

July 13, 2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

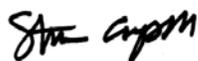
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Richland
2800 George Washington Way
Richland, WA 99352
Tel: (509)375-3131

TestAmerica Job ID: 300-3412-1
TestAmerica Sample Delivery Group: WC1230
Client Project/Site: I16-025

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 1:13:20 PM
Steven Campbell, Project Mgmt. Assistant
steven.campbell@testamericainc.com

Designee for
Whitney Ritari, Project Manager I
(509)375-3131 ext164
whitney.ritari@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 less than five times the MDL.



LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Chain of Custody	5
Detection Summary	6
Client Sample Results	7
QC Sample Results	8
QC Association Summary	9
Lab Chronicle	10
Method Summary	11
Sample Summary	12
Receipt Checklists	13

Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: I16-025

TestAmerica Job ID: 300-3412-1
 SDG: WC1230

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: I16-025

TestAmerica Job ID: 300-3412-1
SDG: WC1230

Job ID: 300-3412-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-3412-1

Comments

No additional comments.

Receipt

The sample was received on 7/5/2016 2:10 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.1° C.

General Chemistry

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

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

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
116-025-016
Page 1 of 1

Collector	Jason Aguilera	CH2M	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	116-025		Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	100KR4, JUNE 2016		Logbook No.	HNF-N-506 <u>52</u> / <u>42</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	CERCLA		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 N/A Special Handling: N/A			
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis
B35885	N		W JUL 05 2016	1015	1x60-ml aG	7196_CRG: COMMON
						Holding Time
						24 Hours
						Preservative
						Cool <=6C

#3412
W/C 1230

300-3412 COC



Reinquished By	<i>Jason Aguilera</i>	Print	Sign	Date/Time	12/10	Received By	<i>Don Weble</i>	Print	Sign	Date/Time	12/10	Matrix *
Reinquished By	<i>Don Weble</i>			JUL 05 2016		Received By	<i>L. Anderson</i>			JUL 05 2016		S = Soil SE = Sediment SO = Solid SL = Sludge WL = Water O = Oil A = Air
Reinquished By	<i>Don Weble</i>			JUL 05 2016	1410	Received By	<i>L. Anderson</i>			JUL 05 2016	1410	DS = Drum Solids DL = Drum Liquids T = Tissue WT = Wipe L = Liquid V = Vegetation X = Other
Reinquished By						Received By						
FINAL SAMPLE DISPOSITION												
Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By						

July 13, 2016

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I16-025

TestAmerica Job ID: 300-3412-1
SDG: WC1230

Client Sample ID: B35885

Lab Sample ID: 300-3412-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.020		0.0040	0.0015	mg/L	1		7196A	Total/NA

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

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

July 13, 2016

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: I16-025

TestAmerica Job ID: 300-3412-1
SDG: WC1230

Client Sample ID: B35885

Lab Sample ID: 300-3412-1

Date Collected: 07/05/16 10:15

Matrix: Water

Date Received: 07/05/16 14:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.020		0.0040	0.0015	mg/L			07/06/16 09:25	1

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

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: I16-025

TestAmerica Job ID: 300-3412-1
 SDG: WC1230

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4795/3
 Matrix: Water
 Analysis Batch: 4795

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			07/06/16 09:21	1

Lab Sample ID: LCS 300-4795/4
 Matrix: Water
 Analysis Batch: 4795

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	0.253		mg/L		101	80 - 120

Lab Sample ID: 300-3412-1 MS
 Matrix: Water
 Analysis Batch: 4795

Client Sample ID: B35885
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.020		0.0500	0.0682		mg/L		97	75 - 125

Lab Sample ID: 300-3412-1 DU
 Matrix: Water
 Analysis Batch: 4795

Client Sample ID: B35885
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.020		0.0205		mg/L		3	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: I16-025

TestAmerica Job ID: 300-3412-1
SDG: WC1230

General Chemistry

Analysis Batch: 4795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3412-1	B35885	Total/NA	Water	7196A	
300-3412-1 DU	B35885	Total/NA	Water	7196A	
300-3412-1 MS	B35885	Total/NA	Water	7196A	
LCS 300-4795/4	Lab Control Sample	Total/NA	Water	7196A	
MB 300-4795/3	Method Blank	Total/NA	Water	7196A	

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

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: I16-025

TestAmerica Job ID: 300-3412-1
 SDG: WC1230

Client Sample ID: B35885

Date Collected: 07/05/16 10:15

Date Received: 07/05/16 14:10

Lab Sample ID: 300-3412-1

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			4795	07/06/16 09:25	RLC	TAL RCH

Client Sample ID: B35885

Date Collected: 07/05/16 10:15

Date Received: 07/05/16 14:10

Lab Sample ID: 300-3412-1 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			4795	07/06/16 09:25	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-4795/4

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			4795	07/06/16 09:22	RLC	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-4795/3

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			4795	07/06/16 09:21	RLC	TAL RCH

Client Sample ID: B35885

Date Collected: 07/05/16 10:15

Date Received: 07/05/16 14:10

Lab Sample ID: 300-3412-1 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	4795	07/06/16 09:22	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: I16-025

TestAmerica Job ID: 300-3412-1
SDG: WC1230

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: I16-025

TestAmerica Job ID: 300-3412-1
SDG: WC1230

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3412-1	B35885	Water	07/05/16 10:15	07/05/16 14:10

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

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3412-1

SDG Number: WC1230

Login Number: 3412

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	

