

July 19, 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: 300-3342-1

TestAmerica Sample Delivery Group: WC1191

Client Project/Site: X16-037

For:

CH2M Hill Plateau Remediation Company

PO BOX 1600

Mail Stop R3-50

Richland, Washington 99352

Attn: CPP Sample Management



Authorized for release by:

7/19/2016 3:34:23 PM

Steven Campbell, Project Mgmt. Assistant

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Designee for

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LINKS

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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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Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.

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, 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: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Job ID: 300-3342-1

Laboratory: TestAmerica Richland

Narrative

Job Narrative
300-3342-1

Comments

No additional comments.

Receipt

The samples were received on 6/23/2016 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.6° C.

HPLC/IC

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

General Chemistry

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



CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
X16-037-116

Page 1 of 1

Collector	Juan Aguilar <i>CHP2C</i>	Contact/Requester	Karen Waters-Husted
SAF No.	X16-037	Sampling Origin	Hanford Site
Project Title	100-KW Rebound Study, May 31, 2016	Logbook No.	HNF-N-506 <u>55 / S1</u>
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE
Protocol	CERCLA	Priority:	30 Days
POSSIBLE SAMPLE HAZARDS/REMARKS		PRIORITY	
*** 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		SPECIAL INSTRUCTIONS N/A Special Handling: N/A	
Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Hold Time	

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35M78	Y		<u>WJUN 23 2016</u>	<u>0922</u>	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B35M76	N		<u>WJUN 23 2016</u>	<u>0922</u>	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

July 19, 2016

WC1191
3342

300-3342 COC



Relinquished By: <i>CHP2C</i> <i>Juan Aguilar</i> Sign: _____ Date/Time: <u>JUN 23 2016 1040</u>	Received By: <i>Be Briggs</i> Sign: _____ Date/Time: <u>JUN 23 2016 1040</u>
Relinquished By: <i>Be Briggs</i> Sign: _____ Date/Time: <u>JUN 23 2016 1430</u>	Received By: <i>J. Bock, TARI</i> Sign: _____ Date/Time: <u>JUN 23 2016 1430</u>
Relinquished By: _____ Sign: _____ Date/Time: _____	Received By: _____ Sign: _____ Date/Time: _____

Matrix *	
S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquids
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

Disposed Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By: _____ Date/Time: _____
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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

CH2MHill Plateau Remediation Company

C.O.C.#

X16-037-118

Page 1 of 1

Collector	Juan Aguilera <i>C. H. P. R. C.</i>	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X16-037	Sampling Origin	Hanford Site	Purchase Order/Charge Code	304027
Project Title	100-KW Rebound Study, May 31, 2016	Logbook No.	HNF-N-506 <u>SS / S1</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	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		
*** 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			N/A Special Handling: N/A		

Sample No.	Filter	Date	Time	No./Type Container	Sample Analysis	Holding Time	Preservative
B35M85	Y	W JUN 23 2016	0958	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C
B35M83	N	W JUN 23 2016	0958	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

July 19, 2016

Wc1191
#3342

Reinquished By: <i>CHPRC</i> Print Juan Aguilera Sign Date/Time: JUN 23 2016 1040	Received By: <i>BE Bridges</i> Print BE Bridges Sign Date/Time: JUN 23 2016 1040
Reinquished By: <i>BE Bridges</i> Print CHPRC Sign Date/Time: JUN 23 2016 1430	Received By: <i>J. Bock, TARK</i> Print J. Bock, TARK Sign Date/Time: JUN 23 2016 1430
Reinquished By: _____ Date/Time: _____	Received By: _____ Date/Time: _____

Matrix *	
S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquids
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#

X16-037-188

Page 1 of 1

Collector	Juan Aguilar <i>CHP</i>	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X16-037	Sampling Origin	Hanford Site	Purchase Order/Charge Code	304027
Project Title	100-KW Rebound Study, May 31, 2016	Logbook No.	HNF-N-506 <u>SS/S1</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	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			PRIORITY		
*** 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			SPECIAL INSTRUCTIONS		
			N/A		
			Hold Time		
			Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	
B35VK9	N	W	JUN 23 2016	OS31	1X500-ml P	300.0 ANIONS_IC: COMMON	48 Hours	Cool <=6C

July 19, 2016
 WCC1191
 # 3342

Relinquished By	Juan Aguilar <i>CHP</i>	Print	Sign	Date/Time	JUN 23 2016	1040	Received By	B.E. Stiggs <i>CHP</i>	Print	Sign	Date/Time	JUN 23 2016	1040	Matrix *
Relinquished By	B.E. Stiggs <i>CHP</i>	Print	Sign	Date/Time	JUN 23 2016	1430	Received By	J. Bock <i>FAIR</i>	Print	Sign	Date/Time	JUN 23 2016	1430	S = Soil
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		SE = Sediment	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		SO = Solid	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		SL = Sludge	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		W = Water	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		O = Oil	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		A = Air	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		DS = Drum Solids	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		DL = Drum Liquids	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		T = Tissue	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		WT = Wipe	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		L = Liquid	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		V = Vegetation	
Relinquished By		Print	Sign	Date/Time			Received By		Print	Sign	Date/Time		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X16-037-187
Page 1 of 1

Collector	<i>Jan Aguilera CHPRC</i>	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	X16-037	Sampling Origin	Hanford Site	Purchase Order/Charge Code	304027
Project Title	100-KW Rebound Study, May 31, 2016	Logbook No.	HNF-N-506 <u>85 / S1</u>	Ice Chest No.	N/A
Shipped To (Lab)	<u>TestAmerica Incorporated, Richland</u>	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			PRIORITY		
*** 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			SPECIAL INSTRUCTIONS N/A		
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis
B35V10	N	<u>W JUN 23 2016</u>	<u>0958</u>	1x500-mL P	300.0_ANIONS_IC: COMMON
					Holding Time
					48 Hours
					Preservative
					Cool <=6C

July 19, 2016

USE 1191
3342

Relinquished By	<i>Print</i>	Sign	Date/Time	Received By	<i>Print</i>	Sign	Date/Time	Matrix *
Relinquished By	<i>Justin Aguilera CHPRC</i>		<u>JUN 23 2016 1040</u>	Received By	<i>Print</i>		<u>JUN 23 2016 1040</u>	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By	<i>Print</i>	<i>B.E. Briggs</i>	<u>JUN 23 2016 1430</u>	Received By	<i>Print</i>	<i>J. Bock, TART</i>	<u>JUN 23 2016 1430</u>	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By				Received By				

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time
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~~July 19, 2016~~
Detection Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
 SDG: WC1191

Client Sample ID: B35M78

Lab Sample ID: 300-3342-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0074		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35M76

Lab Sample ID: 300-3342-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0072		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35M70

Lab Sample ID: 300-3342-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0033	B	0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35M72

Lab Sample ID: 300-3342-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0034	B	0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35M85

Lab Sample ID: 300-3342-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0084		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35M83

Lab Sample ID: 300-3342-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (VI)	0.0079		0.0040	0.0015	mg/L	1		7196A	Total/NA

Client Sample ID: B35M75

Lab Sample ID: 300-3342-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.4	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.22	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	68	D	0.50	0.25	mg/L	2		300.0	Total/NA

Client Sample ID: B35VK9

Lab Sample ID: 300-3342-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.8	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.21	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	81	D	0.50	0.25	mg/L	2		300.0	Total/NA

Client Sample ID: B35VL0

Lab Sample ID: 300-3342-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14	D	0.40	0.20	mg/L	2		300.0	Total/NA
Nitrate as N	5.9	D	0.056	0.028	mg/L	2		300.0	Total/NA
Fluoride	0.19	D	0.10	0.050	mg/L	2		300.0	Total/NA
Sulfate	75	D	0.50	0.25	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

July 19, 2016
Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Client Sample ID: B35M78

Lab Sample ID: 300-3342-1

Date Collected: 06/23/16 09:22
Date Received: 06/23/16 14:30

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0074		0.0040	0.0015	mg/L			06/23/16 15:58	1

Client Sample ID: B35M76

Lab Sample ID: 300-3342-2

Date Collected: 06/23/16 09:22
Date Received: 06/23/16 14:30

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0072		0.0040	0.0015	mg/L			06/23/16 15:59	1

Client Sample ID: B35M70

Lab Sample ID: 300-3342-3

Date Collected: 06/23/16 08:31
Date Received: 06/23/16 14:30

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0033	B	0.0040	0.0015	mg/L			06/23/16 15:59	1

Client Sample ID: B35M72

Lab Sample ID: 300-3342-4

Date Collected: 06/23/16 08:31
Date Received: 06/23/16 14:30

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0034	B	0.0040	0.0015	mg/L			06/23/16 15:59	1

Client Sample ID: B35M85

Lab Sample ID: 300-3342-5

Date Collected: 06/23/16 09:58
Date Received: 06/23/16 14:30

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0084		0.0040	0.0015	mg/L			06/23/16 16:00	1

Client Sample ID: B35M83

Lab Sample ID: 300-3342-6

Date Collected: 06/23/16 09:58
Date Received: 06/23/16 14:30

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0079		0.0040	0.0015	mg/L			06/23/16 16:00	1

Client Sample ID: B35M75

Lab Sample ID: 300-3342-7

Date Collected: 06/23/16 09:22
Date Received: 06/23/16 14:30

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12	D	0.40	0.20	mg/L			06/24/16 13:42	2
Nitrate as N	5.4	D	0.056	0.028	mg/L			06/24/16 13:42	2
Fluoride	0.22	D	0.10	0.050	mg/L			06/24/16 13:42	2

TestAmerica Richland

July 19, 2016
Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Client Sample ID: B35M75

Lab Sample ID: 300-3342-7

Date Collected: 06/23/16 09:22

Matrix: Water

Date Received: 06/23/16 14:30

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/24/16 13:42	2
Sulfate	68	D	0.50	0.25	mg/L			06/24/16 13:42	2

Client Sample ID: B35VK9

Lab Sample ID: 300-3342-8

Date Collected: 06/23/16 08:31

Matrix: Water

Date Received: 06/23/16 14:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14	D	0.40	0.20	mg/L			06/24/16 14:27	2
Nitrate as N	5.8	D	0.056	0.028	mg/L			06/24/16 14:27	2
Fluoride	0.21	D	0.10	0.050	mg/L			06/24/16 14:27	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/24/16 14:27	2
Sulfate	81	D	0.50	0.25	mg/L			06/24/16 14:27	2

Client Sample ID: B35VL0

Lab Sample ID: 300-3342-9

Date Collected: 06/23/16 09:58

Matrix: Water

Date Received: 06/23/16 14:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14	D	0.40	0.20	mg/L			06/24/16 14:42	2
Nitrate as N	5.9	D	0.056	0.028	mg/L			06/24/16 14:42	2
Fluoride	0.19	D	0.10	0.050	mg/L			06/24/16 14:42	2
Nitrite as N	0.038	U D	0.076	0.038	mg/L			06/24/16 14:42	2
Sulfate	75	D	0.50	0.25	mg/L			06/24/16 14:42	2

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-4691/5
Matrix: Water
Analysis Batch: 4691

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			06/24/16 13:12	1
Nitrite as N	0.019	U	0.038	0.019	mg/L			06/24/16 13:12	1

Lab Sample ID: LCS 300-4691/6
Matrix: Water
Analysis Batch: 4691

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	2.26		mg/L		100	80 - 120
Nitrite as N	3.04	3.05		mg/L		100	80 - 120

Lab Sample ID: 300-3342-7 MS
Matrix: Water
Analysis Batch: 4691

Client Sample ID: B35M75
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.4	D	0.452	5.86	D	mg/L		94	75 - 125
Nitrite as N	0.038	U D	0.609	0.525	D	mg/L		86	75 - 125

Lab Sample ID: 300-3342-7 DU
Matrix: Water
Analysis Batch: 4691

Client Sample ID: B35M75
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	5.4	D	5.43	D	mg/L		0.1	20
Nitrite as N	0.038	U D	0.038	U D	mg/L		NC	20

Lab Sample ID: MB 300-4692/5
Matrix: Water
Analysis Batch: 4692

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			06/24/16 13:12	1
Fluoride	0.025	U	0.050	0.025	mg/L			06/24/16 13:12	1
Sulfate	0.13	U	0.25	0.13	mg/L			06/24/16 13:12	1

Lab Sample ID: LCS 300-4692/6
Matrix: Water
Analysis Batch: 4692

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	15.7		mg/L		98	80 - 120
Fluoride	4.00	3.95		mg/L		99	80 - 120
Sulfate	20.0	19.8		mg/L		99	80 - 120

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-3342-7 MS
Matrix: Water
Analysis Batch: 4692

Client Sample ID: B35M75
Prep Type: Total/NA

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Chloride	12	D	3.20	15.6	D	mg/L		99	75 - 125
Fluoride	0.22	D	0.800	0.959	D	mg/L		92	75 - 125
Sulfate	68	D	4.00	71.4	D	mg/L		88	75 - 125

Lab Sample ID: 300-3342-7 DU
Matrix: Water
Analysis Batch: 4692

Client Sample ID: B35M75
Prep Type: Total/NA

Analyte	Sample		DU DU		Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Chloride	12	D	12.4	D	mg/L		0.2	20
Fluoride	0.22	D	0.222	D	mg/L		0.1	20
Sulfate	68	D	67.8	D	mg/L		0.2	20

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4685/3
Matrix: Water
Analysis Batch: 4685

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cr (VI)	0.0015	U	0.0040	0.0015	mg/L			06/23/16 15:55	1

Lab Sample ID: LCS 300-4685/4
Matrix: Water
Analysis Batch: 4685

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Cr (VI)	0.250	0.252		mg/L		101	80 - 120

Lab Sample ID: 300-3342-1 MS
Matrix: Water
Analysis Batch: 4685

Client Sample ID: B35M78
Prep Type: Total/NA

Analyte	Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Cr (VI)	0.0074		0.0499	0.0577		mg/L		101	75 - 125

Lab Sample ID: 300-3342-1 DU
Matrix: Water
Analysis Batch: 4685

Client Sample ID: B35M78
Prep Type: Total/NA

Analyte	Sample		DU DU		Unit	D	RPD	RPD Limit
	Result	Qualifier	Result	Qualifier				
Cr (VI)	0.0074		0.00740		mg/L		0	20

July 19, 2016
QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

HPLC/IC

Analysis Batch: 4691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3342-7	B35M75	Total/NA	Water	300.0	
300-3342-8	B35VK9	Total/NA	Water	300.0	
300-3342-9	B35VL0	Total/NA	Water	300.0	
MB 300-4691/5	Method Blank	Total/NA	Water	300.0	
LCS 300-4691/6	Lab Control Sample	Total/NA	Water	300.0	
300-3342-7 MS	B35M75	Total/NA	Water	300.0	
300-3342-7 DU	B35M75	Total/NA	Water	300.0	

Analysis Batch: 4692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3342-7	B35M75	Total/NA	Water	300.0	
300-3342-8	B35VK9	Total/NA	Water	300.0	
300-3342-9	B35VL0	Total/NA	Water	300.0	
MB 300-4692/5	Method Blank	Total/NA	Water	300.0	
LCS 300-4692/6	Lab Control Sample	Total/NA	Water	300.0	
300-3342-7 MS	B35M75	Total/NA	Water	300.0	
300-3342-7 DU	B35M75	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 4685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
300-3342-1	B35M78	Total/NA	Water	7196A	
300-3342-2	B35M76	Total/NA	Water	7196A	
300-3342-3	B35M70	Total/NA	Water	7196A	
300-3342-4	B35M72	Total/NA	Water	7196A	
300-3342-5	B35M85	Total/NA	Water	7196A	
300-3342-6	B35M83	Total/NA	Water	7196A	
MB 300-4685/3	Method Blank	Total/NA	Water	7196A	
LCS 300-4685/4	Lab Control Sample	Total/NA	Water	7196A	
300-3342-1 MS	B35M78	Total/NA	Water	7196A	
300-3342-1 DU	B35M78	Total/NA	Water	7196A	



Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Client Sample ID: B35M78

Date Collected: 06/23/16 09:22

Date Received: 06/23/16 14:30

Lab Sample ID: 300-3342-1

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			4685	06/23/16 15:58	RLC	TAL RCH

Client Sample ID: B35M76

Date Collected: 06/23/16 09:22

Date Received: 06/23/16 14:30

Lab Sample ID: 300-3342-2

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			4685	06/23/16 15:59	RLC	TAL RCH

Client Sample ID: B35M70

Date Collected: 06/23/16 08:31

Date Received: 06/23/16 14:30

Lab Sample ID: 300-3342-3

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			4685	06/23/16 15:59	RLC	TAL RCH

Client Sample ID: B35M72

Date Collected: 06/23/16 08:31

Date Received: 06/23/16 14:30

Lab Sample ID: 300-3342-4

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	7196A		1			4685	06/23/16 15:59	RLC	TAL RCH

Client Sample ID: B35M85

Date Collected: 06/23/16 09:58

Date Received: 06/23/16 14:30

Lab Sample ID: 300-3342-5

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	7196A		1			4685	06/23/16 16:00	RLC	TAL RCH

Client Sample ID: B35M83

Date Collected: 06/23/16 09:58

Date Received: 06/23/16 14:30

Lab Sample ID: 300-3342-6

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	7196A		1			4685	06/23/16 16:00	RLC	TAL RCH

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Client Sample ID: B35M75

Lab Sample ID: 300-3342-7

Date Collected: 06/23/16 09:22
Date Received: 06/23/16 14:30

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			4691	06/24/16 13:42	RLC	TAL RCH
Total/NA	Analysis	300.0		2			4692	06/24/16 13:42	RLC	TAL RCH

Client Sample ID: B35VK9

Lab Sample ID: 300-3342-8

Date Collected: 06/23/16 08:31
Date Received: 06/23/16 14:30

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			4691	06/24/16 14:27	RLC	TAL RCH
Total/NA	Analysis	300.0		2			4692	06/24/16 14:27	RLC	TAL RCH

Client Sample ID: B35VL0

Lab Sample ID: 300-3342-9

Date Collected: 06/23/16 09:58
Date Received: 06/23/16 14:30

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			4691	06/24/16 14:42	RLC	TAL RCH
Total/NA	Analysis	300.0		2			4692	06/24/16 14:42	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4685/3

Date Collected: N/A
Date Received: N/A

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			4685	06/23/16 15:55	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4691/5

Date Collected: N/A
Date Received: N/A

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			4691	06/24/16 13:12	RLC	TAL RCH

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4692/5

Date Collected: N/A
Date Received: N/A

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			4692	06/24/16 13:12	RLC	TAL RCH

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4685/4

Date Collected: N/A
Date Received: N/A

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			4685	06/23/16 15:55	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4691/6

Date Collected: N/A
Date Received: N/A

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			4691	06/24/16 13:27	RLC	TAL RCH

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4692/6

Date Collected: N/A
Date Received: N/A

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			4692	06/24/16 13:27	RLC	TAL RCH

Client Sample ID: B35M78

Lab Sample ID: 300-3342-1 MS

Date Collected: 06/23/16 09:22
Date Received: 06/23/16 14:30

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			4685	06/23/16 15:55	RLC	TAL RCH

Client Sample ID: B35M75

Lab Sample ID: 300-3342-7 MS

Date Collected: 06/23/16 09:22
Date Received: 06/23/16 14:30

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			4691	06/24/16 13:57	RLC	TAL RCH
Total/NA	Analysis	300.0		2			4692	06/24/16 13:57	RLC	TAL RCH

Laboratory References:

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

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

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 19, 2016
Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 300-3342-1
SDG: WC1191

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
300-3342-1	B35M78	Water	06/23/16 09:22	06/23/16 14:30
300-3342-2	B35M76	Water	06/23/16 09:22	06/23/16 14:30
300-3342-3	B35M70	Water	06/23/16 08:31	06/23/16 14:30
300-3342-4	B35M72	Water	06/23/16 08:31	06/23/16 14:30
300-3342-5	B35M85	Water	06/23/16 09:58	06/23/16 14:30
300-3342-6	B35M83	Water	06/23/16 09:58	06/23/16 14:30
300-3342-7	B35M75	Water	06/23/16 09:22	06/23/16 14:30
300-3342-8	B35VK9	Water	06/23/16 08:31	06/23/16 14:30
300-3342-9	B35VL0	Water	06/23/16 09:58	06/23/16 14:30

- 1
- 2
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- 11
- 12
- 13

July 19, 2016

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3342-1

SDG Number: WC1191

Login Number: 3342

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.	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.	True	
Residual Chlorine Checked.	N/A	

