

# 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: 300-6385-1  
 TestAmerica Sample Delivery Group: WC2519  
 Client Project/Site: S18-011

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

Attn: CPP Sample Management

*Kristine D. Allen*

Authorized for release by:  
 11/29/2017 4:30:21 PM  
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### LINKS

Review your project  
 results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.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.*

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## Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-011

TestAmerica Job ID: 300-6385-1  
SDG: WC2519

## Qualifiers

### 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.
□	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: S18-011

TestAmerica Job ID: 300-6385-1  
SDG: WC2519

**Job ID: 300-6385-1**

**Laboratory: TestAmerica Richland**

**Narrative**

**Job Narrative**  
**300-6385-1**

**Comments**

No additional comments.

**Receipt**

The samples were received on 11/14/2017 11:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3° C.

**General Chemistry**

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

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CH2MH11 Plateau  
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#  
S18-011-350

Page 1 of 1

Collector:	IVAN SCHAEFFER	Contact/Requester:	Karen Waters-Husted	Telephone No.:	509-376-4650
SAF No.:	S18-011	Sampling Origin:	Hanford Site	Purchase Order/Charge Code:	300071
Project Title:	SURV, NOVEMBER 2017	Logbook No.:	HNF-N-506 97/26	Ice Chest No.:	N/A
Shipped To (Lab):	TestAmerica Incorporated, Rich	Method of Shipment:	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.:	N/A
Protocol:	SURV	Priority:	30 Days	Offsite Property No.:	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARK</b>			<b>SPECIAL INSTRUCTIONS</b>		
** ** 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		

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3F7V8	Y	NOV 14 2017	0824	1x60-mL aG	7196_CR6: COMMON	24 Hours	COOL <=6C
B3F3H9	N	NOV 14 2017	0824	1x60-mL aG	7196_CR6: COMMON	24 Hours	COOL <=6C

6355  
W22519

Relinquished By:	IVAN SCHAEFFER	Signature	NOV 14 2017	1000	Received By:	Jeff Lucas KHPRC	Signature	NOV 11 2017	1000	Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other
Relinquished By:	Jeff Lucas KHPRC	Signature	NOV 14 2017	1100	Received By:	B. Jorgenson, TARL	Signature	11/14/17	1100	
Relinquished By:	Print First and Last Name	Signature	Date/Time		Received By:	Print First and Last Name	Signature	Date/Time		
Relinquished By:	Print First and Last Name	Signature	Date/Time		Received By:	Print First and Last Name	Signature	Date/Time		
Relinquished By:	Print First and Last Name	Signature	Date/Time		Received By:	Print First and Last Name	Signature	Date/Time		
<b>FINAL SAMPLE DISPOSITION</b>					Disposal Method (e.g., Return to customer, per lab procedure, used in process):					
Disposal Method (e.g., Return to customer, per lab procedure, used in process):					Disposed By:					
Date/Time:					Date/Time:					

Detection Summary

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: S18-011

TestAmerica Job ID: 300-6385-1  
 SDG: WC2519

Client Sample ID: B3F3H8

Lab Sample ID: 300-6385-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.11		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3F7V7

Lab Sample ID: 300-6385-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.11		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3F7V8

Lab Sample ID: 300-6385-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.11		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3F3H9

Lab Sample ID: 300-6385-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.11		0.0040	0.0015	mg/L	1		7196A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland



Client Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: S18-011

TestAmerica Job ID: 300-6385-1  
 SDG: WC2519

Client Sample ID: B3F3H8

Lab Sample ID: 300-6385-1

Date Collected: 11/14/17 08:24

Matrix: Water

Date Received: 11/14/17 11:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.11		0.0040	0.0015	mg/L			11/14/17 13:19	1

Client Sample ID: B3F7V7

Lab Sample ID: 300-6385-2

Date Collected: 11/14/17 08:24

Matrix: Water

Date Received: 11/14/17 11:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.11		0.0040	0.0015	mg/L			11/14/17 13:19	1

Client Sample ID: B3F7V8

Lab Sample ID: 300-6385-3

Date Collected: 11/14/17 08:24

Matrix: Water

Date Received: 11/14/17 11:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.11		0.0040	0.0015	mg/L			11/14/17 13:19	1

Client Sample ID: B3F3H9

Lab Sample ID: 300-6385-4

Date Collected: 11/14/17 08:24

Matrix: Water

Date Received: 11/14/17 11:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.11		0.0040	0.0015	mg/L			11/14/17 13:22	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: S18-011

TestAmerica Job ID: 300-6385-1  
 SDG: WC2519

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-9674/3  
 Matrix: Water  
 Analysis Batch: 9674

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	-		11/14/17 13:09	1

Lab Sample ID: LCS 300-9674/4  
 Matrix: Water  
 Analysis Batch: 9674

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	0.259		mg/L	-	103	80 - 120

Lab Sample ID: 300-6383-A-2 MS  
 Matrix: Water  
 Analysis Batch: 9674

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)	0.012		0.0501	0.0632		mg/L	-	102	75 - 125

Lab Sample ID: 300-6383-A-2 DU  
 Matrix: Water  
 Analysis Batch: 9674

Client Sample ID: Duplicate  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.012		0.0124		mg/L	-	2	20

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QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: S18-011

TestAmerica Job ID: 300-6385-1  
 SDG: WC2519

General Chemistry

Analysis Batch: 9674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-6385-1	B3F3H8	Total/NA	Water	7196A	
300-6385-2	B3F7V7	Total/NA	Water	7196A	
300-6385-3	B3F7V8	Total/NA	Water	7196A	
300-6385-4	B3F3H9	Total/NA	Water	7196A	
MB 300-9674/3	Method Blank	Total/NA	Water	7196A	
LCS 300-9674/4	Lab Control Sample	Total/NA	Water	7196A	
300-6383-A-2 MS	Matrix Spike	Total/NA	Water	7196A	
300-6383-A-2 DU	Duplicate	Total/NA	Water	7196A	

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Lab Chronicle

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: S18-011

TestAmerica Job ID: 300-6385-1  
 SDG: WC2519

**Client Sample ID: B3F3H8**

Date Collected: 11/14/17 08:24

Date Received: 11/14/17 11:00

**Lab Sample ID: 300-6385-1**

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			9674	11/14/17 13:19	TRH	TAL RCH

**Client Sample ID: B3F7V7**

Date Collected: 11/14/17 08:24

Date Received: 11/14/17 11:00

**Lab Sample ID: 300-6385-2**

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			9674	11/14/17 13:19	TRH	TAL RCH

**Client Sample ID: B3F7V8**

Date Collected: 11/14/17 08:24

Date Received: 11/14/17 11:00

**Lab Sample ID: 300-6385-3**

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			9674	11/14/17 13:19	TRH	TAL RCH

**Client Sample ID: B3F3H9**

Date Collected: 11/14/17 08:24

Date Received: 11/14/17 11:00

**Lab Sample ID: 300-6385-4**

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			9674	11/14/17 13:22	TRH	TAL RCH

**Client Sample ID: Method Blank**

Date Collected: N/A

Date Received: N/A

**Lab Sample ID: MB 300-9674/3**

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			9674	11/14/17 13:09	TRH	TAL RCH

**Client Sample ID: Lab Control Sample**

Date Collected: N/A

Date Received: N/A

**Lab Sample ID: LCS 300-9674/4**

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			9674	11/14/17 13:09	TRH	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-011

TestAmerica Job ID: 300-6385-1  
SDG: WC2519

Client Sample ID: Matrix Spike

Lab Sample ID: 300-6383-A-2 MS

Date Collected: 11/14/17 09:03

Matrix: Water

Date Received: 11/14/17 11:00

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			9674	11/14/17 13:10	TRH	TAL RCH

Laboratory References:

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

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### Method Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S18-011

TestAmerica Job ID: 300-6385-1  
SDG: WC2519

Method	Method Description	Protocol	Laboratory
7196A	Chromium, Hexavalent	SW846	TAL RCH

**Protocol References:**

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: S18-011

TestAmerica Job ID: 300-6385-1  
SDG: WC2519

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-6385-1	B3F3H8	Water	11/14/17 08:24	11/14/17 11:00
300-6385-2	B3F7V7	Water	11/14/17 08:24	11/14/17 11:00
300-6385-3	B3F7V8	Water	11/14/17 08:24	11/14/17 11:00
300-6385-4	B3F3H9	Water	11/14/17 08:24	11/14/17 11:00

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## Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-6385-1

SDG Number: WC2519

Login Number: 6385

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	