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**Data Validation Report for CH2M Hill
Plateau Remediation Company**

**VSR12-008
Remedial Action Wells Sampling and Analysis
Project 200 Area SGRP**

Chemical & Radiochemical Validation - Level C

Validation Performed By: *Eyda Hergemeder* Date: 3-01-2012
Eyda Hergemeder

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Date: 01 March 2012
 To: CH2M Hill (technical representative)
 From: Analytical Quality Associates, Inc.
 Project: FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis- Water
 Subject: Volatile Organics - Sample Data Groups (SDGs) SL1198, SL1199 and SL1216

INTRODUCTION

This memorandum presents the results of data validation for SDGs SL1198, SL1199 and SL1216 prepared by TestAmerica. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B2BTC8	11/03/11	Water	C	8260B
B2BTD2	11/03/11	Water	C	8260B
B2BTC9	11/04/11	Water	C	8260B
B2BTD0	11/07/11	Water	C	8260B
B2BTD1	11/08/11	Water	C	8260B
B2BPJ1	11/03/11	Water	C	8260B
B2BTJ6	11/15/11	Water	C	8260B
B2BTJ7	11/16/11	Water	C	8260B
B2BTJ8	11/17/11	Water	C	8260B

Data validation was conducted in accordance with the CHPRC validation statement of work and the Sampling and Analysis Plan for Eight Remediation Wells in the 200-ZP-1 Operable Unit in FY 2011, DOE/RL-2010-72, Rev. 0, Volume 1 (SAP). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Documentation Requested By Client

DATA QUALITY OBJECTIVES

- **Holding Times and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The holding time requirements for volatile organics are analysis within 14 days of sample collection. Sample preservation requires chilling to 4 degrees Celsius and acid preservation with hydrochloric or sulfuric acid to pH <2.

The samples were analyzed within the prescribed holding time and properly preserved.

- **Blanks**

The blank data results are reviewed to assess the extent of contamination introduced through sampling, sample preparation, and analysis.

Laboratory Blanks

All laboratory blank results were acceptable with the following exceptions.

For SDG SL1198, the styrene and acetone laboratory blank results for batch 1311189 and the acetone laboratory blank result for batch 1314217 were > the method detection limits (MDLs) but < the reporting limits (RLs). All associated sample results were non-detects and should not be qualified for the blank infraction.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

No equipment blanks were submitted for validation.

- **Accuracy**

Accuracy is evaluated by reviewing surrogate results, matrix spike sample results, and laboratory control sample results. According to the SAP, the matrix spike and laboratory control sample accuracy limits are 80% to 120%. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

Surrogates

All surrogate recoveries were acceptable.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

All MS/MSD recoveries were acceptable with the following exceptions.

For SDG SL1198, batch 1311189, the 1,1,2,2-tetrachloroethane and acetone MS and MSD recoveries were below the lower acceptance limit but $\geq 20\%$. The sample results were non-detects and should be qualified as estimates and flagged "UJ." See the table in Appendix 2 for a listing of all affected sample results.

For SDG SL1198, for batch 1312258, the MS and/or MSD recoveries for carbon tetrachloride and acetone and for batch 1314217 the MS and MSD recoveries for acetone were below the lower acceptance limit but $\geq 20\%$. The carbon tetrachloride result for sample B2BTD0 was detect and should be qualified as an estimate and flagged "J." All other sample results were non-detects and should be qualified as estimates and flagged "UJ." See the table in Appendix 2 for a listing of all affected sample results.

For SDG SL1216, for batch 1321204, the MSD recovery for acetone and for batch 1326275 the MS and MSD recoveries for carbon tetrachloride were below the lower acceptance limit but $\geq 20\%$. The carbon tetrachloride result for sample B2BTJ8 was detect and should be qualified as an estimate and flagged "J." The acetone result for samples B2BTJ6 and B2BTJ7 were non-detects and should be qualified as estimates and flagged "UJ."

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable with the following exceptions.

For SDG SL1198, batch 1311189, the LCS recovery for tetrachloroethene was above the upper acceptance limit and LCS recovery for 1,1,2,2-tetrachloroethane was below the lower acceptance limit. The associated tetrachloroethene sample results were non-detects and should not be qualified for the recovery infraction. The associated 1,1,2,2-tetrachloroethane sample results were non-detects and should be qualified as estimates and flagged "UJ." See the table in Appendix 2 for a listing of all affected sample results.

For SDG SL1198, batches 1312258 and 1314217, the LCS recoveries for 2-butanone and acetone were below the lower acceptance limits. The associated sample results were non-detects and should be qualified as estimates and flagged "UJ." See the table in Appendix 2 for a listing of all affected sample results.

For SDG SL1216, batch 1321204, the LCS recovery for acetone was below the lower acceptance limit. The acetone result for sample B2BTJ7 was non-detect and should be qualified as an estimate and flagged "UJ." For batch 1326275, the LCS recovery for carbon disulfide was above the upper acceptance limit. The associated sample results was non-detects and should not be qualified.

- **Precision**

Precision is evaluated by reviewing MS/MSD results, field duplicate sample results, field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the relative percent difference (RPD) limits are $\pm 20\%$. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

MS/MSD Samples

All MS/MSD relative percent difference values were acceptable.

Field Duplicate Samples

All field duplicate results were acceptable.

Field Split Samples

No field splits were submitted for validation.

- **Internal Standards**

Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during each analysis. Internal standards are added to all samples, including QC samples, prior to analysis.

Internal standards data was not included in the data package. Sample results should not be qualified based on this.

- **Detection Limits**

Reported MDLs are compared against the contractually required detection limits (CRDLs) to ensure that laboratory detection limits meet the required criteria.

All reported sample MDLs were below the CRDLs.

- **Completeness**

SDGs SL1198, SL1199 and SL1216 were submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Minor deficiencies leading to qualification of sample results as estimates were due to MS/MSD and LCS infractions. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010.

DOE/RL-2010-72, Rev. 0, *Sampling and Analysis Plan for Eight Remediation Wells in the 200-ZP-1 Operable Unit in FY 2011*, September 2010.

Appendix 1
Glossary of Data Reporting Qualifiers

Qualifiers that may be applied by data validators in compliance with the CHPRC statement of work are as follows:

- **U** — The constituent was analyzed for, but was not detected. The data should be considered usable for decision-making purposes.
- **UJ** — The constituent was analyzed for and was not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the RL. The data should be considered usable for decision-making purposes.
- **J** — Indicates the constituent was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J+** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J-** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **N** — The analysis indicates the presence of an analyte that has been tentatively identified.
- **NJ** — The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
- **NJ+** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation.
- **NJ-** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation.
- **UR** — Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.
- **R** — Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

Appendix 2
Summary of Data Qualification

Volatile Organics Data Qualification Summary			
SDG: SL1198, SL1199 and SL1216	Reviewer: AQA	Project: FY2011 200- ZP-1 Remedial Action Wells Sampling and Analysis - Water	Page 1 of 1
Analyte(s)	Qualifier	Samples Affected	Reason
1,1,2,2- tetrachloroethane	UJ	B2BTC8, B2BTD2, B2BTC9	Low MS/MSD and low LCS recoveries
acetone	UJ	B2BTC8, B2BTD2, B2BTC9	Low MS/MSD recoveries
acetone	UJ	B2BTD0, B2BTD1, B2BTJ6, B2BTJ7,	Low MS/MSD and low LCS recoveries
carbon tetrachloride	J	B2BTD0, B2BTJ8	Low MS/MSD recoveries
2-butanone	UJ	B2BTD0, B2BTD1	Low LCS recovery

Comments: None

Appendix 3

Annotated Laboratory Reports

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTC8

GC/MS Volatiles

Lot-Sample #...: F1K040469-001 Work Order #...: MNQNMLAQ Matrix.....: WATER
 Date Sampled...: 11/03/11 Date Received...: 11/04/11
 Prep Date.....: 11/07/11 Analysis Date...: 11/08/11
 Prep Batch #...: 1311189
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.15
Dibromochloromethane	ND	1.0	ug/L	0.13
Tetrachloroethene	ND	1.0	ug/L	0.18
2-Hexanone	ND	5.0	ug/L	0.22
Chlorobenzene	ND	1.0	ug/L	0.15
Ethylbenzene	ND	1.0	ug/L	0.086
Xylenes (total)	ND	3.0	ug/L	0.20
Styrene	ND	1.0	ug/L	0.074
Bromoform	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	UJ ND	1.0	ug/L	0.098
2-Butanone	ND	5.0	ug/L	0.52
Chloroform	1.6	1.0	ug/L	0.10
1,1,1-Trichloroethane	ND	1.0	ug/L	0.069
Carbon tetrachloride	4.2	1.0	ug/L	0.12
Benzene	ND	1.0	ug/L	0.064
1,2-Dichloroethane	ND	1.0	ug/L	0.10
Trichloroethene	ND	1.0	ug/L	0.25
1,2-Dichloropropane	ND	1.0	ug/L	0.097
Bromodichloromethane	ND	1.0	ug/L	0.088
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.073
4-Methyl-2-pentanone	ND	5.0	ug/L	0.12
Toluene	1.0	1.0	ug/L	0.072
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.083
1,1,2-Trichloroethane	ND	1.0	ug/L	0.15
1,1-Dichloroethene	ND	1.0	ug/L	0.083
Carbon disulfide	ND	1.0	ug/L	0.051
Methylene chloride	ND	1.0	ug/L	0.27
1,1-Dichloroethane	ND	1.0	ug/L	0.068
Chloromethane	ND	2.0	ug/L	0.077
Vinyl chloride	ND	2.0	ug/L	0.084
Bromomethane	ND	2.0	ug/L	0.25
Chloroethane	ND	2.0	ug/L	0.099
Acetone	UJ ND	2.0	ug/L	0.34

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	92	(68 - 123)
Dibromofluoromethane	90	(71 - 123)
1,2-Dichloroethane-d4	91	(69 - 121)
4-Bromofluorobenzene	100	(68 - 122)

CH2M Hill Plateau Remediation DOE RL

B2BTC8

GC/MS Volatiles

Lot-Sample #: F1K040469-001 Work Order #: MNQNM1AQ Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD2

GC/MS Volatiles

Lot-Sample #...: F1K040469-002 Work Order #...: MNQNQ1AQ Matrix.....: WATER
 Date Sampled...: 11/03/11 Date Received...: 11/04/11
 Prep Date.....: 11/07/11 Analysis Date...: 11/08/11
 Prep Batch #...: 1311189
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.15
Dibromochloromethane	ND	1.0	ug/L	0.13
Tetrachloroethene	ND	1.0	ug/L	0.18
2-Hexanone	ND	5.0	ug/L	0.22
Chlorobenzene	ND	1.0	ug/L	0.15
Ethylbenzene	ND	1.0	ug/L	0.086
Xylenes (total)	ND	3.0	ug/L	0.20
Styrene	ND	1.0	ug/L	0.074
Bromoform	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	UJ ND	1.0	ug/L	0.098
2-Butanone	ND	5.0	ug/L	0.52
Chloroform	1.7	1.0	ug/L	0.10
1,1,1-Trichloroethane	ND	1.0	ug/L	0.069
Carbon tetrachloride	4.3	1.0	ug/L	0.12
Benzene	ND	1.0	ug/L	0.064
1,2-Dichloroethane	ND	1.0	ug/L	0.10
Trichloroethene	ND	1.0	ug/L	0.25
1,2-Dichloropropane	ND	1.0	ug/L	0.097
Bromodichloromethane	ND	1.0	ug/L	0.088
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.073
4-Methyl-2-pentanone	ND	5.0	ug/L	0.12
Toluene	1.0	1.0	ug/L	0.072
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.083
1,1,2-Trichloroethane	ND	1.0	ug/L	0.15
1,1-Dichloroethene	0.69 J	1.0	ug/L	0.083
Carbon disulfide	ND	1.0	ug/L	0.051
Methylene chloride	ND	1.0	ug/L	0.27
1,1-Dichloroethane	ND	1.0	ug/L	0.068
Chloromethane	0.25 J	2.0	ug/L	0.077
Vinyl chloride	ND	2.0	ug/L	0.084
Bromomethane	ND	2.0	ug/L	0.25
Chloroethane	ND	2.0	ug/L	0.099
Acetone	UJ ND	2.0	ug/L	0.34

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	94	(68 - 123)
Dibromofluoromethane	91	(71 - 123)
1,2-Dichloroethane-d4	89	(69 - 121)
4-Bromofluorobenzene	100	(68 - 122)

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CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD2

GC/MS Volatiles

Lot-Sample #...: F1K040469-002 Work Order #...: MNQNQ1AQ Matrix.....: WATER

NOTE(S) :

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

B2BTD2

GC/MS Volatiles

Lot-Sample #: F1K040469-002

Work Order #: MNQNQ1AQ

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTC9

GC/MS Volatiles

Lot-Sample #...: F1K070411-001 Work Order #...: MNRK21AQ Matrix.....: WATER
 Date Sampled...: 11/04/11 Date Received...: 11/05/11
 Prep Date.....: 11/07/11 Analysis Date...: 11/08/11
 Prep Batch #...: 1311189
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.15
Dibromochloromethane	ND	1.0	ug/L	0.13
Tetrachloroethene	ND	1.0	ug/L	0.18
2-Hexanone	ND	5.0	ug/L	0.22
Chlorobenzene	ND	1.0	ug/L	0.15
Ethylbenzene	ND	1.0	ug/L	0.086
Xylenes (total)	ND	3.0	ug/L	0.20
Styrene	ND	1.0	ug/L	0.074
Bromoform	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	UJ ND	1.0	ug/L	0.098
2-Butanone	ND	5.0	ug/L	0.52
Chloroform	1.9	1.0	ug/L	0.10
1,1,1-Trichloroethane	ND	1.0	ug/L	0.069
Carbon tetrachloride	9.5	1.0	ug/L	0.12
Benzene	ND	1.0	ug/L	0.064
1,2-Dichloroethane	ND	1.0	ug/L	0.10
Trichloroethene	ND	1.0	ug/L	0.25
1,2-Dichloropropane	ND	1.0	ug/L	0.097
Bromodichloromethane	ND	1.0	ug/L	0.088
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.073
4-Methyl-2-pentanone	ND	5.0	ug/L	0.12
Toluene	1.2	1.0	ug/L	0.072
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.083
1,1,2-Trichloroethane	ND	1.0	ug/L	0.15
1,1-Dichloroethene	0.83 J	1.0	ug/L	0.083
Carbon disulfide	ND	1.0	ug/L	0.051
Methylene chloride	ND	1.0	ug/L	0.27
1,1-Dichloroethane	ND	1.0	ug/L	0.068
Chloromethane	0.29 J	2.0	ug/L	0.077
Vinyl chloride	ND	2.0	ug/L	0.084
Bromomethane	ND	2.0	ug/L	0.25
Chloroethane	ND	2.0	ug/L	0.099
Acetone	UJ ND	2.0	ug/L	0.34

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	94	(68 - 123)
Dibromofluoromethane	92	(71 - 123)
1,2-Dichloroethane-d4	90	(69 - 121)
4-Bromofluorobenzene	99	(68 - 122)

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CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTC9

GC/MS Volatiles

Lot-Sample #....: F1K070411-001 Work Order #....: MNRK21AQ Matrix.....: WATER

NOTE(S) :

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

B2BTC9

GC/MS Volatiles

Lot-Sample #: F1K070411-001

Work Order #: MNRK21AQ

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTDO

GC/MS Volatiles

Lot-Sample #...: F1K080464-001 Work Order #...: MNTHW1AQ Matrix.....: WATER
 Date Sampled...: 11/07/11 Date Received...: 11/08/11
 Prep Date.....: 11/08/11 Analysis Date...: 11/08/11
 Prep Batch #...: 1312258
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.15
Dibromochloromethane	ND	1.0	ug/L	0.13
Tetrachloroethene	ND	1.0	ug/L	0.18
2-Hexanone	ND	5.0	ug/L	0.22
Chlorobenzene	ND	1.0	ug/L	0.15
Ethylbenzene	ND	1.0	ug/L	0.086
Xylenes (total)	ND	3.0	ug/L	0.20
Styrene	ND	1.0	ug/L	0.074
Bromoform	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.098
2-Butanone	UJ ND	5.0	ug/L	0.52
Chloroform	2.6	1.0	ug/L	0.10
1,1,1-Trichloroethane	ND	1.0	ug/L	0.069
Carbon tetrachloride	J 22	1.0	ug/L	0.12
Benzene	ND	1.0	ug/L	0.064
1,2-Dichloroethane	ND	1.0	ug/L	0.10
Trichloroethene	0.29 J	1.0	ug/L	0.25
1,2-Dichloropropane	ND	1.0	ug/L	0.097
Bromodichloromethane	0.097 J	1.0	ug/L	0.088
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.073
4-Methyl-2-pentanone	ND	5.0	ug/L	0.12
Toluene	1.2	1.0	ug/L	0.072
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.083
1,1,2-Trichloroethane	ND	1.0	ug/L	0.15
1,1-Dichloroethene	0.89 J	1.0	ug/L	0.083
Carbon disulfide	ND	1.0	ug/L	0.051
Methylene chloride	ND	1.0	ug/L	0.27
1,1-Dichloroethane	ND	1.0	ug/L	0.068
Chloromethane	0.12 J	2.0	ug/L	0.077
Vinyl chloride	ND	2.0	ug/L	0.084
Bromomethane	ND	2.0	ug/L	0.25
Chloroethane	ND	2.0	ug/L	0.099
Acetone	UJ ND	2.0	ug/L	0.34

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	92	(68 - 123)
Dibromofluoromethane	95	(71 - 123)
1,2-Dichloroethane-d4	96	(69 - 121)
4-Bromofluorobenzene	98	(68 - 122)

(Continued on next page)

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD0

GC/MS Volatiles

Lot-Sample #...: F1K080464-001 Work Order #...: MNTHW1AQ Matrix.....: WATER

NOTE(S) :

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

B2BTDO

GC/MS Volatiles

Lot-Sample #: F1K080464-001

Work Order #: MNTHW1AQ

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD1

GC/MS Volatiles

Lot-Sample #...: F1K090456-001 Work Order #...: MNVQG1AQ Matrix.....: WATER
 Date Sampled...: 11/08/11 Date Received...: 11/09/11
 Prep Date.....: 11/10/11 Analysis Date...: 11/10/11
 Prep Batch #...: 1314217
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.15
Dibromochloromethane	ND	1.0	ug/L	0.13
Tetrachloroethene	ND	1.0	ug/L	0.18
2-Hexanone	ND	5.0	ug/L	0.22
Chlorobenzene	ND	1.0	ug/L	0.15
Ethylbenzene	ND	1.0	ug/L	0.086
Xylenes (total)	ND	3.0	ug/L	0.20
Styrene	ND	1.0	ug/L	0.074
Bromoform	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.098
2-Butanone	UJ ND	5.0	ug/L	0.52
Chloroform	2.6	1.0	ug/L	0.10
1,1,1-Trichloroethane	ND	1.0	ug/L	0.069
Carbon tetrachloride	34	1.0	ug/L	0.12
Benzene	ND	1.0	ug/L	0.064
1,2-Dichloroethane	ND	1.0	ug/L	0.10
Trichloroethene	0.38 J	1.0	ug/L	0.25
1,2-Dichloropropane	ND	1.0	ug/L	0.097
Bromodichloromethane	0.097 J	1.0	ug/L	0.088
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.073
4-Methyl-2-pentanone	ND	5.0	ug/L	0.12
Toluene	0.78 J	1.0	ug/L	0.072
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.083
1,1,2-Trichloroethane	ND	1.0	ug/L	0.15
1,1-Dichloroethene	0.47 J	1.0	ug/L	0.083
Carbon disulfide	ND	1.0	ug/L	0.051
Methylene chloride	ND	1.0	ug/L	0.27
1,1-Dichloroethane	ND	1.0	ug/L	0.068
Chloromethane	ND	2.0	ug/L	0.077
Vinyl chloride	ND	2.0	ug/L	0.084
Bromomethane	ND	2.0	ug/L	0.25
Chloroethane	ND	2.0	ug/L	0.099
Acetone	UJ ND	2.0	ug/L	0.34

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	95	(68 - 123)
Dibromofluoromethane	100	(71 - 123)
1,2-Dichloroethane-d4	99	(69 - 121)
4-Bromofluorobenzene	101	(68 - 122)

(Continued on next page)

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD1

GC/MS Volatiles

Lot-Sample #...: F1K090456-001 Work Order #...: MNVQG1AQ Matrix.....: WATER

NOTE(S) :

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

B2BTD1

GC/MS Volatiles

Lot-Sample #: F1K090456-001

Work Order #: MNVQG1AQ

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

NOVEMBER 13, 2011

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BPJ1

GC/MS Volatiles

Lot-Sample #....: F1K040446-001 Work Order #....: MNQF11AA Matrix.....: WATER
 Date Sampled....: 11/03/11 Date Received...: 11/04/11
 Prep Date.....: 11/07/11 Analysis Date...: 11/07/11
 Prep Batch #....: 1311127
 Dilution Factor: 1 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Carbon tetrachloride	4.9	1.0	ug/L	0.12
Chloroform	1.6	1.0	ug/L	0.10
Trichloroethene	ND	1.0	ug/L	0.25

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Toluene-d8	111	(68 - 123)
Dibromofluoromethane	98	(71 - 123)
1,2-Dichloroethane-d4	96	(69 - 121)
4-Bromofluorobenzene	101	(68 - 122)

NOVEMBER 13, 2011

CH2M Hill Plateau Remediation DOE RL

B2BPJ1

GC/MS Volatiles

Lot-Sample #: F1K040446-001

Work Order #: MNQF11AA

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ6

GC/MS Volatiles

Lot-Sample #...: F1K160461-001 Work Order #...: MN29L1AQ Matrix.....: WATER
 Date Sampled...: 11/15/11 Date Received...: 11/16/11
 Prep Date.....: 11/17/11 Analysis Date...: 11/17/11
 Prep Batch #...: 1321204
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.15
Dibromochloromethane	ND	1.0	ug/L	0.13
Tetrachloroethene	ND	1.0	ug/L	0.18
2-Hexanone	ND	5.0	ug/L	0.22
Chlorobenzene	ND	1.0	ug/L	0.15
Ethylbenzene	ND	1.0	ug/L	0.086
Xylenes (total)	ND	3.0	ug/L	0.20
Styrene	ND	1.0	ug/L	0.074
Bromoform	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.098
2-Butanone	ND	5.0	ug/L	0.52
Chloroform	2.1	1.0	ug/L	0.10
1,1,1-Trichloroethane	ND	1.0	ug/L	0.069
Benzene	ND	1.0	ug/L	0.064
1,2-Dichloroethane	ND	1.0	ug/L	0.10
Trichloroethene	1.5	1.0	ug/L	0.25
1,2-Dichloropropane	ND	1.0	ug/L	0.097
Bromodichloromethane	ND	1.0	ug/L	0.088
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.073
4-Methyl-2-pentanone	ND	5.0	ug/L	0.12
Toluene	ND	1.0	ug/L	0.072
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.083
1,1,2-Trichloroethane	ND	1.0	ug/L	0.15
1,1-Dichloroethene	ND	1.0	ug/L	0.083
Carbon disulfide	ND	1.0	ug/L	0.051
Methylene chloride	ND	1.0	ug/L	0.27
1,1-Dichloroethane	ND	1.0	ug/L	0.068
Chloromethane	0.084 J	2.0	ug/L	0.077
Vinyl chloride	ND	2.0	ug/L	0.084
Bromomethane	ND	2.0	ug/L	0.25
Chloroethane	ND	2.0	ug/L	0.099
Acetone	UJ ND	2.0	ug/L	0.34

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	94	(68 - 123)
Dibromofluoromethane	102	(71 - 123)
1,2-Dichloroethane-d4	94	(69 - 121)
4-Bromofluorobenzene	95	(68 - 122)

NOTE(S) :

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

B2BTJ6

GC/MS Volatiles

Lot-Sample #: F1K160461-001 Work Order #: MN29L1AQ Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ6

GC/MS Volatiles

Lot-Sample #...: F1K160461-001 Work Order #...: MN29L2AQ Matrix.....: WATER
 Date Sampled...: 11/15/11 Date Received...: 11/16/11
 Prep Date.....: 11/17/11 Analysis Date...: 11/17/11
 Prep Batch #...: 1321204
 Dilution Factor: 5 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Carbon tetrachloride	63 D	5.0	ug/L	0.62

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	96	(68 - 123)
Dibromofluoromethane	94	(71 - 123)
1,2-Dichloroethane-d4	88	(69 - 121)
4-Bromofluorobenzene	99	(68 - 122)

NOTE (S) :

D Result was obtained from the analysis of a dilution.

CH2M Hill Plateau Remediation DOE RL

B2BTJ6

GC/MS Volatiles

Lot-Sample #: F1K160461-001 Work Order #: MN29L2AQ Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ7

GC/MS Volatiles

Lot-Sample #...: F1K170446-001 Work Order #...: MN3331AQ Matrix.....: WATER
 Date Sampled...: 11/16/11 Date Received...: 11/17/11
 Prep Date.....: 11/17/11 Analysis Date...: 11/18/11
 Prep Batch #...: 1321204
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.15
Dibromochloromethane	ND	1.0	ug/L	0.13
Tetrachloroethene	ND	1.0	ug/L	0.18
2-Hexanone	ND	5.0	ug/L	0.22
Chlorobenzene	ND	1.0	ug/L	0.15
Ethylbenzene	ND	1.0	ug/L	0.086
Xylenes (total)	ND	3.0	ug/L	0.20
Styrene	ND	1.0	ug/L	0.074
Bromoform	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.098
2-Butanone	ND	5.0	ug/L	0.52
Chloroform	1.8	1.0	ug/L	0.10
1,1,1-Trichloroethane	ND	1.0	ug/L	0.069
Benzene	ND	1.0	ug/L	0.064
1,2-Dichloroethane	ND	1.0	ug/L	0.10
Trichloroethene	1.1	1.0	ug/L	0.25
1,2-Dichloropropane	ND	1.0	ug/L	0.097
Bromodichloromethane	ND	1.0	ug/L	0.088
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.073
4-Methyl-2-pentanone	ND	5.0	ug/L	0.12
Toluene	0.67 J	1.0	ug/L	0.072
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.083
1,1,2-Trichloroethane	ND	1.0	ug/L	0.15
1,1-Dichloroethene	ND	1.0	ug/L	0.083
Carbon disulfide	ND	1.0	ug/L	0.051
Methylene chloride	ND	1.0	ug/L	0.27
1,1-Dichloroethane	ND	1.0	ug/L	0.068
Chloromethane	0.083 J	2.0	ug/L	0.077
Vinyl chloride	ND	2.0	ug/L	0.084
Bromomethane	ND	2.0	ug/L	0.25
Chloroethane	ND	2.0	ug/L	0.099
Acetone	UJ ND	2.0	ug/L	0.34

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(68 - 123)
Dibromofluoromethane	98	(71 - 123)
1,2-Dichloroethane-d4	91	(69 - 121)
4-Bromofluorobenzene	93	(68 - 122)

NOTE(S) :

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

B2BTJ7

GC/MS Volatiles

Lot-Sample #: F1K170446-001 Work Order #: MN3331AQ Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ7

GC/MS Volatiles

Lot-Sample #...: F1K170446-001 Work Order #...: MN3332AQ Matrix.....: WATER
 Date Sampled...: 11/16/11 Date Received...: 11/17/11
 Prep Date.....: 11/18/11 Analysis Date...: 11/18/11
 Prep Batch #...: 1322173
 Dilution Factor: 2 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Carbon tetrachloride	60 D	2.0	ug/L	0.25

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	94	(68 - 123)
Dibromofluoromethane	114	(71 - 123)
1,2-Dichloroethane-d4	113	(69 - 121)
4-Bromofluorobenzene	91	(68 - 122)

NOTE(S) :

D Result was obtained from the analysis of a dilution.

CH2M Hill Plateau Remediation DOE RL

B2BTJ7

GC/MS Volatiles

Lot-Sample #: F1K170446-001 Work Order #: MN3332AQ Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ8

GC/MS Volatiles

Lot-Sample #...: F1K180491-001 Work Order #...: MN5G11AQ Matrix.....: WATER
 Date Sampled...: 11/17/11 Date Received...: 11/18/11
 Prep Date.....: 11/22/11 Analysis Date...: 11/23/11
 Prep Batch #...: 1326275
 Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	MDL
1,2-Dichloroethene (total)	ND	2.0	ug/L	0.15
Dibromochloromethane	ND	1.0	ug/L	0.13
Tetrachloroethene	ND	1.0	ug/L	0.18
2-Hexanone	ND	5.0	ug/L	0.22
Chlorobenzene	ND	1.0	ug/L	0.15
Ethylbenzene	ND	1.0	ug/L	0.086
Xylenes (total)	ND	3.0	ug/L	0.20
Styrene	ND	1.0	ug/L	0.074
Bromoform	ND	1.0	ug/L	0.17
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	0.098
2-Butanone	ND	5.0	ug/L	0.52
Chloroform	1.7	1.0	ug/L	0.10
1,1,1-Trichloroethane	ND	1.0	ug/L	0.069
Carbon tetrachloride	8.2	1.0	ug/L	0.12
Benzene	ND	1.0	ug/L	0.064
1,2-Dichloroethane	ND	1.0	ug/L	0.10
Trichloroethene	0.38 J	1.0	ug/L	0.25
1,2-Dichloropropane	ND	1.0	ug/L	0.097
Bromodichloromethane	ND	1.0	ug/L	0.088
cis-1,3-Dichloropropene	ND	1.0	ug/L	0.073
4-Methyl-2-pentanone	ND	5.0	ug/L	0.12
Toluene	15	1.0	ug/L	0.072
trans-1,3-Dichloropropene	ND	1.0	ug/L	0.083
1,1,2-Trichloroethane	ND	1.0	ug/L	0.15
1,1-Dichloroethene	ND	1.0	ug/L	0.083
Carbon disulfide	ND	1.0	ug/L	0.051
Methylene chloride	ND	1.0	ug/L	0.27
1,1-Dichloroethane	ND	1.0	ug/L	0.068
Chloromethane	0.093 J	2.0	ug/L	0.077
Vinyl chloride	ND	2.0	ug/L	0.084
Bromomethane	ND	2.0	ug/L	0.25
Chloroethane	ND	2.0	ug/L	0.099
Acetone	ND	2.0	ug/L	0.34

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	104	(68 - 123)
Dibromofluoromethane	100	(71 - 123)
1,2-Dichloroethane-d4	99	(69 - 121)
4-Bromofluorobenzene	98	(68 - 122)

(Continued on next page)

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ8

GC/MS Volatiles

Lot-Sample #...: F1K180491-001 Work Order #...: MN5G11AQ Matrix.....: WATER

NOTE(S) :

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

B2BTJ8

GC/MS Volatiles

Lot-Sample #: F1K180491-001

Work Order #: MN5G11AQ

Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
December 5, 2011
Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1198
Number of Samples	: eight samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 11, 2011

II. Introduction

Between November 4, 2011 and November 11, 2011, eight samples water samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-004

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

Volatiles

Batch: 1311189

Styrene and Acetone were detected in the method blank at concentrations above the MDL but below the RL. The analytes were not detected above the MDL in the associated samples; therefore, no qualifier is required.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

The LCS recovery for Tetrachloroethene is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

The CCV recoveries are outside the upper QC limit (greater than 20% D) for Acetone, 4-Methyl-2-pentanone, Tetrachloroethene, 2-Hexanone, and Bromoform, indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit in the associated samples.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

TestAmerica Laboratories, Inc.

Batch: 1312258

The CCV recovery is outside the upper QC limit (greater than 20% D) for Bromoform, indicating a potential high bias for this analytes in the samples associated with this CCV. The analyte was not detected above the reporting limit in the associated samples.

Affected Samples:

F1K080464 (1): B2BTD0

Batch: 1314217

Acetone was detected in the method blank at a concentration above the MDL but below the RL. The analyte was not detected above the MDL in the associated samples; therefore, no qualifier is required.

Affected Samples:

F1K090456 (1): B2BTD1

ICPMS Metals

Batch: 1325081

The internal standard was outside QC limits in the CCV and the CCB. All analytes were within acceptable limits, showing that there was no bias.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

F1K080464 (1): B2BTD0

F1K090456 (1): B2BTD1

F1K100454 (1): B2J9F4

F1K100454 (2): B2J9F5

F1K110416 (1): B2J9F6

Ion Chromatography

Batch: 1313085

The sample was analyzed at dilution due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run. The analyte is qualified with a "D" flag.

Affected Samples:

F1K040469 (2): B2BTD2

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

TestAmerica Laboratories, Inc.

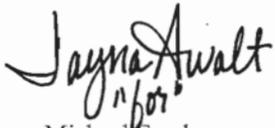
The sample was analyzed outside of the 48-hour hold time for Nitrate due to instrument capacity, long instrument run time, and dilutions. The sample was analyzed at a dilution within 2 times hold time. Sample Issue Resolution Form SDR12-082 accepted the proposed resolution to report the analysis performed outside hold time.

Affected Samples:

F1K040469 (2): B2BTD2

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Michael Franks
St. Louis Project Manager

SAMPLE ISSUE RESOLUTION

SIR NUM SDR12-082
REV NUM 0
DATE INITIATED 12/4/2011

SAMPLE EVENT INFORMATION

SAF NUM(S) F11-004
OPERABLE UNIT(S) 200-ZP-1
PROJECT(S) 200 AREA SGRP
SAMPLE EVENT TITLE(S) 200-ZP-1 Remedial Action Wells
LABORATORY TestAmerica St. Louis

SAMPLING INFORMATION

NUMBER OF SAMPLES 1
SAMPLE NUMBERS B2BTD2
SAMPLE MATRIX WATER
COLLECTION DATE 11/3/2011 - 11/3/2011
SDG NUM SL1198

ISSUE BACKGROUND

CLASS Laboratory Issue
TYPE Analysis Holding Time Exceeded
DESCRIPTION The listed samples for Nitrate were analyzed outside of the hold time due to instrument capacity, long instrument run time, and dilutions.

DISPOSITION

DESCRIPTION Proposed Resolution: Report the data and include comments about the missed hold time in the case narrative.

JUSTIFICATION Accepted Resolution: Accepted proposed resolution

Submitted by: Jayna Awalt / TASL Date: 12/04/11
 Accepted by: Sally Simmons / CHPRC Date: 12/06/11

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COL 455

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-128	PAGE 1 OF 1	
COLLECTOR Kara Crew, Fulton		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-002		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. CWS-184		FIELD LOGBOOK NO. 1579 HNF-N-507-11	ACTUAL SAMPLE DEPTH 325 FT	COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO TASL #11-3-11		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. 7977 0048 3329			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	None		
		HOLDING TIME	14 Days	6 Months	6 Months		
		TYPE OF CONTAINER	aGs*	G/P	G		
		NO. OF CONTAINER(S)	3	1	1		
		VOLUME	40mL	500mL	250mL		
		SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 82608 (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Trilium Ion Ex (Trilium);	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2BTC8	WATER	11-3-11	08:10				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20.□** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□□□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.□□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Elk River Corp - Fulton</i>	11-3-11 1400	FEDEX			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
FEDEX		Brian Daniels	11/4/11 0915		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-136	PAGE 1 OF 1	
COLLECTOR <i>Karen Crow, Fulton</i>		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-002 DUP		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. <i>GLS-184</i>		FIELD LOGBOOK NO. <i>pg 29</i> <i>HNF-N-507-11</i>	ACTUAL SAMPLE DEPTH <i>375 FT</i>	COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL		
SHIPPED TO <i>11-3-11</i> Waste Sampling & Characterization <i>TASL</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. <i>MTX 10, 11/3/11 797700483329</i>				
MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH	HNO3 to pH <2/Cool~4C	Cool~4C	None	HNO3 to pH <2 (ULTREx)	
		HOLDING TIME	14 Days	6 Months	28 Days/48 Hours	6 Months	None	
		TYPE OF CONTAINER	aGs*	G/P	P	G	Nalgene	
		NO. OF CONTAINER(S)	3	1	1	1	1	
	VOLUME	40mL	500mL	500mL	250mL	500mL		
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	IC Anions - 300.0 (Nitrogen in Nitrate);	Tritium - Ion Ex (Tritium);	Tc-99 by ICPMS (Technetium-99);	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2BTD2	WATER	11-3-11	08:10	✓	✓	✓	✓	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Ed Kane CHPRC</i>	<i>11-3-11 1400</i>	<i>FED EX</i>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>FED EX</i>		<i>B. J. Brian Daniels</i>	<i>11/4/11 0915</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-131	PAGE 1 OF 1	
COLLECTOR KAWA, CROW		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-003		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. ¹¹⁻⁴⁻¹¹ (N/A) CWS-205		FIELD LOGBOOK NO. ⁸⁵⁸⁰ HNF-N-567-11	ACTUAL SAMPLE DEPTH 396 FT	COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO ¹¹⁻⁴⁻¹¹ Waste Sampling & Characterization TASL		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A 7977 0373 6592				
MATRIX* A=Air DL=Drum L=Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	None			
		HOLDING TIME	14 Days	6 Months	6 Months			
		TYPE OF CONTAINER	aGs*	G/P	G			
		NO. OF CONTAINER(S)	3	1	1			
		VOLUME	40mL	500mL	250mL			
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);				
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2BTC9	WATER	11-4-11	0820					

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM cd Kawa CHRC	DATE/TIME 11-4-11 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□□□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN NICHOLAS COWENS	DATE/TIME 11/5/11 0820		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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CH2M Hill Plateau Remediation Company *456* CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F11-004-134 PAGE 1 OF 1

COLLECTOR <i>Ed Kase Crow, Fulham</i>		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924		PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND
SAMPLING LOCATION C8068 (699-44-67); I-004		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water				SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	30 Days / 30 Days
ICE CHEST NO. <i>with 11-7-11 (IATA) CWS-246</i>		FIELD LOGBOOK NO. <i>ps 81</i> HNF-N-507-11		ACTUAL SAMPLE DEPTH <i>416</i> FT		COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL	
SHIPPED TO <i>Waste Sampling & Characterization TASL</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. <i>7977 1119 3888</i>					
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/ Cool to 4C	HNO3 to pH <2/ Cool to 4C	None				
		HOLDING TIME	14 Days	6 Months	6 Months				
		TYPE OF CONTAINER	aGs*	G/P	G				
		NO. OF CONTAINER(S)	3 <i>2</i>	1	1				
		VOLUME	40mL	500mL	250mL				
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);					
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B2BT00	WATER	11-7-11	0936	✓	✓				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Ed Kase Crow</i>	<i>11-7-11 1400</i>	<i>FEDEX</i>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>FED EX</i>		<i>Abrahamson</i>	<i>11/8/11</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-140	PAGE 1 OF 1
COLLECTOR KAREN CROW	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-005	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. ^{(1) X-1} (N/A) CWS-006	FIELD LOGBOOK NO. pg 82 HNF-N-507-11	ACTUAL SAMPLE DEPTH 436 FT	COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL		
SHIPPED TO Waste Sampling & Characterization - TASL		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. 7953 8574 5722			
MATRIX* A=Air DL=Drum L=Liquid DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool to 4C	HNO3 to pH <2/Cool to 4C	None		
		HOLDING TIME	14 Days	6 Months	6 Months		
		TYPE OF CONTAINER	aGs*	G/P	G		
		NO. OF CONTAINER(S)	3	1	1		
		VOLUME	40mL	500mL	250mL		
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	VOA - 82608 (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2BTD1	WATER	11-8-11	0900	✓	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM KAREN CROW	DATE/TIME 11-8-11 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN Brian Daniels	DATE/TIME 11/9/11 0920		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-186	PAGE 1 OF 1
COLLECTOR <i>Crow Hawk</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-006	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>GWS-188</i>	FIELD LOGBOOK NO. <i>883</i> HNF-N-507-11	ACTUAL SAMPLE DEPTH <i>452.5</i>	COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. <i>797720782620</i>			

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2	
		HOLDING TIME	6 Months	
		TYPE OF CONTAINER	G/P	
		NO. OF CONTAINER(S)	1	
		VOLUME	500mL	
		SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2J9F4	WATER	11-9-11	0825	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS ** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};
RELINQUISHED BY/REMOVED FROM <i>Ed Kavir</i>	DATE/TIME <i>11-9-11 0930</i>	RECEIVED BY/STORED IN <i>Mawhite</i>	DATE/TIME <i>11-9-11 0930</i>	
RELINQUISHED BY/REMOVED FROM <i>Mawhite</i>	DATE/TIME <i>11-9-11 1400</i>	RECEIVED BY/STORED IN FEDEX	DATE/TIME	
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN <i>Swilson</i>	DATE/TIME <i>11-10-11 0915</i>	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-187	PAGE 1 OF 1
COLLECTOR <i>Crow, Krause</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-006 DUP	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>CWS-188</i>	FIELD LOGBOOK NO. <i>P583</i> <i>HNF-N-507-11</i>	ACTUAL SAMPLE DEPTH <i>457.5 FT</i>	COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. <i>7977 2078 2620</i>		
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2			
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	500mL			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2J9F5	WATER	11-9-11	0825	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS ** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};
RELINQUISHED BY/REMOVED FROM <i>Ed Kouss</i>	DATE/TIME <i>11-9-11 0930</i>	RECEIVED BY/STORED IN <i>MA Whit</i>	DATE/TIME <i>11-9-11 0930</i>	
RELINQUISHED BY/REMOVED FROM <i>MA Whit</i>	DATE/TIME <i>11-9-11 1400</i>	RECEIVED BY/STORED IN FED EX	DATE/TIME	
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN <i>SWilson</i>	DATE/TIME <i>11-10-11 0915</i>	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

DECEMBER 07, 2011

TestAmerica - St. Louis

51198

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-188	PAGE 1 OF 1
COLLECTOR Crow Raven cert 256	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-007	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. 6WS-115	FIELD LOGBOOK NO. PS 84 HNF-N-507-11	ACTUAL SAMPLE DEPTH 471 FT		COA 300194ES10	METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. 7977 2555 1113		

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2
		HOLDING TIME	6 Months
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS SEE ITEM (1) IN SPECIAL INSTRUCTIONS	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B2J9F6	WATER	11-10-11	0835

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS ** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};
RELINQUISHED BY/REMOVED FROM Ella & C4 PREC... 11-10-11	DATE/TIME 0945	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME NOV 10 2011 0945	
RELINQUISHED BY/REMOVED FROM L.D. Wall	DATE/TIME NOV 10 2011 1400	RECEIVED BY/STORED IN CHPRG	DATE/TIME	
RELINQUISHED BY/REMOVED FROM RDEK	DATE/TIME	RECEIVED BY/STORED IN ABR... 11/11/11	DATE/TIME 0915	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

DECEMBER 07, 2011

TestAmerica - St. Louis

NOVEMBER 13, 2011

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
 P.O. Box 1600
 MS B3-60
 Richland, Washington 99352
 November 13, 2011
 Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1199
Number of Samples	: one sample
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 4, 2011

II. Introduction

On November 4, 2011, one water sample was received by TestAmerica - St. Louis for chemical analysis. The sample was received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the sample was given a laboratory Id to correspond with the specific client Id. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-004

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

NOVEMBER 13, 2011

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

TestAmerica Laboratories, Inc.

November 13, 2011

SDG: SL1199

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

Ion Chromatography

Batch: 1313085

The sample was analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted for the dilution and the analyte is qualified with a "D" flag in the associated sample.

Affected Samples:

F1K040446 (1): B2BPJ1

The sample was analyzed outside of the 48 hour hold time for Nitrate due to long instrument run time. The sample was analyzed within 2x hold the hold time.

Affected Samples:

F1K040446 (1): B2BPJ1

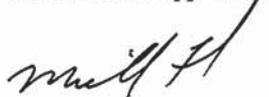
There were no observations or nonconformances for the following methods:

Volatiles

ICPMS Metals (Tc-99)

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Michael Franks
St. Louis Project Manager

SL1199 CUL 455

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-127	PAGE 1 OF 1
COLLECTOR Krause Fulton, Crow	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 1A	DATA TURNAROUND 24 Hours / 15 Days
SAMPLING LOCATION C8068 (699-44-67); I-002	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. CWS-184	FIELD LOGBOOK NO. <i>ps 75</i> HNF-N-507-11	ACTUAL SAMPLE DEPTH 375 FT		COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL	
SHIPPED TO Waste Sampling & Characterization. <i>TASL</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. <i>11/3/11 7977 0048 3329</i>		

MATRIX* A=Air DL=Drum L=Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION		Cool~4C	Cool~4C	HCl to pH <2/Cool~4C	HN03 to pH <2 (ULTREX)	
		HOLDING TIME		24 Hours	28 Days/48 Hours	14 Days	None	
		TYPE OF CONTAINER		aG	P	aGs*	Nalgene	
		NO. OF CONTAINER(S)		1	1	3	1	
		VOLUME		500mL	500mL	40mL	500mL	
		SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		Chromium Hex - 7196;	IC Anions - 300.0 {Nitrogen in Nitrate};	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2BPJ1	WATER	11-3-11	0810		✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
<i>Ed Krause</i>	<i>11-3-11 1400</i>	<i>FEDEX</i>	
<i>FEDEX</i>		<i>Brian James</i>	<i>11/4/11 0914</i>

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260.

(1) VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene};

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

NOVEMBER 13, 2011

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TestAmerica St. Louis

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
 P.O. Box 1600
 MS B3-60
 Richland, Washington 99352
 December 23, 2011
 Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1216
Number of Samples	: six samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 23, 2011

II. Introduction

Between November 16, 2011 and November 23, 2011, six water samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-004

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 23, 2011

SDG: SL1216

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

Volatiles

Batch: 1321204

The sample was analyzed at a dilution due to high concentrations of the target analyte. The reporting limit has been adjusted only for this target reported from the dilution run. This analyte has been qualified accordingly with a "D" flag in the associated sample.

Affected Samples:

F1K160461 (1): B2BTJ6

Batch: 1322173

The sample was analyzed at a dilution due to a high concentration of the target analyte. The reporting limit has been adjusted only for this target reported from the dilution run. This analyte has been qualified accordingly with a "D" flag in the associated sample.

Affected Samples:

F1K170446 (1): B2BTJ7

ICPMS Total Metals

Batch: 1322113

Lead and Nickel were detected in the method blank above the method detection limit but below the reporting limit. These analytes have been qualified accordingly with a "C" flag in the associated sample.

Affected Samples:

F1K170446 (1): B2BTJ7

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 23, 2011

SDG: SL1216

TestAmerica Laboratories, Inc.

Batch: 1333097

The internal standard was outside QC limits in the ICSA and/or the ICSAB. All analytes were within acceptable limits, showing that there was no bias. Original results will be reported.

Affected Samples:

F1K160461 (1): B2BTJ6

F1K180491 (1): B2BTJ8

F1K220433 (1): B2JD78

F1K220433 (2): B2JD84

F1K230436 (1): B2JD90

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Jayna Awalt
St. Louis Project Manager

SL1211
[Handwritten signature]

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-156		PAGE 1 OF 1		
COLLECTOR <i>KAWA, CROW</i>		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924		PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H		DATA TURNAROUND 30 Days / 30 Days		
SAMPLING LOCATION C889 (699-42-67); I-004		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water				SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>				
ICE CHEST NO. GWS-092		FIELD LOGBOOK NO. <i>P885</i> HNF-N 507-11		ACTUAL SAMPLE DEPTH 418		COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE		ORIGINAL		
SHIPPED TO <i>Waste Sampling & Characterization</i>		OFFSITE PROPERTY NO. N/A				BILL OF LADING/AIR BILL NO. <i>7954 0996 6256</i>						
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		PRESERVATION HCl or H2SO4 to pH 14 Days		HNO3 to pH <2/Cool~4C 6 Months		None 6 Months				
		HOLDING TIME		TYPE OF CONTAINER aGs*		G/P		G				
		NO. OF CONTAINER(S)		VOLUME 40mL		500mL		250mL				
		SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS VOA - 8260B (TCL);		SEE ITEM (1) IN SPECIAL INSTRUCTIONS		Tritium Ion Ex (Tritium);				
SAMPLE NO.		MATRIX*		SAMPLE DATE		SAMPLE TIME						
B2BTJ6		WATER		<i>11-15-11</i>		0810						

NO. 11/15/11

DECEMBER 27, 2011

TestAmerica - St. Louis

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>E. Kawa</i>	DATE/TIME <i>11-15-11 1400</i>	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME <i>11-15-11 1400</i>	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. . . . (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>Fed Ex</i>	DATE/TIME	RECEIVED BY/STORED IN <i>ABryanson</i>	DATE/TIME <i>11/16/11 0950</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

COLLECTOR <i>Crow Kawa</i>		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924		PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H		DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C869 (699-42-67); I-005		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water				SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>			
ICF CHEST NO. <i>WS-193</i>		FIELD LOGBOOK NO. <i>9586</i> <i>HNF-N-507-11</i>		ACTUAL SAMPLE DEPTH <i>436 FT</i>		COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE		ORIGINAL	
SHIPPED TO <i>Waste Sampling & Characterization TASL</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A <i>7977 4565 0164</i>							

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION		HCl or H2SO4 to pH	HNO3 to pH <2/Cool to 4C	None
		HOLDING TIME		14 Days	6 Months	6 Months
		TYPE OF CONTAINER		aGs*	G/P	G
		NO. OF CONTAINER(S)		3	1	1 <i>11-16-11</i>
		VOLUME		40mL	500mL	250mL
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2BTJ7	WATER	11-16-11	0845			

DECEMBER 27, 2011

TestAmerica - St. Louis

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Ed Kawa CTRC Edward Kawa</i>	<i>11-16-11 / 1400</i>	<i>FED EX</i>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
		<i>Swilson Swilson</i>	<i>4.17.11 0925</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-162		PAGE 1 OF 1	
COLLECTOR <i>Crow House</i>		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924		PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H		DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C889 (699-42-67); I-006		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water				SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>			
ICE CHEST NO. <i>GWS-289</i>		FIELD LOGBOOK NO. <i>ps 87</i> HNF-N- <i>507-11</i>		ACTUAL SAMPLE DEPTH <i>457 FT</i>		COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE		ORIGINAL	
SHIPPED TO <i>Waste Sampling & Characterization</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. <i>7954 2041 4374</i>							
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		PRESERVATION		HCl or H2SO4 to pH <2 / Cool ~4C		HNO3 to pH <2 / Cool ~4C		None	
				HOLDING TIME		14 Days		6 Months		6 Months	
				TYPE OF CONTAINER		aGs*		G/P		G	
				NO. OF CONTAINER(S)		3		1		1	
				VOLUME		40mL		500mL		250mL	
		SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		VOA - 8260B (TCL);		SEE ITEM (1) IN SPECIAL INSTRUCTIONS		Tritium - Ion Ex (Tritium);	
SAMPLE NO.		MATRIX*		SAMPLE DATE		SAMPLE TIME					
B2BTJ8		WATER		11-17-11		1003		✓		✓	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium}; <i>ALL samples F. checked</i> <i>TURB > 1000 ER 11-17-11</i>	
<i>Ed House Cape 2nd/11/11</i>	<i>11-17-11 1400</i>	<i>F2D EX</i>			
<i>Fed Ex</i>		<i>J Wilson</i>	<i>11-18-11 0930</i>		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 27, 2011

TestAmerica - St. Louis

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CWL 312

CH2M Hill Plateau Remediation Company SL1216		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-004-195	PAGE 1 OF 1
COLLECTOR <i>Crow, Fulton</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8069-007 (699-42-67)	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO. F11-004	COA 300194ES10	AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO. <i>GWS-166</i>	FIELD LOGBOOK NO. <i>HNF-507-11</i>	ACTUAL SAMPLE DEPTH <i>478'</i>	METHOD OF SHIPMENT FEDERAL EXPRESS	BILL OF LADING/AIR BILL NO. <i>7954 3080 7411</i>	
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR	SEE PTR			
MATRIX* A=Air DL=Drum L=Liquid DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION HNO3 to pH <2	<i>11/21/11</i>		
		HOLDING TIME 6 Months			
		TYPE OF CONTAINER G/P			
		NO. OF CONTAINER(S) 1			
		VOLUME 500mL			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2JD78	WATER	<i>11-21-11</i>	<i>1045</i>		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>Fulton</i>	DATE/TIME <i>11-21-11 1400</i>	RECEIVED BY/STORED IN <i>FDG</i>	DATE/TIME	** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};
RELINQUISHED BY/REMOVED FROM <i>Fed Ex</i>	DATE/TIME	RECEIVED BY/STORED IN <i>Brian Daniels</i>	DATE/TIME <i>11/22/11 0925</i>	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

DECEMBER 27, 2011

TestAmerica - St. Louis

CH2MHill Plateau Remediation Company SL216		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-201	PAGE 1 OF 1
COLLECTOR Crow, Fulton	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8069-007 (699-42-67) DUP	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. GWS 166	FIELD LOGBOOK NO. HWF-507-11	ACTUAL SAMPLE DEPTH 478'	COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR 7954 3080 7411		
MATRIX* A=Air DL=Drum L=Liquid DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2		<i>JWS</i> <i>11/21/11</i>	
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	500mL			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2JD84	WATER	11-21-11	1045	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Crow, Fulton</i>	DATE/TIME 11-21-11 1400	RECEIVED BY/STORED IN <i>FED Ex</i>	DATE/TIME	** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>Fed Ex</i>	DATE/TIME	RECEIVED BY/STORED IN <i>Brian Daniels</i>	DATE/TIME 11/22/11 0925		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

Wd 294 SL1216

SDG#SL1216

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-207	PAGE 1 OF 1
COLLECTOR <i>Karen Crow</i>		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8069-008 (699-42-67)		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water			SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>
ICE CHEST NO. <i>GWS-222</i>		FIELD LOGBOOK NO. <i>P58E</i> <i>HNE-N-507-11</i>	ACTUAL SAMPLE DEPTH <i>498' RT</i>		COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR			BILL OF LADING/AIR BILL NO. <i>SEE PTR</i> <i>7954 35281563</i> <i>do</i> <i>1/22/11</i>		
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2				
		HOLDING TIME	6 Months				
		TYPE OF CONTAINER	G/P				
		NO. OF CONTAINER(S)	1				
		VOLUME	500mL				
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2JD90	WATER	11-22-11	0920				

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Ed Kuhn, SHARLENE</i>	<i>11-22-11 1400</i>	<i>FED EX</i>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>Fed EX</i>		<i>Brian Daniels</i>	<i>11/23/11 0915</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 27, 2011

TestAmerica - St. Louis

Appendix 5

Data Validation Supporting Documentation

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

Appendix A - Chemical Data Validation Checklist

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis-Water			DATA PACKAGE: VSR12-008		
VALIDATOR: Eyda Hergenreder		LAB: TestAmerica		DATE: 03-01-2012	
			SDG: SL1198, SL1199, SL1216		
ANALYSES PERFORMED					
SW-846 8260 X		SW-846 8260 (TCLP)	SW-846 8270		SW-846 8270 (TCLP)
SAMPLES/MATRIX Water samples SDG SL1198: B2BTC8, B2BTD2, B2BTC9, B2BTD0, B2BTD1 SDG SL1199: B2BPJ1 SDG SL1216: B2BTJ6, B2BTJ7, B2BTJ8,					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present?.....**Yes** No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

GC/MS tuning/performance check acceptable?	Yes	No	N/A
Initial calibrations acceptable?	Yes	No	N/A
Continuing calibrations acceptable?	Yes	No	N/A
Standards traceable?	Yes	No	N/A
Standards expired?	Yes	No	N/A
Calculation check acceptable?	Yes	No	N/A

Comments:

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E)	Yes	No	N/A
Calibration blank results acceptable? (Levels D, E)	Yes	No	N/A
Laboratory blanks analyzed?	Yes	No	N/A
Laboratory blank results acceptable?	Yes	No	N/A
Field/trip blanks analyzed? (Levels C, D, E)	Yes	No	N/A
Field/trip blank results acceptable? (Levels C, D, E)	Yes	No	N/A
Transcription/calculation errors? (Levels D, E)	Yes	No	N/A

Comments:

SDG SL1198: batch 1311189; styrene 0.091 ug/L; acetone 1.6 ug/L
batch 1314217; acetone 0.94 ug/L

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? Yes No N/A
 Surrogate/system monitoring compound recoveries acceptable? Yes No N/A
 Surrogates traceable? (Levels D, E) Yes No N/A
 Surrogates expired? (Levels D, E) Yes No N/A
 MS/MSD samples analyzed? Yes No N/A
 MS/MSD results acceptable? Yes No N/A
 MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A
 MS/MSD standards? (Levels D, E) Yes No N/A
 LCS/BSS samples analyzed? Yes No N/A
 LCS/BSS results acceptable? Yes No N/A
 Standards traceable? (Levels D, E) Yes No N/A
 Standards expired? (Levels D, E) Yes No N/A
 Transcription/calculation errors? (Levels D, E) Yes No N/A
 Performance audit sample(s) analyzed? Yes No N/A
 Performance audit sample results acceptable? Yes No N/A

Comments:

SDG SL1198: MS/MSD (batch 1311189) 1,1,2,2-tetrachloroethane 70%/75%; acetone 62%/56%
 (batch 1312258) carbon tetrachloride 73%/78%; acetone MS 72%
 (batch 1314217) acetone 64%/68%

LCS (batch 1311189) tetrachloroethene 156%; 1,1,2,2-tetrachloroethane 76%;
 (batch 1312258) 2-butanone 78%; acetone 75%
 (batch 1314217) 2-butanone 75%; acetone 76%

SDG SL1216: MS/MSD (batch 1321204) acetone MSD 79%
 (batch 1326275) carbon tetrachloride 49%/52%;

LCS (batch 1321204) acetone 74%
 (batch 1326275) carbon disulfide 122%

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

5. PRECISION (Levels C, D, and E)

MS/MSD samples analyzed? Yes No N/A

MS/MSD RPD values acceptable? Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A

MS/MSD standards expired? (Levels D, E) Yes No N/A

Field duplicate RPD values acceptable? Yes No N/A

Field split RPD values acceptable? Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: None

6. SYSTEM PERFORMANCE (Levels D and E)

Internal standards analyzed? Yes No N/A

Internal standard areas acceptable? Yes No N/A

Internal standard retention times acceptable? Yes No N/A

Standards traceable? Yes No N/A

Standards expired? Yes No N/A

Transcription/calculation errors? Yes No N/A

Comments:

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

7. HOLDING TIMES (all levels)

Samples properly preserved? Yes No N/A

Sample holding times acceptable? Yes No N/A

Comments: None

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) Yes No N/A

Compound quantitation acceptable? (Levels D, E) Yes No N/A

Results reported for all requested analyses? Yes No N/A

Results supported in the raw data? (Levels D, E) Yes No N/A

Samples properly prepared? (Levels D, E) Yes No N/A

Laboratory properly identified and coded all TIC? (Levels D, E) Yes No N/A

Detection limits meet RDL? Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

9. SAMPLE CLEANUP (Levels D and E)

GPC cleanup performed?	Yes	No	N/A
GPC check performed?.....	Yes	No	N/A
GPC check recoveries acceptable?.....	Yes	No	N/A
GPC calibration performed?.....	Yes	No	N/A
GPC calibration check performed?	Yes	No	N/A
GPC calibration check retention times acceptable?	Yes	No	N/A
Check/calibration materials traceable?	Yes	No	N/A
Check/calibration materials Expired?.....	Yes	No	N/A
Analytical batch QC given similar cleanup?.....	Yes	No	N/A
Transcription/Calculation Errors?.....	Yes	No	N/A

Comments:

Comments (attach additional sheets as necessary): None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

Appendix 6

Additional Documentation Requested By Client

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNR011AA Matrix.....: WATER
 MB Lot-Sample #: F1K070000-189
 Prep Date.....: 11/07/11
 Analysis Date...: 11/07/11 Prep Batch #...: 1311189
 Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B
Styrene	0.091 J	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Acetone	1.6 J	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	93	(68 - 123)
Dibromofluoromethane	86	(71 - 123)
1,2-Dichloroethane-d4	95	(69 - 121)
4-Bromofluorobenzene	100	(68 - 122)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1198

Work Order #...: MNR011AA

Matrix.....: WATER

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNT7L1AA Matrix.....: WATER
 MB Lot-Sample #: F1K080000-258
 Prep Date.....: 11/08/11
 Analysis Date...: 11/08/11 Prep Batch #...: 1312258
 Dilution Factor: 1

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Acetone	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	93	(68 - 123)
Dibromofluoromethane	87	(71 - 123)
1,2-Dichloroethane-d4	92	(69 - 121)
4-Bromofluorobenzene	96	(68 - 122)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1198

Work Order #...: MNT7L1AA

Matrix.....: WATER

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

CH2M Hill Plateau Remediation DOE RL

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F1K080000-258 B Work Order #: MNT7L1AA Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNW881AA Matrix.....: WATER
 MB Lot-Sample #: F1K100000-217
 Analysis Date...: 11/10/11 Prep Date.....: 11/10/11
 Dilution Factor: 1 Prep Batch #...: 1314217

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Acetone	0.94 J	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	94	(68 - 123)
Dibromofluoromethane	90	(71 - 123)
1,2-Dichloroethane-d4	92	(69 - 121)
4-Bromofluorobenzene	95	(68 - 122)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1198

Work Order #...: MNW881AA

Matrix.....: WATER

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

J Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F1K100000-217 B Work Order #: MNW881AA Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNR011AC Matrix.....: WATER
LCS Lot-Sample#: F1K070000-189
Prep Date.....: 11/07/11 Analysis Date...: 11/07/11
Prep Batch #...: 1311189
Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>METHOD</u>
1,2-Dichloroethene (total)	20.0	20.9	ug/L	104	SW846 8260B
Dibromochloromethane	10.0	10.6	ug/L	106	SW846 8260B
Tetrachloroethene	10.0	15.6	ug/L	156	SW846 8260B
2-Hexanone	10.0	10.2	ug/L	102	SW846 8260B
Chlorobenzene	10.0	10.6	ug/L	106	SW846 8260B
Ethylbenzene	10.0	10.4	ug/L	104	SW846 8260B
Styrene	10.0	11.5	ug/L	115	SW846 8260B
Bromoform	10.0	11.5	ug/L	115	SW846 8260B
1,1,2,2-Tetrachloroethane	10.0	7.58	ug/L	76	SW846 8260B
2-Butanone	10.0	9.18	ug/L	92	SW846 8260B
Chloroform	10.0	10.8	ug/L	108	SW846 8260B
1,1,1-Trichloroethane	10.0	10.5	ug/L	105	SW846 8260B
Carbon tetrachloride	10.0	10.4	ug/L	104	SW846 8260B
Benzene	10.0	10.4	ug/L	104	SW846 8260B
1,2-Dichloroethane	10.0	10.6	ug/L	106	SW846 8260B
Trichloroethene	10.0	11.0	ug/L	110	SW846 8260B
1,2-Dichloropropane	10.0	9.98	ug/L	100	SW846 8260B
Bromodichloromethane	10.0	10.6	ug/L	106	SW846 8260B
cis-1,3-Dichloropropene	10.0	10.5	ug/L	105	SW846 8260B
4-Methyl-2-pentanone	10.0	9.76	ug/L	98	SW846 8260B
Toluene	10.0	9.44	ug/L	94	SW846 8260B
trans-1,3-Dichloropropene	10.0	10.8	ug/L	108	SW846 8260B
1,1,2-Trichloroethane	10.0	9.81	ug/L	98	SW846 8260B
1,1-Dichloroethene	10.0	10.6	ug/L	106	SW846 8260B
Carbon disulfide	10.0	9.60	ug/L	96	SW846 8260B
Methylene chloride	10.0	9.68	ug/L	97	SW846 8260B
1,1-Dichloroethane	10.0	10.6	ug/L	106	SW846 8260B
Chloromethane	10.0	11.1	ug/L	111	SW846 8260B
Vinyl chloride	10.0	11.3	ug/L	113	SW846 8260B
Bromomethane	10.0	10.8	ug/L	108	SW846 8260B
Chloroethane	10.0	10.5	ug/L	105	SW846 8260B
Acetone	10.0	10.1	ug/L	101	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNR011AC Matrix.....: WATER
LCS Lot-Sample#: F1K070000-189

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Toluene-d8	90	(76 - 123)
Dibromofluoromethane	96	(77 - 118)
1,2-Dichloroethane-d4	96	(66 - 125)
4-Bromofluorobenzene	100	(74 - 120)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNT7L1AC Matrix.....: WATER
LCS Lot-Sample#: F1K080000-258
Prep Date.....: 11/08/11 Analysis Date...: 11/08/11
Prep Batch #...: 1312258
Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>METHOD</u>
1,2-Dichloroethene (total)	20.0	19.4	ug/L	97	SW846 8260B
Dibromochloromethane	10.0	9.92	ug/L	99	SW846 8260B
Tetrachloroethene	10.0	10.7	ug/L	107	SW846 8260B
2-Hexanone	10.0	8.85	ug/L	89	SW846 8260B
Chlorobenzene	10.0	10.1	ug/L	101	SW846 8260B
Ethylbenzene	10.0	9.88	ug/L	99	SW846 8260B
Styrene	10.0	10.9	ug/L	109	SW846 8260B
Bromoform	10.0	10.5	ug/L	105	SW846 8260B
1,1,2,2-Tetrachloroethane	10.0	8.34	ug/L	83	SW846 8260B
2-Butanone	10.0	7.85	ug/L	78	SW846 8260B
Chloroform	10.0	9.72	ug/L	97	SW846 8260B
1,1,1-Trichloroethane	10.0	10.3	ug/L	103	SW846 8260B
Carbon tetrachloride	10.0	10.4	ug/L	104	SW846 8260B
Benzene	10.0	9.60	ug/L	96	SW846 8260B
1,2-Dichloroethane	10.0	9.16	ug/L	92	SW846 8260B
Trichloroethene	10.0	9.90	ug/L	99	SW846 8260B
1,2-Dichloropropane	10.0	9.22	ug/L	92	SW846 8260B
Bromodichloromethane	10.0	9.66	ug/L	97	SW846 8260B
cis-1,3-Dichloropropene	10.0	9.65	ug/L	97	SW846 8260B
4-Methyl-2-pentanone	10.0	9.09	ug/L	91	SW846 8260B
Toluene	10.0	9.29	ug/L	93	SW846 8260B
trans-1,3-Dichloropropene	10.0	9.94	ug/L	99	SW846 8260B
1,1,2-Trichloroethane	10.0	9.19	ug/L	92	SW846 8260B
1,1-Dichloroethene	10.0	10.1	ug/L	101	SW846 8260B
Carbon disulfide	10.0	9.11	ug/L	91	SW846 8260B
Methylene chloride	10.0	8.89	ug/L	89	SW846 8260B
1,1-Dichloroethane	10.0	9.96	ug/L	100	SW846 8260B
Chloromethane	10.0	9.80	ug/L	98	SW846 8260B
Vinyl chloride	10.0	10.6	ug/L	106	SW846 8260B
Bromomethane	10.0	10.2	ug/L	102	SW846 8260B
Chloroethane	10.0	9.95	ug/L	100	SW846 8260B
Acetone	10.0	7.51	ug/L	75	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 **Work Order #...**: MNT7L1AC **Matrix.....**: WATER
LCS Lot-Sample#: F1K080000-258

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Toluene-d8	92	(76 - 123)
Dibromofluoromethane	91	(77 - 118)
1,2-Dichloroethane-d4	88	(66 - 125)
4-Bromofluorobenzene	96	(74 - 120)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNW881AC Matrix.....: WATER
 LCS Lot-Sample#: F1K100000-217
 Prep Date.....: 11/10/11 Analysis Date...: 11/10/11
 Prep Batch #...: 1314217
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
1,2-Dichloroethene (total)	20.0	19.6	ug/L	98	SW846 8260B
Dibromochloromethane	10.0	9.89	ug/L	99	SW846 8260B
Tetrachloroethene	10.0	10.6	ug/L	106	SW846 8260B
2-Hexanone	10.0	8.49	ug/L	85	SW846 8260B
Chlorobenzene	10.0	10.1	ug/L	101	SW846 8260B
Ethylbenzene	10.0	9.88	ug/L	99	SW846 8260B
Styrene	10.0	11.1	ug/L	111	SW846 8260B
Bromoform	10.0	11.0	ug/L	110	SW846 8260B
1,1,2,2-Tetrachloroethane	10.0	8.44	ug/L	84	SW846 8260B
2-Butanone	10.0	7.52	ug/L	75	SW846 8260B
Chloroform	10.0	9.97	ug/L	100	SW846 8260B
1,1,1-Trichloroethane	10.0	10.4	ug/L	104	SW846 8260B
Carbon tetrachloride	10.0	10.3	ug/L	103	SW846 8260B
Benzene	10.0	9.83	ug/L	98	SW846 8260B
1,2-Dichloroethane	10.0	9.52	ug/L	95	SW846 8260B
Trichloroethene	10.0	9.93	ug/L	99	SW846 8260B
1,2-Dichloropropane	10.0	9.59	ug/L	96	SW846 8260B
Bromodichloromethane	10.0	10.1	ug/L	101	SW846 8260B
cis-1,3-Dichloropropene	10.0	9.91	ug/L	99	SW846 8260B
4-Methyl-2-pentanone	10.0	8.97	ug/L	90	SW846 8260B
Toluene	10.0	9.15	ug/L	92	SW846 8260B
trans-1,3-Dichloropropene	10.0	9.84	ug/L	98	SW846 8260B
1,1,2-Trichloroethane	10.0	8.92	ug/L	89	SW846 8260B
1,1-Dichloroethene	10.0	10.1	ug/L	101	SW846 8260B
Carbon disulfide	10.0	8.88	ug/L	89	SW846 8260B
Methylene chloride	10.0	9.06	ug/L	91	SW846 8260B
1,1-Dichloroethane	10.0	10.2	ug/L	102	SW846 8260B
Chloromethane	10.0	9.64	ug/L	96	SW846 8260B
Vinyl chloride	10.0	10.2	ug/L	102	SW846 8260B
Bromomethane	10.0	10.2	ug/L	102	SW846 8260B
Chloroethane	10.0	9.71	ug/L	97	SW846 8260B
Acetone	10.0	7.64	ug/L	76	SW846 8260B

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 **Work Order #...**: MNW881AC **Matrix.....**: WATER
LCS Lot-Sample#: F1K100000-217

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Toluene-d8	93	(76 - 123)
Dibromofluoromethane	95	(77 - 118)
1,2-Dichloroethane-d4	92	(66 - 125)
4-Bromofluorobenzene	100	(74 - 120)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNQ5L1AE-MS Matrix.....: WATER
 MS Lot-Sample #: F1K050418-001 MNQ5L1AF-MSD
 Date Sampled...: 11/04/11 Date Received...: 11/05/11
 Prep Date.....: 11/07/11 Analysis Date...: 11/07/11
 Prep Batch #...: 1311189
 Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
1,2-Dichloroethene (total)	ND	20.0	19.1	ug/L	96		SW846 8260B
	ND	20.0	19.4	ug/L	97	1.2	SW846 8260B
Dibromochloromethane	ND	10.0	10.0	ug/L	100		SW846 8260B
	ND	10.0	10.1	ug/L	101	1.0	SW846 8260B
Tetrachloroethene	ND	10.0	10.4	ug/L	104		SW846 8260B
	ND	10.0	9.96	ug/L	100	4.0	SW846 8260B
2-Hexanone	ND	10.0	8.74	ug/L	87		SW846 8260B
	ND	10.0	9.24	ug/L	92	5.6	SW846 8260B
Chlorobenzene	ND	10.0	10.0	ug/L	100		SW846 8260B
	ND	10.0	9.91	ug/L	99	0.86	SW846 8260B
Ethylbenzene	ND	10.0	9.90	ug/L	99		SW846 8260B
	ND	10.0	9.68	ug/L	97	2.3	SW846 8260B
Styrene	ND	10.0	10.9	ug/L	109		SW846 8260B
	ND	10.0	10.8	ug/L	108	0.64	SW846 8260B
Bromoform	ND	10.0	10.4	ug/L	104		SW846 8260B
	ND	10.0	11.3	ug/L	113	8.6	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	10.0	6.99	ug/L	70		SW846 8260B
	ND	10.0	7.54	ug/L	75	7.5	SW846 8260B
2-Butanone	ND	10.0	8.64	ug/L	86		SW846 8260B
	ND	10.0	8.74	ug/L	87	1.2	SW846 8260B
Chloroform	1.8	10.0	11.9	ug/L	101		SW846 8260B
	1.8	10.0	11.9	ug/L	101	0.08	SW846 8260B
1,1,1-Trichloroethane	ND	10.0	10.3	ug/L	103		SW846 8260B
	ND	10.0	10.0	ug/L	100	2.8	SW846 8260B
Carbon tetrachloride	9.6	10.0	19.5	ug/L	99		SW846 8260B
	9.6	10.0	18.9	ug/L	93	2.9	SW846 8260B
Benzene	ND	10.0	9.79	ug/L	98		SW846 8260B
	ND	10.0	9.83	ug/L	98	0.39	SW846 8260B
1,2-Dichloroethane	ND	10.0	9.55	ug/L	96		SW846 8260B
	ND	10.0	9.66	ug/L	97	1.1	SW846 8260B
Trichloroethene	ND	10.0	10.4	ug/L	104		SW846 8260B
	ND	10.0	10.3	ug/L	103	0.96	SW846 8260B
1,2-Dichloropropane	ND	10.0	9.55	ug/L	96		SW846 8260B
	ND	10.0	9.60	ug/L	96	0.50	SW846 8260B
Bromodichloromethane	ND	10.0	10.2	ug/L	102		SW846 8260B
	ND	10.0	10.3	ug/L	103	0.97	SW846 8260B
cis-1,3-Dichloropropene	ND	10.0	9.95	ug/L	99		SW846 8260B
	ND	10.0	9.94	ug/L	99	0.05	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNQ5L1AE-MS Matrix.....: WATER
 MS Lot-Sample #: F1K050418-001 MNQ5L1AF-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
4-Methyl-2-pentanone	ND	10.0	9.33	ug/L	93		SW846 8260B
	ND	10.0	9.09	ug/L	91	2.6	SW846 8260B
Toluene	ND	10.0	10.1	ug/L	101		SW846 8260B
	ND	10.0	9.73	ug/L	97	3.6	SW846 8260B
trans-1,3-Dichloropropene	ND	10.0	9.97	ug/L	100		SW846 8260B
	ND	10.0	9.95	ug/L	99	0.20	SW846 8260B
1,1,2-Trichloroethane	ND	10.0	9.16	ug/L	92		SW846 8260B
	ND	10.0	9.28	ug/L	93	1.3	SW846 8260B
1,1-Dichloroethene	0.81	10.0	10.6	ug/L	98		SW846 8260B
	0.81	10.0	10.6	ug/L	98	0.09	SW846 8260B
Carbon disulfide	ND	10.0	8.76	ug/L	88		SW846 8260B
	ND	10.0	8.76	ug/L	88	0.08	SW846 8260B
Methylene chloride	ND	10.0	8.92	ug/L	89		SW846 8260B
	ND	10.0	9.05	ug/L	90	1.5	SW846 8260B
1,1-Dichloroethane	ND	10.0	9.96	ug/L	100		SW846 8260B
	ND	10.0	9.89	ug/L	99	0.68	SW846 8260B
Chloromethane	ND	10.0	10.0	ug/L	100		SW846 8260B
	ND	10.0	9.92	ug/L	99	0.92	SW846 8260B
Vinyl chloride	ND	10.0	10.4	ug/L	104		SW846 8260B
	ND	10.0	10.6	ug/L	106	1.0	SW846 8260B
Bromomethane	ND	10.0	10.4	ug/L	104		SW846 8260B
	ND	10.0	10.2	ug/L	102	1.6	SW846 8260B
Chloroethane	ND	10.0	9.79	ug/L	98		SW846 8260B
	ND	10.0	9.66	ug/L	97	1.2	SW846 8260B
Acetone	1.7	10.0	7.90	ug/L	62		SW846 8260B
	1.7	10.0	7.31	ug/L	56	7.6	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	89	(68 - 123)
	88	(68 - 123)
Dibromofluoromethane	92	(71 - 123)
	95	(71 - 123)
1,2-Dichloroethane-d4	90	(69 - 121)
	90	(69 - 121)
4-Bromofluorobenzene	93	(68 - 122)
	97	(68 - 122)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNR9C1AE-MS Matrix.....: WATER
 MS Lot-Sample #: F1K080422-001 MNR9C1AF-MSD
 Date Sampled...: 11/07/11 Date Received...: 11/08/11
 Prep Date.....: 11/08/11 Analysis Date...: 11/08/11
 Prep Batch #...: 1312258
 Dilution Factor: 1

PARAMETER	SAMPLE	SPIKE	MEASRD	UNITS	PERCNT		METHOD	
	AMOUNT	AMT	AMOUNT		RECVRY	RPD		
1,2-Dichloroethene	ND	20.0	18.7	ug/L	94		SW846	8260B
(total)	ND	20.0	18.6	ug/L	93	0.85	SW846	8260B
Dibromochloromethane	ND	10.0	10.1	ug/L	101		SW846	8260B
	ND	10.0	9.91	ug/L	99	1.9	SW846	8260B
Tetrachloroethene	ND	10.0	10.0	ug/L	100		SW846	8260B
	ND	10.0	9.91	ug/L	99	1.3	SW846	8260B
2-Hexanone	ND	10.0	9.24	ug/L	92		SW846	8260B
	ND	10.0	8.61	ug/L	86	7.0	SW846	8260B
Chlorobenzene	ND	10.0	10.1	ug/L	101		SW846	8260B
	ND	10.0	9.89	ug/L	99	1.8	SW846	8260B
Ethylbenzene	ND	10.0	9.74	ug/L	97		SW846	8260B
	ND	10.0	9.48	ug/L	95	2.7	SW846	8260B
Styrene	ND	10.0	10.9	ug/L	109		SW846	8260B
	ND	10.0	10.6	ug/L	106	2.3	SW846	8260B
Bromoform	ND	10.0	10.6	ug/L	106		SW846	8260B
	ND	10.0	11.0	ug/L	110	4.2	SW846	8260B
1,1,2,2-Tetrachloroethane	ND	10.0	8.45	ug/L	84		SW846	8260B
	ND	10.0	8.45	ug/L	85	0.08	SW846	8260B
2-Butanone	ND	10.0	8.74	ug/L	87		SW846	8260B
	ND	10.0	8.08	ug/L	81	7.8	SW846	8260B
Chloroform	2.8	10.0	12.4	ug/L	95		SW846	8260B
	2.8	10.0	11.6	ug/L	88	6.3	SW846	8260B
1,1,1-Trichloroethane	ND	10.0	9.75	ug/L	97		SW846	8260B
	ND	10.0	9.71	ug/L	97	0.34	SW846	8260B
Carbon tetrachloride	24	10.0	31.3	ug/L	73		SW846	8260B
	24	10.0	31.8	ug/L	78	1.5	SW846	8260B
Benzene	ND	10.0	9.43	ug/L	94		SW846	8260B
	ND	10.0	9.46	ug/L	95	0.36	SW846	8260B
1,2-Dichloroethane	ND	10.0	9.27	ug/L	93		SW846	8260B
	ND	10.0	9.25	ug/L	93	0.22	SW846	8260B
Trichloroethene	0.32	10.0	9.81	ug/L	95		SW846	8260B
	0.32	10.0	9.75	ug/L	94	0.65	SW846	8260B
1,2-Dichloropropane	ND	10.0	9.25	ug/L	92		SW846	8260B
	ND	10.0	9.42	ug/L	94	1.8	SW846	8260B
Bromodichloromethane	ND	10.0	9.67	ug/L	97		SW846	8260B
	ND	10.0	10.3	ug/L	103	6.4	SW846	8260B
cis-1,3-Dichloropropene	ND	10.0	9.52	ug/L	95		SW846	8260B
	ND	10.0	9.59	ug/L	96	0.80	SW846	8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNR9C1AE-MS Matrix.....: WATER
 MS Lot-Sample #: F1K080422-001 MNR9C1AF-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
4-Methyl-2-pentanone	ND	10.0	9.29	ug/L	93		SW846 8260B
	ND	10.0	8.30	ug/L	83	11	SW846 8260B
Toluene	ND	10.0	10.1	ug/L	101		SW846 8260B
	ND	10.0	9.94	ug/L	99	1.7	SW846 8260B
trans-1,3-Dichloropropene	ND	10.0	9.82	ug/L	98		SW846 8260B
	ND	10.0	9.88	ug/L	99	0.66	SW846 8260B
1,1,2-Trichloroethane	ND	10.0	9.21	ug/L	92		SW846 8260B
	ND	10.0	8.86	ug/L	89	3.9	SW846 8260B
1,1-Dichloroethene	ND	10.0	10.1	ug/L	101		SW846 8260B
	ND	10.0	10.3	ug/L	103	2.1	SW846 8260B
Carbon disulfide	ND	10.0	8.37	ug/L	84		SW846 8260B
	ND	10.0	8.52	ug/L	85	1.7	SW846 8260B
Methylene chloride	ND	10.0	9.14	ug/L	91		SW846 8260B
	ND	10.0	8.99	ug/L	90	1.7	SW846 8260B
1,1-Dichloroethane	ND	10.0	9.48	ug/L	95		SW846 8260B
	ND	10.0	9.78	ug/L	98	3.1	SW846 8260B
Chloromethane	ND	10.0	9.03	ug/L	90		SW846 8260B
	ND	10.0	9.37	ug/L	94	3.7	SW846 8260B
Vinyl chloride	ND	10.0	9.94	ug/L	99		SW846 8260B
	ND	10.0	10.1	ug/L	101	1.2	SW846 8260B
Bromomethane	ND	10.0	9.59	ug/L	96		SW846 8260B
	ND	10.0	9.71	ug/L	97	1.2	SW846 8260B
Chloroethane	ND	10.0	9.06	ug/L	91		SW846 8260B
	ND	10.0	9.20	ug/L	92	1.5	SW846 8260B
Acetone	ND	10.0	7.21	ug/L	72		SW846 8260B
	ND	10.0	8.04	ug/L	80	11	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	Toluene-d8	90
	91	(68 - 123)
Dibromofluoromethane	95	(71 - 123)
	94	(71 - 123)
1,2-Dichloroethane-d4	92	(69 - 121)
	88	(69 - 121)
4-Bromofluorobenzene	98	(68 - 122)
	97	(68 - 122)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Boild print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNW1K1AC-MS Matrix.....: WATER
 MS Lot-Sample #: F1K100465-001 MNW1K1AD-MSD
 Date Sampled...: 11/09/11 Date Received...: 11/10/11
 Prep Date.....: 11/10/11 Analysis Date...: 11/10/11
 Prep Batch #...: 1314217
 Dilution Factor: 1

PARAMETER	SAMPLE	SPIKE	MEASRD	UNITS	PERCNT		METHOD	
	AMOUNT	AMT	AMOUNT		RECVRY	RPD		
1,2-Dichloroethene	ND	20.0	18.7	ug/L	94		SW846	8260B
(total)	ND	20.0	19.0	ug/L	95	1.3	SW846	8260B
Dibromochloromethane	ND	10.0	9.62	ug/L	96		SW846	8260B
	ND	10.0	9.65	ug/L	97	0.33	SW846	8260B
Tetrachloroethene	ND	10.0	9.97	ug/L	100		SW846	8260B
	ND	10.0	9.95	ug/L	99	0.18	SW846	8260B
2-Hexanone	ND	10.0	7.95	ug/L	80		SW846	8260B
	ND	10.0	7.97	ug/L	80	0.26	SW846	8260B
Chlorobenzene	ND	10.0	9.90	ug/L	99		SW846	8260B
	ND	10.0	9.78	ug/L	98	1.2	SW846	8260B
Ethylbenzene	ND	10.0	9.61	ug/L	96		SW846	8260B
	ND	10.0	9.66	ug/L	97	0.57	SW846	8260B
Styrene	ND	10.0	10.6	ug/L	106		SW846	8260B
	ND	10.0	10.7	ug/L	107	0.37	SW846	8260B
Bromoform	ND	10.0	10.6	ug/L	106		SW846	8260B
	ND	10.0	10.8	ug/L	108	2.4	SW846	8260B
1,1,2,2-Tetrachloroethane	ND	10.0	8.65	ug/L	87		SW846	8260B
	ND	10.0	9.00	ug/L	90	3.9	SW846	8260B
2-Butanone	ND	10.0	8.23	ug/L	82		SW846	8260B
	ND	10.0	9.09	ug/L	91	9.9	SW846	8260B
Chloroform	ND	10.0	9.71	ug/L	97		SW846	8260B
	ND	10.0	9.68	ug/L	97	0.24	SW846	8260B
1,1,1-Trichloroethane	ND	10.0	9.55	ug/L	95		SW846	8260B
	ND	10.0	9.64	ug/L	96	0.99	SW846	8260B
Carbon tetrachloride	ND	10.0	9.73	ug/L	97		SW846	8260B
	ND	10.0	9.71	ug/L	97	0.20	SW846	8260B
Benzene	ND	10.0	9.68	ug/L	97		SW846	8260B
	ND	10.0	9.79	ug/L	98	1.2	SW846	8260B
1,2-Dichloroethane	ND	10.0	9.33	ug/L	93		SW846	8260B
	ND	10.0	9.26	ug/L	93	0.72	SW846	8260B
Trichloroethene	ND	10.0	9.46	ug/L	95		SW846	8260B
	ND	10.0	9.45	ug/L	94	0.14	SW846	8260B
1,2-Dichloropropane	ND	10.0	9.18	ug/L	92		SW846	8260B
	ND	10.0	9.22	ug/L	92	0.47	SW846	8260B
Bromodichloromethane	ND	10.0	10.3	ug/L	103		SW846	8260B
	ND	10.0	9.84	ug/L	98	4.1	SW846	8260B
cis-1,3-Dichloropropene	ND	10.0	9.43	ug/L	94		SW846	8260B
	ND	10.0	9.38	ug/L	94	0.51	SW846	8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1198 Work Order #...: MNW1K1AC-MS Matrix.....: WATER

MS Lot-Sample #: F1K100465-001 MNW1K1AD-MSD

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
4-Methyl-2-pentanone	ND	10.0	9.18	ug/L	92		SW846 8260B
	ND	10.0	9.21	ug/L	92	0.31	SW846 8260B
Toluene	ND	10.0	8.90	ug/L	89		SW846 8260B
	ND	10.0	9.05	ug/L	90	1.7	SW846 8260B
trans-1,3-Dichloropropene	ND	10.0	9.66	ug/L	97		SW846 8260B
	ND	10.0	9.57	ug/L	96	0.89	SW846 8260B
1,1,2-Trichloroethane	ND	10.0	9.04	ug/L	90		SW846 8260B
	ND	10.0	9.05	ug/L	90	0.12	SW846 8260B
1,1-Dichloroethene	ND	10.0	9.29	ug/L	93		SW846 8260B
	ND	10.0	9.33	ug/L	93	0.48	SW846 8260B
Carbon disulfide	ND	10.0	8.19	ug/L	82		SW846 8260B
	ND	10.0	8.34	ug/L	83	1.8	SW846 8260B
Methylene chloride	1.7	10.0	10.2	ug/L	85		SW846 8260B
	1.7	10.0	10.3	ug/L	86	1.6	SW846 8260B
1,1-Dichloroethane	ND	10.0	9.53	ug/L	95		SW846 8260B
	ND	10.0	9.53	ug/L	95	0.03	SW846 8260B
Chloromethane	ND	10.0	8.99	ug/L	90		SW846 8260B
	ND	10.0	9.20	ug/L	92	2.3	SW846 8260B
Vinyl chloride	ND	10.0	9.34	ug/L	93		SW846 8260B
	ND	10.0	9.56	ug/L	96	2.3	SW846 8260B
Bromomethane	ND	10.0	9.52	ug/L	95		SW846 8260B
	ND	10.0	9.60	ug/L	96	0.75	SW846 8260B
Chloroethane	ND	10.0	8.75	ug/L	88		SW846 8260B
	ND	10.0	8.71	ug/L	87	0.48	SW846 8260B
Acetone	ND	10.0	6.43	ug/L	64		SW846 8260B
	ND	10.0	6.80	ug/L	68	5.5	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	90	(68 - 123)
	93	(68 - 123)
Dibromofluoromethane	94	(71 - 123)
	95	(71 - 123)
1,2-Dichloroethane-d4	89	(69 - 121)
	91	(69 - 121)
4-Bromofluorobenzene	98	(68 - 122)
	103	(68 - 122)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

NOVEMBER 13, 2011

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1199 Work Order #...: MNRLT1AA Matrix.....: WATER
 MB Lot-Sample #: F1K070000-127
 Analysis Date...: 11/07/11 Prep Date.....: 11/07/11
 Dilution Factor: 1 Prep Batch #...: 1311127

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
SURROGATE	PERCENT	RECOVERY		
	RECOVERY	LIMITS		
Toluene-d8	110	(68 - 123)		
Dibromofluoromethane	106	(71 - 123)		
1,2-Dichloroethane-d4	104	(69 - 121)		
4-Bromofluorobenzene	100	(68 - 122)		

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NOVEMBER 13, 2011

CH2M Hill Plateau Remediation DOE RL

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F1K070000-127 B Work Order #: MNRLT1AA Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

NOVEMBER 13, 2011

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1199 Work Order #...: MNRLT1AC Matrix.....: WATER
 LCS Lot-Sample#: F1K070000-127
 Prep Date.....: 11/07/11 Analysis Date...: 11/07/11
 Prep Batch #...: 1311127
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>METHOD</u>
Chloroform	10.0	9.96	ug/L	100	SW846 8260B
Carbon tetrachloride	10.0	10.8	ug/L	108	SW846 8260B
Trichloroethene	10.0	10.5	ug/L	105	SW846 8260B

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
Toluene-d8	108	(76 - 123)
Dibromofluoromethane	99	(77 - 118)
1,2-Dichloroethane-d4	96	(66 - 125)
4-Bromofluorobenzene	93	(74 - 120)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

NOVEMBER 13, 2011

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1199 Work Order #...: MNQF11AE-MS Matrix.....: WATER
 MS Lot-Sample #: F1K040446-001 MNQF11AF-MSD
 Date Sampled...: 11/03/11 Date Received...: 11/04/11
 Prep Date.....: 11/07/11 Analysis Date...: 11/07/11
 Prep Batch #...: 1311127
 Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Chloroform	1.6	10.0	11.7	ug/L	100		SW846 8260B
	1.6	10.0	11.4	ug/L	98	2.4	SW846 8260B
Carbon tetrachloride	4.9	10.0	15.8	ug/L	109		SW846 8260B
	4.9	10.0	15.3	ug/L	105	2.7	SW846 8260B
Trichloroethene	ND	10.0	10.5	ug/L	105		SW846 8260B
	ND	10.0	10.4	ug/L	104	1.8	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	107	(68 - 123)
	111	(68 - 123)
Dibromofluoromethane	99	(71 - 123)
	104	(71 - 123)
1,2-Dichloroethane-d4	96	(69 - 121)
	98	(69 - 121)
4-Bromofluorobenzene	94	(68 - 122)
	98	(68 - 122)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN4GF1AA Matrix.....: WATER
 MB Lot-Sample #: F1K170000-204
 Prep Date.....: 11/17/11
 Analysis Date...: 11/17/11 Prep Batch #...: 1321204
 Dilution Factor: 1

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Acetone	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	98	(68 - 123)
Dibromofluoromethane	94	(71 - 123)
1,2-Dichloroethane-d4	96	(69 - 121)
4-Bromofluorobenzene	93	(68 - 122)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1216

Work Order #...: MN4GF1AA

Matrix.....: WATER

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

CH2M Hill Plateau Remediation DOE RL

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F1K170000-204 B Work Order #: MN4GF1AA Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN50C1AA Matrix.....: WATER
 MB Lot-Sample #: F1K180000-173
 Prep Date.....: 11/18/11
 Analysis Date...: 11/18/11 Prep Batch #...: 1322173
 Dilution Factor: 1

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		
		<u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>		
Toluene-d8	96	(68 - 123)		
Dibromofluoromethane	112	(71 - 123)		
1,2-Dichloroethane-d4	111	(69 - 121)		
4-Bromofluorobenzene	94	(68 - 122)		

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

CH2M Hill Plateau Remediation DOE RL

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F1K180000-173 B Work Order #: MN50C1AA Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN8K71AA Matrix.....: WATER
 MB Lot-Sample #: F1K220000-275
 Prep Date.....: 11/22/11
 Analysis Date..: 11/22/11 Prep Batch #...: 1326275
 Dilution Factor: 1

PARAMETER	RESULT	REPORTING		
		LIMIT	UNITS	METHOD
1,2-Dichloroethene (total)	ND	2.0	ug/L	SW846 8260B
Dibromochloromethane	ND	1.0	ug/L	SW846 8260B
Tetrachloroethene	ND	1.0	ug/L	SW846 8260B
2-Hexanone	ND	5.0	ug/L	SW846 8260B
Chlorobenzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	3.0	ug/L	SW846 8260B
Styrene	ND	1.0	ug/L	SW846 8260B
Bromoform	ND	1.0	ug/L	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	SW846 8260B
2-Butanone	ND	5.0	ug/L	SW846 8260B
Chloroform	ND	1.0	ug/L	SW846 8260B
1,1,1-Trichloroethane	ND	1.0	ug/L	SW846 8260B
Carbon tetrachloride	ND	1.0	ug/L	SW846 8260B
Benzene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Trichloroethene	ND	1.0	ug/L	SW846 8260B
1,2-Dichloropropane	ND	1.0	ug/L	SW846 8260B
Bromodichloromethane	ND	1.0	ug/L	SW846 8260B
cis-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
4-Methyl-2-pentanone	ND	5.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
trans-1,3-Dichloropropene	ND	1.0	ug/L	SW846 8260B
1,1,2-Trichloroethane	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethene	ND	1.0	ug/L	SW846 8260B
Carbon disulfide	ND	1.0	ug/L	SW846 8260B
Methylene chloride	ND	1.0	ug/L	SW846 8260B
1,1-Dichloroethane	ND	1.0	ug/L	SW846 8260B
Chloromethane	ND	2.0	ug/L	SW846 8260B
Vinyl chloride	ND	2.0	ug/L	SW846 8260B
Bromomethane	ND	2.0	ug/L	SW846 8260B
Chloroethane	ND	2.0	ug/L	SW846 8260B
Acetone	ND	2.0	ug/L	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	106	(68 - 123)
Dibromofluoromethane	94	(71 - 123)
1,2-Dichloroethane-d4	97	(69 - 121)
4-Bromofluorobenzene	96	(68 - 122)

(Continued on next page)

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: SL1216

Work Order #...: MN8K71AA

Matrix.....: WATER

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

CH2M Hill Plateau Remediation DOE RL

Method Blank Report

GC/MS Volatiles

Lot-Sample #: F1K220000-275 B Work Order #: MN8K71AA Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

<u>PARAMETER</u>	<u>CAS #</u>	<u>ESTIMATED RESULT</u>	<u>RETENTION TIME</u>	<u>UNITS</u>
None				ug/L

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN4GF1AC Matrix.....: WATER
 LCS Lot-Sample#: F1K170000-204
 Prep Date.....: 11/17/11 Analysis Date...: 11/17/11
 Prep Batch #...: 1321204
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECOVERY</u>	<u>METHOD</u>
1,2-Dichloroethene (total)	20.0	19.0	ug/L	95	SW846 8260B
Dibromochloromethane	10.0	9.79	ug/L	98	SW846 8260B
Tetrachloroethene	10.0	9.65	ug/L	96	SW846 8260B
2-Hexanone	10.0	9.04	ug/L	90	SW846 8260B
Chlorobenzene	10.0	9.04	ug/L	90	SW846 8260B
Ethylbenzene	10.0	9.70	ug/L	97	SW846 8260B
Styrene	10.0	10.4	ug/L	104	SW846 8260B
Bromoform	10.0	9.38	ug/L	94	SW846 8260B
1,1,2,2-Tetrachloroethane	10.0	8.53	ug/L	85	SW846 8260B
2-Butanone	10.0	8.80	ug/L	88	SW846 8260B
Chloroform	10.0	9.42	ug/L	94	SW846 8260B
1,1,1-Trichloroethane	10.0	9.84	ug/L	98	SW846 8260B
Carbon tetrachloride	10.0	9.82	ug/L	98	SW846 8260B
Benzene	10.0	9.19	ug/L	92	SW846 8260B
1,2-Dichloroethane	10.0	9.10	ug/L	91	SW846 8260B
Trichloroethene	10.0	9.20	ug/L	92	SW846 8260B
1,2-Dichloropropane	10.0	9.10	ug/L	91	SW846 8260B
Bromodichloromethane	10.0	9.71	ug/L	97	SW846 8260B
cis-1,3-Dichloropropene	10.0	9.67	ug/L	97	SW846 8260B
4-Methyl-2-pentanone	10.0	8.41	ug/L	84	SW846 8260B
Toluene	10.0	9.03	ug/L	90	SW846 8260B
trans-1,3-Dichloropropene	10.0	9.96	ug/L	100	SW846 8260B
1,1,2-Trichloroethane	10.0	9.24	ug/L	92	SW846 8260B
1,1-Dichloroethene	10.0	9.89	ug/L	99	SW846 8260B
Carbon disulfide	10.0	8.33	ug/L	83	SW846 8260B
Methylene chloride	10.0	9.46	ug/L	95	SW846 8260B
1,1-Dichloroethane	10.0	9.38	ug/L	94	SW846 8260B
Chloromethane	10.0	9.67	ug/L	97	SW846 8260B
Vinyl chloride	10.0	10.4	ug/L	104	SW846 8260B
Bromomethane	10.0	9.39	ug/L	94	SW846 8260B
Chloroethane	10.0	9.58	ug/L	96	SW846 8260B
Acetone	10.0	7.37	ug/L	74	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN4GF1AC Matrix.....: WATER
 LCS Lot-Sample#: F1K170000-204

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Toluene-d8	95	(76 - 123)
Dibromofluoromethane	96	(77 - 118)
1,2-Dichloroethane-d4	95	(66 - 125)
4-Bromofluorobenzene	93	(74 - 120)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN50C1AC-LCS Matrix.....: WATER
 LCS Lot-Sample#: F1K180000-173 MN50C1AD-LCSD
 Prep Date.....: 11/18/11 Analysis Date...: 11/18/11
 Prep Batch #...: 1322173
 Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
Carbon tetrachloride	10.0	10.8	ug/L	108		SW846 8260B
	10.0	10.6	ug/L	106	2.4	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	98	(76 - 123)
	95	(76 - 123)
Dibromofluoromethane	107	(77 - 118)
	106	(77 - 118)
1,2-Dichloroethane-d4	106	(66 - 125)
	108	(66 - 125)
4-Bromofluorobenzene	102	(74 - 120)
	101	(74 - 120)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN8K71AC Matrix.....: WATER
 LCS Lot-Sample#: F1K220000-275
 Prep Date.....: 11/22/11 Analysis Date...: 11/22/11
 Prep Batch #...: 1326275
 Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>METHOD</u>
1,2-Dichloroethene (total)	20.0	18.9	ug/L	95	SW846 8260B
Dibromochloromethane	10.0	9.81	ug/L	98	SW846 8260B
Tetrachloroethene	10.0	9.83	ug/L	98	SW846 8260B
2-Hexanone	10.0	10.5	ug/L	105	SW846 8260B
Chlorobenzene	10.0	9.37	ug/L	94	SW846 8260B
Ethylbenzene	10.0	9.78	ug/L	98	SW846 8260B
Styrene	10.0	10.7	ug/L	107	SW846 8260B
Bromoform	10.0	10.1	ug/L	101	SW846 8260B
1,1,2,2-Tetrachloroethane	10.0	9.35	ug/L	93	SW846 8260B
2-Butanone	10.0	9.15	ug/L	91	SW846 8260B
Chloroform	10.0	9.29	ug/L	93	SW846 8260B
1,1,1-Trichloroethane	10.0	9.85	ug/L	99	SW846 8260B
Carbon tetrachloride	10.0	9.93	ug/L	99	SW846 8260B
Benzene	10.0	9.43	ug/L	94	SW846 8260B
1,2-Dichloroethane	10.0	9.37	ug/L	94	SW846 8260B
Trichloroethene	10.0	9.64	ug/L	96	SW846 8260B
1,2-Dichloropropane	10.0	9.26	ug/L	93	SW846 8260B
Bromodichloromethane	10.0	9.40	ug/L	94	SW846 8260B
cis-1,3-Dichloropropene	10.0	9.82	ug/L	98	SW846 8260B
4-Methyl-2-pentanone	10.0	9.77	ug/L	98	SW846 8260B
Toluene	10.0	9.81	ug/L	98	SW846 8260B
trans-1,3-Dichloropropene	10.0	9.80	ug/L	98	SW846 8260B
1,1,2-Trichloroethane	10.0	9.32	ug/L	93	SW846 8260B
1,1-Dichloroethene	10.0	10.0	ug/L	100	SW846 8260B
Carbon disulfide	10.0	12.2	ug/L	122	SW846 8260B
Methylene chloride	10.0	9.29	ug/L	93	SW846 8260B
1,1-Dichloroethane	10.0	9.40	ug/L	94	SW846 8260B
Chloromethane	10.0	9.44	ug/L	94	SW846 8260B
Vinyl chloride	10.0	10.2	ug/L	102	SW846 8260B
Bromomethane	10.0	9.22	ug/L	92	SW846 8260B
Chloroethane	10.0	9.18	ug/L	92	SW846 8260B
Acetone	10.0	9.68	ug/L	97	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN8K71AC Matrix.....: WATER
 LCS Lot-Sample#: F1K220000-275

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Toluene-d8	101	(76 - 123)
Dibromofluoromethane	96	(77 - 118)
1,2-Dichloroethane-d4	92	(66 - 125)
4-Bromofluorobenzene	96	(74 - 120)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN3T91AX-MS Matrix.....: WATER
 MS Lot-Sample #: F1K170416-001 MN3T91A0-MSD
 Date Sampled...: 11/16/11 Date Received...: 11/17/11
 Prep Date.....: 11/17/11 Analysis Date...: 11/17/11
 Prep Batch #...: 1321204
 Dilution Factor: 1

PARAMETER	SAMPLE	SPIKE	MEASRD	UNITS	PERCNT		METHOD	
	AMOUNT	AMT	AMOUNT		RECVRY	RPD		
1,2-Dichloroethene (total)	ND	20.0	20.2	ug/L	101		SW846	8260B
	ND	20.0	19.8	ug/L	99	1.8	SW846	8260B
Dibromochloromethane	ND	10.0	10.7	ug/L	107		SW846	8260B
	ND	10.0	10.5	ug/L	105	1.4	SW846	8260B
Tetrachloroethene	ND	10.0	10.1	ug/L	101		SW846	8260B
	ND	10.0	9.98	ug/L	100	1.6	SW846	8260B
2-Hexanone	ND	10.0	8.39	ug/L	84		SW846	8260B
	ND	10.0	8.92	ug/L	89	6.1	SW846	8260B
Chlorobenzene	ND	10.0	9.78	ug/L	98		SW846	8260B
	ND	10.0	9.73	ug/L	97	0.52	SW846	8260B
Ethylbenzene	ND	10.0	10.3	ug/L	103		SW846	8260B
	ND	10.0	10.3	ug/L	103	0.09	SW846	8260B
Styrene	ND	10.0	11.0	ug/L	110		SW846	8260B
	ND	10.0	10.9	ug/L	109	0.73	SW846	8260B
Bromoform	ND	10.0	10.4	ug/L	104		SW846	8260B
	ND	10.0	10.4	ug/L	104	0.67	SW846	8260B
1,1,2,2-Tetrachloroethane	ND	10.0	9.31	ug/L	93		SW846	8260B
	ND	10.0	9.95	ug/L	100	6.7	SW846	8260B
2-Butanone	ND	10.0	9.65	ug/L	96		SW846	8260B
	ND	10.0	9.00	ug/L	90	7.0	SW846	8260B
Chloroform	2.0	10.0	12.6	ug/L	106		SW846	8260B
	2.0	10.0	12.5	ug/L	106	0.63	SW846	8260B
1,1,1-Trichloroethane	ND	10.0	10.6	ug/L	106		SW846	8260B
	ND	10.0	10.4	ug/L	104	1.8	SW846	8260B
Benzene	ND	10.0	10.1	ug/L	101		SW846	8260B
	ND	10.0	9.85	ug/L	98	2.9	SW846	8260B
1,2-Dichloroethane	ND	10.0	9.85	ug/L	99		SW846	8260B
	ND	10.0	9.63	ug/L	96	2.3	SW846	8260B
Trichloroethene	1.2	10.0	11.0	ug/L	98		SW846	8260B
	1.2	10.0	10.9	ug/L	97	1.1	SW846	8260B
1,2-Dichloropropane	ND	10.0	10.1	ug/L	101		SW846	8260B
	ND	10.0	9.77	ug/L	98	3.1	SW846	8260B
Bromodichloromethane	ND	10.0	10.4	ug/L	104		SW846	8260B
	ND	10.0	10.5	ug/L	105	1.1	SW846	8260B
cis-1,3-Dichloropropene	ND	10.0	10.5	ug/L	105		SW846	8260B
	ND	10.0	10.2	ug/L	102	2.9	SW846	8260B
4-Methyl-2-pentanone	ND	10.0	8.64	ug/L	86		SW846	8260B
	ND	10.0	8.78	ug/L	88	1.6	SW846	8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN3T91AX-MS Matrix.....: WATER
 MS Lot-Sample #: F1K170416-001 MN3T91A0-MSD

PARAMETER	SAMPLE	SPIKE	MEASRD	UNITS	PERCNT		METHOD
	AMOUNT	AMT	AMOUNT		RECVRY	RPD	
Toluene	ND	10.0	9.96	ug/L	100		SW846 8260B
	ND	10.0	9.90	ug/L	99	0.55	SW846 8260B
trans-1,3-Dichloropropene	ND	10.0	10.5	ug/L	105		SW846 8260B
	ND	10.0	10.4	ug/L	104	1.5	SW846 8260B
1,1,2-Trichloroethane	ND	10.0	9.89	ug/L	99		SW846 8260B
	ND	10.0	9.69	ug/L	97	2.1	SW846 8260B
1,1-Dichloroethene	ND	10.0	10.2	ug/L	102		SW846 8260B
	ND	10.0	9.98	ug/L	100	1.8	SW846 8260B
Carbon disulfide	ND	10.0	8.34	ug/L	83		SW846 8260B
	ND	10.0	8.05	ug/L	80	3.6	SW846 8260B
Methylene chloride	ND	10.0	10.1	ug/L	101		SW846 8260B
	ND	10.0	9.90	ug/L	99	1.7	SW846 8260B
1,1-Dichloroethane	ND	10.0	10.1	ug/L	101		SW846 8260B
	ND	10.0	10.0	ug/L	100	0.49	SW846 8260B
Chloromethane	ND	10.0	9.48	ug/L	95		SW846 8260B
	ND	10.0	9.40	ug/L	94	0.89	SW846 8260B
Vinyl chloride	ND	10.0	10.2	ug/L	102		SW846 8260B
	ND	10.0	10.1	ug/L	101	0.89	SW846 8260B
Bromomethane	ND	10.0	9.36	ug/L	94		SW846 8260B
	ND	10.0	9.20	ug/L	92	1.8	SW846 8260B
Chloroethane	ND	10.0	9.39	ug/L	94		SW846 8260B
	ND	10.0	9.26	ug/L	93	1.4	SW846 8260B
Acetone	ND	10.0	8.35	ug/L	83		SW846 8260B
	ND	10.0	7.85	ug/L	79	6.1	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	92	(68 - 123)
	92	(68 - 123)
Dibromofluoromethane	101	(71 - 123)
	97	(71 - 123)
1,2-Dichloroethane-d4	90	(69 - 121)
	92	(69 - 121)
4-Bromofluorobenzene	94	(68 - 122)
	94	(68 - 122)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN4V11AE-MS Matrix.....: WATER
 MS Lot-Sample #: F1K180428-001 MN4V11AF-MSD
 Date Sampled...: 11/17/11 Date Received...: 11/18/11
 Prep Date.....: 11/18/11 Analysis Date...: 11/18/11
 Prep Batch #...: 1322173
 Dilution Factor: 1

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECVRY	RPD	METHOD
Carbon tetrachloride	9.7	10.0	20.3	ug/L	106		SW846 8260B
	9.7	10.0	19.4	ug/L	96	4.7	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	95	(68 - 123)
	96	(68 - 123)
Dibromofluoromethane	111	(71 - 123)
	107	(71 - 123)
1,2-Dichloroethane-d4	115	(69 - 121)
	108	(69 - 121)
4-Bromofluorobenzene	94	(68 - 122)
	101	(68 - 122)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.
 Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN69X1AC-MS Matrix.....: WATER
 MS Lot-Sample #: F1K220422-003 MN69X1AD-MSD
 Date Sampled...: 11/21/11 Date Received...: 11/22/11
 Prep Date.....: 11/22/11 Analysis Date...: 11/22/11
 Prep Batch #...: 1326275
 Dilution Factor: 1

PARAMETER	SAMPLE	SPIKE	MEASRD	UNITS	PERCNT		METHOD
	AMOUNT	AMT	AMOUNT		RECVRY	RPD	
1,2-Dichloroethene (total)	ND	20.0	18.4	ug/L	92		SW846 8260B
	ND	20.0	18.3	ug/L	92	0.21	SW846 8260B
Dibromochloromethane	ND	10.0	10.1	ug/L	101		SW846 8260B
	ND	10.0	10.2	ug/L	102	1.5	SW846 8260B
Tetrachloroethene	ND	10.0	9.16	ug/L	92		SW846 8260B
	ND	10.0	9.37	ug/L	94	2.3	SW846 8260B
2-Hexanone	ND	10.0	11.3	ug/L	113		SW846 8260B
	ND	10.0	10.4	ug/L	104	7.8	SW846 8260B
Chlorobenzene	ND	10.0	9.17	ug/L	92		SW846 8260B
	ND	10.0	9.26	ug/L	93	1.0	SW846 8260B
Ethylbenzene	ND	10.0	9.35	ug/L	93		SW846 8260B
	ND	10.0	9.40	ug/L	94	0.53	SW846 8260B
Styrene	ND	10.0	10.4	ug/L	104		SW846 8260B
	ND	10.0	10.1	ug/L	101	2.9	SW846 8260B
Bromoform	ND	10.0	10.3	ug/L	103		SW846 8260B
	ND	10.0	9.49	ug/L	95	8.0	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	10.0	9.71	ug/L	97		SW846 8260B
	ND	10.0	9.57	ug/L	96	1.4	SW846 8260B
2-Butanone	ND	10.0	9.80	ug/L	98		SW846 8260B
	ND	10.0	9.59	ug/L	96	2.1	SW846 8260B
Chloroform	2.9	10.0	12.1	ug/L	93		SW846 8260B
	2.9	10.0	12.7	ug/L	98	4.5	SW846 8260B
1,1,1-Trichloroethane	ND	10.0	9.38	ug/L	94		SW846 8260B
	ND	10.0	9.48	ug/L	95	1.0	SW846 8260B
Carbon tetrachloride	38	10.0	43.3	ug/L	49		SW846 8260B
	38	10.0	43.6	ug/L	52	0.69	SW846 8260B
Benzene	ND	10.0	9.37	ug/L	94		SW846 8260B
	ND	10.0	9.55	ug/L	95	1.9	SW846 8260B
1,2-Dichloroethane	ND	10.0	9.35	ug/L	93		SW846 8260B
	ND	10.0	8.87	ug/L	89	5.2	SW846 8260B
Trichloroethene	0.79	10.0	10.1	ug/L	93		SW846 8260B
	0.79	10.0	9.87	ug/L	91	2.0	SW846 8260B
1,2-Dichloropropane	ND	10.0	9.34	ug/L	93		SW846 8260B
	ND	10.0	9.28	ug/L	93	0.66	SW846 8260B
Bromodichloromethane	ND	10.0	9.62	ug/L	96		SW846 8260B
	ND	10.0	9.82	ug/L	98	2.1	SW846 8260B
cis-1,3-Dichloropropene	ND	10.0	9.99	ug/L	100		SW846 8260B
	ND	10.0	9.49	ug/L	95	5.1	SW846 8260B

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MATRIX SPIKE SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: SL1216 Work Order #...: MN69X1AC-MS Matrix.....: WATER
 MS Lot-Sample #: F1K220422-003 MN69X1AD-MSD

PARAMETER	SAMPLE	SPIKE	MEASRD	UNITS	PERCNT		METHOD
	AMOUNT	AMT	AMOUNT		RECVRY	RPD	
4-Methyl-2-pentanone	ND	10.0	9.72	ug/L	97		SW846 8260B
	ND	10.0	9.70	ug/L	97	0.14	SW846 8260B
Toluene	0.89	10.0	10.3	ug/L	94		SW846 8260B
	0.89	10.0	10.3	ug/L	94	0.0	SW846 8260B
trans-1,3-Dichloropropene	ND	10.0	9.56	ug/L	96		SW846 8260B
	ND	10.0	9.68	ug/L	97	1.2	SW846 8260B
1,1,2-Trichloroethane	ND	10.0	9.47	ug/L	95		SW846 8260B
	ND	10.0	9.09	ug/L	91	4.1	SW846 8260B
1,1-Dichloroethene	ND	10.0	9.14	ug/L	91		SW846 8260B
	ND	10.0	8.88	ug/L	89	2.9	SW846 8260B
Carbon disulfide	ND	10.0	11.2	ug/L	112		SW846 8260B
	ND	10.0	11.0	ug/L	110	1.7	SW846 8260B
Methylene chloride	ND	10.0	9.42	ug/L	94		SW846 8260B
	ND	10.0	9.48	ug/L	95	0.67	SW846 8260B
1,1-Dichloroethane	ND	10.0	9.33	ug/L	93		SW846 8260B
	ND	10.0	9.40	ug/L	94	0.74	SW846 8260B
Chloromethane	ND	10.0	8.48	ug/L	85		SW846 8260B
	ND	10.0	8.50	ug/L	85	0.27	SW846 8260B
Vinyl chloride	ND	10.0	9.00	ug/L	90		SW846 8260B
	ND	10.0	9.07	ug/L	91	0.73	SW846 8260B
Bromomethane	ND	10.0	8.77	ug/L	88		SW846 8260B
	ND	10.0	8.82	ug/L	88	0.51	SW846 8260B
Chloroethane	ND	10.0	8.73	ug/L	87		SW846 8260B
	ND	10.0	8.54	ug/L	85	2.2	SW846 8260B
Acetone	1.4	10.0	10.7	ug/L	93		SW846 8260B
	1.4	10.0	10.6	ug/L	92	0.75	SW846 8260B

SURROGATE	PERCENT	RECOVERY
	RECOVERY	LIMITS
Toluene-d8	99	(68 - 123)
	100	(68 - 123)
Dibromofluoromethane	101	(71 - 123)
	99	(71 - 123)
1,2-Dichloroethane-d4	98	(69 - 121)
	95	(69 - 121)
4-Bromofluorobenzene	100	(68 - 122)
	97	(68 - 122)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Date: 01 March 2012
 To: CH2M Hill (technical representative)
 From: Analytical Quality Associates, Inc.
 Project: FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water
 Subject: Inorganics - Sample Data Groups (SDGs) SL1198, SL1199 and SL1216

INTRODUCTION

This memorandum presents the results of data validation for SDGs SL1198, SL1199 and SL1216 prepared by TestAmerica. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B2BTC8	11/03/11	Water	C	6020
B2BTD2	11/03/11	Water	C	6020
B2BTC9	11/04/11	Water	C	6020
B2BTD0	11/07/11	Water	C	6020
B2BTD1	11/08/11	Water	C	6020
B2J9F4	11/09/11	Water	C	6020
B2J9F5	11/09/11	Water	C	6020
B2J9F6	11/10/11	Water	C	6020
B2BPJ1	11/03/11	Water	C	6020
B2BTJ6	11/15/11	Water	C	6020
B2BTJ7	11/16/11	Water	C	6020
B2BTJ8	11/17/11	Water	C	6020
B2JD78	11/21/11	Water	C	6020
B2JD84	11/21/11	Water	C	6020
B2JD90	11/22/11	Water	C	6020

Data validation was conducted in accordance with the CHPRC validation statement of work and the Sampling and Analysis Plan for Eight Remediation Wells in the 200-ZP-1 Operable Unit in FY 2011, DOE/RL-2010-72, Rev. 0, Volume 1 (SAP). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Documentation Requested By Client

DATA QUALITY OBJECTIVES

- **Holding Times and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The holding time requirement for ICP metals are analysis within 180 days of sample collection. Sample preservation requires acid preservation with nitric acid to pH <2.

The samples were analyzed within the prescribed holding times and properly preserved.

- **Blanks**

The blank data results are reviewed to assess the extent of contamination introduced through sampling, sample preparation, and analysis.

Laboratory Blanks

All laboratory blank results were acceptable with the following exception.

For SDG SL1216, batch 1322113, the Pb and Ni laboratory blank results were > the method detection limits (MDLs) but < the reporting limits (RLs). The Pb and Ni results for sample B2BTJ7 were detects below the associated RLs and should be qualified as non-detects at the RLs (Pb 3.0 µg/L and Ni 5.0 µg/L) and flagged "U."

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

No equipment blanks were submitted for validation.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results, laboratory control sample results, and ICP-AES interference check sample results. According to the SAP, the matrix spike sample and laboratory control sample accuracy limits are 80% to 120%. The limits for reported analytes not listed in the SAP are specified by the DV procedure. The interference check sample limits are ones specified by the DV procedure.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

All MS/MSD recoveries were acceptable.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

ICP-AES Interference Check Samples (ICSs)

ICS data was not included in the data package. Sample results should not be qualified based on this.

- **Precision**

Precision is evaluated by reviewing MS/MSD results, field duplicate sample results, field split sample results, and ICP serial dilution results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the relative percent difference (RPD) limits are $\pm 20\%$. The limits for reported analytes not listed in the SAP are specified by the DV procedure.

MS/MSD Samples

All MS/MSD RPD values were acceptable.

Field Duplicate Samples

All field duplicate results were acceptable.

Field Split Samples

No field splits were submitted for validation.

ICP Serial Dilution Samples

ICS serial dilution data was not included in the data package. Sample results should not be qualified based on this.

- **ICP-MS Internal Standards**

The analysis of ICP-MS internal standards is used to determine the existences and magnitude of instrument drift and physical interferences. The criteria for evaluation of internal standard results apply to all samples (including QC) analyzed during the analytical run, beginning with the calibration.

ICP-MS internal standards data was not included in the data package. Sample results should not be qualified based on this.

- **Detection Limits**

Reported MDLs are compared against the contractually required detection limits (CRDLs) to ensure that laboratory detection limits meet the required criteria.

All reported sample MDLs were below the CRDLs.

- **Completeness**

SDGs SL1198, SL1199 and SL1216 were submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

A minor deficiency leading to qualification of Ni and Pb sample results as non-detects was due to a laboratory blank infraction. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010.

DOE/RL-2010-72, Rev. 0, *Sampling and Analysis Plan for Eight Remediation Wells in the 200-ZP-1 Operable Unit in FY 2011*, September 2011.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers that may be applied by data validators in compliance with the CHPRC statement of work are as follows:

- **U** — The constituent was analyzed for, but was not detected. The data should be considered usable for decision-making purposes.
- **UJ** — The constituent was analyzed for and was not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the RL. The data should be considered usable for decision-making purposes.
- **J** — Indicates the constituent was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J+** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J-** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **N** — The analysis indicates the presence of an analyte that has been tentatively identified.
- **NJ** — The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
- **NJ+** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation.
- **NJ-** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation.
- **UR** — Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.
- **R** — Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

Appendix 2
Summary of Data Qualification

Inorganic Data Qualification Summary			
SDG: SL1198, SL1199 and SL1216	Reviewer: AQA	Project: FY2011 200- ZP-1 Remedial Action Wells Sampling and Analysis - Water	Page 1 of 1
Analyte(s)	Qualifier	Samples Affected	Reason
Pb	3.0U	B2BTJ7	Laboratory blank contamination
Ni	5.0U	B2BTJ7	Laboratory blank contamination

Comments: None

Appendix 3

Annotated Laboratory Reports

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTC8

TOTAL Metals

Lot-Sample #...: FLK040469-001
Date Sampled...: 11/03/11

Date Received...: 11/04/11

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #... : 1325081						
Aluminum	108	30.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	2.4 B	10.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	58.0	2.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	8.0 B	10.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	1.2	1.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	20.7	2.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	0.58 B	5.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	0.26 B	3.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	189	5.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.7	1.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	24.6	10.0	ug/L	SW846 6020	11/22-11/24/11	MNQNMLAP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD2

TOTAL Metals

Lot-Sample #...: F1K040469-002

Matrix.....: WATER

Date Sampled...: 11/03/11

Date Received...: 11/04/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1321024						
Technetium	ND	0.0050	ug/L	SW846 6020	11/17-11/19/11	MNQNQ1AR
		Dilution Factor: 1		MDL.....: 0.0010		
Prep Batch #...: 1325081						
Aluminum	236	30.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	2.3 B	10.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	58.2	2.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	8.2 B	10.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	0.98 B	1.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	22.6	2.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	0.60 B	5.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	0.22 B	3.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	187	5.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.7	1.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AN
		Dilution Factor: 1		MDL.....: 0.23		

(Continued on next page)

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD2

TOTAL Metals

Lot-Sample #...: F1K040469-002

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Vanadium	25.3	10.0	ug/L	SW846 6020	11/22-11/24/11	MNQNQ1AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTC9

TOTAL Metals

Lot-Sample #...: F1K070411-001
Date Sampled...: 11/04/11

Date Received...: 11/05/11

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 1325081						
Aluminum	19.4 B	30.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.9 B	10.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	45.3	2.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/24/11	MNRK21AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	12.8	10.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	0.62 B	1.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	21.7	2.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	0.49 B	5.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	202	5.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.4	1.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	24.7	10.0	ug/L	SW846 6020	11/22-11/24/11	MNRK21AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD0

TOTAL Metals

Lot-Sample #...: F1K080464-001
Date Sampled...: 11/07/11

Date Received...: 11/08/11

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 1325081						
Aluminum	ND	30.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.8 B	10.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	40.6	2.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	15.8	10.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	0.63 B	1.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	20.5	2.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	ND	5.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	210	5.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.3	1.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	24.2	10.0	ug/L	SW846 6020	11/22-11/24/11	MNTHW1AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE (S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD1

TOTAL Metals

Lot-Sample #...: F1K090456-001
Date Sampled...: 11/08/11

Date Received...: 11/09/11

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #... : 1325081						
Aluminum	ND	30.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.8 B	10.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	43.3	2.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	22.9	10.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	1.2	1.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	21.9	2.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	ND	5.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	225	5.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.3	1.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	24.3	10.0	ug/L	SW846 6020	11/22-11/24/11	MNVQG1AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2J9F4

TOTAL Metals

Lot-Sample #...: F1K100454-001
Date Sampled...: 11/09/11

Date Received...: 11/10/11

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 1325081						
Aluminum	ND	30.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.7 B	10.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	40.9	2.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/24/11	MNWON1AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	22.6	10.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	0.85 B	1.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	28.6	2.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	ND	5.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	217	5.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.3	1.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	23.9	10.0	ug/L	SW846 6020	11/22-11/24/11	MNWON1AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2J9F5

TOTAL Metals

Lot-Sample #...: F1K100454-002

Matrix.....: WATER

Date Sampled...: 11/09/11

Date Received...: 11/10/11

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 1325081						
Aluminum	ND	30.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.7 B	10.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	43.2	2.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	21.7	10.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	0.51 B	1.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	26.9	2.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	0.45 B	5.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	207	5.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.2	1.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	23.7	10.0	ug/L	SW846 6020	11/22-11/29/11	MNWOR1AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2J9F6

TOTAL Metals

Lot-Sample #...: F1K110416-001
 Date Sampled...: 11/10/11

Date Received...: 11/11/11

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	1325081					
Aluminum	44.5	30.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.7 B	10.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	42.4	2.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/29/11	MNXG41AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	20.8	10.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	0.53 B	1.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	34.4	2.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	0.59 B	5.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	205	5.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.4	1.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	22.8	10.0	ug/L	SW846 6020	11/22-11/29/11	MNXG41AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

NOVEMBER 13, 2011

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BPJ1

TOTAL Metals

Lot-Sample #...: F1K040446-001

Matrix.....: WATER

Date Sampled...: 11/03/11

Date Received...: 11/04/11

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u>		<u>METHOD</u>	<u>PREPARATION-</u>	<u>WORK</u>
		<u>LIMIT</u>	<u>UNITS</u>		<u>ANALYSIS DATE</u>	<u>ORDER #</u>
Prep Batch #...: 1308147						
Technetium	ND	0.0050	ug/L	SW846 6020	11/04-11/05/11	MNQF11AC
		Dilution Factor: 1		MDL.....: 0.0010		

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ6

TOTAL Metals

Lot-Sample #...: F1K160461-001

Matrix.....: WATER

Date Sampled...: 11/15/11

Date Received...: 11/16/11

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...	1333097					
Aluminum	40.1	30.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	2.3 B	10.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	73.9	2.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/29-12/06/11	MN29L1AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	ND	2.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	0.62 B	1.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	13.8	2.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	1.1 B	5.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	0.19 B	3.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	205	5.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.4	1.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	26.2	10.0	ug/L	SW846 6020	11/29-12/06/11	MN29L1AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ7

TOTAL Metals

Lot-Sample #...: F1K170446-001
 Date Sampled...: 11/16/11

Date Received...: 11/17/11

Matrix.....: WATER

PARAMETER	RESULT	REPORTING			METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS				
Prep Batch #...	1322113						
Aluminum	147	30.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AA	
		Dilution Factor: 1		MDL.....: 12.9			
Arsenic	2.0 B	10.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AC	
		Dilution Factor: 1		MDL.....: 0.95			
Barium	52.2	2.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AD	
		Dilution Factor: 1		MDL.....: 0.20			
Cadmium	ND	0.50	ug/L	SW846 6020	11/18-11/23/11	MN3331AE	
		Dilution Factor: 1		MDL.....: 0.10			
Cobalt	0.32 B	2.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AF	
		Dilution Factor: 1		MDL.....: 0.22			
Chromium	ND	10.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AG	
		Dilution Factor: 1		MDL.....: 3.3			
Copper	0.54 B	1.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AH	
		Dilution Factor: 1		MDL.....: 0.45			
Manganese	32.0	2.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AJ	
		Dilution Factor: 1		MDL.....: 0.24			
Nickel	5.0U 1.6 B,C	5.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AK	
		Dilution Factor: 1		MDL.....: 0.40			
Lead	3.0U 0.46 B,C	3.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AL	
		Dilution Factor: 1		MDL.....: 0.17			
Strontium	190	5.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AM	
		Dilution Factor: 1		MDL.....: 1.0			
Uranium	1.2	1.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AN	
		Dilution Factor: 1		MDL.....: 0.23			
Vanadium	27.2	10.0	ug/L	SW846 6020	11/18-11/23/11	MN3331AP	
		Dilution Factor: 1		MDL.....: 2.4			

NOTE(S) :

B Estimated result. Result is less than RL.

C Method blank contamination. The associated method blank contains the target analyte at a reportable level.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTJ8

TOTAL Metals

Lot-Sample #...: F1K180491-001
 Date Sampled...: 11/17/11

Date Received...: 11/18/11

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...	1333097					
Aluminum	671	30.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.1 B	10.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	117	2.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/29-12/06/11	MN5G11AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	1.8 B	2.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	1.3	1.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	281	2.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	4.4 B	5.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	0.32 B	3.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	194	5.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.3	1.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	12.6	10.0	ug/L	SW846 6020	11/29-12/06/11	MN5G11AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2JD78

TOTAL Metals

Lot-Sample #...: F1K220433-001

Matrix.....: WATER

Date Sampled...: 11/21/11

Date Received...: 11/22/11

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Prep Batch #...: 1333097						
Aluminum	ND	30.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.0 B	10.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	47.4	2.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	0.32 B	2.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	ND	1.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	63.2	2.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	1.1 B	5.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	202	5.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.1	1.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	12.3	10.0	ug/L	SW846 6020	11/29-12/06/11	MN7GE1AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2JD84

TOTAL Metals

Lot-Sample #...: F1K220433-002

Matrix.....: WATER

Date Sampled...: 11/21/11

Date Received...: 11/22/11

PARAMETER	RESULT	REPORTING			PREPARATION- ANALYSIS DATE	WORK ORDER #
		LIMIT	UNITS	METHOD		
Prep Batch #...: 1333097						
Aluminum	ND	30.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	1.1 B	10.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	48.0	2.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	0.31 B	2.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	ND	1.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	62.9	2.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	1.0 B	5.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	200	5.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.1	1.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	12.5	10.0	ug/L	SW846 6020	11/29-12/06/11	MN7GF1AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE (S) :

B Estimated result. Result is less than RL.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2JD90

TOTAL Metals

Lot-Sample #...: F1K230436-001

Matrix.....: WATER

Date Sampled...: 11/22/11

Date Received...: 11/23/11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 1333097						
Aluminum	ND	30.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AA
		Dilution Factor: 1		MDL.....: 12.9		
Arsenic	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AC
		Dilution Factor: 1		MDL.....: 0.95		
Barium	44.8	2.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AD
		Dilution Factor: 1		MDL.....: 0.20		
Cadmium	ND	0.50	ug/L	SW846 6020	11/29-12/06/11	MN8X81AE
		Dilution Factor: 1		MDL.....: 0.10		
Cobalt	0.26 B	2.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AF
		Dilution Factor: 1		MDL.....: 0.22		
Chromium	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AG
		Dilution Factor: 1		MDL.....: 3.3		
Copper	ND	1.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AH
		Dilution Factor: 1		MDL.....: 0.45		
Manganese	50.1	2.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AJ
		Dilution Factor: 1		MDL.....: 0.24		
Nickel	0.78 B	5.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AK
		Dilution Factor: 1		MDL.....: 0.40		
Lead	ND	3.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AL
		Dilution Factor: 1		MDL.....: 0.17		
Strontium	199	5.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AM
		Dilution Factor: 1		MDL.....: 1.0		
Uranium	1.1	1.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AN
		Dilution Factor: 1		MDL.....: 0.23		
Vanadium	12.3	10.0	ug/L	SW846 6020	11/29-12/06/11	MN8X81AP
		Dilution Factor: 1		MDL.....: 2.4		

NOTE(S) :

B Estimated result. Result is less than RL.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
December 5, 2011
Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1198
Number of Samples	: eight samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 11, 2011

II. Introduction

Between November 4, 2011 and November 11, 2011, eight samples water samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-004

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

Volatiles

Batch: 1311189

Styrene and Acetone were detected in the method blank at concentrations above the MDL but below the RL. The analytes were not detected above the MDL in the associated samples; therefore, no qualifier is required.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

The LCS recovery for Tetrachloroethene is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

The CCV recoveries are outside the upper QC limit (greater than 20% D) for Acetone, 4-Methyl-2-pentanone, Tetrachloroethene, 2-Hexanone, and Bromoform, indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit in the associated samples.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

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CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

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Batch: 1312258

The CCV recovery is outside the upper QC limit (greater than 20% D) for Bromoform, indicating a potential high bias for this analytes in the samples associated with this CCV. The analyte was not detected above the reporting limit in the associated samples.

Affected Samples:

F1K080464 (1): B2BTD0

Batch: 1314217

Acetone was detected in the method blank at a concentration above the MDL but below the RL. The analyte was not detected above the MDL in the associated samples; therefore, no qualifier is required.

Affected Samples:

F1K090456 (1): B2BTD1

ICPMS Metals

Batch: 1325081

The internal standard was outside QC limits in the CCV and the CCB. All analytes were within acceptable limits, showing that there was no bias.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

F1K080464 (1): B2BTD0

F1K090456 (1): B2BTD1

F1K100454 (1): B2J9F4

F1K100454 (2): B2J9F5

F1K110416 (1): B2J9F6

Ion Chromatography

Batch: 1313085

The sample was analyzed at dilution due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run. The analyte is qualified with a "D" flag.

Affected Samples:

F1K040469 (2): B2BTD2

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CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

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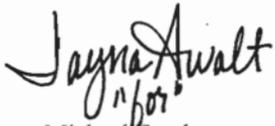
The sample was analyzed outside of the 48-hour hold time for Nitrate due to instrument capacity, long instrument run time, and dilutions. The sample was analyzed at a dilution within 2 times hold time. Sample Issue Resolution Form SDR12-082 accepted the proposed resolution to report the analysis performed outside hold time.

Affected Samples:

F1K040469 (2): B2BTD2

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Michael Franks
St. Louis Project Manager

SAMPLE ISSUE RESOLUTION

SIR NUM SDR12-082
REV NUM 0
DATE INITIATED 12/4/2011

SAMPLE EVENT INFORMATION

SAF NUM(S) F11-004
OPERABLE UNIT(S) 200-ZP-1
PROJECT(S) 200 AREA SGRP
SAMPLE EVENT TITLE(S) 200-ZP-1 Remedial Action Wells
LABORATORY TestAmerica St. Louis

SAMPLING INFORMATION

NUMBER OF SAMPLES 1
SAMPLE NUMBERS B2BTD2
SAMPLE MATRIX WATER
COLLECTION DATE 11/3/2011 - 11/3/2011
SDG NUM SL1198

ISSUE BACKGROUND

CLASS Laboratory Issue
TYPE Analysis Holding Time Exceeded
DESCRIPTION The listed samples for Nitrate were analyzed outside of the hold time due to instrument capacity, long instrument run time, and dilutions.

DISPOSITION

DESCRIPTION Proposed Resolution: Report the data and include comments about the missed hold time in the case narrative.

JUSTIFICATION Accepted Resolution: Accepted proposed resolution

Submitted by: Jayna Awalt / TASL Date: 12/04/11
 Accepted by: Sally Simmons / CHPRC Date: 12/06/11

SL1198

COL 455

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-128	PAGE 1 OF 1
COLLECTOR <i>Karen Crew, Fulton</i>		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-002		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>11-3-11 (N/A) CWS-184</i>		FIELD LOGBOOK NO. <i>1579</i> HNF-N-507-11	ACTUAL SAMPLE DEPTH <i>325 FT</i>	COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TASL <i>11-3-11</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. <i>N/A 7977 0048 3329</i>		
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	None	
		HOLDING TIME	14 Days	6 Months	6 Months	
		TYPE OF CONTAINER	aGs*	G/P	G	
		NO. OF CONTAINER(S)	3	1	1 <i>10-25-11</i>	
		VOLUME	40mL	500mL	250mL	
		SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 82608 (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium Ion Ex (Tritium);
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2BTC8	WATER	<i>11-3-11</i>	<i>08:10</i>			

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Elk River CTR - E. Daniel</i>	DATE/TIME <i>11-3-11 1400</i>	RECEIVED BY/STORED IN FEDEX	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20.□** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□□□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.□□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM FEDEX	DATE/TIME	RECEIVED BY/STORED IN <i>B-2C Brian Daniels</i>	DATE/TIME <i>11/4/11 0915</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 29, 2011

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-136	PAGE 1 OF 1	
COLLECTOR <i>Karen Crow, Fulton</i>		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-002 DUP		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. <i>GLS-184</i>		FIELD LOGBOOK NO. <i>pg 28</i> <i>HNF-N-507-11</i>	ACTUAL SAMPLE DEPTH <i>375 FT</i>		COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL		
SHIPPED TO <i>11-3-11</i> Waste Sampling & Characterization <i>TASL</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. <i>MTX 10, 11/3/11 797700483329</i>				
MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Soil L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH	HNO3 to pH <2/Cool~4C	Cool~4C	None	HNO3 to pH <2 (ULTREx)	
		HOLDING TIME	14 Days	6 Months	28 Days/48 Hours	6 Months	None	
		TYPE OF CONTAINER	aGs*	G/P	P	G	Nalgene	
		NO. OF CONTAINER(S)	3	1	1	1	1	
		VOLUME	40mL	500mL	500mL	250mL	500mL	
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	IC Anions - 300.0 (Nitrogen in Nitrate);	Tritium - Ion Ex (Tritium);	Tc-99 by ICPMS (Technetium-99);		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2BTD2	WATER	11-3-11	08:10	✓	✓	✓	✓	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Ed Kawa CHPRC Ed Kawa</i>	<i>11-3-11 1400</i>	<i>FED EX</i>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>FED EX</i>		<i>B. J. Brian Daniels</i>	<i>11/4/11 0915</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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SDG #SL1198

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-131	PAGE 1 OF 1
COLLECTOR KAWA, CROW		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-003		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. ¹¹⁻⁴⁻¹¹ (N/A) CWS-205		FIELD LOGBOOK NO. ⁸⁵⁸⁰ HNF-N-567-11	ACTUAL SAMPLE DEPTH 396 FT	COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO ¹¹⁻⁴⁻¹¹ Waste Sampling & Characterization TASL		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A 7977 0373 6592			
MATRIX* A=Air DL=Drum L=Liquids DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	None		
		HOLDING TIME	14 Days	6 Months	6 Months		
		TYPE OF CONTAINER	aGs*	G/P	G		
		NO. OF CONTAINER(S)	3	1	1		
		VOLUME	40mL	500mL	250mL		
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2BTC9	WATER	11-4-11	0820				

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□□□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
cd Kawa CHPRC	11-4-11 1400	FEDEX			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
FED EX		NICHOLAS	11/5/11 0820		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-134	PAGE 1 OF 1	
COLLECTOR Ed Kase Crow, Fulham		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-004		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. CWS-246		FIELD LOGBOOK NO. #581 HNF-N-507-11	ACTUAL SAMPLE DEPTH 416 FT	COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO Waste Sampling & Characterization TASL		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. 7977 1119 3888			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/ Cool to 4C	HNO3 to pH <2/ Cool to 4C	None		
		HOLDING TIME	14 Days	6 Months	6 Months		
		TYPE OF CONTAINER	aGs*	G/P	G		
		NO. OF CONTAINER(S)	3	1	1		
		VOLUME	40mL	500mL	250mL		
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2BTD0	WATER	11-7-11	0936	✓	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		

PRINTED ON 2/2/2011

A-6003-618 (REV 2)

DECEMBER 23, 2011

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-140	PAGE 1 OF 1
COLLECTOR KAREN CROW	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-005	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. ^{(1) X-1} (N/A) CWS-006	FIELD LOGBOOK NO. pg 82 HNF-N-507-11	ACTUAL SAMPLE DEPTH 436 FT	COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL		
SHIPPED TO Waste Sampling & Characterization - TASL		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. 7953 8574 5722			
MATRIX* A=Air DL=Drum L=Liquid DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool to 4C	HNO3 to pH <2/Cool to 4C	None		
		HOLDING TIME	14 Days	6 Months	6 Months		
		TYPE OF CONTAINER	aGs*	G/P	G		
		NO. OF CONTAINER(S)	3	1	1		
		VOLUME	40mL	500mL	250mL		
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2BTD1	WATER	11-8-11	0900	✓	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM KAREN CROW	DATE/TIME 11-8-11 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □□** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN Brian Daniels	DATE/TIME 11/9/11 0920		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 23, 2011

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-186	PAGE 1 OF 1
COLLECTOR <i>Crow Hawk</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-006	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>GWS-188</i>	FIELD LOGBOOK NO. <i>883</i> HNF-N-507-11	ACTUAL SAMPLE DEPTH <i>452.5</i>	COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. <i>797720782620</i>			

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2	
		HOLDING TIME	6 Months	
		TYPE OF CONTAINER	G/P	
		NO. OF CONTAINER(S)	1	
		VOLUME	500mL	
		SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2J9F4	WATER	11-9-11	0825	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Ed Kavir</i>	DATE/TIME <i>11-9-11 0930</i>	RECEIVED BY/STORED IN <i>Mawhite</i>	DATE/TIME <i>11-9-11 0930</i>	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □□** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>Mawhite</i>	DATE/TIME <i>11-9-11 1400</i>	RECEIVED BY/STORED IN FEDEX	DATE/TIME		
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN <i>Swilson</i>	DATE/TIME <i>11-18-11 0915</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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DECEMBER 27, 2011

TestAmerica - St. Louis

SL1198

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-187	PAGE 1 OF 1
COLLECTOR <i>Crow, Krause</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-006 DUP	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>CWS-188</i>	FIELD LOGBOOK NO. <i>PS 83</i> <i>HNF-N-507-11</i>	ACTUAL SAMPLE DEPTH <i>457.5 FT</i>	COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. <i>7977 2078 2620</i>		
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2			
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	500mL			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2J9F5	WATER	11-9-11	0825	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Ed Kouss</i>	DATE/TIME <i>11-9-11 0930</i>	RECEIVED BY/STORED IN <i>MA Whit</i>	DATE/TIME <i>11-9-11 0930</i>	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>MA Wilson</i>	DATE/TIME <i>11-9-11 1400</i>	RECEIVED BY/STORED IN FED EX	DATE/TIME		
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN <i>SWilson</i>	DATE/TIME <i>11-10-11 0915</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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DECEMBER 23, 2011

TestAmerica - St. Louis

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-188	PAGE 1 OF 1
COLLECTOR <i>Crow Raven</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-007	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>6WS-115</i>	FIELD LOGBOOK NO. <i>PS 84</i> HNF-N-507-11	ACTUAL SAMPLE DEPTH <i>471 FT</i>		COA 300194ES10	METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. <i>7977 2555 1113</i>		

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2
		HOLDING TIME	6 Months
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
		VOLUME	500mL
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS SEE ITEM (1) IN SPECIAL INSTRUCTIONS	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B2J9F6	WATER	11-10-11	0835 ✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS ** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};
RELINQUISHED BY/REMOVED FROM <i>Ellen & Chaele</i>	DATE/TIME 11-10-11 0945	RECEIVED BY/STORED IN <i>L.D. Wall</i>	DATE/TIME NOV 10 2011 0945	
RELINQUISHED BY/REMOVED FROM <i>L.D. Wall</i>	DATE/TIME NOV 10 2011 1400	RECEIVED BY/STORED IN FEDEX		
RELINQUISHED BY/REMOVED FROM <i>RDEK</i>	DATE/TIME	RECEIVED BY/STORED IN <i>ABrinson</i>	DATE/TIME 11/11/10 0915	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

DECEMBER 23, 2011

TestAmerica - St. Louis

NOVEMBER 13, 2011

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
 P.O. Box 1600
 MS B3-60
 Richland, Washington 99352
 November 13, 2011
 Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1199
Number of Samples	: one sample
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 4, 2011

II. Introduction

On November 4, 2011, one water sample was received by TestAmerica - St. Louis for chemical analysis. The sample was received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the sample was given a laboratory Id to correspond with the specific client Id. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-004

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

NOVEMBER 13, 2011

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

November 13, 2011

SDG: SL1199

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

Ion Chromatography

Batch: 1313085

The sample was analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted for the dilution and the analyte is qualified with a "D" flag in the associated sample.

Affected Samples:

F1K040446 (1): B2BPJ1

The sample was analyzed outside of the 48 hour hold time for Nitrate due to long instrument run time. The sample was analyzed within 2x hold the hold time.

Affected Samples:

F1K040446 (1): B2BPJ1

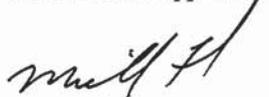
There were no observations or nonconformances for the following methods:

Volatiles

ICPMS Metals (Tc-99)

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Michael Franks
St. Louis Project Manager

SL1199 CUL 455

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-127	PAGE 1 OF 1
COLLECTOR Krause Fulton, Crow	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 1A	DATA TURNAROUND 24 Hours / 15 Days
SAMPLING LOCATION C8068 (699-44-67); I-002	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. CWS-184	FIELD LOGBOOK NO. ps 75 HNF-N-507-11	ACTUAL SAMPLE DEPTH 375 FT	COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL	
SHIPPED TO Waste Sampling & Characterization. # 11-3-11 TASL		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. MAD 11/3/11 7977 0048 3329		

MATRIX* A=Air DL=Drum L=Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION		Cool~4C	Cool~4C	HCl to pH <2/Cool~4C	HN03 to pH <2 (ULTREX)
		HOLDING TIME		24 Hours	28 Days/48 Hours	14 Days	None
		TYPE OF CONTAINER		aG	P	aGs*	Nalgene
		NO. OF CONTAINER(S)		1	1	3	1
		VOLUME		500mL	500mL	40mL	500mL
	SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		Chromium Hex - 7196;	IC Anions - 300.0 {Nitrogen in Nitrate};	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2BPJ1	WATER	11-3-11	0810				

NOVEMBER 13, 2011

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene};	
Ed Krause, CH2M Hill	11-3-11 1400	FEDEX			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
FED EX		Brian James	11/4/11 0914		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
 P.O. Box 1600
 MS B3-60
 Richland, Washington 99352
 December 23, 2011
 Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1216
Number of Samples	: six samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 23, 2011

II. Introduction

Between November 16, 2011 and November 23, 2011, six water samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-004

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 23, 2011

SDG: SL1216

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

Volatiles

Batch: 1321204

The sample was analyzed at a dilution due to high concentrations of the target analyte. The reporting limit has been adjusted only for this target reported from the dilution run. This analyte has been qualified accordingly with a "D" flag in the associated sample.

Affected Samples:

F1K160461 (1): B2BTJ6

Batch: 1322173

The sample was analyzed at a dilution due to a high concentration of the target analyte. The reporting limit has been adjusted only for this target reported from the dilution run. This analyte has been qualified accordingly with a "D" flag in the associated sample.

Affected Samples:

F1K170446 (1): B2BTJ7

ICPMS Total Metals

Batch: 1322113

Lead and Nickel were detected in the method blank above the method detection limit but below the reporting limit. These analytes have been qualified accordingly with a "C" flag in the associated sample.

Affected Samples:

F1K170446 (1): B2BTJ7

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 23, 2011

SDG: SL1216

TestAmerica Laboratories, Inc.

Batch: 1333097

The internal standard was outside QC limits in the ICSA and/or the ICSAB. All analytes were within acceptable limits, showing that there was no bias. Original results will be reported.

Affected Samples:

F1K160461 (1): B2BTJ6

F1K180491 (1): B2BTJ8

F1K220433 (1): B2JD78

F1K220433 (2): B2JD84

F1K230436 (1): B2JD90

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Jayna Awalt
St. Louis Project Manager

SL1211
[Handwritten signature]

CH2M Hill Plateau Remediation Company				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-156		PAGE 1 OF 1		
COLLECTOR KAWA, CROW		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924		PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H		DATA TURNAROUND 30 Days / 30 Days		
SAMPLING LOCATION C889 (699-42-67); I-004		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water				SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>				
ICE CHEST NO. GWS-092		FIELD LOGBOOK NO. P885 HNF-N 507-11		ACTUAL SAMPLE DEPTH 418 FT		COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE		ORIGINAL		
SHIPPED TO Waste Sampling & Characterization		OFFSITE PROPERTY NO. N/A				BILL OF LADING/AIR BILL NO. 7954 0996 6256						
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		PRESERVATION HCl or H2SO4 to pH 14 Days		HNO3 to pH <2/Cool~4C 6 Months		None 6 Months				
		HOLDING TIME		TYPE OF CONTAINER aGs*		G/P		G				
		NO. OF CONTAINER(S)		3		1		1				
		VOLUME		40mL		500mL		250mL				
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		VOA - 8260B (TCL);		SEE ITEM (1) IN SPECIAL INSTRUCTIONS		Tritium Ion Ex (Tritium);				
SAMPLE NO.		MATRIX*		SAMPLE DATE		SAMPLE TIME						
B2BTJ6		WATER		11-15-11		0810						

DECEMBER 27, 2011

TestAmerica - St. Louis

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>E. Kawa</i>	DATE/TIME 11-15-11 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME 11-15-11 1400	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. . . . (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM Fed Ex	DATE/TIME	RECEIVED BY/STORED IN A Brynson	DATE/TIME 11/16/11 0950		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

COLLECTOR <i>Crow Kawa</i>		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924		PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H		DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8669 (699-42-67); I-005		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water				SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>			
ICF CHEST NO. <i>WS-193</i>		FIELD LOGBOOK NO. <i>9586</i> <i>HNF-N-507-11</i>		ACTUAL SAMPLE DEPTH <i>436 FT</i>		COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE		ORIGINAL	
SHIPPED TO <i>Waste Sampling & Characterization TASL</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A <i>7977 4565 6164</i>							

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION		HCl or H2SO4 to pH	HNO3 to pH <2/Cool to 4C	None
		HOLDING TIME		14 Days	6 Months	6 Months
		TYPE OF CONTAINER		aGs*	G/P	G
		NO. OF CONTAINER(S)		3	1	1 <i>11-16-11</i>
		VOLUME		40mL	500mL	250mL
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2BTJ7	WATER	11-16-11	0845			

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Ed Kawa CTRC Edward Kawa</i>	<i>11-16-11 / 1400</i>	<i>FED EX</i>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>Fed EX</i>		<i>Swilson Swilson</i>	<i>4.17.11 0925</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 27, 2011

TestAmerica - St. Louis

COLLECTOR CROW KAUSE		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C899 (699-42-67); I-006		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water			SAF NO. F11-004	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. GWS-289 (N/A) cont 11-17-11		FIELD LOGBOOK NO. ps 87 HNF-N- 507-11	ACTUAL SAMPLE DEPTH 457 FT		COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL	
SHIPPED TO Waste Sampling & Characterization - TASL		OFFSITE PROPERTY NO. N/A			BILL OF LADING/AIR BILL NO. 7954 2041 4374		

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2 / Cool ~4C	HNO3 to pH <2 / Cool ~4C	None	
		HOLDING TIME	14 Days	6 Months	6 Months	
		TYPE OF CONTAINER	aGs*	G/P	G	
		NO. OF CONTAINER(S)	3	1	1	
		VOLUME	40mL	500mL	250mL	
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2BTJ8	WATER	11-17-11	1003	✓	✓	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium}; ALL SAMPLES F. I. & E. D. TURB > 1000 ER 11-17-11	
Ed Kasey Cape 2nd/11/11	11-17-11 1400	F2D EX			
Fed Ex		J Wilson	11-18-11 0930		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 27, 2011

TestAmerica - St. Louis

021312

CH2M Hill Plateau Remediation Company SL1216		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-004-195	PAGE 1 OF 1
COLLECTOR <i>Crow, Fulton</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8069-007 (699-42-67)	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO. F11-004	COA 300194ES10	AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO. <i>GWS-166</i>	FIELD LOGBOOK NO. <i>HNF-507-11</i>	ACTUAL SAMPLE DEPTH <i>478'</i>	METHOD OF SHIPMENT FEDERAL EXPRESS	BILL OF LADING/AIR BILL NO. <i>7954 3080 7411</i>	
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR	SEE PTR			
MATRIX* A=Air DL=Drum L=Liquid DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION HNO3 to pH <2	<i>11/21/11</i>		
		HOLDING TIME 6 Months			
		TYPE OF CONTAINER G/P			
		NO. OF CONTAINER(S) 1			
		VOLUME 500mL			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B2JD78	WATER	<i>11-21-11</i>	<i>1045</i>		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>Fulton</i>	DATE/TIME <i>11-21-11 1400</i>	RECEIVED BY/STORED IN <i>FCDC</i>	DATE/TIME	** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};
RELINQUISHED BY/REMOVED FROM <i>Fed Ex</i>	DATE/TIME	RECEIVED BY/STORED IN <i>Brian Daniels</i>	DATE/TIME <i>11/22/11 0925</i>	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

CH2MHill Plateau Remediation Company SL216		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-201	PAGE 1 OF 1
COLLECTOR <i>Crow, Fulton</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8069-007 (699-42-67) DUP	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>615 166</i>	FIELD LOGBOOK NO. <i>HWF-507-11</i>	ACTUAL SAMPLE DEPTH <i>478'</i>	COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. SEE PTR <i>7954 3080 7411</i>			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2		<i>JW</i> <i>11/21/11</i>	
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	500mL			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2JD84	WATER	11-21-11	1045			✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Crow, Fulton</i>	DATE/TIME <i>11-21-11 1400</i>	RECEIVED BY/STORED IN <i>FED Ex</i>	DATE/TIME	** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>Fed Ex</i>	DATE/TIME	RECEIVED BY/STORED IN <i>Brian Daniels</i>	DATE/TIME <i>11/22/11 0925</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

Wd 294 SL1216

SDG#SL1216

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-207	PAGE 1 OF 1
COLLECTOR <i>Kawn Crow</i>		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8069-008 (699-42-67)		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>GWS-222</i>		FIELD LOGBOOK NO. <i>p58E</i> <i>HNE-N-507-11</i>	ACTUAL SAMPLE DEPTH <i>498' RT</i>		COA 300194ES10	METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. <i>SEE PTR</i> <i>7954 35281563</i>			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2		<i>do</i> <i>1/22/11</i>		
		HOLDING TIME	6 Months				
		TYPE OF CONTAINER	G/P				
		NO. OF CONTAINER(S)	1				
		VOLUME	500mL				
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2JD90	WATER	<i>11-22-11</i>	<i>0920</i>				

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Ed Kawn, SHARLENE</i>	<i>11-22-11 1400</i>	<i>FED EX</i>			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
<i>Fed EX</i>		<i>Brian Daniels</i>	<i>11/23/11 0915</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 27, 2011

TestAmerica - St. Louis

Appendix 5

Data Validation Supporting Documentation

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water			DATA PACKAGE: VSR12-008		
VALIDATOR: Eyda Hergenreder		LAB: TestAmerica		DATE: 03-01-2012	
			SDG: SL1198, SL1199, SL1216		
ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg		EPA 200.8	SW-846/6020 X
<p>SAMPLES/MATRIX Water samples</p> <p>SDG SL1198: B2BTC8, B2BTD2, B2BTC9, B2BTD0, B2BTD1, B2J9F4, B2J9F5, B2J9F6</p> <p>SDG SL1199: B2BPJ1</p> <p>SDG SL1216: B2BTJ6, B2BTJ7, B2BTJ8, B2JD78, B2JD84, B2JD90</p>					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present?.....(Yes) No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments?	Yes	No	N/A
Initial calibrations acceptable?	Yes	No	N/A
ICP interference checks acceptable?	Yes	No	N/A
ICV and CCV checks performed on all instruments?	Yes	No	N/A
ICV and CCV checks acceptable?	Yes	No	N/A
Standards traceable?	Yes	No	N/A
Standards expired?	Yes	No	N/A
Calculation check acceptable?	Yes	No	N/A

Comments:

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)	Yes	No	N/A
ICB and CCB results acceptable? (Levels D, E)	Yes	No	N/A
Laboratory blanks analyzed?	Yes	No	N/A
Laboratory blank results acceptable?	Yes	No	N/A
Field blanks analyzed? (Levels C, D, E)	Yes	No	N/A
Field blank results acceptable? (Levels C, D, E)	Yes	No	N/A
Transcription/calculation errors? (Levels D, E)	Yes	No	N/A

Comments:

SDG SL1216: (batch 1322113) Pb 0.21 mg/L; Ni 0.59 ug/L

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? Yes No N/A

MS/MSD results acceptable? Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A

MS/MSD standards expired? (Levels D, E) Yes No N/A

LCS/BSS samples analyzed? Yes No N/A

LCS/BSS results acceptable? Yes No N/A

Standards traceable? (Levels D, E) Yes No N/A

Standards expired? (Levels D, E) Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Performance audit sample(s) analyzed? Yes No N/A

Performance audit sample results acceptable? Yes No N/A

Comments: None

Data Validation for Chemical Analyses**Published Date: 08/16/10****Effective Date: 08/16/10****5. PRECISION (Levels C, D, and E)**

Duplicate RPD values acceptable?..... Yes No N/A

Duplicate results acceptable?..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E)..... Yes No N/A

MS/MSD standards expired? (Levels D, E)..... Yes No N/A

Field duplicate RPD values acceptable?..... Yes No N/A

Field split RPD values acceptable?..... Yes No N/A

Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? Yes No N/A

ICP serial dilution %D values acceptable? Yes No N/A

ICP post digestion spike required? Yes No N/A

ICP post digestion spike values acceptable?..... Yes No N/A

Standards traceable? Yes No N/A

Standards expired? Yes No N/A

Transcription/calculation errors? Yes No N/A

Comments:

7. HOLDING TIMES (all levels)

Samples properly preserved? (Yes) No N/A

Sample holding times acceptable? (Yes) No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

8. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

- Results reported for all requested analyses?..... Yes No N/A
- Results supported in the raw data? (Levels D, E) Yes No N/A
- Samples properly prepared? (Levels D, E) Yes No N/A
- Detection limits meet RDL?..... Yes No N/A
- Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

Comments (attach additional sheets as necessary):

More

Appendix 6

Additional Documentation Requested By Client

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1K040469

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
MB Lot-Sample #: F1K170000-024 Prep Batch #... : 1321024						
Technetium	ND	0.0050	ug/L	SW846 6020	11/17-11/19/11	MN3Q91AA
		Dilution Factor: 1				
MB Lot-Sample #: F1K210000-081 Prep Batch #... : 1325081						
Aluminum	ND	30.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1CP
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1CQ
		Dilution Factor: 1				
Barium	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1CR
		Dilution Factor: 1				
Cadmium	ND	0.50	ug/L	SW846 6020	11/22-11/24/11	MN58R1CT
		Dilution Factor: 1				
Chromium	ND	10.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1CV
		Dilution Factor: 1				
Cobalt	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1CU
		Dilution Factor: 1				
Copper	ND	1.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1CW
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1C6
		Dilution Factor: 1				
Manganese	ND	2.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1CX
		Dilution Factor: 1				
Nickel	ND	5.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1DC
		Dilution Factor: 1				
Strontium	ND	5.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1DD
		Dilution Factor: 1				
Uranium	ND	1.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1DE
		Dilution Factor: 1				
Vanadium	ND	10.0	ug/L	SW846 6020	11/22-11/24/11	MN58R1DF
		Dilution Factor: 1				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F1K040469

Matrix.....: WATER

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1K040469

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #	
LCS Lot-Sample#: F1K170000-024 Prep Batch #... : 1321024								
Technetium	1.17	1.19	ug/L	101	SW846 6020	11/17-11/19/11	MN3Q91AC	
			Dilution Factor: 1					
LCS Lot-Sample#: F1K210000-081 Prep Batch #... : 1325081								
Aluminum	10000	9690	ug/L	97	SW846 6020	11/22-11/24/11	MN58R1A0	
			Dilution Factor: 1					
Arsenic	1000	1040	ug/L	104	SW846 6020	11/22-11/24/11	MN58R1A1	
			Dilution Factor: 1					
Barium	1000	994	ug/L	99	SW846 6020	11/22-11/24/11	MN58R1A2	
			Dilution Factor: 1					
Cadmium	1000	976	ug/L	98	SW846 6020	11/22-11/24/11	MN58R1A5	
			Dilution Factor: 1					
Cobalt	1000	1020	ug/L	102	SW846 6020	11/22-11/24/11	MN58R1A6	
			Dilution Factor: 1					
Chromium	1000	951	ug/L	95	SW846 6020	11/22-11/24/11	MN58R1A7	
			Dilution Factor: 1					
Copper	1000	998	ug/L	100	SW846 6020	11/22-11/24/11	MN58R1A8	
			Dilution Factor: 1					
Manganese	1000	1030	ug/L	103	SW846 6020	11/22-11/24/11	MN58R1CC	
			Dilution Factor: 1					
Lead	1000	994	ug/L	99	SW846 6020	11/22-11/24/11	MN58R1CE	
			Dilution Factor: 1					
Nickel	1000	1020	ug/L	102	SW846 6020	11/22-11/24/11	MN58R1CK	
			Dilution Factor: 1					
Strontium	1000	1010	ug/L	101	SW846 6020	11/22-11/24/11	MN58R1CL	
			Dilution Factor: 1					
Uranium	1000	1040	ug/L	104	SW846 6020	11/22-11/24/11	MN58R1CM	
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F1K040469

Matrix.....: WATER

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCENT RECVRY</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Vanadium	1000	960	ug/L	96	SW846 6020	11/22-11/24/11	MN58R1CN

Dilution Factor: 1

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1198

Matrix.....: WATER

Date Sampled...: 11/03/11

Date Received...: 11/04/11

<u>PARAMETER</u>	<u>AMOUNT</u>	<u>AMT</u>	<u>MEASRD</u>	<u>AMOUNT</u>	<u>UNITS</u>	<u>PERCNT</u>	<u>RECVRY</u>	<u>RPD</u>	<u>METHOD</u>	<u>PREPARATION-</u>	<u>WORK</u>
										<u>ANALYSIS DATE</u>	<u>ORDER #</u>

MS Lot-Sample #: F1K040469-002 Prep Batch #...: 1321024

Technetium

ND	1.17	1.17	ug/L	100		SW846	6020			11/17-11/19/11	MNQNQ1AU
ND	1.17	1.17	ug/L	100	0.41	SW846	6020			11/17-11/19/11	MNQNQ1AV

Dilution Factor: 1

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1198

Matrix.....: WATER

Date Sampled...: 11/14/11

Date Received...: 11/15/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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MS Lot-Sample #: F1K150499-002 Prep Batch #...: 1325081

Aluminum

27.0	10000	9500	ug/L	95			SW846 6020	11/22-11/29/11	MN2GT1CW
27.0	10000	9520	ug/L	95	0.20		SW846 6020	11/22-11/29/11	MN2GT1CX
Dilution Factor: 1									

Arsenic

1.3	1000	987	ug/L	99			SW846 6020	11/22-11/29/11	MN2GT1C0
1.3	1000	997	ug/L	100	0.93		SW846 6020	11/22-11/29/11	MN2GT1C1
Dilution Factor: 1									

Barium

30.1	1000	1010	ug/L	98			SW846 6020	11/22-11/29/11	MN2GT1C2
30.1	1000	1010	ug/L	98	0.25		SW846 6020	11/22-11/29/11	MN2GT1C3
Dilution Factor: 1									

Cadmium

ND	1000	964	ug/L	96			SW846 6020	11/22-11/29/11	MN2GT1C8
ND	1000	950	ug/L	95	1.5		SW846 6020	11/22-11/29/11	MN2GT1C9
Dilution Factor: 1									

Chromium

4.1	1000	932	ug/L	93			SW846 6020	11/22-11/29/11	MN2GT1DD
4.1	1000	931	ug/L	93	0.08		SW846 6020	11/22-11/29/11	MN2GT1DE
Dilution Factor: 1									

Cobalt

ND	1000	907	ug/L	91			SW846 6020	11/22-11/29/11	MN2GT1DA
ND	1000	896	ug/L	90	1.2		SW846 6020	11/22-11/29/11	MN2GT1DC
Dilution Factor: 1									

Copper

ND	1000	888	ug/L	89			SW846 6020	11/22-11/29/11	MN2GT1DF
ND	1000	875	ug/L	87	1.5		SW846 6020	11/22-11/29/11	MN2GT1DG
Dilution Factor: 1									

Lead

0.23	1000	992	ug/L	99			SW846 6020	11/22-11/29/11	MN2GT1DR
0.23	1000	992	ug/L	99	0.02		SW846 6020	11/22-11/29/11	MN2GT1DT
Dilution Factor: 1									

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1198

Matrix.....: WATER

Date Sampled...: 11/14/11

Date Received...: 11/15/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Manganese	10.7	1000	948	ug/L	94		SW846 6020	11/22-11/29/11	MN2GT1DM
	10.7	1000	940	ug/L	93	0.76	SW846 6020	11/22-11/29/11	MN2GT1DN

Dilution Factor: 1

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NOVEMBER 13, 2011

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: SL1199

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
MB Lot-Sample #: F1K040000-147						
Prep Batch #...: 1308147						
Technetium	ND	0.0050	ug/L	SW846 6020	11/04-11/05/11	MNQMD1AA
		Dilution Factor: 1				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NOVEMBER 13, 2011

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1199

Matrix.....: WATER

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCNT RECVRY</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
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LCS Lot-Sample#: F1K040000-147 Prep Batch #...: 1308147

Technetium 1.17 1.17 ug/L 100 SW846 6020

11/04-11/05/11 MNQMD1AC

Dilution Factor: 1

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NOVEMBER 13, 2011

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #....: SL1199

Matrix.....: WATER

Date Sampled....: 11/03/11

Date Received...: 11/04/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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MS Lot-Sample #: F1K040446-001 Prep Batch #....: 1308147

Technetium

ND	1.17	1.17	ug/L	100			SW846 6020	11/04-11/05/11	MNQF11AG
ND	1.17	1.17	ug/L	100	0.35		SW846 6020	11/04-11/05/11	MNQF11AH

Dilution Factor: 1

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: SL1216

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
MB Lot-Sample #: F1K180000-113 Prep Batch #...: 1322113						
Aluminum	ND	30.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AA
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AC
		Dilution Factor: 1				
Barium	ND	2.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AD
		Dilution Factor: 1				
Cadmium	ND	0.50	ug/L	SW846 6020	11/18-11/23/11	MN4T91AE
		Dilution Factor: 1				
Chromium	ND	10.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AG
		Dilution Factor: 1				
Cobalt	ND	2.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AF
		Dilution Factor: 1				
Copper	ND	1.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AH
		Dilution Factor: 1				
Lead	0.21 B	3.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AL
		Dilution Factor: 1				
Manganese	ND	2.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AJ
		Dilution Factor: 1				
Nickel	0.59 B	5.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AK
		Dilution Factor: 1				
Strontium	ND	5.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AM
		Dilution Factor: 1				
Uranium	ND	1.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AN
		Dilution Factor: 1				
Vanadium	ND	10.0	ug/L	SW846 6020	11/18-11/23/11	MN4T91AP
		Dilution Factor: 1				

(Continued on next page)

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: SL1216

Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F1K290000-097 Prep Batch #...: 1333097						
Aluminum	ND	30.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1AC
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1AD
		Dilution Factor: 1				
Barium	ND	2.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1AE
		Dilution Factor: 1				
Cadmium	ND	0.50	ug/L	SW846 6020	11/29-12/06/11	MPATF1AH
		Dilution Factor: 1				
Chromium	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1AK
		Dilution Factor: 1				
Cobalt	ND	2.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1AJ
		Dilution Factor: 1				
Copper	ND	1.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1AL
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1AR
		Dilution Factor: 1				
Manganese	ND	2.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1AP
		Dilution Factor: 1				
Nickel	ND	5.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1CK
		Dilution Factor: 1				
Strontium	ND	5.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1CL
		Dilution Factor: 1				
Uranium	ND	1.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1CM
		Dilution Factor: 1				
Vanadium	ND	10.0	ug/L	SW846 6020	11/29-12/06/11	MPATF1CN
		Dilution Factor: 1				

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1216

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #	
LCS Lot-Sample#: F1K180000-113 Prep Batch #...: 1322113								
Aluminum	10000	9910	ug/L	99	SW846 6020	11/18-11/23/11	MN4T91AQ	
			Dilution Factor: 1					
Arsenic	1000	1020	ug/L	102	SW846 6020	11/18-11/23/11	MN4T91AR	
			Dilution Factor: 1					
Barium	1000	980	ug/L	98	SW846 6020	11/18-11/23/11	MN4T91AT	
			Dilution Factor: 1					
Cadmium	1000	1000	ug/L	100	SW846 6020	11/18-11/23/11	MN4T91AU	
			Dilution Factor: 1					
Cobalt	1000	1010	ug/L	101	SW846 6020	11/18-11/23/11	MN4T91AV	
			Dilution Factor: 1					
Chromium	1000	995	ug/L	99	SW846 6020	11/18-11/23/11	MN4T91AW	
			Dilution Factor: 1					
Copper	1000	1000	ug/L	100	SW846 6020	11/18-11/23/11	MN4T91AX	
			Dilution Factor: 1					
Manganese	1000	1020	ug/L	102	SW846 6020	11/18-11/23/11	MN4T91A0	
			Dilution Factor: 1					
Nickel	1000	1020	ug/L	102	SW846 6020	11/18-11/23/11	MN4T91A1	
			Dilution Factor: 1					
Lead	1000	1050	ug/L	105	SW846 6020	11/18-11/23/11	MN4T91A2	
			Dilution Factor: 1					
Strontium	1000	1020	ug/L	102	SW846 6020	11/18-11/23/11	MN4T91A3	
			Dilution Factor: 1					
Uranium	1000	1110	ug/L	111	SW846 6020	11/18-11/23/11	MN4T91A4	
			Dilution Factor: 1					
Vanadium	1000	972	ug/L	97	SW846 6020	11/18-11/23/11	MN4T91A5	
			Dilution Factor: 1					

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1216

Matrix.....: WATER

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCNT RECVRY</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>	
LCS Lot-Sample#: F1K290000-097 Prep Batch #...: 1333097								
Aluminum	10000	8670	ug/L	87	SW846 6020	11/29-12/06/11	MPATF1A0	
			Dilution Factor: 1					
Arsenic	1000	919	ug/L	92	SW846 6020	11/29-12/06/11	MPATF1A1	
			Dilution Factor: 1					
Barium	1000	1010	ug/L	101	SW846 6020	11/29-12/06/11	MPATF1A2	
			Dilution Factor: 1					
Cadmium	1000	915	ug/L	91	SW846 6020	11/29-12/06/11	MPATF1A5	
			Dilution Factor: 1					
Cobalt	1000	1030	ug/L	103	SW846 6020	11/29-12/06/11	MPATF1A6	
			Dilution Factor: 1					
Chromium	1000	864	ug/L	86	SW846 6020	11/29-12/06/11	MPATF1A7	
			Dilution Factor: 1					
Copper	1000	991	ug/L	99	SW846 6020	11/29-12/06/11	MPATF1A8	
			Dilution Factor: 1					
Manganese	1000	1050	ug/L	105	SW846 6020	11/29-12/06/11	MPATF1CC	
			Dilution Factor: 1					
Lead	1000	1100	ug/L	110	SW846 6020	11/29-12/06/11	MPATF1CE	
			Dilution Factor: 1					
Nickel	1000	1020	ug/L	102	SW846 6020	11/29-12/06/11	MPATF1CP	
			Dilution Factor: 1					
Strontium	1000	1050	ug/L	105	SW846 6020	11/29-12/06/11	MPATF1CQ	
			Dilution Factor: 1					
Uranium	1000	1200	ug/L	120	SW846 6020	11/29-12/06/11	MPATF1CR	
			Dilution Factor: 1					
Vanadium	1000	876	ug/L	88	SW846 6020	11/29-12/06/11	MPATF1CT	
			Dilution Factor: 1					

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1216

Matrix.....: WATER

Date Sampled...: 11/16/11

Date Received...: 11/17/11

<u>PARAMETER</u>	<u>SAMPLE AMOUNT</u>	<u>SPIKE AMT</u>	<u>MEASRD AMOUNT</u>	<u>UNITS</u>	<u>PERCNT RECVRY</u>	<u>RPD</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
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MS Lot-Sample #: F1K170426-001 **Prep Batch #...**: 1333097

Aluminum

65.8	10000	8850	ug/L	88			SW846 6020	11/29-12/06/11	MN3WD1C0
65.8	10000	9480	ug/L	94	6.8		SW846 6020	11/29-12/06/11	MN3WD1C1

Dilution Factor: 1

Arsenic

1.8	1000	898	ug/L	90			SW846 6020	11/29-12/06/11	MN3WD1C2
1.8	1000	899	ug/L	90	0.09		SW846 6020	11/29-12/06/11	MN3WD1C3

Dilution Factor: 1

Barium

51.0	1000	1060	ug/L	101			SW846 6020	11/29-12/06/11	MN3WD1C4
51.0	1000	1060	ug/L	100	0.73		SW846 6020	11/29-12/06/11	MN3WD1C5

Dilution Factor: 1

Cadmium

ND	1000	885	ug/L	89			SW846 6020	11/29-12/06/11	MN3WD1DA
ND	1000	874	ug/L	87	1.2		SW846 6020	11/29-12/06/11	MN3WD1DC

Dilution Factor: 1

Chromium

24.8	1000	864	ug/L	84			SW846 6020	11/29-12/06/11	MN3WD1DF
24.8	1000	932	ug/L	91	7.6		SW846 6020	11/29-12/06/11	MN3WD1DG

Dilution Factor: 1

Cobalt

ND	1000	983	ug/L	98			SW846 6020	11/29-12/06/11	MN3WD1DD
ND	1000	989	ug/L	99	0.60		SW846 6020	11/29-12/06/11	MN3WD1DE

Dilution Factor: 1

Copper

1.2	1000	920	ug/L	92			SW846 6020	11/29-12/06/11	MN3WD1DH
1.2	1000	919	ug/L	92	0.05		SW846 6020	11/29-12/06/11	MN3WD1DJ

Dilution Factor: 1

Lead

0.54	1000	1100	ug/L	110			SW846 6020	11/29-12/06/11	MN3WD1DU
0.54	1000	1090	ug/L	109	0.61		SW846 6020	11/29-12/06/11	MN3WD1DV

Dilution Factor: 1

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1216

Matrix.....: WATER

Date Sampled...: 11/16/11

Date Received...: 11/17/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Manganese	5.1	1000	1010	ug/L	101		SW846 6020	11/29-12/06/11	MN3WD1DP
	5.1	1000	1030	ug/L	102	1.5	SW846 6020	11/29-12/06/11	MN3WD1DQ

Dilution Factor: 1

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: SL1216 Matrix.....: WATER
 Date Sampled...: 11/16/11 Date Received...: 11/17/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F1K170446-001 Prep Batch #...: 1322113									
Aluminum									
	147	10000	10000	ug/L	99		SW846 6020	11/18-11/23/11	MN3331AR
	147	10000	9950	ug/L	98	0.51	SW846 6020	11/18-11/23/11	MN3331AT
Dilution Factor: 1									
Arsenic									
	2.0	1000	974	ug/L	97		SW846 6020	11/18-11/23/11	MN3331AU
	2.0	1000	969	ug/L	97	0.56	SW846 6020	11/18-11/23/11	MN3331AV
Dilution Factor: 1									
Barium									
	52.2	1000	1020	ug/L	97		SW846 6020	11/18-11/23/11	MN3331AW
	52.2	1000	1020	ug/L	97	0.64	SW846 6020	11/18-11/23/11	MN3331AX
Dilution Factor: 1									
Cadmium									
	ND	1000	1000	ug/L	100		SW846 6020	11/18-11/23/11	MN3331A0
	ND	1000	991	ug/L	99	0.93	SW846 6020	11/18-11/23/11	MN3331A1
Dilution Factor: 1									
Chromium									
	ND	1000	992	ug/L	99		SW846 6020	11/18-11/23/11	MN3331A4
	ND	1000	994	ug/L	99	0.24	SW846 6020	11/18-11/23/11	MN3331A5
Dilution Factor: 1									
Cobalt									
	0.32	1000	923	ug/L	92		SW846 6020	11/18-11/23/11	MN3331A2
	0.32	1000	930	ug/L	93	0.80	SW846 6020	11/18-11/23/11	MN3331A3
Dilution Factor: 1									
Copper									
	0.54	1000	931	ug/L	93		SW846 6020	11/18-11/23/11	MN3331A6
	0.54	1000	933	ug/L	93	0.23	SW846 6020	11/18-11/23/11	MN3331A7
Dilution Factor: 1									
Lead									
	0.46	1000	1040	ug/L	104		SW846 6020	11/18-11/23/11	MN3331CD
	0.46	1000	1040	ug/L	104	0.39	SW846 6020	11/18-11/23/11	MN3331CE
Dilution Factor: 1									

(Continued on next page)

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #....: SL1216

Matrix.....: WATER

Date Sampled...: 11/16/11

Date Received...: 11/17/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Manganese									
	32.0	1000	972	ug/L	94		SW846 6020	11/18-11/23/11	MN3331A8
	32.0	1000	966	ug/L	93	0.55	SW846 6020	11/18-11/23/11	MN3331A9
	Dilution Factor: 1								
Nickel									
	1.6	1000	933	ug/L	93		SW846 6020	11/18-11/23/11	MN3331CA
	1.6	1000	942	ug/L	94	0.95	SW846 6020	11/18-11/23/11	MN3331CC
	Dilution Factor: 1								
Strontium									
	190	1000	1160	ug/L	97		SW846 6020	11/18-11/23/11	MN3331CF
	190	1000	1170	ug/L	98	0.89	SW846 6020	11/18-11/23/11	MN3331CG
	Dilution Factor: 1								
Uranium									
	1.2	1000	1120	ug/L	112		SW846 6020	11/18-11/23/11	MN3331CH
	1.2	1000	1120	ug/L	111	0.05	SW846 6020	11/18-11/23/11	MN3331CJ
	Dilution Factor: 1								
Vanadium									
	27.2	1000	999	ug/L	97		SW846 6020	11/18-11/23/11	MN3331CK
	27.2	1000	1000	ug/L	98	0.43	SW846 6020	11/18-11/23/11	MN3331CL
	Dilution Factor: 1								

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Date: 01 March 2012
 To: CH2M Hill (technical representative)
 From: Analytical Quality Associates, Inc.
 Project: FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water
 Subject: General Chemistry - Sample Data Groups (SDGs) SL1198 and SL1199

INTRODUCTION

This memorandum presents the results of data validation for SDGs SL1198 and SL1199 prepared by TestAmerica. A list of samples validated along with the analytical methods is provided in the following table.

Sample ID	Sample Date	Media	Validation Level	Analytical Methods
B2BTD2	11/03/11	Water	C	300.0 (NO ₃)
B2BPJ1	11/03/11	Water	C	300.0 (NO ₃)

Data validation was conducted in accordance with the CHPRC validation statement of work and the Sampling and Analysis Plan for Eight Remediation Wells in the 200-ZP-1 Operable Unit in FY 2011, DOE/RL-2010-72, Rev. 0, Volume 1 (SAP). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Documentation Requested By Client

DATA QUALITY OBJECTIVES

- **Holding Times and Sample Preservation**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The holding time requirement for nitrate as nitrogen was 48 hours after sample collection and sample preservation requires chilling to 4 degrees Celsius.

The samples were properly preserved; however the laboratory indicates that the samples were analyzed beyond but $\leq 2X$ the holding time. The exact time of analysis was not provided; therefore based on professional judgment, all sample results were detects and should be qualified as estimates and flagged "J."

- **Blanks**

The blank data results are reviewed to assess the extent of contamination introduced through sampling, sample preparation, and analysis.

Laboratory Blanks

The laboratory blank result was acceptable.

Trip Blanks

No trip blanks were submitted for validation.

Field Blanks

No field blanks were submitted for validation.

Equipment Blanks

No equipment blanks were submitted for validation.

- **Accuracy**

Accuracy is evaluated by reviewing matrix spike sample results and laboratory control sample results. According to the SAP, the matrix spike and laboratory control sample accuracy limits are 70% to 130%.

Matrix Spike (MS) Samples

All MS recoveries were acceptable.

Laboratory Control Samples (LCSs)

All LCS recoveries were acceptable.

- **Precision**

Precision is evaluated by reviewing laboratory duplicate sample results, field duplicate sample results, and field split sample results. These QC results provide information on the laboratory reproducibility and whether sampling activities are adequate to acquire consistent sample results. According to the SAP, the relative percent difference (RPD) limits are $\pm 20\%$.

Laboratory Duplicate Samples

All laboratory duplicate results were acceptable.

Field Duplicate Samples

The field duplicate results were acceptable.

Field Split Samples

No field splits were submitted for validation.

- **Detection Limits**

Reported MDLs are compared against the contractually required detection limits (CRDLs) to ensure that laboratory detection limits meet the required criteria.

The reported sample MDLs were above the CRDLs; due to sample dilution.

- **Completeness**

SDGs SL1198 and SL1199 were submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Minor deficiencies leading to qualification of nitrate results as estimates were due to holding time infractions. See the table in Appendix 2 for a listing of all affected sample results.

REFERENCES

GRP-GD-003, Rev. 0, Change 0, *Data Validation for Chemical Analyses*, August 2010.

DOE/RL-2010-72, Rev. 0, *Sampling and Analysis Plan for Eight Remediation Wells in the 200-ZP-1 Operable Unit in FY 2011*, September 2010.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers that may be applied by data validators in compliance with the CHPRC statement of work are as follows:

- **U** — The constituent was analyzed for, but was not detected. The data should be considered usable for decision-making purposes.
- **UJ** — The constituent was analyzed for and was not detected. Due to a quality control deficiency identified during data validation the value reported may not accurately reflect the RL. The data should be considered usable for decision-making purposes.
- **J** — Indicates the constituent was analyzed for and detected. The associated value is estimated due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J+** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **J-** — Indicates the constituent was analyzed for and detected. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation. The data should be considered usable for decision-making purposes.
- **N** — The analysis indicates the presence of an analyte that has been tentatively identified.
- **NJ** — The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.
- **NJ+** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected positive bias due to a quality control deficiency identified during data validation.
- **NJ-** — The analysis indicates the presence of an analyte that has been tentatively identified. The associated value is estimated with a suspected negative bias due to a quality control deficiency identified during data validation.
- **UR** — Indicates the constituent was analyzed for and not detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.
- **R** — Indicates the constituent was analyzed for and detected; however, due to an identified quality control deficiency the data should be considered unusable for decision-making purposes.

Appendix 2
Summary of Data Qualification

General Chemistry Data Qualification Summary			
SDGs: SL1198, SL1199	Reviewer: AQA	Project: FY2011 200- ZP-1 Remedial Action Wells Sampling and Analysis - Water	Page 1 of 1
Analyte(s)	Qualifier	Samples Affected	Reason
Nitrate	J	B2BTD2, B2BPJ1	Analysis beyond but within 2X the holding time

Comments: None

Appendix 3

Annotated Laboratory Reports

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BTD2

General Chemistry

Lot-Sample #...: F1K040469-002 Work Order #...: MNQNO Matrix.....: WATER
Date Sampled...: 11/03/11 Date Received...: 11/04/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrogen, Nitrate	J 8.7 D	0.40	mg/L	MCAWW 300.0A	11/05/11	1313085
		Dilution Factor: 20		MDL.....: 0.17		

NOTE(S):

RL Reporting Limit

D Result was obtained from the analysis of a dilution.

NOVEMBER 13, 2011

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2BPJ1

General Chemistry

Lot-Sample #...: F1K040446-001 Work Order #...: MNQF1 Matrix.....: WATER
Date Sampled...: 11/03/11 Date Received...: 11/04/11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrogen, Nitrate J	8.7 D	0.40	mg/L	MCAWW 300.0A	11/05/11	1313085
		Dilution Factor: 20		MDL.....: 0.17		

NOTE(S) :

RL Reporting Limit.

D Result was obtained from the analysis of a dilution.

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

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THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
December 5, 2011
Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1198
Number of Samples	: eight samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 11, 2011

II. Introduction

Between November 4, 2011 and November 11, 2011, eight samples water samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-004

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

Volatiles

Batch: 1311189

Styrene and Acetone were detected in the method blank at concentrations above the MDL but below the RL. The analytes were not detected above the MDL in the associated samples; therefore, no qualifier is required.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

The LCS recovery for Tetrachloroethene is outside the upper QC limit, indicating a potential positive bias for that analyte. This analyte was not observed above the reporting limit in the associated samples; therefore the sample data was not adversely affected by this excursion.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

The CCV recoveries are outside the upper QC limit (greater than 20% D) for Acetone, 4-Methyl-2-pentanone, Tetrachloroethene, 2-Hexanone, and Bromoform, indicating a potential high bias for those analytes in the samples associated with this CCV. These analytes were not detected above the reporting limit in the associated samples.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

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THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

TestAmerica Laboratories, Inc.

Batch: 1312258

The CCV recovery is outside the upper QC limit (greater than 20% D) for Bromoform, indicating a potential high bias for this analyte in the samples associated with this CCV. The analyte was not detected above the reporting limit in the associated samples.

Affected Samples:

F1K080464 (1): B2BTD0

Batch: 1314217

Acetone was detected in the method blank at a concentration above the MDL but below the RL. The analyte was not detected above the MDL in the associated samples; therefore, no qualifier is required.

Affected Samples:

F1K090456 (1): B2BTD1

ICPMS Metals

Batch: 1325081

The internal standard was outside QC limits in the CCV and the CCB. All analytes were within acceptable limits, showing that there was no bias.

Affected Samples:

F1K040469 (1): B2BTC8

F1K040469 (2): B2BTD2

F1K070411 (1): B2BTC9

F1K080464 (1): B2BTD0

F1K090456 (1): B2BTD1

F1K100454 (1): B2J9F4

F1K100454 (2): B2J9F5

F1K110416 (1): B2J9F6

Ion Chromatography

Batch: 1313085

The sample was analyzed at dilution due to high concentrations of the target analytes. The reporting limit has been adjusted only for those targets reported from the dilution run. The analyte is qualified with a "D" flag.

Affected Samples:

F1K040469 (2): B2BTD2

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THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

December 5, 2011

SDG: SL1198

TestAmerica Laboratories, Inc.

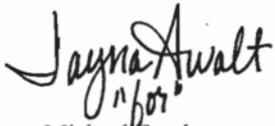
The sample was analyzed outside of the 48-hour hold time for Nitrate due to instrument capacity, long instrument run time, and dilutions. The sample was analyzed at a dilution within 2 times hold time. Sample Issue Resolution Form SDR12-082 accepted the proposed resolution to report the analysis performed outside hold time.

Affected Samples:

F1K040469 (2): B2BTD2

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Michael Franks
St. Louis Project Manager

SAMPLE ISSUE RESOLUTION

SIR NUM SDR12-082
REV NUM 0
DATE INITIATED 12/4/2011

SAMPLE EVENT INFORMATION

SAF NUM(S) F11-004
OPERABLE UNIT(S) 200-ZP-1
PROJECT(S) 200 AREA SGRP
SAMPLE EVENT TITLE(S) 200-ZP-1 Remedial Action Wells
LABORATORY TestAmerica St. Louis

SAMPLING INFORMATION

NUMBER OF SAMPLES 1
SAMPLE NUMBERS B2BTD2
SAMPLE MATRIX WATER
COLLECTION DATE 11/3/2011 - 11/3/2011
SDG NUM SL1198

ISSUE BACKGROUND

CLASS Laboratory Issue
TYPE Analysis Holding Time Exceeded
DESCRIPTION The listed samples for Nitrate were analyzed outside of the hold time due to instrument capacity, long instrument run time, and dilutions.

DISPOSITION

DESCRIPTION Proposed Resolution: Report the data and include comments about the missed hold time in the case narrative.

JUSTIFICATION Accepted Resolution: Accepted proposed resolution

Submitted by: Jayna Awalt / TASL Date: 12/04/11
 Accepted by: Sally Simmons / CHPRC Date: 12/06/11

SL1198 CWL 455

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-128	PAGE 1 OF 1	
COLLECTOR Kara Crew, Fulton		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-002		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. CWS-184		FIELD LOGBOOK NO. 1579 HNF-N-507-11	ACTUAL SAMPLE DEPTH 325 FT	COA 300194ES10	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO TASL #11-3-11		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A 7977 0048 3329			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	None		
		HOLDING TIME	14 Days	6 Months	6 Months		
		TYPE OF CONTAINER	aGs*	G/P	G		
		NO. OF CONTAINER(S)	3	1	1		
		VOLUME	40mL	500mL	250mL		
		SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 82608 (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Trilium Ion Ex (Trilium);	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2BTC8	WATER	11-3-11	08:10				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20.□** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.□□□□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem.□□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
<i>Elk River Corp - Elkhart</i>	11-3-11 1400	FEDEX			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
FEDEX		Brian Daniels	11/4/11 0915		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		

DECEMBER 29, 2011

TestAmerica - St. Louis

SDG#SL1198

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-136	PAGE 1 OF 1	
COLLECTOR Kawan Crow, Fulton		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924		PROJECT COORDINATOR EVANS, RT		
SAMPLING LOCATION C8068 (699-44-67); I-002 DUP		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water				PRICE CODE 7H DATA TURNAROUND 30 Days / 30 Days		
ICE CHEST NO. GLS-184		FIELD LOGBOOK NO. pg 28 HNF-N-507-11		ACTUAL SAMPLE DEPTH 375 FT		SAF NO. F11-004		
SHIPPED TO Waste Sampling & Characterization TASL		OFFSITE PROPERTY NO. N/A				BILL OF LADING/AIR BILL NO. MTX 10, 11/3/11 797700483329		
MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Soil L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)		PRESERVATION	HCl or H2SO4 to pH	HNO3 to pH <2/Cool~4C	Cool~4C	None	
			HOLDING TIME	14 Days	6 Months	28 Days/48 Hours	6 Months	None
			TYPE OF CONTAINER	aGs*	G/P	P	G	Nalgene
			NO. OF CONTAINER(S)	3	1	1	1	1
			VOLUME	40mL	500mL	500mL	250mL	500mL
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	IC Anions - 300.0 (Nitrogen in Nitrate);	Tritium - Ion Ex (Tridium);	Tc-99 by ICPMS (Technetium-99);	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2BTD2	WATER	11-3-11	08:10	✓	✓	✓	✓	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
Ed Kawan CH2M Hill 11-3-11 1400		FED EX			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
FED EX		B. J. Brian Daniels	11/4/11 0915		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 23, 2011

TestAmerica - St. Louis

SL1198 CW 492

SDG #SL1198

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-131	PAGE 1 OF 1	
COLLECTOR KAWA, CROW		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days	
SAMPLING LOCATION C8068 (699-44-67); I-003		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. ¹¹⁻⁴⁻¹¹ (N/A) CWS-205		FIELD LOGBOOK NO. ⁸⁵⁸⁰ HNF-N-567-11	ACTUAL SAMPLE DEPTH 396 FT	COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL	
SHIPPED TO ¹¹⁻⁴⁻¹¹ Waste Sampling & Characterization TASL		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A 7977 0373 6592				
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool~4C	HNO3 to pH <2/Cool~4C	None			
		HOLDING TIME	14 Days	6 Months	6 Months			
		TYPE OF CONTAINER	aGs*	G/P	G			
		NO. OF CONTAINER(S)	3	1	1			
		VOLUME	40mL	500mL	250mL			
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);				
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2BTC9	WATER	11-4-11	0820					

DECEMBER 29, 2011

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□□□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
cd Kawa CHPRC	11-4-11 1400	FEDEX			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
FED EX		NICHOLAS	11/5/11 0820		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

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TestAmerica - St. Louis

SDG #SL1198

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51198
CH2M Hill Plateau Remediation Company *456* CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F11-004-134 PAGE 1 OF 1

COLLECTOR <i>Ed Kase Crow, Fulham</i>		COMPANY CONTACT EVANS, RT		TELEPHONE NO. 373-7924		PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND
SAMPLING LOCATION C8068 (699-44-67); I-004		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water				SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	30 Days / 30 Days
ICE CHEST NO. <i>11-7-11 (IATA) CWS-246</i>		FIELD LOGBOOK NO. <i>PS 81</i> HNF-N-507-11		ACTUAL SAMPLE DEPTH <i>416</i> FT		COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL	
SHIPPED TO <i>Waste Sampling & Characterization TASL</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. <i>7977 1119 3888</i>					
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/ Cool to 4C	HNO3 to pH <2/ Cool to 4C	None				
		HOLDING TIME	14 Days	6 Months	6 Months				
		TYPE OF CONTAINER	aGs*	G/P	G				
		NO. OF CONTAINER(S)	3 <i>2</i>	1	1				
		VOLUME	40mL	500mL	250mL				
SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);					
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B2BTD0	WATER	11-7-11	0936	✓	✓				

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Ed Kase Crow</i>	DATE/TIME <i>11-7-11 1400</i>	RECEIVED BY/STORED IN <i>FEDEX</i>	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>FED EX</i>	DATE/TIME	RECEIVED BY/STORED IN <i>Abrahamson</i>	DATE/TIME <i>11/8/11</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

PRINTED ON 2/2/2011

A-6003-618 (REV 2)

DECEMBER 23, 2011

TestAmerica - St. Louis

561198

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F11-004-140	PAGE 1 OF 1
COLLECTOR <i>Karen Crow</i>		COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-005		PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>(N/A)</i> <i>CWS-006</i>		FIELD LOGBOOK NO. <i>pg 82</i> HNF-N-507-11	ACTUAL SAMPLE DEPTH <i>436 FT</i>		COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL
SHIPPED TO <i>Waste Sampling & Characterization</i> <i>TASL</i>		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. <i>7953 8574 5722</i>			
MATRIX* A=Air DL=Drum L=Liquid DS=Drum S=Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HCl or H2SO4 to pH <2/Cool to 4C	HNO3 to pH <2/Cool to 4C	None		
		HOLDING TIME	14 Days	6 Months	6 Months		
		TYPE OF CONTAINER	aGs*	G/P	G		
		NO. OF CONTAINER(S)	3	1	1		
		VOLUME	40mL	500mL	250mL		
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	VOA - 8260B (TCL);	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Tritium - Ion Ex (Tritium);		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B2BTD1	WATER	11-8-11	0900	✓	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Karen Crow</i>	DATE/TIME 11-8-11 1400	RECEIVED BY/STORED IN <i>FED EX</i>	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □ ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □ □ ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □ □ ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □ □ ** The laboratory is to report all TICs for Method 8260. (1) ICP/MS - 200.8 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP/MS - 200.8 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>FED EX</i>	DATE/TIME	RECEIVED BY/STORED IN <i>Brian Daniels</i>	DATE/TIME 11/9/11 0920		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 23, 2011

TestAmerica - St. Louis

SL1198

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-186	PAGE 1 OF 1
COLLECTOR <i>Crow Hawk</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-006	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>GWS-188</i>	FIELD LOGBOOK NO. <i>883</i> HNF-N-507-11	ACTUAL SAMPLE DEPTH <i>452.5</i>	COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. <i>797720782620</i>			

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2	
		HOLDING TIME	6 Months	
		TYPE OF CONTAINER	G/P	
		NO. OF CONTAINER(S)	1	
		VOLUME	500mL	
		SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B2J9F4	WATER	11-9-11	0825	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS ** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};
RELINQUISHED BY/REMOVED FROM <i>Ed Kavir</i>	DATE/TIME <i>11-9-11 0930</i>	RECEIVED BY/STORED IN <i>Mawhite</i>	DATE/TIME <i>11-9-11 0930</i>	
RELINQUISHED BY/REMOVED FROM <i>Mawhite</i>	DATE/TIME <i>11-9-11 1400</i>	RECEIVED BY/STORED IN FEDEX	DATE/TIME	
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN <i>Swilson</i>	DATE/TIME <i>11-10-11 0915</i>	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

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DECEMBER 27, 2011

TestAmerica - St. Louis

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-187	PAGE 1 OF 1
COLLECTOR <i>Crow, Krause</i>	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-006 DUP	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>CWS-188</i>	FIELD LOGBOOK NO. <i>PS 83</i> <i>HNF-N-507-11</i>	ACTUAL SAMPLE DEPTH <i>457.5 FT</i>	COA 300194ES10		METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR		BILL OF LADING/AIR BILL NO. <i>7977 2078 2620</i>		
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2			
		HOLDING TIME	6 Months			
		TYPE OF CONTAINER	G/P			
		NO. OF CONTAINER(S)	1			
		VOLUME	500mL			
SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B2J9F5	WATER	11-9-11	0825	✓		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Ed Kouss</i>	DATE/TIME <i>11-9-11 0930</i>	RECEIVED BY/STORED IN <i>MA Whit</i>	DATE/TIME <i>11-9-11 0930</i>	** The CACN for all analytical work at WSCF laboratory is 401648ES20. <input type="checkbox"/> ** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. <input type="checkbox"/> ** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. <input type="checkbox"/> ** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. <input type="checkbox"/> ** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>MA Whit</i>	DATE/TIME <i>11-9-11 1400</i>	RECEIVED BY/STORED IN FED EX	DATE/TIME		
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN <i>J Wilson</i>	DATE/TIME <i>11-10-11 0915</i>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	

DECEMBER 23, 2011

TestAmerica - St. Louis

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-188	PAGE 1 OF 1
COLLECTOR Crow Raven cert 286	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8068 (699-44-67); I-007	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. 6WS-115	FIELD LOGBOOK NO. PS 84 HNF-N-507-11	ACTUAL SAMPLE DEPTH 471 FT	COA 300194ES10	METHOD OF SHIPMENT FEDERAL EXPRESS		ORIGINAL
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. SEE PTR	BILL OF LADING/AIR BILL NO. 7977 2555 1113			

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION	HNO3 to pH <2
		HOLDING TIME	6 Months
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
	SPECIAL HANDLING AND/OR STORAGE	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B2J9F6	WATER	11-10-11	0835

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS ** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) ICP Metals - 6020 (TAL) {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Nickel, Vanadium}; ICP Metals - 6020 (Add-on) {Arsenic, Lead, Strontium, Uranium};
RELINQUISHED BY/REMOVED FROM Ella & C4 PREC... 11-10-11	DATE/TIME 0945	RECEIVED BY/STORED IN L.D. Wall	DATE/TIME NOV 10 2011 0945	
RELINQUISHED BY/REMOVED FROM L.D. Wall	DATE/TIME NOV 10 2011 1400	RECEIVED BY/STORED IN CHPRG	DATE/TIME	
RELINQUISHED BY/REMOVED FROM RDEK	DATE/TIME	RECEIVED BY/STORED IN ABR... 11/11/11	DATE/TIME 0915	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME

DECEMBER 23, 2011

TestAmerica - St. Louis

NOVEMBER 13, 2011

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
 P.O. Box 1600
 MS B3-60
 Richland, Washington 99352
 November 13, 2011
 Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1199
Number of Samples	: one sample
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 4, 2011

II. Introduction

On November 4, 2011, one water sample was received by TestAmerica - St. Louis for chemical analysis. The sample was received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the sample was given a laboratory Id to correspond with the specific client Id. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F11-004

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with a LCS/LCS duplicate.

Deviation from Request: None

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

NOVEMBER 13, 2011

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

CH2M Hill Plateau Remediation Company

November 13, 2011

SDG: SL1199

TestAmerica Laboratories, Inc.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less than the RL.
- **C** – For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** – For all analyses, the sample result was obtained from the analysis of a dilution.
- **N** – For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** – For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.

Ion Chromatography

Batch: 1313085

The sample was analyzed at a dilution due to high concentrations of target analytes. The reporting limit has been adjusted for the dilution and the analyte is qualified with a "D" flag in the associated sample.

Affected Samples:

F1K040446 (1): B2BPJ1

The sample was analyzed outside of the 48 hour hold time for Nitrate due to long instrument run time. The sample was analyzed within 2x hold the hold time.

Affected Samples:

F1K040446 (1): B2BPJ1

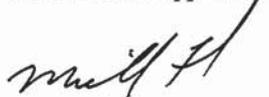
There were no observations or nonconformances for the following methods:

Volatiles

ICPMS Metals (Tc-99)

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Michael Franks
St. Louis Project Manager

SL1199 CUL 455

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F11-004-127	PAGE 1 OF 1
COLLECTOR Krause Fulton, Crow	COMPANY CONTACT EVANS, RT	TELEPHONE NO. 373-7924	PROJECT COORDINATOR EVANS, RT		PRICE CODE 1A	DATA TURNAROUND 24 Hours / 15 Days
SAMPLING LOCATION C8068 (699-44-67); I-002	PROJECT DESIGNATION FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		SAF NO. F11-004		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. CWS-184	FIELD LOGBOOK NO. ps 75 HNF-N-507-11	ACTUAL SAMPLE DEPTH 375 FT	COA 300194ES10		METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL	
SHIPPED TO Waste Sampling & Characterization. # 11-3-11 TASL		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. N/A 11/3/11 7977 0048 3329		

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	PRESERVATION		Cool~4C	Cool~4C	HCl to pH <2/Cool~4C	HN03 to pH <2 (ULTREX)	
		HOLDING TIME		24 Hours	28 Days/48 Hours	14 Days	None	
		TYPE OF CONTAINER		aG	P	aGs*	Nalgene	
		NO. OF CONTAINER(S)		1	1	3	1	
		VOLUME		500mL	500mL	40mL	500mL	
		SPECIAL HANDLING AND/OR STORAGE		SAMPLE ANALYSIS		Chromium Hex - 7196;	IC Anions - 300.0 {Nitrogen in Nitrate};	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B2BPJ1	WATER	11-3-11	0810					

NOVEMBER 13, 2011

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The CACN for all analytical work at WSCF laboratory is 401648ES20. □** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF. □□** All requests for TCE, CHCl3, and CCL4 by Field Gc as well as Cr+6, Tc-99, Nitrate requesting a 24 hour turnaround time will be on a separate COC. □□** Cr VI holding times MUST BE MET. Sample Management Project Coordinator must be contacted immediately if there is a problem. □□** The laboratory is to report all TICs for Method 8260. (1) VOLATILE ORGANICS BY FIELD GC {Carbon tetrachloride, Chloroform, Trichloroethene};
ed Krause, Charles	11-3-11 1400	FEDEX		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
FED EX		Brian James	11/4/11 0914	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

Appendix 5

Data Validation Supporting Documentation

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

VALIDATION LEVEL:	A	B	(C)	D	E
PROJECT: FY2011 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water			DATA PACKAGE: VSR12-008		
VALIDATOR: Eyda Hergenreder		LAB: TestAmerica		DATE: 03-01-2012	
			SDG: SL1198, SL1199		
ANALYSES PERFORMED					
Anions/IC X	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO ₃ /NO ₂
Sulfate	TDS	TKN	Phosphate	Cyanide	
SAMPLES/MATRIX Water samples SDG SL1198: B2BTD2 SDG SL1199: B2BPJ1					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? (Yes) No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments?	Yes	No	N/A
Initial calibrations acceptable?	Yes	No	N/A
ICV and CCV checks performed on all instruments?	Yes	No	N/A
ICV and CCV checks acceptable?	Yes	No	N/A
Standards traceable?	Yes	No	N/A
Standards expired?	Yes	No	N/A
Calculation check acceptable?	Yes	No	N/A

Comments:

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E)	Yes	No	N/A
ICB and CCB results acceptable? (Levels D, E)	Yes	No	N/A
Laboratory blanks analyzed?	Yes	No	N/A
Laboratory blank results acceptable?	Yes	No	N/A
Field blanks analyzed? (Levels C, D, E)	Yes	No	N/A
Field blank results acceptable? (Levels C, D, E)	Yes	No	N/A
Transcription/calculation errors? (Levels D, E)	Yes	No	N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? Yes No N/A

Spike recoveries acceptable? Yes No N/A

Spike standards NIST traceable? (Levels D, E) Yes No N/A

Spike standards expired? (Levels D, E) Yes No N/A

LCS/BSS samples analyzed? Yes No N/A

LCS/BSS results acceptable? Yes No N/A

Standards traceable? (Levels D, E) Yes No N/A

Standards expired? (Levels D, E) Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Performance audit sample(s) analyzed? Yes No N/A

Performance audit sample results acceptable? Yes No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable?..... Yes No N/A

Duplicate results acceptable?..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E)..... Yes No N/A

MS/MSD standards expired? (Levels D, E)..... Yes No N/A

Field duplicate RPD values acceptable?..... Yes No N/A

Field split RPD values acceptable?..... Yes No N/A

Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Comments: None

6. HOLDING TIMES (all levels)

Samples properly preserved?..... Yes No N/A

Sample holding times acceptable?..... Yes No N/A

Comments:

Analysis time were not included in data, however laboratory indicates HT was missed.

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses?..... Yes No N/A

Results supported in the raw data? (Levels D, E) Yes No N/A

Samples properly prepared? (Levels D, E) Yes No N/A

Detection limits meet RDL?..... Yes No N/A

Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: None

Data Validation for Chemical Analyses

Published Date: 08/16/10

Effective Date: 08/16/10

Comments (attach additional sheets as necessary):

More

Appendix 6

Additional Documentation Requested By Client

METHOD BLANK REPORT

General Chemistry

Client Lot #...: SL1198

Matrix.....: WATER

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	PREP
		LIMIT	UNITS		ANALYSIS DATE	BATCH #
Nitrogen, Nitrate	ND	Work Order #:	MNXA61AA	MB Lot-Sample #:	F1K090000-085	1313085
		0.020	mg/L	MCAWW 300.0A	11/04/11	
		Dilution Factor: 1				

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: SL1198

Matrix.....: WATER

<u>PARAMETER</u>	<u>SPIKE AMOUNT</u>	<u>MEASURED AMOUNT</u>	<u>UNITS</u>	<u>PERCNT RECVRY</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrogen, Nitrate	0.400	0.419	mg/L	105	MCAWW 300.0A	11/04/11	1313085
				Work Order #: MNXA61AC LCS Lot-Sample#: F1K090000-085			
				Dilution Factor: 1			

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: SL1198
 Date Sampled...: 11/03/11

Date Received...: 11/04/11

Matrix.....: WATER

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrogen, Nitrate	3.7	8.00	12.5 D	mg/L	110	MCAWW 300.0A	11/04/11	1313085
			Work Order #...: MNQN81CL		MS Lot-Sample #: F1K040471-001			
			Dilution Factor: 20					

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

D Result was obtained from the analysis of a dilution.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F1K040469

Work Order #...: MNQN8-SMP
MNQN8-DUP

Matrix.....: WATER

Date Sampled...: 11/03/11

Date Received...: 11/04/11

<u>PARAM RESULT</u>	<u>DUPLICATE RESULT</u>	<u>UNITS</u>	<u>RPD</u>	<u>RPD LIMIT</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Nitrogen, Nitrate	3.6 D	mg/L	1.8	(0-20)	MCAWW 300.0A	11/04/11	1313085
	3.7				SD Lot-Sample #: F1K040471-001		
		Dilution Factor: 20					

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

D Result was obtained from the analysis of a dilution.

NOVEMBER 13, 2011

METHOD BLANK REPORT

General Chemistry

Client Lot #...: SL1199

Matrix.....: WATER

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	PREP	
		LIMIT	UNITS		ANALYSIS DATE	BATCH #	
Nitrogen, Nitrate	ND	Work Order #: MNXA61AA		MB Lot-Sample #:	F1K090000-085		
		0.020	mg/L	MCAWW 300.0A	11/04/11	1313085	
		Dilution Factor: 1					

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NOVEMBER 13, 2011

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: SL1199

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrogen, Nitrate	0.400	0.419	mg/L	105	MCAWW 300.0A	11/04/11	1313085
				Work Order #: MNXA61AC LCS Lot-Sample#: F1K090000-085			
				Dilution Factor: 1			

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

NOVEMBER 13, 2011

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: SL1199

Matrix.....: WATER

Date Sampled...: 11/03/11

Date Received...: 11/04/11

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrogen, Nitrate	3.7	8.00	12.5 D	mg/L	110	MCAWW 300.0A	11/04/11	1313085
			Work Order #...: MNQN81CL		MS Lot-Sample #: F1K040471-001			
			Dilution Factor: 20					

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

D Result was obtained from the analysis of a dilution.

NOVEMBER 13, 2011

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: F1K040446

Work Order #....: MNQN8-SMP
MNQN8-DUP

Matrix.....: WATER

Date Sampled....: 11/03/11

Date Received...: 11/04/11

<u>PARAM</u>	<u>RESULT</u>	<u>DUPLICATE</u> <u>RESULT</u>	<u>UNITS</u>	<u>RPD</u> <u>RPD</u>	<u>RPD</u> <u>LIMIT</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Nitrogen, Nitrate	3.7	3.6 D	mg/L	1.8	(0-20)	SD Lot-Sample #: F1K040471-001 MCAWW 300.0A	11/04/11	1313085
			Dilution Factor: 20					

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

D Result was obtained from the analysis of a dilution.