

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: 300-1714-1
TestAmerica Sample Delivery Group: WC0647
Client Project/Site: CHPRC Chemical Hanford

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

Attn: CPP Sample Management



Authorized for release by:
12/7/2015 4:12:33 PM
Steven Campbell, Quality Assurance 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. The sample/ sample duplicate RPD agreement is not applicable if one or both results are elss than five times the MDL.



LINKS

Review your project results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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Qualifiers**HPLC/IC**

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

Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|----------------|---|
| 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: CHPRC Chemical Hanford

TestAmerica Job ID: 300-1714-1
SDG: WC0647

Job ID: 300-1714-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-1714-1**

Comments

No additional comments.

Receipt

The samples were received on 12/1/2015 2:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.9° C.

HPLC/IC

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

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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

CH2M Hill Plateau Remediation Company

C.O.C. #
W16-012-041
Page 1 of 1

| | | | |
|--|--|---|-----------------------------------|
| Collector K.C. Paterson/CHPRC | | Contact/Requester Karen Waters-Husted | Telephone No. 509-376-4650 |
| SAF No. W16-012 | Sampling Origin Hanford Site | Purchase Order/Charge Code 300071 | |
| Project Title RCRA, DECEMBER 2015 | Logbook No. HNF-N-506 80/44 | 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 RCRA | Priority: 30 Days | Offsite Property No. N/A | |
| POSSIBLE SAMPLE HAZARDS/REMARKS *** 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 438.1 | | SPECIAL INSTRUCTIONS | Hold Time |
| Sample No. E33D51 | Filter N | Date DEC 01 2015 1158 | Time 1158 |
| No/Type Container 1x500-mL P | Sample Analysis 300.0_ANIONS_IC: COMMON | Holding Time 48 Hours | Preservative Cool <=6C |
| | | Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | |

11114
WTC 0644
Due 12-10-15

300-1714 COC



| | | | | | | | | |
|--|-------|------|-----------------------------------|-------------------------------------|-------|------|-----------------------------------|--|
| Relinquished By K.C. Paterson/CHPRC | Print | Sign | Date/Time DEC 01 2015 1300 | Received By T.L. Bacon/CHPRC | Print | Sign | Date/Time DEC 01 2015 1300 | Matrix * |
| Relinquished By T.L. Bacon/CHPRC | Print | Sign | Date/Time DEC 01 2015 1415 | Received By J. Bock, TARL | Print | Sign | Date/Time DEC 01 2015 1415 | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WL = Wipe L = Liquid V = Vegetation X = Other |

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

December 07, 2015

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W16-012-071
Page 1 of 1

| | | |
|--|--|---|
| Collector K.C. Paterson/CHPRC | Contact/Requester Karen Waters-Husted | Telephone No. 509-376-4650 |
| SAF No. W16-012 | Sampling Origin Hanford Site | Purchase Order/Charge Code 300071 |
| Project Title RCRA DECEMBER 2015 | Logbook No. HNF-N-50680/44 | 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 RCRA | Priority: 30 Days | Offsite Property No. N/A |
| POSSIBLE SAMPLE HAZARDS/REMARKS | | Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1 | | |

| Sample No. | Filter | * | Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|---|-------------|------|--------------------|-------------------------|--------------|--------------|
| B33D60 | N | W | DEC 01 2015 | 1233 | 1x500-ml P | 300.0 ANIONS_IC: COMMON | 48 Hours | Cool <=6C |

Handwritten:
B1M14
W16064M
Dec 12-16-15

| | | | | | | | | |
|---|-----------|------|---------------------------------|--|-----------|------|---------------------------------|--|
| Relinquished By K.C. Paterson/CHPRC | Print | Sign | Date/Time DEC 01 2015 | Received By T.L. BACON/CHPRC | Print | Sign | Date/Time DEC 01 2015 | Matrix * |
| Relinquished By T.L. BACON/CHPRC | Print | Sign | Date/Time DEC 01 2015 | Received By J. Bock, TARL | Print | Sign | Date/Time DEC 01 2015 | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other |

| | | | |
|-----------------|-----------|-------------|-----------|
| Relinquished By | Date/Time | Received By | Date/Time |
| Relinquished By | Date/Time | Received By | Date/Time |

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W16-012-045

Page 1 of 1

| | | |
|--|--|------------------------------------|
| Collector: c. Patterson/CHPRC | Contact/Requester: Karen Waters-Husted | Telephone No.: 509-376-4650 |
| SAF No.: W16-012 | Sampling Origin: Hanford Site | Purchase Order/Charge Code: 300071 |
| Project Title: RCRA, DECEMBER 2015 | Logbook No.: HNF-N-506 <u>80/44</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: RCRA | Priority: 30 Days | Offsite Property No.: N/A |
| POSSIBLE SAMPLE HAZARDS/REMARKS | | |
| *** 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 | | |
| 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 |
|------------|--------|---|-------------|------|--------------------|-------------------------|--------------|--------------|
| B33D68 | N | | DEC 01 2015 | 1044 | 1x500-ml P | 300.0 ANIONS_IC: COMMON | 48 Hours | Cool <=6C |

*21114
W16012-045
Dec 12-14-15*

December 07, 2015

| | | | | |
|---|--------------------------------------|--|--------------------------------------|--|
| Relinquished By: <i>[Signature]</i> c. Patterson/CHPRC | Print Date/Time: DEC 01 2015 1105 | Received By: <i>[Signature]</i> LD, Wall CHPRC | Print Date/Time: DEC 01 2015 1105 | Matrix * |
| Relinquished By: <i>[Signature]</i> LD, Wall CHPRC | Date/Time: DEC 01 2015 | Received By: <i>[Signature]</i> J. Bock, TARL | Date/Time: DEC 01 2015 1105 | S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air DS = Drumm Solids DL = Drumm Liquids T = Tissue WL = Wipe L = Liquid V = Vegetation X = Other |

| | | | |
|--------------------------|------------------|--------------------|------------------|
| Relinquished By: _____ | Date/Time: _____ | Received By: _____ | Date/Time: _____ |
| FINAL SAMPLE DISPOSITION | | Disposed By: _____ | |



CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
W16-012-047
Page 1 of 1

| | | | | | |
|---|------------------------------------|--------------------|-----------------------------|-----------------------------|--|
| Collector | K.C. Paterson/CHPRC | Contact/Requester | Karen Waters-Husted | Telephone No. | 509-376-4650 |
| SAF No. | W16-012 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300071 |
| Project Title | RCRA, DECEMBER 2015 | Logbook No. | HNF-N-506 <u>80/44</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 | RCRA | Priority: | 30 Days | Offsite Property No. | N/A |
| POSSIBLE SAMPLE HAZARDS/REMARKS | | | SPECIAL INSTRUCTIONS | Hold Time | Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR /IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1 | | | | | |

| Sample No. | Filter | * Date | Time | No./Type Container | Sample Analysis | Holding Time | Preservative |
|------------|--------|-------------|------|--------------------|-------------------------|--------------|--------------|
| B33D69 | N | DEC 01 2015 | 1044 | 1x500-mL P | 300.0_ANIONS_IC: COMMON | 48 Hours | Cool <=6C |

11114
wed 12-15-15
Due 12-15-15

| | | | | | | | | | | | |
|------------------|--------------------|-------|------|-----------|------------------|--------------|--------------------|-------|------|-----------|------------------|
| Relinquished By: | <i>[Signature]</i> | Print | Sign | Date/Time | DEC 01 2015 1105 | Received By: | L.D. Wall | Print | Sign | Date/Time | DEC 01 2015 1105 |
| Relinquished By: | <i>[Signature]</i> | CHPRC | | Date/Time | 1/4/15 | Received By: | <i>[Signature]</i> | CHPRC | | Date/Time | 1/4/15 |
| Relinquished By: | L.D. Wall | | | Date/Time | DEC 01 2015 | Received By: | J. Bock, TARL | | | Date/Time | DEC 01 2015 |
| Relinquished By: | <i>[Signature]</i> | CHPRC | | Date/Time | | Received By: | | | | Date/Time | |

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

| | | | | | | | |
|---------------------------------|--|-----------|--|--------------|--|-----------|--|
| Relinquished By: | | Date/Time | | Received By: | | Date/Time | |
| FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process) | | | Disposed By: | | Date/Time | |

December 07 2015

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CHPRC Chemical Hanford

TestAmerica Job ID: 300-1714-1
 SDG: WC0647

Client Sample ID: B33D51

Lab Sample ID: 300-1714-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride | 5.9 | D | 0.40 | 0.20 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrate as N | 2.3 | D | 0.056 | 0.028 | mg/L | 2 | | 300.0 | Total/NA |
| Fluoride | 0.46 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 17 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

Client Sample ID: B33D60

Lab Sample ID: 300-1714-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|--------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride | 7.9 | D | 0.40 | 0.20 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrate as N | 4.8 | D | 0.056 | 0.028 | mg/L | 2 | | 300.0 | Total/NA |
| Fluoride | 0.48 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 22 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

Client Sample ID: B33D68

Lab Sample ID: 300-1714-3

| 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 | 28 | D | 0.14 | 0.070 | mg/L | 5 | | 300.0 | Total/NA |
| Fluoride | 0.41 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 19 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

Client Sample ID: B33D69

Lab Sample ID: 300-1714-4

| 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 | 27 | D | 0.14 | 0.070 | mg/L | 5 | | 300.0 | Total/NA |
| Fluoride | 0.40 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 19 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

This Detection Summary does not include radiochemical test results.

TestAmerica Richland

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CHPRC Chemical Hanford

TestAmerica Job ID: 300-1714-1
 SDG: WC0647

Client Sample ID: B33D51

Date Collected: 12/01/15 11:58

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-1

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride | 5.9 | D | 0.40 | 0.20 | mg/L | | | 12/01/15 18:19 | 2 |
| Nitrate as N | 2.3 | D | 0.056 | 0.028 | mg/L | | | 12/01/15 18:19 | 2 |
| Fluoride | 0.46 | D | 0.10 | 0.050 | mg/L | | | 12/01/15 18:19 | 2 |
| Nitrite as N | 0.038 | U | 0.076 | 0.038 | mg/L | | | 12/01/15 18:19 | 2 |
| Sulfate | 17 | D | 0.50 | 0.25 | mg/L | | | 12/01/15 18:19 | 2 |

Client Sample ID: B33D60

Date Collected: 12/01/15 12:33

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-2

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|--------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride | 7.9 | D | 0.40 | 0.20 | mg/L | | | 12/01/15 19:04 | 2 |
| Nitrate as N | 4.8 | D | 0.056 | 0.028 | mg/L | | | 12/01/15 19:04 | 2 |
| Fluoride | 0.48 | D | 0.10 | 0.050 | mg/L | | | 12/01/15 19:04 | 2 |
| Nitrite as N | 0.038 | U | 0.076 | 0.038 | mg/L | | | 12/01/15 19:04 | 2 |
| Sulfate | 22 | D | 0.50 | 0.25 | mg/L | | | 12/01/15 19:04 | 2 |

Client Sample ID: B33D68

Date Collected: 12/01/15 10:44

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-3

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 | | | 12/01/15 19:19 | 2 |
| Nitrate as N | 28 | D | 0.14 | 0.070 | mg/L | | | 12/02/15 00:50 | 5 |
| Fluoride | 0.41 | D | 0.10 | 0.050 | mg/L | | | 12/01/15 19:19 | 2 |
| Nitrite as N | 0.038 | U | 0.076 | 0.038 | mg/L | | | 12/01/15 19:19 | 2 |
| Sulfate | 19 | D | 0.50 | 0.25 | mg/L | | | 12/01/15 19:19 | 2 |

Client Sample ID: B33D69

Date Collected: 12/01/15 10:44

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-4

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 | | | 12/01/15 19:34 | 2 |
| Nitrate as N | 27 | D | 0.14 | 0.070 | mg/L | | | 12/02/15 01:05 | 5 |
| Fluoride | 0.40 | D | 0.10 | 0.050 | mg/L | | | 12/01/15 19:34 | 2 |
| Nitrite as N | 0.038 | U | 0.076 | 0.038 | mg/L | | | 12/01/15 19:34 | 2 |
| Sulfate | 19 | D | 0.50 | 0.25 | mg/L | | | 12/01/15 19:34 | 2 |

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-2193/27
 Matrix: Water
 Analysis Batch: 2193

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 | | | 12/01/15 17:49 | 1 |
| Nitrite as N | 0.019 | U | 0.038 | 0.019 | mg/L | | | 12/01/15 17:49 | 1 |

Lab Sample ID: LCS 300-2193/28
 Matrix: Water
 Analysis Batch: 2193

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 | 2.38 | | mg/L | | 105 | 80 - 120 |
| Nitrite as N | 3.04 | 3.21 | | mg/L | | 105 | 80 - 120 |

Lab Sample ID: 300-1714-1 MS
 Matrix: Water
 Analysis Batch: 2193

Client Sample ID: B33D51
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Nitrate as N | 2.3 | D | 0.452 | 2.78 | D | mg/L | | 108 | 75 - 125 |
| Nitrite as N | 0.038 | U | 0.609 | 0.571 | D | mg/L | | 94 | 75 - 125 |

Lab Sample ID: 300-1714-1 DU
 Matrix: Water
 Analysis Batch: 2193

Client Sample ID: B33D51
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|--------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Nitrate as N | 2.3 | D | 2.28 | D | mg/L | | 0.3 | 20 |
| Nitrite as N | 0.038 | U | 0.038 | U | mg/L | | NC | 20 |

Lab Sample ID: MB 300-2194/27
 Matrix: Water
 Analysis Batch: 2194

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 | | | 12/01/15 17:49 | 1 |
| Fluoride | 0.025 | U | 0.050 | 0.025 | mg/L | | | 12/01/15 17:49 | 1 |
| Sulfate | 0.13 | U | 0.25 | 0.13 | mg/L | | | 12/01/15 17:49 | 1 |

Lab Sample ID: LCS 300-2194/28
 Matrix: Water
 Analysis Batch: 2194

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 | 16.6 | | mg/L | | 104 | 80 - 120 |
| Fluoride | 4.00 | 4.16 | | mg/L | | 104 | 80 - 120 |
| Sulfate | 20.0 | 20.6 | | mg/L | | 103 | 80 - 120 |

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-1714-1 MS
 Matrix: Water
 Analysis Batch: 2194

Client Sample ID: B33D51
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Chloride | 5.9 | D | 3.20 | 9.28 | D | mg/L | | 104 | 75 - 125 |
| Fluoride | 0.46 | D | 0.800 | 1.27 | D | mg/L | | 101 | 75 - 125 |
| Sulfate | 17 | D | 4.00 | 20.8 | D | mg/L | | 105 | 75 - 125 |

Lab Sample ID: 300-1714-1 DU
 Matrix: Water
 Analysis Batch: 2194

Client Sample ID: B33D51
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|----------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Chloride | 5.9 | D | 5.93 | D | mg/L | | 0.3 | 20 |
| Fluoride | 0.46 | D | 0.459 | D | mg/L | | 0.8 | 20 |
| Sulfate | 17 | D | 16.5 | D | mg/L | | 0.4 | 20 |



HPLC/IC**Analysis Batch: 2193**

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 300-1714-1 | B33D51 | Total/NA | Water | 300.0 | |
| 300-1714-1 DU | B33D51 | Total/NA | Water | 300.0 | |
| 300-1714-1 MS | B33D51 | Total/NA | Water | 300.0 | |
| 300-1714-2 | B33D60 | Total/NA | Water | 300.0 | |
| 300-1714-3 | B33D68 | Total/NA | Water | 300.0 | |
| 300-1714-3 | B33D68 | Total/NA | Water | 300.0 | |
| 300-1714-4 | B33D69 | Total/NA | Water | 300.0 | |
| 300-1714-4 | B33D69 | Total/NA | Water | 300.0 | |
| LCS 300-2193/28 | Lab Control Sample | Total/NA | Water | 300.0 | |
| MB 300-2193/27 | Method Blank | Total/NA | Water | 300.0 | |

Analysis Batch: 2194

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 300-1714-1 | B33D51 | Total/NA | Water | 300.0 | |
| 300-1714-1 DU | B33D51 | Total/NA | Water | 300.0 | |
| 300-1714-1 MS | B33D51 | Total/NA | Water | 300.0 | |
| 300-1714-2 | B33D60 | Total/NA | Water | 300.0 | |
| 300-1714-3 | B33D68 | Total/NA | Water | 300.0 | |
| 300-1714-4 | B33D69 | Total/NA | Water | 300.0 | |
| LCS 300-2194/28 | Lab Control Sample | Total/NA | Water | 300.0 | |
| MB 300-2194/27 | Method Blank | Total/NA | Water | 300.0 | |

Client Sample ID: B33D51

Date Collected: 12/01/15 11:58

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-1

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2193 | 12/01/15 18:19 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2194 | 12/01/15 18:19 | CPM | TAL RCH |

Client Sample ID: B33D60

Date Collected: 12/01/15 12:33

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-2

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 | 300.0 | | 2 | 10 mL | | 2193 | 12/01/15 19:04 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2194 | 12/01/15 19:04 | CPM | TAL RCH |

Client Sample ID: B33D68

Date Collected: 12/01/15 10:44

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-3

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 | 300.0 | | 2 | 10 mL | | 2193 | 12/01/15 19:19 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2194 | 12/01/15 19:19 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 5 | 10 mL | | 2193 | 12/02/15 00:50 | CPM | TAL RCH |

Client Sample ID: B33D69

Date Collected: 12/01/15 10:44

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-4

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 | 10 mL | | 2193 | 12/01/15 19:34 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2194 | 12/01/15 19:34 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 5 | 10 mL | | 2193 | 12/02/15 01:05 | CPM | TAL RCH |

Client Sample ID: B33D51

Date Collected: 12/01/15 11:58

Date Received: 12/01/15 14:15

Lab Sample ID: 300-1714-1 DU

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2193 | 12/01/15 18:49 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2194 | 12/01/15 18:49 | CPM | TAL RCH |

Client: CH2M Hill Plateau Remediation Company
 Project/Site: CHPRC Chemical Hanford

TestAmerica Job ID: 300-1714-1
 SDG: WC0647

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-2193/28

Date Collected: N/A

Matrix: Water

Date Received: N/A

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 1 | 10 mL | | 2193 | 12/01/15 18:04 | CPM | TAL RCH |

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-2194/28

Date Collected: N/A

Matrix: Water

Date Received: N/A

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 1 | 10 mL | | 2194 | 12/01/15 18:04 | CPM | TAL RCH |

Client Sample ID: Method Blank

Lab Sample ID: MB 300-2193/27

Date Collected: N/A

Matrix: Water

Date Received: N/A

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 1 | 10 mL | | 2193 | 12/01/15 17:49 | CPM | TAL RCH |

Client Sample ID: Method Blank

Lab Sample ID: MB 300-2194/27

Date Collected: N/A

Matrix: Water

Date Received: N/A

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 1 | 10 mL | | 2194 | 12/01/15 17:49 | CPM | TAL RCH |

Client Sample ID: B33D51

Lab Sample ID: 300-1714-1 MS

Date Collected: 12/01/15 11:58

Matrix: Water

Date Received: 12/01/15 14:15

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2193 | 12/01/15 18:34 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2194 | 12/01/15 18:34 | CPM | 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: CHPRC Chemical Hanford

TestAmerica Job ID: 300-1714-1
SDG: WC0647

| Method | Method Description | Protocol | Laboratory |
|--------|----------------------------|----------|------------|
| 300.0 | Anions, Ion Chromatography | MCAWW | TAL RCH |

Protocol References:

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

Laboratory References:

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



December 07, 2015

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: CHPRC Chemical Hanford

TestAmerica Job ID: 300-1714-1
SDG: WC0647

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 300-1714-1 | B33D51 | Water | 12/01/15 11:58 | 12/01/15 14:15 |
| 300-1714-2 | B33D60 | Water | 12/01/15 12:33 | 12/01/15 14:15 |
| 300-1714-3 | B33D68 | Water | 12/01/15 10:44 | 12/01/15 14:15 |
| 300-1714-4 | B33D69 | Water | 12/01/15 10:44 | 12/01/15 14:15 |

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-1714-1

SDG Number: WC0647

Login Number: 1714

List Number: 1

Creator: Bock, Julie A

List Source: TestAmerica Richland

| Question | Answer | Comment |
|--|--------|---------|
| Radioactivity wasn't checked or is </= background as measured by a survey meter. | True | |
| The cooler's custody seal, if present, is intact. | True | |
| Sample custody seals, if present, are intact. | True | |
| The cooler or samples do not appear to have been compromised or tampered with. | True | |
| Samples were received on ice. | True | |
| Cooler Temperature is acceptable. | True | |
| Cooler Temperature is recorded. | True | |
| COC is present. | True | |
| COC is filled out in ink and legible. | True | |
| COC is filled out with all pertinent information. | True | |
| Is the Field Sampler's name present on COC? | True | |
| There are no discrepancies between the containers received and the COC. | True | |
| Samples are received within Holding Time. | True | |
| Sample containers have legible labels. | True | |
| Containers are not broken or leaking. | True | |
| Sample collection date/times are provided. | True | |
| Appropriate sample containers are used. | True | |
| Sample bottles are completely filled. | True | |
| Sample Preservation Verified. | True | |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True | |
| Containers requiring zero headspace have no headspace or bubble is <6mm (1/4"). | N/A | |
| Multiphasic samples are not present. | N/A | |
| Samples do not require splitting or compositing. | True | |
| Residual Chlorine Checked. | N/A | |

