June 30, 2017

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Knoxville
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Knoxville, TN 37921
Tel: (865)291-3000

TestAmerica Job ID: 140-8428-1
TestAmerica Sample Delivery Group: W07765
Client Project/Site: SAF W17-006

For:
CH2M Hill Plateau Remediation Company
PO BOX 1600, MS H8-41
Richland, Washington 99352

Attn: Ms. Karen Waters-Husted

Authorized for release by:
6/30/2017 10:02:33 AM

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Qualifiers

Dioxin

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Analyte was found in the associated method blank as well as in the sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 140-8428-1

Laboratory: TestAmerica Knoxville

Narrative

Job Narrative
140-8428-1

Comments
No additional comments.

Receipt
The samples were received on 6/16/2017 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3º C and 0.6º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. Per client instructions, the firm responsible for delivery was filled in and dated by the sample receiving department on completion of the shipment. relinquished date and time record is the same as laboratory receipt date and time.

Dioxin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NJ3 — Lab Sample ID: 140-8428-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
OCDD	3.06	J B	94.1	0.26	pg/L	1		8290A	Total/NA
OCDF	1.21	J B	94.1	0.17	pg/L	1		8290A	Total/NA

Client Sample ID: B39NH4 — Lab Sample ID: 140-8428-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
OCDD	2.49	J B	97.5	0.23	pg/L	1		8290A	Total/NA
OCDF	1.03	J B	97.5	0.081	pg/L	1		8290A	Total/NA

Client Sample ID: B39NJ4 — Lab Sample ID: 140-8428-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
OCDD	1.64	J B	95.1	0.31	pg/L	1		8290A	Total/NA
OCDF	0.47	J B	95.1	0.12	pg/L	1		8290A	Total/NA

Client Sample ID: B39NH5 — Lab Sample ID: 140-8428-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
OCDD	1.22	J B	96.9	0.044	pg/L	1		8290A	Total/NA
OCDF	0.30	J B	96.9	0.084	pg/L	1		8290A	Total/NA

Client Sample ID: B39NM6 — Lab Sample ID: 140-8428-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
OCDD	0.99	J B	96.0	0.12	pg/L	1		8290A	Total/NA
OCDF	0.61	J B	96.0	0.15	pg/L	1		8290A	Total/NA

Client Sample ID: B39NF7 — Lab Sample ID: 140-8428-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
OCDD	1.95	J B	98.9	0.049	pg/L	1		8290A	Total/NA
OCDF	1.28	J B	98.9	0.17	pg/L	1		8290A	Total/NA

This Detection Summary does not include radiochemical test results.

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NJ3
Date Collected: 06/15/17 08:00
Date Received: 06/16/17 09:45

Lab Sample ID: 140-8428-1
Matrix: Water

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.60	U	9.41	0.60	pg/L		06/23/17 14:10	06/28/17 03:03	1
Total TCDD	0.60	U	9.41	0.60	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,7,8-PeCDD	0.23	U	47.1	0.23	pg/L		06/23/17 14:10	06/28/17 03:03	1
Total PeCDD	0.23	U	47.1	0.23	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,4,7,8-HxCDD	0.33	U	47.1	0.33	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,6,7,8-HxCDD	0.36	U	47.1	0.36	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,7,8,9-HxCDD	0.32	U	47.1	0.32	pg/L		06/23/17 14:10	06/28/17 03:03	1
Total HxCDD	0.36	U	47.1	0.36	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,4,6,7,8-HpCDD	0.51	U	47.1	0.51	pg/L		06/23/17 14:10	06/28/17 03:03	1
Total HpCDD	0.51	U	47.1	0.51	pg/L		06/23/17 14:10	06/28/17 03:03	1
OCDD	**3.06**	**J B**	94.1	0.26	pg/L		06/23/17 14:10	06/28/17 03:03	1
2,3,7,8-TCDF	0.71	U	9.41	0.71	pg/L		06/23/17 14:10	06/28/17 03:03	1
Total TCDF	0.71	U	9.41	0.71	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,7,8-PeCDF	0.59	U	47.1	0.59	pg/L		06/23/17 14:10	06/28/17 03:03	1
2,3,4,7,8-PeCDF	0.52	U	47.1	0.52	pg/L		06/23/17 14:10	06/28/17 03:03	1
Total PeCDF	0.59	U	47.1	0.59	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,4,7,8-HxCDF	0.30	U	47.1	0.30	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,6,7,8-HxCDF	0.29	U	47.1	0.29	pg/L		06/23/17 14:10	06/28/17 03:03	1
2,3,4,6,7,8-HxCDF	0.32	U	47.1	0.32	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,7,8,9-HxCDF	0.40	U	47.1	0.40	pg/L		06/23/17 14:10	06/28/17 03:03	1
Total HxCDF	0.40	U	47.1	0.40	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,4,6,7,8-HpCDF	0.19	U	47.1	0.19	pg/L		06/23/17 14:10	06/28/17 03:03	1
1,2,3,4,7,8,9-HpCDF	0.28	U	47.1	0.28	pg/L		06/23/17 14:10	06/28/17 03:03	1
Total HpCDF	0.28	U	47.1	0.28	pg/L		06/23/17 14:10	06/28/17 03:03	1
OCDF	**1.21**	**J B**	94.1	0.17	pg/L		06/23/17 14:10	06/28/17 03:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,4,7,8-HxCDD	*80*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*88*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-OCDD	*78*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-2,3,7,8-TCDF	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,7,8-PeCDF	*81*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,4,7,8-HxCDF	*86*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,6,7,8-HxCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-2,3,4,6,7,8-HxCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,7,8,9-HxCDF	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*90*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*
13C-OCDF	*76*		*40 - 135*	*06/23/17 14:10*	*06/28/17 03:03*	*1*

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NH4

Date Collected: 06/15/17 08:45
Date Received: 06/16/17 09:45

Lab Sample ID: 140-8428-2

Matrix: Water

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.77	U	9.75	0.77	pg/L		06/23/17 14:10	06/28/17 04:04	1
Total TCDD	0.77	U	9.75	0.77	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,7,8-PeCDD	0.29	U	48.8	0.29	pg/L		06/23/17 14:10	06/28/17 04:04	1
Total PeCDD	0.29	U	48.8	0.29	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,4,7,8-HxCDD	0.36	U	48.8	0.36	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,6,7,8-HxCDD	0.37	U	48.8	0.37	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,7,8,9-HxCDD	0.34	U	48.8	0.34	pg/L		06/23/17 14:10	06/28/17 04:04	1
Total HxCDD	0.37	U	48.8	0.37	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,4,6,7,8-HpCDD	1.07	U	48.8	1.07	pg/L		06/23/17 14:10	06/28/17 04:04	1
Total HpCDD	1.07	U	48.8	1.07	pg/L		06/23/17 14:10	06/28/17 04:04	1
OCDD	**2.49**	**J B**	97.5	0.23	pg/L		06/23/17 14:10	06/28/17 04:04	1
2,3,7,8-TCDF	0.55	U	9.75	0.55	pg/L		06/23/17 14:10	06/28/17 04:04	1
Total TCDF	0.55	U	9.75	0.55	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,7,8-PeCDF	0.59	U	48.8	0.59	pg/L		06/23/17 14:10	06/28/17 04:04	1
2,3,4,7,8-PeCDF	0.53	U	48.8	0.53	pg/L		06/23/17 14:10	06/28/17 04:04	1
Total PeCDF	0.59	U	48.8	0.59	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,4,7,8-HxCDF	0.34	U	48.8	0.34	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,6,7,8-HxCDF	0.33	U	48.8	0.33	pg/L		06/23/17 14:10	06/28/17 04:04	1
2,3,4,6,7,8-HxCDF	0.37	U	48.8	0.37	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,7,8,9-HxCDF	0.46	U	48.8	0.46	pg/L		06/23/17 14:10	06/28/17 04:04	1
Total HxCDF	0.46	U	48.8	0.46	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,4,6,7,8-HpCDF	0.20	U	48.8	0.20	pg/L		06/23/17 14:10	06/28/17 04:04	1
1,2,3,4,7,8,9-HpCDF	0.28	U	48.8	0.28	pg/L		06/23/17 14:10	06/28/17 04:04	1
Total HpCDF	0.28	U	48.8	0.28	pg/L		06/23/17 14:10	06/28/17 04:04	1
OCDF	**1.03**	**J B**	97.5	0.081	pg/L		06/23/17 14:10	06/28/17 04:04	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,7,8-PeCDD	*86*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,4,7,8-HxCDD	*78*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,6,7,8-HxCDD	*81*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-OCDD	*75*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-2,3,7,8-TCDF	*93*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,7,8-PeCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-2,3,4,7,8-PeCDF	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,4,7,8-HxCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,6,7,8-HxCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-2,3,4,6,7,8-HxCDF	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,7,8,9-HxCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*82*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*
13C-OCDF	*72*		*40 - 135*	*06/23/17 14:10*	*06/28/17 04:04*	*1*

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NJ4
Date Collected: 06/15/17 09:48
Date Received: 06/16/17 09:45

Lab Sample ID: 140-8428-3
Matrix: Water

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.52	U	9.51	0.52	pg/L		06/23/17 14:10	06/28/17 05:05	1
Total TCDD	0.52	U	9.51	0.52	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,7,8-PeCDD	0.14	U	47.6	0.14	pg/L		06/23/17 14:10	06/28/17 05:05	1
Total PeCDD	0.14	U	47.6	0.14	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,4,7,8-HxCDD	0.36	U	47.6	0.36	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,6,7,8-HxCDD	0.37	U	47.6	0.37	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,7,8,9-HxCDD	0.34	U	47.6	0.34	pg/L		06/23/17 14:10	06/28/17 05:05	1
Total HxCDD	0.37	U	47.6	0.37	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,4,6,7,8-HpCDD	0.86	U	47.6	0.86	pg/L		06/23/17 14:10	06/28/17 05:05	1
Total HpCDD	0.86	U	47.6	0.86	pg/L		06/23/17 14:10	06/28/17 05:05	1
OCDD	**1.64**	**J B**	95.1	0.31	pg/L		06/23/17 14:10	06/28/17 05:05	1
2,3,7,8-TCDF	0.48	U	9.51	0.48	pg/L		06/23/17 14:10	06/28/17 05:05	1
Total TCDF	0.48	U	9.51	0.48	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,7,8-PeCDF	0.37	U	47.6	0.37	pg/L		06/23/17 14:10	06/28/17 05:05	1
2,3,4,7,8-PeCDF	0.34	U	47.6	0.34	pg/L		06/23/17 14:10	06/28/17 05:05	1
Total PeCDF	0.37	U	47.6	0.37	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,4,7,8-HxCDF	0.25	U	47.6	0.25	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,6,7,8-HxCDF	0.24	U	47.6	0.24	pg/L		06/23/17 14:10	06/28/17 05:05	1
2,3,4,6,7,8-HxCDF	0.23	U	47.6	0.23	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,7,8,9-HxCDF	0.32	U	47.6	0.32	pg/L		06/23/17 14:10	06/28/17 05:05	1
Total HxCDF	0.32	U	47.6	0.32	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,4,6,7,8-HpCDF	0.17	U	47.6	0.17	pg/L		06/23/17 14:10	06/28/17 05:05	1
1,2,3,4,7,8,9-HpCDF	0.23	U	47.6	0.23	pg/L		06/23/17 14:10	06/28/17 05:05	1
Total HpCDF	0.23	U	47.6	0.23	pg/L		06/23/17 14:10	06/28/17 05:05	1
OCDF	**0.47**	**J B**	95.1	0.12	pg/L		06/23/17 14:10	06/28/17 05:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*82*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,7,8-PeCDD	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,4,7,8-HxCDD	*82*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-OCDD	*77*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-2,3,7,8-TCDF	*90*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,7,8-PeCDF	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-2,3,4,7,8-PeCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,4,7,8-HxCDF	*82*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,6,7,8-HxCDF	*80*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-2,3,4,6,7,8-HxCDF	*91*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,7,8,9-HxCDF	*88*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*79*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*
13C-OCDF	*75*		*40 - 135*	*06/23/17 14:10*	*06/28/17 05:05*	*1*

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NH5

Date Collected: 06/15/17 11:03
Date Received: 06/16/17 09:45

Lab Sample ID: 140-8428-4

Matrix: Water

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.54	U	9.69	0.54	pg/L		06/23/17 14:10	06/28/17 06:06	1
Total TCDD	0.54	U	9.69	0.54	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,7,8-PeCDD	0.15	U	48.4	0.15	pg/L		06/23/17 14:10	06/28/17 06:06	1
Total PeCDD	0.15	U	48.4	0.15	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,4,7,8-HxCDD	0.27	U	48.4	0.27	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,6,7,8-HxCDD	0.29	U	48.4	0.29	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,7,8,9-HxCDD	0.26	U	48.4	0.26	pg/L		06/23/17 14:10	06/28/17 06:06	1
Total HxCDD	0.29	U	48.4	0.29	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,4,6,7,8-HpCDD	0.76	U	48.4	0.76	pg/L		06/23/17 14:10	06/28/17 06:06	1
Total HpCDD	0.76	U	48.4	0.76	pg/L		06/23/17 14:10	06/28/17 06:06	1
OCDD	**1.22**	**J B**	96.9	0.044	pg/L		06/23/17 14:10	06/28/17 06:06	1
2,3,7,8-TCDF	0.36	U	9.69	0.36	pg/L		06/23/17 14:10	06/28/17 06:06	1
Total TCDF	0.36	U	9.69	0.36	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,7,8-PeCDF	0.43	U	48.4	0.43	pg/L		06/23/17 14:10	06/28/17 06:06	1
2,3,4,7,8-PeCDF	0.39	U	48.4	0.39	pg/L		06/23/17 14:10	06/28/17 06:06	1
Total PeCDF	0.43	U	48.4	0.43	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,4,7,8-HxCDF	0.28	U	48.4	0.28	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,6,7,8-HxCDF	0.26	U	48.4	0.26	pg/L		06/23/17 14:10	06/28/17 06:06	1
2,3,4,6,7,8-HxCDF	0.28	U	48.4	0.28	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,7,8,9-HxCDF	0.36	U	48.4	0.36	pg/L		06/23/17 14:10	06/28/17 06:06	1
Total HxCDF	0.36	U	48.4	0.36	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,4,6,7,8-HpCDF	0.20	U	48.4	0.20	pg/L		06/23/17 14:10	06/28/17 06:06	1
1,2,3,4,7,8,9-HpCDF	0.27	U	48.4	0.27	pg/L		06/23/17 14:10	06/28/17 06:06	1
Total HpCDF	0.27	U	48.4	0.27	pg/L		06/23/17 14:10	06/28/17 06:06	1
OCDF	**0.30**	**J B**	96.9	0.084	pg/L		06/23/17 14:10	06/28/17 06:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,4,7,8-HxCDD	*80*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,6,7,8-HxCDD	*82*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-OCDD	*80*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-2,3,7,8-TCDF	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,7,8-PeCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-2,3,4,7,8-PeCDF	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,4,7,8-HxCDF	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,6,7,8-HxCDF	*86*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-2,3,4,6,7,8-HxCDF	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,7,8,9-HxCDF	*88*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*92*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*
13C-OCDF	*78*		*40 - 135*	*06/23/17 14:10*	*06/28/17 06:06*	*1*

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NM6

Date Collected: 06/15/17 13:00
Date Received: 06/16/17 09:45

Lab Sample ID: 140-8428-5

Matrix: Water

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.74	U	9.60	0.74	pg/L		06/23/17 14:10	06/28/17 07:07	1
Total TCDD	0.74	U	9.60	0.74	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,7,8-PeCDD	0.16	U	48.0	0.16	pg/L		06/23/17 14:10	06/28/17 07:07	1
Total PeCDD	0.16	U	48.0	0.16	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,4,7,8-HxCDD	0.32	U	48.0	0.32	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,6,7,8-HxCDD	0.34	U	48.0	0.34	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,7,8,9-HxCDD	0.31	U	48.0	0.31	pg/L		06/23/17 14:10	06/28/17 07:07	1
Total HxCDD	0.34	U	48.0	0.34	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,4,6,7,8-HpCDD	0.56	U	48.0	0.56	pg/L		06/23/17 14:10	06/28/17 07:07	1
Total HpCDD	0.56	U	48.0	0.56	pg/L		06/23/17 14:10	06/28/17 07:07	1
OCDD	**0.99**	**J B**	96.0	0.12	pg/L		06/23/17 14:10	06/28/17 07:07	1
2,3,7,8-TCDF	0.51	U	9.60	0.51	pg/L		06/23/17 14:10	06/28/17 07:07	1
Total TCDF	0.51	U	9.60	0.51	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,7,8-PeCDF	0.47	U	48.0	0.47	pg/L		06/23/17 14:10	06/28/17 07:07	1
2,3,4,7,8-PeCDF	0.41	U	48.0	0.41	pg/L		06/23/17 14:10	06/28/17 07:07	1
Total PeCDF	0.47	U	48.0	0.47	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,4,7,8-HxCDF	0.49	U	48.0	0.49	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,6,7,8-HxCDF	0.45	U	48.0	0.45	pg/L		06/23/17 14:10	06/28/17 07:07	1
2,3,4,6,7,8-HxCDF	0.50	U	48.0	0.50	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,7,8,9-HxCDF	0.63	U	48.0	0.63	pg/L		06/23/17 14:10	06/28/17 07:07	1
Total HxCDF	0.63	U	48.0	0.63	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,4,6,7,8-HpCDF	0.19	U	48.0	0.19	pg/L		06/23/17 14:10	06/28/17 07:07	1
1,2,3,4,7,8,9-HpCDF	0.28	U	48.0	0.28	pg/L		06/23/17 14:10	06/28/17 07:07	1
Total HpCDF	0.28	U	48.0	0.28	pg/L		06/23/17 14:10	06/28/17 07:07	1
OCDF	**0.61**	**J B**	96.0	0.15	pg/L		06/23/17 14:10	06/28/17 07:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,7,8-PeCDD	*90*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,4,7,8-HxCDD	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,6,7,8-HxCDD	*83*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*88*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-OCDD	*75*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-2,3,7,8-TCDF	*91*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,7,8-PeCDF	*86*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-2,3,4,7,8-PeCDF	*90*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,4,7,8-HxCDF	*86*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,6,7,8-HxCDF	*90*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-2,3,4,6,7,8-HxCDF	*88*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,7,8,9-HxCDF	*90*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*90*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*
13C-OCDF	*74*		*40 - 135*	*06/23/17 14:10*	*06/28/17 07:07*	*1*

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NF7

Date Collected: 06/15/17 12:12
Date Received: 06/16/17 09:45

Lab Sample ID: 140-8428-6

Matrix: Water

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.72	U	9.89	0.72	pg/L		06/23/17 14:10	06/28/17 12:03	1
Total TCDD	0.72	U	9.89	0.72	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,7,8-PeCDD	0.14	U	49.4	0.14	pg/L		06/23/17 14:10	06/28/17 12:03	1
Total PeCDD	0.14	U	49.4	0.14	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,4,7,8-HxCDD	0.27	U	49.4	0.27	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,6,7,8-HxCDD	0.28	U	49.4	0.28	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,7,8,9-HxCDD	0.26	U	49.4	0.26	pg/L		06/23/17 14:10	06/28/17 12:03	1
Total HxCDD	0.28	U	49.4	0.28	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,4,6,7,8-HpCDD	1.15	U	49.4	1.15	pg/L		06/23/17 14:10	06/28/17 12:03	1
Total HpCDD	1.15	U	49.4	1.15	pg/L		06/23/17 14:10	06/28/17 12:03	1
OCDD	**1.95**	**J B**	98.9	0.049	pg/L		06/23/17 14:10	06/28/17 12:03	1
2,3,7,8-TCDF	0.66	U	9.89	0.66	pg/L		06/23/17 14:10	06/28/17 12:03	1
Total TCDF	0.66	U	9.89	0.66	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,7,8-PeCDF	0.54	U	49.4	0.54	pg/L		06/23/17 14:10	06/28/17 12:03	1
2,3,4,7,8-PeCDF	0.51	U	49.4	0.51	pg/L		06/23/17 14:10	06/28/17 12:03	1
Total PeCDF	0.54	U	49.4	0.54	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,4,7,8-HxCDF	0.33	U	49.4	0.33	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,6,7,8-HxCDF	0.32	U	49.4	0.32	pg/L		06/23/17 14:10	06/28/17 12:03	1
2,3,4,6,7,8-HxCDF	0.35	U	49.4	0.35	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,7,8,9-HxCDF	0.46	U	49.4	0.46	pg/L		06/23/17 14:10	06/28/17 12:03	1
Total HxCDF	0.46	U	49.4	0.46	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,4,6,7,8-HpCDF	0.25	U	49.4	0.25	pg/L		06/23/17 14:10	06/28/17 12:03	1
1,2,3,4,7,8,9-HpCDF	0.34	U	49.4	0.34	pg/L		06/23/17 14:10	06/28/17 12:03	1
Total HpCDF	0.34	U	49.4	0.34	pg/L		06/23/17 14:10	06/28/17 12:03	1
OCDF	**1.28**	**J B**	98.9	0.17	pg/L		06/23/17 14:10	06/28/17 12:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*88*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,7,8-PeCDD	*97*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,4,7,8-HxCDD	*80*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*94*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-OCDD	*79*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-2,3,7,8-TCDF	*95*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,7,8-PeCDF	*93*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-2,3,4,7,8-PeCDF	*94*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,4,7,8-HxCDF	*95*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,6,7,8-HxCDF	*95*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-2,3,4,6,7,8-HxCDF	*94*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,7,8,9-HxCDF	*93*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*90*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*103*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*
13C-OCDF	*81*		*40 - 135*	*06/23/17 14:10*	*06/28/17 12:03*	*1*

Default Detection Limits

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Prep: 8290

Analyte	RL		Units	Method
1,2,3,4,6,7,8-HpCDD	50.0		pg/L	8290A
1,2,3,4,6,7,8-HpCDF	50.0		pg/L	8290A
1,2,3,4,7,8,9-HpCDF	50.0		pg/L	8290A
1,2,3,4,7,8-HxCDD	50.0		pg/L	8290A
1,2,3,4,7,8-HxCDF	50.0		pg/L	8290A
1,2,3,6,7,8-HxCDD	50.0		pg/L	8290A
1,2,3,6,7,8-HxCDF	50.0		pg/L	8290A
1,2,3,7,8,9-HxCDD	50.0		pg/L	8290A
1,2,3,7,8,9-HxCDF	50.0		pg/L	8290A
1,2,3,7,8-PeCDD	50.0		pg/L	8290A
1,2,3,7,8-PeCDF	50.0		pg/L	8290A
2,3,4,6,7,8-HxCDF	50.0		pg/L	8290A
2,3,4,7,8-PeCDF	50.0		pg/L	8290A
2,3,7,8-TCDD	10.0		pg/L	8290A
2,3,7,8-TCDF	10.0		pg/L	8290A
OCDD	100		pg/L	8290A
OCDF	100		pg/L	8290A
Total HpCDD	50.0		pg/L	8290A
Total HpCDF	50.0		pg/L	8290A
Total HxCDD	50.0		pg/L	8290A
Total HxCDF	50.0		pg/L	8290A
Total PeCDD	50.0		pg/L	8290A
Total PeCDF	50.0		pg/L	8290A
Total TCDD	10.0		pg/L	8290A
Total TCDF	10.0		pg/L	8290A

Isotope Dilution Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (40-135)	PeCDD (40-135)	HxCDD1 (40-135)	HxCDD2 (40-135)	HpCDD (40-135)	OCDD (40-135)	TCDF (40-135)	PeCDF1 (40-135)
140-8428-1	B39NJ3	81	85	80	79	88	78	87	81
140-8428-2	B39NH4	83	86	78	81	85	75	93	84
140-8428-3	B39NJ4	82	84	82	79	87	77	90	85
140-8428-4	B39NH5	79	85	80	82	89	80	85	84
140-8428-5	B39NM6	83	90	87	83	88	75	91	86
140-8428-6	B39NF7	88	97	80	86	94	79	95	93
140-8428-6 DU	B39NF7	80	88	79	86	88	76	90	85
LCS 140-12310/14-A	Lab Control Sample	79	87	82	78	94	86	77	86
MB 140-12310/13-A	Method Blank	77	85	81	78	84	77	87	84

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PeCDF2 (40-135)	HxCDF1 (40-135)	HxCDF2 (40-135)	HxCDF3 (40-135)	HxCDF4 (40-135)	HpCDF1 (40-135)	HpCDF2 (40-135)	13C-OCDF (40-135)
140-8428-1	B39NJ3	83	86	84	84	85	83	90	76
140-8428-2	B39NH4	87	84	84	85	84	82	87	72
140-8428-3	B39NJ4	84	82	80	91	88	79	87	75
140-8428-4	B39NH5	85	87	86	87	88	83	92	78
140-8428-5	B39NM6	90	86	90	88	90	87	90	74
140-8428-6	B39NF7	94	95	95	94	93	90	103	81
140-8428-6 DU	B39NF7	84	86	89	89	88	86	95	76
LCS 140-12310/14-A	Lab Control Sample	81	76	77	80	82	79	89	79
MB 140-12310/13-A	Method Blank	83	81	79	82	83	80	82	74

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
PeCDD = 13C-1,2,3,7,8-PeCDD
HxCDD1 = 13C-1,2,3,4,7,8-HxCDD
HxCDD2 = 13C-1,2,3,6,7,8-HxCDD
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
OCDD = 13C-OCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDF1 = 13C-1,2,3,7,8-PeCDF
PeCDF2 = 13C-2,3,4,7,8-PeCDF
HxCDF1 = 13C-1,2,3,4,7,8-HxCDF
HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
HpCDF1 = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
13C-OCDF = 13C-OCDF

Method: 8290A - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 140-12310/13-A
Matrix: Water
Analysis Batch: 12401

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 12310

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.52	U	10.0	0.52	pg/L		06/23/17 14:10	06/28/17 02:00	1
Total TCDD	0.52	U	10.0	0.52	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,7,8-PeCDD	0.26	U	50.0	0.26	pg/L		06/23/17 14:10	06/28/17 02:00	1
Total PeCDD	2.884	J	50.0	0.26	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,4,7,8-HxCDD	0.39	U	50.0	0.39	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,6,7,8-HxCDD	0.40	U	50.0	0.40	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,7,8,9-HxCDD	0.37	U	50.0	0.37	pg/L		06/23/17 14:10	06/28/17 02:00	1
Total HxCDD	0.40	U	50.0	0.40	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,4,6,7,8-HpCDD	0.46	U	50.0	0.46	pg/L		06/23/17 14:10	06/28/17 02:00	1
Total HpCDD	0.46	U	50.0	0.46	pg/L		06/23/17 14:10	06/28/17 02:00	1
OCDD	5.396	J	100	0.14	pg/L		06/23/17 14:10	06/28/17 02:00	1
2,3,7,8-TCDF	0.38	U	10.0	0.38	pg/L		06/23/17 14:10	06/28/17 02:00	1
Total TCDF	0.38	U	10.0	0.38	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,7,8-PeCDF	0.34	U	50.0	0.34	pg/L		06/23/17 14:10	06/28/17 02:00	1
2,3,4,7,8-PeCDF	0.32	U	50.0	0.32	pg/L		06/23/17 14:10	06/28/17 02:00	1
Total PeCDF	0.34	U	50.0	0.34	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,4,7,8-HxCDF	0.22	U	50.0	0.22	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,6,7,8-HxCDF	0.21	U	50.0	0.21	pg/L		06/23/17 14:10	06/28/17 02:00	1
2,3,4,6,7,8-HxCDF	0.21	U	50.0	0.21	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,7,8,9-HxCDF	0.28	U	50.0	0.28	pg/L		06/23/17 14:10	06/28/17 02:00	1
Total HxCDF	0.28	U	50.0	0.28	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,4,6,7,8-HpCDF	0.760	J	50.0	0.19	pg/L		06/23/17 14:10	06/28/17 02:00	1
1,2,3,4,7,8,9-HpCDF	0.26	U	50.0	0.26	pg/L		06/23/17 14:10	06/28/17 02:00	1
Total HpCDF	0.760	J	50.0	0.22	pg/L		06/23/17 14:10	06/28/17 02:00	1
OCDF	2.668	J	100	0.15	pg/L		06/23/17 14:10	06/28/17 02:00	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-OCDD	*77*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-2,3,7,8-TCDF	*87*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,7,8-PeCDF	*84*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,4,7,8-HxCDF	*81*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-2,3,4,6,7,8-HxCDF	*82*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,7,8,9-HxCDF	*83*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*82*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*
13C-OCDF	*74*		*40 - 135*	*06/23/17 14:10*	*06/28/17 02:00*	*1*

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 140-12310/14-A
Matrix: Water
Analysis Batch: 12401

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 12310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	200	194.0		pg/L		97	71 - 125
1,2,3,7,8-PeCDD	1000	985.6		pg/L		99	76 - 121
1,2,3,4,7,8-HxCDD	1000	984.5		pg/L		98	80 - 126
1,2,3,6,7,8-HxCDD	1000	978.1		pg/L		98	78 - 134
1,2,3,7,8,9-HxCDD	1000	1059		pg/L		106	76 - 137
1,2,3,4,6,7,8-HpCDD	1000	909.8		pg/L		91	79 - 122
OCDD	2000	1812		pg/L		91	81 - 135
2,3,7,8-TCDF	200	210.6		pg/L		105	72 - 138
1,2,3,7,8-PeCDF	1000	868.3		pg/L		87	82 - 130
2,3,4,7,8-PeCDF	1000	970.2		pg/L		97	77 - 129
1,2,3,4,7,8-HxCDF	1000	1017		pg/L		102	80 - 130
1,2,3,6,7,8-HxCDF	1000	954.4		pg/L		95	79 - 131
2,3,4,6,7,8-HxCDF	1000	990.8		pg/L		99	81 - 130
1,2,3,7,8,9-HxCDF	1000	1004		pg/L		100	83 - 130
1,2,3,4,6,7,8-HpCDF	1000	1023		pg/L		102	81 - 130
1,2,3,4,7,8,9-HpCDF	1000	966.9		pg/L		97	77 - 128
OCDF	2000	1789		pg/L		89	66 - 150

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*79*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*87*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*82*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*78*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*94*		*40 - 135*
13C-OCDD	*86*		*40 - 135*
13C-2,3,7,8-TCDF	*77*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*86*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*81*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*76*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*77*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*80*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*82*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*79*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*89*		*40 - 135*
13C-OCDF	*79*		*40 - 135*

Lab Sample ID: 140-8428-6 DU
Matrix: Water
Analysis Batch: 12421

Client Sample ID: B39NF7
Prep Type: Total/NA
Prep Batch: 12310

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
2,3,7,8-TCDD	0.72	U	0.64	U	pg/L		NC	15
Total TCDD	0.72	U	0.64	U	pg/L		NC	
1,2,3,7,8-PeCDD	0.14	U	0.13	U	pg/L		NC	15
Total PeCDD	0.14	U	0.13	U	pg/L		NC	
1,2,3,4,7,8-HxCDD	0.27	U	0.25	U	pg/L		NC	15
1,2,3,6,7,8-HxCDD	0.28	U	0.26	U	pg/L		NC	15
1,2,3,7,8,9-HxCDD	0.26	U	0.24	U	pg/L		NC	15

Method: 8290A - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: 140-8428-6 DU
Matrix: Water
Analysis Batch: 12421

Client Sample ID: B39NF7
Prep Type: Total/NA
Prep Batch: 12310

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total HxCDD	0.28	U		0.892	J	pg/L				NC	
1,2,3,4,6,7,8-HpCDD	1.15	U		0.73	U	pg/L				NC	15
Total HpCDD	1.15	U		0.73	U	pg/L				NC	
OCDD	1.95	J B		1.099	J B	pg/L				56	15
2,3,7,8-TCDF	0.66	U		0.86	U	pg/L				NC	15
Total TCDF	0.66	U		0.86	U	pg/L				NC	
1,2,3,7,8-PeCDF	0.54	U		0.31	U	pg/L				NC	15
2,3,4,7,8-PeCDF	0.51	U		0.31	U	pg/L				NC	15
Total PeCDF	0.54	U		0.31	U	pg/L				NC	
1,2,3,4,7,8-HxCDF	0.33	U		0.46	U	pg/L				NC	15
1,2,3,6,7,8-HxCDF	0.32	U		0.43	U	pg/L				NC	15
2,3,4,6,7,8-HxCDF	0.35	U		0.46	U	pg/L				NC	15
1,2,3,7,8,9-HxCDF	0.46	U		0.63	U	pg/L				NC	15
Total HxCDF	0.46	U		0.63	U	pg/L				NC	
1,2,3,4,6,7,8-HpCDF	0.25	U		0.15	U	pg/L				NC	15
1,2,3,4,7,8,9-HpCDF	0.34	U		0.21	U	pg/L				NC	15
Total HpCDF	0.34	U		0.21	U	pg/L				NC	
OCDF	1.28	J B		0.676	J B	pg/L				62	15

Isotope Dilution	*DU %Recovery*	*DU Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*80*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*88*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*79*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*86*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*88*		*40 - 135*
13C-OCDD	*76*		*40 - 135*
13C-2,3,7,8-TCDF	*90*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*85*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*84*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*86*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*89*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*89*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*88*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*95*		*40 - 135*
13C-OCDF	*76*		*40 - 135*

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Specialty Organics

Prep Batch: 12310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-8428-1	B39NJ3	Total/NA	Water	8290	
140-8428-2	B39NH4	Total/NA	Water	8290	
140-8428-3	B39NJ4	Total/NA	Water	8290	
140-8428-4	B39NH5	Total/NA	Water	8290	
140-8428-5	B39NM6	Total/NA	Water	8290	
140-8428-6	B39NF7	Total/NA	Water	8290	
MB 140-12310/13-A	Method Blank	Total/NA	Water	8290	
LCS 140-12310/14-A	Lab Control Sample	Total/NA	Water	8290	
140-8428-6 DU	B39NF7	Total/NA	Water	8290	

Analysis Batch: 12401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-8428-1	B39NJ3	Total/NA	Water	8290A	12310
140-8428-2	B39NH4	Total/NA	Water	8290A	12310
140-8428-3	B39NJ4	Total/NA	Water	8290A	12310
140-8428-4	B39NH5	Total/NA	Water	8290A	12310
140-8428-5	B39NM6	Total/NA	Water	8290A	12310
MB 140-12310/13-A	Method Blank	Total/NA	Water	8290A	12310
LCS 140-12310/14-A	Lab Control Sample	Total/NA	Water	8290A	12310

Analysis Batch: 12421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
140-8428-6	B39NF7	Total/NA	Water	8290A	12310
140-8428-6 DU	B39NF7	Total/NA	Water	8290A	12310

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NJ3 — Lab Sample ID: 140-8428-1

Date Collected: 06/15/17 08:00 — **Matrix: Water**
Date Received: 06/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1062.6 mL	20 uL	12310	06/23/17 14:10	BRS	TAL KNX
Total/NA	Analysis	8290A		1			12401	06/28/17 03:03	LKM	TAL KNX
	Instrument ID:	D2A								

Client Sample ID: B39NH4 — Lab Sample ID: 140-8428-2

Date Collected: 06/15/17 08:45 — **Matrix: Water**
Date Received: 06/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1025.2 mL	20 uL	12310	06/23/17 14:10	BRS	TAL KNX
Total/NA	Analysis	8290A		1			12401	06/28/17 04:04	LKM	TAL KNX
	Instrument ID:	D2A								

Client Sample ID: B39NJ4 — Lab Sample ID: 140-8428-3

Date Collected: 06/15/17 09:48 — **Matrix: Water**
Date Received: 06/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1051.5 mL	20 uL	12310	06/23/17 14:10	BRS	TAL KNX
Total/NA	Analysis	8290A		1			12401	06/28/17 05:05	LKM	TAL KNX
	Instrument ID:	D2A								

Client Sample ID: B39NH5 — Lab Sample ID: 140-8428-4

Date Collected: 06/15/17 11:03 — **Matrix: Water**
Date Received: 06/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1032.2 mL	20 uL	12310	06/23/17 14:10	BRS	TAL KNX
Total/NA	Analysis	8290A		1			12401	06/28/17 06:06	LKM	TAL KNX
	Instrument ID:	D2A								

Client Sample ID: B39NM6 — Lab Sample ID: 140-8428-5

Date Collected: 06/15/17 13:00 — **Matrix: Water**
Date Received: 06/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1041.4 mL	20 uL	12310	06/23/17 14:10	BRS	TAL KNX
Total/NA	Analysis	8290A		1			12401	06/28/17 07:07	LKM	TAL KNX
	Instrument ID:	D2A								

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Client Sample ID: B39NF7

Lab Sample ID: 140-8428-6
Date Collected: 06/15/17 12:12
Matrix: Water
Date Received: 06/16/17 09:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1011.3 mL	20 uL	12310	06/23/17 14:10	BRS	TAL KNX
Total/NA	Analysis	8290A		1			12421	06/28/17 12:03	MSD	TAL KNX
	Instrument ID:	D2A								

Client Sample ID: Method Blank

Lab Sample ID: MB 140-12310/13-A
Date Collected: N/A
Matrix: Water
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1000 mL	20 uL	12310	06/23/17 14:10	BRS	TAL KNX
Total/NA	Analysis	8290A		1			12401	06/28/17 02:00	LKM	TAL KNX
	Instrument ID:	D2A								

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 140-12310/14-A
Date Collected: N/A
Matrix: Water
Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1000 mL	20 uL	12310	06/23/17 14:10	BRS	TAL KNX
Total/NA	Analysis	8290A		1			12401	06/27/17 23:56	LKM	TAL KNX
	Instrument ID:	D2A								

Laboratory References:
TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	TAL KNX

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: SAF W17-006

TestAmerica Job ID: 140-8428-1
SDG: W07765

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
140-8428-1	B39NJ3	Water	06/15/17 08:00	06/16/17 09:45
140-8428-2	B39NH4	Water	06/15/17 08:45	06/16/17 09:45
140-8428-3	B39NJ4	Water	06/15/17 09:48	06/16/17 09:45
140-8428-4	B39NH5	Water	06/15/17 11:03	06/16/17 09:45
140-8428-5	B39NM6	Water	06/15/17 13:00	06/16/17 09:45
140-8428-6	B39NF7	Water	06/15/17 12:12	06/16/17 09:45

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W17-006-089 Page 1 of 1

Collector	Juan Aguilar /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	RCRA, JUNE 2017	Logbook No.	HNF-N-506 92 / 93	Ice Chest No.	GWS-589
Shipped To (Lab)	TestAmerica Knoxville	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7794131971 90
Protocol	RCRA	Priority:	30 Days PRIORITY	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39NJ3	N	W	6-15-17	0800	4x1-L aG	8290_DIOXINS_GCMS: COMMON	30/45 Days	Cool <=6C

SDG# W0765

CUSTODY SEALS INTACT
RECEIVED AT RT 0.6, 0.3/CT 0.6, 0.2°C
BKO 6-16-17
2 COOLERS FEDEX# 7794 1319 7190
7794 1529 7759

140-8428 Chain of Custody

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	Juan Aguilar /CHPRC		JUN 15 2017 0830		Lesly Wall /CHPRC	Lesly Wall	JUN 15 2017 0830
Relinquished By	Lesly Wall /CHPRC	Lesly Wall	JUN 15 2017 1400	Received By	FEDEX		
Relinquished By	FEDEX 6-16-17 09:45 ENTERED BY TESTAMERIC BKO 6-16-17 09:45			Received By	BRYAN DAMERON		6-16-17 09:45
Relinquished By				Received By			

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 5/15/2017 FSR ID = FSR45132 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W17-006-087 Page 1 of 1

Collector	Juan Aguilar /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	RCRA, JUNE 2017	Logbook No.	HNF-N-506 92 / 93	Ice Chest No.	6W05-589
Shipped To (Lab)	TestAmerica Knoxville	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7794 1319 7190
Protocol	RCRA	Priority:	30 Days PRIORITY	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39NH4	N	W	6-15-17	0845	4x1-L aG	8290_DIOXINS_GCMS: COMMON	30/45 Days	Cool <=6C

SDG# W0765

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC			JUN 15 2017 1045	Lesly Wall /CHPRC			JUN 15 2017 1045
Lesly Wall /CHPRC			JUN 15 2017 1400				
FEDEX 6-16-17 09:45 ENTERED BY TESTAMERICA DRD 6-16-17 09:45				FEDEX BRYAN DAMERON			6-16-17 09:45

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 5/23/2017 FSR ID = FSR25971 A-6004-842 (REV 2)

70 LBS.

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W17-006-090 Page 1 of 1

Collector	Juan Aguilar /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	RCRA, JUNE 2017	Logbook No.	HNF-N-506 92/93	Ice Chest No.	GWS-589
Shipped To (Lab)	TestAmerica Knoxville	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	779413197190
Protocol	RCRA	Priority:	30 Days PRIORITY	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39NJ4	N	W	6-15-17	0948	4x1-L aG	8290_DIOXINS_GCMS: COMMON	30/45 Days	Cool <=6C

SDG# W0765

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC			JUN 15 2017 1045	Lesly Wall /CHPRC	Lesly Wall		JUN 15 2017 1045
Lesly Wall /CHPRC	Lesly Wall		JUN 15 2017 1400	FEDEX			
FEDEX 6-16-17 09:45 ENTERED BY TESTAMERICA BKD 6-16-17 09:45				Bryan Dameron BRYAN DAMERON 6-16-17 09:45			

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 5/15/2017 FSR ID = FSR37529 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W17-006-088
		Page 1 of 1

Collector	Juan Aguilar /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	6/15/17 300071
Project Title	RCRA, JUNE 2017	Logbook No.	HNF-N-506 92 / 93	Ice Chest No.	GWS-236342
Shipped To (Lab)	TestAmerica Knoxville	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7794 1529 7759
Protocol	RCRA	Priority:	30 Days **PRIORITY**	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39NH5	N	W	6-15-17	1103	4x1-L aG	8290_DIOXINS_GCMS: COMMON	30/45 Days	Cool <=6C

SDG# W0765

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC			JUN 15 2017 1145	Lesly Wall /CHPRC	Lesly Wall		JUN 15 2017 1145
Lesly Wall /CHPRC	Lesly Wall		JUN 15 2017 1400	FEDEX			
FEDEX 6-16-17 09:45 ENTERED BY TESTAMERICA			DKD 6-16-17 09:45	BRYAN DAMERON 6-16-17 09:45			

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 5/15/2017 FSR ID = FSR8642 A-6004-842 (REV 2)

75 lbs

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W17-006-095
		Page 1 of 1

Collector	Juan Aguilar /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	RCRA, JUNE 2017	Logbook No.	HNF-N-506 92 / 93	Ice Chest No.	605-342
Shipped To (Lab)	TestAmerica Knoxville	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7794 1529 7759
Protocol	RCRA	Priority:	30 Days PRIORITY	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39NM6	N	W	6-15-17	1300	4x1-L aG	8290_DIOXINS_GCMS: COMMON	30/45 Days	Cool <=6C

SDG# W0765

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC			JUN 15 2017 1332	Curt Hoffman CHPRC			JUN 15 2017 1332
Curt Hoffman CHPRC			JUN 15 2017 1460	FEDEX			
FEDEX 6-16-17 09:45 ENTERED BY TESTAMERICA BKD 6-16-17 09:45				BAYAN/DAMERON 6-16-17 09:45			

Matrix *			
S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 5/15/2017 FSR ID = FSR45136 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W17-006-086 Page 1 of 1

Collector	Juan Aguilar /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	RAS 6/5/17 300071
Project Title	RCRA, JUNE 2017	Logbook No.	HNF-N-506 92 / 93	Ice Chest No.	GWS - 236342
Shipped To (Lab)	TestAmerica Knoxville	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7794 1529 7759
Protocol	RCRA	Priority:	30 Days PRIORITY	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B39NF7	N	W	6-15-17	1212	4x1-L aG	8290_DIOXINS_GCMS: COMMON	30/45 Days	Cool <=6C

SDG# W0765

June 30, 2017

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC		JUN 15 2017	1245	RA Shepard	CHPRC	JUN 15 2017	1245
RA Shepard	CHPRC		6/15/17 1400	FEDEX			
FEDEX 6-16-17 09:45		FAXTRANS BY TESTAMERICA	6-16-17 09:45	Brian Damron			6-16-17 09:45

Matrix *

S	= Soil	DS	= Drum Solids		
SE	= Sediment	DL	= Drum Liquids		
SO	= Solid	T	= Tissue		
SL	= Sludge	WI	= Wipe		
W	= Water	L	= Liquid		
O	= Oil	V	= Vegetation		
A	= Air	X	= Other		

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 5/15/2017 FSR ID = FSR34761 A-6004-842 (REV 2)

Loc: 140
8428

TESTAMERICA KNOXVILLE SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST **Log In Number:**

Review Items	Yes	No	NA	If No, what was the problem?	Comments/Actions Taken
1. Are the shipping containers intact?	✓			☐ **Containers, Broken**	
2. Were ambient air containers received intact?			✓	☐ Checked in lab	
3. The coolers/containers custody seal if present, is it intact?	✓			☐ Yes ☐ NA	
4. Is the cooler temperature within limits? (> freezing temp. of water to 6 °C, VOST: 10°C) Thermometer ID : 5165 Correction factor: 0.0	✓			☐ **Cooler Out of Temp, Client Contacted, Proceed/Cancel** ☐ **Cooler Out of Temp, Same Day Receipt**	
5. Were all of the sample containers received intact?	✓			☐ **Containers, Broken**	
6. Were samples received in appropriate containers?	✓			☐ **Containers, Improper; Client Contacted; Proceed/Cancel**	
7. Do sample container labels match COC? (IDs, Dates, Times)	✓			☐ **COC & Samples Do Not Match** ☐ **COC Incorrect/Incomplete** ☐ **COC Not Received**	
8. Were all of the samples listed on the COC received?	✓			☐ **Sample Received, Not on COC** ☐ **Sample on COC, Not Received**	
9. Is the date/time of sample collection noted?	✓			☐ **COC; No Date/Time; Client Contacted**	
10. Was the sampler identified on the COC?	✓			☐ **Sampler Not Listed on COC**	**Labeling Verified by:** **Date:**
11. Is the client and project name/# identified?	✓			☐ **COC Incorrect/Incomplete**	**pH test strip lot number:**
12. Are tests/parameters listed for each sample?	✓			☐ **COC No tests on COC**	
13. Is the matrix of the samples noted?	✓			☐ **COC Incorrect/Incomplete**	
14. Was COC relinquished? (Signed/Dated/Timed)	✓			☐ **COC Incorrect/Incomplete**	
15. Were samples received within holding time?	✓			☐ **Holding Time - Receipt**	
16. Were samples received with correct chemical preservative (excluding Encore)?			✓	☐ **pH Adjusted, pH Included (See box 16A)** ☐ **Incorrect Preservative**	
17. Were VOA samples received without headspace?			✓	☐ **Headspace (VOA only)**	
18. Did you check for residual chlorine, if necessary? (e.g. 1613B, 1668) Chlorine test strip lot number:			✓	☐ **Residual Chlorine**	
19. For 1613B water samples is pH<9?			✓	☐ If no, lab will adjust	
20. For rad samples was sample activity info. Provided?			✓	☐ Project missing info	

	Box 16A: pH Preservation	Box 18A: Residual Chlorine
Preservative:		
Lot Number:		
Exp Date:		
Analyst:		
Date:		
Time:		

Project #: 140038842 PM Instructions:

Sample Receiving Associate: [signature] Date: 6-16-17

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June 30, 2017