

# 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: 300-5501-1  
TestAmerica Sample Delivery Group: WC2048  
Client Project/Site: F17-014

For:  
CH2M Hill Plateau Remediation Company  
825 Jadwin Avenue  
Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:  
6/14/2017 8:06:23 AM  
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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.*



### LINKS

Review your project results through  
**TotalAccess**

Have a Question?



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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

<b>SAMPLE ISSUE RESOLUTION (SIR) REPORT</b>		<b>SIR Number:</b> SIR17-0835 <b>Rev. Number:</b> 0 <b>Date Initiated:</b> 07/18/2017
<b><u>SAMPLE EVENT INFORMATION</u></b>		
<b>SAF NUM(S):</b>	F17-014	
<b>LABORATORY:</b>	TARL	
<b><u>SAMPLING INFORMATION</u></b>		
<b>NUMBER OF SAMPLES:</b>	1	
<b>SAMPLE NUMBERS:</b>	B398V9	
<b>SAMPLE MATRIX:</b>	WATER	
<b>SDG NUM(S):</b>	WC2048	
<b><u>ISSUE BACKGROUND</u></b>		
<b>CLASS:</b>	Chain of Custody Issue (Field)	
<b>TYPE:</b>	No Receiver Listed on COC	
<b>DESCRIPTION:</b>	CIC F17-014-070, missing signature in the second received by box	
<b><u>RESOLUTION</u></b>		
<b>PROPOSED RESOLUTION:</b>	DOCUMENT AND CLOSE	
<b>FINAL RESOLUTION:</b>	DOCUMENT AND CLOSE	
<b>SUBMITTED BY:</b>		
CALIXTO, SE	_____	06/14/2017 _____
<b>ACCEPTED BY:</b>		
KILLAND, KE	_____	07/18/2017 _____

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Chain of Custody . . . . .	5
Detection Summary . . . . .	9
Client Sample Results . . . . .	10
QC Sample Results . . . . .	11
QC Association Summary . . . . .	14
Lab Chronicle . . . . .	15
Method Summary . . . . .	17
Sample Summary . . . . .	18
Receipt Checklists . . . . .	19



## Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
SDG: WC2048

### Qualifiers

#### HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
N	MS, MSD: Spike recovery is outside acceptance limits.
X	See case narrative notes for explanation of the 'X' flag

#### 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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

### Case Narrative

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
SDG: WC2048

**Job ID: 300-5501-1**

**Laboratory: TestAmerica Richland**

**Narrative**

**Job Narrative  
300-5501-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 5/17/2017 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.0° C.

**HPLC/IC**

Method 300.0: The matrix spike (MS) recovery for Nitrate as N in analytical batch 7942 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The associated sample result exceeds four times the amount spiked into the MS.

The matrix spike (MS) recovery for Orthophosphate as P from the 2x dilution run in analytical batch 7942 was outside control limits. The MS recovery from the 5x dilution run met acceptance criteria and has been reported.

An X flag indicates that the associated sample result exceeds four times the amount spiked into the MS sample for a given analyte.

Due to TALS limitations an X qualifier was not placed on the MS sample for Chloride and Sulfate.

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

**General Chemistry**

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



CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F17-014-076	PAGE 1 OF 1
COLLECTOR Jeff Tuckesen CHPRC	COMPANY CONTACT LYNCH, SA	TELEPHONE NO. 373-5586	PROJECT COORDINATOR LYNCH, SA	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9563, I-006 DUP	PROJECT DESIGNATION FY2017 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	FIELD LOGBOOK NO. HNF-N-645 7-42	ACTUAL SAMPLE DEPTH 266.77	SAF NO. F17-014	AIR QUALITY <input type="checkbox"/>
ICE CHEST NO. NA	OFFSITE PROPERTY NO. NA	NO. OF CONTAINER(S) 1	VOLUME 60mL	COA 302938	METHOD OF SHIPMENT GOVERNMENT VEHICLE
SHIPPED TO TestAmerica Incorporated, Richland	PRESERVATION Cool <=6C		HOLDING TIME 24 Hours		ORIGINAL
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		*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.		BILL OF LADING/AIR BILL NO. NA	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	SPECIAL HANDLING AND/OR STORAGE	
				NO. OF CONTAINER(S)	VOLUME
B398W5	WATER	MAY 16 2017	1445	1	60mL

WCT048  
5501



300-5501 COC

CHAIN OF POSSESSION	SIGN / PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Jeff Tuckesen CHPRC	RECEIVED BY/STORED IN SSU-1	TRVL-17-090
DATE/TIME MAY 16 2017 1545	DATE/TIME MAY 16 2017 1545	
RELINQUISHED BY/REMOVED FROM SSU-1	RECEIVED BY/STORED IN Janelle Zunker CHPRC	
DATE/TIME MAY 17 2017 0715	DATE/TIME MAY 17 2017 0715	
RELINQUISHED BY/REMOVED FROM Janelle Zunker CHPRC	RECEIVED BY/STORED IN A Rogers	
DATE/TIME MAY 17 2017 1000	DATE/TIME MAY 17 2017 1000	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	

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

PRINTED ON 3/9/2017      FSR ID = FSR42553      TRVL NUM = TRVL-17-090      A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F17-014-069	PAGE 1 OF 1
COLLECTOR	Jeff Tuckesen CHPRC	COMPANY CONTACT	LYNCH, SA	TELEPHONE NO.	373-5986
SAMPLING LOCATION	C9563, I-006	PROJECT DESIGNATION	FV2017 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water		
ICE CHEST NO.	NA	FIELD LOGBOOK NO.	HNF-N-645	ACTUAL SAMPLE DEPTH	296.77 ft
SHIPPED TO	TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.	NA	COA	302938
		BILL OF LADING/AIR BILL NO.	NA		
		PROJECT COORDINATOR	LYNCH, SA	PRICE CODE	7H
		AIR QUALITY	<input type="checkbox"/>	METHOD OF SHIPMENT	GOVERNMENT VEHICLE
				DATA TURNAROUND	30 Days / 30 Days
					<b>ORIGINAL</b>

SAMPLE NO.	MATRIX*	SPECIAL HANDLING AND/OR STORAGE	SAMPLING DATE	SAMPLING TIME	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLING ANALYSIS	REMARKS
B398V8	WATER		MAY 16 2017	1445	Cool <=6C	24 Hours	ag	1	60ml	7196, CR6; COMMON;	
											WC2048 SS01

CHAIN OF POSSESSION		SIGN / PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-17-090	
Jeff Tuckesen CHPRC	MAY 16 2017 1545	SSU-1	MAY 16 2017 1545		
SSU-1	MAY 17 2017 0715	Jamelle Zunker CHPRC	MAY 17 2017 0715		
Jamelle Zunker CHPRC	MAY 17 2017 1806	A. Rogers, IARL	MAY 17 2017 1806		
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 3/9/2017      FSR ID = FSR42551      TRVL NUM = TRVL-17-090      A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		FL17-014-077	PAGE 1 OF 1
COLLECTOR Jeff Tuckser CHPRC	COMPANY CONTACT LYNCH, SA	TELEPHONE NO. 373-5586	PROJECT COORDINATOR LYNCH, SA	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9563, I-006 DUP	PROJECT DESIGNATION FY2017 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	FIELD LOGBOOK NO. HNF-N-645 2-42	SAF NO. FL17-014	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE <b>ORIGINAL</b>
ICE CHEST NO. NA	FIELD LOGBOOK NO. HNF-N-645 2-42	ACTUAL SAMPLE DEPTH 266.77 ft	COA 302938		
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. NA	BILL OF LADING/AIR BILL NO. NA			

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION		HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
		COOL <=6C	48 Hours					
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Sediment SF=Sludge T=Tissue V=Vegetation W=Water WI=Wipe X=Other					P	1	125ml	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B398W6	WATER	MAY 16 2017	1445					

WC2048  
5501

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS.
RELINQUISHED BY/REMOVED FROM Jeff Tuckser CHPRC	RECEIVED BY/STORED IN SSU-1	TRVL-17-090 (1) 300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};
RELINQUISHED BY/REMOVED FROM SSU-1	RECEIVED BY/STORED IN JEFF TUCKSER CHPRC	
RELINQUISHED BY/REMOVED FROM Janelle Zunker CHPRC	RECEIVED BY/STORED IN A. ROGERS, TARIK CHPRC	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
LABORATORY SECTION	RECEIVED BY	TITLE
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY

PRINTED ON 3/9/2017 FSR ID = FSR42553 TRVL NUM = TRVL-17-090 A-6003-618 (REV 2)



### Detection Summary

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
 SDG: WC2048

**Client Sample ID: B398W5**

**Lab Sample ID: 300-5501-1**

No Detections.

**Client Sample ID: B398V8**

**Lab Sample ID: 300-5501-2**

No Detections.

**Client Sample ID: B398W6**

**Lab Sample ID: 300-5501-3**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	45	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	6.6	D	0.14	0.070	mg/L	5		300.0	Total/NA
Fluoride	0.33	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	78	D	0.50	0.25	mg/L	2		300.0	Total/NA

**Client Sample ID: B398V9**

**Lab Sample ID: 300-5501-4**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	44	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	6.8	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.33	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	78	D	0.50	0.25	mg/L	2		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: F17-014

TestAmerica Job ID: 300-5501-1  
SDG: WC2048

Client Sample ID: B398W5

Date Collected: 05/16/17 14:45

Date Received: 05/17/17 10:00

Lab Sample ID: 300-5501-1

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			05/17/17 11:51	1

Client Sample ID: B398V8

Date Collected: 05/16/17 14:45

Date Received: 05/17/17 10:00

Lab Sample ID: 300-5501-2

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			05/17/17 11:51	1

Client Sample ID: B398W6

Date Collected: 05/16/17 14:45

Date Received: 05/17/17 10:00

Lab Sample ID: 300-5501-3

Matrix: Water

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45	D	0.40	0.20	mg/L			05/17/17 14:21	2
Nitrate as N	6.6	D	0.14	0.070	mg/L			05/17/17 15:52	5
Fluoride	0.33	D	0.10	0.050	mg/L			05/17/17 14:21	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			05/17/17 14:21	2
Orthophosphate as P	0.082	U D N	0.16	0.082	mg/L			05/17/17 14:21	2
Sulfate	78	D	0.50	0.25	mg/L			05/17/17 14:21	2

Client Sample ID: B398V9

Date Collected: 05/16/17 14:45

Date Received: 05/17/17 10:00

Lab Sample ID: 300-5501-4

Matrix: Water

## Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44	D	0.40	0.20	mg/L			05/17/17 15:07	2
Nitrate as N	6.8	D	0.056	0.028	mg/L			05/17/17 15:07	2
Fluoride	0.33	D	0.10	0.050	mg/L			05/17/17 15:07	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			05/17/17 15:07	2
Orthophosphate as P	0.082	U D N	0.16	0.082	mg/L			05/17/17 15:07	2
Sulfate	78	D	0.50	0.25	mg/L			05/17/17 15:07	2

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
SDG: WC2048

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-7942/5  
Matrix: Water  
Analysis Batch: 7942

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			05/17/17 13:51	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			05/17/17 13:51	1
Orthophosphate as P	0.041	U	0.082	0.041	mg/L			05/17/17 13:51	1

Lab Sample ID: LCS 300-7942/6  
Matrix: Water  
Analysis Batch: 7942

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	2.32		mg/L		103	80 - 120
Nitrite as N	3.04	3.05		mg/L		100	80 - 120
Orthophosphate as P	6.53	6.64		mg/L		102	80 - 120

Lab Sample ID: 300-5501-3 MS  
Matrix: Water  
Analysis Batch: 7942

Client Sample ID: B398W6  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.038	U D	0.609	0.645	D	mg/L		106	75 - 125

Lab Sample ID: 300-5501-3 MS  
Matrix: Water  
Analysis Batch: 7942

Client Sample ID: B398W6  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	6.6	D	1.13	8.03	D X	mg/L		127	75 - 125
Orthophosphate as P	0.21	U D	3.26	3.15	D	mg/L		97	75 - 125

Lab Sample ID: 300-5501-3 DU  
Matrix: Water  
Analysis Batch: 7942

Client Sample ID: B398W6  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20
Orthophosphate as P	0.082	U D N	0.082	U D	mg/L		NC	20

Lab Sample ID: 300-5501-3 DU  
Matrix: Water  
Analysis Batch: 7942

Client Sample ID: B398W6  
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	6.6	D	6.72	D	mg/L		2	20

Lab Sample ID: MB 300-7943/5  
Matrix: Water  
Analysis Batch: 7943

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			05/17/17 13:51	1

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
 SDG: WC2048

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 300-7943/5  
 Matrix: Water  
 Analysis Batch: 7943

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.025	U	0.050	0.025	mg/L			05/17/17 13:51	1
Sulfate	0.13	U	0.25	0.13	mg/L			05/17/17 13:51	1

Lab Sample ID: LCS 300-7943/6  
 Matrix: Water  
 Analysis Batch: 7943

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	15.9		mg/L		100	80 - 120
Fluoride	4.00	3.99		mg/L		100	80 - 120
Sulfate	20.0	20.1		mg/L		100	80 - 120

Lab Sample ID: 300-5501-3 MS  
 Matrix: Water  
 Analysis Batch: 7943

Client Sample ID: B398W6  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	45	D	3.20	47.2	D	mg/L		76	75 - 125
Fluoride	0.33	D	0.800	1.09	D	mg/L		94	75 - 125
Sulfate	78	D	4.00	81.1	D	mg/L		76	75 - 125

Lab Sample ID: 300-5501-3 DU  
 Matrix: Water  
 Analysis Batch: 7943

Client Sample ID: B398W6  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	45	D	44.7	D	mg/L		0.1	20
Fluoride	0.33	D	0.333	D	mg/L		0.2	20
Sulfate	78	D	78.2	D	mg/L		0.1	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-8069/3  
 Matrix: Water  
 Analysis Batch: 8069

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			05/17/17 11:47	1

Lab Sample ID: LCS 300-8069/4  
 Matrix: Water  
 Analysis Batch: 8069

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	0.256		mg/L		102	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
 SDG: WC2048

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: 300-5501-1 MS  
 Matrix: Water  
 Analysis Batch: 8069

Client Sample ID: B398W5  
 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	0.0501	0.0476		mg/L		95	75 - 125

Lab Sample ID: 300-5501-1 DU  
 Matrix: Water  
 Analysis Batch: 8069

Client Sample ID: B398W5  
 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

- 1
- 2
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## QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
 SDG: WC2048

## HPLC/IC

## Analysis Batch: 7942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-5501-3	B398W6	Total/NA	Water	300.0	
300-5501-3	B398W6	Total/NA	Water	300.0	
300-5501-4	B398V9	Total/NA	Water	300.0	
MB 300-7942/5	Method Blank	Total/NA	Water	300.0	
LCS 300-7942/6	Lab Control Sample	Total/NA	Water	300.0	
300-5501-3 MS	B398W6	Total/NA	Water	300.0	
300-5501-3 MS	B398W6	Total/NA	Water	300.0	
300-5501-3 DU	B398W6	Total/NA	Water	300.0	
300-5501-3 DU	B398W6	Total/NA	Water	300.0	

## Analysis Batch: 7943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-5501-3	B398W6	Total/NA	Water	300.0	
300-5501-4	B398V9	Total/NA	Water	300.0	
MB 300-7943/5	Method Blank	Total/NA	Water	300.0	
LCS 300-7943/6	Lab Control Sample	Total/NA	Water	300.0	
300-5501-3 MS	B398W6	Total/NA	Water	300.0	
300-5501-3 DU	B398W6	Total/NA	Water	300.0	

## General Chemistry

## Analysis Batch: 8069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-5501-1	B398W5	Total/NA	Water	7196A	
300-5501-2	B398V8	Total/NA	Water	7196A	
MB 300-8069/3	Method Blank	Total/NA	Water	7196A	
LCS 300-8069/4	Lab Control Sample	Total/NA	Water	7196A	
300-5501-1 MS	B398W5	Total/NA	Water	7196A	
300-5501-1 DU	B398W5	Total/NA	Water	7196A	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
SDG: WC2048

Client Sample ID: B398W5

Lab Sample ID: 300-5501-1

Date Collected: 05/16/17 14:45

Matrix: Water

Date Received: 05/17/17 10:00

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			8069	05/17/17 11:51	HR	TAL RCH

Client Sample ID: B398V8

Lab Sample ID: 300-5501-2

Date Collected: 05/16/17 14:45

Matrix: Water

Date Received: 05/17/17 10:00

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			8069	05/17/17 11:51	HR	TAL RCH

Client Sample ID: B398W6

Lab Sample ID: 300-5501-3

Date Collected: 05/16/17 14:45

Matrix: Water

Date Received: 05/17/17 10:00

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			7942	05/17/17 14:21	ALR	TAL RCH
Total/NA	Analysis	300.0		2			7943	05/17/17 14:21	ALR	TAL RCH
Total/NA	Analysis	300.0		5			7942	05/17/17 15:52	ALR	TAL RCH

Client Sample ID: B398V9

Lab Sample ID: 300-5501-4

Date Collected: 05/16/17 14:45

Matrix: Water

Date Received: 05/17/17 10:00

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			7942	05/17/17 15:07	ALR	TAL RCH
Total/NA	Analysis	300.0		2			7943	05/17/17 15:07	ALR	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-7942/5

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			7942	05/17/17 13:51	ALR	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-7943/5

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			7943	05/17/17 13:51	ALR	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F17-014

TestAmerica Job ID: 300-5501-1  
 SDG: WC2048

**Client Sample ID: Method Blank**

**Lab Sample ID: MB 300-8069/3**

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			8069	05/17/17 11:47	HR	TAL RCH

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: LCS 300-7942/6**

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			7942	05/17/17 14:06	ALR	TAL RCH

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: LCS 300-7943/6**

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			7943	05/17/17 14:06	ALR	TAL RCH

**Client Sample ID: Lab Control Sample**

**Lab Sample ID: LCS 300-8069/4**

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			8069	05/17/17 11:48	HR	TAL RCH

**Client Sample ID: B398W5**

**Lab Sample ID: 300-5501-1 MS**

Date Collected: 05/16/17 14:45

Matrix: Water

Date Received: 05/17/17 10:00

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			8069	05/17/17 11:48	HR	TAL RCH

**Client Sample ID: B398W6**

**Lab Sample ID: 300-5501-3 MS**

Date Collected: 05/16/17 14:45

Matrix: Water

Date Received: 05/17/17 10:00

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			7942	05/17/17 14:37	ALR	TAL RCH
Total/NA	Analysis	300.0		2			7943	05/17/17 14:37	ALR	TAL RCH
Total/NA	Analysis	300.0		5			7942	05/17/17 16:07	ALR	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: F17-014

TestAmerica Job ID: 300-5501-1  
SDG: WC2048

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: F17-014

TestAmerica Job ID: 300-5501-1  
SDG: WC2048

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-5501-1	B398W5	Water	05/16/17 14:45	05/17/17 10:00
300-5501-2	B398V8	Water	05/16/17 14:45	05/17/17 10:00
300-5501-3	B398W6	Water	05/16/17 14:45	05/17/17 10:00
300-5501-4	B398V9	Water	05/16/17 14:45	05/17/17 10:00

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## Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-5501-1

SDG Number: WC2048

**Login Number: 5501****List Number: 1****Creator: Rogers, Angeline D****List Source: TestAmerica Richland**

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	