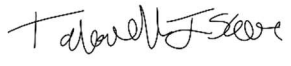
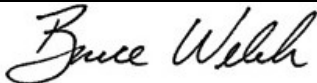


DATA VALIDATION CHECKLIST – STAGE 2A

Site Name	Joint Base Pearl Harbor - Hickam	Project Name	Red-Hill-Incident
Data Reviewer (signature and date)	 Jan 22, 2022	Technical Reviewer (signature and date)	 Jan 23, 2022
Laboratory Report No.	2201009	Laboratory	Torrent Laboratory, Inc. - Milpitas, CA
Analyses	Semivolatile organic compounds (SVOC) by EPA SW-846 Method 8270 using selected ion monitoring, total petroleum hydrocarbons (TPH) by EPA SW-846 Method 8015B, TPH using silica gel (SG) by EPA SW-846 Method 8015B, total organic carbon (TOC) by SM 5310B, volatile organic compounds (VOC) by EPA SW-846 Method 8260B, and gasoline by EPA SW-846 8260, and methane by EPA RSK175		
Samples and Matrix	One groundwater sample (ERH2312 – RHMW11 [Zone 5])		
Field Duplicate Pairs	None		
Field Blanks	None		

INTRODUCTION,

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use* (January 2009). Analytical data were evaluated in general accordance with the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (November 2020).

OVERALL EVALUATION

No results were rejected for this data package. All results are usable with the qualifications described in this checklist.

Data completeness:

Within Criteria	Exceedance/Notes
N	The laboratory reported water method blanks and water laboratory control samples (LCS) for TPH diesel and motor oil and TPH diesel (SG) and motor oil (SG) in solid units of milligrams per kilogram (mg/Kg), not in water units of milligrams per liter (mg/L). The laboratory was contacted to review this issue, and the laboratory confirmed water method blank and LCS samples in units of mg/Kg are incorrect and the correct units are mg/L. The laboratory provided a revised laboratory report to correct the issue.

DATA VALIDATION CHECKLIST – STAGE 2A

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
N	<p>One vial that was preserved with HCl was received broken, and two vials that were preserved with HCl were received with septa that ballooned above the vial cap, but the three remaining vials had sufficient sample volume to perform the requested analyses.</p> <p>The chain of custody requested SVOC by EPA 8270 SIM. The laboratory SVOC prep method was called 3510_BNASIM, but the laboratory analysis method was called SW8270. The laboratory was contacted, and they confirmed the samples were analyzed via EPA 8270 SIM.</p> <p>All samples were received with proper COC documentation. The cooler temperature and sample preservation (as applicable) were verified upon receipt of the samples. No custody seals were present on sample or shipping containers, but no qualifications were applied for this field oversight.</p> <p>The data user should note that lead scavenger (ethylene dibromide and ethylene dichloride) by EPA methods 8011/8260 was requested on the chain of custody, but the laboratory reported both ethylene dibromide and ethylene dichloride results by VOC method 8260B, and no qualifications were applied for this variance. Also, the laboratory reported ethylene dibromide as 1,2-dibromoethane and ethylene dichloride as 1,2-dichloroethane.</p> <p>All samples were subcontracted to the Atmospheric Analysis & Consulting Inc. for methane by EPA RSK 175, but the subcontracted results were attached to the laboratory report. The laboratory was contacted, and they provided a revised report to include the methane results from Atmospheric Analysis & Consulting Inc.</p>

Method blanks:

Within Criteria	Exceedance/Notes
N	<p>VOC by 8260</p> <ul style="list-style-type: none"> • Batch 1138173: The method blank 0.27 micrograms per liter ($\mu\text{g/L}$) of n-butylbenzene, however, no qualification was applied because the n-butylbenzene sample result was nondetect. <p>Gasoline by 8260</p> <ul style="list-style-type: none"> • Batch 1138173: The method blank contained 37 $\mu\text{g/L}$ of gasoline; however, no qualification was applied because the gasoline sample result was nondetect. <p>SVOC by 8270</p> <ul style="list-style-type: none"> • Batch 1138225: The method blank contained 0.336 $\mu\text{g/L}$ of bis(2-ethylhexyl)phthalate; however, no qualification was applied because the gasoline sample result was nondetect.

DATA VALIDATION CHECKLIST – STAGE 2A

Method blanks continued:

Within Criteria	Exceedance/Notes
N	TOC by 5310B <ul style="list-style-type: none"> Batch 1138306: The method blank contained 0.42 mg/L of TOC; however, no qualification was applied to the TOC sample results because it exceeded the reporting limit and was greater than 10x the concentration of TOC in the method blank.

Field blanks:

Within Criteria	Exceedance/Notes
NA	

System monitoring compounds (surrogates and labeled compounds):

Within Criteria	Exceedance/Notes
Y	

MS/MSD:

Within Criteria	Exceedance/Notes
NA	

Laboratory duplicates:

Within Criteria	Exceedance/Notes
Y	

Field duplicates:

Within Criteria	Exceedance/Notes
NA	

DATA VALIDATION CHECKLIST – STAGE 2A

LCSs/LCSDs:

Within Criteria	Exceedance/Notes
N	<p>SVOC by 8270</p> <ul style="list-style-type: none"> Batch 1138225: The LCS/LCSD relative percent difference for n-nitroso-di-n-propylamine exceeded the laboratory acceptance limit; however, no qualification was applied because the n-nitroso-di-n-propylamine sample result is nondetect. <p>The data user should note that the SVOC and VOC full analyte lists were not spiked in the laboratory control sample (LCS). The NFG requires all of the SVOC and VOC target analytes to be spiked in the LCS/LCSD, but no qualifications were applied because the laboratory achieved the method 8270 and 8260 requirements by spiking a representative subset of SVOC and VOC method-specified analytes (as opposed to all reported analytes) in the LCS/LCSD.</p>

Sample dilutions:

Within Criteria	Exceedance/Notes
Y	The sample was analyzed undiluted.

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	Analytes detected between the MDL and RL were not present. The nondetect sample results are reported at the reporting limit (identified as PQL [project quantitation limit] in the laboratory report) and qualified nondetect (flagged U).

Tentatively identified compounds:

Within Criteria	Exceedance/Notes
NA	

DATA VALIDATION CHECKLIST – STAGE 2A

Other [target analyte identification]:

Within Criteria	Exceedance/Notes
N	<p>TPH by 8015</p> <ul style="list-style-type: none"> The diesel result for sample ERH2313-RHMW11 (Zone 5) had contributions from unknown discrete peaks within the diesel quantification range; therefore, the diesel result for ERH2313-RHMW11 (Zone 5) was qualified as estimated (flagged J).

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

Report prepared for:

Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm

Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_BNASIM	Prep Batch Date/Time: 1/6/22 1:40:00PM
Prep Batch ID: 1138225	Prep Analyst: NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Pyridine	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
N-Nitrosdimethylamine	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Aniline	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Phenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Bis(2-chloroethyl) ether	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2-Chlorophenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
1,3-Dichlorobenzene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
1,4-Dichlorobenzene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzyl Alcohol	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
1,2-Dichlorobenzene	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2-Methylphenol (o-Cresol)	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Bis(2-chloroisopropyl)ether	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
3-/4-Methylphenol (p-/m-Cresol)	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
N-nitroso-di-n-propylamine	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Hexachloroethane	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Nitrobenzene	SW8270	1	0.900	18 U	ND		ug/L	01/11/22	17:51	TA	462738
Isophorone	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2-Nitrophenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2,4-Dimethylphenol	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzoic Acid	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Bis(2-Chloroethoxy)methane	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2,4-Dichlorophenol	SW8270	1	0.180	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
1,2,4-Trichlorobenzene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2,6-Dichlorophenol	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Naphthalene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
4-Chloroaniline	SW8270	1	0.180	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Hexachloro-1,3-butadiene	SW8270	1	0.450	18 U	ND		ug/L	01/11/22	17:51	TA	462738
4-Chloro-3-methylphenol	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2-Methylnaphthalene	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
1-Methylnaphthalene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Hexachlorocyclopentadiene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2,4,6-Trichlorophenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2,4,5-Trichlorophenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2-Chloronaphthalene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
2-Nitroaniline	SW8270	1	0.900	9.0 U	ND		ug/L	01/11/22	17:51	TA	462738
1,4-Dinitrobenzene	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Dimethyl phthalate	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
1,3-Dinitrobenzene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Acenaphthylene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

Report prepared for:

Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm

Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_BNASIM	Prep Batch Date/Time: 1/6/22 1:40:00PM
Prep Batch ID: 1138225	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 U	ND		ug/L	01/11/22	17:51	TA	462738
1,2-Dinitrobenzene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
3-Nitroaniline	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Acenaphthene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2,4-Dinitrophenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
4-Nitrophenol	SW8270	1	0.900	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Dibenzofuran	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
2,4-Dinitrotoluene	SW8270	1	0.180	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2,3,5,6-Tetrachlorophenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
2,3,4,6-Tetrachlorophenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Diethylphthalate	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Fluorene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
4-Chlorophenyl phenyl ether	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
4-Nitroaniline	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
4,6-Dinitro-2-methylphenol	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Diphenylamine	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Azobenzene	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
4-Bromophenyl phenyl ether	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Hexachlorobenzene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Pentachlorophenol	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Phenanthrene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Anthracene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Carbazole	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Di-n-butylphthalate	SW8270	1	0.450	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Fluoranthene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzidine	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Pyrene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzyl butyl phthalate	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Benz[a]anthracene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
3,3-Dichlorobenzidine	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Chrysene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Bis(2-Ethylhexyl)phthalate	SW8270	1	0.180	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Di-n-octyl phthalate	SW8270	1	0.180	3.6 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[b]fluoranthene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[k]fluoranthene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[a]pyrene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Indeno[1,2,3-cd]pyrene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[a,h]anthracene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738
Benzo[g,h,i]perylene	SW8270	1	0.180	0.54 U	ND		ug/L	01/11/22	17:51	TA	462738



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

Report prepared for:

Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm

Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_BNASIM	Prep Batch Date/Time: 1/6/22 1:40:00PM
Prep Batch ID: 1138225	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		43.4		%	01/11/22	17:51	TA	462738
Phenol-d6 (S)	SW8270		15 - 100		27.1		%	01/11/22	17:51	TA	462738
Nitrobenzene-d5 (S)	SW8270		30 - 100		87.0		%	01/11/22	17:51	TA	462738
2-Fluorobiphenyl (S)	SW8270		30 - 105		97.1		%	01/11/22	17:51	TA	462738
2,4,6-Tribromophenol (S)	SW8270		15 - 125		116		%	01/11/22	17:51	TA	462738
p-Terphenyl-d14 (S)	SW8270		30 - 125		117		%	01/11/22	17:51	TA	462738



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

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

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 3510_TPH	Prep Batch Date/Time: 1/4/22 10:32:00AM
Prep Batch ID: 1138163	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	0.114 J	x	mg/L	01/05/22	10:47	SN	462653
TPH as Motor Oil	SW8015B	1	0.11	0.40 U	ND		mg/L	01/05/22	10:47	SN	462653
			Acceptance Limits								
Pentacosane (S)	SW8015B		59 - 129		86.9		%	01/05/22	10:47	SN	462653

NOTE: x - Diesel result due to unknown organics within diesel quantified range



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

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

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001A
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method:	3510_TPH SG	Prep Batch Date/Time:	1/5/22 9:20:00AM
Prep Batch ID:	1138164	Prep Analyst:	AKIZ

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH as Diesel (SG)	SW8015B	1	0.037	0.10 U	ND		mg/L	01/05/22	23:01	SN	462632
TPH as Motor Oil (SG)	SW8015B	1	0.11	0.40 U	ND		mg/L	01/05/22	23:01	SN	462632
			Acceptance Limits								
Pentacosane (S)	SW8015B		40 - 129		99.0		%	01/05/22	23:01	SN	462632



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

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

Date/Time Received: 01/04/22, 1:00 pm
Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001B
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method:	TOC-W-P	Prep Batch Date/Time:	1/10/22 3:53:00PM
Prep Batch ID:	1138306	Prep Analyst:	BJAY

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TOC	A5310B	1	0.40	2.0	29.0		mg/L	01/10/22	15:53	BJAY	462730



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

Report prepared for:

Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm

Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001C
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 5030VOC	Prep Batch Date/Time: 1/4/22 10:37:00AM
Prep Batch ID: 1138173	Prep Analyst: JZHAO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	0.26	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Chloromethane	SW8260B	1	0.17	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Vinyl Chloride	SW8260B	1	0.21	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Bromomethane	SW8260B	1	0.21	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Chloroethane	SW8260B	1	0.11	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Trichlorofluoromethane	SW8260B	1	0.19	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,1-Dichloroethene	SW8260B	1	0.14	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Freon 113	SW8260B	1	0.34	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Methylene Chloride	SW8260B	1	0.13	1.0	U ND		ug/L	01/04/22	15:41	JZ	462617
trans-1,2-Dichloroethene	SW8260B	1	0.16	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
MTBE	SW8260B	1	0.077	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
tert-Butanol	SW8260B	1	2.9	5.0	U ND		ug/L	01/04/22	15:41	JZ	462617
DIPE	SW8260B	1	0.12	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,1-Dichloroethane	SW8260B	1	0.12	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
ETBE	SW8260B	1	0.064	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
cis-1,2-Dichloroethene	SW8260B	1	0.15	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
2,2-Dichloropropane	SW8260B	1	0.094	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Bromochloromethane	SW8260B	1	0.15	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Chloroform	SW8260B	1	0.12	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Carbon Tetrachloride	SW8260B	1	0.16	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,1,1-Trichloroethane	SW8260B	1	0.16	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,1-Dichloropropene	SW8260B	1	0.19	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Benzene	SW8260B	1	0.065	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
TAME	SW8260B	1	0.072	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,2-Dichloroethane	SW8260B	1	0.11	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Trichloroethylene	SW8260B	1	0.15	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Dibromomethane	SW8260B	1	0.11	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,2-Dichloropropane	SW8260B	1	0.089	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Bromodichloromethane	SW8260B	1	0.076	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
cis-1,3-Dichloropropene	SW8260B	1	0.078	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Toluene	SW8260B	1	0.14	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Tetrachloroethylene	SW8260B	1	0.24	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
trans-1,3-Dichloropropene	SW8260B	1	0.22	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,1,2-Trichloroethane	SW8260B	1	0.076	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Dibromochloromethane	SW8260B	1	0.18	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,3-Dichloropropane	SW8260B	1	0.22	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
1,2-Dibromoethane	SW8260B	1	0.079	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Chlorobenzene	SW8260B	1	0.16	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617
Ethylbenzene	SW8260B	1	0.20	0.50	U ND		ug/L	01/04/22	15:41	JZ	462617



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

Report prepared for:

Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm

Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001C
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 5030VOC	Prep Batch Date/Time: 1/4/22 10:37:00AM
Prep Batch ID: 1138173	Prep Analyst: JZHAO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	0.087	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
m,p-Xylene	SW8260B	1	0.39	1.0	U	ND	ug/L	01/04/22	15:41	JZ	462617
o-Xylene	SW8260B	1	0.15	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
Styrene	SW8260B	1	0.11	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
Bromoform	SW8260B	1	0.076	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
Isopropyl Benzene	SW8260B	1	0.22	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
n-Propylbenzene	SW8260B	1	0.30	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
Bromobenzene	SW8260B	1	0.15	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,1,2,2-Tetrachloroethane	SW8260B	1	0.079	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
2-Chlorotoluene	SW8260B	1	0.25	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,3,5-Trimethylbenzene	SW8260B	1	0.24	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,2,3-Trichloropropane	SW8260B	1	0.15	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
4-Chlorotoluene	SW8260B	1	0.22	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
tert-Butylbenzene	SW8260B	1	0.26	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,2,4-Trimethylbenzene	SW8260B	1	0.23	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
sec-Butyl Benzene	SW8260B	1	0.30	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
p-Isopropyltoluene	SW8260B	1	0.27	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,3-Dichlorobenzene	SW8260B	1	0.17	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,4-Dichlorobenzene	SW8260B	1	0.18	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
n-Butylbenzene	SW8260B	1	0.27	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,2-Dichlorobenzene	SW8260B	1	0.16	0.50	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,2-Dibromo-3-Chloropropane	SW8260B	1	0.76	2.0	U	ND	ug/L	01/04/22	15:41	JZ	462617
Hexachlorobutadiene	SW8260B	1	0.62	2.0	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,2,4-Trichlorobenzene	SW8260B	1	0.93	2.0	U	ND	ug/L	01/04/22	15:41	JZ	462617
Naphthalene	SW8260B	1	1.2	2.0	U	ND	ug/L	01/04/22	15:41	JZ	462617
1,2,3-Trichlorobenzene	SW8260B	1	1.2	2.0	U	ND	ug/L	01/04/22	15:41	JZ	462617
(S) Dibromofluoromethane	SW8260B		61.2 - 131			109	%	01/04/22	15:41	JZ	462617
(S) Toluene-d8	SW8260B		75.1 - 127			96.6	%	01/04/22	15:41	JZ	462617
(S) 4-Bromofluorobenzene	SW8260B		64.1 - 120			99.7	%	01/04/22	15:41	JZ	462617



Talaidh Isaacs 01/22/2022

SAMPLE RESULTS

Report prepared for:

Yvonne Parry
Tetra Tech Inc (HI)

Date/Time Received: 01/04/22, 1:00 pm

Date Reported: 01/11/22

Client Sample ID:	ERH2313-RHMW11 (Zone 5)	Lab Sample ID:	2201009-001C
Project Name/Location:	HDOH Red Hill	Sample Matrix:	Water
Project Number:	103S518817512		
Date/Time Sampled:	12/30/21 / 11:00		
SDG:			

Prep Method: 5030GRO	Prep Batch Date/Time: 1/4/22 10:37:00AM
Prep Batch ID: 1138176	Prep Analyst: JZHAO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
TPH(Gasoline)	8260TPH	1	29	50 U	ND		ug/L	01/04/22	15:41	JZ	462617
(S) 4-Bromofluorobenzene	8260TPH		41.5 - 125		86.8		%	01/04/22	15:41	JZ	462617