

April 7, 2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

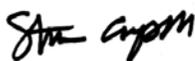
ANALYTICAL REPORT

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

TestAmerica Job ID: 300-2627-1
TestAmerica Sample Delivery Group: WC0928
Client Project/Site: S16-003

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

Attn: CPP Sample Management



Authorized for release by:
4/7/2016 9:59:19 AM
Steven Campbell, Quality Assurance Assistant
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Designee for
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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 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 elss than five times the MDL.

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
 SDG: WC0928

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)



April 7, 2016

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
SDG: WC0928

Job ID: 300-2627-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-2627-1

Comments

No additional comments.

Receipt

The sample was received on 3/21/2016 1:05 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 16.9° C.

HPLC/IC

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

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CH2M/Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
S16-003-277

Page 1 of 1

Collector	JR Aguilera/CH2MRC		Contact/Requester	Karen Waters-Husted		Telephone No.	509-376-4650	
SAF No.	S16-003		Sampling Origin	Hanford Site		Purchase Order/Charge Code	300071	
Project Title	SURV, MARCH 2016		Logbook No.	HNF-N-506 <u>52 / S 8</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	SURV		Priority:	30 Days		Offsite Property No.	N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS			PRIORITY			Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
*** 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								
Sample No.	Filter	*	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B34DV5	N	W	3-21-16	1236	1x500-ml P	300.0 ANIONS_IC: COMMON	48 Hours	Cool <=6C

#2627
WCO928

300-2627 CO



Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
JR Aguilera/CH2MRC			MAR 21 2016 1305	<i>[Signature]</i>	J. Bock, TARL		MAR 21 2016 1305	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WL = Wipe L = Liquid V = Vegetation X = Other
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
Relinquished By			Date/Time	Received By			Date/Time	
FINAL SAMPLE DISPOSITION			Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		

April 7, 2016

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
SDG: WC0928

Client Sample ID: B34DV5

Lab Sample ID: 300-2627-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	6.9	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.29	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	45	D	0.50	0.25	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
SDG: WC0928

Client Sample ID: B34DV5

Lab Sample ID: 300-2627-1

Date Collected: 03/21/16 12:36

Matrix: Water

Date Received: 03/21/16 13:05

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13	D	0.40	0.20	mg/L			03/23/16 12:13	2
Nitrate as N	6.9	D	0.056	0.028	mg/L			03/23/16 12:13	2
Fluoride	0.29	D	0.10	0.050	mg/L			03/23/16 12:13	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			03/23/16 12:13	2
Sulfate	45	D	0.50	0.25	mg/L			03/23/16 12:13	2

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
 SDG: WC0928

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-3491/5
 Matrix: Water
 Analysis Batch: 3491

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			03/23/16 11:43	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			03/23/16 11:43	1

Lab Sample ID: LCS 300-3491/6
 Matrix: Water
 Analysis Batch: 3491

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	2.37		mg/L		105	80 - 120
Nitrite as N	3.04	3.19		mg/L		105	80 - 120

Lab Sample ID: 300-2627-1 MS
 Matrix: Water
 Analysis Batch: 3491

Client Sample ID: B34DV5
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	6.9	D	0.452	7.40	D	mg/L		102	75 - 125
Nitrite as N	0.038	U D	0.609	0.574	D	mg/L		94	75 - 125

Lab Sample ID: 300-2627-1 DU
 Matrix: Water
 Analysis Batch: 3491

Client Sample ID: B34DV5
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nitrate as N	6.9	D	6.92	D	mg/L		0.2	20
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20

Lab Sample ID: MB 300-3492/5
 Matrix: Water
 Analysis Batch: 3492

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			03/23/16 11:43	1
Fluoride	0.025	U	0.050	0.025	mg/L			03/23/16 11:43	1
Sulfate	0.13	U	0.25	0.13	mg/L			03/23/16 11:43	1

Lab Sample ID: LCS 300-3492/6
 Matrix: Water
 Analysis Batch: 3492

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	16.5		mg/L		103	80 - 120
Fluoride	4.00	4.16		mg/L		104	80 - 120
Sulfate	20.0	20.8		mg/L		104	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
 SDG: WC0928

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-2627-1 MS

Matrix: Water

Analysis Batch: 3492

Client Sample ID: B34DV5

Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Chloride	13	D	3.20	16.5	D	mg/L		105	75 - 125
Fluoride	0.29	D	0.800	1.10	D	mg/L		102	75 - 125
Sulfate	45	D	4.00	49.1	D	mg/L		107	75 - 125

Lab Sample ID: 300-2627-1 DU

Matrix: Water

Analysis Batch: 3492

Client Sample ID: B34DV5

Prep Type: Total/NA

Analyte	Sample	Sample	DU		Unit	D	RPD	RPD	
	Result	Qualifier	Result	Qualifier				RPD	Limit
Chloride	13	D	13.1	D	mg/L		0.3	20	
Fluoride	0.29	D	0.287	D	mg/L		0.4	20	
Sulfate	45	D	44.7	D	mg/L		0.3	20	

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
 SDG: WC0928

HPLC/IC

Analysis Batch: 3491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-2627-1	B34DV5	Total/NA	Water	300.0	
300-2627-1 DU	B34DV5	Total/NA	Water	300.0	
300-2627-1 MS	B34DV5	Total/NA	Water	300.0	
LCS 300-3491/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-3491/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 3492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-2627-1	B34DV5	Total/NA	Water	300.0	
300-2627-1 DU	B34DV5	Total/NA	Water	300.0	
300-2627-1 MS	B34DV5	Total/NA	Water	300.0	
LCS 300-3492/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-3492/5	Method Blank	Total/NA	Water	300.0	

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Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
SDG: WC0928

Client Sample ID: B34DV5

Lab Sample ID: 300-2627-1

Date Collected: 03/21/16 12:36

Matrix: Water

Date Received: 03/21/16 13:05

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		3491	03/23/16 12:13	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		3492	03/23/16 12:13	CPM	TAL RCH

Client Sample ID: B34DV5

Lab Sample ID: 300-2627-1 DU

Date Collected: 03/21/16 12:36

Matrix: Water

Date Received: 03/21/16 13:05

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		3491	03/23/16 12:43	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		3492	03/23/16 12:43	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-3491/6

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	10 mL		3491	03/23/16 11:58	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-3492/6

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	10 mL		3492	03/23/16 11:58	CPM	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-3491/5

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	10 mL		3491	03/23/16 11:43	CPM	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-3492/5

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	10 mL		3492	03/23/16 11:43	CPM	TAL RCH

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
SDG: WC0928

Client Sample ID: B34DV5

Lab Sample ID: 300-2627-1 MS

Date Collected: 03/21/16 12:36

Matrix: Water

Date Received: 03/21/16 13:05

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		3491	03/23/16 12:28	CPM	TAL RCH
Total/NA	Analysis	300.0		2	10 mL		3492	03/23/16 12:28	CPM	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: S16-003

TestAmerica Job ID: 300-2627-1
SDG: WC0928

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



April 7, 2016

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S16-003

TestAmerica Job ID: 300-2627-1
SDG: WC0928

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-2627-1	B34DV5	Water	03/21/16 12:36	03/21/16 13:05

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-2627-1

SDG Number: WC0928

Login Number: 2627

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	

