

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: 300-3648-1

TestAmerica Sample Delivery Group: WC1333

Client Project/Site: F16-007

Revision: 1

For:

CH2M Hill Plateau Remediation Company

PO BOX 1600

Mail Stop R3-50

Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:

8/10/2016 1:44:18 PM

Steven Campbell, Project Mgmt. Assistant

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Designee for

Whitney Ritari, Project Manager I

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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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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-007

TestAmerica Job ID: 300-3648-1
SDG: WC1333

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
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.
□	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)

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-007

TestAmerica Job ID: 300-3648-1
SDG: WC1333

Job ID: 300-3648-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-3648-1**

Comments

This report has been revised to include SIR16-558 with regards to TAT.

Receipt

The sample was received on 8/3/2016 2:30 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8° C.

HPLC/IC

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



SAMPLE ISSUE RESOLUTION

SIR NUM SIR16-558
REV NUM 0
DATE INITIATED 8/10/2016

SAMPLE EVENT INFORMATION

SAF NUM(S) F16-007
OPERABLE UNIT(S) 200-UP-1
PROJECT(S) 200 AREA SGRP
SAMPLE EVENT TITLE(S) 200-UP-1 Remedial Action Wells
LABORATORY TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES 1
SAMPLE NUMBERS B34T78
SAMPLE MATRIX WATER
COLLECTION DATE 8/3/2016 - 8/3/2016
SDG NUM WC1333

ISSUE BACKGROUND

CLASS Sample Management Issues
TYPE Turnaround Time and Due Date Modification
DESCRIPTION On August 9, 2016 SMR requested that the turnaround time (TAT) for WC1333 be updated to a 3 day prelim/15 day final TAT. SDG WC1333 was received on 8/3/16.

DISPOSITION

DESCRIPTION Please change the TAT from 30 days to 3/15 days. TAT may start the new TAT from August 9, 2016. Include a copy of the SIR as a reference in the reporting files.

JUSTIFICATION Final Disposition:

SUBMITTED BY: Heather Medley DATE: 08/10/2016
ACCEPTED BY: Steven Campbell DATE: 08/10/2016

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

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-007-200	PAGE 1 OF 1
COLLECTOR <i>Kevin Patterson</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9411, I-008	PROJECT DESIGNATION FY2016 200-UP-1 Remedial Action Wells Sampling and Analysis - Water	FIELD LOGBOOK NO. HNF-N-645 <i>5</i>	ACTUAL SAMPLE DEPTH <i>257.5-260.5</i>	SAF NO. F16-007	AIR QUALITY <input type="checkbox"/>
ICE CHEST NO.	OFFSITE PROPERTY NO.	BILL OF LADING/AIR BILL NO.		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland					

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WF=W/pipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION Cool <=6C	HOLDING TIME 48 Hours	TYPE OF CONTAINER P	NO. OF CONTAINER(S) 1	VOLUME 500mL	SPECIAL HANDLING AND/OR STORAGE
SAMPLE NO. B34178	MATRIX* WATER	SAMPLE DATE AUG 03 2016	SAMPLE TIME 1049	3045 COC1333 			

FILTER

CHAIN OF POSSESSION SIGN/ PRINT NAMES SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM <i>Frank Hall</i>	DATE/TIME AUG 03 2016	RECEIVED BY/STORED IN <i>J. Bock, TARL</i>	DATE/TIME AUG 03 2016	TITLE FILTER	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
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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	

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-007

TestAmerica Job ID: 300-3648-1
SDG: WC1333

Client Sample ID: B34T78

Lab Sample ID: 300-3648-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	18	D	0.28	0.14	mg/L	10		300.0	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

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-007

TestAmerica Job ID: 300-3648-1
SDG: WC1333

Client Sample ID: B34T78

Lab Sample ID: 300-3648-1

Date Collected: 08/03/16 10:49

Matrix: Water

Date Received: 08/03/16 14:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	18	D	0.28	0.14	mg/L			08/04/16 18:17	10

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

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-007

TestAmerica Job ID: 300-3648-1
 SDG: WC1333

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-5152/5
 Matrix: Water
 Analysis Batch: 5152

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.014	U	0.028	0.014	mg/L			08/04/16 13:58	1

Lab Sample ID: LCS 300-5152/6
 Matrix: Water
 Analysis Batch: 5152

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.26	2.31		mg/L		102	80 - 120

Lab Sample ID: 300-3645-A-3 MS
 Matrix: Water
 Analysis Batch: 5152

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.8	D	0.452	6.26	D	mg/L		95	75 - 125

Lab Sample ID: 300-3645-A-3 DU
 Matrix: Water
 Analysis Batch: 5152

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	5.8	D	5.85	D	mg/L		0.4	20

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

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-007

TestAmerica Job ID: 300-3648-1
 SDG: WC1333

HPLC/IC

Analysis Batch: 5152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3648-1	B34T78	Total/NA	Water	300.0	
MB 300-5152/5	Method Blank	Total/NA	Water	300.0	
LCS 300-5152/6	Lab Control Sample	Total/NA	Water	300.0	
300-3645-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
300-3645-A-3 DU	Duplicate	Total/NA	Water	300.0	

- 1
- 2
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- 12
- 13

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-007

TestAmerica Job ID: 300-3648-1
 SDG: WC1333

Client Sample ID: B34T78

Lab Sample ID: 300-3648-1

Date Collected: 08/03/16 10:49

Matrix: Water

Date Received: 08/03/16 14:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			5152	08/04/16 18:17	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-5152/5

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			5152	08/04/16 13:58	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-5152/6

Date Collected: N/A

Matrix: Water

Date Received: N/A

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			5152	08/04/16 14:13	RLC	TAL RCH

Client Sample ID: Matrix Spike

Lab Sample ID: 300-3645-A-3 MS

Date Collected: 08/03/16 09:41

Matrix: Water

Date Received: 08/03/16 14:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2			5152	08/04/16 14:43	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: F16-007

TestAmerica Job ID: 300-3648-1
SDG: WC1333

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

Laboratory References:

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



Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-007

TestAmerica Job ID: 300-3648-1
SDG: WC1333

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3648-1	B34T78	Water	08/03/16 10:49	08/03/16 14:30

- 1
- 2
- 3
- 4
- 5
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- 11
- 12
- 13

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3648-1

SDG Number: WC1333

Login Number: 3648

List Number: 1

Creator: Bock, Julie A

List Source: TestAmerica Richland

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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 $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	