

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: 300-1593-1
TestAmerica Sample Delivery Group: WC0618
Client Project/Site: F15-055

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

Attn: CPP Sample Management



Authorized for release by:
12/8/2015 8:56:59 AM
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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 elss than five times the MDL.



LINKS

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Have a Question?



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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)

Client: CH2M Hill Plateau Remediation Company
Project/Site: F15-055

TestAmerica Job ID: 300-1593-1
SDG: WC0618

Job ID: 300-1593-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-1593-1**

Comments

No additional comments.

Receipt

The sample was received on 11/18/2015 12:30 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 14.5° 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		FIS-055-063	PAGE 1 OF 1
COLLECTOR K.C. Patterson CHPRC	COMPANY CONTACT WHITLEY, KM	TELEPHONE NO. 373-4929	PROJECT COORDINATOR WHITLEY, KM	PRICE CODE 9H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION SKID & INJECTION DAY 12	PROJECT DESIGNATION 300-FI-5 Enhanced Attenuation - Stage A Phosphate Solution Injection - ot	FIELD LOGBOOK NO. HNF-N-50681	ACTUAL SAMPLE DEPTH (N/A)	SAF NO. F15-055	AIR QUALITY <input type="checkbox"/>
ICE CHEST NO.	OFFSITE PROPERTY NO. (N/A)	COA 300205	METHOD OF SHIPMENT FEDERAL EXPRESS	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/Flpe X=Other	*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. N/A	PRESERVATION	Cool <=6C
		HOLDING TIME	28 Day/48 Hours
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
SPECIAL HANDLING AND/OR STORAGE		VOLUME	500ml
		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	
SAMPLE NO. B32157	MATRIX* OTHER LIQUID	SAMPLE DATE NOV 18 2015 0832	SAMPLE TIME ✓

1593
USC0618



300-1593 COC

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM K.C. Patterson	RECEIVED BY/STORED IN NOV 18 2015 1230	** Offsite lab analyses will be a blend of river water and phosphate injection solution. TRVL-15-155 (1) 300.0_ANIONS_IC: COMMON {Chloride, Sulfate}; 300.0_ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN NOV 18 2015 1230	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
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RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
LABORATORY SECTION	RECEIVED BY	TITLE
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY

December 08 2015

December 08, 2015

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F15-055

TestAmerica Job ID: 300-1593-1
SDG: WC0618

Client Sample ID: B32L57

Lab Sample ID: 300-1593-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Orthophosphate as P	2800	D	41	21	mg/L	500		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

December 08, 2015

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F15-055

TestAmerica Job ID: 300-1593-1
SDG: WC0618

Client Sample ID: B32L57
Date Collected: 11/18/15 08:32
Date Received: 11/18/15 12:30

Lab Sample ID: 300-1593-1
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	50	U	100	50	mg/L			11/18/15 22:13	500
Orthophosphate as P	2800	D	41	21	mg/L			11/18/15 22:13	500
Sulfate	63	U	130	63	mg/L			11/18/15 22:13	500

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Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-2050/5
Matrix: Water
Analysis Batch: 2050

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Orthophosphate as P	0.041	U	0.082	0.041	mg/L			11/18/15 16:39	1

Lab Sample ID: LCS 300-2050/6
Matrix: Water
Analysis Batch: 2050

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Orthophosphate as P	6.53	6.89		mg/L		106	80 - 120

Lab Sample ID: 300-1594-A-1 MS
Matrix: Water
Analysis Batch: 2050

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
Orthophosphate as P	590	D	65.3	669	D	mg/L		123	75 - 125

Lab Sample ID: 300-1594-A-1 DU
Matrix: Water
Analysis Batch: 2050

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Orthophosphate as P	590	D	601	D	mg/L		2	20

Lab Sample ID: MB 300-2051/5
Matrix: Water
Analysis Batch: 2051

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			11/18/15 16:39	1
Sulfate	0.13	U	0.25	0.13	mg/L			11/18/15 16:39	1

Lab Sample ID: LCS 300-2051/6
Matrix: Water
Analysis Batch: 2051

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	16.9		mg/L		105	80 - 120
Sulfate	20.0	21.3		mg/L		106	80 - 120

Lab Sample ID: 300-1594-A-1 MS
Matrix: Water
Analysis Batch: 2051

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
Chloride	38	D	160	200	D	mg/L		101	75 - 125
Sulfate	41	D	200	235	D	mg/L		97	75 - 125

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F15-055

TestAmerica Job ID: 300-1593-1
 SDG: WC0618

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-1594-A-1 DU
 Matrix: Water
 Analysis Batch: 2051

Client Sample ID: Duplicate
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	38	D	38.4	D	mg/L		1	20
Sulfate	41	D	41.2	D	mg/L		2	20

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HPLC/IC

Analysis Batch: 2050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1593-1	B32L57	Total/NA	Water	300.0	
300-1594-A-1 DU	Duplicate	Total/NA	Water	300.0	
300-1594-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-2050/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-2050/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 2051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-1593-1	B32L57	Total/NA	Water	300.0	
300-1594-A-1 DU	Duplicate	Total/NA	Water	300.0	
300-1594-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
LCS 300-2051/6	Lab Control Sample	Total/NA	Water	300.0	
MB 300-2051/5	Method Blank	Total/NA	Water	300.0	



Client Sample ID: B32L57

Date Collected: 11/18/15 08:32

Date Received: 11/18/15 12:30

Lab Sample ID: 300-1593-1

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		500	10 mL		2050	11/18/15 22:13	CPM	TAL RCH
Total/NA	Analysis	300.0		500	10 mL		2051	11/18/15 22:13	CPM	TAL RCH

Client Sample ID: Duplicate

Date Collected: 11/18/15 11:33

Date Received: 11/18/15 12:30

Lab Sample ID: 300-1594-A-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		100	10 mL		2050	11/18/15 20:28	CPM	TAL RCH
Total/NA	Analysis	300.0		100	10 mL		2051	11/18/15 20:28	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-2050/6

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		2050	11/18/15 16:54	CPM	TAL RCH

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-2051/6

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		2051	11/18/15 16:54	CPM	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-2050/5

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		2050	11/18/15 16:39	CPM	TAL RCH

Client Sample ID: Method Blank

Date Collected: N/A

Date Received: N/A

Lab Sample ID: MB 300-2051/5

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		2051	11/18/15 16:39	CPM	TAL RCH

Client: CH2M Hill Plateau Remediation Company
Project/Site: F15-055

TestAmerica Job ID: 300-1593-1
SDG: WC0618

Client Sample ID: Matrix Spike

Lab Sample ID: 300-1594-A-1 MS

Date Collected: 11/18/15 11:33

Matrix: Water

Date Received: 11/18/15 12:30

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		100	10 mL		2050	11/18/15 20:13	CPM	TAL RCH
Total/NA	Analysis	300.0		100	10 mL		2051	11/18/15 20:13	CPM	TAL RCH

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: F15-055

TestAmerica Job ID: 300-1593-1
SDG: WC0618

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



December 08, 2015

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F15-055

TestAmerica Job ID: 300-1593-1
SDG: WC0618

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-1593-1	B32L57	Water	11/18/15 08:32	11/18/15 12:30

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-1593-1

SDG Number: WC0618

Login Number: 1593

List Number: 1

Creator: Bock, Julie A

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.	True	
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.	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.	True	
Residual Chlorine Checked.	N/A	

