

7/6/2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Richland
2800 George Washington Way
Richland, WA 99352
Tel: (509)375-3131

TestAmerica Job ID: 300-3167-1
TestAmerica Sample Delivery Group: WC1118
Client Project/Site: F16-042

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

Attn: CPP Sample Management



Authorized for release by:
7/6/2016 10:20:48 AM
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I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this package. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the attached signature.

The laboratory is accredited to EPA 7196A in Solid and Chemical Materials, per Washington State Department of Ecology this is approved for non-discharge water samples. The sample/ sample duplicate RPD agreement is not applicable if one or both results are less than five times the MDL.



LINKS

Review your project results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Qualifiers

HPLC/IC

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

General Chemistry

| Qualifier | Qualifier Description |
|-----------|--|
| B | Estimated result. Result is less than the RL, but greater than MDL |
| U | Analyzed for but not detected. |

Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|----------------|---|
| α | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| CNF | Contains no Free Liquid |
| DER | Duplicate error ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision level concentration |
| MDA | Minimum detectable activity |
| EDL | Estimated Detection Limit |
| MDC | Minimum detectable concentration |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |
| NC | Not Calculated |
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
| PQL | Practical Quantitation Limit |
| QC | Quality Control |
| RER | Relative error ratio |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Job ID: 300-3167-1

Laboratory: TestAmerica Richland

Narrative

**Job Narrative
300-3167-1**

Comments

No additional comments.

Receipt

The samples were received on 6/1/2016 2:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 10.2° C.

HPLC/IC

Method 300.0: Manual integration was performed on the following sample for Nitrite as N: B35VF6 (300-3167-3).

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

General Chemistry

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



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

| | | | | | |
|--|--|--|------------------------------------|--------------------|---|
| CH2MHill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | F16-042-009 | PAGE 1 OF 1 |
| COLLECTOR <i>F. Hall</i> | COMPANY CONTACT TODAK, D | TELEPHONE NO. 376-6427 | PROJECT COORDINATOR TODAK, D | PRICE CODE 7H | DATA TURNAROUND 30 Days / 30 Days |
| SAMPLING LOCATION C9400, I-006 | PROJECT DESIGNATION 100-NR-2 Drilling - Water | FIELD LOGBOOK NO. HNF-N-645 | ACTUAL SAMPLE DEPTH 85.6 | SAF NO. F16-042 | METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL |
| ICE CHEST NO. N/A | OFFSITE PROPERTY NO. N/A | COA 304070 | BILL OF LADING/AIR BILL NO. N/A | | |
| SHIPPED TO TestAmerica Incorporated, Richland | | | | | |

| | | | | | | | | |
|--|---|---|--------------------------|----------------------------|---------------------|-----------------------|--|--|
| MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other | *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1, NA | PRESERVATION Cool <=6C | HOLDING TIME 24 Hours | NO. OF CONTAINERS(S) 1 | VOLUME 60ml | 7196, CR6: COMMON; | | |
| | | SPECIAL HANDLING AND/OR STORAGE | | | | | | |
| | | SAMPLE NO. B35V/F5 | MATRIX* WATER | SAMPLE DATE JUN 01 2016 | SAMPLE TIME 1300 | | | |
| | | <div style="text-align: right;"># 31027 USC 11114</div> | | | | | | |

300-3167 COC



| | | | | | |
|---|--------------------------|---|--------------------------|----------------------|--|
| CHAIN OF POSSESSION | | SIGN/ PRINT NAMES | | SPECIAL INSTRUCTIONS | |
| RELINQUISHED BY/REMOVED FROM <i>F Hall</i> | DATE/TIME JUN 01 2016 | RECEIVED BY/STORED IN <i>J. Beck</i> | DATE/TIME JUN 01 2016 | | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | | |
| LABORATORY SECTION | RECEIVED BY | TITLE | DATE/TIME | | |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DISPOSED BY | DATE/TIME | | |

PRINTED ON 5/23/2016 FSR ID = FSR322406 TRVL NUM = TRVL-16-151 A-6003-618 (REV 2)



| | | | | | |
|--|--|--|------------------------------------|--|---|
| CH2M Hill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | FIG-042-014 | PAGE 1 OF 1 |
| COLLECTOR <i>F. Hall</i> | COMPANY CONTACT TODAK, D | TELEPHONE NO. 376-6427 | PROJECT COORDINATOR TODAK, D | PRICE CODE 7H | DATA TURNAROUND 30 Days / 30 Days |
| SAMPLING LOCATION C9400, I-006 | PROJECT DESIGNATION 100-NR-2 Drilling - Water | FIELD LOGBOOK NO. HNF-N-645 4-12 | ACTUAL SAMPLE DEPTH 85.6 | SAF NO. F16-042 | AIR QUALITY <input type="checkbox"/> |
| ICE CHEST NO. N/A | OFFSITE PROPERTY NO. N/A | COA 304070 | BILL OF LADING/AIR BILL NO. N/A | METHOD OF SHIPMENT GOVERNMENT VEHICLE | ORIGINAL |
| SHIPPED TO TestAmerica Incorporated, Richland | | | | | |

| | | | |
|--|--|----------------------------|---------------------|
| MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WT=Wipe X=Other | *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1, NA | PRESERVATION | Cool <=6C |
| | | HOLDING TIME | 24 Hours |
| | | TYPE OF CONTAINER | ag |
| | | NO. OF CONTAINER(S) | 1 |
| SPECIAL HANDLING AND/OR STORAGE | | VOLUME | 60ml |
| SAMPLE NO. B35VH0 | MATRIX* WATER | SAMPLE DATE JUN 01 2016 | SAMPLE TIME 1300 |

FILTER

*23101
used*

| | | | | | |
|--|--------------------------|---|--------------------------|----------------------|--|
| CHAIN OF POSSESSION | | SIGN/ PRINT NAMES | | SPECIAL INSTRUCTIONS | |
| RELINQUISHED BY/REMOVED FROM <i>F. Hall</i> | DATE/TIME JUN 01 2016 | RECEIVED BY/STORED IN <i>J. Bock, TARL</i> | DATE/TIME JUN 01 2016 | FILTER | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | FILTER | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | FILTER | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | FILTER | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | FILTER | |
| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME | FILTER | |

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

| | | | | | |
|--|--|--|------------------------------------|--------------------|---|
| CH2M Hill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | F16-042-010 | PAGE 1 OF 1 |
| COLLECTOR <i>F. Hall check</i> | COMPANY CONTACT TODAK, D | TELEPHONE NO. 376-6427 | PROJECT COORDINATOR TODAK, D | PRICE CODE 7H | DATA TURNAROUND 30 Days / 30 Days |
| SAMPLING LOCATION C9400, I-006 | PROJECT DESIGNATION 100-NR-2 Drilling - Water | FIELD LOGBOOK NO. HNF-N-645 4-12 | ACTUAL SAMPLE DEPTH 85.6 | SAF NO. F16-042 | METHOD OF SHIPMENT GOVERNMENT VEHICLE ORIGINAL |
| ICE CHEST NO. N/A | OFFSITE PROPERTY NO. N/A | COA 30-4070 | BILL OF LADING/AIR BILL NO. N/A | | |
| SHIPPED TO TestAmerica Incorporated, Richland | | | | | |

| MATRIX* | SPECIAL HANDLING AND/OR STORAGE | PRESERVATION | HOLDING TIME | TYPE OF CONTAINER | NO. OF CONTAINER(S) | VOLUME | SAMPLE ANALYSIS | SAMPLE DATE | SAMPLE TIME | Cool <=6C |
|---------|---------------------------------|--------------|--------------|-------------------|---------------------|--------|-----------------|-------------|-------------|-----------|
| | | | | | | | | | | |
| B35V/F6 | WATER | | | | | 500mL | | JUN 01 2016 | 1300 | |

ARRIVED 6/30/16 2321118

| CHAIN OF POSSESSION | SIGN/ PRINT NAMES | SPECIAL INSTRUCTIONS |
|--|---|--|
| RELINQUISHED BY/REMOVED FROM <i>F. Hall</i> | RECEIVED BY/STORED IN <i>JUN 01 2016 [Signature]</i> | (1) 300.0 ANIONS_IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}; 300.0 ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate}; |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | |
| LABORATORY SECTION | RECEIVED BY | TITLE |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DATE/TIME |

PRINTED ON 5/23/2016 FSR ID = FSR322406 TRVL NUM = TRVL-16-151 A-6003-618 (REV 2)

Detection Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Client Sample ID: B35VF5

Lab Sample ID: 300-3167-1

| Analyte | Result | Qualifier | RL | MDL | Unit | Dil Fac | D | Method | Prep Type |
|---------|--------|-----------|--------|--------|------|---------|---|--------|-----------|
| Cr (VI) | 0.0022 | B | 0.0040 | 0.0015 | mg/L | 1 | | 7196A | Total/NA |

Client Sample ID: B35VH0

Lab Sample ID: 300-3167-2

No Detections.

Client Sample ID: B35VF6

Lab Sample ID: 300-3167-3

| 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 | 5.5 | D | 0.056 | 0.028 | mg/L | 2 | | 300.0 | Total/NA |
| Fluoride | 0.54 | D | 0.10 | 0.050 | mg/L | 2 | | 300.0 | Total/NA |
| Nitrite as N | 0.046 | B D | 0.076 | 0.038 | mg/L | 2 | | 300.0 | Total/NA |
| Orthophosphate as P | 0.14 | B D | 0.16 | 0.082 | mg/L | 2 | | 300.0 | Total/NA |
| Sulfate | 100 | D | 2.5 | 1.3 | mg/L | 10 | | 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: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Client Sample ID: B35VF5

Date Collected: 06/01/16 13:00

Date Received: 06/01/16 14:25

Lab Sample ID: 300-3167-1

Matrix: Water

General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|--------|--------|------|---|----------|----------------|---------|
| Cr (VI) | 0.0022 | B | 0.0040 | 0.0015 | mg/L | | | 06/01/16 16:00 | 1 |

Client Sample ID: B35VH0

Date Collected: 06/01/16 13:00

Date Received: 06/01/16 14:25

Lab Sample ID: 300-3167-2

Matrix: Water

General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|--------|--------|------|---|----------|----------------|---------|
| Cr (VI) | 0.0015 | U | 0.0040 | 0.0015 | mg/L | | | 06/01/16 16:01 | 1 |

Client Sample ID: B35VF6

Date Collected: 06/01/16 13:00

Date Received: 06/01/16 14:25

Lab Sample ID: 300-3167-3

Matrix: Water

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 | | | 06/02/16 13:30 | 2 |
| Nitrate as N | 5.5 | D | 0.056 | 0.028 | mg/L | | | 06/02/16 13:30 | 2 |
| Fluoride | 0.54 | D | 0.10 | 0.050 | mg/L | | | 06/02/16 13:30 | 2 |
| Nitrite as N | 0.046 | B D | 0.076 | 0.038 | mg/L | | | 06/02/16 13:30 | 2 |
| Orthophosphate as P | 0.14 | B D | 0.16 | 0.082 | mg/L | | | 06/02/16 13:30 | 2 |
| Sulfate | 100 | D | 2.5 | 1.3 | mg/L | | | 06/02/16 15:01 | 10 |

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 300-4400/5
Matrix: Water
Analysis Batch: 4400

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------------------|-----------|--------------|-------|-------|------|---|----------|----------------|---------|
| Nitrate as N | 0.014 | U | 0.028 | 0.014 | mg/L | | | 06/02/16 13:00 | 1 |
| Nitrite as N | 0.019 | U | 0.038 | 0.019 | mg/L | | | 06/02/16 13:00 | 1 |
| Orthophosphate as P | 0.041 | U | 0.082 | 0.041 | mg/L | | | 06/02/16 13:00 | 1 |

Lab Sample ID: LCS 300-4400/6
Matrix: Water
Analysis Batch: 4400

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 | 2.24 | | mg/L | | 99 | 80 - 120 |
| Nitrite as N | 3.04 | 3.03 | | mg/L | | 100 | 80 - 120 |
| Orthophosphate as P | 6.53 | 6.48 | | mg/L | | 99 | 80 - 120 |

Lab Sample ID: 300-3167-3 MS
Matrix: Water
Analysis Batch: 4400

Client Sample ID: B35VF6
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Nitrate as N | 5.5 | D | 0.452 | 5.92 | D | mg/L | | 91 | 75 - 125 |
| Nitrite as N | 0.046 | B D | 0.609 | 0.547 | D | mg/L | | 82 | 75 - 125 |
| Orthophosphate as P | 0.14 | B D | 1.31 | 1.21 | D | mg/L | | 82 | 75 - 125 |

Lab Sample ID: 300-3167-3 DU
Matrix: Water
Analysis Batch: 4400

Client Sample ID: B35VF6
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---------------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Nitrate as N | 5.5 | D | 5.46 | D | mg/L | | 0.9 | 20 |
| Nitrite as N | 0.046 | B D | 0.0458 | B D | mg/L | | 0.2 | 20 |
| Orthophosphate as P | 0.14 | B D | 0.135 | B D | mg/L | | 2 | 20 |

Lab Sample ID: MB 300-4401/5
Matrix: Water
Analysis Batch: 4401

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

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|----------|-----------|--------------|-------|-------|------|---|----------|----------------|---------|
| Chloride | 0.10 | U | 0.20 | 0.10 | mg/L | | | 06/02/16 13:00 | 1 |
| Fluoride | 0.025 | U | 0.050 | 0.025 | mg/L | | | 06/02/16 13:00 | 1 |
| Sulfate | 0.13 | U | 0.25 | 0.13 | mg/L | | | 06/02/16 13:00 | 1 |

Lab Sample ID: LCS 300-4401/6
Matrix: Water
Analysis Batch: 4401

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Chloride | 16.0 | 15.6 | | mg/L | | 97 | 80 - 120 |
| Fluoride | 4.00 | 3.92 | | mg/L | | 98 | 80 - 120 |
| Sulfate | 20.0 | 19.6 | | mg/L | | 98 | 80 - 120 |

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 300-3167-3 MS

Matrix: Water

Analysis Batch: 4401

Client Sample ID: B35VF6

Prep Type: Total/NA

| Analyte | Sample | Sample | Spike Added | MS | MS | Unit | D | %Rec | %Rec. Limits |
|----------|--------|-----------|----------------|--------|-----------|------|---|------|-----------------|
| | Result | Qualifier | | Result | Qualifier | | | | |
| Chloride | 20 | D | 3.20 | 23.1 | D | mg/L | | 95 | 75 - 125 |
| Fluoride | 0.54 | D | 0.800 | 1.32 | D | mg/L | | 97 | 75 - 125 |

Lab Sample ID: 300-3167-3 MS

Matrix: Water

Analysis Batch: 4401

Client Sample ID: B35VF6

Prep Type: Total/NA

| Analyte | Sample | Sample | Spike Added | MS | MS | Unit | D | %Rec | %Rec. Limits |
|---------|--------|-----------|----------------|--------|-----------|------|---|------|-----------------|
| | Result | Qualifier | | Result | Qualifier | | | | |
| Sulfate | 100 | D | 20.0 | 121 | D | mg/L | | 98 | 75 - 125 |

Lab Sample ID: 300-3167-3 DU

Matrix: Water

Analysis Batch: 4401

Client Sample ID: B35VF6

Prep Type: Total/NA

| Analyte | Sample | Sample | DU Result | DU | Unit | D | RPD | RPD Limit |
|----------|--------|-----------|--------------|-----------|------|---|-----|--------------|
| | Result | Qualifier | | Qualifier | | | | |
| Chloride | 20 | D | 19.9 | D | mg/L | | 0.8 | 20 |
| Fluoride | 0.54 | D | 0.542 | D | mg/L | | 0.6 | 20 |

Lab Sample ID: 300-3167-3 DU

Matrix: Water

Analysis Batch: 4401

Client Sample ID: B35VF6

Prep Type: Total/NA

| Analyte | Sample | Sample | DU Result | DU | Unit | D | RPD | RPD Limit |
|---------|--------|-----------|--------------|-----------|------|---|-----|--------------|
| | Result | Qualifier | | Qualifier | | | | |
| Sulfate | 100 | D | 100 | D | mg/L | | 0.8 | 20 |

Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 300-4394/3

Matrix: Water

Analysis Batch: 4394

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB | MB | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---------|--------|-----------|--------|--------|------|---|----------|----------------|---------|
| | Result | Qualifier | | | | | | | |
| Cr (VI) | 0.0015 | U | 0.0040 | 0.0015 | mg/L | | | 06/01/16 15:57 | 1 |

Lab Sample ID: LCS 300-4394/4

Matrix: Water

Analysis Batch: 4394

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS | LCS | Unit | D | %Rec | %Rec. Limits |
|---------|----------------|--------|-----------|------|---|------|-----------------|
| | | Result | Qualifier | | | | |
| Cr (VI) | 0.250 | 0.250 | | mg/L | | 100 | 80 - 120 |

Lab Sample ID: 300-3167-1 MS

Matrix: Water

Analysis Batch: 4394

Client Sample ID: B35VF5

Prep Type: Total/NA

| Analyte | Sample | Sample | Spike Added | MS | MS | Unit | D | %Rec | %Rec. Limits |
|---------|--------|-----------|----------------|--------|-----------|------|---|------|-----------------|
| | Result | Qualifier | | Result | Qualifier | | | | |
| Cr (VI) | 0.0022 | B | 0.0499 | 0.0529 | | mg/L | | 102 | 75 - 125 |

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QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Method: 7196A - Chromium, Hexavalent (Continued)

Lab Sample ID: 300-3167-1 DU
Matrix: Water
Analysis Batch: 4394

Client Sample ID: B35VF5
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|---------|---------------|------------------|-----------|--------------|------|----|-----|-----------|
| Cr (VI) | 0.0022 | B | 0.00240 | B | mg/L | -- | 9 | 20 |

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QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
 SDG: WC1118

HPLC/IC

Analysis Batch: 4400

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------|--------------------|-----------|--------|--------|------------|
| 300-3167-3 | B35VF6 | Total/NA | Water | 300.0 | |
| 300-3167-3 DU | B35VF6 | Total/NA | Water | 300.0 | |
| 300-3167-3 MS | B35VF6 | Total/NA | Water | 300.0 | |
| LCS 300-4400/6 | Lab Control Sample | Total/NA | Water | 300.0 | |
| MB 300-4400/5 | Method Blank | Total/NA | Water | 300.0 | |

Analysis Batch: 4401

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------|--------------------|-----------|--------|--------|------------|
| 300-3167-3 | B35VF6 | Total/NA | Water | 300.0 | |
| 300-3167-3 | B35VF6 | Total/NA | Water | 300.0 | |
| 300-3167-3 DU | B35VF6 | Total/NA | Water | 300.0 | |
| 300-3167-3 DU | B35VF6 | Total/NA | Water | 300.0 | |
| 300-3167-3 MS | B35VF6 | Total/NA | Water | 300.0 | |
| 300-3167-3 MS | B35VF6 | Total/NA | Water | 300.0 | |
| LCS 300-4401/6 | Lab Control Sample | Total/NA | Water | 300.0 | |
| MB 300-4401/5 | Method Blank | Total/NA | Water | 300.0 | |

General Chemistry

Analysis Batch: 4394

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------|--------------------|-----------|--------|--------|------------|
| 300-3167-1 | B35VF5 | Total/NA | Water | 7196A | |
| 300-3167-1 DU | B35VF5 | Total/NA | Water | 7196A | |
| 300-3167-1 MS | B35VF5 | Total/NA | Water | 7196A | |
| 300-3167-2 | B35VH0 | Total/NA | Water | 7196A | |
| LCS 300-4394/4 | Lab Control Sample | Total/NA | Water | 7196A | |
| MB 300-4394/3 | Method Blank | Total/NA | Water | 7196A | |

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Client Sample ID: B35VF5

Date Collected: 06/01/16 13:00

Date Received: 06/01/16 14:25

Lab Sample ID: 300-3167-1

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 7196A | | 1 | | | 4394 | 06/01/16 16:00 | RLC | TAL RCH |

Client Sample ID: B35VH0

Date Collected: 06/01/16 13:00

Date Received: 06/01/16 14:25

Lab Sample ID: 300-3167-2

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 7196A | | 1 | | | 4394 | 06/01/16 16:01 | RLC | TAL RCH |

Client Sample ID: B35VF6

Date Collected: 06/01/16 13:00

Date Received: 06/01/16 14:25

Lab Sample ID: 300-3167-3

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 | | 4400 | 06/02/16 13:30 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 4401 | 06/02/16 13:30 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | 10 mL | | 4401 | 06/02/16 15:01 | CPM | TAL RCH |

Client Sample ID: B35VF5

Date Collected: 06/01/16 13:00

Date Received: 06/01/16 14:25

Lab Sample ID: 300-3167-1 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 | 7196A | | 1 | | | 4394 | 06/01/16 16:01 | RLC | TAL RCH |

Client Sample ID: B35VF6

Date Collected: 06/01/16 13:00

Date Received: 06/01/16 14:25

Lab Sample ID: 300-3167-3 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 | | 4400 | 06/02/16 14:01 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 4401 | 06/02/16 14:01 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | 10 mL | | 4401 | 06/02/16 16:01 | CPM | TAL RCH |

Client Sample ID: Lab Control Sample

Date Collected: N/A

Date Received: N/A

Lab Sample ID: LCS 300-4394/4

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 7196A | | 1 | | | 4394 | 06/01/16 15:57 | RLC | TAL RCH |

TestAmerica Richland

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4400/6

Date Collected: N/A

Matrix: Water

Date Received: N/A

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 1 | 10 mL | | 4400 | 06/02/16 13:15 | CPM | TAL RCH |

Client Sample ID: Lab Control Sample

Lab Sample ID: LCS 300-4401/6

Date Collected: N/A

Matrix: Water

Date Received: N/A

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 300.0 | | 1 | 10 mL | | 4401 | 06/02/16 13:15 | CPM | TAL RCH |

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4394/3

Date Collected: N/A

Matrix: Water

Date Received: N/A

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 7196A | | 1 | | | 4394 | 06/01/16 15:57 | RLC | TAL RCH |

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4400/5

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 | 10 mL | | 4400 | 06/02/16 13:00 | CPM | TAL RCH |

Client Sample ID: Method Blank

Lab Sample ID: MB 300-4401/5

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 | 10 mL | | 4401 | 06/02/16 13:00 | CPM | TAL RCH |

Client Sample ID: B35VF5

Lab Sample ID: 300-3167-1 MS

Date Collected: 06/01/16 13:00

Matrix: Water

Date Received: 06/01/16 14:25

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|-----------|------------|--------------|-----|------------|----------------|--------------|--------------|----------------------|---------|---------|
| Total/NA | Analysis | 7196A | | 1 | | 3.0 mL | 4394 | 06/01/16 15:58 | RLC | TAL RCH |

Lab Chronicle

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
 SDG: WC1118

Client Sample ID: B35VF6

Lab Sample ID: 300-3167-3 MS

Date Collected: 06/01/16 13:00

Matrix: Water

Date Received: 06/01/16 14:25

| 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 | | 4400 | 06/02/16 13:45 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 2 | 10 mL | | 4401 | 06/02/16 13:45 | CPM | TAL RCH |
| Total/NA | Analysis | 300.0 | | 10 | 10 mL | | 4401 | 06/02/16 15:16 | CPM | TAL RCH |

Laboratory References:

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

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Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

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

Protocol References:

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

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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



Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-042

TestAmerica Job ID: 300-3167-1
SDG: WC1118

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---------------|------------------|--------|----------------|----------------|
| 300-3167-1 | B35VF5 | Water | 06/01/16 13:00 | 06/01/16 14:25 |
| 300-3167-2 | B35VH0 | Water | 06/01/16 13:00 | 06/01/16 14:25 |
| 300-3167-3 | B35VF6 | Water | 06/01/16 13:00 | 06/01/16 14:25 |

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 300-3167-1

SDG Number: WC1118

Login Number: 3167

List Number: 1

Creator: Bock, Julie A

List Source: TestAmerica Richland

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