

September 16, 2015

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: 300-704-1
TestAmerica Sample Delivery Group: WC0312
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:
9/16/2015 9:50:10 AM

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

LINKS

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results through
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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. The sample/ sample duplicate RPD agreement is not applicable if one or both results are elss than five times the MDL.



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Client: CH2M Hill Plateau Remediation Company
Project/Site: CH2M Hill ChemicalTestAmerica Job ID: 300-704-1
SDG: WC0312

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, 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)

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

TestAmerica Job ID: 300-704-1
SDG: WC0312

Job ID: 300-704-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-704-1**

Comments

No additional comments.

Receipt

The sample was received on 9/4/2015 12:45 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.8° C.

General Chemistry

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

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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST		F15-028-049	PAGE 1 OF 1
COLLECTOR	K.C. PATTERSON/CH2MPC	COMPANY CONTACT	TODAK, D	TELEPHONE NO.	376-6427
SAMPLING LOCATION	C8797, Interval W-5	PROJECT DESIGNATION	100-KE Characterization Boreholes - Water	PROJECT COORDINATOR	TODAK, D
ICE CHEST NO.		FIELD LOGBOOK NO.	HAIF-N-6453	SAF NO.	F15-028
SHIPPED TO	TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.	1051	ACTUAL SAMPLE DEPTH	COA 303581
				BILL OF LADING/AIR BILL NO.	
					METHOD OF SHIPMENT GOVERNMENT VEHICLE
					PRICE CODE 7H
					AIR QUALITY <input type="checkbox"/>
					TURNAROUND 30 Days / 30 Days
					ORIGINAL

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation WF=Water W=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION	Cool <=6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	3G
		NO. OF CONTAINER(S)	1
		VOLUME	60mL
		SAMPLE ANALYSIS	7196 CR6; COMMON;
SPECIAL HANDLING AND/OR STORAGE	RADIOACTIVE TO B32355- Jct 9/2/15		
SAMPLE NO.	B31TX8	MATRIX*	WATER
		SAMPLE DATE	SEP 03 2015 1423
		SAMPLE TIME	✓

September 16, 2015

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	K.C. PATTERSON/CH2MPC	RECEIVED BY/STORED IN	SEP 03 2015 1525	TRVL-15-112	
RELINQUISHED BY/REMOVED FROM	SSU-1	RECEIVED BY/STORED IN	SEP 04 2015 1525		
RELINQUISHED BY/REMOVED FROM	F.M. HADICHPRC	RECEIVED BY/STORED IN	J. Friesz, TARI		* All samples are signed
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	DATE/TIME	DISPOSED BY	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD				

#704
WCO312
300-704 COC



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

TestAmerica Job ID: 300-704-1
SDG: WC0312

Client Sample ID: B31TX8

Lab Sample ID: 300-704-1

No Detections.

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This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

TestAmerica Job ID: 300-704-1
SDG: WC0312

Client Sample ID: B31TX8
Date Collected: 09/03/15 14:23
Date Received: 09/04/15 12:45

Lab Sample ID: 300-704-1
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			09/04/15 15:38	1

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

TestAmerica Job ID: 300-704-1
 SDG: WC0312

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-993/3
Matrix: Water
Analysis Batch: 993

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	-		09/04/15 15:35	1

Lab Sample ID: LCS 300-993/4
Matrix: Water
Analysis Batch: 993

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	0.257		mg/L	-	103	85 - 115

Lab Sample ID: 300-704-1 MS
Matrix: Water
Analysis Batch: 993

Client Sample ID: B31TX8
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	0.0440		mg/L	-	88	85 - 115

Lab Sample ID: 300-704-1 DU
Matrix: Water
Analysis Batch: 993

Client Sample ID: B31TX8
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

September 16, 2015
QC Association Summary

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

TestAmerica Job ID: 300-704-1
SDG: WC0312

General Chemistry

Analysis Batch: 993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-704-1	B31TX8	Total/NA	Water	7196A	
300-704-1 DU	B31TX8	Total/NA	Water	7196A	
300-704-1 MS	B31TX8	Total/NA	Water	7196A	
LCS 300-993/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-993/3	Method Blank	Total/NA	Water	7196A	

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

TestAmerica Job ID: 300-704-1
SDG: WC0312

Client Sample ID: B31TX8
Date Collected: 09/03/15 14:23
Date Received: 09/04/15 12:45

Lab Sample ID: 300-704-1
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			993	09/04/15 15:38	AMC	TAL RCH

Client Sample ID: B31TX8
Date Collected: 09/03/15 14:23
Date Received: 09/04/15 12:45

Lab Sample ID: 300-704-1 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			993	09/04/15 15:38	AMC	TAL RCH

Client Sample ID: Lab Control Sample
Date Collected: N/A
Date Received: N/A

Lab Sample ID: LCS 300-993/4
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			993	09/04/15 15:35	AMC	TAL RCH

Client Sample ID: Method Blank
Date Collected: N/A
Date Received: N/A

Lab Sample ID: MB 300-993/3
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			993	09/04/15 15:35	AMC	TAL RCH

Client Sample ID: B31TX8
Date Collected: 09/03/15 14:23
Date Received: 09/04/15 12:45

Lab Sample ID: 300-704-1 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	993	09/04/15 15:35	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: 300-704-1
SDG: WC0312

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



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

TestAmerica Job ID: 300-704-1
SDG: WC0312

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-704-1	B31TX8	Water	09/03/15 14:23	09/04/15 12:45

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-704-1
SDG Number: WC0312

Login Number: 704
List Number: 1
Creator: Friesz, Jordan 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.	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 <6mm (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	

