GEL Laboratories LLC
a member of The GEL Group INC

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January 11, 2021

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

Re: CHPRC SAF I21-007
Work Order: 530295
SDG: GEL530295

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 17, 2020. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

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,

Meredith Boddiford

Meredith Boddiford for
Heather Shaffer
Project Manager

Purchase Order: 300071 - 7C
Chain of Custody: I21-007-185 and I21-007-227
Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company (74393)
CHPRC SAF I21-007
SDG: GEL530295

January 11, 2021

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 December 17, 2020, 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.

Sample Identification
The laboratory received the following samples:

Laboratory Identification	Sample Description
530295001	B3Y982
530295002	B3Y966
530295003	B3Y965

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: Metals and Radiochemistry.

We certify that this package is in compliance with the Analytical Laboratory Services for CH2M Hill Plateau Remediation Company Statement of Work, 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 data package deliverable 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.

Meredith Boddiford

Meredith Boddiford for
Heather Shaffer
Project Manager

Technical Case Narrative
CH2MHill Plateau Remediation Company
SDG #: GEL530295
Work Order #: 530295

Metals

Determination of Metals by ICP

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.

Determination of Metals by ICP-MS

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.

Radiochemistry

SMR_AM241_AEA

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 1204719977 (LCS) was recounted due to a peak shift. The recount is reported.

SMR_PUISO_AEA

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 530295001 (B3Y982) was recounted due to a suspected false positive. The recount is reported.

SMR_COMMON_GEA + SB-125CS-134K-40

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.

SMR_SR_RAD_GPC

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 530295001 (B3Y982) was taken through additional clean-up steps and recounted due to a suspected false positive. The recount is reported.

SMR_PU241_LSC

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.

SMR_SE79_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
Sample 1204719411 (LCS) was recounted due to low recovery. The recount is reported.

SMR_C14_LSC

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.

SMR_TC99_LSC

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.

SMR_TRITIUM_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.

Quality Control (QC) Information

Matrix Spike (MS) Recovery
The Matrix Spike (See Below) did not meet recovery requirements due to the sample activity being greater than five times the spiked nominal concentration.

Sample	Analyte	Value
1204725722 (Non SDG 530077003MS)	Tritium	340* (75%-125%), but result > 5x nominal

Technical Information

Recounts
Samples 1204725720 (MB), 1204725721 (Non SDG 530077003DUP), 1204725722 (Non SDG 530077003MS), 1204725723 (LCS) and 530295001 (B3Y982) were recounted due to a detector lock out condition. The recounts are reported.

Certification Statement

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

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 530295	C.O.C. # I21-007-185 Page 1 of 1

Collector: Lesly Wall CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: I21-007	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: AEA, DECEMBER 2020	**Logbook No.:** HNF-N-506 -116-94	**Ice Chest No.:** GWS-190
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 772388667137
Protocol: SURV	**Priority:** 30 Days	**Offsite Property No.:** N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3Y982	N	W	DEC 15 2020	1216	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B3Y982	N	W			2x1-L G/P	SMR_AM241_AEA; SMR_PU241_LSC; SMR_PUISO_AEA	6 Months	HNO3 to pH <2
B3Y982	N	W			1x250-mL G/P	SMR_C14_LSC	6 Months	None
B3Y982	N	W			1x500-mL G/P	SMR_COMMON_GEA; SMR_SB-125CS-134K-40_GEA	6 Months	HNO3 to pH <2
B3Y982	N	W			1x250-mL G/P	SMR_SE79_LSC	6 Months	HNO3 to pH <2
B3Y982	N	W			1x1-L G/P	SMR_SR_RAD_GPC	6 Months	HNO3 to pH <2
B3Y982	N	W			1x250-mL G/P	SMR_TC99_LSC	6 Months	HNO3 to pH <2
B3Y982	N	W			1x250-mL P	SMR_TRITIUM_LSC	6 Months	None

Relinquished By			Received By		
Print First and Last Name	*Signature*	*Date/Time*	*Print First and Last Name*	*Signature*	*Date/Time*
Lesly Wall CHPRC	Lesly Wall	DEC 15 2020 1320	SSU-1		DEC 15 2020 1320
SSU-1		DEC 16 2020 0630	Troy Bacon CHPRC	Troy L Bacon	DEC 16 2020 0630
Troy Bacon CHPRC	Troy L Bacon	DEC 16 2020 1400	FEDEX		
FED EX			Stacy Boone GEL Laboratories		DEC 17 2020 1020

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

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

GEL530295 January 14, 2021 Rev. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # I21-007-227

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5 3 0 2 9 5

Collector: Lesly Wall CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: I21-007	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: AEA, DECEMBER 2020	**Logbook No.:** HNF-N-506 -116-94	**Ice Chest No.:** GWS-190
Shipped To (Lab): ~~TestAmerica St. Louis~~ GEL	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 772388667137
Protocol: SURV Sal 11/20/20	**Priority:** 30 Days	**Offsite Property No.:** N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3Y966	Y	W	DEC 15 2020	1042	1x500-mL G/P	6010_METALS_ICP: GW 10; 6020_METALS_ICPMS: GW 06	6 Months	HNO3 to pH <2
B3Y965	N	W	DEC 15 2020	1	1x500-mL G/P	6010_METALS_ICP: GW 10; 6020_METALS_ICPMS: GW 06; 6020_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2

Relinquished By			Received By		
Print First and Last Name	*Signature*	*Date/Time*	*Print First and Last Name*	*Signature*	*Date/Time*
Lesly Wall CHPRC	Lesly Wall	DEC 15 2020 1320	SSU-1		DEC 15 2020 1320
SSU-1		DEC 16 2020 0630	Troy Bacon CHPRC	Troy L Bacon	DEC 16 2020 0630
Troy Bacon CHPRC	Troy L Bacon	DEC 16 2020 1400	FEDEX		
FED EX			Stacy Boone GEL Laboratories		DEC 17 2020 1020

Matrix *

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

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

Printed On 10/27/2020

FSR ID = FSR100397

A-6004-842 (REV 4)

GEL530295
January 14, 2021
Rev. 0

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC	SDG/AR/COC/Work Order: 530295
Received By: STACY BOONE	Date Received: DECEMBER 17 2020
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other
	7723 9354 1052 1 c 7723 7253 8780 1 c

Suspected Hazard Information	Yes	No	
			*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?	✓		COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?	✓		Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 300 CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

	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	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP:_____
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR1-20 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	✓			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?			✓	If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes___ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes___ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

7723 8866 7137 1 c 7723 9314 8538 1 c 7723 7988 3156 12 c

PM (or PMA) review: Initials CD Date 12/17/20 Page 1 of 1

GL-CHL-SR-001 Rev 7

Data Review Qualifier Definitions

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

Report Date: 11−JAN−21

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.		
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 analyte was detected in the associated method blank >/= MDC or >5% sample activity.	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	
o	Analyte failed to recover within LCS limits	Radiological	Rad

Laboratory Certifications

List of current GEL Certifications as of 11 January 2021

State	Certification
Alabama	42200
Alaska	17−018
Alaska Drinking Water	SC00012
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
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	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M−SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122021−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	2019−165
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−20−17
Utah NELAP	SC000122020−33
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company
SDG #: GEL530295
Work Order #: 530295

Product: **Determination of Metals by ICP**
Analytical Method: SW846 3005A/6010D
Analytical Procedure: GL-MA-E-013 REV# 31
Analytical Batch: 2074434

Product: **Determination of Metals by ICP-MS**
Analytical Method: SW846 3005A/6020B
Analytical Procedure: GL-MA-E-014 REV# 34
Analytical Batch: 2074501

Preparation Method: SW846 3005A
Preparation Procedure: GL-MA-E-006 REV# 14
Preparation Batches: 2074433 and 2074495

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
530295002	B3Y966
530295003	B3Y965
1204718606	Method Blank (MB)**ICP**
1204718607	Laboratory Control Sample (LCS)
1204718610	530308001(NonSDGL) Serial Dilution (SD)
1204718608	530308001(NonSDGS) Matrix Spike (MS)
1204718609	530308001(NonSDGSD) Matrix Spike Duplicate (MSD)
1204718726	Method Blank (MB)**ICP-MS**
1204718727	Laboratory Control Sample (LCS)
1204718730	530252005(B3Y9P3L) Serial Dilution (SD)
1204718728	530252005(B3Y9P3S) Matrix Spike (MS)
1204718729	530252005(B3Y9P3SD) Matrix Spike Duplicate (MSD)

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.

Calibration Information

ICSA/ICSAB Statement
For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

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

CPRC002 CH2MHill Plateau Remediation Company (74393)

Client SDG: GEL530295 GEL Work Order: 530295

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

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).

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.

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: Edmund Frampton**

Date: 05 JAN 2021 **Title: Team Leader**

Sample Data Summary

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL530295 **CONTRACT:** CPRC0I21007 **METHOD TYPE:** SW846

SAMPLE ID: 530295001 **BASIS:** As Received **DATE COLLECTED** 15−DEC−20

CLIENT ID: B3Y982 **LEVEL:** Low **DATE RECEIVED** 17−DEC−20

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−61−1	Uranium	9.02	ug/L		0.0670	0.200	15.0	1	MS	PRB	12/23/20 02:04	201222−3	2074501

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2074501	2074495	SW846 3005A	50	mL	50	mL	12/22/20	SM1

***Analytical Methods:**

MS **SW846 3005A/6020B**

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL530295 **CONTRACT:** CPRC0I21007 **METHOD TYPE:** SW846

SAMPLE ID: 530295002 **BASIS:** As Received **DATE COLLECTED** 15−DEC−20

CLIENT ID: B3Y966 **LEVEL:** Low **DATE RECEIVED** 17−DEC−20

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−47−3	Chromium	3.00	ug/L	U	3.00	10.0	10.0	1	MS	PRB	12/23/20 02:07	201222−3	2074501
7439−89−6	Iron	30.0	ug/L	U	30.0	100	100	1	P	HSC	01/04/21 13:31	010421−1	2074434
7439−96−5	Manganese	2.33	ug/L	B	1.00	5.00	5.00	1	MS	PRB	12/23/20 02:07	201222−3	2074501
7439−98−7	Molybdenum	1.09	ug/L		0.200	1.00	1.00	1	MS	PRB	12/22/20 21:45	201222−2	2074501
7440−02−0	Nickel	10.9	ug/L		0.600	2.00	2.00	1	MS	PRB	12/23/20 02:07	201222−3	2074501

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2074434	2074433	SW846 3005A	50	mL	50	mL	12/22/20	SM1
2074501	2074495	SW846 3005A	50	mL	50	mL	12/22/20	SM1

***Analytical Methods:**

P **SW846 3005A/6010D**

MS **SW846 3005A/6020B**

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL530295 **CONTRACT:** CPRC0I21007 **METHOD TYPE:** SW846

SAMPLE ID: 530295003 **BASIS:** As Received **DATE COLLECTED** 15−DEC−20

CLIENT ID: B3Y965 **LEVEL:** Low **DATE RECEIVED** 17−DEC−20

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−47−3	Chromium	13.7	ug/L		3.00	10.0	10.0	1	MS	PRB	12/23/20 02:11	201222−3	2074501
7439−89−6	Iron	329	ug/L		30.0	100	100	1	P	HSC	01/04/21 13:35	010421−1	2074434
7439−96−5	Manganese	2.80	ug/L	B	1.00	5.00	5.00	1	MS	PRB	12/23/20 02:11	201222−3	2074501
7439−98−7	Molybdenum	1.15	ug/L		0.200	1.00	1.00	1	MS	PRB	12/22/20 21:49	201222−2	2074501
7440−02−0	Nickel	13.8	ug/L		0.600	2.00	2.00	1	MS	PRB	12/23/20 02:11	201222−3	2074501
7440−61−1	Uranium	27.5	ug/L		0.0670	0.200	0.200	1	MS	PRB	12/23/20 02:11	201222−3	2074501

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2074434	2074433	SW846 3005A	50	mL	50	mL	12/22/20	SM1
2074501	2074495	SW846 3005A	50	mL	50	mL	12/22/20	SM1

***Analytical Methods:**

P **SW846 3005A/6010D**
MS **SW846 3005A/6020B**

Quality Control Summary

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

QC Summary

Report Date: January 5, 2021

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

Contact: **Mr. Scot Fitzgerald**

Workorder: **530295**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 2074501											
QC1204718727 LCS											
Chromium	50.0				47.8	ug/L		95.5	(80%-120%)	PRB	12/23/20 01:18
Manganese	50.0				46.7	ug/L		93.3	(80%-120%)		
Molybdenum	50.0				50.9	ug/L		102	(80%-120%)		12/22/20 20:55
Nickel	50.0				48.0	ug/L		96	(80%-120%)		12/23/20 01:18
Uranium	50.0				46.1	ug/L		92.2	(80%-120%)		
QC1204718726 MB											
Chromium				U	3.00	ug/L					12/23/20 01:14
Manganese				U	1.00	ug/L					
Molybdenum				U	0.200	ug/L					12/22/20 20:51
Nickel				U	0.600	ug/L					12/23/20 01:14
Uranium				U	0.0670	ug/L					
QC1204718728 530252005 MS											
Chromium	50.0	B	3.70		51.9	ug/L		96.4	(75%-125%)		12/23/20 01:36
Manganese	50.0	U	1.00		47.0	ug/L		92.5	(75%-125%)		
Molybdenum	50.0		2.05		57.6	ug/L		111	(75%-125%)		12/22/20 21:13

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

QC Summary

Workorder: **530295**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 2074501											
Nickel	50.0		2.47		49.3	ug/L		93.6	(75%-125%)	PRB	12/23/20 01:36
Uranium	50.0		12.1		59.8	ug/L		95.3	(75%-125%)		
QC1204718729 530252005 MSD											
Chromium	50.0	B	3.70		54.0	ug/L	4.02	101	(0%-20%)		12/23/20 01:39
Manganese	50.0	U	1.00		48.6	ug/L	3.23	95.5	(0%-20%)		
Molybdenum	50.0		2.05		56.9	ug/L	1.16	110	(0%-20%)		12/22/20 21:16
Nickel	50.0		2.47		50.0	ug/L	1.39	95	(0%-20%)		12/23/20 01:39
Uranium	50.0		12.1		59.7	ug/L	0.139	95.2	(0%-20%)		
QC1204718730 530252005 SDILT											
Chromium		B	3.70	DU	15.0	ug/L	N/A		(0%-20%)		12/23/20 01:46
Manganese		U	0.819	DU	5.00	ug/L	N/A		(0%-20%)		
Molybdenum			2.05	BD	0.519	ug/L	26.6		(0%-20%)		12/22/20 21:23
Nickel			2.47	DU	3.00	ug/L	N/A		(0%-20%)		12/23/20 01:46
Uranium			12.1	D	2.56	ug/L	5.51		(0%-20%)		
Metals Analysis-ICP											
Batch 2074434											
QC1204718607 LCS											
Iron	5000				4900	ug/L		98	(80%-120%)	HSC	01/04/21 12:45

GEL LABORATORIES LLC
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QC Summary

Workorder: **530295**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 2074434											
QC1204718606 MB											
Iron				U	30.0	ug/L				HSC	01/04/21 12:41
QC1204718608 530308001 MS											
Iron	5000	U	30.0		4890	ug/L		97.9	(75%-125%)		01/04/21 12:52
QC1204718609 530308001 MSD											
Iron	5000	U	30.0		4980	ug/L	1.8	99.6	(0%-20%)		01/04/21 12:55
QC1204718610 530308001 SDILT											
Iron		U	-10.7	DU	150	ug/L	N/A		(0%-20%)		01/04/21 12:58

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: **530295**

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.

Radiological Analysis

Case Narrative

Radiochemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company
SDG #: GEL530295
Work Order #: 530295

Product: **SMR_AM241_AEA**
Analytical Method: AM241CMISO_AEA
Analytical Procedure: GL-RAD-A-011 REV# 28
Analytical Batch: 2075164

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204719975	Method Blank (MB)
1204719976	530155002(NonSDG) Sample Duplicate (DUP)
1204719977	Laboratory Control Sample (LCS)

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

Data Summary:

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

Technical Information

Recounts
Sample 1204719977 (LCS) was recounted due to a peak shift. The recount is reported.

Product: **SMR_PUISO_AEA**
Analytical Method: PUISO_AEA
Analytical Procedure: GL-RAD-A-011 REV# 28
Analytical Batch: 2075165

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204719978	Method Blank (MB)
1204719979	530155002(NonSDG) Sample Duplicate (DUP)
1204719980	Laboratory Control Sample (LCS)

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

Data Summary:

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

Technical Information

Recounts
Sample 530295001 (B3Y982) was recounted due to a suspected false positive. The recount is reported.

Product: **SMR_COMMON_GEA + SB-125CS-134K-40**
Analytical Method: GEA
Analytical Procedure: GL-RAD-A-013 REV# 27
Analytical Batch: 2074258

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204718230	Method Blank (MB)
1204718231	530155002(NonSDG) Sample Duplicate (DUP)
1204718232	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: **SMR_SR_RAD_GPC**
Analytical Method: SR_RAD_GPC
Analytical Procedure: GL-RAD-A-004 REV# 21
Analytical Batch: 2075260

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204720213	Method Blank (MB)
1204720214	530308010(NonSDG) Sample Duplicate (DUP)
1204720215	Laboratory Control Sample (LCS)

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

Data Summary:

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

Technical Information

Recounts
Sample 530295001 (B3Y982) was taken through additional clean-up steps and recounted due to a suspected false positive. The recount is reported.

Product: **SMR_PU241_LSC**
Analytical Method: PU241_LSC
Analytical Procedure: GL-RAD-A-035 REV# 21
Analytical Batch: 2075166

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204719981	Method Blank (MB)
1204719982	530155002(NonSDG) Sample Duplicate (DUP)
1204719983	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: **SMR_SE79_LSC**
Analytical Method: SE79_LSC
Analytical Procedure: GL-RAD-A-031 REV# 13
Analytical Batch: 2074904

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204719409	Method Blank (MB)
1204719410	530088004(B3Y936) Sample Duplicate (DUP)
1204719411	Laboratory Control Sample (LCS)

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

Data Summary:

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

Technical Information

Recounts
Sample 1204719411 (LCS) was recounted due to low recovery. The recount is reported.

Product: **SMR_C14_LSC**
Analytical Method: C14_LSC
Analytical Procedure: GL-RAD-A-003 REV# 16
Analytical Batch: 2074919

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204719455	Method Blank (MB)
1204719456	530075009(NonSDG) Sample Duplicate (DUP)
1204719457	530075009(NonSDG) Matrix Spike (MS)
1204719458	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: **SMR_TC99_LSC**
Analytical Method: TC99_LSC
Analytical Procedure: GL-RAD-A-059 REV# 5
Analytical Batch: 2075449

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204720668	Method Blank (MB)
1204720669	530075007(NonSDG) Sample Duplicate (DUP)
1204720670	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: **SMR_TRITIUM_LSC**
Analytical Method: TRITIUM_LSC
Analytical Procedure: GL-RAD-A-002 REV# 23
Analytical Batch: 2077971

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

GEL Sample ID#	Client Sample Identification
530295001	B3Y982
1204725720	Method Blank (MB)
1204725721	530077003(NonSDG) Sample Duplicate (DUP)
1204725722	530077003(NonSDG) Matrix Spike (MS)
1204725723	Laboratory Control Sample (LCS)

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

Data Summary:

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

Quality Control (QC) Information

Matrix Spike (MS) Recovery
The Matrix Spike (See Below) did not meet recovery requirements due to the sample activity being greater than five times the spiked nominal concentration.

Sample	Analyte	Value
1204725722 (Non SDG 530077003MS)	Tritium	340* (75%-125%), but result > 5x nominal

Technical Information

Recounts
Samples 1204725720 (MB), 1204725721 (Non SDG 530077003DUP), 1204725722 (Non SDG 530077003MS), 1204725723 (LCS) and 530295001 (B3Y982) were recounted due to a detector lock out condition. The recounts are reported.

Certification Statement

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

GEL LABORATORIES LLC

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

Qualifier Definition Report
for

CPRC002 CH2MHill Plateau Remediation Company (74393)

Client SDG: GEL530295 GEL Work Order: 530295

The Qualifiers in this report are defined as follows:

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.

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: 13 JAN 2021 **Title: Group Leader**

Sample Data Summary

Rad

Certificate of Analysis
Sample Summary

SDG Number:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2075164**	**Method:**	**AM241CMISO_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**01/02/2021 11:11**	**Analyst:**	**MXS2**	**Instrument:**	**1092**
Data File:	**S0530295001_AM.1A.gcnf**	**Aliquot:**	**0.4 L**	**Count Time:**	**240 min**
Prep Batch:	**2075164**	**Prep Method:**	**DOE EML HASL-300, Am-05**		
Prep Date:	**12/28/2020 09:29**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14596-10-2	Americium-241	U	0.0179	pCi/L	+/-0.0801	0.0802	0.157	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	3.97	5.54	pCi/L	71.6	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2075165**	**Method:**	**PUISO_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**01/03/2021 11:41**	**Analyst:**	**MXS2**	**Instrument:**	**1067**
Data File:	**S0530295001_PU.1B.gcnf**	**Aliquot:**	**0.4 L**	**Count Time:**	**119.9998 min**
Prep Batch:	**2075165**	**Prep Method:**	**DOE EML HASL-300, Pu-11-**		
Prep Date:	**12/28/2020 09:29**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13981-16-3	Plutonium-238	U	-0.0561	pCi/L	+/-0.0722	0.0724	0.251	1.00
OER-100-70	Plutonium-239/240	U	0.131	pCi/L	+/-0.162	0.164	0.221	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Plutonium-242 Tracer	4.90	4.81	pCi/L	102	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2075166**	**Method:**	**PU241_LSC**	**SOP Ref:**	**GL-RAD-A-035**
Run Date:	**01/04/2021 20:07**	**Analyst:**	**MXS2**	**Instrument:**	**LSCMOCHA**
Data File:	**PU2075166.xls**	**Aliquot:**	**0.4 L**	**Count Time:**	**45 min**
Prep Batch:	**2075166**	**Prep Method:**	**DOE EML HASL-300, Pu-11-**		
Prep Date:	**12/28/2020 09:29**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14119-32-5	Plutonium-241	U	-10.6	pCi/L	+/-8.00	8.00	14.2	25.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Plutonium-242 Tracer	4.90	4.81	pCi/L	102	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2075260**	**Method:**	**SR_RAD_GPC**	**SOP Ref:**	**GL-RAD-A-004**
Run Date:	**01/02/2021 15:04**	**Analyst:**	**JXC9**	**Instrument:**	**PIC1B**
Data File:	**S2075260r3.xls**	**Aliquot:**	**300 mL**	**Count Time:**	**70 min**
Prep Batch:	**2075260**	**Prep Method:**	**EPA 905.0 Modified/DOE RP5**		
Prep Date:	**12/28/2020 09:31**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10098-97-2	Strontium-90	U	0.000688	pCi/L	+/-1.02	1.02	1.90	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Strontium Carrier	2.20	4.29	mg	51.3	(40%-110%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2074258**	**Method:**	**GEA**	**SOP Ref:**	**GL-RAD-A-013**
Run Date:	**12/18/2020 06:06**	**Analyst:**	**RYH1**	**Instrument:**	**GAM03**
Data File:	**G530295001.CNF;1**	**Aliquot:**	**0.5 L**	**Count Time:**	**180 min**
Prep Batch:	**2074258**	**Prep Method:**	**EPA 901.1**		
Prep Date:	**12/17/2020 21:18**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14234-35-6	Antimony-125	U	-4.84	pCi/L	+/-11.5	11.7	19.5	
13967-70-9	Cesium-134	U	-6.09	pCi/L	+/-4.93	5.67	6.64	
10045-97-3	Cesium-137	U	-0.973	pCi/L	+/-4.01	4.03	7.38	15.0
10198-40-0	Cobalt-60	U	1.14	pCi/L	+/-4.32	4.35	8.94	
14683-23-9	Europium-152	U	-0.266	pCi/L	+/-11.6	11.6	20.6	
15585-10-1	Europium-154	U	-2.25	pCi/L	+/-12.2	12.3	21.5	
14391-16-3	Europium-155	U	-2.77	pCi/L	+/-14.9	15.0	24.6	
13966-00-2	Potassium-40	U	-51.5	pCi/L	+/-57.8	62.5	102	

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.
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:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2074904**	**Method:**	**SE79_LSC**	**SOP Ref:**	**GL-RAD-A-031**
Run Date:	**01/08/2021 15:14**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCMOCHA**
Data File:	**SE2074904R.xls**	**Aliquot:**	**0.1 L**	**Count Time:**	**30 min**
Prep Batch:	**2074904**	**Prep Method:**	**NERC ORD**		
Prep Date:	**01/07/2021 08:43**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
15758-45-9	Selenium-79	U	-6.01	pCi/L	+/-15.4	15.4	26.7	50.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Selenium Carrier	18.6	20.0	mg	93	(40%-110%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2074919**	**Method:**	**C14_LSC**	**SOP Ref:**	**GL-RAD-A-003**
Run Date:	**01/07/2021 20:27**	**Analyst:**	**EW3**	**Instrument:**	**LSCBLUE**
Data File:	**C2074919.xls**	**Aliquot:**	**100 mL**	**Count Time:**	**15 min**
Prep Batch:	**2074919**	**Prep Method:**	**EPA EERF C-01 Modified**		
Prep Date:	**01/07/2021 13:23**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14762-75-5	Carbon-14	U	-1.68	pCi/L	+/-16.7	16.7	29.4	50.0

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.
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:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2075449**	**Method:**	**TC99_LSC**	**SOP Ref:**	**GL-RAD-A-059**
Run Date:	**12/27/2020 17:13**	**Analyst:**	**JJ3**	**Instrument:**	**LSCYELLOW**
Data File:	**E2075449.xls**	**Aliquot:**	**100 mL**	**Count Time:**	**15 min**
Prep Batch:	**2075449**	**Prep Method:**	**DOE EML HASL-300, Tc-02-**		
Prep Date:	**12/21/2020 15:58**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99	U	-15.1	pCi/L	+/-23.8	23.8	43.0	50.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	4.01E+05	4.54E+05	CPM	88.3	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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:	**GEL530295**	**Client:**	**CPRC002**	**Project:**	**CPRC0I21007**
Lab Sample ID:	**530295001**	**Date Collected:**	**12/15/2020 12:16**	**Matrix:**	**WATER**
		Date Received:	**12/17/2020 10:20**		
Client ID:	**B3Y982**			**Prep Basis:**	**"As Received"**
Batch ID:	**2077971**	**Method:**	**TRITIUM_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**01/10/2021 20:45**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCYELLOW**
Data File:	**T2077971R.xls**	**Aliquot:**	**50 mL**	**Count Time:**	**70 min**
Prep Batch:	**2077971**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**01/08/2021 11:14**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium		1040	pCi/L	+/-242	315	331	400

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.
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
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QC Summary

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

Workorder: 530295

Report Date: January 13, 2021

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch 2075164									
QC1204719975 MB									
Americium-241			U	-0.0111	pCi/L			MXS2	01/02/2111:11
	Uncert:			+/-0.0337					
	TPU:			+/-0.0337					
**Americium-243 Tracer	5.54			4.98	pCi/L	REC: 90	(30%-105%)		
	Uncert:			+/-0.571					
	TPU:			+/-0.886					
QC1204719976 530155002 DUP									
Americium-241		U -0.0147	U	0.000865	pCi/L				
	Uncert:	+/-0.0633		+/-0.0641		RPD: 0	N/A		
	TPU:	+/-0.0633		+/-0.0642		RER: 0.338	(0-2)		
**Americium-243 Tracer	5.54	4.39		3.71	pCi/L	REC: 67	(30%-105%)		
	Uncert:	+/-0.596		+/-0.676					
	TPU:	+/-0.918		+/-1.02					
QC1204719977 LCS									
Americium-241	4.93			4.67	pCi/L	REC: 94.7	(80%-120%)		01/05/2117:13
	Uncert:			+/-0.514					
	TPU:			+/-0.761					
**Americium-243 Tracer	5.54			4.99	pCi/L	REC: 90	(30%-105%)		
	Uncert:			+/-0.558					
	TPU:			+/-0.869					
Batch 2075165									
QC1204719978 MB									
Plutonium-238			U	-0.0569	pCi/L			MXS2	01/02/2111:07
	Uncert:			+/-0.0550					
	TPU:			+/-0.0551					
Plutonium-239/240			U	0.0983	pCi/L				
	Uncert:			+/-0.115					
	TPU:			+/-0.116					
**Plutonium-242 Tracer	4.81			3.79	pCi/L	REC: 79	(30%-105%)		
	Uncert:			+/-0.634					
	TPU:			+/-0.935					
QC1204719979 530155002 DUP									
Plutonium-238		U 0.0189	U	0.0190	pCi/L				
	Uncert:	+/-0.0645		+/-0.0648		RPD: 0	N/A		
	TPU:	+/-0.0646		+/-0.0648		RER: 0.00142	(0-2)		
Plutonium-239/240		U -0.00871	U	0.0248	pCi/L				
	Uncert:	+/-0.0385		+/-0.0852		RPD: 0	N/A		
	TPU:	+/-0.0386		+/-0.0852		RER: 0.701	(0-2)		
**Plutonium-242 Tracer	4.81	3.88		4.54	pCi/L	REC: 94	(30%-105%)		
	Uncert:	+/-0.581		+/-0.585					
	TPU:	+/-0.863		+/-0.869					
QC1204719980 LCS									
Plutonium-238			U	0.0433	pCi/L				
	Uncert:			+/-0.0624					

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QC Summary

Workorder: 530295

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch 2075165									
	TPU:			+/-0.0626					
Plutonium-239/240	4.96			4.83	pCi/L	REC: 97.4	(80%-120%)		
	Uncert:			+/-0.543					
	TPU:			+/-0.812					
**Plutonium-242 Tracer	4.81			4.39	pCi/L	REC: 91	(30%-105%)		
	Uncert:			+/-0.540					
	TPU:			+/-0.808					
Batch 2075166									
QC1204719981 MB									
Plutonium-241			U	-14.0	pCi/L			MXS2	01/05/2104:15
	Uncert:			+/-10.5					
	TPU:			+/-10.5					
**Plutonium-242 Tracer	4.81			3.79	pCi/L	REC: 79	(30%-105%)		
	Uncert:			+/-0.634					
	TPU:			+/-0.935					
QC1204719982 530155002 DUP									
Plutonium-241	U	-2.01	U	-4.35	pCi/L				01/05/2105:02
	Uncert:	+/-10.3		+/-8.98		RPD: 0	N/A		
	TPU:	+/-10.3		+/-8.98		RER: 0.336	(0-2)		
**Plutonium-242 Tracer	4.81	3.88		4.54	pCi/L	REC: 94	(30%-105%)		
	Uncert:	+/-0.581		+/-0.585					
	TPU:	+/-0.863		+/-0.869					
QC1204719983 LCS									
Plutonium-241	391			350	pCi/L	REC: 89.5	(80%-120%)		01/05/2105:48
	Uncert:			+/-17.8					
	TPU:			+/-77.3					
**Plutonium-242 Tracer	4.81			3.71	pCi/L	REC: 77	(30%-105%)		
	Uncert:			+/-0.601					
	TPU:			+/-0.890					
Rad Gamma Spec									
Batch 2074258									
QC1204718230 MB									
Antimony-125			U	-2.57	pCi/L			RYH1	12/18/2007:36
	Uncert:			+/-11.7					
	TPU:			+/-11.8					
Cesium-134			U	-1.27	pCi/L				
	Uncert:			+/-5.47					
	TPU:			+/-5.50					
Cesium-137			U	1.19	pCi/L				
	Uncert:			+/-4.08					
	TPU:			+/-4.12					
Cobalt-60			U	4.60	pCi/L				
	Uncert:			+/-5.94					
	TPU:			+/-6.31					
Europium-152			U	2.33	pCi/L				
	Uncert:			+/-13.9					
	TPU:			+/-13.9					
Europium-154			U	3.22	pCi/L				
	Uncert:			+/-15.0					

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QC Summary

Workorder: **530295**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gamma Spec									
Batch 2074258									
	TPU:			+/-15.0					
Europium-155			U	-13.0	pCi/L				
	Uncert:			+/-14.6					
	TPU:			+/-15.7					
Potassium-40			U	-5.47	pCi/L				
	Uncert:			+/-60.5					
	TPU:			+/-60.5					
QC1204718231 530155002 DUP									
Antimony-125	U	1.55	U	1.85	pCi/L				12/18/2007:37
	Uncert:	+/-9.72		+/-12.3		RPD:	0	N/A	
	TPU:	+/-9.74		+/-12.3		RER:	0.037	(0-2)	
Cesium-134	U	1.61	U	1.59	pCi/L				
	Uncert:	+/-4.07		+/-4.44		RPD:	0	N/A	
	TPU:	+/-4.14		+/-4.50		RER:	0.00545	(0-2)	
Cesium-137	U	0.0584	U	-0.650	pCi/L				
	Uncert:	+/-3.61		+/-5.09		RPD:	0	N/A	
	TPU:	+/-3.61		+/-5.10		RER:	0.222	(0-2)	
Cobalt-60	U	-0.767	U	0.502	pCi/L				
	Uncert:	+/-3.61		+/-5.04		RPD:	0	N/A	
	TPU:	+/-3.63		+/-5.04		RER:	0.401	(0-2)	
Europium-152	U	0.0528	U	-0.929	pCi/L				
	Uncert:	+/-10.5		+/-14.4		RPD:	0	N/A	
	TPU:	+/-10.5		+/-14.5		RER:	0.108	(0-2)	
Europium-154	U	-5.15	U	12.0	pCi/L				
	Uncert:	+/-10.1		+/-13.9		RPD:	0	N/A	
	TPU:	+/-10.4		+/-15.0		RER:	1.85	(0-2)	
Europium-155	U	5.66	U	1.08	pCi/L				
	Uncert:	+/-13.1		+/-14.1		RPD:	0	N/A	
	TPU:	+/-13.4		+/-14.1		RER:	0.461	(0-2)	
Potassium-40	U	-73.8	U	-72.1	pCi/L				
	Uncert:	+/-53.0		+/-59.1		RPD:	0	N/A	
	TPU:	+/-62.9		+/-67.8		RER:	0.0356	(0-2)	
QC1204718232 LCS									
Americium-241	1.09E+05			1.18E+05	pCi/L	REC:	107	(80%-120%)	12/18/2006:42
	Uncert:			+/-3130					
	TPU:			+/-13600					
Antimony-125			U	-6.43	pCi/L				
	Uncert:			+/-447					
	TPU:			+/-447					
Cesium-134			U	152	pCi/L				
	Uncert:			+/-167					
	TPU:			+/-181					
Cesium-137	38800			41000	pCi/L	REC:	106	(80%-120%)	
	Uncert:			+/-831					
	TPU:			+/-3500					
Cobalt-60	24000			25200	pCi/L	REC:	105	(80%-120%)	
	Uncert:			+/-838					
	TPU:			+/-2520					
Europium-152			U	104	pCi/L				
	Uncert:			+/-398					

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QC Summary

Workorder: **530295**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gamma Spec									
Batch 2074258									
	TPU:			+/-401					
Europium-154			U	-11.2	pCi/L				
	Uncert:			+/-276					
	TPU:			+/-276					
Europium-155			U	469	pCi/L				
	Uncert:			+/-390					
	TPU:			+/-446					
Potassium-40			U	-266	pCi/L				
	Uncert:			+/-658					
	TPU:			+/-669					
Rad Gas Flow									
Batch 2075260									
QC1204720213 MB									
Strontium-90			U	0.166	pCi/L			JXC9	12/29/2013:20
	Uncert:			+/-0.795					
	TPU:			+/-0.796					
**Strontium Carrier	4.29			4.20	mg	REC:	98	(40%-110%)	
QC1204720214 530308010 DUP									
Strontium-90	U	-0.354	U	-0.442	pCi/L				12/29/2013:20
	Uncert:	+/-0.685		+/-0.666		RPD:	0	N/A	
	TPU:	+/-0.685		+/-0.667		RER:	0.18	(0-2)	
**Strontium Carrier	4.29	3.50		4.40	mg	REC:	103	(40%-110%)	
QC1204720215 LCS									
Strontium-90	72.3			61.4	pCi/L	REC:	84.9	(80%-120%)	12/29/2013:20
	Uncert:			+/-4.12					
	TPU:			+/-14.9					
**Strontium Carrier	4.29			3.80	mg	REC:	89	(40%-110%)	
Rad Liquid Scintillation									
Batch 2074904									
QC1204719409 MB									
Selenium-79			U	-8.28	pCi/L			TXJ1	01/08/2117:50
	Uncert:			+/-15.0					
	TPU:			+/-15.0					
**Selenium Carrier	20.0			19.1	mg	REC:	96	(40%-110%)	
QC1204719410 530088004 DUP									
Selenium-79	U	-6.35	U	-3.13	pCi/L				01/08/2118:21
	Uncert:	+/-16.0		+/-15.2		RPD:	0	N/A	
	TPU:	+/-16.0		+/-15.2		RER:	0.286	(0-2)	
**Selenium Carrier	20.0	18.0		19.0	mg	REC:	95	(40%-110%)	
QC1204719411 LCS									
Selenium-79	5960			5530	pCi/L	REC:	92.9	(75%-125%)	01/11/2105:48
	Uncert:			+/-114					
	TPU:			+/-161					
**Selenium Carrier	20.0			18.9	mg	REC:	95	(40%-110%)	
Batch 2074919									
QC1204719455 MB									
Carbon-14			U	-10.7	pCi/L			EW3	01/07/2120:44
	Uncert:			+/-16.2					
	TPU:			+/-16.2					

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QC Summary

Workorder: **530295**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Liquid Scintillation									
Batch 2074919									
QC1204719456 530075009 DUP									
Carbon-14	U	10.0	U	2.31	pCi/L				01/07/2118:35
Uncert:		+/-23.9		+/-23.7		RPD: 0	N/A		
TPU:		+/-24.0		+/-23.7		RER: 0.45	(0-2)		
QC1204719457 530075009 MS									
Carbon-14	1510 U	10.0		1450	pCi/L	REC: 95.8	(75%-125%)		01/07/2121:00
Uncert:		+/-23.9		+/-77.9					
TPU:		+/-24.0		+/-280					
QC1204719458 LCS									
Carbon-14	755			748	pCi/L	REC: 99.1	(80%-120%)		01/07/2121:17
Uncert:				+/-39.7					
TPU:				+/-145					
Batch 2075449									
QC1204720668 MB									
Technetium-99			U	-23.9	pCi/L			JJ3	12/27/2020:27
Uncert:				+/-21.9					
TPU:				+/-21.9					
**Technetium-99m Tracer	4.54E+05			4.18E+05	CPM	REC: 92	(30%-105%)		
QC1204720669 530075007 DUP									
Technetium-99	U	-2.64	U	-8.50	pCi/L				12/27/2020:43
Uncert:		+/-24.4		+/-25.4		RPD: 0	N/A		
TPU:		+/-24.4		+/-25.4		RER: 0.326	(0-2)		
**Technetium-99m Tracer	4.54E+05	3.88E+05		3.75E+05	CPM	REC: 83	(30%-105%)		
QC1204720670 LCS									
Technetium-99	756			719	pCi/L	REC: 95.1	(80%-120%)		12/27/2020:59
Uncert:				+/-45.4					
TPU:				+/-91.7					
**Technetium-99m Tracer	4.54E+05			4.21E+05	CPM	REC: 93	(30%-105%)		
Batch 2077971									
QC1204725720 MB									
Tritium			U	211	pCi/L			TXJ1	01/11/2102:43
Uncert:				+/-197					
TPU:				+/-202					
QC1204725721 530077003 DUP									
Tritium		1.79E+05		2.00E+05	pCi/L				01/11/2103:54
Uncert:		+/-3520		+/-2150		RPD: 11	(0%-20%)		
TPU:		+/-34800		+/-38700		RER: 0.784	(0-2)		
QC1204725722 530077003 MS									
Tritium	5060	1.79E+05		1.96E+05	pCi/L	REC: N/A			01/11/2105:06
Uncert:		+/-3520		+/-4510					
TPU:		+/-34800		+/-38200					
QC1204725723 LCS									
Tritium	5050			5320	pCi/L	REC: 105	(80%-120%)		01/11/2105:22
Uncert:				+/-821					
TPU:				+/-1320					

Notes:

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

The Qualifiers in this report are defined as follows:

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QC Summary

Workorder: **530295**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date	Time

*	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).
B	The analyte was detected in the associated method blank >/= MDC or >5% sample activity.
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
o	Analyte failed to recover within LCS limits

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.