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

RE: HDOH Red Hill

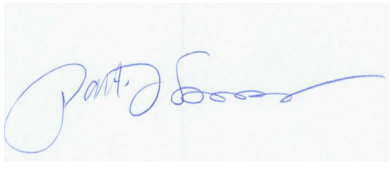
Work Order No.: 2112152

Dear Yvonne Parry:

Torrent Laboratory, Inc. received 1 sample(s) on December 11, 2021 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.



Patti L Sandrock
QA Officer

December 16, 2021
Date

Date: 12/16/2021

Client: Tetra Tech Inc (HI)

Project: HDOH Red Hill

Work Order: 2112152

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.

Sample Result Summary

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date Received: 12/11/21
Date Reported: 12/16/21

AIEA Halawa Water Sample 2112152-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
TOC	A5310B	1	0.40	2.0	26.9	mg/L

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 12/11/21, 4:22 pm
Date Reported: 12/16/21

Client Sample ID:	AIEA Halawa Water Sample	**Lab Sample ID:**	2112152-001A
Project Name/Location:	HDOH Red Hill	**Sample Matrix:**	Water
Project Number:			
Date/Time Sampled:	12/09/21 / 10:30		
SDG:			

Prep Method:	3510_BNASIM	**Prep Batch Date/Time:**	12/15/21 9:54:00AM
Prep Batch ID:	1137731	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Pyridine	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
N-Nitrosdimethylamine	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Aniline	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Phenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Bis(2-chloroethyl) ether	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2-Chlorophenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
1,3-Dichlorobenzene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
1,4-Dichlorobenzene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Benzyl Alcohol	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
1,2-Dichlorobenzene	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2-Methylphenol (o-Cresol)	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Bis(2-chloroisopropyl)ether	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
3-/4-Methylphenol (p-/m-Cresol)	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
N-nitroso-di-n-propylamine	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Hexachloroethane	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Nitrobenzene	SW8270	1	0.900	18	ND		ug/L	12/16/21	0:59	TA	462240
Isophorone	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2-Nitrophenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2,4-Dimethylphenol	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Benzoic Acid	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Bis(2-Chloroethoxy)methane	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2,4-Dichlorophenol	SW8270	1	0.180	3.6	ND		ug/L	12/16/21	0:59	TA	462240
1,2,4-Trichlorobenzene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2,6-Dichlorophenol	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Naphthalene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
4-Chloroaniline	SW8270	1	0.180	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Hexachloro-1,3-butadiene	SW8270	1	0.450	18	ND		ug/L	12/16/21	0:59	TA	462240
4-Chloro-3-methylphenol	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2-Methylnaphthalene	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
1-Methylnaphthalene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Hexachlorocyclopentadiene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2,4,6-Trichlorophenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2,4,5-Trichlorophenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2-Chloronaphthalene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
2-Nitroaniline	SW8270	1	0.900	9.0	ND		ug/L	12/16/21	0:59	TA	462240
1,4-Dinitrobenzene	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Dimethyl phthalate	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
1,3-Dinitrobenzene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Acenaphthylene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 12/11/21, 4:22 pm
Date Reported: 12/16/21

Client Sample ID:	AIEA Halawa Water Sample	**Lab Sample ID:**	2112152-001A
Project Name/Location:	HDOH Red Hill	**Sample Matrix:**	Water
Project Number:			
Date/Time Sampled:	12/09/21 / 10:30		
SDG:			

Prep Method:	3510_BNASIM	**Prep Batch Date/Time:**	12/15/21 9:54:00AM
Prep Batch ID:	1137731	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,6-Dinitrotoluene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
1,2-Dinitrobenzene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
3-Nitroaniline	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Acenaphthene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2,4-Dinitrophenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
4-Nitrophenol	SW8270	1	0.900	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Dibenzofuran	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
2,4-Dinitrotoluene	SW8270	1	0.180	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2,3,5,6-Tetrachlorophenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
2,3,4,6-Tetrachlorophenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Diethylphthalate	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Fluorene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
4-Chlorophenyl phenyl ether	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
4-Nitroaniline	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
4,6-Dinitro-2-methylphenol	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Diphenylamine	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Azobenzene	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
4-Bromophenyl phenyl ether	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Hexachlorobenzene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Pentachlorophenol	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Phenanthrene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Anthracene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Carbazole	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Di-n-butylphthalate	SW8270	1	0.450	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Fluoranthene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Benzidine	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Pyrene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Benzyl butyl phthalate	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Benz[a]anthracene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
3,3-Dichlorobenzidine	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Chrysene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Bis(2-Ethylhexyl)phthalate	SW8270	1	0.180	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Di-n-octyl phthalate	SW8270	1	0.180	3.6	ND		ug/L	12/16/21	0:59	TA	462240
Benzo[b]fluoranthene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Benzo[k]fluoranthene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Benzo[a]pyrene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Indeno[1,2,3-cd]pyrene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Dibenz[a,h]anthracene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240
Benzo[g,h,i]perylene	SW8270	1	0.180	0.54	ND		ug/L	12/16/21	0:59	TA	462240

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 12/11/21, 4:22 pm
Date Reported: 12/16/21

Client Sample ID:	AIEA Halawa Water Sample	**Lab Sample ID:**	2112152-001A
Project Name/Location:	HDOH Red Hill	**Sample Matrix:**	Water
Project Number:			
Date/Time Sampled:	12/09/21 / 10:30		
SDG:			

Prep Method:	3510_BNASIM	**Prep Batch Date/Time:**	12/15/21 9:54:00AM
Prep Batch ID:	1137731	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
			Acceptance Limits								
2-Fluorophenol (S)	SW8270		15 - 105		**34.8**		%	12/16/21	0:59	TA	462240
Phenol-d6 (S)	SW8270		15 - 100		**20.2**		%	12/16/21	0:59	TA	462240
Nitrobenzene-d5 (S)	SW8270		30 - 100		**66.4**		%	12/16/21	0:59	TA	462240
2-Fluorobiphenyl (S)	SW8270		30 - 105		**71.2**		%	12/16/21	0:59	TA	462240
2,4,6-Tribromophenol (S)	SW8270		15 - 125		**79.7**		%	12/16/21	0:59	TA	462240
p-Terphenyl-d14 (S)	SW8270		30 - 125		**110**		%	12/16/21	0:59	TA	462240

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 12/11/21, 4:22 pm
Date Reported: 12/16/21

Client Sample ID:	AIEA Halawa Water Sample	**Lab Sample ID:**	2112152-001A
Project Name/Location:	HDOH Red Hill	**Sample Matrix:**	Water
Project Number:			
Date/Time Sampled:	12/09/21 / 10:30		
SDG:			

Prep Method:	3510_TPH	**Prep Batch Date/Time:**	12/14/21 9:49:00AM
Prep Batch ID:	1137683	**Prep Analyst:**	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel	SW8015B	1	0.037	0.10	ND		mg/L	12/14/21	20:50	SN	462214
TPH as Motor Oil	SW8015B	1	0.11	0.40	ND		mg/L	12/14/21	20:50	SN	462214
			Acceptance Limits								
Pentacosane (S)	SW8015B		59 - 129		**87.9**		%	12/14/21	20:50	SN	462214

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 12/11/21, 4:22 pm
Date Reported: 12/16/21

Client Sample ID:	AIEA Halawa Water Sample	**Lab Sample ID:**	2112152-001B
Project Name/Location:	HDOH Red Hill	**Sample Matrix:**	Water
Project Number:			
Date/Time Sampled:	12/09/21 / 10:30		
SDG:			

Prep Method:	TOC-W-P	**Prep Batch Date/Time:**	12/15/21	11:55:00AM
Prep Batch ID:	1137773	**Prep Analyst:**	BJAY	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TOC	A5310B	1	0.40	2.0	**26.9**		mg/L	12/15/21	11:55	BJAY	462251

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2112152	**Prep Method:**	3510_TPH	**Prep Date:**	12/14/21	**Prep Batch:**	1137683
Matrix:	Water	**Analytical Method:**	SW8015B	**Analyzed Date:**	12/15/2021	**Analytical Batch:**	462214
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH as Diesel	0.037	0.10	ND	
TPH as Motor Oil	0.11	0.40	ND	
Pentacosane (S)			77.8	

Work Order:	2112152	**Prep Method:**	3510_BNASIM	**Prep Date:**	12/15/21	**Prep Batch:**	1137731
Matrix:	Water	**Analytical Method:**	SW8270	**Analyzed Date:**	12/15/2021	**Analytical Batch:**	462240
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Pyridine	0.45	3.6	ND	
N-Nitrosdimethylamine	0.45	3.6	ND	
Aniline	0.90	3.6	ND	
Phenol	0.45	3.6	ND	
Bis(2-chloroethyl) ether	0.90	3.6	ND	
2-Chlorophenol	0.45	3.6	ND	
1,3-Dichlorobenzene	0.45	3.6	ND	
1,4-Dichlorobenzene	0.45	3.6	ND	
Benzyl Alcohol	0.90	3.6	ND	
1,2-Dichlorobenzene	0.90	3.6	ND	
2-Methylphenol (o-Cresol)	0.90	3.6	ND	
Bis(2-chloroisopropyl)ether	0.45	3.6	ND	
3-/4-Methylphenol (p-/m-Cresol)	0.45	3.6	ND	
N-nitroso-di-n-propylamine	0.90	3.6	ND	
Hexachloroethane	0.45	3.6	ND	
Nitrobenzene	0.90	18	ND	
Isophorone	0.90	3.6	ND	
2-Nitrophenol	0.45	3.6	ND	
2,4-Dimethylphenol	0.90	3.6	ND	
Benzoic Acid	0.45	3.6	ND	
Bis(2-Chloroethoxy)methane	0.90	3.6	ND	
2,4-Dichlorophenol	0.18	3.6	ND	
1,2,4-Trichlorobenzene	0.45	3.6	ND	
2,6-Dichlorophenol	0.90	3.6	ND	
Naphthalene	0.18	0.54	ND	
4-Chloroaniline	0.18	3.6	ND	
Hexachloro-1,3-butadiene	0.45	18	ND	
4-Chloro-3-methylphenol	0.90	3.6	ND	
2-Methylnaphthalene	0.90	3.6	ND	
1-Methylnaphthalene	0.45	3.6	ND	
Hexachlorocyclopentadiene	0.45	3.6	ND	
2,4,6-Trichlorophenol	0.45	3.6	ND	
2,4,5-Trichlorophenol	0.45	3.6	ND	
2-Chloronaphthalene	0.18	0.54	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2112152	**Prep Method:**	3510_BNASIM	**Prep Date:**	12/15/21	**Prep Batch:**	1137731
Matrix:	Water	**Analytical Method:**	SW8270	**Analyzed Date:**	12/15/2021	**Analytical Batch:**	462240
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2-Nitroaniline	0.90	9.0	ND	
1,4-Dinitrobenzene	0.90	3.6	ND	
Dimethyl phthalate	0.90	3.6	ND	
1,3-Dinitrobenzene	0.45	3.6	ND	
Acenaphthylene	0.18	0.54	ND	
2,6-Dinitrotoluene	0.45	3.6	ND	
1,2-Dinitrobenzene	0.45	3.6	ND	
3-Nitroaniline	0.45	3.6	ND	
Acenaphthene	0.45	3.6	ND	
2,4-Dinitrophenol	0.45	3.6	ND	
4-Nitrophenol	0.90	3.6	ND	
Dibenzofuran	0.18	0.54	ND	
2,4-Dinitrotoluene	0.18	3.6	ND	
2,3,5,6-Tetrachlorophenol	0.45	3.6	ND	
2,3,4,6-Tetrachlorophenol	0.45	3.6	ND	
Diethylphthalate	0.45	3.6	ND	
Fluorene	0.45	3.6	ND	
4-Chlorophenyl phenyl ether	0.45	3.6	ND	
4-Nitroaniline	0.45	3.6	ND	
4,6-Dinitro-2-methylphenol	0.45	3.6	ND	
Diphenylamine	0.45	3.6	ND	
Azobenzene	0.45	3.6	ND	
4-Bromophenyl phenyl ether	0.45	3.6	ND	
Hexachlorobenzene	0.18	0.54	ND	
Pentachlorophenol	0.18	0.54	ND	
Phenanthrene	0.18	0.54	ND	
Anthracene	0.18	0.54	ND	
Carbazole	0.18	0.54	ND	
Di-n-butylphthalate	0.45	3.6	ND	
Fluoranthene	0.18	0.54	ND	
Benzidine	0.18	0.54	ND	
Pyrene	0.18	0.54	ND	
Benzyl butyl phthalate	0.18	0.54	ND	
Benz[a]anthracene	0.18	0.54	ND	
3,3-Dichlorobenzidine	0.18	0.54	ND	
Chrysene	0.18	0.54	ND	
Bis(2-Ethylhexyl)phthalate	0.18	3.6	ND	
Di-n-octyl phthalate	0.18	3.6	ND	
Benzo[b]fluoranthene	0.18	0.54	ND	
Benzo[k]fluoranthene	0.18	0.54	ND	
Benzo[a]pyrene	0.18	0.54	ND	
Indeno[1,2,3-cd]pyrene	0.18	0.54	ND	
Dibenz[a,h]anthracene	0.18	0.54	ND	
Benzo[g,h,i]perylene	0.18	0.54	ND	
2-Fluorophenol (S)			36.6	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2112152	**Prep Method:**	3510_BNASIM	**Prep Date:**	12/15/21	**Prep Batch:**	1137731
Matrix:	Water	**Analytical Method:**	SW8270	**Analyzed Date:**	12/15/2021	**Analytical Batch:**	462240
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Phenol-d6 (S)			22.9	
Nitrobenzene-d5 (S)			67.2	
2-Fluorobiphenyl (S)			73.3	
2,4,6-Tribromophenol (S)			72.4	
p-Terphenyl-d14 (S)			116	

Work Order:	2112152	**Prep Method:**	TOC-W-P	**Prep Date:**	12/15/21	**Prep Batch:**	1137773
Matrix:	Water	**Analytical Method:**	A5310B	**Analyzed Date:**	12/15/2021	**Analytical Batch:**	462251
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TOC	0.40	2.0	0.52	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2112152	**Prep Method:**	3510_TPH	**Prep Date:**	12/14/21	**Prep Batch:**	1137683
Matrix:	Water	**Analytical Method:**	SW8015B	**Analyzed Date:**	12/15/2021	**Analytical Batch:**	462214
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	0.037	0.10	ND	1.0	68.2	78.8	14.4	52 - 115	30	
Pentacosane (S)				200	78.1	84.9		59 - 129		

Work Order:	2112152	**Prep Method:**	3510_BNASIM	**Prep Date:**	12/15/21	**Prep Batch:**	1137731
Matrix:	Water	**Analytical Method:**	SW8270	**Analyzed Date:**	12/15/2021	**Analytical Batch:**	462240
Units:	ug/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	0.45	3.6	ND	2.000	23.8	24.4	2.07	15 - 95	30	
2-Chlorophenol	0.45	3.6	ND	2.000	55.2	55.7	0.905	15 - 105	30	
1,4-Dichlorobenzene	0.45	3.6	ND	2.000	59.4	62.0	4.12	35 - 105	30	
N-nitroso-di-n-propylamine	0.90	3.6	ND	2.000	83.0	84.6	1.79	40 - 115	30	
1,2,4-Trichlorobenzene	0.45	3.6	ND	2.000	63.0	65.7	3.89	45 - 110	30	
4-Chloro-3-methylphenol	0.90	3.6	ND	2.000	60.2	59.7	0.837	15 - 110	30	
Acenaphthene	0.18	0.54	ND	2.000	71.9	72.6	2.07	45 - 110	30	
4-Nitrophenol	0.90	3.6	ND	2.000	69.9	71.4	2.12	15 - 140	30	
2,4-Dinitrotoluene	0.18	0.54	ND	2.000	81.8	84.0	2.41	40 - 115	30	
Pentachlorophenol	0.18	0.54	ND	2.000	19.7	22.1	11.2	15 - 120	30	
Pyrene	0.18	0.54	ND	2.000	73.8	73.8	0.000	45 - 125	30	
2-Fluorophenol (S)				1111	35.5	35.9		15 - 105		
Phenol-d6 (S)				1111	20.4	20.6		15 - 100		
Nitrobenzene-d5 (S)				555.6	67.6	71.5		30 - 100		
2-Fluorobiphenyl (S)				555.6	73.7	75.9		30 - 105		
2,4,6-Tribromophenol (S)				1111	85.2	83.4		15 - 125		
p-Terphenyl-d14 (S)				555.6	116	113		30 - 125		

Work Order:	2112152	**Prep Method:**	TOC-W-P	**Prep Date:**	12/15/21	**Prep Batch:**	1137773
Matrix:	Water	**Analytical Method:**	A5310B	**Analyzed Date:**	12/15/2021	**Analytical Batch:**	462251
Units:	mg/L						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TOC	0.40	2.0	0.52	10	98.3	98.8	0.507	80 - 120	20	

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 100cm2 surface)

LABORATORY QUALIFIERS:

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

Sample Receipt Checklist

Client Name: Tetra Tech Inc (HI)

Project Name: HDOH Red Hill

Work Order No.: 2112152

Date and Time Received: 12/11/2021 4:22:00PM

Received By: HU

Physically Logged By: Katherene Evans

Checklist Completed By: Katherene Evans

Carrier Name: Client Drop Off

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?	Yes	Temperature:	5.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: na

pH Adjusted by: na

Comments:

Login Summary Report

Client ID: TL5162 Tetra Tech Inc (HI)
Project Name: HDOH Red Hill
Project # :
Report Due Date: 12/16/2021
Comments:
Work Order # : ***2112152***

QC Level: II
TAT Requested: 2 Day Rush:2
Date Received: 12/11/2021
Time Received: 4:22 pm

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2112152-001A	AIEA Halawa Water Sample	12/09/21 10:30	Water	01/23/22			SVOC_W_SIMFull TPHDO_W_8015B(M)	
Sample Note:	TPH d/mo with and w/o sgcu							
2112152-001B	AIEA Halawa Water Sample	12/09/21 10:30	Water	01/23/22			TOC_5310B	
Sample Note:	Sub sampled for TOC 12/14							

Torrent LABORATORY, INC.

CHAIN-OF-CUSTODY RECORD

TETRA TECH

2112152

Client Name/Account #: TetraTech, Inc.

Address: 737 Bishop St., Suite 2340

City/State/Zip: Honolulu, HI 96813

Project Manager: Yvonne Parry

Report To: Yvonne Parry

Telephone Number: (808)441-6617 Fax No.: (808) 836-1689

Invoice To: Yvonne Parry

Sampler Name: (Print) Mel Tokuda

Project ID: HDOH Red Hill

Sampler Signature:

Project #:

								Preservative								Matrix						Analyze For:																RUSH TAT (Pre-Schedule)	Standard TAT		
Sample ID / Description	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Multi-incremental Sample	Ice	HNO_3 (Red Label)	HCl (Blue Label)	NaOH (Orange Label)	H_2SO_4 Plastic (Yellow Label)	H_2SO_4 Glass(Yellow Label)	None (Black Label)	Other (one MeOH VOA)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyses pending																				
001 Aiea Halawa water samples	12/9/21	1030	7				X														X																			

RUSH
2 DAYS

Special Instructions:

Method of Shipment: FEDEX

Laboratory Comments:
Temperature Upon Receipt:
VOCs Free of Headspace? Y N

Relinquished by:	Date	Time	Received by:	Date	Time
Ramon Mendoza for Mel Tokuda	12/10/2021	1002	TetraTech	12/10/21	1002
Relinquished by:	Date	Time	Received by Laboratory:	Date	Time
	12/10/21	1100	Torrent Lab	12/11/21	1630

FEDEX Temp=5°C #2

Page 1 of 1

Gmail

Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: FW: FedEx Shipment 775452062427. This shipment was tendered to FedEx Express

1 message

Parry, Yvonne <Yvonne.Parry@tetratech.com> Tue, Dec 14, 2021 at 9:14 AM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>
Cc: "Jensen, Eric" <Eric.Jensen@tetratech.com>

Please run for the following:

TPH Diesel and Oil

TPH Diesel and Oil with Silica Gel Cleanup

8270 SIM

TOC

Thank you!

Yvonne-Katrin Parry | Senior Project Manager-Environmental Chemist

Main: 808.441.6600 | Direct: 808.441.6617 | Cell: 808.393.8829 | Fax: 808.536.3953
yvonne.parry@tetratech.com

Tetra Tech | Honolulu
737 Bishop St., Ste. 2340 | Honolulu, HI 96813 | www.tetratech.com

From: Torrent Laboratory, Inc. <pm@torrentlaboratory.com>
Sent: Monday, December 13, 2021 2:51 PM
To: Parry, Yvonne <Yvonne.Parry@tetratech.com>
Cc: Jensen, Eric <Eric.Jensen@tetratech.com>
Subject: Re: FW: FedEx Shipment 775452062427. This shipment was tendered to FedEx Express

Hi Yvonne