

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: 300-1701-1
TestAmerica Sample Delivery Group: WC0644
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:
12/8/2015 10:20:37 AM
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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. 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:
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December 08, 2015

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

TestAmerica Job ID: 300-1701-1
SDG: WC0644

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Qualifiers**HPLC/IC**

| Qualifier | Qualifier Description |
|-----------|--|
| U | Analyzed for but not detected. |
| D | The reported value is from a dilution. |
| B | Estimated result. Result is less than the RL, but greater than MDL |

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: 300-1701-1
SDG: WC0644

Job ID: 300-1701-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-1701-1**

Comments

No additional comments.

Receipt

The samples were received on 11/30/2015 2:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.5° C.

HPLC/IC

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

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CH2M HILL Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.# **X15-067-036**
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| | | | | | |
|--|---|--------------------|---|-----------------------------|----------|
| Collector | DL Floyd/CHPRC | Contact/Requester | WHITLEY, KM | Telephone No. | 373-4929 |
| SAF No. | X15-067 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300205 |
| Project Title | 300 Area Uranium Sequestration Post Inj | Logbook No. | HNF-N-506 81/48 | 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 be regulated for transportation per 49 CER/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. | | | 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 |
|------------|--------|-------------|------|-------------------|--|--------------|--------------|
| B331T1 | N | NOV 30 2015 | 1250 | 1x500-mL P | 300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: GW/01 | 48 Hours | Cool <=6C |

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300-1701 COC

December 08 2015

| | |
|---|--|
| Relinquished By: <i>[Signature]</i> Print: M.A. White Sign: <i>[Signature]</i> Date/Time: NOV 30 2015 1325 | Received By: <i>[Signature]</i> Print: M.A. White Sign: <i>[Signature]</i> Date/Time: NOV 30 2015 1225 |
| Relinquished By: <i>[Signature]</i> Print: M.A. White Sign: <i>[Signature]</i> Date/Time: NOV 30 2015 1445 | Received By: <i>[Signature]</i> Print: J. Bock, TARL Sign: <i>[Signature]</i> Date/Time: NOV 30 2015 1445 |

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

| | |
|---|--|
| Relinquished By: <i>[Signature]</i> Print: M.A. White Sign: <i>[Signature]</i> Date/Time: NOV 30 2015 1325 | Received By: <i>[Signature]</i> Print: M.A. White Sign: <i>[Signature]</i> Date/Time: NOV 30 2015 1225 |
| Relinquished By: <i>[Signature]</i> Print: M.A. White Sign: <i>[Signature]</i> Date/Time: NOV 30 2015 1445 | Received By: <i>[Signature]</i> Print: J. Bock, TARL Sign: <i>[Signature]</i> Date/Time: NOV 30 2015 1445 |

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. #
X15-067-043
Page 1 of 1

| | | | | | |
|---|---|--------------------|---|-----------------------------|----------|
| Collector | DL Floyd/CHPRC | Contact/Requester | WHITLEY, KM | Telephone No. | 373-4929 |
| SAF No. | X15-067 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300205 |
| Project Title | 300 Area Uranium Sequestration Post Inj | Logbook No. | HNF-N-506 <u>81/48</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 be regulated for transportation per 49 CFR/LATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. | | | 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 |
|------------|---------|---|-------------|------|-------------------|--|--------------|--------------|
| E331L3 | 9413305 | W | NOV 30 2015 | 1122 | 1x500-ml P | 300.0 ANIONS_IC: COMMON; 300.0 ANIONS_IC: GW 01 | 48 Hours | Cool <=6C |

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December 08 2015

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|-----------------|----------------|-------|------|-----------|------------------|-------------|---------------|-------|------|-----------|------------------|
| Relinquished By | DL Floyd/CHPRC | Print | Sign | Date/Time | NOV 30 2015 1325 | Received By | M.A. White | Print | Sign | Date/Time | NOV 30 2015 1325 |
| Relinquished By | M.A. White | Print | Sign | Date/Time | NOV 30 2015 1445 | Received By | J. Bock, TARL | Print | Sign | Date/Time | NOV 30 2015 1445 |
| Relinquished By | CHPRC | Print | Sign | Date/Time | | Received By | | Print | Sign | 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 |

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



CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-067-030**
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| | | | | | |
|---|---|--------------------|---|-----------------------------|----------|
| Collector | D.L. Foyd/CHPRC | Contact/Requester | WHITLEY, KM | Telephone No. | 373-4929 |
| SAF No. | X15-067 | Sampling Origin | Hanford Site | Purchase Order/Charge Code | 300205 |
| Project Title | 300 Area Uranium Sequestration Post Jnj | Logbook No. | HNF-N-506 81/48 | 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/ATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. | | | 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 |
|------------|--------|-------------|------|-------------------|--|--------------|--------------|
| B331R7 | N | NOV 30 2015 | 1205 | 1x500-ml P | 300.0 ANIONS IC: COMMON; 300.0 ANIONS_IC: GW 01 | 48 Hours | Cool <=6C |

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December 08 2015

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|-----------------|-------|------|------------------|---------------|-------|------|-----------------|---------------|
| Relinquished By | Print | Sign | Date/Time | Received By | Print | Sign | Date/Time | Matrix * |
| R.L. Foyd/CHPRC | | | NOV 30 2015 1315 | M.A. White | | | NOV 30 2015/225 | S = Soil |
| Relinquished By | | | | CHPRC | | | | SE = Sediment |
| M.A. White | | | NOV 30 2015 | Received By | | | | SO = Solid |
| CHPRC | | | | J. Bock, TARL | | | | SL = Sludge |
| Relinquished By | | | | Received By | | | | W = Water |
| | | | | | | | | O = Oil |
| | | | | | | | | A = Air |

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

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

TestAmerica Job ID: 300-1701-1
 SDG: WC0644

Client Sample ID: B331T1

Lab Sample ID: 300-1701-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|-------|-------|------|---------|---|--------|-----------|
| Chloride | 35 | D | 0.40 | 0.20 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrate as N | 7.0 | D | 0.056 | 0.028 | mg/L | 2 | | 300.0 | Total/NA |
| Fluoride | 1.1 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Orthophosphate as P | 5.2 | D | 0.16 | 0.082 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 58 | D | 0.50 | 0.25 | mg/L | 2 | | 300.0 | Total/NA |

Client Sample ID: B331L3

Lab Sample ID: 300-1701-2

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|-----|------|------|---------|---|--------|-----------|
| Chloride | 34 | D | 10 | 5.0 | mg/L | 50 | | 300.0 | Total/NA |
| Nitrate as N | 7.6 | D | 1.4 | 0.70 | mg/L | 50 | | 300.0 | Total/NA |
| Fluoride | 1.9 | B D | 2.5 | 1.3 | mg/L | 50 | | 300.0 | Total/NA |
| Orthophosphate as P | 120 | D | 4.1 | 2.1 | mg/L | 50 | | 300.0 | Total/NA |
| Sulfate | 66 | D | 13 | 6.3 | mg/L | 50 | | 300.0 | Total/NA |

Client Sample ID: B331K9

Lab Sample ID: 300-1701-3

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|------|-------|------|---------|---|--------|-----------|
| Chloride | 19 | D | 1.0 | 0.50 | mg/L | 5 | | 300.0 | Total/NA |
| Nitrate as N | 5.6 | D | 0.14 | 0.070 | mg/L | 5 | | 300.0 | Total/NA |
| Fluoride | 0.31 | D | 0.25 | 0.13 | mg/L | 5 | | 300.0 | Total/NA |
| Orthophosphate as P | 53 | D | 0.41 | 0.21 | mg/L | 5 | | 300.0 | Total/NA |
| Sulfate | 52 | D | 1.3 | 0.63 | mg/L | 5 | | 300.0 | Total/NA |

Client Sample ID: B331R7

Lab Sample ID: 300-1701-4

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------------------|--------|-----------|-----|-----|------|---------|---|--------|-----------|
| Chloride | 24 | D | 20 | 10 | mg/L | 100 | | 300.0 | Total/NA |
| Nitrate as N | 5.1 | D | 2.8 | 1.4 | mg/L | 100 | | 300.0 | Total/NA |
| Orthophosphate as P | 680 | D | 8.2 | 4.1 | mg/L | 100 | | 300.0 | Total/NA |
| Sulfate | 31 | D | 25 | 13 | mg/L | 100 | | 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: 300-1701-1
 SDG: WC0644

Client Sample ID: B331T1

Date Collected: 11/30/15 12:50

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1701-1

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------------------|--------|-----------|-------|-------|------|---|----------|----------------|---------|
| Chloride | 35 | D | 0.40 | 0.20 | mg/L | | | 12/01/15 18:27 | 2 |
| Nitrate as N | 7.0 | D | 0.056 | 0.028 | mg/L | | | 12/01/15 18:27 | 2 |
| Fluoride | 1.1 | D | 0.10 | 0.050 | mg/L | | | 12/01/15 18:27 | 2 |
| Nitrite as N | 0.038 | U | 0.076 | 0.038 | mg/L | | | 12/01/15 18:27 | 2 |
| Orthophosphate as P | 5.2 | D | 0.16 | 0.082 | mg/L | | | 12/01/15 18:27 | 2 |
| Sulfate | 58 | D | 0.50 | 0.25 | mg/L | | | 12/01/15 18:27 | 2 |

Client Sample ID: B331L3

Date Collected: 11/30/15 11:22

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1701-2

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| Chloride | 34 | D | 10 | 5.0 | mg/L | | | 12/01/15 21:43 | 50 |
| Nitrate as N | 7.6 | D | 1.4 | 0.70 | mg/L | | | 12/01/15 21:43 | 50 |
| Fluoride | 1.9 | B D | 2.5 | 1.3 | mg/L | | | 12/01/15 21:43 | 50 |
| Nitrite as N | 0.95 | U | 1.9 | 0.95 | mg/L | | | 12/01/15 21:43 | 50 |
| Orthophosphate as P | 120 | D | 4.1 | 2.1 | mg/L | | | 12/01/15 21:43 | 50 |
| Sulfate | 66 | D | 13 | 6.3 | mg/L | | | 12/01/15 21:43 | 50 |

Client Sample ID: B331K9

Date Collected: 11/30/15 09:55

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1701-3

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------------------|--------|-----------|------|-------|------|---|----------|----------------|---------|
| Chloride | 19 | D | 1.0 | 0.50 | mg/L | | | 12/01/15 21:13 | 5 |
| Nitrate as N | 5.6 | D | 0.14 | 0.070 | mg/L | | | 12/01/15 21:13 | 5 |
| Fluoride | 0.31 | D | 0.25 | 0.13 | mg/L | | | 12/01/15 21:13 | 5 |
| Nitrite as N | 0.095 | U | 0.19 | 0.095 | mg/L | | | 12/01/15 21:13 | 5 |
| Orthophosphate as P | 53 | D | 0.41 | 0.21 | mg/L | | | 12/01/15 21:13 | 5 |
| Sulfate | 52 | D | 1.3 | 0.63 | mg/L | | | 12/01/15 21:13 | 5 |

Client Sample ID: B331R7

Date Collected: 11/30/15 12:25

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1701-4

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| Chloride | 24 | D | 20 | 10 | mg/L | | | 12/01/15 21:58 | 100 |
| Nitrate as N | 5.1 | D | 2.8 | 1.4 | mg/L | | | 12/01/15 21:58 | 100 |
| Fluoride | 2.5 | U | 5.0 | 2.5 | mg/L | | | 12/01/15 21:58 | 100 |
| Nitrite as N | 1.9 | U | 3.8 | 1.9 | mg/L | | | 12/01/15 21:58 | 100 |
| Orthophosphate as P | 680 | D | 8.2 | 4.1 | mg/L | | | 12/01/15 21:58 | 100 |
| Sulfate | 31 | D | 25 | 13 | mg/L | | | 12/01/15 21:58 | 100 |

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-2191/27
 Matrix: Water
 Analysis Batch: 2191

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 16:42 | 1 |
| Nitrite as N | 0.019 | U | 0.038 | 0.019 | mg/L | | | 12/01/15 16:42 | 1 |
| Orthophosphate as P | 0.041 | U | 0.082 | 0.041 | mg/L | | | 12/01/15 16:42 | 1 |

Lab Sample ID: LCS 300-2191/28
 Matrix: Water
 Analysis Batch: 2191

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 |
| Orthophosphate as P | 6.53 | 6.87 | | mg/L | | 105 | 80 - 120 |

Lab Sample ID: 300-1700-A-3 MS
 Matrix: Water
 Analysis Batch: 2191

Client Sample ID: Matrix Spike
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Nitrite as N | 0.038 | U | 0.609 | 0.545 | D | mg/L | | 90 | 75 - 125 |
| Orthophosphate as P | 0.082 | U | 1.31 | 1.17 | D | mg/L | | 89 | 75 - 125 |

Lab Sample ID: 300-1700-A-3 MS
 Matrix: Water
 Analysis Batch: 2191

Client Sample ID: Matrix Spike
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|--------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Nitrate as N | 20 | D | 2.26 | 22.7 | D | mg/L | | 106 | 75 - 125 |

Lab Sample ID: 300-1700-A-3 DU
 Matrix: Water
 Analysis Batch: 2191

Client Sample ID: Duplicate
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---------------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Nitrite as N | 0.038 | U | 0.038 | U | mg/L | | NC | 20 |
| Orthophosphate as P | 0.082 | U | 0.082 | U | mg/L | | NC | 20 |

Lab Sample ID: 300-1700-A-3 DU
 Matrix: Water
 Analysis Batch: 2191

Client Sample ID: Duplicate
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|--------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Nitrate as N | 20 | D | 20.2 | D | mg/L | | 0.9 | 20 |

Lab Sample ID: MB 300-2192/27
 Matrix: Water
 Analysis Batch: 2192

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 16:42 | 1 |

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 300-2192/27
 Matrix: Water
 Analysis Batch: 2192

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|-----------|--------------|-------|-------|------|---|----------|----------------|---------|
| Fluoride | 0.025 | U | 0.050 | 0.025 | mg/L | | | 12/01/15 16:42 | 1 |
| Sulfate | 0.13 | U | 0.25 | 0.13 | mg/L | | | 12/01/15 16:42 | 1 |

Lab Sample ID: LCS 300-2192/28
 Matrix: Water
 Analysis Batch: 2192

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 | 4.18 | | mg/L | | 104 | 80 - 120 |
| Sulfate | 20.0 | 20.9 | | mg/L | | 105 | 80 - 120 |

Lab Sample ID: 300-1700-A-3 MS
 Matrix: Water
 Analysis Batch: 2192

Client Sample ID: Matrix Spike
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Chloride | 25 | D | 3.20 | 27.5 | D | mg/L | | 83 | 75 - 125 |
| Fluoride | 1.0 | D | 0.800 | 1.82 | D | mg/L | | 102 | 75 - 125 |
| Sulfate | 51 | D | 4.00 | 53.7 | D | mg/L | | 76 | 75 - 125 |

Lab Sample ID: 300-1700-A-3 DU
 Matrix: Water
 Analysis Batch: 2192

Client Sample ID: Duplicate
 Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|----------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Chloride | 25 | D | 24.5 | D | mg/L | | 1 | 20 |
| Fluoride | 1.0 | D | 0.979 | D | mg/L | | 2 | 20 |
| Sulfate | 51 | D | 50.0 | D | mg/L | | 1 | 20 |

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

TestAmerica Job ID: 300-1701-1
 SDG: WC0644

HPLC/IC

Analysis Batch: 2191

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 300-1700-A-3 DU | Duplicate | Total/NA | Water | 300.0 | |
| 300-1700-A-3 DU | Duplicate | Total/NA | Water | 300.0 | |
| 300-1700-A-3 MS | Matrix Spike | Total/NA | Water | 300.0 | |
| 300-1700-A-3 MS | Matrix Spike | Total/NA | Water | 300.0 | |
| 300-1701-1 | B331T1 | Total/NA | Water | 300.0 | |
| 300-1701-2 | B331L3 | Total/NA | Water | 300.0 | |
| 300-1701-3 | B331K9 | Total/NA | Water | 300.0 | |
| 300-1701-4 | B331R7 | Total/NA | Water | 300.0 | |
| LCS 300-2191/28 | Lab Control Sample | Total/NA | Water | 300.0 | |
| MB 300-2191/27 | Method Blank | Total/NA | Water | 300.0 | |

Analysis Batch: 2192

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------|--------------------|-----------|--------|--------|------------|
| 300-1700-A-3 DU | Duplicate | Total/NA | Water | 300.0 | |
| 300-1700-A-3 MS | Matrix Spike | Total/NA | Water | 300.0 | |
| 300-1701-1 | B331T1 | Total/NA | Water | 300.0 | |
| 300-1701-2 | B331L3 | Total/NA | Water | 300.0 | |
| 300-1701-3 | B331K9 | Total/NA | Water | 300.0 | |
| 300-1701-4 | B331R7 | Total/NA | Water | 300.0 | |
| LCS 300-2192/28 | Lab Control Sample | Total/NA | Water | 300.0 | |
| MB 300-2192/27 | Method Blank | Total/NA | Water | 300.0 | |

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

TestAmerica Job ID: 300-1701-1
 SDG: WC0644

Client Sample ID: B331T1

Date Collected: 11/30/15 12:50

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1701-1

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 | | 2191 | 12/01/15 18:27 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2192 | 12/01/15 18:27 | CPM | TAL RCH |

Client Sample ID: B331L3

Date Collected: 11/30/15 11:22

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1701-2

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 | | 50 | 10 mL | | 2191 | 12/01/15 21:43 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 50 | 10 mL | | 2192 | 12/01/15 21:43 | CPM | TAL RCH |

Client Sample ID: B331K9

Date Collected: 11/30/15 09:55

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1701-3

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 | | 5 | 10 mL | | 2191 | 12/01/15 21:13 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 5 | 10 mL | | 2192 | 12/01/15 21:13 | CPM | TAL RCH |

Client Sample ID: B331R7

Date Collected: 11/30/15 12:25

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1701-4

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 | | 100 | 10 mL | | 2191 | 12/01/15 21:58 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 100 | 10 mL | | 2192 | 12/01/15 21:58 | CPM | TAL RCH |

Client Sample ID: Duplicate

Date Collected: 11/30/15 09:54

Date Received: 11/30/15 14:45

Lab Sample ID: 300-1700-A-3 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 | | 2191 | 12/01/15 17:42 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2192 | 12/01/15 17:42 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | 10 mL | | 2191 | 12/01/15 19:42 | CPM | TAL RCH |

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-2191/28

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 | | 2191 | 12/01/15 16:57 | CPM | TAL RCH |

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-2192/28

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 | | 2192 | 12/01/15 16:57 | CPM | TAL RCH |

Client Sample ID: Method Blank

Lab Sample ID: MB 300-2191/27

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 | | 2191 | 12/01/15 16:42 | CPM | TAL RCH |

Client Sample ID: Method Blank

Lab Sample ID: MB 300-2192/27

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 | | 2192 | 12/01/15 16:42 | CPM | TAL RCH |

Client Sample ID: Matrix Spike

Lab Sample ID: 300-1700-A-3 MS

Date Collected: 11/30/15 09:54

Matrix: Water

Date Received: 11/30/15 14:45

| 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 | | 2191 | 12/01/15 17:27 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 2192 | 12/01/15 17:27 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | 10 mL | | 2191 | 12/01/15 19:27 | 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: 300-1701-1
SDG: WC0644

| 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: CHPRC Chemical Hanford

TestAmerica Job ID: 300-1701-1
SDG: WC0644

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 300-1701-1 | B331T1 | Water | 11/30/15 12:50 | 11/30/15 14:45 |
| 300-1701-2 | B331L3 | Water | 11/30/15 11:22 | 11/30/15 14:45 |
| 300-1701-3 | B331K9 | Water | 11/30/15 09:55 | 11/30/15 14:45 |
| 300-1701-4 | B331R7 | Water | 11/30/15 12:25 | 11/30/15 14:45 |

- 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: 300-1701-1
SDG Number: WC0644

Login Number: 1701
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 | |

