

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: 300-6437-1
TestAmerica Sample Delivery Group: WC2542
Client Project/Site: X18-018

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

Attn: CPP Sample Management

Kristine D. Allen

Authorized for release by:
11/29/2017 2:45:54 PM
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(253)248-4970
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Designee for
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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.



LINKS

Review your project results through
TotalAccess

Have a Question?



Visit us at:
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- 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 | 9 |
| Client Sample Results | 10 |
| QC Sample Results | 11 |
| QC Association Summary | 13 |
| Lab Chronicle | 14 |
| Method Summary | 16 |
| Sample Summary | 17 |
| Receipt Checklists | 18 |

Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
SDG: WC2542

Qualifiers

HPLC/IC

| Qualifier | Qualifier Description |
|-----------|---|
| D | The reported value is from a dilution. |
| N | MS, MSD: Spike recovery is outside acceptance limits. |
| 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) |

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
SDG: WC2542

Job ID: 300-6437-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-6437-1**

Comments

No additional comments.

Receipt

The samples were received on 11/20/2017 2:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.9° C.

HPLC/IC

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

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

CH2MHILL Plateau
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X18-018-011
Page 1 of 1

| | | |
|---|--|------------------------------------|
| Collector: Juan Aguilar ACI/SPC | Contact/Requester: Karen Waters-Husted | Telephone No.: 509-376-4650 |
| SAF No.: X18-018 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071 |
| Project Title: WVA T, ANION RESAMPLE 17 NOV 1 | Logbook No.: HNF-N-506 -94/89 | Ice Chest No.: N/A |
| Shipped To (Lab): TestAmerica Incorporated, Rich | Method of Shipment: GOVERNMENT VEHICLE | Bill of Lading/Air Bill No.: N/A |
| Protocol: RCRA | Priority: 15 Days | Offsite Property No.: N/A |
| POSSIBLE SAMPLE HAZARDS/REMARK ** ** 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 | Holding Time | Preservative |
|------------|--------|----------|------|-------------------|--------------------------|--------------|--------------|
| B3FY76 | N | 11-20-17 | 1230 | 1x125-mL P | 300.0_ANTIONS_IC: COMMON | 48 Hours | COOL <=6C |

W431
W2854



300-6437 COC

| | | | | | | |
|---|-------------|-----------|---|-------------|-----------|--|
| Relinquished By: Juan Aguilar ACI/SPC | NOV 20 2017 | 1248 | Received By: Jeff Lucas CHERC | NOV 20 2017 | 1248 | Matrix * S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other |
| Print First and Last Name | Signature | Date/Time | Print First and Last Name | Signature | Date/Time | |
| Relinquished By: | NOV 20 2017 | 1430 | Received By: J. Bock, TAPL | NOV 20 2017 | 1430 | |
| Print First and Last Name | Signature | Date/Time | Print First and Last Name | Signature | Date/Time | |
| Relinquished By: | Signature | Date/Time | Received By: | Signature | Date/Time | |
| Print First and Last Name | Signature | Date/Time | Print First and Last Name | Signature | Date/Time | |

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process):

Disposed By: _____ Date/Time: _____

CH2MH11 Plateau
Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X18-018-020
Page 1 of 1

| | | |
|--|--|---|
| Collector: Juan Aguilar <small>KR2580</small> | Contact/Requester: Karen Waters-Husted | Telephone No.: 509-376-4650 |
| SAF No.: X18-018 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071 |
| Project Title: WMA T, ANTON RESAMPLE 17 NOV 1 | Logbook No.: HNF-N-506-94159 | Ice Chest No.: N/A |
| Shipped To (Lab): TestAmerica Incorporated, Rich | Method of Shipment: GOVERNMENT VEHICLE | Bill of Lading/Air Bill No.: N/A |
| Protocol: RCPA | Priority: 15 Days | Offsite Property No.: N/A |
| <p>POSSIBLE SAMPLE HAZARDS/REMARK</p> <p>** ** 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</p> | | <p>SPECIAL INSTRUCTIONS</p> <p>N/A</p> |

| Sample No. | Filter | * | Date | Time | No/Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|---|----------|------|-------------------|--------------------------|--------------|--------------|
| B3FY94 | N | W | 11-20-17 | 1044 | 1x125-mL P | 300.0_ANTIONS_IC: COMMON | 48 Hours | COOL <=6C |

WHSN
WRSYA

| | | | | | | | |
|-------------------------------------|-------------|---|---|----------------------|-------------|---------------------------------|--|
| Relinquished By: <i>[Signature]</i> | NOV 20 2017 | 1249 | Received By: Jeff Lucas <small>JCHPRC</small> | <i>[Signature]</i> | NOV 20 2017 | 1248 | <p>Matrix *</p> <p>S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquid SO = Solid T = Tissue SL = Sludge WI = Wipe W = Water L = Liquid O = Oil V = Vegetation A = Air X = Other</p> |
| Print First and Last Name | Signature | Date/Time | Print First and Last Name | Signature | Date/Time | Date/Time | |
| Relinquished By: <i>[Signature]</i> | NOV 20 2017 | 1430 | Received By: <i>[Signature]</i> | J. Beck, TARI | 11-20-17 | 1435 | |
| Print First and Last Name | Signature | Date/Time | Print First and Last Name | Signature | Date/Time | Date/Time | |
| Relinquished By: <i>[Signature]</i> | Signature | Date/Time | Received By: <i>[Signature]</i> | Signature | Date/Time | Date/Time | |
| Print First and Last Name | Signature | Date/Time | Print First and Last Name | Signature | Date/Time | Date/Time | |
| FINAL SAMPLE DISPOSITION | | Disposal Method (e.g., Return to customer, per lab procedure, used in process): | | | | Disposed By: <i>[Signature]</i> | Date/Time: |

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#
X18-018-016
Page 1 of 1

Collector: Juan Aguilar
SAF No.: X18-018
Project Title: WMA T, ANTON RESAMPLE 17 NOV 1
Shipped To (Lab): TestAmerica Incorporated, Rich
Protocol: RCRA
Contact/Requester: Karen Waters-Husted
Sampling Origin: Hanford Site
Logbook No.: HNF-N-506 - 94189
Method of Shipment: GOVERNMENT VEHICLE
Priority: 15 Days PRIORITY
Telephone No.: 509-376-4650
Purchase Order/Charge Code: 300071
Ice Chest No.: N/A
Bill of Lading/Air Bill No.: N/A
Offsite Property No.: N/A

POSSIBLE SAMPLE HAZARDS/REMARK
 ** ** 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 | Holding Time | Preservative |
|------------|--------|---|----------|------|-------------------|-------------------------|--------------|--------------|
| B3FY86 | N | W | 11-20-17 | 0853 | 1x125-ml P | 300.0 ANIONS_IC: COMMON | 48 Hours | Cool <=6C |

6431
W02542

Relinquished By: Juan Aguilar
Print First and Last Name: Juan Aguilar
Signature: [Signature]
Date/Time: NOV 20 2017 1248

Received By: Jeff Luns
Print First and Last Name: Jeff Luns
Signature: [Signature]
Date/Time: NOV 20 2017 1248

Relinquished By: Jeff Luns
Print First and Last Name: Jeff Luns
Signature: [Signature]
Date/Time: NOV 20 2017 1430

Received By: J. Bock, TARL
Print First and Last Name: J. Bock, TARL
Signature: [Signature]
Date/Time: 11/20/17 1430

Relinquished By: [Signature]
Print First and Last Name: [Signature]
Date/Time: [Date/Time]

Received By: [Signature]
Print First and Last Name: [Signature]
Date/Time: [Date/Time]

Relinquished By: [Signature]
Print First and Last Name: [Signature]
Date/Time: [Date/Time]

Received By: [Signature]
Print First and Last Name: [Signature]
Date/Time: [Date/Time]

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process): [Text] Disposed By: [Signature] Date/Time: [Date/Time]

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

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
SDG: WC2542

Client Sample ID: B3FY76

Lab Sample ID: 300-6437-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|------|-------|------|---------|---|--------|-----------|
| Chloride | 20 | D | 0.40 | 0.20 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrate as N | 8.3 | D | 0.14 | 0.070 | mg/L | 5 | | 300.0 | Total/NA |
| Fluoride | 0.31 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrite as N | 0.22 | D | 0.19 | 0.095 | mg/L | 5 | | 300.0 | Total/NA |
| Sulfate | 36 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

Client Sample ID: B3FY94

Lab Sample ID: 300-6437-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride | 21 | D | 0.40 | 0.20 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrate as N | 37 | D | 0.28 | 0.14 | mg/L | 10 | | 300.0 | Total/NA |
| Fluoride | 2.4 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrite as N | 0.16 | D N | 0.076 | 0.038 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 42 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

Client Sample ID: B3FY88

Lab Sample ID: 300-6437-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride | 23 | D | 0.40 | 0.20 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrate as N | 50 | D | 0.28 | 0.14 | mg/L | 10 | | 300.0 | Total/NA |
| Fluoride | 2.0 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrite as N | 0.19 | D N | 0.076 | 0.038 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 46 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

Client Sample ID: B3FY86

Lab Sample ID: 300-6437-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride | 19 | D | 0.40 | 0.20 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrate as N | 31 | D | 0.28 | 0.14 | mg/L | 10 | | 300.0 | Total/NA |
| Fluoride | 2.3 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrite as N | 0.16 | D N | 0.076 | 0.038 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 56 | 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: X18-018

TestAmerica Job ID: 300-6437-1
SDG: WC2542

Client Sample ID: B3FY76

Lab Sample ID: 300-6437-1

Date Collected: 11/20/17 12:30

Matrix: Water

Date Received: 11/20/17 14:30

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|------|-------|------|---|----------|----------------|---------|
| Chloride | 20 | D | 0.40 | 0.20 | mg/L | | | 11/21/17 12:25 | 2 |
| Nitrate as N | 8.3 | D | 0.14 | 0.070 | mg/L | | | 11/21/17 15:56 | 5 |
| Fluoride | 0.31 | D | 0.10 | 0.050 | mg/L | | | 11/21/17 12:25 | 2 |
| Nitrite as N | 0.22 | D | 0.19 | 0.095 | mg/L | | | 11/21/17 15:56 | 5 |
| Sulfate | 36 | D | 0.50 | 0.25 | mg/L | | | 11/21/17 12:25 | 2 |

Client Sample ID: B3FY94

Lab Sample ID: 300-6437-2

Date Collected: 11/20/17 10:44

Matrix: Water

Date Received: 11/20/17 14:30

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride | 21 | D | 0.40 | 0.20 | mg/L | | | 11/21/17 14:56 | 2 |
| Nitrate as N | 37 | D | 0.28 | 0.14 | mg/L | | | 11/21/17 18:27 | 10 |
| Fluoride | 2.4 | D | 0.10 | 0.050 | mg/L | | | 11/21/17 14:56 | 2 |
| Nitrite as N | 0.16 | D N | 0.076 | 0.038 | mg/L | | | 11/21/17 14:56 | 2 |
| Sulfate | 42 | D | 0.50 | 0.25 | mg/L | | | 11/21/17 14:56 | 2 |

Client Sample ID: B3FY88

Lab Sample ID: 300-6437-3

Date Collected: 11/20/17 10:21

Matrix: Water

Date Received: 11/20/17 14:30

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride | 23 | D | 0.40 | 0.20 | mg/L | | | 11/21/17 15:11 | 2 |
| Nitrate as N | 50 | D | 0.28 | 0.14 | mg/L | | | 11/21/17 18:42 | 10 |
| Fluoride | 2.0 | D | 0.10 | 0.050 | mg/L | | | 11/21/17 15:11 | 2 |
| Nitrite as N | 0.19 | D N | 0.076 | 0.038 | mg/L | | | 11/21/17 15:11 | 2 |
| Sulfate | 46 | D | 0.50 | 0.25 | mg/L | | | 11/21/17 15:11 | 2 |

Client Sample ID: B3FY86

Lab Sample ID: 300-6437-4

Date Collected: 11/20/17 08:53

Matrix: Water

Date Received: 11/20/17 14:30

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride | 19 | D | 0.40 | 0.20 | mg/L | | | 11/21/17 15:26 | 2 |
| Nitrate as N | 31 | D | 0.28 | 0.14 | mg/L | | | 11/21/17 18:57 | 10 |
| Fluoride | 2.3 | D | 0.10 | 0.050 | mg/L | | | 11/21/17 15:26 | 2 |
| Nitrite as N | 0.16 | D N | 0.076 | 0.038 | mg/L | | | 11/21/17 15:26 | 2 |
| Sulfate | 56 | D | 0.50 | 0.25 | mg/L | | | 11/21/17 15:26 | 2 |

TestAmerica Richland

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
SDG: WC2542

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-9742/5
Matrix: Water
Analysis Batch: 9742

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 | | | 11/21/17 11:55 | 1 |
| Nitrite as N | 0.019 | U | 0.038 | 0.019 | mg/L | | | 11/21/17 11:55 | 1 |

Lab Sample ID: LCS 300-9742/6
Matrix: Water
Analysis Batch: 9742

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 | 2.29 | | mg/L | | 101 | 80 - 120 |
| Nitrite as N | 3.04 | 3.15 | | mg/L | | 104 | 80 - 120 |

Lab Sample ID: 300-6437-1 MS
Matrix: Water
Analysis Batch: 9742

Client Sample ID: B3FY76
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Nitrate as N | 8.3 | D | 1.13 | 9.76 | D | mg/L | | 125 | 75 - 125 |
| Nitrite as N | 0.22 | D | 1.52 | 1.38 | D | mg/L | | 76 | 75 - 125 |

Lab Sample ID: 300-6437-1 DU
Matrix: Water
Analysis Batch: 9742

Client Sample ID: B3FY76
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|--------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Nitrate as N | 8.3 | D | 8.75 | D | mg/L | | 5 | 20 |
| Nitrite as N | 0.22 | D | 0.218 | D | mg/L | | 1 | 20 |

Lab Sample ID: MB 300-9743/5
Matrix: Water
Analysis Batch: 9743

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 | | | 11/21/17 11:55 | 1 |
| Fluoride | 0.025 | U | 0.050 | 0.025 | mg/L | | | 11/21/17 11:55 | 1 |
| Sulfate | 0.13 | U | 0.25 | 0.13 | mg/L | | | 11/21/17 11:55 | 1 |

Lab Sample ID: LCS 300-9743/6
Matrix: Water
Analysis Batch: 9743

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 | 16.0 | | mg/L | | 100 | 80 - 120 |
| Fluoride | 4.00 | 4.06 | | mg/L | | 102 | 80 - 120 |
| Sulfate | 20.0 | 20.3 | | mg/L | | 102 | 80 - 120 |

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
 SDG: WC2542

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-6437-1 MS
 Matrix: Water
 Analysis Batch: 9743

Client Sample ID: B3FY76
 Prep Type: Total/NA

| Analyte | Sample | Sample | Spike | MS | MS | Unit | D | %Rec | %Rec. | Limits |
|----------|--------|-----------|-------|--------|-----------|------|---|------|----------|--------|
| | Result | Qualifier | | Result | Qualifier | | | | | |
| Chloride | 20 | D | 3.20 | 23.2 | D | mg/L | | 94 | 75 - 125 | |
| Fluoride | 0.31 | D | 0.800 | 1.09 | D | mg/L | | 98 | 75 - 125 | |
| Sulfate | 36 | D | 4.00 | 39.3 | D | mg/L | | 91 | 75 - 125 | |

Lab Sample ID: 300-6437-1 DU
 Matrix: Water
 Analysis Batch: 9743

Client Sample ID: B3FY76
 Prep Type: Total/NA

| Analyte | Sample | Sample | DU | | Unit | D | RPD | RPD | |
|----------|--------|-----------|--------|-----------|------|---|-----|-----|-------|
| | Result | Qualifier | Result | Qualifier | | | | RPD | Limit |
| Chloride | 20 | D | 20.1 | D | mg/L | | 0.7 | 20 | |
| Fluoride | 0.31 | D | 0.306 | D | mg/L | | 0.8 | 20 | |
| Sulfate | 36 | D | 35.5 | D | mg/L | | 0.7 | 20 | |

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

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
 SDG: WC2542

HPLC/IC

Analysis Batch: 9742

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------|--------------------|-----------|--------|--------|------------|
| 300-6437-1 | B3FY76 | Total/NA | Water | 300.0 | |
| 300-6437-2 | B3FY94 | Total/NA | Water | 300.0 | |
| 300-6437-2 | B3FY94 | Total/NA | Water | 300.0 | |
| 300-6437-3 | B3FY88 | Total/NA | Water | 300.0 | |
| 300-6437-3 | B3FY88 | Total/NA | Water | 300.0 | |
| 300-6437-4 | B3FY86 | Total/NA | Water | 300.0 | |
| 300-6437-4 | B3FY86 | Total/NA | Water | 300.0 | |
| MB 300-9742/5 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 300-9742/6 | Lab Control Sample | Total/NA | Water | 300.0 | |
| 300-6437-1 MS | B3FY76 | Total/NA | Water | 300.0 | |
| 300-6437-1 DU | B3FY76 | Total/NA | Water | 300.0 | |

Analysis Batch: 9743

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------|--------------------|-----------|--------|--------|------------|
| 300-6437-1 | B3FY76 | Total/NA | Water | 300.0 | |
| 300-6437-2 | B3FY94 | Total/NA | Water | 300.0 | |
| 300-6437-3 | B3FY88 | Total/NA | Water | 300.0 | |
| 300-6437-4 | B3FY86 | Total/NA | Water | 300.0 | |
| MB 300-9743/5 | Method Blank | Total/NA | Water | 300.0 | |
| LCS 300-9743/6 | Lab Control Sample | Total/NA | Water | 300.0 | |
| 300-6437-1 MS | B3FY76 | Total/NA | Water | 300.0 | |
| 300-6437-1 DU | B3FY76 | Total/NA | Water | 300.0 | |

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
 SDG: WC2542

Client Sample ID: B3FY76

Lab Sample ID: 300-6437-1

Date Collected: 11/20/17 12:30

Matrix: Water

Date Received: 11/20/17 14:30

| 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 | | 2 | | | 9743 | 11/21/17 12:25 | ALR | TAL RCH |
| Total/NA | Analysis | 300.0 | | 5 | | | 9742 | 11/21/17 15:56 | ALR | TAL RCH |

Client Sample ID: B3FY94

Lab Sample ID: 300-6437-2

Date Collected: 11/20/17 10:44

Matrix: Water

Date Received: 11/20/17 14:30

| 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 | | 2 | | | 9742 | 11/21/17 14:56 | ALR | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | | | 9743 | 11/21/17 14:56 | ALR | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | | | 9742 | 11/21/17 18:27 | ALR | TAL RCH |

Client Sample ID: B3FY88

Lab Sample ID: 300-6437-3

Date Collected: 11/20/17 10:21

Matrix: Water

Date Received: 11/20/17 14:30

| 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 | | 2 | | | 9742 | 11/21/17 15:11 | ALR | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | | | 9743 | 11/21/17 15:11 | ALR | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | | | 9742 | 11/21/17 18:42 | ALR | TAL RCH |

Client Sample ID: B3FY86

Lab Sample ID: 300-6437-4

Date Collected: 11/20/17 08:53

Matrix: Water

Date Received: 11/20/17 14:30

| 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 | | 2 | | | 9742 | 11/21/17 15:26 | ALR | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | | | 9743 | 11/21/17 15:26 | ALR | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | | | 9742 | 11/21/17 18:57 | ALR | TAL RCH |

Client Sample ID: Method Blank

Lab Sample ID: MB 300-9742/5

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 | | | 9742 | 11/21/17 11:55 | ALR | TAL RCH |

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
 SDG: WC2542

Client Sample ID: Method Blank

Lab Sample ID: MB 300-9743/5

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 | | | 9743 | 11/21/17 11:55 | ALR | TAL RCH |

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-9742/6

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 | | | 9742 | 11/21/17 12:10 | ALR | TAL RCH |

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-9743/6

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 | | | 9743 | 11/21/17 12:10 | ALR | TAL RCH |

Client Sample ID: B3FY76

Lab Sample ID: 300-6437-1 MS

Date Collected: 11/20/17 12:30
 Date Received: 11/20/17 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 | | | 9743 | 11/21/17 12:40 | ALR | TAL RCH |
| Total/NA | Analysis | 300.0 | | 5 | | | 9742 | 11/21/17 16:11 | ALR | TAL RCH |

Laboratory References:

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

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
SDG: WC2542

| 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



Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X18-018

TestAmerica Job ID: 300-6437-1
SDG: WC2542

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 300-6437-1 | B3FY76 | Water | 11/20/17 12:30 | 11/20/17 14:30 |
| 300-6437-2 | B3FY94 | Water | 11/20/17 10:44 | 11/20/17 14:30 |
| 300-6437-3 | B3FY88 | Water | 11/20/17 10:21 | 11/20/17 14:30 |
| 300-6437-4 | B3FY86 | Water | 11/20/17 08:53 | 11/20/17 14:30 |

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

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-6437-1

SDG Number: WC2542

Login Number: 6437

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 | |