2311115	Prep Method:	3546MI_OCP	Prep Date:	11/17/23	Prep Batch:	1156201
Matrix:	Soil	Analytical Method:	SW8081B	Analyzed Date:	11/17/2023	Analytical Batch:	479848
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
alpha-BHC	0.13	2.0	ND		
gamma-BHC (Lindane)	0.16	2.0	ND		
beta-BHC	0.32	2.0	ND		
delta-BHC	0.16	2.0	ND		
Heptachlor	0.11	2.0	ND		
Aldrin	0.20	2.0	ND		
Heptachlor Epoxide	0.078	2.0	ND		
gamma-Chlordane	0.16	2.0	ND		
alpha-Chlordane	0.17	2.0	ND		
4,4-DDE	0.19	2.0	ND		
Endosulfan I	0.18	2.0	ND		
Dieldrin	0.15	2.0	ND		
Endrin	0.19	2.0	ND		
4,4-DDD	0.57	2.0	ND		
Endosulfan II	0.58	2.0	ND		
4,4-DDT	0.13	2.0	ND		
Endrin Aldehyde	0.15	2.0	ND		
Methoxychlor	0.20	2.0	ND		
Endosulfan Sulfate	0.12	2.0	ND		
Endrin Ketone	0.094	2.0	ND		
Chlordane, Technical	2.1	20	ND		
Toxaphene	8.5	50	ND		
TCMX (S)			100		
DCBP (S)			98.0		

Work Order:	2311115	Prep Method:	1312/7470	Prep Date:	11/17/23	Prep Batch:	1156202
Matrix:	Soil	Analytical Method:	SW7470A	Analyzed Date:	11/20/2023	Analytical Batch:	479741
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Mercury (SPLP)	0.00013	0.020	ND		



MB Summary Report

Work Order:	2311115	Prep Method:	8290S-P	Prep Date:	11/21/23	Prep Batch:	1156332
Matrix:	Soil	Analytical Method:	8290	Analyzed Date:	11/27/2023	Analytical Batch:	479871
Units:	pg/g						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
2,3,7,8-TCDF	0.22		0.22	U	
1,2,3,7,8-PeCDF	1.0		1.0	U	
2,3,4,7,8-PeCDF	0.68		0.68	U	
1,2,3,4,7,8-HxCDF	0.50		0.50	U	
1,2,3,6,7,8-HxCDF	0.50		0.50	U	
2,3,4,6,7,8-HxCDF	0.50		0.50	U	
1,2,3,7,8,9-HxCDF	0.50		0.50	U	
1,2,3,4,6,7,8-HpCDF	1.8		1.8	U	
1,2,3,4,7,8,9-HpCDF	1.1		1.1	U	
OCDF	1.5		1.5	U	
2,3,7,8-TCDD	0.20		0.20	U	
1,2,3,7,8-PeCDD	1.1		1.1	U	
1,2,3,4,7,8-HxCDD	0.95		0.95	U	
1,2,3,6,7,8-HxCDD	1.3		1.3	U	
1,2,3,7,8,9-HxCDD	3.2		3.2	U	
1,2,3,4,6,7,8-HpCDD	1.6		1.6	U	
OCDD	4.4		6.3	J	
(LS) 13C-2,3,7,8-TCDF			59.0		
(LS) 13C-1,2,3,7,8-PeCDF			72.8		
(LS) 13C-2,3,4,7,8-PeCDF			78.5		
(LS) 13C-1,2,3,4,7,8-HxCDF			92.5		
(LS) 13C-1,2,3,6,7,8-HxCDF			95.9		
(LS) 13C-2,3,4,6,7,8-HxCDF			97.2		
(LS) 13C-1,2,3,7,8,9-HxCDF			96.5		
(LS) 13C-1,2,3,4,6,7,8-HpCDF			89.6		
(LS) 13C-1,2,3,4,7,8,9-HpCDF			85.9		
(LS) 13C-2,3,7,8-TCDD			65.0		
(LS) 13C-1,2,3,7,8-PeCDD			77.4		
(LS) 13C-1,2,3,4,7,8-HxCDD			99.7		
(LS) 13C-1,2,3,6,7,8-HxCDD			102		
(LS) 13C-1,2,3,4,6,7,8-HpCDD			90.7		
(LS) 13C-OCDD			77.9		

Work Order:	2311115	Prep Method:	Bioavailable As	Prep Date:	11/27/23	Prep Batch:	1156340
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	11/27/2023	Analytical Batch:	479892
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Arsenic	0.0100	0.100	0.0429		



MB Summary Report

Work Order:	2311115	Prep Method:	7471BP	Prep Date:	11/27/23	Prep Batch:	1156351
Matrix:	Soil	Analytical Method:	SW7471B	Analyzed Date:	11/28/2023	Analytical Batch:	479879
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Mercury	0.049	0.29	ND		

Work Order:	2311115	Prep Method:	3050B	Prep Date:	11/27/23	Prep Batch:	1156354
Matrix:	Soil	Analytical Method:	SW6010C	Analyzed Date:	11/28/2023	Analytical Batch:	480014
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Antimony	0.025	2.45	0.032	J	
Arsenic	0.074	0.637	ND		
Barium	0.027	2.45	0.049	J	
Beryllium	0.027	2.45	0.051	J	
Cadmium	0.049	2.45	0.054	J	
Chromium	0.037	2.45	0.059	J	
Cobalt	0.034	2.45	0.051	J	
Copper	0.098	2.45	0.13	J	
Lead	0.049	1.47	0.049		
Nickel	0.25	2.45	ND		
Selenium	0.17	0.539	ND		
Silver	0.074	0.245	ND		
Thallium	0.098	2.45	ND		
Vanadium	0.049	2.45	ND		
Zinc	0.15	2.45	ND		
Aluminum	10	49.0	ND		
Calcium	5.9	24.5	9.3	J	
Iron	8.4	24.5	ND		
Magnesium	2.5	24.5	ND		
Manganese	0.42	2.45	ND		
Potassium	2.3	24.5	ND		
Sodium	67	147	ND		

Work Order:	2311115	Prep Method:	TOC-S-P	Prep Date:	12/27/23	Prep Batch:	1157083
Matrix:	Soil	Analytical Method:	E9060A	Analyzed Date:	12/28/2023	Analytical Batch:	480536
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Total Organic Carbon	20	200	ND		



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2311115	Prep Method:	3546_TPHetraMI	Prep Date:	11/15/23	Prep Batch:	1156129
Matrix:	Soil	Analytical Method:	SW8015B	Analyzed Date:	11/15/2023	Analytical Batch:	479660
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel	1.1	2.7	ND	33.3	84.5	106	22.4	52 - 115	30	
Pentacosane (S)				200	87.9	114		59 - 129		

Work Order:	2311115	Prep Method:	3546_PAHSIM	Prep Date:	11/15/23	Prep Batch:	1156131
Matrix:	Soil	Analytical Method:	SW8270CSIM	Analyzed Date:	11/15/2023	Analytical Batch:	479659
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Acenaphthene	0.13	3.3	0.767	333.3	77.7	80.0	3.04	45 - 125	30	
Pyrene	0.46	3.3	0.257	333.3	82.6	83.7	1.44	45 - 125	30	
2-Fluorobiphenyl (S)				5556	86.7	88.9		45 - 125		
Acenaphthylene			ND	5556				30 - 125		

Work Order:	2311115	Prep Method:	3546_PCB	Prep Date:	11/17/23	Prep Batch:	1156189
Matrix:	Soil	Analytical Method:	SW8082A	Analyzed Date:	11/20/2023	Analytical Batch:	479736
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	0.053	0.10	ND	0.60	74.8	80.3	7.09	25 - 145	30	
Aroclor1260	0.036	0.10	ND	0.60	76.3	83.3	8.77	30 - 145	30	
TCMX (S)				0.10	86.0	88.0		48 - 125		
DCBP (S)				0.10	85.0	89.0		48 - 135		



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2311115	Prep Method:	1312/3010A	Prep Date:	11/17/23	Prep Batch:	1156199
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	11/17/2023	Analytical Batch:	479721
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony (SPLP)	0.10	0.20	ND	10	104	103	0.966	80 - 120	20	
Arsenic (SPLP)	0.20	0.40	ND	10	104	103	0.966	80 - 120	20	
Barium (SPLP)	0.020	0.20	ND	10	104	103	0.966	80 - 120	20	
Beryllium (SPLP)	0.010	0.20	ND	10	103	102	0.976	80 - 120	20	
Cadmium (SPLP)	0.040	0.20	ND	10	103	101	1.96	80 - 120	20	
Chromium (SPLP)	0.010	0.20	ND	10	103	102	0.976	80 - 120	20	
Cobalt (SPLP)	0.010	0.20	ND	10	104	102	1.94	80 - 120	20	
Copper (SPLP)	0.020	0.20	ND	10	104	102	1.94	80 - 120	20	
Lead (SPLP)	0.050	0.20	ND	10	103	102	0.976	80 - 120	20	
Molybdenum (SPLP)	0.020	0.20	ND	10	103	102	0.976	80 - 120	20	
Nickel (SPLP)	0.010	0.20	ND	10	103	102	0.976	80 - 120	20	
Selenium (SPLP)	0.090	0.20	ND	10	105	103	1.92	80 - 120	20	
Silver (SPLP)	0.020	0.20	ND	10	103	102	0.976	80 - 120	20	
Thallium (SPLP)	0.12	0.20	ND	10	103	102	0.976	80 - 120	20	
Vanadium (SPLP)	0.020	0.20	ND	10	104	102	1.94	80 - 120	20	
Zinc (SPLP)	0.080	0.20	ND	10	103	102	0.976	80 - 120	20	



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2311115	Prep Method:	3546MI_OCP	Prep Date:	11/17/23	Prep Batch:	1156201
Matrix:	Soil	Analytical Method:	SW8081B	Analyzed Date:	11/17/2023	Analytical Batch:	479848
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
alpha-BHC	0.18	2.0	ND	40	89.9	88.9	1.12	45 - 137	30	
gamma-BHC (Lindane)	0.16	2.0	ND	40	89.4	87.8	1.97	49 - 135	30	
beta-BHC	0.32	2.0	ND	40	85.2	82.0	3.89	50 - 136	30	
delta-BHC	0.22	2.0	ND	40	82.8	81.1	2.14	47 - 139	30	
Heptachlor	0.12	2.0	ND	40	89.3	87.7	1.69	47 - 136	30	
Aldrin	0.20	2.0	ND	40	93.3	91.3	2.17	45 - 136	30	
Heptachlor Epoxide	0.24	2.0	ND	40	94.3	91.1	3.51	52 - 136	30	
gamma-Chlordane	0.44	2.0	ND	40	91.9	90.0	2.20	53 - 135	30	
alpha-Chlordane	0.21	2.0	ND	40	86.8	85.7	1.16	54 - 133	30	
4,4-DDE	0.45	2.0	ND	40	91.9	89.7	2.20	56 - 134	30	
Endosulfan I	0.20	2.0	ND	40	88.1	86.1	2.30	53 - 132	30	
Dieldrin	0.15	2.0	ND	40	93.9	91.1	3.24	56 - 136	30	
Endrin	1.4	2.0	ND	40	94.2	90.1	4.61	57 - 140	30	
4,4-DDD	0.57	2.0	ND	40	93.2	90.0	3.55	56 - 139	30	
Endosulfan II	0.93	4.0	ND	40	94.8	89.3	5.98	53 - 134	30	
4,4-DDT	0.24	2.0	ND	40	85.5	83.8	2.07	50 - 141	30	
Endrin Aldehyde	0.61	2.0	ND	40	86.0	71.4	18.8	35 - 137	30	
Methoxychlor	0.20	2.0	ND	120	98.1	93.9	4.33	52 - 143	30	
Endosulfan Sulfate	0.58	2.0	ND	40	96.7	86.0	11.8	55 - 134	30	
Endrin Ketone	0.098	2.0	ND	40	96.2	90.5	6.16	55 - 136	30	
Chlordane, Technical			ND	100				47 - 130		
DCBP (S)				100	104	99.7		54 - 125		

Work Order:	2311115	Prep Method:	1312/7470	Prep Date:	11/17/23	Prep Batch:	1156202
Matrix:	Soil	Analytical Method:	SW7470A	Analyzed Date:	11/20/2023	Analytical Batch:	479741
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury (SPLP)	0.00013	0.020	ND	0.015	95.8	93.4	2.82	80 - 120	20	



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2311115	Prep Method:	8290S-P	Prep Date:	11/21/23	Prep Batch:	1156332
Matrix:	Soil	Analytical Method:	8290	Analyzed Date:	11/27/2023	Analytical Batch:	479871
Units:	pg/g						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
2,3,7,8-TCDF	0.22		0.22	50.0	0.50			0.0 - 99.5		
1,2,3,7,8-PeCDF	1.0		1.0	250	5.0			0.0 - 97.8		
2,3,4,7,8-PeCDF	0.68		0.68	250	5.0			0.0 - 94.7		
1,2,3,4,7,8-HxCDF	0.50		0.50	250	5.0			0.0 - 92.9		
1,2,3,6,7,8-HxCDF	0.50		0.50	250	5.0			0.0 - 89.5		
2,3,4,6,7,8-HxCDF	0.50		0.50	250	5.0			0.0 - 94.0		
1,2,3,7,8,9-HxCDF	0.50		0.50	250	5.0			0.0 - 94.2		
1,2,3,4,6,7,8-HpCDF	1.8		1.8	250	5.0			0.0 - 95.4		
1,2,3,4,7,8,9-HpCDF	1.1		1.1	250	5.0			0.0 - 101		
OCDF	1.5		1.5	500	25			0.0 - 97.2		
2,3,7,8-TCDD	0.20		0.20	50.0	0.50			0.0 - 94.7		
1,2,3,7,8-PeCDD	1.1		1.1	250	5.0			0.0 - 95.1		
1,2,3,4,7,8-HxCDD	0.95		0.95	250	5.0			0.0 - 97.0		
1,2,3,6,7,8-HxCDD	1.3		1.3	250	5.0			0.0 - 85.1		
1,2,3,7,8,9-HxCDD	3.2		3.2	250	5.0			0.0 - 85.1		
1,2,3,4,6,7,8-HpCDD	1.6		1.6	250	5.0			0.0 - 101		
OCDD	4.4		6.3	500	25			0.0 - 91.5		
(LS) 13C-2,3,7,8-TCDF				100	62.8			-		
(LS) 13C-1,2,3,7,8-PeCDF				100	73.7			-		
(LS) 13C-2,3,4,7,8-PeCDF				100	77.7			-		
(LS) 13C-1,2,3,4,7,8-HxCDF				100	86.9			-		
(LS) 13C-1,2,3,6,7,8-HxCDF				100	87.4			-		
(LS) 13C-2,3,4,6,7,8-HxCDF				100	88.8			-		
(LS) 13C-1,2,3,7,8,9-HxCDF				100	88.1			-		
(LS) 13C-1,2,3,4,6,7,8-HpCDF				100	81.8			-		
(LS) 13C-1,2,3,4,7,8,9-HpCDF				100	79.7			-		
(LS) 13C-2,3,7,8-TCDD				100	67.1			-		
(LS) 13C-1,2,3,7,8-PeCDD				100	77.2			-		
(LS) 13C-1,2,3,4,7,8-HxCDD				100	89.9			-		
(LS) 13C-1,2,3,6,7,8-HxCDD				100	91.4			-		
(LS) 13C-1,2,3,4,6,7,8-HpCDD				100	81.7			-		
(LS) 13C-OCDD				200	73.5			-		

Work Order:	2311115	Prep Method:	Bioavailable As	Prep Date:	11/27/23	Prep Batch:	1156340
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	11/27/2023	Analytical Batch:	479892
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Arsenic	0.0100	0.100	0.0429	1.0	110	112	1.80	80 - 120	30	



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2311115	Prep Method:	7471BP	Prep Date:	11/27/23	Prep Batch:	1156351
Matrix:	Soil	Analytical Method:	SW7471B	Analyzed Date:	11/28/2023	Analytical Batch:	479879
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.028	0.30	ND	0.743	98.3	101	0.687	80 - 120	20	

Work Order:	2311115	Prep Method:	3050B	Prep Date:	11/27/23	Prep Batch:	1156354
Matrix:	Soil	Analytical Method:	SW6010C	Analyzed Date:	11/28/2023	Analytical Batch:	480014
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.024	2.42	0.032	24	103	102	0.000	80 - 120	30	
Arsenic	0.072	0.628	ND	24	102	101	0.000	80 - 120	30	
Barium	0.027	2.42	0.049	24	102	101	0.000	80 - 120	30	
Beryllium	0.027	2.42	0.051	24	103	102	0.000	80 - 120	30	
Cadmium	0.048	2.42	0.054	24	103	102	0.000	80 - 120	30	
Chromium	0.036	2.42	0.059	24	103	102	0.000	80 - 120	30	
Cobalt	0.034	2.42	0.051	24	102	102	1.21	80 - 120	30	
Copper	0.097	2.42	0.13	24	102	101	0.000	80 - 120	30	
Lead	0.048	1.45	0.049	24	102	101	0.000	80 - 120	30	
Nickel	0.24	2.42	ND	24	102	101	0.000	80 - 120	30	
Selenium	0.11	2.42	ND	24	103	102	0.000	80 - 120	30	
Silver	0.072	2.42	ND	24	102	101	0.000	80 - 120	30	
Thallium	0.097	2.42	ND	24	103	101	1.21	80 - 120	30	
Vanadium	0.048	2.42	ND	24	102	101	0.000	80 - 120	30	
Zinc	0.14	2.42	ND	24	102	101	0.000	80 - 120	30	
Aluminum	0.58	48.3	ND	240	104	102	0.800	80 - 120	30	
Calcium	4.8	24.2	9.3	240	102	101	0.000	80 - 120	30	
Iron	4.8	24.2	ND	240	103	102	0.000	80 - 120	30	
Magnesium	4.8	24.2	ND	240	103	103	0.800	80 - 120	30	
Manganese	0.48	2.42	ND	24	103	104	1.99	80 - 120	30	
Potassium	2.3	24.2	ND	240	102	102	1.21	80 - 120	30	
Sodium	4.8	24.2	ND	240	103	111	8.46	80 - 120	30	

Work Order:	2311115	Prep Method:	TOC-S-P	Prep Date:	12/27/23	Prep Batch:	1157083
Matrix:	Soil	Analytical Method:	E9060A	Analyzed Date:	12/28/2023	Analytical Batch:	480536
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Total Organic Carbon	20	54	ND	266000	121	120	1.25	60 - 140	20	



MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2311115	Prep Method:	3546_TPHetraMI	Prep Date:	11/15/23	Prep Batch:	1156129
Matrix:	Soil	Analytical Method:	SW8015B	Analyzed Date:	11/15/2023	Analytical Batch:	479660
Spiked Sample:	2311115-001A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH as Diesel	1.13	2.67	37.6	33.3	129	138	3.41	52 - 115	30	S,x,
Pentacosane (S)				200	152	73.1		59 - 129		S

Work Order:	2311115	Prep Method:	3546_PAHSIM	Prep Date:	11/15/23	Prep Batch:	1156131
Matrix:	Soil	Analytical Method:	SW8270CSIM	Analyzed Date:	11/15/2023	Analytical Batch:	479659
Spiked Sample:	2311115-001A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Acenaphthene	0.135	3.30	ND	333.3	45.3	56.2	21.1	45 - 125	30	
Pyrene	0.457	3.30	13.0	333.3	38.3	56.5	36.7	45 - 125	30	S,R
2-Fluorobiphenyl (S)				5556	52.6	62.6	17.4	45 - 125		
p-Terphenyl-d14 (S)				5556	36.5	48.6	28.4	30 - 125		

Work Order:	2311115	Prep Method:	3546MI_OCP	Prep Date:	11/17/23	Prep Batch:	1156201
Matrix:	Soil	Analytical Method:	SW8081B	Analyzed Date:	11/17/2023	Analytical Batch:	479848
Spiked Sample:	2311115-001A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
alpha-BHC	0.181	2.00	ND	40	6.62	8.92	29.6	45 - 137	30	S
gamma-BHC (Lindane)	0.159	2.00	ND	40	7.53	11.9	45.0	49 - 135	30	S,R
beta-BHC	0.316	2.00	ND	40	15.9	15.6	1.75	50 - 136	30	S
delta-BHC	0.218	2.00	ND	40	0.323	0.518	46.4	47 - 139	30	S,R
Heptachlor	0.116	2.00	ND	40	5.86	12.4	72.0	47 - 136	30	S,R
Aldrin	0.196	2.00	ND	40	18.5	20.6	10.7	45 - 136	30	S
Heptachlor Epoxide	0.239	2.00	ND	40	21.2	21.1	0.354	52 - 136	30	S
gamma-Chlordane	0.439	2.00	ND	40	7.04	6.83	2.89	53 - 135	30	S
alpha-Chlordane	0.206	2.00	ND	40	19.2	20.0	4.21	54 - 133	30	S
4,4-DDE	0.448	2.00	ND	40	20.3	19.8	2.42	56 - 134	30	S
Endosulfan I	0.196	2.00	ND	40	0.000	0.000		53 - 132		S
Dieldrin	0.150	2.00	ND	40	19.9	20.3	2.36	56 - 136	30	S
Endrin	1.43	2.00	ND	40	19.4	19.5	0.627	57 - 140	30	S
4,4-DDD	0.565	2.00	ND	40	18.5	18.9	2.41	56 - 139	30	S
Endosulfan II	0.925	4.00	ND	40	0.000	0.138	200	53 - 134	30	S,R
4,4-DDT	0.241	2.00	ND	40	12.7	14.7	14.2	50 - 141	30	S
Endrin Aldehyde	0.607	2.00	ND	40	0.315	0.390	21.3	35 - 137	30	S
Methoxychlor	0.200	2.00	ND	120	18.7	19.5	3.92	52 - 143	30	S
Endosulfan Sulfate	0.583	2.00	ND	40	1.21	2.06	52.2	55 - 134	30	S,R



MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2311115	Prep Method:	3546MI_OCP	Prep Date:	11/17/23	Prep Batch:	1156201
Matrix:	Soil	Analytical Method:	SW8081B	Analyzed Date:	11/17/2023	Analytical Batch:	479848
Spiked Sample:	2311115-001A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Endrin Ketone	0.0980	2.00	ND	40	0.933	1.14	19.6	55 - 136	30	S
TCMX (S)				100	30.0	31.0		47 - 130		S
DCBP (S)				100	17.3	19.3		54 - 125		S

Work Order:	2311115	Prep Method:	1312/7470	Prep Date:	11/17/23	Prep Batch:	1156202
Matrix:	Soil	Analytical Method:	SW7470A	Analyzed Date:	11/20/2023	Analytical Batch:	479741
Spiked Sample:	2311115-001A						
Units:	mg/L						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury (SPLP)	0.000130	0.0200	ND	0.015	91.8	92.3	0.722	80 - 120	20	

Work Order:	2311115	Prep Method:	Bioavailable As	Prep Date:	11/27/23	Prep Batch:	1156340
Matrix:	Soil	Analytical Method:	SW6010B	Analyzed Date:	11/27/2023	Analytical Batch:	479892
Spiked Sample:	2311115-001B						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Bioaccessible Arsenic	0.0100	0.100	2.75	1.0	87.0	32.0	16.4	60 - 140	30	S

Work Order:	2311115	Prep Method:	7471BP	Prep Date:	11/27/23	Prep Batch:	1156351
Matrix:	Soil	Analytical Method:	SW7471B	Analyzed Date:	11/28/2023	Analytical Batch:	479879
Spiked Sample:	2311115-001A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.027	0.29	ND	0.714	59.1	64.7	11.0	80 - 120	20	S



MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order: 2311115	Prep Method: 3050B	Prep Date: 11/27/23	Prep Batch: 1156354
Matrix: Soil	Analytical Method: SW6010C	Analyzed Date: 11/28/2023	Analytical Batch: 480014
Spiked Sample: 2311115-001A			
Units: mg/Kg			

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.49	49.0	ND	25	56.3	67.6	6.12	30.7 - 130	30	
Arsenic	13	49.0	297	25	0	0	4.49	71.0 - 121	30	NR
Barium	0.54	49.0	231	25	0	0	8.14	70.2 - 130	30	NR
Beryllium	0.54	49.0	ND	25	95.2	98.5	1.65	73.3 - 115	30	
Cadmium	0.98	49.0	ND	25	94.9	101	4.08	68.7 - 110	30	
Chromium	0.74	49.0	136	25	0	0	4.42	76.0 - 116	30	NR
Cobalt	0.69	49.0	ND	25	84.8	121	15.9	57.4 - 122	30	
Copper	2.0	49.0	1400	25	0	0	9.59	74.8 - 119	30	NR
Lead	29	49.0	383	25	0	0	17.1	67.9 - 118	30	NR
Nickel	4.9	49.0	71.3	25	179	145	8.14	61.5 - 122	30	S
Selenium	2.2	49.0	ND	25	85.4	90.3	4.03	62.0 - 111	30	
Silver	1.5	49.0	ND	25	105	100	4.48	75 - 125	30	
Thallium	2.0	49.0	ND	25	80.5	82.1	0.473	39.2 - 125	30	
Vanadium	0.98	49.0	55.0	25	87.6	102	4.10	65.8 - 122	30	
Zinc	2.9	49.0	2040	25	0	0	4.74	59.9 - 122	30	NR
Aluminum	210	980	10900	250	0	0	4.15	75.0 - 125	30	NR
Calcium	120	490	278000	250	0	0	2.95	77.0 - 125	30	NR
Iron	170	490	8710	250	0	0	4.34	75.0 - 125	30	NR
Magnesium	50	490	10100	250	0	0	3.88	75.0 - 125	30	NR
Manganese	8.3	49.0	299	25	0	0	3.11	75.0 - 125	30	NR
Potassium	46	490	1470	250	0	0	3.97	75.0 - 125	30	NR
Sodium	98	490	3380	250	0	0	5.96	75.0 - 125	30	NR



Duplicate QC Summary Report

Work Order: 2311115	Prep Method: TOC-S-P	Prep Date: 12/27/2023	Prep Batch: 1157083
Matrix:	Analytical Method: E9060A	Analyzed Date: 12/27/23	Analytical Batch: 480536
Units:	Lab Sample ID: 2311115-001A-DUP-1157083		

Parameters	<u>MDL</u>	<u>PQL</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>% RPD</u>	
Total Organic Carbon	20	200	50700	50500	0.40	



Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - mg/L and mg/Kg (equivalent to PPM - parts per million in liquid and solid), ug/L and ug/Kg (equivalent to PPB - parts per billion in liquid and solid), ug/m³ , mg/m³ , ppbv and ppmv (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), ug/Wipe (concentration found on the surface of a single Wipe usually taken over a 100cm ² surface)

LABORATORY QUALIFIERS

<p>B - Indicates when the analyte is found in the associated method or preparation blank</p> <p>D - Surrogate is not recoverable due to the necessary dilution of the sample</p> <p>E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.</p> <p>H- Indicates that the recommended holding time for the analyte or compound has been exceeded</p> <p>J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative</p> <p>NA - Not Analyzed</p> <p>N/A - Not Applicable</p> <p>ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.</p> <p>NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added</p> <p>R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts</p> <p>S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative</p> <p>X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.</p>



Sample Receipt Checklist

Client Name: Tetra Tech Inc (HI)

Date and Time Received: 11/14/2023 10:05:00AM

Project Name: DOH Maui Wildfire Ash Sample-LAHAINA ASH DU-1

Received By: Claudia Moreno

Work Order No.: 2311115

Physically Logged By: LIMBAT

Checklist Completed By: LIMBAT

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present? Yes

Chain of custody signed when relinquished and received? Yes

Chain of custody agrees with sample labels? Yes

Custody seals intact on sample bottles? Yes

Sample Receipt Information

Custody seals intact on shipping container/cooler? Not Present

Shipping Container/Cooler In Good Condition? Yes

Samples in proper container/bottle? Yes

Samples containers intact? Yes

Sufficient sample volume for indicated test? Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes

Container/Temp Blank temperature in compliance? Yes Temperature: 3.0 °C

Water-VOA vials have zero headspace? No VOA vials submitted

Water-pH acceptable upon receipt? N/A

pH Checked by: N/A pH Adjusted by: N/A

Comments:

Recv'd sample INTACT



Login Summary Report

Client ID:	TL5162 Tetra Tech Inc (HI)	QC Level:	II
Project Name:	DOH Maui Wildfire Ash Sample-LAHAINA ASH DU-1	TAT Requested:	10 Day:10
Project # :	103S864023138	Date Received:	11/14/2023
Report Due Date:	12/28/2023	Time Received:	10:05 am

Comments:
Work Order # : **2311115**

<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
2311115-001A	LAHAINA ASH DU-1	11/08/23 11:00	Soil	05/06/24			PCBs_S_8082A TOC_S_5310B(M) Dioxins_8290 M_S Met_S_6010Full ISM Prep Pest_S_8081TETRA Hg_S_SPLP PAHSIM_S_8270 C Hg_S_7471B TPHDO_S_TetraMI Met_S_CAM17SPLP	
Sample Note: MIS samples from HI (ask). Analyze all samples dried/sieved (no wet). Analyze PAHs, metals, dioxins in triplicate (samples 001A/001B/001C). 6010 is for As, Ba, Cd, Cr, Pb, Hg, Se, Ag, Sb, Be, Cu, Ni, Tl, Zn, Al, Ca, Co, Fe, Mg, Mn, K, Na and V.								
2311115-001B	LAHAINA ASH DU-1 Duplicate	11/08/23 11:00	Soil	05/06/24			Hg_S_7471B PAHSIM_S_8270 C Bioavailable As Met_S_6010Full Dioxins_8290_S	
2311115-001C	LAHAINA ASH DU-1 Triplicate	11/08/23 11:00	Soil	05/06/24			Hg_S_7471B PAHSIM_S_8270 C Met_S_6010Full Dioxins_8290_S	

