

6/27/2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Richland
2800 George Washington Way
Richland, WA 99352
Tel: (509)375-3131

TestAmerica Job ID: 300-3120-1
TestAmerica Sample Delivery Group: WC1093
Client Project/Site: S16-005

For:
CH2M Hill Plateau Remediation Company
PO BOX 1600
Mail Stop R3-50
Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:
6/27/2016 12:34:07 PM
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Designee for
Whitney Ritari, Project Manager I
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I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this package. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the attached signature.

The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples. The sample/ sample duplicate RPD agreement is not applicable if one or both results are less than five times the MDL.



LINKS

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
M	Sample duplicate precision not met.
B	Estimated result. Result is less than the RL, but greater than MDL.
U	Analyzed for but not detected.

Glossary

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

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Job ID: 300-3120-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-3120-1

Comments

No additional comments.

Receipt

The samples were received on 5/24/2016 1:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 7.4° C.

HPLC/IC

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

General Chemistry

Method 7196A: The sample duplicate precision for the following sample associated with analytical batch 300-4300 was outside control limits: B35170 (300-3120-1) and (300-3120-A-1 DU). Results less than five times reporting limit. The associated Laboratory Control Sample (LCS) precision met acceptance criteria.

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



CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-005-212
Page 1 of 1

Collector Dan Weehle CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
SAF No. S16-005	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071
Project Title SURV, MAY 2016	Logbook No. HNF-N-506 <u>86</u> / <u>123</u>	Ice Chest No. N/A
Shipped To (Lab) TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
Protocol SURV	Priority: 30 Days	Offsite Property No. N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1		
SPECIAL INSTRUCTIONS		
N/A Special Handling: N/A		
Hold Time		
Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35170	N	W 5-24-16	1023	1x60-ml aG	7196_CRG: COMMON	24 Hours	Cool <=6C
B35172	Y	W 5-24-16	1022	1x60-ml aG	7196_CRG: COMMON	24 Hours	Cool <=6C

Handwritten: \$ 3120
W061093



Relinquished By Dan Weehle CHPRC	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time MAY 24 2016 1120	Received By C.M. Aguilar/CHPRC	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time MAY 24 2016 1120	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By C.M. Aguilar/CHPRC	<i>[Signature]</i>		Date/Time MAY 24 2016 1310	Received By J. Bock, TARL			Date/Time MAY 24 2016 1310	
Relinquished By			Date/Time	Received By			Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-005-186
Page 1 of 1

Collector	Dan Woeltje CHPRG	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S16-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, MAY 2016	Logbook No.	HNF-N-506 <u>86 / 13</u>	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		SPECIAL INSTRUCTIONS		Hold Time	
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1		N/A Special Handling: N/A		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	No/Type Container	Sample Analysis	Holding Time
B350Y9	Y	5.24.16	1x60-ml aG	7196_CR6: COMMON	24 Hours
B350Y8	N	5.24.16	1x60-ml aG	7196_CR6: COMMON	24 Hours
					Preservative
					Cool <=6C
					Cool <=6C

3120
CC1093

Relinquished By	Print Dan Woeltje CHPRG	Sign <i>[Signature]</i>	Date/Time MAY 24 2016 11:20	Received By	Print C.M. Aguirre CHPRG	Sign <i>[Signature]</i>	Date/Time MAY 24 2016 11:20	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Relinquished By			MAY 24 2016 13:10	Received By	J. Bock, TARL		MAY 24 2016 13:10	
Relinquished By				Received By				
Relinquished By				Received By				
Relinquished By				Received By				
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By			Date/Time	



CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-005-318
Page 1 of 1

Collector Dan Woshle CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
SAF No. S16-005	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071
Project Title SURV, MAY 2016	Logbook No. HNF-N-506 <u>86/13</u>	Ice Chest No. N/A
Shipped To (Lab) TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A
Protocol SURV	Priority: 30 Days	Offsite Property No. N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1		
SPECIAL INSTRUCTIONS N/A Special Handling: N/A		Hold Time N/A
Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Preservative Cool <=6C
Sample No.	Filter	* Date
B352C3	N	W 5.24.16 0809
B352C4	Y	W 5.24.16 0809
		No/Type Container
		1x60-ml aG
		7196_CR6: COMMON
		1x60-ml aG
		7196_CR6: COMMON
		Holding Time
		24 Hours
		24 Hours
		Preservative
		Cool <=6C
		Cool <=6C

3120
we1093

Relinquished By Dan Woshle CHPRC	Print <i>[Signature]</i>	Sign	Date/Time MAY 24 2016 12:00	Received By CM Aguirre/CHPRC	Print <i>[Signature]</i>	Sign	Date/Time MAY 24 2016 12:00	Matrix *
Relinquished By CM Aguirre/CHPRC	<i>[Signature]</i>		Date/Time MAY 24 2016 13:10	Received By <i>[Signature]</i>			Date/Time MAY 24 2016 13:10	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time		



CH2M/Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-005-211

Page 1 of 1

Collector Dan Woeltje CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	C.O.C. # S16-005-211
SAF No. S16-005	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071	
Project Title SURV, MAY 2016	Logbook No. HNF-N-506 86/13	Ice Chest No. N/A	
Shipped To (Lab) TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A	
Protocol SURV	Priority: 30 Days	Offsite Property No. N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS			
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1			
SPECIAL INSTRUCTIONS N/A Special Handling: N/A		Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35169	N	W	5:24:16	1x500-ml P	300.0_ANIONS_JC: COMMON	48 Hours	Cool <=6C

3120
W C1093

Reinquished By Dan Woeltje CHPRC	Print <i>Print</i>	Sign <i>Sign</i>	Date/Time MAY 24 2016	Received By CM Aguilar/CHPRC	Print <i>Print</i>	Sign <i>Sign</i>	Date/Time MAY 24 2016	Matrix *
Reinquished By CM Aguilar/CHPRC	<i>Print</i>	<i>Sign</i>	MAY 24 2016	Received By J. Bock, TARL	<i>Print</i>	<i>Sign</i>	MAY 24 2016	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Reinquished By				Received By				DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other

FINAL SAMPLE DISPOSITION	Disposed Method (e.g., Return to customer, per lab procedure, used in process)
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Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Client Sample ID: B35170

Lab Sample ID: 300-3120-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0045	M	0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35172

Lab Sample ID: 300-3120-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.010		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B350Y9

Lab Sample ID: 300-3120-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.044		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B350Y8

Lab Sample ID: 300-3120-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.043		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B352C3

Lab Sample ID: 300-3120-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.015		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B352C4

Lab Sample ID: 300-3120-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.016		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35169

Lab Sample ID: 300-3120-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.8	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.19	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	200	D	2.5	1.3	mg/L	10		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Client Sample ID: B35170

Date Collected: 05/24/16 10:22

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0045	M	0.0040	0.0015	mg/L			05/24/16 16:02	1

Client Sample ID: B35172

Date Collected: 05/24/16 10:22

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.010		0.0040	0.0015	mg/L			05/24/16 16:02	1

Client Sample ID: B350Y9

Date Collected: 05/24/16 09:05

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.044		0.0040	0.0015	mg/L			05/24/16 16:02	1

Client Sample ID: B350Y8

Date Collected: 05/24/16 09:05

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.043		0.0040	0.0015	mg/L			05/24/16 16:03	1

Client Sample ID: B352C3

Date Collected: 05/24/16 08:09

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-5

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.015		0.0040	0.0015	mg/L			05/24/16 16:03	1

Client Sample ID: B352C4

Date Collected: 05/24/16 08:09

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.016		0.0040	0.0015	mg/L			05/24/16 16:03	1

Client Sample ID: B35169

Date Collected: 05/24/16 10:22

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-7

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16	D	0.40	0.20	mg/L			05/24/16 17:38	2
Nitrate as N	5.8	D	0.056	0.028	mg/L			05/24/16 17:38	2
Fluoride	0.19	D	0.10	0.050	mg/L			05/24/16 17:38	2

TestAmerica Richland

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
 SDG: WC1093

Client Sample ID: B35169

Lab Sample ID: 300-3120-7

Date Collected: 05/24/16 10:22

Matrix: Water

Date Received: 05/24/16 13:10

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.038	U D	0.076	0.038	mg/L			05/24/16 17:38	2
Sulfate	200	D	2.5	1.3	mg/L			05/24/16 20:09	10

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
 SDG: WC1093

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-4279/5
 Matrix: Water
 Analysis Batch: 4279

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.014	U	0.028	0.014	mg/L			05/24/16 16:23	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			05/24/16 16:23	1

Lab Sample ID: LCS 300-4279/6
 Matrix: Water
 Analysis Batch: 4279

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.26	2.24		mg/L		99	80 - 120
Nitrite as N	3.04	3.05		mg/L		100	80 - 120

Lab Sample ID: 300-3121-A-1 MS
 Matrix: Water
 Analysis Batch: 4279

Client Sample ID: Matrix Spike
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	4.7	D	0.452	5.10	D	mg/L		99	75 - 125
Nitrite as N	0.038	U D	0.609	0.518	D	mg/L		85	75 - 125

Lab Sample ID: 300-3121-A-1 DU
 Matrix: Water
 Analysis Batch: 4279

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nitrate as N	4.7	D	4.71	D	mg/L		1	20
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20

Lab Sample ID: MB 300-4280/5
 Matrix: Water
 Analysis Batch: 4280

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			05/24/16 16:23	1
Fluoride	0.025	U	0.050	0.025	mg/L			05/24/16 16:23	1
Sulfate	0.13	U	0.25	0.13	mg/L			05/24/16 16:23	1

Lab Sample ID: LCS 300-4280/6
 Matrix: Water
 Analysis Batch: 4280

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16.0	15.6		mg/L		97	80 - 120
Fluoride	4.00	3.91		mg/L		98	80 - 120
Sulfate	20.0	19.6		mg/L		98	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-3121-A-1 MS
Matrix: Water
Analysis Batch: 4280

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Chloride	14	D	3.20	17.6	D	mg/L		99	75 - 125
Fluoride	0.33	D	0.800	1.08	D	mg/L		93	75 - 125
Sulfate	33	D	4.00	36.5	D	mg/L		99	75 - 125

Lab Sample ID: 300-3121-A-1 DU
Matrix: Water
Analysis Batch: 4280

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample		DU DU		Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Chloride	14	D	14.6	D	mg/L		1	20
Fluoride	0.33	D	0.333	D	mg/L		1	20
Sulfate	33	D	32.9	D	mg/L		1	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4300/3
Matrix: Water
Analysis Batch: 4300

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			05/24/16 15:58	1

Lab Sample ID: LCS 300-4300/4
Matrix: Water
Analysis Batch: 4300

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Cr (VI)	0.250	0.253		mg/L		101	80 - 120

Lab Sample ID: 300-3120-1 MS
Matrix: Water
Analysis Batch: 4300

Client Sample ID: B35170
Prep Type: Total/NA

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Cr (VI)	0.0045	M	0.0500	0.0454		mg/L		82	75 - 125

Lab Sample ID: 300-3120-1 DU
Matrix: Water
Analysis Batch: 4300

Client Sample ID: B35170
Prep Type: Total/NA

Analyte	Sample		DU DU		Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Cr (VI)	0.0045	M	0.00330	B M	mg/L		31	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

HPLC/IC

Analysis Batch: 4279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3120-7	B35169	Total/NA	Water	300.0	
300-3121-A-1 DU	Duplicate	Total/NA	Water	300.0	
300-3121-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-4279/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4279/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 4280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3120-7	B35169	Total/NA	Water	300.0	
300-3120-7	B35169	Total/NA	Water	300.0	
300-3121-A-1 DU	Duplicate	Total/NA	Water	300.0	
300-3121-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-4280/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4280/5	Method Blank	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 4300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3120-1	B35170	Total/NA	Water	7196A	
300-3120-1 DU	B35170	Total/NA	Water	7196A	
300-3120-1 MS	B35170	Total/NA	Water	7196A	
300-3120-2	B35172	Total/NA	Water	7196A	
300-3120-3	B350Y9	Total/NA	Water	7196A	
300-3120-4	B350Y8	Total/NA	Water	7196A	
300-3120-5	B352C3	Total/NA	Water	7196A	
300-3120-6	B352C4	Total/NA	Water	7196A	
LCS 300-4300/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4300/3	Method Blank	Total/NA	Water	7196A	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Client Sample ID: B35170

Date Collected: 05/24/16 10:22

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 16:02	RLC	TAL RCH

Client Sample ID: B35172

Date Collected: 05/24/16 10:22

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 16:02	RLC	TAL RCH

Client Sample ID: B350Y9

Date Collected: 05/24/16 09:05

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 16:02	RLC	TAL RCH

Client Sample ID: B350Y8

Date Collected: 05/24/16 09:05

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 16:03	RLC	TAL RCH

Client Sample ID: B352C3

Date Collected: 05/24/16 08:09

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 16:03	RLC	TAL RCH

Client Sample ID: B352C4

Date Collected: 05/24/16 08:09

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 16:03	RLC	TAL RCH

TestAmerica Richland

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Client Sample ID: B35169

Lab Sample ID: 300-3120-7

Date Collected: 05/24/16 10:22

Matrix: Water

Date Received: 05/24/16 13:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4279	05/24/16 17:38	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4280	05/24/16 17:38	RLC	TAL RCH
Total/NA	Analysis	300.0		10	10 mL		4280	05/24/16 20:09	RLC	TAL RCH

Client Sample ID: B35170

Lab Sample ID: 300-3120-1 DU

Date Collected: 05/24/16 10:22

Matrix: Water

Date Received: 05/24/16 13:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 16:02	RLC	TAL RCH

Client Sample ID: Duplicate

Lab Sample ID: 300-3121-A-1 DU

Date Collected: 05/24/16 10:22

Matrix: Water

Date Received: 05/24/16 13:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4279	05/24/16 17:23	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4280	05/24/16 17:23	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4279/6

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4279	05/24/16 16:38	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4280/6

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4280	05/24/16 16:38	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4300/4

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 15:59	RLC	TAL RCH

TestAmerica Richland

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-4279/5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4279	05/24/16 16:23	RLC	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-4280/5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		4280	05/24/16 16:23	RLC	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-4300/3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1			4300	05/24/16 15:58	RLC	TAL RCH

Client Sample ID: B35170

Date Collected: 05/24/16 10:22

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3120-1 MS

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	7196A		1		3.0 mL	4300	05/24/16 15:59	RLC	TAL RCH

Client Sample ID: Matrix Spike

Date Collected: 05/24/16 10:22

Date Received: 05/24/16 13:10

Lab Sample ID: 300-3121-A-1 MS

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	10 mL		4279	05/24/16 17:08	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4280	05/24/16 17:08	RLC	TAL RCH

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

Method Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
 SDG: WC1093

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH
7196A	Chromium, Hexavalent	SW846	TAL RCH

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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

Laboratory References:

TAL RCH = TestAmerica Richland, 2800 George Washington Way, Richland, WA 99352, TEL (509)375-3131

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-005

TestAmerica Job ID: 300-3120-1
SDG: WC1093

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3120-1	B35170	Water	05/24/16 10:22	05/24/16 13:10
300-3120-2	B35172	Water	05/24/16 10:22	05/24/16 13:10
300-3120-3	B350Y9	Water	05/24/16 09:05	05/24/16 13:10
300-3120-4	B350Y8	Water	05/24/16 09:05	05/24/16 13:10
300-3120-5	B352C3	Water	05/24/16 08:09	05/24/16 13:10
300-3120-6	B352C4	Water	05/24/16 08:09	05/24/16 13:10
300-3120-7	B35169	Water	05/24/16 10:22	05/24/16 13:10

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3120-1

SDG Number: WC1093

Login Number: 3120

List Number: 1

Creator: Bock, Julie A

List Source: TestAmerica Richland

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	