GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
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gel.com

April 26, 2016

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

Re: CHPRC SAF F16-028
Work Order: 394080
SDG: GEL394080

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 31, 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,

Heather Shaffer

Heather Shaffer
Project Manager

Purchase Order: 304043 - 8H
Chain of Custody: F16-028-003 and F16-028-004
Enclosures

Table of Contents

Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF F16-028
SDG: GEL394080

April 26, 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 March 31, 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
394080001	B353C6
394080002	B354J1
394080003	B353C7
394080004	B354J2

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: General Chemistry, Metals and 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.

Heather Shaffer

Heather Shaffer
Project Manager

Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL394080
Work Order #: 394080

Metals

Determination of Metals by ICP-MS

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 Dilutions
The ICPMS solid samples in this SDG were diluted the standard two times.

Analyte	394080	
	001	003
Uranium	2X	2X

General Chemistry

Ion Chromatography

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.

Miscellaneous Information

Manual Integrations
Samples 1203518819 (B353C7DUP), 394080001 (B353C6) and 394080003 (B353C7) were manually integrated to correctly position the baseline as set in the calibration standards.

pH

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

Holding Times
Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1203519329 (B354J2DUP)	pH	Received 31-MAR-16, out of holding 29-MAR-16
394080002 (B354J1)	pH	Received 31-MAR-16, out of holding 29-MAR-16
394080004 (B354J2)	pH	Received 31-MAR-16, out of holding 29-MAR-16

Radiochemistry

AMCMISO_EIE_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

Recounts
Sample 394080001 (B353C6) was recounted due to high carrier/tracer yield. The recount is reported.

NP237_IE_PRECIP_AEA: COMMON

There are no exceptions, anomalies or deviations from the specified methods. 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.

PUISO_PRECIP_AEA:COMMON

There are no exceptions, anomalies or deviations from the specified methods. 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.

THISO_IE_PLATE_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

Recounts
Sample 394080001 (B353C6) was recounted due to high carrier/tracer yield. The recount is reported.

UISO_IE_PRECIP_AEA:COMMON

There are no exceptions, anomalies or deviations from the specified methods. 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.

Dry Weight

There are no exceptions, anomalies or deviations from the specified methods. 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.

I129_SEP_LEPS_GS

There are no exceptions, anomalies or deviations from the specified methods. 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.

GAMMA_GS:COMMON + (Add-on)

There are no exceptions, anomalies or deviations from the specified methods. 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.

SRTOT_SEP_PRECIP_GPC: COMMON

There are no exceptions, anomalies or deviations from the specified methods. 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.

TC99_SEP_GPC

There are no exceptions, anomalies or deviations from the specified methods. 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.

NI63_LSC

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

Recounts
Samples 1203522067 (MB), 1203522068 (B353C6DUP) and 394080003 (B353C7) were recounted to verify sample results. Recounts are reported.

TRITIUM_DIST_LSC: COMMON

There are no exceptions, anomalies or deviations from the specified methods. 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.

C14_LSC: COMMON

There are no exceptions, anomalies or deviations from the specified methods. 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.

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 30100	F16-028-003	PAGE 1 OF 2

COLLECTOR	COMPANY CONTACT	TELEPHONE NO.	PROJECT COORDINATOR	PRICE CODE 8H	DATA TURNAROUND
Curt Hoffman CHPRC	TODAK, D	376-6427	TODAK, D	AIR QUALITY ☐	30 Days / 30 Days
SAMPLING LOCATION	**PROJECT DESIGNATION**		**SAF NO.**		
C9414, 200-WA-1 #3	200-WA-1 Opportunistic sampling - soil		F16-028		
ICE CHEST NO.	**FIELD LOGBOOK NO.**	**ACTUAL SAMPLE DEPTH**	**COA** dlw. 3/24/16	**METHOD OF SHIPMENT**	
GWS-424	HNF-N-645 3-57	159.7' - 162.2'	~~300192~~ 304043	FEDERAL EXPRESS	ORIGINAL
SHIPPED TO	**OFFSITE PROPERTY NO.**		**BILL OF LADING/AIR BILL NO.**		
GEL Laboratories, LLC	6476*		7759 9338 5316		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*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.

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool <=6C	None	None	None
HOLDING TIME	6 Months	6 Months	6 Months	ASAP
TYPE OF CONTAINER	G/P	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1
VOLUME	250mL	250mL	500mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS

394080

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B353C6	SOIL	MAR 2 9 2016	1215	✓	✓	✓	~~✓~~ dlw. 3/30/16
B354J1	SOIL	MAR 2 9 2016	1215	~~✓~~	~~✓~~	~~✓~~	✓

dlw. 3/30/16

April 26, 2016

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: Curt Hoffman CHPRC — DATE/TIME: MAR 2 9 2016 1450	RECEIVED BY/STORED IN: SSU-1 — DATE/TIME: MAR 2 9 2016 1450	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: SSU-1 — DATE/TIME: MAR 3 0 2016 0800	RECEIVED BY/STORED IN: L.D. Wall CHPRC — DATE/TIME: MAR 3 0 2016 0800	
RELINQUISHED BY/REMOVED FROM: L.D. Wall CHPRC — DATE/TIME: MAR 3 0 2016 1400	RECEIVED BY/STORED IN: FEDEX — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME: 3-31-16 1020	
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**

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PRINTED ON 3/23/2016 | FSR ID = FSR28195 | TRVL NUM = TRVL-16-059 | A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F16-028-003	PAGE 2 OF 2
COLLECTOR Curt Hoffman CHPRC	**COMPANY CONTACT** TODAK, D	**TELEPHONE NO.** 376-6427	**PROJECT COORDINATOR** TODAK, D	**PRICE CODE** 8H	**DATA TURNAROUND**
SAMPLING LOCATION C9414, 200-WA-1 #3	**PROJECT DESIGNATION** 200-WA-1 Opportunistic sampling - soil		**SAF NO.** F16-028	**AIR QUALITY** ☐	**30 Days / 30 Days**
ICE CHEST NO. GWS-424	**FIELD LOGBOOK NO.** HNF-N-645 3 - 57	**ACTUAL SAMPLE DEPTH** 159.7' - 162.2'	**COA** pw. 3/24/16 ~~300192~~ 304043	**METHOD OF SHIPMENT** FEDERAL EXPRESS	**ORIGINAL**
SHIPPED TO GEL Laboratories, LLC	**OFFSITE PROPERTY NO.** 6476		**BILL OF LADING/AIR BILL NO.** 7759 9338 5316		

SPECIAL INSTRUCTIONS

(1) 6020_METALS_ICPMS: COMMON (Add-on) {Uranium}; 9056_ANIONS_IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}; 9056_ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};
(2) GAMMA_GS: COMMON; GAMMA_GS: COMMON (Add-on) {Radium-226, Radium-228};
(3) AMCMISO_IE_PRECIP_AEA: COMMON {Americium-241}; C14_LSC: COMMON; I129_SEP_LEPS_GS: COMMON; NI63_LSC: COMMON; PUISO_PLATE_AEA: COMMON; SRTOT_SEP_PRECIP_GPC: COMMON; TC99_EIE_LSC: COMMON; THISO_IE_PLATE_AEA: COMMON {Thorium-232}; UISO_IE_PRECIP_AEA: COMMON; NP237_IE_PRECIP_AEA: COMMON; TRITIUM_DIST_LSC: COMMON;
(4) 9045_pH (Non-Aqueous): COMMON {pH Measurement};

PRINTED ON 3/23/2016 FSR ID = FSR28195 TRVL NUM = TRVL-16-059 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F16-028-004	PAGE 1 OF 2
COLLECTOR Curt Hoffman CHPRC	**COMPANY CONTACT** TODAK, D	**TELEPHONE NO.** 376-6427	**PROJECT COORDINATOR** TODAK, D	**PRICE CODE** 8H	**DATA TURNAROUND**
SAMPLING LOCATION C9414, 200-WA-1 #4	**PROJECT DESIGNATION** 200-WA-1 Opportunistic sampling - soil		**SAF NO.** F16-028	**AIR QUALITY** ☐	30 Days / 30 Days
ICE CHEST NO. GWS-424	**FIELD LOGBOOK NO.** HNF-N-645 3 - 57	**ACTUAL SAMPLE DEPTH** 165.8' - 168.3'	**COA** DW. 3/24/16 ~~300192~~ 304043	**METHOD OF SHIPMENT** FEDERAL EXPRESS	**ORIGINAL**
SHIPPED TO GEL Laboratories, LLC	**OFFSITE PROPERTY NO.** 6476		**BILL OF LADING/AIR BILL NO.** 7759 9338 5316		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*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.

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Cool <=6C	None	None	None	
HOLDING TIME	6 Months	6 Months	6 Months	ASAP	
TYPE OF CONTAINER	G/P	G/P	G/P	G/P	
NO. OF CONTAINER(S)	1	1	1	1	
VOLUME	250mL	250mL	500mL	60mL	
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	

394080

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B353C7	SOIL	MAR 2 9 2016	1355	✓	✓	✓	✓ DW. 3/30/16
B354J2	SOIL	MAR 2 9 2016	1355	✓	✓	✓	✓ DW. 3/30/16

April 26, 2016

CHAIN OF POSSESSION / **SIGN/ PRINT NAMES**

RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Curt Hoffman CHPRC	MAR 2 9 2016 1450	SSU-1	MAR 2 9 2016 1450
SSU-1	MAR 3 0 2016 0800	L.D. Wall CHPRC	MAR 3 0 2016 0800
L.D. Wall CHPRC	MAR 3 0 2016 1400	FEDEX	
		M. Krsbow	3-31-16 1020

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

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

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PRINTED ON 3/23/2016 **FSR ID = FSR28196** **TRVL NUM = TRVL-16-059** A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F16-028-004	PAGE 2 OF 2
COLLECTOR Curt Hoffman CHPRC	**COMPANY CONTACT** TODAK, D	**TELEPHONE NO.** 376-6427	**PROJECT COORDINATOR** TODAK, D	**PRICE CODE** 8H	**DATA TURNAROUND**
SAMPLING LOCATION C9414, 200-WA-1 #4	**PROJECT DESIGNATION** 200-WA-1 Opportunistic sampling - soil		**SAF NO.** F16-028	**AIR QUALITY** ☐	**30 Days / 30 Days**
ICE CHEST NO. GWS-424	**FIELD LOGBOOK NO.** HNF-N-645 3 - 57	**ACTUAL SAMPLE DEPTH** 165.8 → 168.3	**COA** DW: 3/24/16 ~~300192~~ 304043	**METHOD OF SHIPMENT** FEDERAL EXPRESS	**ORIGINAL**
SHIPPED TO GEL Laboratories, LLC	**OFFSITE PROPERTY NO.** 6476		**BILL OF LADING/AIR BILL NO.** 7759 9338 5316		

SPECIAL INSTRUCTIONS

(1) 6020_METALS_ICPMS: COMMON (Add-on) {Uranium}; 9056_ANIONS_IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}; 9056_ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};
(2) GAMMA_GS: COMMON; GAMMA_GS: COMMON (Add-on) {Radium-226, Radium-228};
(3) AMCMISO_IE_PRECIP_AEA: COMMON {Americium-241}; C14_LSC: COMMON; I129_SEP_LEPS_GS: COMMON; NI63_LSC: COMMON; PUISO_PLATE_AEA: COMMON; SRTOT_SEP_PRECIP_GPC: COMMON; TC99_EIE_LSC: COMMON; THISO_IE_PLATE_AEA: COMMON {Thorium-232}; UISO_IE_PRECIP_AEA: COMMON; NP237_IE_PRECIP_AEA: COMMON; TRITIUM_DIST_LSC: COMMON;
(4) 9045_pH (Non-Aqueous): COMMON {pH Measurement};

PRINTED ON 3/23/2016 FSR ID = FSR28196 TRVL NUM = TRVL-16-059 A-6003-618 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRS	**SDG/AR/COC/Work Order:** 394080
Received By: MK	**Date Received:** 3-31-16

Suspected Hazard Information	Yes	No	
COC/Samples marked as radioactive?		✓	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
Classified Radioactive II or III by RSO?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0
COC/Samples marked containing PCBs?		✓	If yes, Were swipes taken of sample containers < action levels?
Package, COC, and/or Samples marked as beryllium or asbestos containing?		✓	
Shipped as a DOT Hazardous?		✓	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group. Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 2C
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: 150462962 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?		✓		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	Do Low Level Perchlorate samples have headspace as required?		✓		Sample ID's and containers affected:
7	VOA vials contain acid preservation?		✓		(If unknown, select No)
8	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
9	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
10	Samples received within holding time?	✓			ID's and tests affected:
11	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
12	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
13	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
14	Are sample containers identifiable as GEL provided?			✓	
15	COC form is properly signed in relinquished/received sections?	✓			
16	Carrier and tracking number.	✓			Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 7759 9338 5316

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials DS Date 4/1/16 Page 1 of 1 GL-CHL-SR-001 Rev 2

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 26−APR−16

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 (0rganics 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 26 April 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

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL394080
Work Order #: 394080

Product: **Determination of Metals by ICP-MS**
Analytical Method: 6020_METALS_ICPMS
Analytical Procedure: GL-MA-E-014 REV# 27
Analytical Batch: 1556310

Preparation Method: SW846 3050B
Preparation Procedure: GL-MA-E-009 REV# 26
Preparation Batch: 1556309

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203518990	Method Blank (MB)**ICP-MS**
1203518991	Laboratory Control Sample (LCS)
1203518994	394080001(B353C6L) Serial Dilution (SD)
1203518992	394080001(B353C6D) Sample Duplicate (DUP)
1203518993	394080001(B353C6S) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" 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

Preparation/Analytical Method Verification
Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The ICPMS solid samples in this SDG were diluted the standard two times.

Analyte	394080	
	001	003
Uranium	2X	2X

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: GEL394080 GEL Work Order: 394080

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

D Results are reported from a diluted aliquot of sample.

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: Nik-Cole Elmore**

Date: 25 APR 2016 **Title: Data Validator**

Sample Data Summary

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL394080 **CONTRACT:** CPRC0F16028 **METHOD TYPE:** SW846

SAMPLE ID: 394080001 **BASIS:** Dry Weight **DATE COLLECTED** 29−MAR−16

CLIENT ID: B353C6 **LEVEL:** Low **DATE RECEIVED** 31−MAR−16

MATRIX: SOIL **%SOLIDS:** 84

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−61−1	Uranium	923	ug/kg	D	15	45.5	45.5	2	MS	BAJ	04/04/16 16:25	160404−1	1556310

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1556310	1556309	SW846 3050B	0.524	g	50	mL	04/01/16	JXM5

***Analytical Methods:**

MS **SW846 3050B/6020A**

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL394080 **CONTRACT:** CPRC0F16028 **METHOD TYPE:** SW846

SAMPLE ID: 394080003 **BASIS:** Dry Weight **DATE COLLECTED** 29−MAR−16

CLIENT ID: B353C7 **LEVEL:** Low **DATE RECEIVED** 31−MAR−16

MATRIX: SOIL **%SOLIDS:** 89

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−61−1	Uranium	1030	ug/kg	D	14.5	43.9	43.9	2	MS	BAJ	04/04/16 16:30	160404−1	1556310

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1556310	1556309	SW846 3050B	0.513	g	50	mL	04/01/16	JXM5

***Analytical Methods:**

MS **SW846 3050B/6020A**

Quality Control Summary

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

QC Summary

Report Date: April 25, 2016

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **394080**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1556310										
QC1203518992 394080001 DUP										
Uranium	D	923	D	987	ug/kg	6.78		(0%-20%)	BAJ	04/04/16 16:26
QC1203518991 LCS										
Uranium	4700		D	4910	ug/kg		104	(34%-166%)		04/04/16 16:24
QC1203518990 MB										
Uranium			DU	13.1	ug/kg					04/04/16 16:23
QC1203518993 394080001 MS										
Uranium	5560 D	923	D	6320	ug/kg		97.1	(75%-125%)		04/04/16 16:28
QC1203518994 394080001 SDILT										
Uranium	D	4.06	D	0.847	ug/L	4.44		(0%-10%)		04/04/16 16:29

Notes:

The Qualifiers in this report are defined as follows:

- * Duplicate analysis not within control limits
- + Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
- 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).
- 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.
- D Results are reported from a diluted aliquot of sample.
- E Reported value is estimated due to interferences. See comment in narrative.
- M Duplicate precision not met.
- N Spike Sample recovery is outside control limits.
- S Reported value determined by the Method of Standard Additions (MSA)
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- W Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
- 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

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

QC Summary

Workorder: 394080

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time

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.
^ 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.
* Indicates that a Quality Control parameter was not within specifications.
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.

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL394080
Work Order #: 394080

Product: **Ion Chromatography**
Analytical Method: 9056_ANIONS_IC
Analytical Procedure: GL-GC-E-086 REV# 25
Analytical Batches: 1556244 and 1556243

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203518817	Method Blank (MB)
1203518818	Laboratory Control Sample (LCS)
1203518819	394080003(B353C7) Sample Duplicate (DUP)
1203518820	394080003(B353C7) Matrix Spike (MS)

The samples in this SDG were analyzed on a "dry weight" 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.

Miscellaneous Information

Manual Integrations
Samples 1203518819 (B353C7DUP), 394080001 (B353C6) and 394080003 (B353C7) were manually integrated to correctly position the baseline as set in the calibration standards.

Product: pH
Analytical Method: SW846 9045D
Analytical Procedure: GL-GC-E-008 REV# 21
Analytical Batch: 1556440

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

GEL Sample ID#	Client Sample Identification
394080002	B354J1
394080004	B354J2
1203519328	Laboratory Control Sample (LCS)
1203519329	394080004(B354J2) Sample Duplicate (DUP)

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

Holding Times
Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

Sample	Analyte	Value
1203519329 (B354J2DUP)	pH	Received 31-MAR-16, out of holding 29-MAR-16
394080002 (B354J1)	pH	Received 31-MAR-16, out of holding 29-MAR-16
394080004 (B354J2)	pH	Received 31-MAR-16, out of holding 29-MAR-16

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: GEL394080 GEL Work Order: 394080

The Qualifiers in this report are defined as follows:

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).

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

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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: Thomas Lewis**

Date: 18 APR 2016 **Title: Data Validator**

Sample Data Summary

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

Certificate of Analysis

Report Date: April 18, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF F16-028

Client Sample ID: B353C6
Sample ID: 394080001
Matrix: SOIL
Collect Date: 29-MAR-16 12:15
Receive Date: 31-MAR-16
Collector: Client
Moisture: 16.1%

Project: CPRC0F16028
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC:COMMON + (Add-on) "Dry Weight Corrected"											
Chloride		2930	799	2380	ug/Kg	1	MAR1	04/02/16	0008	1556244	1
Fluoride	B	998	393	1190	ug/Kg	1					
Nitrate-N	B	1150	393	1190	ug/Kg	1					
Nitrite-N	U	393	393	1190	ug/Kg	1					
Phosphorus in phosphate	B	926	799	2380	ug/Kg	1					
Sulfate		11300	1590	4770	ug/Kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	MAR1	04/01/16	0911	1556243

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	

Notes:

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

Certificate of Analysis

Report Date: April 18, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF F16-028

Client Sample ID: B354J1
Sample ID: 394080002
Matrix: SOIL
Collect Date: 29-MAR-16 12:15
Receive Date: 31-MAR-16
Collector: Client

Project: CPRC0F16028
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis											
9045_pH (Non-Aqueous):COMMON "As Received"											
pH at Temp 21.9C	X	8.90	0.010	0.100	SU	1	RXB5	04/01/16	1717	1556440	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9045D	

Notes:

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

Certificate of Analysis

Report Date: April 18, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF F16-028

Client Sample ID: B353C7
Sample ID: 394080003
Matrix: SOIL
Collect Date: 29-MAR-16 13:55
Receive Date: 31-MAR-16
Collector: Client
Moisture: 11.1%

Project: CPRC0F16028
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC:COMMON + (Add-on) "Dry Weight Corrected"											
Chloride		2560	754	2250	ug/Kg	1	MAR1	04/02/16	0041	1556244	1
Fluoride	B	809	371	1130	ug/Kg	1					
Nitrate-N	B	846	371	1130	ug/Kg	1					
Nitrite-N	U	371	371	1130	ug/Kg	1					
Phosphorus in phosphate	B	912	754	2250	ug/Kg	1					
Sulfate		9570	1500	4500	ug/Kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	MAR1	04/01/16	0911	1556243

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	

Notes:

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

Certificate of Analysis

Report Date: April 18, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF F16-028

Client Sample ID: B354J2
Sample ID: 394080004
Matrix: SOIL
Collect Date: 29-MAR-16 13:55
Receive Date: 31-MAR-16
Collector: Client

Project: CPRC0F16028
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis											
9045_pH (Non-Aqueous):COMMON "As Received"											
pH at Temp 21.7C	X	8.63	0.010	0.100	SU	1	RXB5	04/01/16	1724	1556440	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9045D	

Notes:

Quality Control Summary

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

QC Summary

Report Date: April 18, 2016

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **394080**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1556244											
QC1203518819 394080003 DUP											
Chloride			2560		2260	ug/Kg	12.6 ^		(+/-2250)	MAR1	04/02/16 01:14
Fluoride		B	809	B	787	ug/Kg	2.82 ^		(+/-1130)		
Nitrate-N		B	846	B	846	ug/Kg	0 ^		(+/-1130)		
Nitrite-N		U	371	U	371	ug/Kg	N/A				
Phosphorus in phosphate		B	912	B	953	ug/Kg	4.47 ^		(+/-2250)		
Sulfate			9570		9420	ug/Kg	1.54 ^		(+/-4500)		
QC1203518818 LCS											
Chloride	50000				45300	ug/Kg		90.6	(80%-120%)		04/01/16 23:35
Fluoride	25000				23600	ug/Kg		94.3	(80%-120%)		
Nitrate-N	25000				23500	ug/Kg		94.1	(80%-120%)		
Nitrite-N	25000				23700	ug/Kg		94.9	(80%-120%)		
Phosphorus in phosphate	12500				12700	ug/Kg		101	(80%-120%)		
Sulfate	100000				94800	ug/Kg		94.8	(80%-120%)		
QC1203518817 MB											
Chloride				U	670	ug/Kg					04/01/16 23:02
Fluoride				U	330	ug/Kg					
Nitrate-N				U	330	ug/Kg					
Nitrite-N				U	330	ug/Kg					
Phosphorus in phosphate				U	670	ug/Kg					
Sulfate				U	1330	ug/Kg					
QC1203518820 394080003 MS											

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

QC Summary

Workorder: 394080

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1556244											
Chloride	56300		2560		55500	ug/Kg		94	(48%-145%)		04/02/16 01:47
Fluoride	28100	B	809		26600	ug/Kg		91.8	(30%-135%)	MAR1	
Nitrate-N	28100	B	846		27600	ug/Kg		95.3	(70%-125%)		
Nitrite-N	28100	U	371		28100	ug/Kg		99.7	(70%-120%)		
Phosphorus in phosphate	14100	B	912		11200	ug/Kg		73.1	(35%-134%)		
Sulfate	113000		9570		122000	ug/Kg		99.5	(45%-162%)		
Titration and Ion Analysis											
Batch 1556440											
QC1203519329 394080004 DUP											
pH		X	8.63	X	8.63	SU	0		(0%-30%)	RXB5	04/01/16 17:32
QC1203519328 LCS											
pH	7.00				7.07	SU		101	(70%-130%)		04/01/16 17:02

Notes:

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- 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).
- 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.
- 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.
- 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.
^ 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.
* Indicates that a Quality Control parameter was not within specifications.
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.

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL394080
Work Order #: 394080

Product: **AMCMISO_EIE_PRECIP_AEA: COMMON**
Analytical Method: AMCMISO_EIE_PREC_AEA
Analytical Procedure: GL-RAD-A-011 REV# 26
Analytical Batch: 1556353

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203519118	Method Blank (MB)
1203519119	394080001(B353C6) Sample Duplicate (DUP)
1203519120	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" 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

Recounts
Sample 394080001 (B353C6) was recounted due to high carrier/tracer yield. The recount is reported.

Product: **NP237_IE_PRECIP_AEA: COMMON**
Analytical Method: NP237_IE_PRECIP_AEA
Analytical Procedure: GL-RAD-A-032 REV# 20
Analytical Batch: 1556354

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203519121	Method Blank (MB)
1203519122	394080001(B353C6) Sample Duplicate (DUP)
1203519123	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Product: **PUISO_PRECIP_AEA:COMMON**
Analytical Method: PUISO_PLATE_AEA
Analytical Procedure: GL-RAD-A-011 REV# 26
Analytical Batch: 1556355

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203519124	Method Blank (MB)
1203519125	394080001(B353C6) Sample Duplicate (DUP)
1203519126	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Product: **THISO_IE_PLATE_AEA: COMMON**

Analytical Method: THISO_IE_PLATE_AEA
Analytical Procedure: GL-RAD-A-038 REV# 17
Analytical Batch: 1556356

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203519127	Method Blank (MB)
1203519128	394080001(B353C6) Sample Duplicate (DUP)
1203519129	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" 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

Recounts
Sample 394080001 (B353C6) was recounted due to high carrier/tracer yield. The recount is reported.

Product: UISO_IE_PRECIP_AEA:COMMON
Analytical Method: UISO_IE_PRECIP_AEA
Analytical Procedure: GL-RAD-A-011 REV# 26
Analytical Batch: 1556357

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203519130	Method Blank (MB)
1203519131	394080001(B353C6) Sample Duplicate (DUP)
1203519132	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Product: **Dry Weight**
Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203518837	394080001(B353C6) Sample Duplicate (DUP)

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

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Product: **I129_SEP_LEPS_GS**
Analytical Method: I129_SEP_LEPS_GS
Analytical Procedure: GL-RAD-A-006 REV# 21
Analytical Batch: 1555991

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203518042	Method Blank (MB)
1203518043	393993001(B353C4) Sample Duplicate (DUP)
1203518044	393993001(B353C4) Matrix Spike (MS)
1203518045	Laboratory Control Sample (LCS)

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

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Product: **GAMMA_GS:COMMON + (Add-on)**
Analytical Method: GAMMA_GS
Analytical Procedure: GL-RAD-A-013 REV# 25
Analytical Batch: 1556269

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203518904	Method Blank (MB)
1203518905	394080001(B353C6) Sample Duplicate (DUP)
1203518906	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Qualifier Information

Qualifier	Reason	Analyte	Sample	Client Sample
X	Data rejected due to interference.	Europium-155	394080001	B353C6
			394080003	B353C7
			1203518905	B353C6(394080001DUP)

Product: **SRTOT_SEP_PRECIP_GPC: COMMON**
Analytical Method: SRTOT_SEP_PRECIP_GPC
Analytical Procedure: GL-RAD-A-004 REV# 17

Analytical Batch: 1558681

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203525170	Method Blank (MB)
1203525171	394080003(B353C7) Sample Duplicate (DUP)
1203525172	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Product: **TC99_SEP_GPC**
Analytical Method: TC99_EIE_LSC
Analytical Procedure: GL-RAD-A-059 REV# 4
Analytical Batch: 1556045

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203518194	Method Blank (MB)
1203518195	393993001(B353C4) Sample Duplicate (DUP)
1203518196	Laboratory Control Sample (LCS)

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

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Product: **NI63_LSC**
Analytical Method: NI63_LSC
Analytical Procedure: GL-RAD-A-022 REV# 17
Analytical Batch: 1557505

Preparation Method: Dry Soil Prep
Preparation Procedure: GL-RAD-A-021 REV# 20
Preparation Batch: 1556248

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203522067	Method Blank (MB)
1203522068	394080001(B353C6) Sample Duplicate (DUP)
1203522070	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on a "dry weight" 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

Recounts
Samples 1203522067 (MB), 1203522068 (B353C6DUP) and 394080003 (B353C7) were recounted to verify sample results. Recounts are reported.

Product: **TRITIUM_DIST_LSC: COMMON**
Analytical Method: TRITIUM_DIST_LSC
Analytical Procedure: GL-RAD-A-002 REV# 21
Analytical Batch: 1558440

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203524478	Method Blank (MB)
1203524479	393993001(B353C4) Sample Duplicate (DUP)
1203524481	393993001(B353C4) Matrix Spike (MS)
1203524483	Laboratory Control Sample (LCS)

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

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

Product: **C14_LSC: COMMON**
Analytical Method: C14_LSC
Analytical Procedure: GL-RAD-A-003 REV# 15
Analytical Batch: 1558446

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

GEL Sample ID#	Client Sample Identification
394080001	B353C6
394080003	B353C7
1203524496	Method Blank (MB)
1203524497	393993001(B353C4) Sample Duplicate (DUP)
1203524499	393993001(B353C4) Matrix Spike (MS)
1203524501	Laboratory Control Sample (LCS)

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

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. 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.

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: GEL394080 GEL Work Order: 394080

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.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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: 26 APR 2016 **Title: Group Leader**

Sample Data Summary

Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556353**	**Method:**	**AMCMISO_EIE_PREC_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**04/11/2016 17:35**	**Analyst:**	**KXB2**	**Instrument:**	**1240**
Data File:	**S0394080001_AM.2A.gcnf**	**Aliquot:**	**0.106 g**	**Count Time:**	**240 min**
Prep Batch:	**1556353**	**Prep Method:**	**DOE EML HASL-300, Am-05**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14596-10-2	Americium-241	U	-0.0171	pCi/g	+/-0.148	0.148	0.342	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	19.4	19.6	pCi/g	98.9	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556354**	**Method:**	**NP237_IE_PRECIP_AEA**	**SOP Ref:**	**GL-RAD-A-032**
Run Date:	**04/09/2016 12:48**	**Analyst:**	**KXB2**	**Instrument:**	**1200**
Data File:	**S0394080001_NP.1A.gcnf**	**Aliquot:**	**0.112 g**	**Count Time:**	**240 min**
Prep Batch:	**1556354**	**Prep Method:**	**ASTM C 1476-00 Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13994-20-2	Neptunium-237	U	-0.126	pCi/g	+/-0.217	0.218	0.617	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	1660	1790	pCi/g	92.5	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556355**	**Method:**	**PUISO_PLATE_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**04/09/2016 12:45**	**Analyst:**	**KXB2**	**Instrument:**	**1254**
Data File:	**S0394080001_PU.1A.gcnf**	**Aliquot:**	**0.106 g**	**Count Time:**	**240 min**
Prep Batch:	**1556355**	**Prep Method:**	**DOE EML HASL-300, Pu-11-**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13981-16-3	Plutonium-238	U	-0.0201	pCi/g	+/-0.173	0.173	0.401	1.00
OER-100-70	Plutonium-239/240	U	-0.0401	pCi/g	+/-0.177	0.178	0.463	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Plutonium-242 Tracer	15.8	18.6	pCi/g	84.9	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556356**	**Method:**	**THISO_IE_PLATE_AEA**	**SOP Ref:**	**GL-RAD-A-038**
Run Date:	**04/11/2016 17:03**	**Analyst:**	**KXB2**	**Instrument:**	**1027**
Data File:	**S0394080001_TH.2A.gcnf**	**Aliquot:**	**0.107 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1556356**	**Prep Method:**	**DOE EML HASL-300, Th-01-**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
TH-232 *7440-29-1*	Thorium-232		1.40	pCi/g	+/-0.586	0.619	0.395	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Thorium-229 Tracer	16.5	19.0	pCi/g	86.9	(30%-105%)

Comments:

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

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556357**	**Method:**	**UISO_IE_PRECIP_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**04/09/2016 12:47**	**Analyst:**	**KXB2**	**Instrument:**	**1129**
Data File:	**S0394080001_UU.1A.gcnf**	**Aliquot:**	**0.106 g**	**Count Time:**	**240 min**
Prep Batch:	**1556357**	**Prep Method:**	**DOE EML HASL-300, U-02-R**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
U-233/234 *13968-55-3/13966-29-5*	Uranium-233/234		0.924	pCi/g	+/-0.638	0.655	0.308	1.00
15117-96-1/13982-7	Uranium-235/236	U	0.00	pCi/g	+/-0.256	0.257	0.381	1.00
7440-61-1	Uranium-238		0.821	pCi/g	+/-0.605	0.620	0.308	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Uranium-232 Tracer	12.9	19.7	pCi/g	65.2	(30%-105%)

Comments:

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

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1558681**	**Method:**	**SRTOT_SEP_PRECIP_GPC**	**SOP Ref:**	**GL-RAD-A-004**
Run Date:	**04/19/2016 18:53**	**Analyst:**	**KSD1**	**Instrument:**	**PIC7D**
Data File:	**S1558681r1.xls**	**Aliquot:**	**0.378 g**	**Count Time:**	**60 min**
Prep Batch:	**1558681**	**Prep Method:**	**EPA 905.0 Modified/DOE RP5**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/18/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
SR-RAD	Total Strontium	U	-0.386	pCi/g	+/-0.556	0.556	1.17	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Strontium Carrier	7.40	7.77	mg	95.3	(40%-110%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"As Received"**
Batch ID:	**1555991**	**Method:**	**I129_SEP_LEPS_GS**	**SOP Ref:**	**GL-RAD-A-006**
Run Date:	**04/01/2016 15:39**	**Analyst:**	**MJH1**	**Instrument:**	**XRAY6**
Data File:	**I394080001.CNF;1**	**Aliquot:**	**1.02 g**	**Count Time:**	**120 min**
Prep Batch:	**1555991**	**Prep Method:**	**DOE EML HASL-300,I-01 M**		
Prep Date:	**04/01/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
15046-84-1	Iodine-129	U	0.375	pCi/g	+/-0.446	0.448	1.01	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556269**	**Method:**	**GAMMA_GS**	**SOP Ref:**	**GL-RAD-A-013**
Run Date:	**04/25/2016 06:28**	**Analyst:**	**MXR1**	**Instrument:**	**GAM09**
Data File:	**G394080001.CNF;2**	**Aliquot:**	**139.4 g**	**Count Time:**	**388 min**
Prep Batch:	**1556269**	**Prep Method:**	**DOE HASL 300, 4.5.2.3/Ga-01**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/04/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10045-97-3	Cesium-137	U	0.00321	pCi/g	+/-0.0188	0.0189	0.029	0.100
10198-40-0	Cobalt-60	U	-0.0117	pCi/g	+/-0.0186	0.0194	0.0325	0.100
14683-23-9	Europium-152	U	-0.0116	pCi/g	+/-0.0415	0.0418	0.0755	0.100
15585-10-1	Europium-154	U	0.00369	pCi/g	+/-0.0564	0.0564	0.103	0.100
14391-16-3	Europium-155	UX	0.00	pCi/g	+/-0.0901	0.0907	0.0858	0.100
13982-63-3	Radium-226		0.998	pCi/g	+/-0.0853	0.120	0.054	1.00
15262-20-1	Radium-228		1.50	pCi/g	+/-0.147	0.266	0.106	3.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"As Received"**
Batch ID:	**1556045**	**Method:**	**TC99_EIE_LSC**	**SOP Ref:**	**GL-RAD-A-059**
Run Date:	**04/12/2016 10:12**	**Analyst:**	**MYM1**	**Instrument:**	**LSCORANGE**
Data File:	**E1556045.xls**	**Aliquot:**	**1.223 g**	**Count Time:**	**30.01237 min**
Prep Batch:	**1556045**	**Prep Method:**	**DOE EML HASL-300, Tc-02-**		
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99	U	-0.129	pCi/g	+/-0.729	0.729	1.32	5.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	37300	39400	CPM	94.6	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1557505**	**Method:**	**NI63_LSC**	**SOP Ref:**	**GL-RAD-A-022**
Run Date:	**04/18/2016 15:38**	**Analyst:**	**CXS7**	**Instrument:**	**LSCGOLD**
Data File:	**N1557505.xls**	**Aliquot:**	**0.257 g**	**Count Time:**	**120 min**
Prep Batch:	**1557505**	**Prep Method:**	**DOE RESL Ni-1, Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/13/2016 10:44**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
NI-63	Nickel-63	U	4.97	pCi/g	+/-4.42	4.51	7.38	10.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Nickel Carrier	15.3	24.4	mg	62.7	(40%-110%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"As Received"**
Batch ID:	**1558440**	**Method:**	**TRITIUM_DIST_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**04/18/2016 14:23**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCBLUE**
Data File:	**T1558440.xls**	**Aliquot:**	**2.54 g**	**Count Time:**	**20 min**
Prep Batch:	**1558440**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**04/18/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium	U	-2.61	pCi/g	+/-10.1	10.1	18.4	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080001**	**Date Collected:**	**03/29/2016 12:15**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**16.1**
Client ID:	**B353C6**			**Prep Basis:**	**"As Received"**
Batch ID:	**1558446**	**Method:**	**C14_LSC**	**SOP Ref:**	**GL-RAD-A-003**
Run Date:	**04/21/2016 18:20**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCRED**
Data File:	**C1558446.xls**	**Aliquot:**	**0.58 g**	**Count Time:**	**45 min**
Prep Batch:	**1558446**	**Prep Method:**	**EPA EERF C-01 Modified**		
Prep Date:	**04/21/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14762-75-5	Carbon-14	U	-0.593	pCi/g	+/-1.65	1.65	2.87	5.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556353**	**Method:**	**AMCMISO_EIE_PREC_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**04/09/2016 17:15**	**Analyst:**	**KXB2**	**Instrument:**	**1236**
Data File:	**S0394080003_AM.1A.gcnf**	**Aliquot:**	**0.102 g**	**Count Time:**	**240 min**
Prep Batch:	**1556353**	**Prep Method:**	**DOE EML HASL-300, Am-05**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14596-10-2	Americium-241	U	0.00	pCi/g	+/-0.147	0.147	0.219	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	20.0	20.4	pCi/g	98	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556354**	**Method:**	**NP237_IE_PRECIP_AEA**	**SOP Ref:**	**GL-RAD-A-032**
Run Date:	**04/09/2016 12:48**	**Analyst:**	**KXB2**	**Instrument:**	**1201**
Data File:	**S0394080003_NP.1A.gcnf**	**Aliquot:**	**0.101 g**	**Count Time:**	**240 min**
Prep Batch:	**1556354**	**Prep Method:**	**ASTM C 1476-00 Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13994-20-2	Neptunium-237	U	-0.0778	pCi/g	+/-0.235	0.235	0.660	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	1290	1990	pCi/g	65	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556355**	**Method:**	**PUISO_PLATE_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**04/09/2016 12:45**	**Analyst:**	**KXB2**	**Instrument:**	**1255**
Data File:	**S0394080003_PU.1A.gcnf**	**Aliquot:**	**0.102 g**	**Count Time:**	**240 min**
Prep Batch:	**1556355**	**Prep Method:**	**DOE EML HASL-300, Pu-11-**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13981-16-3	Plutonium-238	U	0.0239	pCi/g	+/-0.250	0.250	0.521	1.00
OER-100-70	Plutonium-239/240	U	-0.0409	pCi/g	+/-0.181	0.181	0.472	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Plutonium-242 Tracer	16.5	19.3	pCi/g	85.3	(30%-105%)

Comments:

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

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

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556356**	**Method:**	**THISO_IE_PLATE_AEA**	**SOP Ref:**	**GL-RAD-A-038**
Run Date:	**04/09/2016 12:47**	**Analyst:**	**KXB2**	**Instrument:**	**1187**
Data File:	**S0394080003_TH.1A.gcnf**	**Aliquot:**	**0.104 g**	**Count Time:**	**240 min**
Prep Batch:	**1556356**	**Prep Method:**	**DOE EML HASL-300, Th-01-**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
TH-232 *7440-29-1*	Thorium-232		2.02	pCi/g	+/-0.991	1.06	0.456	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Thorium-229 Tracer	11.7	19.5	pCi/g	59.7	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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

The MDC is a sample specific MDC.

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556357**	**Method:**	**UISO_IE_PRECIP_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**04/09/2016 12:47**	**Analyst:**	**KXB2**	**Instrument:**	**1130**
Data File:	**S0394080003_UU.1A.gcnf**	**Aliquot:**	**0.102 g**	**Count Time:**	**240 min**
Prep Batch:	**1556357**	**Prep Method:**	**DOE EML HASL-300, U-02-R**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
U-233/234 *13968-55-3/13966-29-5*	Uranium-233/234		1.40	pCi/g	+/-0.684	0.713	0.246	1.00
15117-96-1/13982-7	Uranium-235/236	U	0.179	pCi/g	+/-0.351	0.352	0.486	1.00
7440-61-1	Uranium-238	U	0.456	pCi/g	+/-0.466	0.471	0.607	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Uranium-232 Tracer	17.0	20.5	pCi/g	83.1	(30%-105%)

Comments:

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

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1558681**	**Method:**	**SRTOT_SEP_PRECIP_GPC**	**SOP Ref:**	**GL-RAD-A-004**
Run Date:	**04/19/2016 18:53**	**Analyst:**	**KSD1**	**Instrument:**	**PIC8A**
Data File:	**S1558681r1.xls**	**Aliquot:**	**0.402 g**	**Count Time:**	**60 min**
Prep Batch:	**1558681**	**Prep Method:**	**EPA 905.0 Modified/DOE RP5**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/18/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
SR-RAD	Total Strontium	U	-0.74	pCi/g	+/-0.525	0.525	1.18	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Strontium Carrier	7.70	7.77	mg	99.2	(40%-110%)

Comments:

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"As Received"**
Batch ID:	**1555991**	**Method:**	**I129_SEP_LEPS_GS**	**SOP Ref:**	**GL-RAD-A-006**
Run Date:	**04/01/2016 15:39**	**Analyst:**	**MJH1**	**Instrument:**	**GAM21**
Data File:	**I394080003.CNF;1**	**Aliquot:**	**1.05 g**	**Count Time:**	**120 min**
Prep Batch:	**1555991**	**Prep Method:**	**DOE EML HASL-300,I-01 M**		
Prep Date:	**04/01/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
15046-84-1	Iodine-129	U	-0.272	pCi/g	+/-0.531	0.545	0.801	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

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Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1556269**	**Method:**	**GAMMA_GS**	**SOP Ref:**	**GL-RAD-A-013**
Run Date:	**04/25/2016 06:29**	**Analyst:**	**MXR1**	**Instrument:**	**GAM11**
Data File:	**G394080003.CNF;2**	**Aliquot:**	**154.97 g**	**Count Time:**	**388 min**
Prep Batch:	**1556269**	**Prep Method:**	**DOE HASL 300, 4.5.2.3/Ga-01**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/04/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10045-97-3	Cesium-137	U	-0.00686	pCi/g	+/-0.0195	0.0198	0.0291	0.100
10198-40-0	Cobalt-60	U	-0.0131	pCi/g	+/-0.0183	0.0192	0.0265	0.100
14683-23-9	Europium-152	U	-0.0527	pCi/g	+/-0.0432	0.0495	0.0697	0.100
15585-10-1	Europium-154	U	-0.00788	pCi/g	+/-0.0503	0.0504	0.0899	0.100
14391-16-3	Europium-155	UX	0.00	pCi/g	+/-0.0659	0.0662	0.0745	0.100
13982-63-3	Radium-226		1.15	pCi/g	+/-0.0816	0.124	0.0508	1.00
15262-20-1	Radium-228		1.44	pCi/g	+/-0.145	0.255	0.0979	3.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

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Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"As Received"**
Batch ID:	**1556045**	**Method:**	**TC99_EIE_LSC**	**SOP Ref:**	**GL-RAD-A-059**
Run Date:	**04/12/2016 10:45**	**Analyst:**	**MYM1**	**Instrument:**	**LSCORANGE**
Data File:	**E1556045.xls**	**Aliquot:**	**1.515 g**	**Count Time:**	**30.01237 min**
Prep Batch:	**1556045**	**Prep Method:**	**DOE EML HASL-300, Tc-02-**		
Prep Date:	**04/07/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99	U	-0.0177	pCi/g	+/-0.565	0.565	1.01	5.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	37900	39400	CPM	96.3	(30%-105%)

Comments:

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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:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1557505**	**Method:**	**NI63_LSC**	**SOP Ref:**	**GL-RAD-A-022**
Run Date:	**04/19/2016 21:30**	**Analyst:**	**CXS7**	**Instrument:**	**LSCGOLD**
Data File:	**N1557505R.xls**	**Aliquot:**	**0.313 g**	**Count Time:**	**90 min**
Prep Batch:	**1557505**	**Prep Method:**	**DOE RESL Ni-1, Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**04/13/2016 10:44**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
NI-63	Nickel-63	U	0.466	pCi/g	+/-3.82	3.82	6.53	10.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Nickel Carrier	17.1	24.4	mg	70	(40%-110%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"As Received"**
Batch ID:	**1558440**	**Method:**	**TRITIUM_DIST_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**04/18/2016 14:44**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCBLUE**
Data File:	**T1558440.xls**	**Aliquot:**	**2.51 g**	**Count Time:**	**20 min**
Prep Batch:	**1558440**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**04/18/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium	U	0.101	pCi/g	+/-10.7	10.7	19.1	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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

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Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL394080**	**Client:**	**CPRC001**	**Project:**	**CPRC0F16028**
Lab Sample ID:	**394080003**	**Date Collected:**	**03/29/2016 13:55**	**Matrix:**	**SOIL**
		Date Received:	**03/31/2016 10:20**	**%Moisture:**	**11.1**
Client ID:	**B353C7**			**Prep Basis:**	**"As Received"**
Batch ID:	**1558446**	**Method:**	**C14_LSC**	**SOP Ref:**	**GL-RAD-A-003**
Run Date:	**04/21/2016 19:06**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCRED**
Data File:	**C1558446.xls**	**Aliquot:**	**0.53 g**	**Count Time:**	**45 min**
Prep Batch:	**1558446**	**Prep Method:**	**EPA EERF C-01 Modified**		
Prep Date:	**04/21/2016 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14762-75-5	Carbon-14	U	-0.95	pCi/g	+/-1.80	1.80	3.16	5.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The MDC is a sample specific MDC.

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Client : CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Contact: Mr. Scot Fitzgerald

Workorder: 394080

Report Date: April 26, 2016

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch 1556353									
QC1203519118 MB									
Americium-241			U	0.0576	pCi/g			KXB2	04/09/1617:15
Uncert:				+/-0.216					
TPU:				+/-0.216					
**Americium-243 Tracer	19.6			17.9	pCi/g	REC: 91	(30%-105%)		
Uncert:				+/-2.38					
TPU:				+/-3.62					
QC1203519119 394080001 DUP									
Americium-241		U -0.0171	U	-0.0202	pCi/g				04/09/1617:15
Uncert:		+/-0.148		+/-0.175		RPD: 0	N/A		
TPU:		+/-0.148		+/-0.175		RER: 0.0265	(0-2)		
**Americium-243 Tracer	20.6	19.4		18.1	pCi/g	REC: 88	(30%-105%)		
Uncert:		+/-2.31		+/-2.57					
TPU:		+/-3.53		+/-3.90					
QC1203519120 LCS									
Americium-241	18.6			20.2	pCi/g	REC: 109	(80%-120%)		04/09/1617:15
Uncert:				+/-2.61					
TPU:				+/-3.96					
**Americium-243 Tracer	19.6			16.2	pCi/g	REC: 83	(30%-105%)		
Uncert:				+/-2.55					
TPU:				+/-3.85					
Batch 1556354									
QC1203519121 MB									
Neptunium-237			U	0.156	pCi/g			KXB2	04/09/1612:48
Uncert:				+/-0.430					
TPU:				+/-0.430					
**Americium-243 Tracer	1790			921	pCi/g	REC: 51	(30%-105%)		
QC1203519122 394080001 DUP									
Neptunium-237		U -0.126	U	0.0711	pCi/g				04/09/1612:48
Uncert:		+/-0.217		+/-0.267		RPD: 0	N/A		
TPU:		+/-0.218		+/-0.267		RER: 1.12	(0-2)		
**Americium-243 Tracer	1790	1660		1230	pCi/g	REC: 69	(30%-105%)		
QC1203519123 LCS									
Neptunium-237	39.9			41.0	pCi/g	REC: 103	(80%-120%)		04/09/1612:48
Uncert:				+/-3.71					
TPU:				+/-5.92					
**Americium-243 Tracer	1790			1330	pCi/g	REC: 74	(30%-105%)		
Batch 1556355									
QC1203519124 MB									
Plutonium-238			U	-0.0553	pCi/g			KXB2	04/09/1612:45
Uncert:				+/-0.167					
TPU:				+/-0.167					
Plutonium-239/240			U	-0.0737	pCi/g				
Uncert:				+/-0.171					

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch 1556355									
	TPU:			+/-0.171					
**Plutonium-242 Tracer	18.6			16.8	pCi/g	REC: 90	(30%-105%)		
	Uncert:			+/-2.35					
	TPU:			+/-3.49					
QC1203519125 394080001 DUP									
Plutonium-238		U -0.0201	U	-0.05	pCi/g				04/09/1617:16
	Uncert:	+/-0.173		+/-0.221		RPD: 0	N/A		
	TPU:	+/-0.173		+/-0.222		RER: 0.208	(0-2)		
Plutonium-239/240		U -0.0401	U	0.0541	pCi/g				
	Uncert:	+/-0.177		+/-0.301		RPD: 0	N/A		
	TPU:	+/-0.178		+/-0.301		RER: 0.528	(0-2)		
**Plutonium-242 Tracer	19.5	15.8		13.8	pCi/g	REC: 71	(30%-105%)		
	Uncert:	+/-2.45		+/-2.80					
	TPU:	+/-3.62		+/-4.12					
QC1203519126 LCS									
Plutonium-238			U	0.278	pCi/g				04/09/1617:16
	Uncert:			+/-0.352					
	TPU:			+/-0.354					
Plutonium-239/240	18.6			17.4	pCi/g	REC: 94	(80%-120%)		
	Uncert:			+/-2.32					
	TPU:			+/-3.38					
**Plutonium-242 Tracer	18.6			18.0	pCi/g	REC: 97	(30%-105%)		
	Uncert:			+/-2.39					
	TPU:			+/-3.54					
Batch 1556356									
QC1203519127 MB									
Thorium-232			U	0.0394	pCi/g			KXB2	04/09/1612:47
	Uncert:			+/-0.260					
	TPU:			+/-0.260					
**Thorium-229 Tracer	19.0			14.1	pCi/g	REC: 74	(30%-105%)		
	Uncert:			+/-2.58					
	TPU:			+/-4.02					
QC1203519128 394080001 DUP									
Thorium-232		1.40		1.00	pCi/g				04/09/1612:47
	Uncert:	+/-0.586		+/-0.639		RPD: 33	(0% - 100%)		
	TPU:	+/-0.619		+/-0.659		RER: 0.858	(0-2)		
**Thorium-229 Tracer	19.7	16.5		14.8	pCi/g	REC: 75	(30%-105%)		
	Uncert:	+/-2.08		+/-2.68					
	TPU:	+/-3.39		+/-4.18					
QC1203519129 LCS									
Thorium-232	18.6			18.8	pCi/g	REC: 101	(80%-120%)		04/09/1612:47
	Uncert:			+/-2.32					
	TPU:			+/-3.69					
**Thorium-229 Tracer	19.0			17.8	pCi/g	REC: 94	(30%-105%)		
	Uncert:			+/-2.34					
	TPU:			+/-3.72					
Batch 1556357									
QC1203519130 MB									
Uranium-233/234			U	0.173	pCi/g			KXB2	04/09/1612:47
	Uncert:			+/-0.341					

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch 1556357									
	TPU:			+/-0.342					
Uranium-235/236			U	0.0925	pCi/g				
	Uncert:			+/-0.347					
	TPU:			+/-0.348					
Uranium-238			U	-0.0236	pCi/g				
	Uncert:			+/-0.204					
	TPU:			+/-0.204					
**Uranium-232 Tracer	19.7			15.3	pCi/g	REC: 78	(30%-105%)		
	Uncert:			+/-2.75					
	TPU:			+/-4.16					
QC1203519131 394080001 DUP									
Uranium-233/234		0.924		0.791	pCi/g				04/09/1612:47
	Uncert:	+/-0.638		+/-0.529		RPD: 16	(0% - 100%)		
	TPU:	+/-0.655		+/-0.542		RER: 0.306	(0-2)		
Uranium-235/236	U	0.00	U	0.200	pCi/g				
	Uncert:	+/-0.256		+/-0.343		RPD: 0	N/A		
	TPU:	+/-0.257		+/-0.344		RER: 0.914	(0-2)		
Uranium-238		0.821		0.810	pCi/g				
	Uncert:	+/-0.605		+/-0.528		RPD: 1	(0% - 100%)		
	TPU:	+/-0.620		+/-0.541		RER: 0.0256	(0-2)		
**Uranium-232 Tracer	20.7	12.9		18.6	pCi/g	REC: 90	(30%-105%)		
	Uncert:	+/-2.80		+/-2.55					
	TPU:	+/-4.23		+/-3.92					
QC1203519132 LCS									
Uranium-233/234				25.6	pCi/g				04/10/1612:46
	Uncert:			+/-2.94					
	TPU:			+/-4.85					
Uranium-235/236				1.27	pCi/g				
	Uncert:			+/-0.766					
	TPU:			+/-0.789					
Uranium-238	25.4			27.8	pCi/g	REC: 110	(80%-120%)		
	Uncert:			+/-3.06					
	TPU:			+/-5.20					
**Uranium-232 Tracer	19.7			16.2	pCi/g	REC: 82	(30%-105%)		
	Uncert:			+/-2.59					
	TPU:			+/-3.94					
Rad Gamma Spec									
Batch 1555991									
QC1203518042 MB									
Iodine-129			U	-0.681	pCi/g			MJH1	04/01/1615:40
	Uncert:			+/-0.656					
	TPU:			+/-0.728					
QC1203518043 393993001 DUP									
Iodine-129	U	-0.519	U	-0.0684	pCi/g				04/04/1607:11
	Uncert:	+/-0.771		+/-0.384		RPD: 0	N/A		
	TPU:	+/-0.807		+/-0.385		RER: 0.987	(0-2)		
QC1203518044 393993001 MS									
Iodine-129	38.9 U	-0.519		38.8	pCi/g	REC: 100	(75%-125%)		04/04/1607:20
	Uncert:	+/-0.771		+/-4.97					
	TPU:	+/-0.807		+/-6.31					

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gamma Spec									
Batch 1555991									
QC1203518045 LCS									
Iodine-129	38.9			37.9	pCi/g	REC: 97	(80%-120%)		04/04/1607:57
	Uncert:			+/-3.48					
	TPU:			+/-5.15					
Batch 1556269									
QC1203518904 MB									
Cesium-137			U	0.010	pCi/g			MXR1	04/25/1606:29
	Uncert:			+/-0.0135					
	TPU:			+/-0.0143					
Cobalt-60			U	0.00832	pCi/g				
	Uncert:			+/-0.0147					
	TPU:			+/-0.0152					
Europium-152			U	0.00809	pCi/g				
	Uncert:			+/-0.0438					
	TPU:			+/-0.044					
Europium-154			U	-0.0133	pCi/g				
	Uncert:			+/-0.0382					
	TPU:			+/-0.0387					
Europium-155			U	0.018	pCi/g				
	Uncert:			+/-0.0327					
	TPU:			+/-0.0338					
Radium-226			U	0.00125	pCi/g				
	Uncert:			+/-0.0332					
	TPU:			+/-0.0332					
Radium-228			U	-0.0374	pCi/g				
	Uncert:			+/-0.0699					
	TPU:			+/-0.0721					
QC1203518905 394080001 DUP									
Cesium-137	U	0.00321	U	-0.0128	pCi/g				04/25/1606:29
	Uncert:	+/-0.0188		+/-0.0189		RPD: 0	N/A		
	TPU:	+/-0.0189		+/-0.0197		RER: 1.15	(0-2)		
Cobalt-60	U	-0.0117	U	0.00812	pCi/g				
	Uncert:	+/-0.0186		+/-0.0194		RPD: 0	N/A		
	TPU:	+/-0.0194		+/-0.0197		RER: 1.4	(0-2)		
Europium-152	U	-0.0116	U	-0.0282	pCi/g				
	Uncert:	+/-0.0415		+/-0.0543		RPD: 0	N/A		
	TPU:	+/-0.0418		+/-0.0558		RER: 0.465	(0-2)		
Europium-154	U	0.00369	U	0.050	pCi/g				
	Uncert:	+/-0.0564		+/-0.0605		RPD: 0	N/A		
	TPU:	+/-0.0564		+/-0.0647		RER: 1.06	(0-2)		
Europium-155	UX	0.00	UX	0.00	pCi/g				
	Uncert:	+/-0.0901		+/-0.0697		RPD: 0	N/A		
	TPU:	+/-0.0907		+/-0.0702		RER: 0	(0-2)		
Radium-226		0.998		1.02	pCi/g				
	Uncert:	+/-0.0853		+/-0.0894		RPD: 2	(0% - 20%)		
	TPU:	+/-0.120		+/-0.122		RER: 0.279	(0-2)		
Radium-228		1.50		1.34	pCi/g				
	Uncert:	+/-0.147		+/-0.166		RPD: 11	(0% - 20%)		
	TPU:	+/-0.266		+/-0.253		RER: 0.837	(0-2)		
QC1203518906 LCS									

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gamma Spec									
Batch 1556269									
Americium-241	490			516	pCi/g	REC: 105	(80%-120%)		
Uncert:				+/-5.70					
TPU:				+/-70.7					
Cesium-137	181			180	pCi/g	REC: 99	(80%-120%)		
Uncert:				+/-3.63					
TPU:				+/-15.1					
Cobalt-60	171			172	pCi/g	REC: 100	(80%-120%)		
Uncert:				+/-4.25					
TPU:				+/-14.0					
Europium-152			U	0.106	pCi/g				
Uncert:				+/-1.97					
TPU:				+/-1.97					
Europium-154			U	-0.126	pCi/g				
Uncert:				+/-1.37					
TPU:				+/-1.37					
Europium-155			U	-0.0148	pCi/g				
Uncert:				+/-1.41					
TPU:				+/-1.41					
Radium-226			U	0.515	pCi/g				
Uncert:				+/-1.51					
TPU:				+/-1.53					
Radium-228			U	-0.297	pCi/g				
Uncert:				+/-4.53					
TPU:				+/-4.53					
Rad Gas Flow									
Batch 1558681									
QC1203525170 MB									
Total Strontium			U	-0.14	pCi/g			KSD1	04/19/1618:52
Uncert:				+/-0.535					
TPU:				+/-0.535					
**Strontium Carrier	7.77			7.60	mg	REC: 98	(40%-110%)		
QC1203525171 394080003 DUP									
Total Strontium	U	-0.74	U	-0.0905	pCi/g				04/19/1618:52
Uncert:		+/-0.525		+/-0.627		RPD: 0	N/A		
TPU:		+/-0.525		+/-0.627		RER: 1.56	(0-2)		
**Strontium Carrier	7.77	7.70		8.00	mg	REC: 103	(40%-110%)		
QC1203525172 LCS									
Total Strontium	52.5			48.4	pCi/g	REC: 92	(80%-120%)		04/19/1618:50
Uncert:				+/-2.87					
TPU:				+/-12.6					
**Strontium Carrier	7.77			8.00	mg	REC: 103	(40%-110%)		
Rad Liquid Scintillation									
Batch 1556045									
QC1203518194 MB									
Technetium-99			U	0.141	pCi/g			MYM1	04/12/1613:02
Uncert:				+/-0.596					
TPU:				+/-0.596					
**Technetium-99m Tracer	39400			37300	CPM	REC: 95	(30%-105%)		
QC1203518195 393993001 DUP									

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QC Summary

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Parmname			NOM		Sample	Qual	QC	Units	QC Criteria		Range	Analyst	Date Time
Rad Liquid Scintillation													
Batch 1556045													
Technetium-99				U	0.372	U	0.0411	pCi/g					
			Uncert:		+/-0.826		+/-0.750		RPD:	0	N/A		
			TPU:		+/-0.827		+/-0.750		RER:	0.58	(0-2)		
**Technetium-99m Tracer			39400		36600		36300	CPM	REC:	92	(30%-105%)		
QC1203518196	LCS												
Technetium-99			56.8				54.6	pCi/g	REC:	96	(80%-120%)		04/12/1614:07
			Uncert:				+/-3.04						
			TPU:				+/-6.97						
**Technetium-99m Tracer			39400				39200	CPM	REC:	100	(30%-105%)		
Batch 1557505													
QC1203522067	MB												
Nickel-63						U	0.337	pCi/g				CXS7	04/20/1600:13
			Uncert:				+/-3.94						
			TPU:				+/-3.94						
**Nickel Carrier			24.4				16.4	mg	REC:	67	(40%-110%)		
QC1203522068	394080001	DUP											
Nickel-63				U	4.97	U	4.34	pCi/g					04/20/1601:45
			Uncert:		+/-4.42		+/-4.41		RPD:	0	N/A		
			TPU:		+/-4.51		+/-4.49		RER:	0.195	(0-2)		
**Nickel Carrier			24.4		15.3		18.4	mg	REC:	75	(40%-110%)		
QC1203522070	LCS												
Nickel-63			432				470	pCi/g	REC:	109	(80%-120%)		04/19/1601:41
			Uncert:				+/-22.4						
			TPU:				+/-89.6						
**Nickel Carrier			24.4				18.6	mg	REC:	76	(40%-110%)		
Batch 1558440													
QC1203524478	MB												
Tritium						U	2.93	pCi/g				TXJ1	04/18/1617:15
			Uncert:				+/-10.8						
			TPU:				+/-10.9						
QC1203524479	393993001	DUP											
Tritium				U	0.978	U	-3.7	pCi/g					04/18/1617:36
			Uncert:		+/-10.8		+/-10.3		RPD:	0	N/A		
			TPU:		+/-10.8		+/-10.3		RER:	0.616	(0-2)		
QC1203524481	393993001	MS											
Tritium			92.6	U	0.978		94.8	pCi/g	REC:	102	(75%-125%)		04/18/1618:19
			Uncert:		+/-10.8		+/-16.6						
			TPU:		+/-10.8		+/-27.2						
QC1203524483	LCS												
Tritium			91.2				89.8	pCi/g	REC:	99	(80%-120%)		04/18/1619:02
			Uncert:				+/-16.1						
			TPU:				+/-26.0						
Batch 1558446													
QC1203524496	MB												
Carbon-14						U	-0.667	pCi/g				TXJ1	04/22/1609:39
			Uncert:				+/-1.62						
			TPU:				+/-1.62						
QC1203524497	393993001	DUP											
Carbon-14				U	-0.778	U	-0.108	pCi/g					04/22/1610:25

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Liquid Scintillation									
Batch 1558446									
	Uncert:	+/-1.88		+/-1.93					
	TPU:	+/-1.88		+/-1.93		RPD: 0	N/A		
						RER: 0.487	(0-2)		
QC1203524499 393993001 MS									
Carbon-14	138	-0.778	U	138	pCi/g	REC: 100	(75%-125%)		04/22/1611:58
	Uncert:	+/-1.88		+/-4.21					
	TPU:	+/-1.88		+/-11.0					
QC1203524501 LCS									
Carbon-14	128			129	pCi/g	REC: 100	(80%-120%)		04/22/1613:31
	Uncert:			+/-3.93					
	TPU:			+/-10.3					

Notes:

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

The Qualifiers in this report are defined as follows:

*	Duplicate analysis not within control limits
+	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
<	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
>	Result greater than quantifiable range or greater than upper limit of the analysis range
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).
B	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
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.
D	Results are reported from a diluted aliquot of sample.
E	Reported value is estimated due to interferences. See comment in narrative.
M	Duplicate precision not met.
N	Spike Sample recovery is outside control limits.
S	Reported value determined by the Method of Standard Additions (MSA)
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
W	Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
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 acceptence 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.