

July 13, 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: 300-3393-1
TestAmerica Sample Delivery Group: WC1218
Client Project/Site: F11-003

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

Attn: CPP Sample Management



Authorized for release by:
7/13/2016 11:55:38 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. The sample/ sample duplicate RPD agreement is not applicable if one or both results are less than five times the MDL.



LINKS

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F11-003

TestAmerica Job ID: 300-3393-1
 SDG: WC1218

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)



July 13, 2016

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-3393-1
SDG: WC1218

Job ID: 300-3393-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-3393-1

Comments

No additional comments.

Receipt

The samples were received on 6/30/2016 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8° C.

General Chemistry

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

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-003-125	PAGE 1 OF 1
COLLECTOR	Sabo Briggs /CHPRC	COMPANY CONTACT	SUMNER, LC	TELEPHONE NO.	376-3922
SAMPLING LOCATION	Influent Valve, V-XE068	PROJECT DESIGNATION	100-KX Pump and Treat Influent & Effluent Tanks - Water	PROJECT COORDINATOR	SUMNER, LC
ICE CHEST NO.		FIELD LOGBOOK NO.	HSF-N-50686/38	ACTUAL SAMPLE DEPTH	15 ft
SHIPPED TO	TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.		SAF NO.	F11-003
				COA	302879
				BILL OF LADING/AIR BILL NO.	
				METHOD OF SHIPMENT	GOVERNMENT VEHICLE
				PRICE CODE	7H
				AIR QUALITY	<input type="checkbox"/>
				DATA 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 W=Water WT=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.	PRESERVATION	Cool <=6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	ag
		NO. OF CONTAINER(S)	1
		VOLUME	60ml
SPECIAL HANDLING AND/OR STORAGE	N/A	SAMPLE ANALYSIS	7196 CR6; COMMON;
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B35X63	WATER	JUN 29 2016	1417

#3393
W5C1218

300-3393 COC



CHAIN OF POSSESSION		SIGN / PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Sabo Briggs /CHPRC	JUN 26 2016	SSU E1	JUN 29 2016		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
550 #1	JUN 30 2016	RECEIVED BY/STORED IN	JUN 30 2016		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
CHPRC	JUN 30 2016	RECEIVED BY/STORED IN	JUN 30 2016		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
		RECEIVED BY/STORED IN			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
		RECEIVED BY/STORED IN			
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		

PRINTED ON 6/1/2016

FSR ID = FSR33013

TRVL NUM = TRVL-16-164

A-6003-618 (REV 2)



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		FIL-003-132	PAGE 1 OF 1
COLLECTOR	Barb Briggs ICPRC	COMPANY CONTACT	SUNNER, LC	TELEPHONE NO.	376-3922
SAMPLING LOCATION	Effluent Valve, V-X0030A	PROJECT DESIGNATION	100-KX Pump and Treat Influent & Effluent Tanks - Water	PROJECT COORDINATOR	SUNNER, LC
ICE CHEST NO.		FIELD LOGBOOK NO.	145 F-P-506-216/38	SAF NO.	F11-003
SHIPPED TO	TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO.		ACTUAL SAMPLE DEPTH	2 1/2
				COA	302879
				BILL OF LADING/AIR BILL NO.	
				METHOD OF SHIPMENT	GOVERNMENT VEHICLE
				PRICE CODE	7H
				AIR QUALITY	<input type="checkbox"/>
				DATA TURNAROUND	30 Days / 30 Days
					ORIGINAL

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	Cool <=6C
A=Air	*Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	HOLDING TIME	24 Hours
DL=Drum		TYPE OF CONTAINER	ag
L=Liquid		NO. OF CONTAINERS(S)	1
O=Oil		VOLUME	60ml
SE=Sediment		SAMPLE ANALYSIS	7196 CR6: COMMON;
T=Tissue			
V=Vegetation			
W=Water			
WT=Wipe			
X=Other			
	SPECIAL HANDLING AND/OR STORAGE		
	N/A		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B35X70	WATER	JUN 29 2016	1436

#3393
WJG218

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Barb Briggs	JUN 29 2016 1549	550 #1	JUN 29 2016 1540		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
550 #1	JUN 30 2016 0130	Frank Hart	JUN 30 2016 0130		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Frank Hart	JUN 30 2016 0935	L Anderson, TARI	JUN 30 2016 0935		
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	

July 13, 2016

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-3393-1
SDG: WC1218

Client Sample ID: B35X63

Lab Sample ID: 300-3393-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.015		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35X70

Lab Sample ID: 300-3393-2

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Richland



Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-3393-1
SDG: WC1218

Client Sample ID: B35X63

Lab Sample ID: 300-3393-1

Date Collected: 06/29/16 14:17

Matrix: Water

Date Received: 06/30/16 09:35

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.015		0.0040	0.0015	mg/L			06/30/16 11:25	1

Client Sample ID: B35X70

Lab Sample ID: 300-3393-2

Date Collected: 06/29/16 14:36

Matrix: Water

Date Received: 06/30/16 09:35

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/30/16 11:25	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-3393-1
SDG: WC1218

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4755/3
Matrix: Water
Analysis Batch: 4755

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			06/30/16 11:21	1

Lab Sample ID: LCS 300-4755/4
Matrix: Water
Analysis Batch: 4755

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: 300-3393-1 MS
Matrix: Water
Analysis Batch: 4755

Client Sample ID: B35X63
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.015		0.0499	0.0649		mg/L		100	75 - 125

Lab Sample ID: 300-3393-1 DU
Matrix: Water
Analysis Batch: 4755

Client Sample ID: B35X63
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.015		0.0151		mg/L		0	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-3393-1
SDG: WC1218

General Chemistry

Analysis Batch: 4755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3393-1	B35X63	Total/NA	Water	7196A	
300-3393-1 DU	B35X63	Total/NA	Water	7196A	
300-3393-1 MS	B35X63	Total/NA	Water	7196A	
300-3393-2	B35X70	Total/NA	Water	7196A	
LCS 300-4755/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4755/3	Method Blank	Total/NA	Water	7196A	

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Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-3393-1
SDG: WC1218

Client Sample ID: B35X63

Date Collected: 06/29/16 14:17

Date Received: 06/30/16 09:35

Lab Sample ID: 300-3393-1

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			4755	06/30/16 11:25	RLC	TAL RCH

Client Sample ID: B35X70

Date Collected: 06/29/16 14:36

Date Received: 06/30/16 09:35

Lab Sample ID: 300-3393-2

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			4755	06/30/16 11:25	RLC	TAL RCH

Client Sample ID: B35X63

Date Collected: 06/29/16 14:17

Date Received: 06/30/16 09:35

Lab Sample ID: 300-3393-1 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			4755	06/30/16 11:25	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-4755/4

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			4755	06/30/16 11:22	RLC	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-4755/3

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			4755	06/30/16 11:21	RLC	TAL RCH

Client Sample ID: B35X63

Date Collected: 06/29/16 14:17

Date Received: 06/30/16 09:35

Lab Sample ID: 300-3393-1 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	4755	06/30/16 11:22	RLC	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: F11-003

TestAmerica Job ID: 300-3393-1
SDG: WC1218

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 13, 2016

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-3393-1
SDG: WC1218

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3393-1	B35X63	Water	06/29/16 14:17	06/30/16 09:35
300-3393-2	B35X70	Water	06/29/16 14:36	06/30/16 09:35

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3393-1

SDG Number: WC1218

Login Number: 3393

List Number: 1

Creator: Anderson, Lori F

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.	N/A	
Residual Chlorine Checked.	N/A	

