

July 11, 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: 300-3230-1

TestAmerica Sample Delivery Group: WC1143

Client Project/Site: S16-006

For:

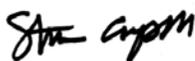
CH2M Hill Plateau Remediation Company

PO BOX 1600

Mail Stop R3-50

Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:

7/11/2016 8:51:26 AM

Steven Campbell, Project Mgmt. Assistant

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Designee for

Whitney Ritari, Project Manager I

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LINKS

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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.



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Qualifiers

General Chemistry

Qualifier	Qualifier Description
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.
□	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: S16-006

TestAmerica Job ID: 300-3230-1
SDG: WC1143

Job ID: 300-3230-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-3230-1**

Comments

No additional comments.

Receipt

The samples were received on 6/8/2016 10:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 9.7° C.

General Chemistry

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

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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-006-520
Page 1 of 1

Collector K.C. Paterson/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No. S16-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	Logbook No.	HNF-N-506 83/83+84	Ice Chest No.	N/A
Shipped To (Lab)	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS		PRIORITY		
*** 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		
		Hold Time		
		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Sample No. B35CW3	Filter	N	No/Type Container	1x60-mL aG
	Date	JUN 07 2016	Sample Analysis	7196_CR6: COMMON
	Time	1200	Holding Time	24 Hours
	Preservative			Cool <=6C

V 3230
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July 11, 2016

300-3230 COC



Relinquished By K.C. Paterson/CHPRC	Print	Sign	Date/Time	Received By S. L. H.	Print	Sign	Date/Time	Matrix *
			JUN 07 2016 1455				JUN 07 2016 1455	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By SSU-1			JUN 08 2016 0700	Received By L. Anderson, TARL			JUN 08 2016 0700	DS = Drum Solids DL = Drum Liquids T = Tissue WL = Wipe L = Liquid V = Vegetation X = Other
Relinquished By Lester Hill/CHPRC			JUN 08 2016 1030	Received By J. Anderson			JUN 08 2016 1030	
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. #
S16-006-514
Page 1 of 1

Collector	K.C. Patterson/CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S16-006	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, JUNE 2016	Logbook No.	HNF-N-506 <u>83/83</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		
*** 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
B35CT7	N	WJUN 07 2016	1334	1x60-mL aG	7196_Cr6: COMMON	24 Hours	Cool <=6C

July 11, 2016

3230
WJUN 11 13

Relinquished By	<i>K.C. Patterson/CHPRC</i>	Print	Sign	Date/Time	JUN 07 2016	1455	Received By	<i>SSU#1</i>	Print	Sign	Date/Time	JUN 07 2016	1455	Matrix *
Relinquished By	<i>SSU-1</i>	Date/Time	JUN 08 2016	0700	Received By	<i>Leah Year</i>	<i>CHPRC</i>	Print	Sign	Date/Time	JUN 08 2016	0700	Matrix *	
Relinquished By	<i>Leah Year</i>	Date/Time	JUN 08 2016	1030	Received By	<i>L Anderson, TARL</i>	<i>J. Anderson</i>	Print	Sign	Date/Time	JUN 08 2016	1030	Matrix *	

FINAL SAMPLE DISPOSITION	Disposed Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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July 11, 2016
Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3230-1
SDG: WC1143

Client Sample ID: B35CW3

Lab Sample ID: 300-3230-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.025		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35CT7

Lab Sample ID: 300-3230-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0036	B	0.0040	0.0015	mg/L	1		7196A	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

July 11, 2016
Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3230-1
SDG: WC1143

Client Sample ID: B35CW3

Date Collected: 06/07/16 12:00

Date Received: 06/08/16 10:30

Lab Sample ID: 300-3230-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.025		0.0040	0.0015	mg/L			06/08/16 11:58	1

Client Sample ID: B35CT7

Date Collected: 06/07/16 13:34

Date Received: 06/08/16 10:30

Lab Sample ID: 300-3230-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0036	B	0.0040	0.0015	mg/L			06/08/16 11:58	1

July 11, 2016
QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3230-1
SDG: WC1143

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4463/3
Matrix: Water
Analysis Batch: 4463

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			06/08/16 11:54	1

Lab Sample ID: LCS 300-4463/4
Matrix: Water
Analysis Batch: 4463

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	0.251		mg/L		100	80 - 120

Lab Sample ID: 300-3230-1 MS
Matrix: Water
Analysis Batch: 4463

Client Sample ID: B35CW3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.025		0.0499	0.0720		mg/L		95	75 - 125

Lab Sample ID: 300-3230-1 DU
Matrix: Water
Analysis Batch: 4463

Client Sample ID: B35CW3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.025		0.0244		mg/L		0.8	20

July 11, 2016
QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3230-1
SDG: WC1143

General Chemistry

Analysis Batch: 4463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3230-1	B35CW3	Total/NA	Water	7196A	
300-3230-1 DU	B35CW3	Total/NA	Water	7196A	
300-3230-1 MS	B35CW3	Total/NA	Water	7196A	
300-3230-2	B35CT7	Total/NA	Water	7196A	
LCS 300-4463/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4463/3	Method Blank	Total/NA	Water	7196A	

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Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3230-1
SDG: WC1143

Client Sample ID: B35CW3
Date Collected: 06/07/16 12:00
Date Received: 06/08/16 10:30

Lab Sample ID: 300-3230-1
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			4463	06/08/16 11:58	RLC	TAL RCH

Client Sample ID: B35CT7
Date Collected: 06/07/16 13:34
Date Received: 06/08/16 10:30

Lab Sample ID: 300-3230-2
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			4463	06/08/16 11:58	RLC	TAL RCH

Client Sample ID: B35CW3
Date Collected: 06/07/16 12:00
Date Received: 06/08/16 10:30

Lab Sample ID: 300-3230-1 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			4463	06/08/16 11:58	RLC	TAL RCH

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

Lab Sample ID: LCS 300-4463/4
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			4463	06/08/16 11:55	RLC	TAL RCH

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

Lab Sample ID: MB 300-4463/3
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			4463	06/08/16 11:54	RLC	TAL RCH

Client Sample ID: B35CW3
Date Collected: 06/07/16 12:00
Date Received: 06/08/16 10:30

Lab Sample ID: 300-3230-1 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	4463	06/08/16 11:55	RLC	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: S16-006

TestAmerica Job ID: 300-3230-1
SDG: WC1143

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



July 11, 2016
Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-006

TestAmerica Job ID: 300-3230-1
SDG: WC1143

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3230-1	B35CW3	Water	06/07/16 12:00	06/08/16 10:30
300-3230-2	B35CT7	Water	06/07/16 13:34	06/08/16 10:30

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July 11, 2016

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3230-1

SDG Number: WC1143

Login Number: 3230

List Number: 1

Creator: Bock, Julie A

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	

