

June 28, 2016



gel.com

June 27, 2016

Mr. Scot Fitzgerald
CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Re: CHPRC SAF F13-002
Work Order: 399362
SDG: GEL399362

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 15, 2016. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

A handwritten signature in cursive script that reads "Heather Shaffer".

Heather Shaffer
Project Manager

Purchase Order: 300071ES20
Chain of Custody: F13-002-2066 and F13-002-2121
Enclosures



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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF F13-002
SDG: GEL399362

June 27, 2016

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on June 15, 2016, for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative and DER.

Sample Identification

The laboratory received the following samples:

| Laboratory Identification | Sample Description |
|----------------------------------|---------------------------|
| 399362001 | B35JT4 |
| 399362002 | B35K08 |

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: Radiochemistry.

We certify that this package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

June 28, 2016

Heather Shaffer

Heather Shaffer
Project Manager

June 28, 2016

**Radiochemistry
Technical Case Narrative
CH2M Hill Plateau Remediation Company (CPRC)
SDG #: GEL399362
Work Order #: 399362**

UIISO_IE_PRECIP_AEA:COMMON

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Re-prep/Re-analysis

Samples were reprepared due to high blank activity. The re-analysis is being reported.

Recounts

Sample 1203571597 (MB) was recounted due to high carrier/tracer yield. The recount is reported. Sample 1203571598 (Non SDG 399283007DUP) was recounted due to a peak shift. The recount is reported.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Chain of Custody and Supporting Documentation

| | | | | | |
|---|---|--|---|---|---|
| CH2MHill Plateau Remediation Company | | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | F13-002-2121 | PAGE 1 OF 1 |
| COLLECTOR Barb Briggs fCHPRC | COMPANY CONTACT SUMNER, LC | TELEPHONE NO. 376-3922 | PROJECT COORDINATOR SUMNER, LC | PRICE CODE 7C | DATA TURNAROUND 15 Days / 15 Days |
| SAMPLING LOCATION 299-E33-350, YE29 WK 4 | PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling | ACTUAL SAMPLE DEPTH N/A | SAF NO. F13-002 | AIR QUALITY <input type="checkbox"/> | METHOD OF SHIPMENT FEDERAL EXPRESS |
| ICE CHEST NO. 6005-103 | FIELD LOGBOOK NO. HNF-N-47-15 | COA 303111 | BILL OF LADING/AIR BILL NO. 776519547453 | ORIGINAL | |
| SHIPPED TO GEL Laboratories, LLC | OFFSITE PROPERTY NO. 6727 | | | | |

| MATRIX* | POSSIBLE SAMPLE HAZARDS/ REMARKS | PRESERVATION | HNO3 to pH |
|---|---|----------------------------|---|
| A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other | *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A | HOLDING TIME | 6 Months |
| | | TYPE OF CONTAINER | G/P |
| | | NO. OF CONTAINER(S) | 1 |
| | | VOLUME | 1L |
| | | SAMPLE ANALYSIS | UI/SO ₄ IE_P/RECI P_AER; COMMON; |
| SAMPLE NO. B35K08 | MATRIX* WATER | SAMPLE DATE JUN 14 2016 | SAMPLE TIME 1131 |

| CHAIN OF POSSESSION | SIGN/ PRINT NAMES | SPECIAL INSTRUCTIONS |
|--|---|-------------------------------|
| RELINQUISHED BY/REMOVED FROM Barb Briggs CHPRC | RECEIVED BY/STORED IN SSU-1 | DATE/TIME JUN 14 2016 1215 |
| RELINQUISHED BY/REMOVED FROM Barb Briggs CHPRC | RECEIVED BY/STORED IN Lacey West CHPRC FEDEx | DATE/TIME JUN 14 2016 1240 |
| RELINQUISHED BY/REMOVED FROM Lacey West CHPRC | RECEIVED BY/STORED IN Sara Gamball FedEx | DATE/TIME JUN 15 16 0910 |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | DATE/TIME |
| RELINQUISHED BY/REMOVED FROM | RECEIVED BY/STORED IN | DATE/TIME |
| LABORATORY SECTION 8 of 14 | RECEIVED BY | DATE/TIME |
| FINAL SAMPLE DISPOSITION | DISPOSAL METHOD | DATE/TIME |

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 399362 **PAGE 1 OF 1**

CH2MHill Plateau Remediation Company
COLLECTOR Barb Briggs /CHPRC
SAMPLING LOCATION 299-E33-344, YE28 Wk 4
ICE CHEST NO. GWS-103
SHIPPED TO GEL Laboratories, LLC

COMPANY CONTACT SUMNER, LC
TELEPHONE NO. 376-3922
PROJECT COORDINATOR SUMNER, LC
SAF NO. F13-002
COA 303111
PRICE CODE 7C
METHOD OF SHIPMENT FEDERAL EXPRESS
DATA TURNAROUND 15 Days / 15 Days
ORIGINAL

PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling
FIELD LOGBOOK NO. HNF-49115
ACTUAL SAMPLE DEPTH N/A
OFFSITE PROPERTY NO. 6707
BILL OF LADING/AIR BILL NO. 776510847453

| MATRIX* | POSSIBLE SAMPLE HAZARDS/ REMARKS | PRESERVATION | HNO3 to pH |
|---|--|---------------------|-----------------------------------|
| A=Air DL=Drum L=Liquid DS=Drum S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other | *Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A | | <2 |
| | | HOLDING TIME | 6 Months |
| | | TYPE OF CONTAINER | G/P |
| | | NO. OF CONTAINER(S) | 1 |
| | | VOLUME | 1L |
| | | SAMPLE ANALYSIS | UIISO, LE, PRECI, P, ARK, COMMON; |
| SAMPLE NO. | MATRIX* | SAMPLE DATE | SAMPLE TIME |
| B35JT4 | WATER | JUN 14 2016 | 1039 ✓ |

CHAIN OF POSSESSION

| RELINQUISHED BY/REMOVED FROM | DATE/TIME | RECEIVED BY/STORED IN | DATE/TIME |
|------------------------------|------------------|-----------------------|------------------|
| Barb Briggs /CHPRC | JUN 14 2016 1215 | SSU-1 | JUN 14 2016 1215 |
| SSU-1 | JUN 14 2016 1240 | RECEIVED BY/STORED IN | JUN 14 2016 1240 |
| Leah West /CHPRC | JUN 14 2016 1400 | RECEIVED BY/STORED IN | JUN 14 2016 1240 |
| FedEx | JUN 14 2016 1400 | FEDEX | JUN 14 2016 1240 |
| | | Sara Grubbs | 6/15/16 0910 |
| | | | 6/15/16 0910 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SPECIAL INSTRUCTIONS
TRVL-16-137

LABORATORY SECTION RECEIVED BY
9 of 10

DISPOSAL METHOD DISPOSED BY
4015 POSITION

TITLE

DATE/TIME

FRS ID = FSR32140 **TRVL NUM = TRVL-16-137** **A-6003-618 (REV 2)**

PRINTED ON 5/5/2016

SAMPLE RECEIPT & REVIEW FORM

| | | | |
|--|--|--|------|
| Client: <u>CPRC</u> | | SDG/AR/COC/Work Order: | |
| Received By: <u>S. J. Hall</u> | | Date Received: <u>6/15/16</u> | |
| Suspected Hazard Information | Yes <input type="checkbox"/> No <input type="checkbox"/> | *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. | |
| COC/Samples marked as radioactive? | <input checked="" type="checkbox"/> | Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0cpm</u> | |
| Classified Radioactive II or III by RSO? | <input checked="" type="checkbox"/> | If yes, Were swipes taken of sample containers < action levels? | |
| COC/Samples marked containing PCBs? | <input checked="" type="checkbox"/> | | |
| Package, COC, and/or Samples marked as beryllium or asbestos containing? | <input checked="" type="checkbox"/> | If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group. | |
| Shipped as a DOT Hazardous? | <input checked="" type="checkbox"/> | Hazard Class Shipped: | UN#: |
| Samples identified as Foreign Soil? | <input checked="" type="checkbox"/> | | |

| Sample Receipt Criteria | Yes | NA | No | Comments/Qualifiers (Required for Non-Conforming Items) |
|---|-------------------------------------|----|----|---|
| 1 Shipping containers received intact and sealed? | <input checked="" type="checkbox"/> | | | Circle Applicable: Seals broken Damaged container Leaking container Other (describe) |
| 2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?* | <input checked="" type="checkbox"/> | | | Preservation Method: <u>Ice bags</u> Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius <u>2°C</u> |
| 2a Daily check performed and passed on IR temperature gun? | <input checked="" type="checkbox"/> | | | Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): <u>ES102009184</u> |
| 3 Chain of custody documents included with shipment? | <input checked="" type="checkbox"/> | | | |
| 4 Sample containers intact and sealed? | <input checked="" type="checkbox"/> | | | Circle Applicable: Seals broken Damaged container Leaking container Other (describe) |
| 5 Samples requiring chemical preservation at proper pH? | <input checked="" type="checkbox"/> | | | Sample ID's, containers affected and observed pH: If Preservation added, Lot#: |
| 6 Do Low Level Perchlorate samples have headspace as required? | <input checked="" type="checkbox"/> | | | Sample ID's and containers affected: |
| 7: VOA vials contain acid preservation? | <input checked="" type="checkbox"/> | | | (If unknown, select No) |
| 8 VOA vials free of headspace (defined as < 6mm bubble)? | <input checked="" type="checkbox"/> | | | Sample ID's and containers affected: |
| 9 Are Encore containers present? | <input checked="" type="checkbox"/> | | | (If yes, immediately deliver to Volatiles laboratory) |
| 10 Samples received within holding time? | <input checked="" type="checkbox"/> | | | ID's and tests affected: |
| 11 Sample ID's on COC match ID's on bottles? | <input checked="" type="checkbox"/> | | | Sample ID's and containers affected: |
| 12 Date & time on COC match date & time on bottles? | <input checked="" type="checkbox"/> | | | Sample ID's affected: |
| 13 Number of containers received match number indicated on COC? | <input checked="" type="checkbox"/> | | | Sample ID's affected: |
| 14 Are sample containers identifiable as GEL provided? | <input checked="" type="checkbox"/> | | | |
| 15 COC form is properly signed in relinquished/received sections? | <input checked="" type="checkbox"/> | | | |
| 16 Carrier and tracking number. | | | | Circle Applicable: FedEx Air <u>FedEx Ground</u> UPS Field Services Courier Other <u>7765 1954 7453</u> |

Comments (Use Continuation Form if needed):

Data Review Qualifier Definitions

Project Specific Qualifier Definitions for GEL Client Code: CPRC

| Qualifier | Qualifier Definition | Department | Fraction |
|-----------|---|-------------------|---------------|
| U | Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error. | | |
| J | The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). Value is estimated | Organics | |
| P | Aroclor target analyte with greater than 25% difference between column analyses. | Organics | |
| C | Analyte has been confirmed by GC/MS analysis | Organics | Pesticide |
| B | The analyte was detected in both the associated QC blank and in the sample. | Organics | |
| E | Concentration exceeds the calibration range of the instrument | Organics | |
| A | The TIC is a suspected aldol-condensation product | Organics | Semi-Volatile |
| X | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | |
| N | Spike Sample recovery is outside control limits. | | |
| * | Duplicate analysis not within control limits | Inorganics | |
| > | Result greater than quantifiable range or greater than upper limit of the analysis range | General Chemistry | |
| Z | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | |
| B | The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). | Inorganics | Metals |
| D | Results are reported from a diluted aliquot of sample. | | |
| E | Reported value is estimated due to interferences. See comment in narrative. | Inorganics | Metals |
| M | Duplicate precision not met. | Inorganics | Metals |
| o | Analyte failed to recover within LCS limits (Organics only) | Organics | |
| S | Reported value determined by the Method of Standard Additions (MSA) | Inorganics | |
| T | Spike and/or spike duplicate sample recovery is outside control limits. | Organics | |
| W | Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency. | Inorganics | |
| B | The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample | Radiological | |
| Y | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | |
| + | Correlation coefficient for Method of Standard Additions (MSA) is < 0.995 | Inorganics | |
| B | The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). | General Chemistry | |
| C | Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples. | Inorganics | Metals |
| C | Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples. | General Chemistry | |
| < | Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide | General Chemistry | |
| UX | Gamma Spectroscopy--Uncertain identification | Radiological | |

Laboratory Certifications

List of current GEL Certifications as of 27 June 2016

| State | Certification |
|--------------------------|------------------------------|
| Alaska | UST-0110 |
| Arkansas | 88-0651 |
| CLIA | 42D0904046 |
| California | 2940 |
| Colorado | SC00012 |
| Connecticut | PH-0169 |
| Delaware | SC00012 |
| DoD ELAP/ ISO17025 A2LA | 2567.01 |
| Florida NELAP | E87156 |
| Foreign Soils Permit | P330-15-00283, P330-15-00253 |
| Georgia | SC00012 |
| Georgia SDWA | 967 |
| Hawaii | SC00012 |
| Idaho Chemistry | SC00012 |
| Idaho Radiochemistry | SC00012 |
| Illinois NELAP | 200029 |
| Indiana | C-SC-01 |
| Kansas NELAP | E-10332 |
| Kentucky SDWA | 90129 |
| Kentucky Wastewater | 90129 |
| Louisiana NELAP | 03046 (AI33904) |
| Louisiana SDWA | LA160006 |
| Maryland | 270 |
| Massachusetts | M-SC012 |
| Michigan | 9976 |
| Mississippi | SC00012 |
| Nebraska | NE-OS-26-13 |
| Nevada | SC000122016-1 |
| New Hampshire NELAP | 205415 |
| New Jersey NELAP | SC002 |
| New Mexico | SC00012 |
| New York NELAP | 11501 |
| North Carolina | 233 |
| North Carolina SDWA | 45709 |
| North Dakota | R-158 |
| Oklahoma | 9904 |
| Pennsylvania NELAP | 68-00485 |
| S.Carolina Radchem | 10120002 |
| South Carolina Chemistry | 10120001 |
| Tennessee | TN 02934 |
| Texas NELAP | T104704235-16-11 |
| Utah NELAP | SC000122016-20 |
| Vermont | VT87156 |
| Virginia NELAP | 460202 |
| Washington | C780 |
| West Virginia | 997404 |

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL399362
Work Order #: 399362

Product: UISO_IE_PRECIP_AEA:COMMON
Analytical Method: UISO_IE_PRECIP_AEA
Analytical Procedure: GL-RAD-A-011 REV# 26
Analytical Batch: 1576168

The following samples were analyzed using the above methods and analytical procedure(s).

| <u>GEL Sample ID#</u> | <u>Client Sample Identification</u> |
|-----------------------|--|
| 399362001 | B35JT4 |
| 399362002 | B35K08 |
| 1203571597 | Method Blank (MB) |
| 1203571598 | 399283007(NonSDG) Sample Duplicate (DUP) |
| 1203571599 | Laboratory Control Sample (LCS) |

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Re-prep/Re-analysis

Samples were re-prepped due to high blank activity. The re-analysis is being reported.

Recounts

Sample 1203571597 (MB) was recounted due to high carrier/tracer yield. The recount is reported. Sample 1203571598 (Non SDG 399283007DUP) was recounted due to a peak shift. The recount is reported.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

**Qualifier Definition Report
for**

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL399362 GEL Work Order: 399362

The Qualifiers in this report are defined as follows:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Theresa Austin

Date: 27 JUN 2016

Title: Group Leader

Sample Data Summary

Rad
Certificate of Analysis
Sample Summary

| | | |
|-----------------------------------|---------------------------------------|---------------------------|
| SDG Number: GEL399362 | Client: CPRC001 | Project: CPRC0F13002 |
| Lab Sample ID: 399362001 | Date Collected: 06/14/2016 10:39 | Matrix: WATER |
| | Date Received: 06/15/2016 09:10 | |
| Client ID: B35JT4 | Method: UIISO_IE_PRECIP_AEA | Prep Basis: "As Received" |
| Batch ID: 1576168 | Analyst: KXB2 | SOP Ref: GL-RAD-A-011 |
| Run Date: 06/23/2016 08:42 | Aliquot: 0.001 L | Instrument: 1118 |
| Data File: S0399362001_UU.2A.gcnf | Prep Method: DOE EML HASL-300, U-02-R | Count Time: 373.902 min |
| Prep Batch: 1576168 | | |
| Prep Date: 06/21/2016 00:00 | | |

| CAS No. | Parmname | Qual | Result | Units | Uncert | TPU | MDC | RDL |
|---|-----------------|------|--------|-------|---------|------|------|------|
| U-233/234 <small>13968-55-3/13966-29-5</small> | Uranium-233/234 | | 29000 | pCi/L | +/-1210 | 5150 | 120 | 1.00 |
| 15117-96-1/13982-7 | Uranium-235/236 | | 1920 | pCi/L | +/-346 | 479 | 48.4 | 1.00 |
| 7440-61-1 | Uranium-238 | | 30400 | pCi/L | +/-1240 | 5390 | 39.1 | 1.00 |

| Surrogate/Tracer recovery | Result | Nominal | Units | Recovery% | Acceptable Limits |
|---------------------------|--------|---------|-------|-----------|-------------------|
| Uranium-232 Tracer | 755 | 2090 | pCi/L | 36.2 | (30%-105%) |

Comments:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).
The MDC is a sample specific MDC.

Rad
Certificate of Analysis
Sample Summary

| | | |
|-----------------------------------|---------------------------------------|---------------------------|
| SDG Number: GEL399362 | Client: CPRC001 | Project: CPRC0F13002 |
| Lab Sample ID: 399362002 | Date Collected: 06/14/2016 11:31 | Matrix: WATER |
| | Date Received: 06/15/2016 09:10 | |
| Client ID: B35K08 | Method: UIISO_IE_PRECIP_AEA | Prep Basis: "As Received" |
| Batch ID: 1576168 | Analyst: KXB2 | SOP Ref: GL-RAD-A-011 |
| Run Date: 06/23/2016 08:42 | Aliquot: 0.001 L | Instrument: 1119 |
| Data File: S0399362002_UU.2B.gcnf | Prep Method: DOE EML HASL-300, U-02-R | Count Time: 373.2757 min |
| Prep Batch: 1576168 | | |
| Prep Date: 06/21/2016 00:00 | | |

| CAS No. | Parmname | Qual | Result | Units | Uncert | TPU | MDC | RDL |
|---|-----------------|------|--------|-------|--------|------|------|------|
| U-233/234 <small>13968-55-3/13966-29-5</small> | Uranium-233/234 | | 22900 | pCi/L | +/-885 | 3530 | 73.4 | 1.00 |
| 15117-96-1/13982-7 | Uranium-235/236 | | 1230 | pCi/L | +/-229 | 293 | 32.9 | 1.00 |
| 7440-61-1 | Uranium-238 | | 24300 | pCi/L | +/-911 | 3730 | 26.6 | 1.00 |

| Surrogate/Tracer recovery | Result | Nominal | Units | Recovery% | Acceptable Limits |
|---------------------------|--------|---------|-------|-----------|-------------------|
| Uranium-232 Tracer | 1200 | 2090 | pCi/L | 57.6 | (30%-105%) |

Comments:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).
The MDC is a sample specific MDC.

Quality Control Summary

June 28, 2016

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 27, 2016
Page 1 of 2

Client : CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Workorder: 399362

| Parmname | NOM | Sample | Qual | QC | Units | QC Criteria | Range | Analyst | Date Time |
|----------------------------|---------|----------|------|------------------|-------|-------------|------------|---------|---------------|
| Rad Alpha Spec | | | | | | | | | |
| Batch | 1576168 | | | | | | | | |
| QC1203571597 MB | | | | | | | | | |
| Uranium-233/234 | | | U | 0.314 | pCi/L | | | KXB2 | 06/25/1609:59 |
| | | | | Uncert: +/-0.382 | | | | | |
| | | | | TPU: +/-0.385 | | | | | |
| Uranium-235/236 | | | U | 0.073 | pCi/L | | | | |
| | | | | Uncert: +/-0.274 | | | | | |
| | | | | TPU: +/-0.274 | | | | | |
| Uranium-238 | | | U | -0.0187 | pCi/L | | | | |
| | | | | Uncert: +/-0.161 | | | | | |
| | | | | TPU: +/-0.161 | | | | | |
| **Uranium-232 Tracer | 20.9 | | | 19.5 | pCi/L | REC: 94 | (30%-105%) | | |
| | | | | Uncert: +/-2.53 | | | | | |
| | | | | TPU: +/-3.89 | | | | | |
| QC1203571598 399283007 DUP | | | | | | | | | |
| Uranium-233/234 | | U 0.154 | U | -0.0173 | pCi/L | | | | 06/25/1610:37 |
| | | | | Uncert: +/-0.304 | | RPD: 0 | N/A | | |
| | | | | TPU: +/-0.305 | | RER: 0.838 | (0-2) | | |
| Uranium-235/236 | | U 0.0427 | U | -0.0257 | pCi/L | | | | |
| | | | | Uncert: +/-0.237 | | RPD: 0 | N/A | | |
| | | | | TPU: +/-0.237 | | RER: 0.412 | (0-2) | | |
| Uranium-238 | | U 0.183 | U | 0.0243 | pCi/L | | | | |
| | | | | Uncert: +/-0.264 | | RPD: 0 | N/A | | |
| | | | | TPU: +/-0.265 | | RER: 0.849 | (0-2) | | |
| **Uranium-232 Tracer | 20.9 | 18.9 | | 17.7 | pCi/L | REC: 85 | (30%-105%) | | |
| | | | | Uncert: +/-2.32 | | | | | |
| | | | | TPU: +/-3.62 | | | | | |
| QC1203571599 LCS | | | | | | | | | |
| Uranium-233/234 | | | | 29.0 | pCi/L | | | | 06/23/1608:43 |
| | | | | Uncert: +/-3.05 | | | | | |
| | | | | TPU: +/-5.17 | | | | | |
| Uranium-235/236 | | | | 2.36 | pCi/L | | | | |
| | | | | Uncert: +/-0.988 | | | | | |
| | | | | TPU: +/-1.05 | | | | | |
| Uranium-238 | 26.9 | | | 28.7 | pCi/L | REC: 106 | (80%-120%) | | |
| | | | | Uncert: +/-3.04 | | | | | |
| | | | | TPU: +/-5.13 | | | | | |
| **Uranium-232 Tracer | 20.9 | | | 19.3 | pCi/L | REC: 92 | (30%-105%) | | |
| | | | | Uncert: +/-2.59 | | | | | |
| | | | | TPU: +/-3.97 | | | | | |

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

B The associated QC sample blank has a result $\geq 2X$ the MDA and, after corrections, result is \geq MDA for this sample

June 28, 2016

GEL LABORATORIES LLC

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QC Summary

Workorder: 399362

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| Parname | NOM | Sample | Qual | QC | Units | QC Criteria | Range | Analyst | Date | Time |
|---------|--|--------|------|----|-------|-------------|-------|---------|------|------|
| D | Results are reported from a diluted aliquot of sample. | | | | | | | | | |
| N | Spike Sample recovery is outside control limits. | | | | | | | | | |
| U | Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error. | | | | | | | | | |
| UX | Gamma Spectroscopy--Uncertain identification | | | | | | | | | |
| X | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | | | | | | | | |
| Y | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | | | | | | | | |
| Z | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier | | | | | | | | | |

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

** Indicates analyte is a surrogate compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.