

July 7, 2017

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: 300-5648-1
TestAmerica Sample Delivery Group: WC2105
Client Project/Site: F11-003

For:
CH2M Hill Plateau Remediation Company
825 Jadwin Avenue
Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:
7/7/2017 10:37:07 AM
Steven Campbell, Project Mgmt. Assistant
steven.campbell@testamericainc.com

Designee for
Whitney Ritari, Project Manager I
(509)375-3131 ext164
whitney.ritari@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.



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

July 7, 2017

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

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

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Chain of Custody	5
Detection Summary	11
Client Sample Results	12
QC Sample Results	14
QC Association Summary	16
Lab Chronicle	17
Method Summary	20
Sample Summary	21
Receipt Checklists	22

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
X	See case narrative notes for explanation of the 'X' flag

General Chemistry

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Job ID: 300-5648-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-5648-1**

Comments

No additional comments.

Receipt

The samples were received on 6/13/2017 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 8.3° C.

HPLC/IC

Method 300.0: The Matrix Spike (MS) recovery for Sulfate in analytical batch 8262 was outside acceptance criteria. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The parent sample result exceeds four times the amount spiked into the MS sample.

An X flag indicates that the associated sample result exceeds four times the amount spiked into the MS sample for a given analyte.

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

General Chemistry

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		F11-003-182	PAGE 1 OF 1
COLLECTOR CHRIS BULLTON CH2MPC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION Effluent Valve, V-XJ030A - FTB	PROJECT DESIGNATION 100-KX Pump and Treat Influent & Effluent Tanks - Water	FIELD LOGBOOK NO. HNF-N-491-16	ACTUAL SAMPLE DEPTH N/A	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL
ICE CHEST NO. NA	OFFSITE PROPERTY NO. NA	COA 302879	SAF NO. F11-003	BILL OF LADING/AIR BILL NO. NA	
SHIPPED TO TestAmerica Incorporated, Richland	PRESERVATION Cool <=6C				

MATRIX* A=Air D1=Drum L=Liquids DS=Drum S=Solids O=Oil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wire 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.	HOLDING TIME 24 Hours	NO. OF CONTAINER(S) 1	VOLUME 60ml	7196 CR6; COMMON;
SAMPLE NO. B3B369	MATRIX* WATER	SAMPLE DATE JUN 13 2017	SAMPLE TIME 6745		

Wc a105



300-5648 COC

July 7 2017

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Chris Bullton</i>	DATE/TIME JUN 13 2017 1051	RECEIVED BY/STORED IN <i>Janelle Zunker</i>	DATE/TIME JUN 13 2017 1031	TRVL-17-135	
RELINQUISHED BY/REMOVED FROM <i>Janelle Zunker</i>	DATE/TIME JUN 13 2017 1500	RECEIVED BY/STORED IN <i>J. Book, TARJUN</i>	DATE/TIME JUN 13 2017 1500		
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

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-003-177	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION Effluent Valve, V-XJ030A	PROJECT DESIGNATION 100-KX Pump and Treat Influent & Effluent Tanks - Water	FIELD LOGBOOK NO. HNF-N-491-16	ACTUAL SAMPLE DEPTH N/A	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL
ICE CHEST NO. NA	OFFSITE PROPERTY NO. NA	COA 302879	BILL OF LADING/AIR BILL NO. NA		
SHIPPED TO TestAmerica Incorporated, Richland					

MATRIX* A=Air D1=Drum L=Liquids DS=Drum S=Solids L=Liquid O=Oil S=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*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.	PRESERVATION	Cool <=6C
		HOLDING TIME	24 Hours
		TYPE OF CONTAINER	ag
		NO. OF CONTAINER(S)	1
		VOLUME	60ml
SPECIAL HANDLING AND/OR STORAGE NA		7196 CR6: COMMON;	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME
B3B354	WATER	JUN 13 2017	0945 ✓

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July 7 2017

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM CHRIS FULTON CHPRC	RECEIVED BY/STORED IN Janelle Zupser CHPRC	TRVL-17-135
DATE/TIME JUN 13 2017 1031	DATE/TIME JUN 13 2017 1031	
RELINQUISHED BY/REMOVED FROM Janelle Zupser CHPRC	RECEIVED BY/STORED IN J. BOCK TARDUN	
DATE/TIME JUN 13 2017 1500	DATE/TIME JUN 13 2017 1500	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
LABORATORY SECTION	RECEIVED BY	TITLE
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DATE/TIME

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-003-172	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION Influent Valve, V-XE068	PROJECT DESIGNATION 100-KX Pump and Treat Influent & Effluent Tanks - Water	FIELD LOGBOOK NO. HNF-N-491-16	ACTUAL SAMPLE DEPTH N/A	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL
ICE CHEST NO. NA	OFFSITE PROPERTY NO. NA	COA 302879	BILL OF LADING/AIR BILL NO. NA		
SHIPPED TO TestAmerica Incorporated, Richland					

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION		Cool <=6C
		HOLDING TIME	24 Hours	
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WL=Wipe X=Other	*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.	TYPE OF CONTAINER	1	ag
SPECIAL HANDLING AND/OR STORAGE NA		NO. OF CONTAINER(S)	1	
		VOLUME	60ml	
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B3B349	WATER	JUN 13 2017	1000	✓

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July 7 2017

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM CHPRC Janelle Zunker	RECEIVED BY/STORED IN Janelle Zunker CHPRC	TRVL-17-135
DATE/TIME JUN 13 2017 1031	DATE/TIME JUN 13 2017 1031	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
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	DATE/TIME

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-003-176	PAGE 1 OF 1
COLLECTOR CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION Effluent Valve, V-X0030A	PROJECT DESIGNATION 100-KX Pump and Treat Influent & Effluent Tanks - Water	FIELD LOGBOOK NO. HNF-N 491-16	ACTUAL SAMPLE DEPTH N/A	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL
ICE CHEST NO. NA	OFFSITE PROPERTY NO. NA	SAF NO. F11-003	COA 302879	BILL OF LADING/AIR BILL NO. NA	
SHIPPED TO TestAmerica Incorporated, Richland					

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	COOL <= 6C
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WF=Wipe 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.	HOLDING TIME	48 Hours
		TYPE OF CONTAINER	P
		NO. OF CONTAINER(S)	1
		VOLUME	125ml
	SPECIAL HANDLING AND/OR STORAGE NA	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO. B3B353	MATRIX* WATER	SAMPLE DATE JUN 13 2017	SAMPLE TIME 0945

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July 7 2017

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM CHPRC	RECEIVED BY/STORED IN Janelle Zunker CHPRC	DATE/TIME JUN 13 2017 1031	DATE/TIME JUN 13 2017 1031	(1) 300.0 ANIONS, IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};	
RELINQUISHED BY/REMOVED FROM Janelle Zunker CHPRC	RECEIVED BY/STORED IN J. BOCK, TARKUN	DATE/TIME JUN 13 2017 1500	DATE/TIME JUN 13 2017 1500		
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	DATE/TIME	DATE/TIME		

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

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-003-181	PAGE 1 OF 1
COLLECTION CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION Effluent Valve, V-X0030A - FTB	PROJECT DESIGNATION 100-KX Pump and Treat Influent & Effluent Tanks - Water	FIELD LOGBOOK NO. HNF-N-491-16	ACTUAL SAMPLE DEPTH N/A	SAF NO. F11-003	AIR QUALITY <input type="checkbox"/>
ICE CHEST NO. NA	OFFSITE PROPERTY NO. NA	COA 302879	BILL OF LADING/AIR BILL NO. NA	METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL	
SHIPPED TO TestAmerica Incorporated, Richland					

MATRIX* A=Air D1=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WR=Wrap X=Other	POSSIBLE SAMPLE HAZARDS/REMARKS *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION Cool <=6C	HOLDING TIME 48 Hours	NO. OF CONTAINER(S) 1	VOLUME 125ml	SPECIAL HANDLING AND/OR STORAGE NA	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
SAMPLE NO. B3B358	MATRIX* WATER	SAMPLE DATE JUN 13 2017	SAMPLE TIME 0745				

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July 7 2017

CHAIN OF POSSESSION	SIGN/PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM CHRIS FULTON	RECEIVED BY/STORED IN Janelle Zumber CHPRC JUN 13 2017 1031	(1) 300.0 ANIONS, IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};
RELINQUISHED BY/REMOVED FROM Janelle Zumber CHPRC	RECEIVED BY/STORED IN J. Boek, TARL JUN 13 2017 1500	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	

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

PRINTED ON 5/8/2017 FSR ID = FSR45071 TRVL NUM = TRVL-17-135 A-6003-618 (REV 2)

July 7 2017

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F11-003-171	PAGE 1 OF 1
COLLECTOR CHRIS FULTON CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION Influent Valve, V-XE068	PROJECT DESIGNATION 100-KX Pump and Treat Influent & Effluent Tanks - Water	FIELD LOGBOOK NO. HNF-N-471-16	ACTUAL SAMPLE DEPTH N/A	SAF NO. F11-003	<input type="checkbox"/> AIR QUALITY ORIGINAL
ICE CHEST NO. NA	OFFSITE PROPERTY NO. NA	COA 302879	BILL OF LADING/AIR BILL NO. NA	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
SHIPPED TO TestAmerica Incorporated, Richland					

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	NO. OF CONTAINER(S)	VOLUME	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WF=Water 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.	Cool <=6C 48 Hours	1	125ml	
SPECIAL HANDLING AND/OR STORAGE NA		HOLDING TIME	TYPE OF CONTAINER		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B3B348	WATER	JUN 13 2017	1600	✓	

See 4 hazards

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM CHRIS FULTON CHPRC	RECEIVED BY/STORED IN Janelle Zanker CHPRC	TRVL-17-135 (1) 300.0 ANIONS, IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate};
DATE/TIME JUN 13 2017 1031	DATE/TIME JUN 13 2017 1031	
RELINQUISHED BY/REMOVED FROM Janelle Zanker CHPRC	RECEIVED BY/STORED IN Janelle Zanker CHPRC	
DATE/TIME JUN 13 2017 1500	DATE/TIME JUN 13 2017 1500	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
DATE/TIME	DATE/TIME	

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

PRINTED ON 5/8/2017 FSR ID = FSR45069 TRVL NUM = TRVL-17-135 A-6003-618 (REV 2)

July 7, 2017 Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Client Sample ID: B3B359

Lab Sample ID: 300-5648-1

No Detections.

Client Sample ID: B3B354

Lab Sample ID: 300-5648-2

No Detections.

Client Sample ID: B3B349

Lab Sample ID: 300-5648-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.017		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B3B353

Lab Sample ID: 300-5648-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	3.0	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.24	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	54	D	0.50	0.25	mg/L	2		300.0	Total/NA

Client Sample ID: B3B358

Lab Sample ID: 300-5648-5

No Detections.

Client Sample ID: B3B348

Lab Sample ID: 300-5648-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	3.0	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.24	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	54	D	0.50	0.25	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

July 7, 2017
Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Client Sample ID: B3B359
Date Collected: 06/13/17 07:45
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-1
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/13/17 17:39	1

Client Sample ID: B3B354
Date Collected: 06/13/17 09:45
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/13/17 17:40	1

Client Sample ID: B3B349
Date Collected: 06/13/17 10:00
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.017		0.0040	0.0015	mg/L			06/13/17 17:40	1

Client Sample ID: B3B353
Date Collected: 06/13/17 09:45
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-4
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11	D	0.40	0.20	mg/L			06/13/17 20:05	2
Nitrate as N	3.0	D	0.056	0.028	mg/L			06/13/17 20:05	2
Fluoride	0.24	D	0.10	0.050	mg/L			06/13/17 20:05	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/13/17 20:05	2
Sulfate	54	D	0.50	0.25	mg/L			06/13/17 20:05	2

Client Sample ID: B3B358
Date Collected: 06/13/17 07:45
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-5
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.20	U D	0.40	0.20	mg/L			06/13/17 20:20	2
Nitrate as N	0.028	U D	0.056	0.028	mg/L			06/13/17 20:20	2
Fluoride	0.050	U D	0.10	0.050	mg/L			06/13/17 20:20	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/13/17 20:20	2
Sulfate	0.25	U D	0.50	0.25	mg/L			06/13/17 20:20	2

Client Sample ID: B3B348
Date Collected: 06/13/17 10:00
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-6
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11	D	0.40	0.20	mg/L			06/13/17 20:35	2
Nitrate as N	3.0	D	0.056	0.028	mg/L			06/13/17 20:35	2

TestAmerica Richland

July 7, 2017
Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Client Sample ID: B3B348
Date Collected: 06/13/17 10:00
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-6
Matrix: Water

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.24	D	0.10	0.050	mg/L			06/13/17 20:35	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/13/17 20:35	2
Sulfate	54	D	0.50	0.25	mg/L			06/13/17 20:35	2

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July 7, 2017 QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-8261/5
Matrix: Water
Analysis Batch: 8261

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			06/13/17 18:35	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			06/13/17 18:35	1

Lab Sample ID: LCS 300-8261/6
Matrix: Water
Analysis Batch: 8261

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	2.21		mg/L		98	80 - 120
Nitrite as N	3.04	3.01		mg/L		99	80 - 120

Lab Sample ID: 300-5647-A-3 MS
Matrix: Water
Analysis Batch: 8261

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	2.0	D	0.452	2.44	D	mg/L		95	75 - 125
Nitrite as N	0.038	U D	0.609	0.553	D	mg/L		91	75 - 125

Lab Sample ID: 300-5647-A-3 DU
Matrix: Water
Analysis Batch: 8261

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nitrate as N	2.0	D	1.98	D	mg/L		2	20
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20

Lab Sample ID: MB 300-8262/5
Matrix: Water
Analysis Batch: 8262

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			06/13/17 18:35	1
Fluoride	0.025	U	0.050	0.025	mg/L			06/13/17 18:35	1
Sulfate	0.13	U	0.25	0.13	mg/L			06/13/17 18:35	1

Lab Sample ID: LCS 300-8262/6
Matrix: Water
Analysis Batch: 8262

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	15.5		mg/L		97	80 - 120
Fluoride	4.00	3.88		mg/L		97	80 - 120
Sulfate	20.0	19.6		mg/L		98	80 - 120

TestAmerica Richland

July 7, 2017 QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-5647-A-3 MS

Matrix: Water

Analysis Batch: 8262

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	8.3	D	3.20	11.3	D	mg/L		94	75 - 125
Fluoride	0.14	D	0.800	0.848	D	mg/L		88	75 - 125
Sulfate	45	D	4.00	47.9	X D	mg/L		72	75 - 125

Lab Sample ID: 300-5647-A-3 DU

Matrix: Water

Analysis Batch: 8262

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	8.3	D	8.15	D	mg/L		1	20
Fluoride	0.14	D	0.140	D	mg/L		3	20
Sulfate	45	D	44.4	D	mg/L		1	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-8280/3

Matrix: Water

Analysis Batch: 8280

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/13/17 17:35	1

Lab Sample ID: LCS 300-8280/4

Matrix: Water

Analysis Batch: 8280

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.254		mg/L		102	80 - 120

Lab Sample ID: 300-5647-A-1 MS

Matrix: Water

Analysis Batch: 8280

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
Cr (VI)	0.0023	B	0.0501	0.0536		mg/L		102	75 - 125

Lab Sample ID: 300-5647-A-1 DU

Matrix: Water

Analysis Batch: 8280

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cr (VI)	0.0023	B	0.00220	B	mg/L		4	20

TestAmerica Richland

July 7, 2017
QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
 SDG: WC2105

HPLC/IC

Analysis Batch: 8261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-5648-4	B3B353	Total/NA	Water	300.0	
300-5648-5	B3B358	Total/NA	Water	300.0	
300-5648-6	B3B348	Total/NA	Water	300.0	
MB 300-8261/5	Method Blank	Total/NA	Water	300.0	
LCS 300-8261/6	Lab Control Sample	Total/NA	Water	300.0	
300-5647-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
300-5647-A-3 DU	Duplicate	Total/NA	Water	300.0	

Analysis Batch: 8262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-5648-4	B3B353	Total/NA	Water	300.0	
300-5648-5	B3B358	Total/NA	Water	300.0	
300-5648-6	B3B348	Total/NA	Water	300.0	
MB 300-8262/5	Method Blank	Total/NA	Water	300.0	
LCS 300-8262/6	Lab Control Sample	Total/NA	Water	300.0	
300-5647-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
300-5647-A-3 DU	Duplicate	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 8280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-5648-1	B3B359	Total/NA	Water	7196A	
300-5648-2	B3B354	Total/NA	Water	7196A	
300-5648-3	B3B349	Total/NA	Water	7196A	
MB 300-8280/3	Method Blank	Total/NA	Water	7196A	
LCS 300-8280/4	Lab Control Sample	Total/NA	Water	7196A	
300-5647-A-1 MS	Matrix Spike	Total/NA	Water	7196A	
300-5647-A-1 DU	Duplicate	Total/NA	Water	7196A	

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Client Sample ID: B3B359
Date Collected: 06/13/17 07:45
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-1
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	7196A		1			8280	06/13/17 17:39	HR	TAL RCH

Client Sample ID: B3B354
Date Collected: 06/13/17 09:45
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-2
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	7196A		1			8280	06/13/17 17:40	HR	TAL RCH

Client Sample ID: B3B349
Date Collected: 06/13/17 10:00
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-3
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	7196A		1			8280	06/13/17 17:40	HR	TAL RCH

Client Sample ID: B3B353
Date Collected: 06/13/17 09:45
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-4
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			8261	06/13/17 20:05	ALR	TAL RCH
Total/NA	Analysis	300.0		2			8262	06/13/17 20:05	ALR	TAL RCH

Client Sample ID: B3B358
Date Collected: 06/13/17 07:45
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-5
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		2			8261	06/13/17 20:20	ALR	TAL RCH
Total/NA	Analysis	300.0		2			8262	06/13/17 20:20	ALR	TAL RCH

Client Sample ID: B3B348
Date Collected: 06/13/17 10:00
Date Received: 06/13/17 15:00

Lab Sample ID: 300-5648-6
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		2			8261	06/13/17 20:35	ALR	TAL RCH
Total/NA	Analysis	300.0		2			8262	06/13/17 20:35	ALR	TAL RCH

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Client Sample ID: Method Blank

Lab Sample ID: MB 300-8261/5

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			8261	06/13/17 18:35	ALR	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-8262/5

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			8262	06/13/17 18:35	ALR	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-8280/3

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	7196A		1			8280	06/13/17 17:35	HR	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-8261/6

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			8261	06/13/17 18:50	ALR	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-8262/6

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			8262	06/13/17 18:50	ALR	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-8280/4

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	7196A		1			8280	06/13/17 17:35	HR	TAL RCH

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Client Sample ID: Matrix Spike

Date Collected: 06/13/17 10:30

Date Received: 06/13/17 15:00

Lab Sample ID: 300-5647-A-1 MS

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	7196A		1			8280	06/13/17 17:36	HR	TAL RCH

Client Sample ID: Matrix Spike

Date Collected: 06/13/17 10:30

Date Received: 06/13/17 15:00

Lab Sample ID: 300-5647-A-3 MS

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			8261	06/13/17 19:20	ALR	TAL RCH
Total/NA	Analysis	300.0		2			8262	06/13/17 19:20	ALR	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: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL RCH
7196A	Chromium, Hexavalent	SW846	TAL RCH

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
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 7, 2017 Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F11-003

TestAmerica Job ID: 300-5648-1
SDG: WC2105

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-5648-1	B3B359	Water	06/13/17 07:45	06/13/17 15:00
300-5648-2	B3B354	Water	06/13/17 09:45	06/13/17 15:00
300-5648-3	B3B349	Water	06/13/17 10:00	06/13/17 15:00
300-5648-4	B3B353	Water	06/13/17 09:45	06/13/17 15:00
300-5648-5	B3B358	Water	06/13/17 07:45	06/13/17 15:00
300-5648-6	B3B348	Water	06/13/17 10:00	06/13/17 15:00

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July 7, 2017

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-5648-1

SDG Number: WC2105

Login Number: 5648

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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	