

July 28, 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: 300-3448-1

TestAmerica Sample Delivery Group: WC1247

Client Project/Site: F16-040

For:

CH2M Hill Plateau Remediation Company

PO BOX 1600

Mail Stop R3-50

Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:

7/28/2016 2:32:24 PM

Steven Campbell, Project Mgmt. Assistant

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Designee for

Whitney Ritari, Project Manager I

(509)375-3131 ext164

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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.



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Chain of Custody	5
Detection Summary	7
Client Sample Results	8
QC Sample Results	9
QC Association Summary	10
Lab Chronicle	11
Method Summary	13
Sample Summary	14
Receipt Checklists	15

Qualifiers

General Chemistry

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
D	The reported value is from a dilution.
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

Job ID: 300-3448-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-3448-1**

Comments

No additional comments.

Receipt

The samples were received on 7/11/2016 2:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.7° C.

General Chemistry

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



COLLECTOR Juan Aguilar	COMPANY CONTACT LYNCH, SA	TELEPHONE NO. 373-5586	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION C9614-1-001	PROJECT DESIGNATION 100-HR-3 Long Term & Interim Action Monitoring - Soil	FIELD LOGBOOK NO. HNF-A-645-3/95	SAF NO. F16-040	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE
ICE CHEST NO.	ACTUAL SAMPLE DEPTH 94.1' - 96.6'	COA 300115	BILL OF LADING/AIR BILL NO.	ORIGINAL	

SHIPPED TO TestAmerica Incorporated, Richland

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Issue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *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. NA	PRESERVATION Cool+4C	HOLDING TIME 30 Days	NO. OF CONTAINER(S) 1	VOLUME 60ml	SAMPLE ANALYSIS 7196 C96: COMMON?
SPECIAL HANDLING AND/OR STORAGE						

SAMPLE NO. B35V/6	MATRIX* SOIL	SAMPLE DATE JUL 11 2016	SAMPLE TIME 1000	DATE/TIME JUL 11 2016 1400	RECEIVED BY/STORER IN CHPRC	DATE/TIME JUL 11 2016 1400
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July 28, 2016

3448
WCI1247
DOE: 07/26/16



300-3448 COC

CHAIN OF POSSESSION **SIGN/ PRINT NAMES** **SPECIAL INSTRUCTIONS**

RELINQUISHED BY/REMOVED FROM Juan Aguilar	DATE/TIME JUL 11 2016 1400	RECEIVED BY/STORER IN CHPRC	DATE/TIME JUL 11 2016 1400	** All requests for Hexavalent Chromium at Test America Richland are to have a unique HEIS sample number and be assigned to a separate COC.
RELINQUISHED BY/REMOVED FROM Toy Bacon	DATE/TIME JUL 11 2016 1400	RECEIVED BY/STORER IN CHPRC	DATE/TIME JUL 11 2016 1400	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F16-040-061

PAGE 1 OF 1

COLLECTOR: Juan Aguilar C-HPRC
 COMPANY CONTACT: LYNCH, SA 373-5586
 PROJECT COORDINATOR: TODAK, D

SAMPLING LOCATION: C9614, 1-001 DUP
 PROJECT DESIGNATION: 100-HR-3 Long Term & Interim Action Monitoring - Soil
 SAF NO. F16-040

ICE CHEST NO. C9614, 1-001 DUP
 FIELD LOGBOOK NO. HNF-A-045-3195
 ACTUAL SAMPLE DEPTH: 94.1' - 96.6' FT

SHIPPED TO: TestAmerica Incorporated, Richland
 OFFSITE PROPERTY NO. 300115
 METHOD OF SHIPMENT: GOVERNMENT VEHICLE
 BILL OF LADING/AIR BILL NO. ORIGINAL

MATRIX*: A=Air, DL=Drum, Liquids, DS=Drum, Solids, L=Liquid, O=Oil, S=Soil, SF=Sediment, T=Tissue, V=Vegetation, W=Water, X=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, NA

PRESERVATION: Cool-to-4C
 HOLDING TIME: 30 Days
 TYPE OF CONTAINER: G/P

NO. OF CONTAINER(S): 1
 VOLUME: 60ml
 SAMPLE ANALYSIS: 7196, CR6, COMMON

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B35YV8	SOIL	JUL 11 2016	1800

3448
 USC1247
 DUE: 07/26/16

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM: Juan Aguilar
 DATE/TIME: JUL 11 2016 1400
 RECEIVED BY/STORED IN: Cheryl Bock
 DATE/TIME: JUL 11 2016 1400

RELINQUISHED BY/REMOVED FROM: Cheryl Bock
 DATE/TIME: JUL 11 2016 1450
 RECEIVED BY/STORED IN: J. Bock, TARI
 DATE/TIME: JUL 11 2016 1450

RELINQUISHED BY/REMOVED FROM: [Signature]
 DATE/TIME: [Blank]
 RECEIVED BY/STORED IN: [Blank]
 DATE/TIME: [Blank]

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RELINQUISHED BY/REMOVED FROM: [Signature]
 DATE/TIME: [Blank]
 RECEIVED BY/STORED IN: [Blank]
 DATE/TIME: [Blank]

LABORATORY SECTION: [Blank]
 RECEIVED BY: [Blank]
 DATE/TIME: [Blank]

FINAL SAMPLE DISPOSITION: [Blank]
 DISPOSAL METHOD: [Blank]
 DATE/TIME: [Blank]

SPECIAL INSTRUCTIONS: ** All requests for Hexavalent Chromium at Test America Richland are to have a unique HES sample number and be assigned to a separate COC.

July 28, 2016
Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

Client Sample ID: B35YV6

Lab Sample ID: 300-3448-1

No Detections.

Client Sample ID: B35YV8

Lab Sample ID: 300-3448-2

No Detections.

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

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

July 28, 2016
Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

Client Sample ID: B35YV6

Lab Sample ID: 300-3448-1

Date Collected: 07/11/16 10:00

Matrix: Soil

Date Received: 07/11/16 14:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.15	U	2.0	0.15	mg/Kg		07/14/16 12:08	07/15/16 09:00	1

Client Sample ID: B35YV8

Lab Sample ID: 300-3448-2

Date Collected: 07/11/16 10:00

Matrix: Soil

Date Received: 07/11/16 14:50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.15	U	2.0	0.15	mg/Kg		07/14/16 12:08	07/15/16 09:00	1

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4880/1-A
Matrix: Solid
Analysis Batch: 5081

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 4880

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.15	U	2.0	0.15	mg/Kg		07/14/16 12:08	07/15/16 09:00	1

Lab Sample ID: LCS 300-4880/2-A
Matrix: Solid
Analysis Batch: 5081

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 4880

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	20.0	18.91		mg/Kg		95	85 - 115

Lab Sample ID: 300-3432-A-1-B MS
Matrix: Solid
Analysis Batch: 5081

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 4880

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.23	B	30.0	25.30		mg/Kg		84	75 - 125

Lab Sample ID: 300-3432-A-1-D MSI
Matrix: Solid
Analysis Batch: 5081

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 4880

Analyte	Sample Result	Sample Qualifier	Spike Added	MSI Result	MSI Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.23	B	675	706.3	D	mg/Kg		105	

Lab Sample ID: 300-3432-A-1-C DU
Matrix: Solid
Analysis Batch: 5081

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 4880

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.23	B	0.228	B	mg/Kg		0	35

July 28, 2016
QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

General Chemistry

Prep Batch: 4880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3448-1	B35YV6	Total/NA	Soil	3060A	
300-3448-2	B35YV8	Total/NA	Soil	3060A	
MB 300-4880/1-A	Method Blank	Total/NA	Solid	3060A	
LCS 300-4880/2-A	Lab Control Sample	Total/NA	Solid	3060A	
300-3432-A-1-B MS	Matrix Spike	Total/NA	Solid	3060A	
300-3432-A-1-D MSI	Matrix Spike	Total/NA	Solid	3060A	
300-3432-A-1-C DU	Duplicate	Total/NA	Solid	3060A	

Analysis Batch: 5081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3448-1	B35YV6	Total/NA	Soil	7196A	4880
300-3448-2	B35YV8	Total/NA	Soil	7196A	4880
MB 300-4880/1-A	Method Blank	Total/NA	Solid	7196A	4880
LCS 300-4880/2-A	Lab Control Sample	Total/NA	Solid	7196A	4880
300-3432-A-1-B MS	Matrix Spike	Total/NA	Solid	7196A	4880
300-3432-A-1-D MSI	Matrix Spike	Total/NA	Solid	7196A	4880
300-3432-A-1-C DU	Duplicate	Total/NA	Solid	7196A	4880



Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

Client Sample ID: B35YV6
Date Collected: 07/11/16 10:00
Date Received: 07/11/16 14:50

Lab Sample ID: 300-3448-1
Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5032 g	100 mL	4880	07/14/16 12:08	HR	TAL RCH
Total/NA	Analysis	7196A		1			5081	07/15/16 09:00	HR	TAL RCH

Client Sample ID: B35YV8
Date Collected: 07/11/16 10:00
Date Received: 07/11/16 14:50

Lab Sample ID: 300-3448-2
Matrix: Soil

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5001 g	100 mL	4880	07/14/16 12:08	HR	TAL RCH
Total/NA	Analysis	7196A		1			5081	07/15/16 09:00	HR	TAL RCH

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

Lab Sample ID: MB 300-4880/1-A
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5 g	100 mL	4880	07/14/16 12:08	HR	TAL RCH
Total/NA	Analysis	7196A		1			5081	07/15/16 09:00	HR	TAL RCH

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

Lab Sample ID: LCS 300-4880/2-A
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5 g	100 mL	4880	07/14/16 12:08	HR	TAL RCH
Total/NA	Analysis	7196A		1			5081	07/15/16 09:00	HR	TAL RCH

Client Sample ID: Matrix Spike
Date Collected: 07/07/16 08:03
Date Received: 07/07/16 14:00

Lab Sample ID: 300-3432-A-1-B MS
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5007 g	100 mL	4880	07/14/16 12:08	HR	TAL RCH
Total/NA	Analysis	7196A		1			5081	07/15/16 09:00	HR	TAL RCH

Client Sample ID: Matrix Spike
Date Collected: 07/07/16 08:03
Date Received: 07/07/16 14:00

Lab Sample ID: 300-3432-A-1-D MSI
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3060A			2.5039 g	100 mL	4880	07/14/16 12:08	HR	TAL RCH
Total/NA	Analysis	7196A		20			5081	07/15/16 09:00	HR	TAL RCH

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

Laboratory References:

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

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Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

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 28, 2016
Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-040

TestAmerica Job ID: 300-3448-1
SDG: WC1247

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3448-1	B35YV6	Soil	07/11/16 10:00	07/11/16 14:50
300-3448-2	B35YV8	Soil	07/11/16 10:00	07/11/16 14:50

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3448-1

SDG Number: WC1247

Login Number: 3448

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	

