



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-KULA

Work Order No.: 2309213

Dear Eric Jensen:

Torrent Laboratory, Inc. received 1 sample(s) on September 27, 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

October 13, 2023

Date



Date: 10/13/2023

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**Client:** Tetra Tech Inc(HI)

**Project:** DOH Maui Wildfire Ash Sample-KULA

**Work Order:** 2309213

### CASE NARRATIVE

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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

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

MS/MSD is not recoverable (NR). Sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for method 6010B, Note:Analyses run at a dilution due to the sample matrix. The spikes in the MS/MSD for a number of metals are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comments for method 8270C, 239213-001MS/MSD, QC Preparation Batch ID 1154834, 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 8015B, 2309213-001MS/MSD, QC Preparation Batch ID 1154856, 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.



## Sample Result Summary

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

**Date Received:** 09/27/23

**Date Reported:** 10/13/23

**KULA ASH #1 Duplicate**

2309213-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Bioaccessible Arsenic	SW6010B	1	0.00200	0.0200	83.3	IVBA %
Antimony	SW6010C	10	0.26	26	110	mg/Kg
Arsenic	SW6010C	10	0.77	6.6	3240	mg/Kg
Barium	SW6010C	10	0.28	26	365	mg/Kg
Beryllium	SW6010C	10	0.28	26	0.510	mg/Kg
Cadmium	SW6010C	10	0.51	26	3.49	mg/Kg
Chromium	SW6010C	10	0.38	26	926	mg/Kg
Cobalt	SW6010C	10	0.36	26	85.7	mg/Kg
Copper	SW6010C	10	1.0	26	3240	mg/Kg
Lead	SW6010C	10	0.51	15	640	mg/Kg
Nickel	SW6010C	10	2.6	26	84.7	mg/Kg
Silver	SW6010C	10	0.77	2.6	17.7	mg/Kg
Vanadium	SW6010C	10	0.51	26	130	mg/Kg
Zinc	SW6010C	10	1.5	26	1890	mg/Kg
Aluminum	SW6010C	10	110	510	28100	mg/Kg
Calcium	SW6010C	10	62	260	181000	mg/Kg
Iron	SW6010C	10	87	260	27800	mg/Kg
Magnesium	SW6010C	10	26	260	15100	mg/Kg
Manganese	SW6010C	10	4.3	26	742	mg/Kg
Potassium	SW6010C	10	24	260	2530	mg/Kg
Sodium	SW6010C	10	690	1500	4340	mg/Kg
Antimony	SW6010C	10	0.25	25	108	mg/Kg
Arsenic	SW6010C	10	0.75	6.5	3260	mg/Kg
Barium	SW6010C	10	0.27	25	602	mg/Kg
Beryllium	SW6010C	10	0.27	25	0.522	mg/Kg
Cadmium	SW6010C	10	0.50	25	3.48	mg/Kg
Chromium	SW6010C	10	0.37	25	908	mg/Kg
Cobalt	SW6010C	10	0.35	25	81.3	mg/Kg
Copper	SW6010C	10	1.00	25	3230	mg/Kg
Lead	SW6010C	10	0.50	15	769	mg/Kg
Nickel	SW6010C	10	2.5	25	79.6	mg/Kg
Silver	SW6010C	10	0.75	2.5	19.0	mg/Kg
Vanadium	SW6010C	10	0.50	25	129	mg/Kg
Zinc	SW6010C	10	1.5	25	1980	mg/Kg
Aluminum	SW6010C	10	100	500	28100	mg/Kg
Calcium	SW6010C	10	60	250	182000	mg/Kg
Iron	SW6010C	10	85	250	27100	mg/Kg
Magnesium	SW6010C	10	25	250	15100	mg/Kg
Manganese	SW6010C	10	4.2	25	746	mg/Kg
Potassium	SW6010C	10	23	250	2510	mg/Kg
Sodium	SW6010C	10	670	1500	4350	mg/Kg
Antimony	SW6010C	10	0.25	25	95.8	mg/Kg
Arsenic	SW6010C	10	0.75	6.5	3080	mg/Kg
Barium	SW6010C	10	0.28	25	613	mg/Kg
Beryllium	SW6010C	10	0.28	25	0.475	mg/Kg
Cadmium	SW6010C	10	0.50	25	3.30	mg/Kg



## Sample Result Summary

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

**Date Received:** 09/27/23

**Date Reported:** 10/13/23

2309213-001

**KULA ASH #1 Triplicate**

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Chromium	SW6010C	10	0.38	25	850	mg/Kg
Cobalt	SW6010C	10	0.35	25	88.5	mg/Kg
Copper	SW6010C	10	1.0	25	2980	mg/Kg
Lead	SW6010C	10	0.50	15	655	mg/Kg
Nickel	SW6010C	10	2.5	25	82.3	mg/Kg
Silver	SW6010C	10	0.75	2.5	16.5	mg/Kg
Vanadium	SW6010C	10	0.50	25	122	mg/Kg
Zinc	SW6010C	10	1.5	25	1810	mg/Kg
Aluminum	SW6010C	10	110	500	26500	mg/Kg
Calcium	SW6010C	10	61	250	173000	mg/Kg
Iron	SW6010C	10	86	250	25500	mg/Kg
Magnesium	SW6010C	10	25	250	14300	mg/Kg
Manganese	SW6010C	10	4.3	25	713	mg/Kg
Potassium	SW6010C	10	24	250	2380	mg/Kg
Sodium	SW6010C	10	680	1500	4150	mg/Kg
TPH as Diesel	SW8015B	4	4.5	11	80.0	mg/Kg
Naphthalene	SW8270CSIM	1	0.23	3.3	250	ug/Kg
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	57	ug/Kg
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	56	ug/Kg
Acenaphthelene	SW8270CSIM	1	0.23	3.3	8.3	ug/Kg
Acenaphthene	SW8270CSIM	1	0.24	3.3	5.5	ug/Kg
Fluorene	SW8270CSIM	1	0.27	3.3	7.1	ug/Kg
Phenanthrene	SW8270CSIM	1	0.24	3.3	10	ug/Kg
Naphthalene	SW8270CSIM	1	0.23	3.3	200	ug/Kg
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	46	ug/Kg
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	45	ug/Kg
Acenaphthelene	SW8270CSIM	1	0.23	3.3	6.9	ug/Kg
Acenaphthene	SW8270CSIM	1	0.24	3.3	4.3	ug/Kg
Fluorene	SW8270CSIM	1	0.27	3.3	5.0	ug/Kg
Phenanthrene	SW8270CSIM	1	0.24	3.3	8.3	ug/Kg
Naphthalene	SW8270CSIM	1	0.23	3.3	270	ug/Kg
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	63	ug/Kg
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	60	ug/Kg
Acenaphthelene	SW8270CSIM	1	0.23	3.3	8.5	ug/Kg
Acenaphthene	SW8270CSIM	1	0.24	3.3	5.5	ug/Kg
Fluorene	SW8270CSIM	1	0.27	3.3	7.4	ug/Kg
Phenanthrene	SW8270CSIM	1	0.24	3.3	9.6	ug/Kg



## Sample Result Summary

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

Date Received: 09/27/23

Date Reported: 10/13/23

2309213-001

KULA ASH #1

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
2378-TCDF	SW8290Mod	1	0.21	0.48	152	pg/g
12378-PeCDF	SW8290Mod	1	0.98	4.8	218	pg/g
23478-PeCDF	SW8290Mod	1	0.65	4.8	349	pg/g
123478-HxCDF	SW8290Mod	1	0.48	4.8	308	pg/g
123678-HxCDF	SW8290Mod	1	1.1	4.8	318	pg/g
234678-HxCDF	SW8290Mod	1	1.4	4.8	439	pg/g
123789-HxCDF	SW8290Mod	1	1.8	4.8	122	pg/g
1234678-HpCDF	SW8290Mod	1	1.8	4.8	1410	pg/g
1234789-HpCDF	SW8290Mod	1	1.1	4.8	135	pg/g
OCDF	SW8290Mod	1	1.4	24	650	pg/g
2378-TCDD	SW8290Mod	1	0.20	0.48	18.4	pg/g
12378-PeCDD	SW8290Mod	1	1.1	4.8	72.6	pg/g
123478-HxCDD	SW8290Mod	1	0.90	4.8	53.6	pg/g
123678-HxCDD	SW8290Mod	1	1.3	4.8	80.1	pg/g
123789-HxCDD	SW8290Mod	1	3.1	4.8	78.4	pg/g
1234678-HpCDD	SW8290Mod	1	1.5	4.8	636	pg/g
OCDD	SW8290Mod	1	4.2	24	1160	pg/g
Total-Dioxins	SW8290Mod	1	0.20	0.48	2100	pg/g
Total-Furans	SW8290Mod	1	0.21	0.48	4100	pg/g
Total-TEQ	SW8290Mod	1			380	pg/g
2,3,7,8-TCDF	SW8290Mod	1	0.21	0.48	161	pg/g
1,2,3,7,8-PeCDF	SW8290Mod	1	0.98	4.8	230	pg/g
2,3,4,7,8-PeCDF	SW8290Mod	1	0.65	4.8	357	pg/g
1,2,3,4,7,8-HxCDF	SW8290Mod	1	0.48	4.8	325	pg/g
1,2,3,6,7,8-HxCDF	SW8290Mod	1	1.1	4.8	334	pg/g
2,3,4,6,7,8-HxCDF	SW8290Mod	1	1.4	4.8	435	pg/g
1,2,3,7,8,9-HxCDF	SW8290Mod	1	1.8	4.8	145	pg/g
1,2,3,4,6,7,8-HpCDF	SW8290Mod	1	1.8	4.8	1580	pg/g
1,2,3,4,7,8,9-HpCDF	SW8290Mod	1	1.1	4.8	147	pg/g
OCDF	SW8290Mod	1	1.4	24	720	pg/g
2,3,7,8-TCDD	SW8290Mod	1	0.20	0.48	18.2	pg/g
1,2,3,7,8-PeCDD	SW8290Mod	1	1.1	4.8	75.6	pg/g
1,2,3,4,7,8-HxCDD	SW8290Mod	1	0.89	4.8	55.5	pg/g
1,2,3,6,7,8-HxCDD	SW8290Mod	1	1.3	4.8	85.1	pg/g
1,2,3,7,8,9-HxCDD	SW8290Mod	1	3.1	4.8	86.2	pg/g
1,2,3,4,6,7,8-HpCDD	SW8290Mod	1	1.5	4.8	681	pg/g
OCDD	SW8290Mod	1	4.2	24	1210	pg/g
Total-Dioxins	SW8290Mod	1	0.20	0.48	2210	pg/g
Total-Furans	SW8290Mod	1	0.21	0.48	4440	pg/g
TEQ	SW8290Mod	1			395	pg/g



## Sample Result Summary

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

Date Received: 09/27/23

Date Reported: 10/13/23

KULA ASH #1 Triplicate

2309213-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
2,3,7,8-TCDF	SW8290Mod	1	0.21	0.48	180	pg/g
1,2,3,7,8-PeCDF	SW8290Mod	1	0.99	4.8	244	pg/g
2,3,4,7,8-PeCDF	SW8290Mod	1	0.65	4.8	385	pg/g
1,2,3,4,7,8-HxCDF	SW8290Mod	1	0.48	4.8	337	pg/g
1,2,3,6,7,8-HxCDF	SW8290Mod	1	1.1	4.8	353	pg/g
2,3,4,6,7,8-HxCDF	SW8290Mod	1	1.4	4.8	459	pg/g
1,2,3,7,8,9-HxCDF	SW8290Mod	1	1.8	4.8	147	pg/g
1,2,3,4,6,7,8-HpCDF	SW8290Mod	1	1.8	4.8	1560	pg/g
1,2,3,4,7,8,9-HpCDF	SW8290Mod	1	1.1	4.8	158	pg/g
OCDF	SW8290Mod	1	1.4	24	760	pg/g
2,3,7,8-TCDD	SW8290Mod	1	0.20	0.48	23.8	pg/g
1,2,3,7,8-PeCDD	SW8290Mod	1	1.1	4.8	81.7	pg/g
1,2,3,4,7,8-HxCDD	SW8290Mod	1	0.90	4.8	62.9	pg/g
1,2,3,6,7,8-HxCDD	SW8290Mod	1	1.3	4.8	97.8	pg/g
1,2,3,7,8,9-HxCDD	SW8290Mod	1	3.1	4.8	99.1	pg/g
1,2,3,4,6,7,8-HpCDD	SW8290Mod	1	1.5	4.8	756	pg/g
OCDD	SW8290Mod	1	4.2	24	1330	pg/g
Total-Dioxins	SW8290Mod	1	0.20	0.48	2450	pg/g
Total-Furans	SW8290Mod	1	0.21	0.48	4590	pg/g
TEQ	SW8290Mod	1			427	pg/g



### SAMPLE RESULTS

**Report prepared for:** Eric Jensen  
 Tetra Tech Inc (HI)
 
**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1	<b>Lab Sample ID:</b>	2309213-001A
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 7471BP	<b>Prep Batch Date/Time:</b> 10/2/23	12:05:00PM
<b>Prep Batch ID:</b> 1154841	<b>Prep Analyst:</b>	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.050	0.30	ND		mg/Kg	10/03/23	12:07	NK	478461



## SAMPLE RESULTS

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

Date/Time Received: 09/27/23, 10:56 am  
Date Reported: 10/13/23

Client Sample ID:	KULA ASH #1	Lab Sample ID:	2309213-001A
Project Name/Location:	DOH Maui Wildfire Ash Sample-KULA	Sample Matrix:	Soil
Project Number:	103S864023138		
Date/Time Sampled:	09/21/23 / 17:00		
SDG:			

Prep Method: 3050B	Prep Batch Date/Time: 10/2/23	12:05:00PM
Prep Batch ID: 1154839	Prep Analyst:	AJNG

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	10	0.26	26	<b>110</b>		mg/Kg	10/02/23	20:55	PH	478479
Arsenic	SW6010C	10	0.77	6.6	<b>3240</b>		mg/Kg	10/02/23	20:55	PH	478479
Barium	SW6010C	10	0.28	26	<b>365</b>		mg/Kg	10/02/23	20:55	PH	478479
Beryllium	SW6010C	10	0.28	26	<b>0.510</b>	J	mg/Kg	10/02/23	20:55	PH	478479
Cadmium	SW6010C	10	0.51	26	<b>3.49</b>	J	mg/Kg	10/02/23	20:55	PH	478479
Chromium	SW6010C	10	0.38	26	<b>926</b>		mg/Kg	10/02/23	20:55	PH	478479
Cobalt	SW6010C	10	0.36	26	<b>85.7</b>		mg/Kg	10/02/23	20:55	PH	478479
Copper	SW6010C	10	1.0	26	<b>3240</b>		mg/Kg	10/02/23	20:55	PH	478479
Lead	SW6010C	10	0.51	15	<b>640</b>		mg/Kg	10/02/23	20:55	PH	478479
Nickel	SW6010C	10	2.6	26	<b>84.7</b>		mg/Kg	10/02/23	20:55	PH	478479
Selenium	SW6010C	10	1.8	5.6	ND		mg/Kg	10/02/23	20:55	PH	478479
Silver	SW6010C	10	0.77	2.6	<b>17.7</b>		mg/Kg	10/02/23	20:55	PH	478479
Thallium	SW6010C	10	1.0	26	ND		mg/Kg	10/02/23	20:55	PH	478479
Vanadium	SW6010C	10	0.51	26	<b>130</b>		mg/Kg	10/02/23	20:55	PH	478479
Zinc	SW6010C	10	1.5	26	<b>1890</b>		mg/Kg	10/02/23	20:55	PH	478479
Aluminum	SW6010C	10	110	510	<b>28100</b>		mg/Kg	10/02/23	20:55	PH	478479
Calcium	SW6010C	10	62	260	<b>181000</b>		mg/Kg	10/02/23	20:55	PH	478479
Iron	SW6010C	10	87	260	<b>27800</b>		mg/Kg	10/02/23	20:55	PH	478479
Magnesium	SW6010C	10	26	260	<b>15100</b>		mg/Kg	10/02/23	20:55	PH	478479
Manganese	SW6010C	10	4.3	26	<b>742</b>		mg/Kg	10/02/23	20:55	PH	478479
Potassium	SW6010C	10	24	260	<b>2530</b>		mg/Kg	10/02/23	20:55	PH	478479
Sodium	SW6010C	10	690	1500	<b>4340</b>		mg/Kg	10/02/23	20:55	PH	478479





## SAMPLE RESULTS

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

**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1	<b>Lab Sample ID:</b>	2309213-001A
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_PAHSIM	<b>Prep Batch Date/Time:</b> 10/3/23	11:40:00AM
<b>Prep Batch ID:</b> 1154834	<b>Prep Analyst:</b> AKIZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Naphthalene	SW8270CSIM	1	0.23	3.3	<b>250</b>		ug/Kg	10/04/23	0:34	MT	478488
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	<b>57</b>		ug/Kg	10/04/23	0:34	MT	478488
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	<b>56</b>		ug/Kg	10/04/23	0:34	MT	478488
Acenaphthelene	SW8270CSIM	1	0.23	3.3	<b>8.3</b>		ug/Kg	10/04/23	0:34	MT	478488
Acenaphthene	SW8270CSIM	1	0.24	3.3	<b>5.5</b>		ug/Kg	10/04/23	0:34	MT	478488
Fluorene	SW8270CSIM	1	0.27	3.3	<b>7.1</b>		ug/Kg	10/04/23	0:34	MT	478488
Phenanthrene	SW8270CSIM	1	0.24	3.3	<b>10</b>		ug/Kg	10/04/23	0:34	MT	478488
Anthracene	SW8270CSIM	1	0.17	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Fluoranthene	SW8270CSIM	1	0.23	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Pyrene	SW8270CSIM	1	0.23	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Benz[a]anthracene	SW8270CSIM	1	0.24	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Chrysene	SW8270CSIM	1	0.12	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Benzo[b]fluoranthene	SW8270CSIM	1	0.41	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Benzo[k]fluoranthene	SW8270CSIM	1	0.48	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Benzo[a]pyrene	SW8270CSIM	1	0.35	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Indeno[1,2,3-cd]pyrene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Dibenz[a,h]anthracene	SW8270CSIM	1	0.55	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Benzo[g,h,i]perylene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	10/04/23	0:34	MT	478488
Acceptance Limits											
2-Fluorobiphenyl (S)	SW8270CSIM		45 - 125		<b>66</b>		%	10/04/23	0:34	MT	478488
p-Terphenyl-d14 (S)	SW8270CSIM		30 - 125		<b>2.1</b>	S	%	10/04/23	0:34	MT	478488

**NOTE:** S- 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:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1	<b>Lab Sample ID:</b>	2309213-001A
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_PCB	<b>Prep Batch Date/Time:</b> 10/4/23	1:04:00PM
<b>Prep Batch ID:</b> 1154922	<b>Prep Analyst:</b> AKIZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	10/04/23	17:04	AK	478523
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	10/04/23	17:04	AK	478523
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	10/04/23	17:04	AK	478523
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	10/04/23	17:04	AK	478523
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	10/04/23	17:04	AK	478523
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	10/04/23	17:04	AK	478523
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	10/04/23	17:04	AK	478523
Acceptance Limits											
TCMX (S)	SW8082A		48 - 125		<b>17.0</b>	S	%	10/04/23	17:04	AK	478523
DCBP (S)	SW8082A		48 - 135		<b>20.0</b>	S	%	10/04/23	17:04	AK	478523

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



## SAMPLE RESULTS

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

**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1	<b>Lab Sample ID:</b>	2309213-001A
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 3546MI_OCP	<b>Prep Batch Date/Time:</b> 10/3/23	11:13:00AM
<b>Prep Batch ID:</b> 1154874	<b>Prep Analyst:</b> AKIZ	

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.*

alpha-BHC	SW8081B	3	0.38	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
gamma-BHC (Lindane)	SW8081B	3	0.48	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
beta-BHC	SW8081B	3	0.95	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
delta-BHC	SW8081B	3	0.47	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Heptachlor	SW8081B	3	0.32	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Aldrin	SW8081B	3	0.59	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Heptachlor Epoxide	SW8081B	3	0.23	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
gamma-Chlordane	SW8081B	3	0.49	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
alpha-Chlordane	SW8081B	3	0.52	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
4,4-DDE	SW8081B	3	0.58	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Endosulfan I	SW8081B	3	0.55	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Dieldrin	SW8081B	3	0.44	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Endrin	SW8081B	3	0.56	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
4,4-DDD	SW8081B	3	1.7	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Endosulfan II	SW8081B	3	1.7	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
4,4-DDT	SW8081B	3	0.39	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Endrin Aldehyde	SW8081B	3	0.45	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Methoxychlor	SW8081B	3	0.60	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Endosulfan Sulfate	SW8081B	3	0.35	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Endrin Ketone	SW8081B	3	0.28	6.0	ND		ug/Kg	10/03/23	15:46	MK	478487
Chlordane, Technical	SW8081B	3	6.3	60	ND		ug/Kg	10/03/23	15:46	MK	478487
Toxaphene	SW8081B	3	26	150	ND		ug/Kg	10/03/23	15:46	MK	478487

**Acceptance Limits**

TCMX (S)	SW8081B		47 - 130		<b>39.1</b>	S	%	10/03/23	15:46	MK	478487
DCBP (S)	SW8081B		54 - 125		<b>40.9</b>	S	%	10/03/23	15:46	MK	478487

**NOTE:** Sample diluted due to the nature of the sample matrix (dark colored extract)  
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:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1	<b>Lab Sample ID:</b>	2309213-001A
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_TPHetraMI	<b>Prep Batch Date/Time:</b> 10/2/23	4:49:00PM
<b>Prep Batch ID:</b> 1154856	<b>Prep Analyst:</b> AKIZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel	SW8015B	4	4.5	11	<b>80.0</b>	x	mg/Kg	10/03/23	13:13	SN	478454
Acceptance Limits											
Pentacosane (S)	SW8015B		59 - 129		<b>73.1</b>		%	10/03/23	13:13	SN	478454

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

<b>Prep Method:</b> 8290S-P	<b>Prep Batch Date/Time:</b> 10/2/23	5:20:00PM
<b>Prep Batch ID:</b> 1154859	<b>Prep Analyst:</b> MSAT	
	<b>Units:</b> pg/g	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2378-TCDF	SW8290Mod	1	0.21	0.48	<b>152</b>		pg/g	10/13/23	12:50	TT	478693
12378-PeCDF	SW8290Mod	1	0.98	4.8	<b>218</b>		pg/g	10/13/23	12:50	TT	478693
23478-PeCDF	SW8290Mod	1	0.65	4.8	<b>349</b>		pg/g	10/13/23	12:50	TT	478693
123478-HxCDF	SW8290Mod	1	0.48	4.8	<b>308</b>		pg/g	10/13/23	12:50	TT	478693
123678-HxCDF	SW8290Mod	1	1.1	4.8	<b>318</b>		pg/g	10/13/23	12:50	TT	478693
234678-HxCDF	SW8290Mod	1	1.4	4.8	<b>439</b>		pg/g	10/13/23	12:50	TT	478693
123789-HxCDF	SW8290Mod	1	1.8	4.8	<b>122</b>		pg/g	10/13/23	12:50	TT	478693
1234678-HpCDF	SW8290Mod	1	1.8	4.8	<b>1410</b>		pg/g	10/13/23	12:50	TT	478693
1234789-HpCDF	SW8290Mod	1	1.1	4.8	<b>135</b>		pg/g	10/13/23	12:50	TT	478693
OCDF	SW8290Mod	1	1.4	24	<b>650</b>		pg/g	10/13/23	12:50	TT	478693
2378-TCDD	SW8290Mod	1	0.20	0.48	<b>18.4</b>		pg/g	10/13/23	12:50	TT	478693
12378-PeCDD	SW8290Mod	1	1.1	4.8	<b>72.6</b>		pg/g	10/13/23	12:50	TT	478693
123478-HxCDD	SW8290Mod	1	0.90	4.8	<b>53.6</b>		pg/g	10/13/23	12:50	TT	478693
123678-HxCDD	SW8290Mod	1	1.3	4.8	<b>80.1</b>		pg/g	10/13/23	12:50	TT	478693
123789-HxCDD	SW8290Mod	1	3.1	4.8	<b>78.4</b>		pg/g	10/13/23	12:50	TT	478693
1234678-HpCDD	SW8290Mod	1	1.5	4.8	<b>636</b>		pg/g	10/13/23	12:50	TT	478693
OCDD	SW8290Mod	1	4.2	24	<b>1160</b>		pg/g	10/13/23	12:50	TT	478693
Total-Dioxins	SW8290Mod	1	0.20	0.48	<b>2100</b>		pg/g	10/13/23	12:50	TT	478693
Total-Furans	SW8290Mod	1	0.21	0.48	<b>4100</b>		pg/g	10/13/23	12:50	TT	478693
Total-TEQ	SW8290Mod	1			<b>380</b>		pg/g	10/13/23	12:50	TT	478693
Acceptance Limits											
(LS) 13C-2378-TCDF	SW8290Mod		<b>40 - 135</b>		<b>45.8</b>		%	10/13/23	12:50	TT	478693
(LS) 13C-12378-PeCDF	SW8290Mod		<b>40 - 135</b>		<b>48.3</b>		%	10/13/23	12:50	TT	478693
(LS) 13C-23478-PeCDF	SW8290Mod		<b>40 - 135</b>		<b>53.5</b>		%	10/13/23	12:50	TT	478693
(LS) 13C-123478-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>43.7</b>		%	10/13/23	12:50	TT	478693



## SAMPLE RESULTS

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

**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1	<b>Lab Sample ID:</b>	2309213-001A
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 8290S-P	<b>Prep Batch Date/Time:</b> 10/2/23	5:20:00PM
<b>Prep Batch ID:</b> 1154859	<b>Prep Analyst:</b>	MSAT
	<b>Units:</b>	pg/g

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
(LS) 13C-123678-HxCDF	SW8290Mod		40 - 135		40.8		%	10/13/23	12:50	TT	478693
(LS) 13C-234678-HxCDF	SW8290Mod		40 - 135		43.0		%	10/13/23	12:50	TT	478693
(LS) 13C-123789-HxCDF	SW8290Mod		40 - 135		40.2		%	10/13/23	12:50	TT	478693
(LS) 13C-1234678-HpCDF	SW8290Mod		40 - 135		37.8	S	%	10/13/23	12:50	TT	478693
(LS) 13C-1234789-HpCDF	SW8290Mod		40 - 135		36.7	S	%	10/13/23	12:50	TT	478693
(LS) 13C-2378-TCDD	SW8290Mod		40 - 135		47.6		%	10/13/23	12:50	TT	478693
(LS) 13C-12378-PeCDD	SW8290Mod		40 - 135		52.1		%	10/13/23	12:50	TT	478693
(LS) 13C-123478-HxCDD	SW8290Mod		40 - 135		44.6		%	10/13/23	12:50	TT	478693
(LS) 13C-123678-HxCDD	SW8290Mod		40 - 135		37.4	S	%	10/13/23	12:50	TT	478693
(LS) 13C-1234678-HpCDD	SW8290Mod		40 - 135		41.2		%	10/13/23	12:50	TT	478693
(LS) 13C-OCDD	SW8290Mod		40 - 135		30.2	S	%	10/13/23	12:50	TT	478693

**NOTE:** S-Recoveries for labeled compounds out of control limits (low bias) due to matrix effects. Sample was reextracted and reanalyzed yielding similar results.



### SAMPLE RESULTS

**Report prepared for:** Eric Jensen  
 Tetra Tech Inc (HI)
 
**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Duplicate	<b>Lab Sample ID:</b>	2309213-001B
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> Bioavailable As	<b>Prep Batch Date/Time:</b> 10/10/23	11:45:00AM
<b>Prep Batch ID:</b> 1155069	<b>Prep Analyst:</b> ROME	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Bioaccessible Arsenic	SW6010B	1	0.00200	0.0200	83.3		IVBA %	10/11/23	14:31	AT	478726



### SAMPLE RESULTS

**Report prepared for:** Eric Jensen  
 Tetra Tech Inc (HI)
 
**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Duplicate	<b>Lab Sample ID:</b>	2309213-001B
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 7471BP	<b>Prep Batch Date/Time:</b> 10/2/23	12:05:00PM
<b>Prep Batch ID:</b> 1154841	<b>Prep Analyst:</b>	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.049	0.29	ND		mg/Kg	10/03/23	12:18	NK	478461



## SAMPLE RESULTS

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

**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Duplicate	<b>Lab Sample ID:</b>	2309213-001B
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 3050B	<b>Prep Batch Date/Time:</b> 10/2/23 12:05:00PM
<b>Prep Batch ID:</b> 1154839	<b>Prep Analyst:</b> AJNG

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	10	0.25	25	<b>108</b>		mg/Kg	10/02/23	21:00	PH	478479
Arsenic	SW6010C	10	0.75	6.5	<b>3260</b>		mg/Kg	10/02/23	21:00	PH	478479
Barium	SW6010C	10	0.27	25	<b>602</b>		mg/Kg	10/02/23	21:00	PH	478479
Beryllium	SW6010C	10	0.27	25	<b>0.522</b>	J	mg/Kg	10/02/23	21:00	PH	478479
Cadmium	SW6010C	10	0.50	25	<b>3.48</b>	J	mg/Kg	10/02/23	21:00	PH	478479
Chromium	SW6010C	10	0.37	25	<b>908</b>		mg/Kg	10/02/23	21:00	PH	478479
Cobalt	SW6010C	10	0.35	25	<b>81.3</b>		mg/Kg	10/02/23	21:00	PH	478479
Copper	SW6010C	10	1.00	25	<b>3230</b>		mg/Kg	10/02/23	21:00	PH	478479
Lead	SW6010C	10	0.50	15	<b>769</b>		mg/Kg	10/02/23	21:00	PH	478479
Nickel	SW6010C	10	2.5	25	<b>79.6</b>		mg/Kg	10/02/23	21:00	PH	478479
Selenium	SW6010C	10	1.7	5.5	ND		mg/Kg	10/02/23	21:00	PH	478479
Silver	SW6010C	10	0.75	2.5	<b>19.0</b>		mg/Kg	10/02/23	21:00	PH	478479
Thallium	SW6010C	10	1.00	25	ND		mg/Kg	10/02/23	21:00	PH	478479
Vanadium	SW6010C	10	0.50	25	<b>129</b>		mg/Kg	10/02/23	21:00	PH	478479
Zinc	SW6010C	10	1.5	25	<b>1980</b>		mg/Kg	10/02/23	21:00	PH	478479
Aluminum	SW6010C	10	100	500	<b>28100</b>		mg/Kg	10/02/23	21:00	PH	478479
Calcium	SW6010C	10	60	250	<b>182000</b>		mg/Kg	10/02/23	21:00	PH	478479
Iron	SW6010C	10	85	250	<b>27100</b>		mg/Kg	10/02/23	21:00	PH	478479
Magnesium	SW6010C	10	25	250	<b>15100</b>		mg/Kg	10/02/23	21:00	PH	478479
Manganese	SW6010C	10	4.2	25	<b>746</b>		mg/Kg	10/02/23	21:00	PH	478479
Potassium	SW6010C	10	23	250	<b>2510</b>		mg/Kg	10/02/23	21:00	PH	478479
Sodium	SW6010C	10	670	1500	<b>4350</b>		mg/Kg	10/02/23	21:00	PH	478479





## SAMPLE RESULTS

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

**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Duplicate	<b>Lab Sample ID:</b>	2309213-001B
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_PAHSIM	<b>Prep Batch Date/Time:</b> 10/3/23	11:40:00AM
<b>Prep Batch ID:</b> 1154834	<b>Prep Analyst:</b>	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Naphthalene	SW8270CSIM	1	0.23	3.3	200		ug/Kg	10/04/23	1:04	MT	478488
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	46		ug/Kg	10/04/23	1:04	MT	478488
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	45		ug/Kg	10/04/23	1:04	MT	478488
Acenaphthelene	SW8270CSIM	1	0.23	3.3	6.9		ug/Kg	10/04/23	1:04	MT	478488
Acenaphthene	SW8270CSIM	1	0.24	3.3	4.3		ug/Kg	10/04/23	1:04	MT	478488
Fluorene	SW8270CSIM	1	0.27	3.3	5.0		ug/Kg	10/04/23	1:04	MT	478488
Phenanthrene	SW8270CSIM	1	0.24	3.3	8.3		ug/Kg	10/04/23	1:04	MT	478488
Anthracene	SW8270CSIM	1	0.17	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Fluoranthene	SW8270CSIM	1	0.23	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Pyrene	SW8270CSIM	1	0.23	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Benz[a]anthracene	SW8270CSIM	1	0.24	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Chrysene	SW8270CSIM	1	0.12	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Benzo[b]fluoranthene	SW8270CSIM	1	0.41	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Benzo[k]fluoranthene	SW8270CSIM	1	0.48	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Benzo[a]pyrene	SW8270CSIM	1	0.35	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Indeno[1,2,3-cd]pyrene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Dibenz[a,h]anthracene	SW8270CSIM	1	0.55	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Benzo[g,h,i]perylene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	10/04/23	1:04	MT	478488
Acceptance Limits											
2-Fluorobiphenyl (S)	SW8270CSIM		45 - 125		56		%	10/04/23	1:04	MT	478488
p-Terphenyl-d14 (S)	SW8270CSIM		30 - 125		3.1	S	%	10/04/23	1:04	MT	478488

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

<b>Prep Method:</b> 8290S-P	<b>Prep Batch Date/Time:</b> 10/2/23	5:20:00PM
<b>Prep Batch ID:</b> 1154859	<b>Prep Analyst:</b>	MSAT
	<b>Units:</b>	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	161		pg/g	10/13/23	13:54	TT	478693
1,2,3,7,8-PeCDF	SW8290Mod	1	0.98	4.8	230		pg/g	10/13/23	13:54	TT	478693
2,3,4,7,8-PeCDF	SW8290Mod	1	0.65	4.8	357		pg/g	10/13/23	13:54	TT	478693
1,2,3,4,7,8-HxCDF	SW8290Mod	1	0.48	4.8	325		pg/g	10/13/23	13:54	TT	478693
1,2,3,6,7,8-HxCDF	SW8290Mod	1	1.1	4.8	334		pg/g	10/13/23	13:54	TT	478693
2,3,4,6,7,8-HxCDF	SW8290Mod	1	1.4	4.8	435		pg/g	10/13/23	13:54	TT	478693
1,2,3,7,8,9-HxCDF	SW8290Mod	1	1.8	4.8	145		pg/g	10/13/23	13:54	TT	478693
1,2,3,4,6,7,8-HpCDF	SW8290Mod	1	1.8	4.8	1580		pg/g	10/13/23	13:54	TT	478693
1,2,3,4,7,8,9-HpCDF	SW8290Mod	1	1.1	4.8	147		pg/g	10/13/23	13:54	TT	478693



## SAMPLE RESULTS

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

**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Duplicate	<b>Lab Sample ID:</b>	2309213-001B
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 8290S-P	<b>Prep Batch Date/Time:</b> 10/2/23 5:20:00PM
<b>Prep Batch ID:</b> 1154859	<b>Prep Analyst:</b> MSAT
	<b>Units:</b> pg/g

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
OCDF	SW8290Mod	1	1.4	24	<b>720</b>		pg/g	10/13/23	13:54	TT	478693
2,3,7,8-TCDD	SW8290Mod	1	0.20	0.48	<b>18.2</b>		pg/g	10/13/23	13:54	TT	478693
1,2,3,7,8-PeCDD	SW8290Mod	1	1.1	4.8	<b>75.6</b>		pg/g	10/13/23	13:54	TT	478693
1,2,3,4,7,8-HxCDD	SW8290Mod	1	0.89	4.8	<b>55.5</b>		pg/g	10/13/23	13:54	TT	478693
1,2,3,6,7,8-HxCDD	SW8290Mod	1	1.3	4.8	<b>85.1</b>		pg/g	10/13/23	13:54	TT	478693
1,2,3,7,8,9-HxCDD	SW8290Mod	1	3.1	4.8	<b>86.2</b>		pg/g	10/13/23	13:54	TT	478693
1,2,3,4,6,7,8-HpCDD	SW8290Mod	1	1.5	4.8	<b>681</b>		pg/g	10/13/23	13:54	TT	478693
OCDD	SW8290Mod	1	4.2	24	<b>1210</b>		pg/g	10/13/23	13:54	TT	478693
Total-Dioxins	SW8290Mod	1	0.20	0.48	<b>2210</b>		pg/g	10/13/23	13:54	TT	478693
Total-Furans	SW8290Mod	1	0.21	0.48	<b>4440</b>		pg/g	10/13/23	13:54	TT	478693
TEQ	SW8290Mod	1			<b>395</b>		pg/g	10/13/23	13:54	TT	478693
Acceptance Limits											
(LS) 13C-2,3,7,8-TCDF	SW8290Mod		<b>40 - 135</b>		<b>65.7</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,7,8-PeCDF	SW8290Mod		<b>40 - 135</b>		<b>74.1</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-2,3,4,7,8-PeCDF	SW8290Mod		<b>40 - 135</b>		<b>87.3</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,4,7,8-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>56.0</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,6,7,8-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>51.3</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-2,3,4,6,7,8-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>56.2</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,7,8,9-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>48.9</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,4,6,7,8-HpCDF	SW8290Mod		<b>40 - 135</b>		<b>52.5</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,4,7,8,9-HpCDF	SW8290Mod		<b>40 - 135</b>		<b>55.6</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-2,3,7,8-TCDD	SW8290Mod		<b>40 - 135</b>		<b>68.0</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,7,8-PeCDD	SW8290Mod		<b>40 - 135</b>		<b>82.6</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,4,7,8-HxCDD	SW8290Mod		<b>40 - 135</b>		<b>58.6</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,6,7,8-HxCDD	SW8290Mod		<b>40 - 135</b>		<b>44.8</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-1,2,3,4,6,7,8-HpCDD	SW8290Mod		<b>40 - 135</b>		<b>62.7</b>		%	10/13/23	13:54	TT	478693
(LS) 13C-OCDD	SW8290Mod		<b>40 - 135</b>		<b>52.0</b>		%	10/13/23	13:54	TT	478693



### SAMPLE RESULTS

**Report prepared for:** Eric Jensen  
 Tetra Tech Inc (HI)
 
**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Triplicate	<b>Lab Sample ID:</b>	2309213-001C
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 7471BP	<b>Prep Batch Date/Time:</b> 10/2/23	12:05:00PM
<b>Prep Batch ID:</b> 1154841	<b>Prep Analyst:</b> AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.049	0.29	ND		mg/Kg	10/03/23	12:20	NK	478461



## SAMPLE RESULTS

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

**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Triplicate	<b>Lab Sample ID:</b>	2309213-001C
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 3050B	<b>Prep Batch Date/Time:</b> 10/2/23 12:05:00PM
<b>Prep Batch ID:</b> 1154839	<b>Prep Analyst:</b> AJNG

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	10	0.25	25	95.8		mg/Kg	10/02/23	21:02	PH	478479
Arsenic	SW6010C	10	0.75	6.5	3080		mg/Kg	10/02/23	21:02	PH	478479
Barium	SW6010C	10	0.28	25	613		mg/Kg	10/02/23	21:02	PH	478479
Beryllium	SW6010C	10	0.28	25	0.475	J	mg/Kg	10/02/23	21:02	PH	478479
Cadmium	SW6010C	10	0.50	25	3.30	J	mg/Kg	10/02/23	21:02	PH	478479
Chromium	SW6010C	10	0.38	25	850		mg/Kg	10/02/23	21:02	PH	478479
Cobalt	SW6010C	10	0.35	25	88.5		mg/Kg	10/02/23	21:02	PH	478479
Copper	SW6010C	10	1.0	25	2980		mg/Kg	10/02/23	21:02	PH	478479
Lead	SW6010C	10	0.50	15	655		mg/Kg	10/02/23	21:02	PH	478479
Nickel	SW6010C	10	2.5	25	82.3		mg/Kg	10/02/23	21:02	PH	478479
Selenium	SW6010C	10	1.8	5.5	ND		mg/Kg	10/02/23	21:02	PH	478479
Silver	SW6010C	10	0.75	2.5	16.5		mg/Kg	10/02/23	21:02	PH	478479
Thallium	SW6010C	10	1.0	25	ND		mg/Kg	10/02/23	21:02	PH	478479
Vanadium	SW6010C	10	0.50	25	122		mg/Kg	10/02/23	21:02	PH	478479
Zinc	SW6010C	10	1.5	25	1810		mg/Kg	10/02/23	21:02	PH	478479
Aluminum	SW6010C	10	110	500	26500		mg/Kg	10/02/23	21:02	PH	478479
Calcium	SW6010C	10	61	250	173000		mg/Kg	10/02/23	21:02	PH	478479
Iron	SW6010C	10	86	250	25500		mg/Kg	10/02/23	21:02	PH	478479
Magnesium	SW6010C	10	25	250	14300		mg/Kg	10/02/23	21:02	PH	478479
Manganese	SW6010C	10	4.3	25	713		mg/Kg	10/02/23	21:02	PH	478479
Potassium	SW6010C	10	24	250	2380		mg/Kg	10/02/23	21:02	PH	478479
Sodium	SW6010C	10	680	1500	4150		mg/Kg	10/02/23	21:02	PH	478479



## SAMPLE RESULTS

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

**Date/Time Received:** 09/27/23, 10:56 am  
**Date Reported:** 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Triplicate	<b>Lab Sample ID:</b>	2309213-001C
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_PAHSIM	<b>Prep Batch Date/Time:</b> 10/3/23	11:40:00AM
<b>Prep Batch ID:</b> 1154834	<b>Prep Analyst:</b> AKIZ	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Naphthalene	SW8270CSIM	1	0.23	3.3	270		ug/Kg	10/04/23	1:34	MT	478488
2-Methylnaphthalene	SW8270CSIM	1	0.23	3.3	63		ug/Kg	10/04/23	1:34	MT	478488
1-Methylnaphthalene	SW8270CSIM	1	0.21	3.3	60		ug/Kg	10/04/23	1:34	MT	478488
Acenaphthelene	SW8270CSIM	1	0.23	3.3	8.5		ug/Kg	10/04/23	1:34	MT	478488
Acenaphthene	SW8270CSIM	1	0.24	3.3	5.5		ug/Kg	10/04/23	1:34	MT	478488
Fluorene	SW8270CSIM	1	0.27	3.3	7.4		ug/Kg	10/04/23	1:34	MT	478488
Phenanthrene	SW8270CSIM	1	0.24	3.3	9.6		ug/Kg	10/04/23	1:34	MT	478488
Anthracene	SW8270CSIM	1	0.17	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Fluoranthene	SW8270CSIM	1	0.23	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Pyrene	SW8270CSIM	1	0.23	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Benz[a]anthracene	SW8270CSIM	1	0.24	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Chrysene	SW8270CSIM	1	0.12	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Benzo[b]fluoranthene	SW8270CSIM	1	0.41	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Benzo[k]fluoranthene	SW8270CSIM	1	0.48	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Benzo[a]pyrene	SW8270CSIM	1	0.35	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Indeno[1,2,3-cd]pyrene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Dibenz[a,h]anthracene	SW8270CSIM	1	0.55	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Benzo[g,h,i]perylene	SW8270CSIM	1	0.50	3.3	ND		ug/Kg	10/04/23	1:34	MT	478488
Acceptance Limits											
2-Fluorobiphenyl (S)	SW8270CSIM		45 - 125		57		%	10/04/23	1:34	MT	478488
p-Terphenyl-d14 (S)	SW8270CSIM		30 - 125		0.99	S	%	10/04/23	1:34	MT	478488

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

<b>Prep Method:</b> 8290S-P	<b>Prep Batch Date/Time:</b> 10/2/23	5:20:00PM
<b>Prep Batch ID:</b> 1154859	<b>Prep Analyst:</b> MSAT	
	<b>Units:</b> 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	180		pg/g	10/13/23	16:27	TT	478693
1,2,3,7,8-PeCDF	SW8290Mod	1	0.99	4.8	244		pg/g	10/13/23	16:27	TT	478693
2,3,4,7,8-PeCDF	SW8290Mod	1	0.65	4.8	385		pg/g	10/13/23	16:27	TT	478693
1,2,3,4,7,8-HxCDF	SW8290Mod	1	0.48	4.8	337		pg/g	10/13/23	16:27	TT	478693
1,2,3,6,7,8-HxCDF	SW8290Mod	1	1.1	4.8	353		pg/g	10/13/23	16:27	TT	478693
2,3,4,6,7,8-HxCDF	SW8290Mod	1	1.4	4.8	459		pg/g	10/13/23	16:27	TT	478693
1,2,3,7,8,9-HxCDF	SW8290Mod	1	1.8	4.8	147		pg/g	10/13/23	16:27	TT	478693
1,2,3,4,6,7,8-HpCDF	SW8290Mod	1	1.8	4.8	1560		pg/g	10/13/23	16:27	TT	478693
1,2,3,4,7,8,9-HpCDF	SW8290Mod	1	1.1	4.8	158		pg/g	10/13/23	16:27	TT	478693



## SAMPLE RESULTS

Report prepared for: Eric Jensen      Date/Time Received: 09/27/23, 10:56 am  
 Tetra Tech Inc (HI)      Date Reported: 10/13/23

<b>Client Sample ID:</b>	KULA ASH #1 Triplicate	<b>Lab Sample ID:</b>	2309213-001C
<b>Project Name/Location:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	103S864023138		
<b>Date/Time Sampled:</b>	09/21/23 / 17:00		
<b>SDG:</b>			

<b>Prep Method:</b> 8290S-P	<b>Prep Batch Date/Time:</b> 10/2/23	5:20:00PM
<b>Prep Batch ID:</b> 1154859	<b>Prep Analyst:</b> MSAT	
	<b>Units:</b> pg/g	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
OCDF	SW8290Mod	1	1.4	24	<b>760</b>		pg/g	10/13/23	16:27	TT	478693
2,3,7,8-TCDD	SW8290Mod	1	0.20	0.48	<b>23.8</b>		pg/g	10/13/23	16:27	TT	478693
1,2,3,7,8-PeCDD	SW8290Mod	1	1.1	4.8	<b>81.7</b>		pg/g	10/13/23	16:27	TT	478693
1,2,3,4,7,8-HxCDD	SW8290Mod	1	0.90	4.8	<b>62.9</b>		pg/g	10/13/23	16:27	TT	478693
1,2,3,6,7,8-HxCDD	SW8290Mod	1	1.3	4.8	<b>97.8</b>		pg/g	10/13/23	16:27	TT	478693
1,2,3,7,8,9-HxCDD	SW8290Mod	1	3.1	4.8	<b>99.1</b>		pg/g	10/13/23	16:27	TT	478693
1,2,3,4,6,7,8-HpCDD	SW8290Mod	1	1.5	4.8	<b>756</b>		pg/g	10/13/23	16:27	TT	478693
OCDD	SW8290Mod	1	4.2	24	<b>1330</b>		pg/g	10/13/23	16:27	TT	478693
Total-Dioxins	SW8290Mod	1	0.20	0.48	<b>2450</b>		pg/g	10/13/23	16:27	TT	478693
Total-Furans	SW8290Mod	1	0.21	0.48	<b>4590</b>		pg/g	10/13/23	16:27	TT	478693
TEQ	SW8290Mod	1			<b>427</b>		pg/g	10/13/23	16:27	TT	478693
Acceptance Limits											
(LS) 13C-2,3,7,8-TCDF	SW8290Mod		<b>40 - 135</b>		<b>65.7</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,7,8-PeCDF	SW8290Mod		<b>40 - 135</b>		<b>71.3</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-2,3,4,7,8-PeCDF	SW8290Mod		<b>40 - 135</b>		<b>87.0</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,4,7,8-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>58.0</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,6,7,8-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>53.7</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-2,3,4,6,7,8-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>58.0</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,7,8,9-HxCDF	SW8290Mod		<b>40 - 135</b>		<b>49.3</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,4,6,7,8-HpCDF	SW8290Mod		<b>40 - 135</b>		<b>56.2</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,4,7,8,9-HpCDF	SW8290Mod		<b>40 - 135</b>		<b>57.1</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-2,3,7,8-TCDD	SW8290Mod		<b>40 - 135</b>		<b>66.7</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,7,8-PeCDD	SW8290Mod		<b>40 - 135</b>		<b>79.3</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,4,7,8-HxCDD	SW8290Mod		<b>40 - 135</b>		<b>59.7</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,6,7,8-HxCDD	SW8290Mod		<b>40 - 135</b>		<b>44.6</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-1,2,3,4,6,7,8-HpCDD	SW8290Mod		<b>40 - 135</b>		<b>64.2</b>		%	10/13/23	16:27	TT	478693
(LS) 13C-OCDD	SW8290Mod		<b>40 - 135</b>		<b>53.3</b>		%	10/13/23	16:27	TT	478693

**NOTE:**



## MB Summary Report

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546_PAHSIM	<b>Prep Date:</b>	10/03/23	<b>Prep Batch:</b>	1154834
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8270CSIM	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478488
<b>Units:</b>	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Naphthalene	0.43	1.5	ND		
2-Methylnaphthalene	0.19	1.5	ND		
1-Methylnaphthalene	0.15	1.5	ND		
Acenaphthelene	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	1.39		
Chrysene	0.41	1.5	0.676		
Benzo[b]fluoranthene	0.20	1.5	0.667		
Benzo[k]fluoranthene	0.19	1.5	0.569		
Benzo[a]pyrene	0.24	1.5	0.533		
Indeno[1,2,3-cd]pyrene	0.18	1.5	0.310		
Dibenz[a,h]anthracene	0.23	1.5	0.337		
Benzo[g,h,i]perylene	0.22	1.5	0.304		
2-Fluorobiphenyl (S)			73.3		
p-Terphenyl-d14 (S)			97.5		



## MB Summary Report

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3050B	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154839
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW6010C	<b>Analyzed Date:</b>	10/2/2023	<b>Analytical Batch:</b>	478479
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Antimony	0.025	2.50	ND		
Arsenic	0.075	0.650	ND		
Barium	0.028	2.50	ND		
Beryllium	0.028	2.50	ND		
Cadmium	0.050	2.50	ND		
Chromium	0.038	2.50	ND		
Cobalt	0.035	2.50	ND		
Copper	0.10	2.50	ND		
Lead	0.050	1.50	ND		
Nickel	0.25	2.50	ND		
Selenium	0.18	0.550	ND		
Silver	0.075	0.250	ND		
Thallium	0.10	2.50	ND		
Vanadium	0.050	2.50	ND		
Zinc	0.15	2.50	ND		
Aluminum	11	50.0	ND		
Calcium	6.0	25.0	ND		
Iron	8.6	25.0	ND		
Magnesium	2.5	25.0	ND		
Manganese	0.43	2.50	0.57	J	
Potassium	2.4	25.0	ND		
Sodium	68	150	ND		

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	7471BP	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154841
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW7471B	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478461
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Mercury	0.050	0.30	ND		

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546_TPH TetraMI	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154856
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8015B	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478454
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
TPH as Diesel	1.1	2.7	2.06		
TPH as Motor Oil	4.2	13	ND		
Pentacosane (S)			115		





## MB Summary Report

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	8290S-P	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154859
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8290	<b>Analyzed Date:</b>	10/13/2023	<b>Analytical Batch:</b>	478693
<b>Units:</b>	pg/g						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
2,3,7,8-TCDF	0.21	0.49	ND		
1,2,3,7,8-PeCDF	1.00	4.9	ND		
2,3,4,7,8-PeCDF	0.66	4.9	ND		
1,2,3,4,7,8-HxCDF	0.49	4.9	ND		
1,2,3,6,7,8-HxCDF	1.1	4.9	ND		
2,3,4,6,7,8-HxCDF	1.4	4.9	ND		
1,2,3,7,8,9-HxCDF	1.9	4.9	ND		
1,2,3,4,6,7,8-HpCDF	1.8	4.9	ND		
1,2,3,4,7,8,9-HpCDF	1.1	4.9	ND		
OCDF	1.5	24	ND		
2,3,7,8-TCDD	0.20	0.49	ND		
1,2,3,7,8-PeCDD	1.1	4.9	ND		
1,2,3,4,7,8-HxCDD	0.91	4.9	ND		
1,2,3,6,7,8-HxCDD	1.3	4.9	ND		
1,2,3,7,8,9-HxCDD	3.2	4.9	ND		
1,2,3,4,6,7,8-HpCDD	1.5	4.9	1.99		
OCDD	4.3	24	13.5		
Total-Dioxins	0.20	4.9	ND		
Total-Furans	0.21	0.49	ND		
OCDD			0.000		
(LS) 13C-2,3,7,8-TCDF			80.0		
(LS) 13C-1,2,3,7,8-PeCDF			96.0		
(LS) 13C-2,3,4,7,8-PeCDF			105		
(LS) 13C-1,2,3,4,7,8-HxCDF			79.4		
(LS) 13C-1,2,3,6,7,8-HxCDF			76.7		
(LS) 13C-2,3,4,6,7,8-HxCDF			82.9		
(LS) 13C-1,2,3,7,8,9-HxCDF			90.8		
(LS) 13C-1,2,3,4,6,7,8-HpCDF			76.9		
(LS) 13C-1,2,3,4,7,8,9-HpCDF			78.6		
(LS) 13C-2,3,7,8-TCDD			87.0		
(LS) 13C-1,2,3,7,8-PeCDD			103		
(LS) 13C-1,2,3,4,7,8-HxCDD			81.7		
(LS) 13C-1,2,3,6,7,8-HxCDD			67.1		
(LS) 13C-1,2,3,4,6,7,8-HpCDD			86.0		
(LS) 13C-OCDD			69.4		



## MB Summary Report

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546MI_OCP	<b>Prep Date:</b>	10/03/23	<b>Prep Batch:</b>	1154874
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8081B	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478487
<b>Units:</b>	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)			101		
DCBP (S)			97.4		

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546_PCB	<b>Prep Date:</b>	10/04/23	<b>Prep Batch:</b>	1154922
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8082A	<b>Analyzed Date:</b>	10/4/2023	<b>Analytical Batch:</b>	478523
<b>Units:</b>	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)			91.0		
DCBP (S)			96.0		



### MB Summary Report

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	Bioavailable As	<b>Prep Date:</b>	10/10/23	<b>Prep Batch:</b>	1155069
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW6010B	<b>Analyzed Date:</b>	10/11/2023	<b>Analytical Batch:</b>	478726
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Arsenic	0.0100	0.100	0.0482	



## LCS/LCSD Summary Report

*Raw values are used in quality control assessment.*

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546_PAHSIM	<b>Prep Date:</b>	10/03/23	<b>Prep Batch:</b>	1154834
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8270CSIM	<b>Analyzed Date:</b>	10/4/2023	<b>Analytical Batch:</b>	478488
<b>Units:</b>	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	ND	333.3	79.3	76.8	3.08	45 - 125	30	
Pyrene	0.46	3.3	ND	333.3	88.5	95.8	7.82	45 - 125	30	
2-Fluorobiphenyl (S)				5556	82.6	75.5		45 - 125		
Acenaphthelene			ND	5556				30 - 125		

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3050B	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154839
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW6010C	<b>Analyzed Date:</b>	10/2/2023	<b>Analytical Batch:</b>	478479
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.025	2.49	ND	25	99.8	97.9	3.70	80 - 120	30	
Arsenic	0.075	0.647	ND	25	99.0	97.6	3.31	80 - 120	30	
Barium	0.027	2.49	ND	25	101	99.6	3.24	80 - 120	30	
Beryllium	0.027	2.49	ND	25	101	99.3	3.65	80 - 120	30	
Cadmium	0.050	2.49	ND	25	100	98.6	3.68	80 - 120	30	
Chromium	0.037	2.49	ND	25	101	99.5	3.24	80 - 120	30	
Cobalt	0.035	2.49	ND	25	101	99.2	3.65	80 - 120	30	
Copper	0.100	2.49	ND	25	103	101	3.98	80 - 120	30	
Lead	0.050	1.49	ND	25	101	99.0	4.07	80 - 120	30	
Nickel	0.25	2.49	ND	25	101	99.1	3.65	80 - 120	30	
Selenium	0.11	2.49	ND	25	95.1	94.1	3.00	80 - 120	30	
Silver	0.075	2.49	ND	25	101	99.0	4.07	80 - 120	30	
Thallium	0.100	2.49	ND	25	100	98.4	3.68	80 - 120	30	
Vanadium	0.050	2.49	ND	25	102	99.7	4.43	80 - 120	30	
Zinc	0.15	2.49	ND	25	100	98.3	3.68	80 - 120	30	
Aluminum	0.60	49.8	ND	250	106	104	3.86	80 - 120	30	
Calcium	5.0	24.9	ND	250	101	99.8	3.24	80 - 120	30	
Iron	5.0	24.9	ND	250	102	99.9	4.02	80 - 120	30	
Magnesium	5.0	24.9	ND	250	99.7	98.0	3.70	80 - 120	30	
Manganese	0.50	2.49	0.57	25	102	99.8	4.43	80 - 120	30	
Potassium	2.3	24.9	ND	250	102	100	4.02	80 - 120	30	
Sodium	5.0	24.9	ND	250	101	99.1	3.65	80 - 120	30	

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	7471BP	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154841
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW7471B	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478461
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.027	0.29	ND	0.735	107	107	0.000	80 - 120	20	



## LCS/LCSD Summary Report

*Raw values are used in quality control assessment.*

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546_TPHetraMI	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154856
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8015B	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478454
<b>Units:</b>	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	2.06	33.3	87.1	91.4	5.04	52 - 115	30	
Pentacosane (S)				200	97.8	94.0		59 - 129		

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	8290S-P	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154859
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8290	<b>Analyzed Date:</b>	10/13/2023	<b>Analytical Batch:</b>	478693
<b>Units:</b>	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	0.21	0.48	ND	50	88.6			70 - 130		
1,2,3,7,8-PeCDF	0.99	4.8	ND	200	89.9			70 - 130		
2,3,4,7,8-PeCDF	0.65	4.8	ND	200	93.1			70 - 130		
1,2,3,4,7,8-HxCDF	0.49	4.8	ND	200	89.9			70 - 130		
1,2,3,6,7,8-HxCDF	1.1	4.8	ND	200	90.9			70 - 130		
2,3,4,6,7,8-HxCDF	1.4	4.8	ND	200	88.5			70 - 130		
1,2,3,7,8,9-HxCDF	1.9	4.8	ND	200	102			70 - 130		
1,2,3,4,6,7,8-HpCDF	1.8	4.8	ND	200	87.0			70 - 130		
1,2,3,4,7,8,9-HpCDF	1.1	4.8	ND	200	92.3			70 - 130		
OCDF	1.4	24	ND	500	105			70 - 130		
2,3,7,8-TCDD	0.20	0.48	ND	50	95.7			70 - 130		
1,2,3,7,8-PeCDD	1.1	4.8	ND	200	94.9			70 - 130		
1,2,3,4,7,8-HxCDD	0.90	4.8	ND	200	85.6			70 - 130		
1,2,3,6,7,8-HxCDD	1.3	4.8	ND	200	93.6			70 - 130		
1,2,3,7,8,9-HxCDD	3.1	4.8	ND	200	124			70 - 130		
1,2,3,4,6,7,8-HpCDD	1.5	4.8	1.99	200	99.8			70 - 130		
OCDD	4.3	24	13.5	500	93.5			70 - 130		
(LS) 13C-2,3,7,8-TCDF				100	82.5			40 - 135		
(LS) 13C-1,2,3,7,8-PeCDF				100	95.1			40 - 135		
(LS) 13C-2,3,4,7,8-PeCDF				100	98.6			40 - 135		
(LS) 13C-1,2,3,4,7,8-HxCDF				100	81.3			40 - 135		
(LS) 13C-1,2,3,6,7,8-HxCDF				100	76.3			40 - 135		
(LS) 13C-2,3,4,6,7,8-HxCDF				100	84.4			40 - 135		
(LS) 13C-1,2,3,7,8,9-HxCDF				100	89.3			40 - 135		
(LS) 13C-1,2,3,4,6,7,8-HpCDF				100	76.8			40 - 135		
(LS) 13C-1,2,3,4,7,8,9-HpCDF				100	78.9			40 - 135		
(LS) 13C-2,3,7,8-TCDD				100	88.6			40 - 135		
(LS) 13C-1,2,3,7,8-PeCDD				100	98.9			40 - 135		
(LS) 13C-2,3,7,8-TCDF				100	82.0			40 - 135		
(LS) 13C-1,2,3,7,8-PeCDF				100	67.5			40 - 135		
(LS) 13C-2,3,4,7,8-PeCDF				100	85.2			40 - 135		
(LS) 13C-1,2,3,4,7,8-HxCDF				200	70.0			40 - 135		



## LCS/LCSD Summary Report

*Raw values are used in quality control assessment.*

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546MI_OCP	<b>Prep Date:</b>	10/03/23	<b>Prep Batch:</b>	1154874
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8081B	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478487
<b>Units:</b>	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	86.2	91.2	5.63	45 - 137	30	
gamma-BHC (Lindane)	0.16	2.0	ND	40	83.5	88.8	6.10	49 - 135	30	
beta-BHC	0.32	2.0	ND	40	83.1	88.6	6.41	50 - 136	30	
delta-BHC	0.22	2.0	ND	40	83.9	89.6	6.34	47 - 139	30	
Heptachlor	0.12	2.0	ND	40	85.7	92.6	7.57	47 - 136	30	
Aldrin	0.20	2.0	ND	40	91.2	96.0	5.07	45 - 136	30	
Heptachlor Epoxide	0.24	2.0	ND	40	86.4	93.8	8.04	52 - 136	30	
gamma-Chlordane	0.44	2.0	ND	40	89.3	96.8	8.06	53 - 135	30	
alpha-Chlordane	0.21	2.0	ND	40	88.1	95.6	8.17	54 - 133	30	
4,4-DDE	0.45	2.0	ND	40	88.9	95.3	6.78	56 - 134	30	
Endosulfan I	0.20	2.0	ND	40	82.5	89.8	8.42	53 - 132	30	
Dieldrin	0.15	2.0	ND	40	83.4	90.8	8.32	56 - 136	30	
Endrin	1.4	2.0	ND	40	86.0	96.0	11.0	57 - 140	30	
4,4-DDD	0.57	2.0	ND	40	82.8	92.8	11.4	56 - 139	30	
Endosulfan II	0.93	4.0	ND	40	85.1	94.3	10.3	53 - 134	30	
4,4-DDT	0.24	2.0	ND	40	74.4	85.8	14.4	50 - 141	30	
Endrin Aldehyde	0.61	2.0	ND	40	75.0	85.4	13.1	35 - 137	30	
Methoxychlor	0.20	2.0	ND	120	78.9	94.8	18.5	52 - 143	30	
Endosulfan Sulfate	0.58	2.0	ND	40	84.0	93.6	10.7	55 - 134	30	
Endrin Ketone	0.098	2.0	ND	40	81.0	92.3	13.0	55 - 136	30	
Chlordane, Technical			ND	100				47 - 130		
DCBP (S)				100	83.8	94.1		54 - 125		

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546_PCB	<b>Prep Date:</b>	10/04/23	<b>Prep Batch:</b>	1154922
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8082A	<b>Analyzed Date:</b>	10/4/2023	<b>Analytical Batch:</b>	478523
<b>Units:</b>	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	53	100	ND	600	84.8	85.7	0.978	25 - 145	30	
Aroclor1260	36	100	ND	600	91.8	89.2	2.95	30 - 145	30	
TCMX (S)				0.10	95.0	97.0		48 - 125		
DCBP (S)				0.10	105	103		48 - 135		

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	Bioavailable As	<b>Prep Date:</b>	10/10/23	<b>Prep Batch:</b>	1155069
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW6010B	<b>Analyzed Date:</b>	10/11/2023	<b>Analytical Batch:</b>	478726
<b>Units:</b>	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	0.0482	1.0	115	110	4.44	80 - 120	30	



## MS/MSD Summary Report

*Raw values are used in quality control assessment.*

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546_PAHSIM	<b>Prep Date:</b>	10/03/23	<b>Prep Batch:</b>	1154834
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8270CSIM	<b>Analyzed Date:</b>	10/4/2023	<b>Analytical Batch:</b>	478488
<b>Spiked Sample:</b>	2309213-001A						
<b>Units:</b>	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	5.50	333.3	34.8	17.9	60.5	45 - 125	30	S,R
Pyrene	0.457	3.30	ND	333.3	6.29	4.36	36.6	45 - 125	30	S,R
2-Fluorobiphenyl (S)				5556	42.6	20.6	69.6	45 - 125		S
p-Terphenyl-d14 (S)				5556	4.77	3.97	18.3	30 - 125		S

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3050B	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154839
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW6010C	<b>Analyzed Date:</b>	10/2/2023	<b>Analytical Batch:</b>	478479
<b>Spiked Sample:</b>	2309213-001A						
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.25	25.1	110	25	0	0	0.000	30.7 - 130	30	NR
Arsenic	6.5	25.1	3240	25	0	0	5.00	71.0 - 121	30	NR
Barium	0.28	25.1	365	25	0	0	11.7	70.2 - 130	30	NR
Beryllium	0.28	25.1	ND	25	89.5	92.5	3.84	73.3 - 115	30	
Cadmium	0.50	25.1	ND	25	85.6	90.2	5.07	68.7 - 110	30	
Chromium	0.38	25.1	926	25	0	0	2.70	76.0 - 116	30	NR
Cobalt	0.35	25.1	85.7	25	90.9	89.6	0.922	57.4 - 122	30	
Copper	1.0	25.1	3240	25	0	0	6.61	74.8 - 119	30	NR
Lead	15	25.1	640	25	0	0	7.10	67.9 - 118	30	NR
Nickel	2.5	25.1	84.7	25	83.9	67.6	3.85	61.5 - 122	30	
Selenium	1.1	25.1	ND	25	83.5	86.9	4.63	62.0 - 111	30	
Silver	0.75	25.1	ND	25	108	103	2.26	75 - 125	30	
Thallium	1.0	25.1	ND	25	71.8	75.2	5.04	39.2 - 125	30	
Vanadium	0.50	25.1	130	25	0	0	3.30	65.8 - 122	30	NR
Zinc	1.5	25.1	1890	25	0	0	5.71	59.9 - 122	30	NR
Aluminum	110	503	28100	250	0	0	4.90	75.0 - 125	30	NR
Calcium	61	251	181000	250	0	0	6.09	77.0 - 125	30	NR
Iron	86	251	27800	250	0	0	0.364	75.0 - 125	30	NR
Magnesium	25	251	15100	250	0	0	5.23	75.0 - 125	30	NR
Manganese	4.3	25.1	742	25	0	0	2.49	75.0 - 125	30	NR
Potassium	24	251	2530	250	0	0	5.07	75.0 - 125	30	NR
Sodium	50	251	4340	250	0	0	4.82	75.0 - 125	30	NR



## MS/MSD Summary Report

*Raw values are used in quality control assessment.*

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	7471BP	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154841
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW7471B	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478461
<b>Spiked Sample:</b>	2309213-001A						
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.029	0.31	ND	0.765	86.1	80.1	0.866	80 - 120	20	

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	3546_TPH TetraMI	<b>Prep Date:</b>	10/02/23	<b>Prep Batch:</b>	1154856
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8015B	<b>Analyzed Date:</b>	10/3/2023	<b>Analytical Batch:</b>	478454
<b>Spiked Sample:</b>	2309213-001A						
<b>Units:</b>	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	4.53	10.7	80.0	33.3	64.6	22.7	15.2	52 - 115	30	S,x
Pentacosane (S)				200	81.6	70.6		59 - 129		

<b>Work Order:</b>	2309213	<b>Prep Method:</b>	Bioavailable As	<b>Prep Date:</b>	10/10/23	<b>Prep Batch:</b>	1155069
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW6010B	<b>Analyzed Date:</b>	10/11/2023	<b>Analytical Batch:</b>	478726
<b>Spiked Sample:</b>	2309213-001B						
<b>Units:</b>	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	27.0	1.0	0	0	0.000	60 - 140	30	NR





## Laboratory Qualifiers and Definitions

### DEFINITIONS:

<b>Accuracy/Bias (% Recovery)</b> - The closeness of agreement between an observed value and an accepted reference value.
<b>Blank (Method/Preparation Blank)</b> -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.
<b>Duplicate</b> - 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)
<b>Laboratory Control Sample (LCS ad LCSD)</b> - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
<b>Matrix</b> - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
<b>Matrix Spike (MS/MSD)</b> - 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.
<b>Method Detection Limit (MDL)</b> - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
<b>Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ)</b> - 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.
<b>Precision (%RPD)</b> - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
<b>Surrogate (S) or (Surr)</b> - 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
<b>Tentatively Identified Compound (TIC)</b> - 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.
<b>Units:</b> the unit of measure used to express the reported result - <b>mg/L</b> and <b>mg/Kg</b> (equivalent to PPM - parts per million in <b>liquid</b> and <b>solid</b> ), <b>ug/L</b> and <b>ug/Kg</b> (equivalent to PPB - parts per billion in <b>liquid</b> and <b>solid</b> ), <b>ug/m3</b> , <b>mg/m3</b> , <b>ppbv</b> and <b>ppmv</b> (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), <b>ug/Wipe</b> ( concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

### LABORATORY QUALIFIERS

<p><b>B</b> - Indicates when the analyte is found in the associated method or preparation blank</p> <p><b>D</b> - Surrogate is not recoverable due to the necessary dilution of the sample</p> <p><b>E</b> - 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><b>H</b>- Indicates that the recommended holding time for the analyte or compound has been exceeded</p> <p><b>J</b>- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative</p> <p><b>NA</b> - Not Analyzed</p> <p><b>N/A</b> - Not Applicable</p> <p><b>ND</b> - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.</p> <p><b>NR</b> - 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><b>R</b>- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts</p> <p><b>S</b>- 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><b>X</b> -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>
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## Sample Receipt Checklist

Client Name: Tetra Tech Inc (HI)

Date and Time Received: 9/27/2023 10:56:00AM

Project Name: DOH Maui Wildfire Ash Sample-KULA

Received By: Lorna Imbat

Work Order No.: 2309213

Physically Logged By: TTHACH

Checklist Completed By: TTHACH

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? Not Present

### 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? No      Temperature: 18.0 °C  
Water-VOA vials have zero headspace?  
Water-pH acceptable upon receipt?  
pH Checked by: N/A      pH Adjusted by: N/A

### Comments:



## Login Summary Report

<b>Client ID:</b>	TL5162      Tetra Tech Inc (HI)	<b>QC Level:</b>	II
<b>Project Name:</b>	DOH Maui Wildfire Ash Sample-KULA	<b>TAT Requested:</b>	10 Day:10
<b>Project # :</b>	103S864023138	<b>Date Received:</b>	9/27/2023
<b>Report Due Date:</b>	10/13/2023	<b>Time Received:</b>	10:56 am

**Comments:**  
**Work Order # :**    **2309213**

<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>
2309213-001A	KULA ASH #1	09/21/23 17:00	Soil	03/19/24			TPHDO_S_TetraMI Dioxins_8290 M_S Met_S_6010Full ISM Prep Hg_S_7471B PAHSIM_S_8270 C Pest_S_8081TETRA PCBs_S_8082A	
<b>Sample Note:</b> MIS samples from HI (ash). Analyze all samples dried/sieved (no wet). Analyze PAHs, metals & Dioxins in triplicate (so 001B/001C)								
2309213-001B	KULA ASH #1 Duplicate	09/21/23 17:00	Soil	03/19/24			Bioavailable As PAHSIM_S_8270 C Hg_S_7471B Met_S_6010Full Dioxins_8290_S	
<b>Sample Note:</b> Same as 001A								
2309213-001C	KULA ASH #1 Triplicate	09/21/23 17:00	Soil	03/19/24			Dioxins_8290_S Met_S_6010Full Hg_S_7471B PAHSIM_S_8270 C	
<b>Sample Note:</b> Same as 001A								



## TORRENT LABORATORY CHAIN-OF-CUSTODY RECORD

2309213



Client Name/Account #: TetraTech, Inc.  
 Address: 737 Bishop St., Suite 2000  
 City/State/Zip: Honolulu, HI 96813  
 Project Manager: Eric Jensen (eric.jensen@tetratech.com)  
 Telephone Number: 808.225.7084 Fax No.: NA  
 Sampler Name: (Print) Roger Brewer, DOH  
 Sampler Signature: Roger Brewer, DOH

Report To: Eric Jensen  
 Invoice To: Eric Jensen  
 Project ID: DOH Maui Wildfire Ash Sample - KULA  
 Project #: 103S864023138

Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Multi-incremental Sample	Preservative								Matrix				Other (specify): ASH	Analyze For:																	
							None	HNO <sub>3</sub> (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H <sub>2</sub> SO <sub>4</sub> Plastic (Yellow Label)	H <sub>2</sub> SO <sub>4</sub> Glass (Yellow Label)	None (Black Label)	Other (one MeOH VOA)	Groundwater	Wastewater	Drinking Water	Sludge		Soil	Multi-Incremental	PAHs 8270C SIM	TPH RRO 8015	Organochlorine Pesticides, 8081A	Heavy Metals (26), via 60106/ 7440/ 7471/ 200.7	PCBs 8082	Dioxins & furans, 8290M	RUSH TAT (Pre-Schedule)	Standard TAT								
KULA ASH #1	9/21/23	1700	1			1	X														X	X	X	X	X	X	X					X					

**Special Instructions:** Please air-dry, sieve and subsample following HDOH MIS guidance; hold samples once analyzed; RETURN UNUSED SAMPLE TO DOH

>>Multi-Increment Processing to 250 microns  
 >>Laboratory Replicates (3) for Heavy Metals (26), PAHs, and Dioxins/Furans  
 >>SubSamples to: SGS-AXYS, Eurofins, EMSL (COCs attached)  
 >>SEE ATTACHED INSTRUCTIONS

**Method of Shipment:** FEDEX

**Laboratory Comments:**

Temperature Upon Receipt: \_\_\_\_\_  
 VOCs Free of Headspace? Y N

Relinquished by:	Date	Time	Received by:	Date	Time
Roger Brewer, DOH	9/26/2023	0800	Eric Jensen, Tetra Tech	9/26/2023	0800
Relinquished by:	Date	Time	Received by Laboratory:	Date	Time
Eric Jensen to FedEx	9/26/2023	1500	<i>Eric Jensen</i>	9-27-23	1050

001A

*Eric Jensen*  
*L.D. Imbat*  
 temp 18#3