

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: 300-1450-1
TestAmerica Sample Delivery Group: WC0572
Client Project/Site: CH2M Hill Chemical

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

Attn: CPP Sample Management



Authorized for release by:
12/7/2015 10:54:00 AM
Steven Campbell, Quality Assurance Assistant
steven.campbell@testamericainc.com

Designee for
Whitney Ritari, Project Manager I
(509)375-3131 ext164
whitney.ritari@testamericainc.com

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 elss than five times the MDL.



LINKS

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Qualifiers**HPLC/IC**

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

General Chemistry

Qualifier	Qualifier Description
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)

Job ID: 300-1450-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-1450-1**

Comments

No additional comments.

Receipt

The samples were received on 11/10/2015 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.9° C.

HPLC/IC

Method 300.0: The following samples required filtration to reduce matrix interferences: B32X51 (300-1450-7) and B32X61 (300-1450-8).

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

General Chemistry

Method 7196A: The following samples were received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: B32X62 (300-1450-1), B32X60 (300-1450-2), B32X50 (300-1450-3) and B32X52 (300-1450-4). For more information refer to SIR attached to report.

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. #
X16-002-265
Page 1 of 1

Collector	J.R. Aguilar	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X16-002	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064
Project Title	AQUIFER TUBES, OCTOBER 2015	Logbook No.	HNF-N-506 78 / 74	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	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		
*** 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			Hold Time N/A		
			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
B32X62	Y	W	11-9-15	1129	1x60-ml aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B32X60	N	W	11-9-15	1129	1x60-ml aG	7196_CR6: COMMON	24 Hours	Cool <=6C

300-1450 COC



#1456
WC0572

December 07, 2015

Relinquished By	J.R. Aguilar	Print	Sign	NOV 09 2015	Date/Time	15:28	Received By	SSU-1	Print	Sign	NOV 09 2015	Date/Time	15:28
Relinquished By	SSU-1	Print	Sign	NOV 10 2015	Date/Time	0740	Received By	M.A. White	Print	Sign	NOV 10 2015	Date/Time	0740
Relinquished By	M.A. White	Print	Sign	NOV 10 2015	Date/Time	0845	Received By	J. Fiestz, TARL	Print	Sign	NOV 10 2015	Date/Time	0845

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

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. #
X16-002-262
Page 1 of 1

Collector	J.R. Aguilar/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X16-002	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064
Project Title	AQUIFER TUBES, OCTOBER 2015	Logbook No.	HNF-N-506 76 / 78	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	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		
*** 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			Hold Time		
			N/A		
			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
B32X50	N	W	11-9-15	1038	1x60-ml aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B32X52	Y	W	11-9-15	1038	1x60-ml aG	7196_CR6: COMMON	24 Hours	Cool <=6C

#1450
WC0572

December 07, 2015

Relinquished By	J.R. Aguilar/CHPRC	Print	Sign	NOV 09 2015	Date/Time	15:00	Received By	SSU-1	Print	Sign	NOV 09 2015	Date/Time	15:00	Matrix *
Relinquished By	SSU-1				NOV 10 2015	0740	Received By	M.A. White/CHPRC			NOV 10 2015	0740		S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By	M.A. White/CHPRC				NOV 10 2015	0845	Received By	J. Friesz/TAPI			NOV 10 2015	0845		DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other

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. #

X16-002-269

Page 1 of 1

Collector	J.R. Aguilar/CH2M	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X16-002	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064
Project Title	AQUIFER TUBES, OCTOBER 2015	Logbook No.	HNF-N-506 78/76	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	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		
*** 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		
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
B32X78	Y	W	11-9-15	1315	1x60-ml aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B32X77	N	W	11-9-15	1315	1x60-ml aG	7196_CR6: COMMON	24 Hours	Cool <=6C

#1450
WCO572

December 07, 2015

Relinquished By	J.R. Aguilar/CH2M	Sign	Date/Time	NOV 09 2015 1528	Received By	SSU-1	Print	Sign	Date/Time	NOV 09 2015 1530
Relinquished By	SSU-1	Sign	Date/Time	NOV 10 2015 0740	Received By	M.A. White/CH2M	Print	Sign	Date/Time	NOV 10 2015 0748
Relinquished By	M.A. White/CH2M	Sign	Date/Time	NOV 10 2015 0845	Received By	J. HESS, TAP	Print	Sign	Date/Time	NOV 10 2015 0845

Matrix *

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

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

C.O.C. #
X16-002-295
Page 1 of 1

Collector	J.R. Aguilar/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X16-002	Sampling Origin	Hanford Site	Purchase Order/Charge Code	303064
Project Title	AQUIFER TUBES, OCTOBER 2015	Logbook No.	HNF-N-506 78 / 76	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	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		PRIORITY		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
*** 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					
Sample No.	B32X61	Filter	N	Date	11-9-15
		* W		Time	1129
		No./Type Container	1x500-mL P	Sample Analysis	300.0_ANIONS_IC: COMMON
		Holding Time	48 Hours	Preservative	Cool <=6C

#1456
W C0572

December 07, 2015

Relinquished By	J.R. Aguilar/CHPRC	Sign	[Signature]	Date/Time	NOV 09 2015 1500	Received By	SSU-1	Print	[Signature]	Sign	[Signature]	Date/Time	NOV 09 2015 1500	Matrix *
Relinquished By	SSU-1	Date/Time	NOV 10 2015 0740	Received By	W.A. White/CHPRC	Date/Time	NOV 10 2015 0740	S	= Soil	DS	= Drum Solids			
Relinquished By	M.A. White/CHPRC	Date/Time	NOV 10 2015 0845	Received By	J. Friesz, TARL	Date/Time	NOV 10 2015 0845	SE	= Sediment	DL	= Dross Liquids			
Relinquished By	[Signature]	Date/Time		Received By		Date/Time		SO	= Solid	T	= Tissue			
Relinquished By		Date/Time		Received By		Date/Time		SL	= Sludges	WT	= Wipe			
Relinquished By		Date/Time		Received By		Date/Time		W	= Water	L	= Liquid			
Relinquished By		Date/Time		Received By		Date/Time		O	= Oil	V	= Vegetation			
Relinquished By		Date/Time		Received By		Date/Time		A	= Air	X	= Other			

SAMPLE ISSUE RESOLUTION

SIR NUM	SIR16-119
REV NUM	0
DATE INITIATED	11/19/2015



SAMPLE EVENT INFORMATION

SAF NUM(S)	X16-002
OPERABLE UNIT(S)	NONE
PROJECT(S)	CERC16
SAMPLE EVENT TITLE(S)	CERC16
LABORATORY	TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES	4
SAMPLE NUMBERS	B32X50, B32X52, B32X60, B32X62
SAMPLE MATRIX	WATER
COLLECTION DATE	11/9/2015 - 11/9/2015
SDG NUM	WC0572

ISSUE BACKGROUND

CLASS	Field Sampling Issue
TYPE	Analysis Hold Time Exceeded
DESCRIPTION	The samples listed above were received with less than half the remaining on the hold time. As such the laboratory had insufficient time remaining to perform the analysis within analytical hold time.

DISPOSITION

DESCRIPTION	PROPOSED DISPOSITION: Initiate SIR, report results and include hold time comment in the case narrative
JUSTIFICATION	ACCEPTED DISPOSITION: Accept the proposed resolution.
	SUBMITTED BY: Steven Campbell/TARL DATE: 11/19/15
	ACCEPTED BY: Karen Waters-Husted/CHPRC DATE: 12/2/15

Detection Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
 SDG: WC0572

Client Sample ID: B32X62

Lab Sample ID: 300-1450-1

No Detections.

Client Sample ID: B32X60

Lab Sample ID: 300-1450-2

No Detections.

Client Sample ID: B32X50

Lab Sample ID: 300-1450-3

No Detections.

Client Sample ID: B32X52

Lab Sample ID: 300-1450-4

No Detections.

Client Sample ID: B32X78

Lab Sample ID: 300-1450-5

No Detections.

Client Sample ID: B32X77

Lab Sample ID: 300-1450-6

No Detections.

Client Sample ID: B32X51

Lab Sample ID: 300-1450-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1.4	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	2.6	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.13	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	11	D	0.50	0.25	mg/L	2		300.0	Total/NA

Client Sample ID: B32X61

Lab Sample ID: 300-1450-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.7	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.9	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.18	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	11	D	0.50	0.25	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
 SDG: WC0572

Client Sample ID: B32X62
Date Collected: 11/09/15 11:29
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L	-		11/10/15 11:31	1

Client Sample ID: B32X60
Date Collected: 11/09/15 11:29
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L	-		11/10/15 11:31	1

Client Sample ID: B32X50
Date Collected: 11/09/15 10:38
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L	-		11/10/15 11:31	1

Client Sample ID: B32X52
Date Collected: 11/09/15 10:38
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-4
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L	-		11/10/15 11:32	1

Client Sample ID: B32X78
Date Collected: 11/09/15 13:15
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-5
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L	-		11/10/15 11:32	1

Client Sample ID: B32X77
Date Collected: 11/09/15 13:15
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-6
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L	-		11/10/15 11:32	1

Client Sample ID: B32X51
Date Collected: 11/09/15 10:38
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-7
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.4	D	0.40	0.20	mg/L	-		11/10/15 15:54	2
Nitrate as N	2.6	D	0.056	0.028	mg/L	-		11/10/15 15:54	2
Fluoride	0.13	D	0.10	0.050	mg/L	-		11/10/15 15:54	2

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
 SDG: WC0572

Client Sample ID: B32X51
Date Collected: 11/09/15 10:38
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-7
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.038	U	0.076	0.038	mg/L			11/10/15 15:54	2
Sulfate	11	D	0.50	0.25	mg/L			11/10/15 15:54	2

Client Sample ID: B32X61
Date Collected: 11/09/15 11:29
Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-8
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.7	D	0.40	0.20	mg/L			11/10/15 16:10	2
Nitrate as N	5.9	D	0.056	0.028	mg/L			11/10/15 16:10	2
Fluoride	0.18	D	0.10	0.050	mg/L			11/10/15 16:10	2
Nitrite as N	0.038	U	0.076	0.038	mg/L			11/10/15 16:10	2
Sulfate	11	D	0.50	0.25	mg/L			11/10/15 16:10	2

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-1923/5
 Matrix: Water
 Analysis Batch: 1923

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			11/10/15 12:39	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			11/10/15 12:39	1

Lab Sample ID: LCS 300-1923/6
 Matrix: Water
 Analysis Batch: 1923

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	2.39		mg/L		106	80 - 120
Nitrite as N	3.04	3.26		mg/L		107	80 - 120

Lab Sample ID: 300-1437-A-5 MS
 Matrix: Water
 Analysis Batch: 1923

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	0.030	B D	0.452	0.437	D	mg/L		90	75 - 125
Nitrite as N	0.038	U	0.609	0.591	D	mg/L		97	75 - 125

Lab Sample ID: 300-1437-A-5 DU
 Matrix: Water
 Analysis Batch: 1923

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nitrate as N	0.030	B D	0.028	U	mg/L		NC	20
Nitrite as N	0.038	U	0.038	U	mg/L		NC	20

Lab Sample ID: MB 300-1924/5
 Matrix: Water
 Analysis Batch: 1924

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			11/10/15 12:39	1
Fluoride	0.025	U	0.050	0.025	mg/L			11/10/15 12:39	1
Sulfate	0.13	U	0.25	0.13	mg/L			11/10/15 12:39	1

Lab Sample ID: LCS 300-1924/6
 Matrix: Water
 Analysis Batch: 1924

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	16.8		mg/L		105	80 - 120
Fluoride	4.00	4.24		mg/L		106	80 - 120
Sulfate	20.0	21.1		mg/L		105	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-1437-A-5 MS
 Matrix: Water
 Analysis Batch: 1924

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
Chloride	0.20	U	3.20	3.19	D	mg/L		100	75 - 125
Fluoride	0.050	U	0.800	0.783	D	mg/L		98	75 - 125
Sulfate	0.25	U	4.00	3.95	D	mg/L		99	75 - 125

Lab Sample ID: 300-1437-A-5 DU
 Matrix: Water
 Analysis Batch: 1924

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	0.20	U	0.20	U	mg/L		NC	20
Fluoride	0.050	U	0.050	U	mg/L		NC	20
Sulfate	0.25	U	0.25	U	mg/L		NC	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-1929/3
 Matrix: Water
 Analysis Batch: 1929

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			11/10/15 11:22	1

Lab Sample ID: LCS 300-1929/4
 Matrix: Water
 Analysis Batch: 1929

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.252		mg/L		101	80 - 120

Lab Sample ID: 300-1448-A-1 MS
 Matrix: Water
 Analysis Batch: 1929

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
Cr (VI)	0.0015	U	0.0500	0.0492		mg/L		98	85 - 115

Lab Sample ID: 300-1448-A-1 DU
 Matrix: Water
 Analysis Batch: 1929

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.0015	U	0.0015	U	mg/L		NC	20

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
 SDG: WC0572

HPLC/IC

Analysis Batch: 1923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1437-A-5 DU	Duplicate	Total/NA	Water	300.0	
300-1437-A-5 MS	Matrix Spike	Total/NA	Water	300.0	
300-1450-7	B32X51	Total/NA	Water	300.0	
300-1450-8	B32X61	Total/NA	Water	300.0	
LCS 300-1923/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-1923/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 1924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1437-A-5 DU	Duplicate	Total/NA	Water	300.0	
300-1437-A-5 MS	Matrix Spike	Total/NA	Water	300.0	
300-1450-7	B32X51	Total/NA	Water	300.0	
300-1450-8	B32X61	Total/NA	Water	300.0	
LCS 300-1924/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-1924/5	Method Blank	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 1929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1448-A-1 DU	Duplicate	Total/NA	Water	7196A	
300-1448-A-1 MS	Matrix Spike	Total/NA	Water	7196A	
300-1450-1	B32X62	Total/NA	Water	7196A	
300-1450-2	B32X60	Total/NA	Water	7196A	
300-1450-3	B32X50	Total/NA	Water	7196A	
300-1450-4	B32X52	Total/NA	Water	7196A	
300-1450-5	B32X78	Total/NA	Water	7196A	
300-1450-6	B32X77	Total/NA	Water	7196A	
LCS 300-1929/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-1929/3	Method Blank	Total/NA	Water	7196A	

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
 SDG: WC0572

Client Sample ID: B32X62

Date Collected: 11/09/15 11:29

Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-1

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			1929	11/10/15 11:31	AMC	TAL RCH

Client Sample ID: B32X60

Date Collected: 11/09/15 11:29

Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-2

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			1929	11/10/15 11:31	AMC	TAL RCH

Client Sample ID: B32X50

Date Collected: 11/09/15 10:38

Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-3

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			1929	11/10/15 11:31	AMC	TAL RCH

Client Sample ID: B32X52

Date Collected: 11/09/15 10:38

Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-4

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			1929	11/10/15 11:32	AMC	TAL RCH

Client Sample ID: B32X78

Date Collected: 11/09/15 13:15

Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-5

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			1929	11/10/15 11:32	AMC	TAL RCH

Client Sample ID: B32X77

Date Collected: 11/09/15 13:15

Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-6

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			1929	11/10/15 11:32	AMC	TAL RCH

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
 SDG: WC0572

Client Sample ID: B32X51

Date Collected: 11/09/15 10:38
 Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-7

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		1923	11/10/15 15:54	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		1924	11/10/15 15:54	RLC	TAL RCH

Client Sample ID: B32X61

Date Collected: 11/09/15 11:29
 Date Received: 11/10/15 08:45

Lab Sample ID: 300-1450-8

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		1923	11/10/15 16:10	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		1924	11/10/15 16:10	RLC	TAL RCH

Client Sample ID: Duplicate

Date Collected: 11/09/15 08:30
 Date Received: 11/09/15 14:35

Lab Sample ID: 300-1437-A-5 DU

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		1923	11/10/15 13:39	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		1924	11/10/15 13:39	RLC	TAL RCH

Client Sample ID: Duplicate

Date Collected: 11/09/15 11:00
 Date Received: 11/10/15 08:45

Lab Sample ID: 300-1448-A-1 DU

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	10 mL		1929	11/10/15 11:26	AMC	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A
 Date Received: N/A

Lab Sample ID: LCS 300-1923/6

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	300.0		1	10 mL		1923	11/10/15 12:54	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A
 Date Received: N/A

Lab Sample ID: LCS 300-1924/6

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	300.0		1	10 mL		1924	11/10/15 12:54	RLC	TAL RCH

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
 SDG: WC0572

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-1929/4

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			1929	11/10/15 11:23	AMC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-1923/5

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		1923	11/10/15 12:39	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-1924/5

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		1924	11/10/15 12:39	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-1929/3

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			1929	11/10/15 11:22	AMC	TAL RCH

Client Sample ID: Matrix Spike

Lab Sample ID: 300-1437-A-5 MS

Date Collected: 11/09/15 08:30

Matrix: Water

Date Received: 11/09/15 14:35

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		1923	11/10/15 13:24	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		1924	11/10/15 13:24	RLC	TAL RCH

Client Sample ID: Matrix Spike

Lab Sample ID: 300-1448-A-1 MS

Date Collected: 11/09/15 11:00

Matrix: Water

Date Received: 11/10/15 08:45

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	1929	11/10/15 11:23	AMC	TAL RCH

Laboratory References:

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

Client: CH2M Hill Plateau Remediation Company
Project/Site: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
SDG: WC0572

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: CH2M Hill Chemical

TestAmerica Job ID: 300-1450-1
SDG: WC0572

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-1450-1	B32X62	Water	11/09/15 11:29	11/10/15 08:45
300-1450-2	B32X60	Water	11/09/15 11:29	11/10/15 08:45
300-1450-3	B32X50	Water	11/09/15 10:38	11/10/15 08:45
300-1450-4	B32X52	Water	11/09/15 10:38	11/10/15 08:45
300-1450-5	B32X78	Water	11/09/15 13:15	11/10/15 08:45
300-1450-6	B32X77	Water	11/09/15 13:15	11/10/15 08:45
300-1450-7	B32X51	Water	11/09/15 10:38	11/10/15 08:45
300-1450-8	B32X61	Water	11/09/15 11:29	11/10/15 08:45



Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-1450-1

SDG Number: WC0572

Login Number: 1450

List Number: 1

Creator: Friesz, Jordan D

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.	True	
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.	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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

