

6/6/2016

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: 300-3069-1
TestAmerica Sample Delivery Group: WC1071
Client Project/Site: F16-024

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

Attn: CPP Sample Management



Authorized for release by:
6/6/2016 12:57:13 PM

Whitney Ritari, Project Manager I
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LINKS

Review your project results through
TotalAccess

Have a Question?



Visit us at:
www.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 desinee 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: F16-024

TestAmerica Job ID: 300-3069-1
SDG: WC1071

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: F16-024

TestAmerica Job ID: 300-3069-1
SDG: WC1071

Job ID: 300-3069-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-3069-1

Comments

No additional comments.

Receipt

The sample was received on 5/18/2016 1:50 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 13.4° C.

HPLC/IC

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



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		FIG-024-012	PAGE 1 OF 1
COLLECTOR JR. Aguilar/CHPRC	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9477, post-development	PROJECT DESIGNATION 100-FR-3 Drilling FY2016 - water	FIELD LOGBOOK NO. HNF-N-645-3/73	ACTUAL SAMPLE DEPTH 48.14'	AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO.	OFFSITE PROPERTY NO.	COA 300119	METHOD OF SHIPMENT GOVERNMENT VEHICLE		
SHIPPED TO TestAmerica Incorporated, Richland	BILL OF LADING/AIR BILL NO.				

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	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION Cool <=6C	HOLDING TIME 48 Hours	NO. OF CONTAINER(S) 1	VOLUME 500ml	SPECIAL HANDLING AND/OR STORAGE 300.0, ANIONS, IC: COMMON;	
		SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
		B34T43	WATER	5-18-16	1152		

#32069
WELSON



300-3069 COC

CHAIN OF POSSESSION		SIGN / PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM JR. Aguilar/CHPRC	DATE/TIME MAY 18 2016 1235	RECEIVED BY/STORED IN Dorabella	DATE/TIME MAY 18 2016 1235		
RELINQUISHED BY/REMOVED FROM Dorabella	DATE/TIME MAY 18 2016	RECEIVED BY/STORED IN J. Bock, TARL	DATE/TIME MAY 18 2016		
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		
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: F16-024

TestAmerica Job ID: 300-3069-1
 SDG: WC1071

Client Sample ID: B34T43

Lab Sample ID: 300-3069-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	7.7	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.18	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	50	D	0.50	0.25	mg/L	2		300.0	Total/NA

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This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-024

TestAmerica Job ID: 300-3069-1
SDG: WC1071

Client Sample ID: B34T43

Lab Sample ID: 300-3069-1

Date Collected: 05/18/16 11:52

Matrix: Water

Date Received: 05/18/16 13:50

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18	D	0.40	0.20	mg/L			05/18/16 18:28	2
Nitrate as N	7.7	D	0.056	0.028	mg/L			05/18/16 18:28	2
Fluoride	0.18	D	0.10	0.050	mg/L			05/18/16 18:28	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			05/18/16 18:28	2
Sulfate	50	D	0.50	0.25	mg/L			05/18/16 18:28	2

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-024

TestAmerica Job ID: 300-3069-1
SDG: WC1071

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-4203/5

Matrix: Water

Analysis Batch: 4203

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			05/18/16 17:58	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			05/18/16 17:58	1

Lab Sample ID: LCS 300-4203/6

Matrix: Water

Analysis Batch: 4203

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	2.28		mg/L		101	80 - 120
Nitrite as N	3.04	3.10		mg/L		102	80 - 120

Lab Sample ID: 300-3069-1 MS

Matrix: Water

Analysis Batch: 4203

Client Sample ID: B34T43

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	7.7	D	0.452	8.19	D	mg/L		99	75 - 125
Nitrite as N	0.038	U D	0.609	0.537	D	mg/L		88	75 - 125

Lab Sample ID: 300-3069-1 DU

Matrix: Water

Analysis Batch: 4203

Client Sample ID: B34T43

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	7.7	D	7.68	D	mg/L		0.8	20
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20

Lab Sample ID: MB 300-4204/5

Matrix: Water

Analysis Batch: 4204

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.10	U	0.20	0.10	mg/L			05/18/16 17:58	1
Fluoride	0.025	U	0.050	0.025	mg/L			05/18/16 17:58	1
Sulfate	0.13	U	0.25	0.13	mg/L			05/18/16 17:58	1

Lab Sample ID: LCS 300-4204/6

Matrix: Water

Analysis Batch: 4204

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16.0	15.9		mg/L		99	80 - 120
Fluoride	4.00	3.98		mg/L		100	80 - 120
Sulfate	20.0	19.9		mg/L		100	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-024

TestAmerica Job ID: 300-3069-1
 SDG: WC1071

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-3069-1 MS
 Matrix: Water
 Analysis Batch: 4204

Client Sample ID: B34T43
 Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Result	Qualifier				
Chloride	18	D	3.20	21.5	D	mg/L		101	75 - 125
Fluoride	0.18	D	0.800	0.916	D	mg/L		92	75 - 125
Sulfate	50	D	4.00	54.0	D	mg/L		104	75 - 125

Lab Sample ID: 300-3069-1 DU
 Matrix: Water
 Analysis Batch: 4204

Client Sample ID: B34T43
 Prep Type: Total/NA

Analyte	Sample	Sample	DU		Unit	D	RPD	RPD	
	Result	Qualifier	Result	Qualifier				Limit	Limit
Chloride	18	D	18.1	D	mg/L		0.9	20	20
Fluoride	0.18	D	0.181	D	mg/L		0.4	20	20
Sulfate	50	D	49.3	D	mg/L		1	20	20

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QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-024

TestAmerica Job ID: 300-3069-1
 SDG: WC1071

HPLC/IC

Analysis Batch: 4203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3069-1	B34T43	Total/NA	Water	300.0	
300-3069-1 DU	B34T43	Total/NA	Water	300.0	
300-3069-1 MS	B34T43	Total/NA	Water	300.0	
LCS 300-4203/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4203/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 4204

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3069-1	B34T43	Total/NA	Water	300.0	
300-3069-1 DU	B34T43	Total/NA	Water	300.0	
300-3069-1 MS	B34T43	Total/NA	Water	300.0	
LCS 300-4204/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-4204/5	Method Blank	Total/NA	Water	300.0	

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-024

TestAmerica Job ID: 300-3069-1
SDG: WC1071

Client Sample ID: B34T43

Date Collected: 05/18/16 11:52

Date Received: 05/18/16 13:50

Lab Sample ID: 300-3069-1

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	300.0		2	10 mL		4203	05/18/16 18:28	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4204	05/18/16 18:28	RLC	TAL RCH

Client Sample ID: B34T43

Date Collected: 05/18/16 11:52

Date Received: 05/18/16 13:50

Lab Sample ID: 300-3069-1 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	300.0		2	10 mL		4203	05/18/16 18:58	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4204	05/18/16 18:58	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-4203/6

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	300.0		1	10 mL		4203	05/18/16 18:13	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-4204/6

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	300.0		1	10 mL		4204	05/18/16 18:13	RLC	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-4203/5

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	300.0		1	10 mL		4203	05/18/16 17:58	RLC	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-4204/5

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	300.0		1	10 mL		4204	05/18/16 17:58	RLC	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-024

TestAmerica Job ID: 300-3069-1
 SDG: WC1071

Client Sample ID: B34T43

Lab Sample ID: 300-3069-1 MS

Date Collected: 05/18/16 11:52

Matrix: Water

Date Received: 05/18/16 13:50

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	10 mL		4203	05/18/16 18:43	RLC	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		4204	05/18/16 18:43	RLC	TAL RCH

Laboratory References:

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

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Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-024

TestAmerica Job ID: 300-3069-1
SDG: WC1071

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



6/6/2016

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-024

TestAmerica Job ID: 300-3069-1
SDG: WC1071

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3069-1	B34T43	Water	05/18/16 11:52	05/18/16 13:50

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3069-1

SDG Number: WC1071

Login Number: 3069

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	