

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-23370-1

TestAmerica Sample Delivery Group: SL2590
Client Project/Site: F17-009

For:

CH2M Hill Plateau Remediation Company
PO BOX 1600, MS H8-41
Richland, Washington 99352

Attn: Mr. Scot Fitzgerald



Authorized for release by:
8/18/2017 3:08:00 PM

Jayna Awalt, Project Manager II
(314)298-8566
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Job ID: 160-23370-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
August 18, 2017
Attention: Scot Fitzgerald

SDG : SL2590
Number of Samples : 7 samples / 2 water extractions
Sample Matrix : Soil
Data Deliverable : Summary
Date SDG Closed : July 18, 2017

II. Introduction

On July 18, 7 samples were received by TestAmerica - St. Louis for analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: F17-009

Due to FedEx delay, cooler was received at 12.7 C. Cooler contained 4 ice packs that were thawed. Per SIR17-0836, the analyses were performed and reported.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with an LCS/LCS duplicate.

Note: For Metals analyses, per standard practice, all 6020 water and soil samples are initially prepared at 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate a narrative note; however, they are flagged "D" due to a limitation in the LIMS.

For solid matrices, all Metals analyses (including Hg) use a Standard Reference Material for the Laboratory Control Sample (LCS). Certificate for this source material may be obtained from TASL.

For Anion analysis, samples have been started at a 2x dilution per CHPRC direction. The samples are flagged accordingly with a "D" flag if sample concentration is above the MDL/RL. Non-conformance will be included in the below section only if dilution is greater than 2x.

For WTPH methods, the lab utilizes method 8015B. Per CHPRC direction, the method name in the electronic data has been modified to read WTPH in the place of 8015B.

Per CHPRC direction, due to the short hold times for Nitrate, Nitrite and Phosphate by IC (48 hours) as well as pH analysis (24 hours), a SIR request is not needed when samples are run outside 1x hold but within 2x hold. A narrative comment will be included below if a sample is run outside the lab-specified hold time for waters.



Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

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Laboratory: TestAmerica St. Louis (Continued)

For extractable and volatile organic analyses, several analytes are considered poor performers and will not meet CHPRC QC limits. Per CHPRC direction, the lab's statistical limits have been reported. Excursions outside these statistical limits will include a non-conformance in the sections below.

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term "Detection Limit" used in the analytical data report refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** - For inorganic/radiochemistry analyses, the sample result is greater than the MDL/MDC but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte above the MDL/RL and Method Blank is greater than 5% of the sample concentration.
- **B** - For inorganics and radiochemistry, Method Blank reported above the MDC/MDL.
- **J** - For organic analyses, the sample is estimated and less than the RL. If on Method Blank, indicates Method Blank contamination.
- **C** - For inorganics and radiochemistry analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL/RL and Method Blank concentration is greater than 5% of the sample concentration.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For ICPMS Metals analyses, per standard practice, all samples are initially prepared at a 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner and will not be narrated below. Only dilutions above 2x will be narrated and considered a true dilution for these samples.
- **N** - For inorganics, rad and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** - For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.
- **o** - For all analyses, the LCS (LCSD) recoveries are outside QC limits.
- **P** - For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.
- **X**- Organics and Anions IC - Sample concentration over calibration and/or surrogate recovery outside QC limits.
- **X**- Inorganics - The analyte present in the original sample is > 4x the spike concentration.
- **X**- Radiochemistry - Carrier or Tracer recovery is outside limits.
- **Z**- Sample was prepped or analyzed beyond the specified sample holding time.
- **y** - RPD is outside established limits.

Water Extraction

As per client request, the following soil samples are to be run as water extractions necessitating a DI-prep to be performed. Samples were prepped at 1:1 ratio in a 1L poly container. Amount of sample and DI water used listed in attached DI-prep document in the Level IV data. Samples were then shaken by hand to break up any large soil clumps before placing on a shaker table for 15 minutes. Samples were then allowed to settle for 1 hour before decanting the supernatant into a new 500 mL poly container. After preparation, samples were made available to the lab for analysis. B3BMR4 (160-23370-7), B3BMN1 (160-23370-9) and B3BMV1 (160-23591-5)

Semivolatiles

Batch: 319010

The continuing calibration verification (CCV) associated with batch 160-319010 recovered above the upper control limit for surrogate Nitrobenzene-d5. The QC controls and all samples associated with this CCV were within the control limits for the affected analyte; therefore, the data have been reported. The following samples are impacted: B3BMN0 (160-23370-1), B3BMN7 (160-23370-2), B3BMP2 (160-23370-3), B3BMP7 (160-23370-4), B3BMR3 (160-23370-5), (CCVIS 160-319010/3), (LCS 160-318471/2-A), (MB 160-318471/1-A),

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
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Job ID: 160-23370-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

(160-23370-B-1-B MS) and (160-23370-B-1-C MSD).

The surrogate recovery for the Blank was outside the upper control limit for Terphenyl-d14. The samples are outside of the 2X holding window and thus will not be re-prepped and re-analyzed. (MB 160-318471/1-A)

The % recovery for tributyl phosphate (TBP) in the LCS is outside of the advisory QC limits of 70-130 %. These limits are advisory limits only until there are sufficient data points to generate in house QC limits. Results are provided with this narrative. B3BMN0 (160-23370-1), B3BMN7 (160-23370-2), B3BMP2 (160-23370-3), B3BMP7 (160-23370-4), B3BMR3 (160-23370-5), (LCS 160-318471/2-A) This analyte has been qualified accordingly with an "o" flag in the associated samples.

Surrogate recoveries in the LCS are outside the lower QC limits for 2,4,6-Tribromophenol, 2-Fluorobiphenyl, 2-Fluorophenol, Phenol-d5, and Terphenyl-d14. The samples are outside of the 2X holding window and thus will not be re-prepped and re-analyzed. B3BMN0 (160-23370-1), B3BMN7 (160-23370-2), B3BMP2 (160-23370-3), B3BMP7 (160-23370-4), B3BMR3 (160-23370-5), (LCS 160-318471/2-A), (MB 160-318471/1-A), (160-23370-B-1-B MS) and (160-23370-B-1-C MSD)

ICP Metals

Batch: 321957

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-321216 and analytical batch 160-321957 were outside control limits for Aluminum. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. (160-23370-A-9-B MS) and (160-23370-A-9-C MSD) This analyte has been qualified accordingly with an "N" flag in the associated samples.

Batch: 322161

The following samples were diluted to bring the concentration of target analytes within the calibration range: B3BMN1 (160-23370-9), (160-23370-A-9-B MS ^) and (160-23370-A-9-A SD ^). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

Due to the high concentration of Silicon, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-321216 and analytical batch 160-322161 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. (160-23370-A-9-B MS ^) and (160-23370-A-9-C MSD)

Batch: 322135

The following sample was diluted to bring the concentration of target analytes within the calibration range: B3BMR4 (160-23370-7). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

ICPMS Metals

Batch: 321571

The serial dilution performed for the following samples associated with batch preparation batch 160-321254 and analytical batch 160-321571 was outside control limits for Nickel which indicates potential matrix interference. (160-23370-A-1-D SD)

Due to the high concentration of Aluminum, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-321254 and analytical batch 160-321571 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria (160-23370-A-1-E MS) and (160-23370-A-1-F MSD)

Due to a sequence error a CCVL, CCV, CCB occurred between the ICSA and the ICSAB instead of after the ICSAB. All recoveries were within established limits. B3BMN0 (160-23370-1), B3BMN7 (160-23370-2), B3BMP2 (160-23370-3), B3BMP7 (160-23370-4), B3BMR3 (160-23370-5), (CCB 160-321571/14), (CCB 160-321571/27), (CCB 160-321571/40), (CCV 160-321571/13), (CCV 160-321571/26), (CCV 160-321571/39), (CCVL 160-321571/12), (CCVL 160-321571/25), (CCVL 160-321571/38), (CRI 160-321571/10), (IC 160-321571/5), (IC 160-321571/6), (IC 160-321571/7), (ICB 160-321571/9), (ICSA 160-321571/11), (ICSAB 160-321571/15), (ICV 160-321571/8), (LCS

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
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Job ID: 160-23370-1 (Continued)**Laboratory: TestAmerica St. Louis (Continued)**

160-321254/2-A), (LCSSRM 160-321254/3-), (LRC 160-321571/1), (LRC 160-321571/2), (LRC 160-321571/3), (MB 160-321254/1-A), (160-23370-A-1-E MS), (160-23370-A-1-F MSD) and (160-23370-A-1-D SD)

Batch: 321728

The following samples were diluted due to the nature of the sample matrix. Samples are high in salts which can cause instrument and QC failures when ran at a lesser dilution: B3BMN0 (160-23370-1), B3BMN7 (160-23370-2), B3BMP2 (160-23370-3), B3BMP7 (160-23370-4), B3BMR3 (160-23370-5), (160-23370-A-1-H MS), (160-23370-A-1-I MSD) and (160-23370-A-1-G SD). Elevated reporting limits (RLs) are provided. This analyte has been qualified accordingly with a "D" flag in the associated samples.

Mercury**Batch: 318984**

The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 160-318875 and analytical batch 160-318984 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. This result was verified using the same standards and samples in a new calibration with similar results. Original results are reported. This analyte has been qualified accordingly with an "N" flag in the associated samples.

Ammonia as N**Batch: 321814**

The following matrix spike (MS) recoveries for Ammonia preparation batch 160-321695 and analytical batch 160-321814 were outside control limits: (160-23370-C-1-F MS). Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. This analyte has been qualified accordingly with an "N" flag in the associated samples.

Conductivity**Batch: 320264**

Specific Conductance was detected in method blank MB 160-320264/2 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "B". If the associated sample reported a result above the MDL and/or RL and if the method blank is greater than 5% the sample concentration, the result has been flagged "C".

TOC**Batch: 321358**

The following samples in TOC batch 160-321358 were analyzed without a duplicate (DU) or a matrix spike (MS) in the batch in order to limit the number of reps performed on these samples (and thereby protect the instrument), due to these leachates containing some suspended solids that would not settle: B3BMR4 (160-23370-7) and B3BMN1 (160-23370-9) To demonstrate acceptable duplication in the batch, a laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) were analyzed and both recovered within acceptance limits.

The following samples in TOC batch 160-321358 were analyzed at dilution to start, based on suspected high concentrations of the target analyte and to limit the volume of sample analyzed, due to suspended solids in the leachates: B3BMR4 (160-23370-7) and B3BMN1 (160-23370-9) All sample results are above the adjusted reporting limit (RL) at dilution. This analyte has been qualified accordingly with a "D" flag in the associated samples.

Batch: 321701

The RPD value for TOC batch 321701 is outside established QC limits. RPD determinations are not applicable to values near the reporting limit; therefore, the data has been reported.

Case Narrative

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Job ID: 160-23370-1 (Continued)**Laboratory: TestAmerica St. Louis (Continued)****TIC****Batch: 321477**

The following samples in TIC batch 160-321477 were analyzed at dilution to start, based on suspected high concentrations of the target analyte and to limit the volume of sample analyzed, due to suspended solids in the leachates: B3BMR4 (160-23370-7) and B3BMN1 (160-23370-9) All sample results are above the adjusted reporting limit (RL) at dilution. This analyte has been qualified accordingly with a "D" flag in the associated samples.

The following samples in TIC batch 160-321477 were analyzed without a duplicate (DU) or a matrix spike (MS) in the batch in order to limit the number of reps performed on these samples (and thereby protect the instrument), due to these leachates containing some suspended solids that would not settle: B3BMR4 (160-23370-7) and B3BMN1 (160-23370-9) To demonstrate acceptable duplication in the batch, a laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) were analyzed and both recovered within acceptance limits.

There were no observations or non-conformances associated with the following methods:

DRO**Total Cyanide**

We certify that this data 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 signature on this report.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager



SAMPLE ISSUE RESOLUTION (SIR) REPORT	SIR Number: SIR17-0836 Rev. Number: 0 Date Initiated: 07/18/2017
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SAMPLE EVENT INFORMATION

SAF NUM(S): F17-009

LABORATORY: TASL

SAMPLING INFORMATION

NUMBER OF SAMPLES: 7

SAMPLE NUMBERS: B3BMN0, B3BMN1, B3BMN7, B3BMP2, B3BMP7, B3BMR3, B3BMR4

SAMPLE MATRIX: SOIL

SDG NUM(S):

ISSUE BACKGROUND

CLASS: Commercial Shipping Issue

TYPE: Other Shipping Issue (Specify)

DESCRIPTION: Cooler was received at 12.7 C. Cooler contained 4 ice packs that were completely thawed upon receipt.

RESOLUTION

PROPOSED RESOLUTION: TASL PROPOSES TO CONTINUE WITH ANALYSIS AND NARRATE.OR CANCEL ANALYSES.

FINAL RESOLUTION: Accept proposed resolution to continue with analysis and narrate.

SUBMITTED BY:

AWALT, JK	07/18/2017
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ACCEPTED BY:

FITZGERALD, SL	07/18/2017
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SAMPLE ISSUE RESOLUTION (SIR) REPORT		SIR Number: SIR17-0993
		Rev. Number: 0
		Date Initiated: 09/28/2017
<u>SAMPLE EVENT INFORMATION</u>		
SAF NUM(S):	F17-009	
LABORATORY:	TASL	
<u>SAMPLING INFORMATION</u>		
NUMBER OF SAMPLES:	2	
SAMPLE NUMBERS:	B3BMN1, B3BMP7	
SAMPLE MATRIX:	SOIL	
SDG NUM(S):	SL2590	
<u>ISSUE BACKGROUND</u>		
CLASS:	Chain of Custody Issue (Field)	
TYPE:	Other COC issue (Specify)	
DESCRIPTION:	On COC F17-009-655, the ice chest number box was left blank. On COC F17-009-639 there is crossed out information in the first relinquished by box without a date nor initials.	
<u>RESOLUTION</u>		
PROPOSED RESOLUTION:	Document and close	
FINAL RESOLUTION:	Document and close	
SUBMITTED BY:		
CUTSFORTH, EC	_____	09/28/2017 _____
ACCEPTED BY:		
FITZGERALD, SL	_____	09/28/2017 _____

SAMPLE ISSUE RESOLUTION (SIR) REPORT**SIR Number:** SIR18-0665**Rev. Number:** 0**Date Initiated:** 05/07/2018**SAMPLE EVENT INFORMATION****SAF NUM(S):** F17-009**LABORATORY:** TASL**SAMPLING INFORMATION****NUMBER OF SAMPLES:** 1**SAMPLE NUMBERS:** B3BMP7**SAMPLE MATRIX:** SOIL**SDG NUM(S):** SL2590**ISSUE BACKGROUND****CLASS:** Chain of Custody Issue (Field)**TYPE:** No Sample Collector Listed on COC**DESCRIPTION:** COC-F17-009-655, there is a missing name in the Collector box.**RESOLUTION****PROPOSED RESOLUTION:** DOCUMENT AND CLOSE**FINAL RESOLUTION:** DOCUMENT AND CLOSE**SUBMITTED BY:**

KESSINGER, AL

05/07/2018

ACCEPTED BY:

HEY, BE

05/07/2018

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-23370-1

SDG Number: SL2590

Login Number: 23370

List Number: 1

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	Ice Packs were included but were melted.
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	12.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	COC not relinquished by TA Richland.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CH2Mhill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F17-009-638	PAGE 1 OF 1	
COLLECTOR P. Brice 9L2590		COMPANY CONTACT FITZGERALD, SL	TELEPHONE NO. 373-7495	PROJECT COORDINATOR FITZGERALD, SL		PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9497, Core 3, B39LN6		PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Sampling - Soil 20		SAF NO. F17-009	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. NA		FIELD LOGBOOK NO. NA	ACTUAL SAMPLE DEPTH 60.7-63.2	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS		ORIGINAL
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. NA		BILL OF LADING/AIR BILL NO. NA			

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 regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION					
		HOLDING TIME					
		TYPE OF CONTAINER					
		NO. OF CONTAINER(S)					
		VOLUME					
		SPECIAL HANDLING AND/OR STORAGE					
NA		SAMPLE ANALYSIS		Cool <=6C	Cool <=6C	Cool <=6C	Cool <=6C
		14/40 Days	14/40 Days	28 Days	28 Days		
		Gs	aG	G/P	G/P		
		1	1	1	1		
		120mL	120mL	250mL	60mL		
		40Z	40Z	40Z	40Z		
		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	WTPH_KEROSENE: COMMON; ✓	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	350.1_AMMONIUM: COMMON; ✓ 9012_CYANIDE: COMMON; ✓		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B3BMN0	SOIL	7/13/17	0930	X	X	X	X

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Jen Russell, Jen Russell PBS 7/13/17 1400	RECEIVED BY/STORED IN GTL Refrigerator 7/13/17 1400	TRVL-17-175 (1) 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate}; ✓ (2) 7471_MERCURY_CV: COMMON (SOLIDS); 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Copper, Lead, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Antimony, Arsenic, Manganese, Nickel, Silver, Uranium};
RELINQUISHED BY/REMOVED FROM GTL Refrigerator 7/14/17 1410	RECEIVED BY/STORED IN Jen Russell, Jen Russell PBS 7/14/17 1410	
RELINQUISHED BY/REMOVED FROM Jen Russell, Jen Russell 7/14/17 1620	RECEIVED BY/STORED IN A. Rogers, TARL 7/14/17 1620	
RELINQUISHED BY/REMOVED FROM FedEx 7/18/17	RECEIVED BY/STORED IN FedEx JILL CLARKE 7/18/17 0910	
RELINQUISHED BY/REMOVED FROM FedEx	RECEIVED BY/STORED IN Jill Clark, Jill Clark 7/18/17 0910	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	

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

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Rev. 2



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F17-009-645	PAGE 1 OF 1
COLLECTOR P. Brice 922590		COMPANY CONTACT FITZGERALD, SL	TELEPHONE NO. 373-7495	PROJECT COORDINATOR FITZGERALD, SL		PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9497, Core 4, B39LN8		PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Sampling - Soil 20		SAF NO. F17-009		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. NA		FIELD LOGBOOK NO. NA	ACTUAL SAMPLE DEPTH 65.3-68.8		COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. N/A		BILL OF LADING/AIR BILL NO. NA			

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 regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION		Cool <=6C	Cool <=6C	Cool <=6C	Cool <=6C
		HOLDING TIME		14/40 Days	14/40 Days	28 Days	28 Days
		TYPE OF CONTAINER		Gs	aG	G/P	G/P
		NO. OF CONTAINER(S)		1 JR 7/13/17	1	1	1 JR 7/13/17
		VOLUME		120ml 4 oz	120mL	250mL	60ml 4 oz
SPECIAL HANDLING AND/OR STORAGE NA		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	WTPH_KEROSENE: COMMON;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	350.1_AMMONIUM: COMMON; 9012_CYANIDE: COMMON;
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B3BMN7	SOIL	7/13/17	1230	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-17-175 (1) 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate}; (2) 7471_MERCURY_CV: COMMON (SOLIDS); 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Copper, Lead, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Antimony, Arsenic, Manganese, Nickel, Silver, Uranium};	
Jen Russell, Jen Russell PBS	7/13/17 1500	GTL Refrigerator	7/13/17 1500		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
GTL Refrigerator	7/14/17	Jen Russell, Jen Russell PBS	7/14/17 1410		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Jen Russell, Jen Russell PBS	7/14/17 1620	A Rogers, TARI	7/14/17 1620		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
FED EX	7.18.17	FedEx JILL CLARKE	7.18.17 0910		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Fed Ex	7.18.17	Jill Clarke, Jill Clark	7.18.17 0910		
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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CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F17-009-650	PAGE 1 OF 1
COLLECTOR P. Brice 8L2590		COMPANY CONTACT FITZGERALD, SL	TELEPHONE NO. 373-7495	PROJECT COORDINATOR FITZGERALD, SL		PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9497, Core 7, B39LP4		PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Sampling - Soil 20		SAF NO. F17-009		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. NA		FIELD LOGBOOK NO. NA	ACTUAL SAMPLE DEPTH 80.3-83.8	COA 302632		METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. NA		BILL OF LADING/AIR BILL NO. NA			

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.	PRESERVATION				Cool <=6C	Cool <=6C	Cool <=6C	Cool <=6C		
		HOLDING TIME				14/40 Days	14/40 Days	28 Days	28 Days		
		TYPE OF CONTAINER				Gs	gG	G/P	G/P		
		NO. OF CONTAINER(S)				1	1	1	1		
		VOLUME				120ml 4oz 7/14/17 ACM	120mL	250mL	60ml 4oz 7/14/17 ACM		
		SPECIAL HANDLING AND/OR STORAGE NA				SAMPLE ANALYSIS				SEE ITEM (1) IN SPECIAL INSTRUCTIONS	WTPH_KEROSENE: COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B3BMP2	SOIL	7/14/17	1045	X	X	X	X

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM Patrick Brice DATE/TIME 7/14/17 1550	RECEIVED BY/STORED IN Jan Russell DATE/TIME 7/14/17 1550	TRVL-17-175 (1) 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate}; (2) 7471_MERCURY_CV: COMMON (SOLIDS); 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Copper, Lead, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Antimony, Arsenic, Manganese, Nickel, Silver, Uranium};
RELINQUISHED BY/REMOVED FROM Jan Russell DATE/TIME 7/14/17 1620	RECEIVED BY/STORED IN A. Rogers DATE/TIME 7/14/17 1620	
RELINQUISHED BY/REMOVED FROM FED EX DATE/TIME 7/18/17	RECEIVED BY/STORED IN FED EX DATE/TIME 7/18/17	
RELINQUISHED BY/REMOVED FROM Fed Ex DATE/TIME 7/18/17	RECEIVED BY/STORED IN Jill Clarke DATE/TIME 7/18/17 0910	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	

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

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F17-009-655	PAGE 1 OF 1
COLLECTOR <i>SL2590</i>		COMPANY CONTACT FITZGERALD, SL	TELEPHONE NO. 373-7495	PROJECT COORDINATOR FITZGERALD, SL		PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9497, Core 7, B39LP4 DUP		PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Sampling - Soil 20		SAF NO. F17-009		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO.		FIELD LOGBOOK NO. <i>NA</i>	ACTUAL SAMPLE DEPTH <i>80.3-83.8</i>		COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. <i>NA</i>		BILL OF LADING/AIR BILL NO. <i>NA</i>			

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.	PRESERVATION	Cool <=6C	Cool <=6C	Cool <=6C	Cool <=6C
		HOLDING TIME	14/40 Days	14/40 Days	28 Days	28 Days
		TYPE OF CONTAINER	Gs	aG	G/P	G/P
		NO. OF CONTAINER(S)	1	1	1	1
		VOLUME	<i>120ml</i> <i>4oz</i>	120mL	250mL	<i>60ml</i> <i>4oz</i>
SPECIAL HANDLING AND/OR STORAGE NA		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	WTPH_KEROSENE: COMMON;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	350.L_AMMONIUM: COMMON; 9012_CYANIDE: COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B3BMP7	SOIL	7/14/17	1045	X	X	X	X

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>Patrick Brna Pat Brna PBS 7/14/17 1550</i>	RECEIVED BY/STORED IN <i>Jan Russell Jan Russell PBS 7/14/17 1550</i>	TRVL-17-175 (1) 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate}; (2) 7471_MERCURY_CV: COMMON (SOLIDS); 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Copper, Lead, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Antimony, Arsenic, Manganese, Nickel, Silver, Uranium};
RELINQUISHED BY/REMOVED FROM <i>Jan Russell Jan Russell PBS 7/14/17 1620</i>	RECEIVED BY/STORED IN <i>A Rogers, TARL [Signature] 7/14/17 1620</i>	
RELINQUISHED BY/REMOVED FROM <i>FEDEREX 7/18/17</i>	RECEIVED BY/STORED IN <i>Jill Clarke Jill Clarke 7/18/17 0910</i>	
RELINQUISHED BY/REMOVED FROM <i>Fed Ex</i>	RECEIVED BY/STORED IN <i>Jill Clarke Jill Clarke 7.18.17 0910</i>	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	

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

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CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F17-009-661	PAGE 1 OF 1
COLLECTOR <i>P. Brice</i> <i>SL 2590</i>		COMPANY CONTACT FITZGERALD, SL	TELEPHONE NO. 373-7495	PROJECT COORDINATOR FITZGERALD, SL		PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9497, Core 11, B39LR2		PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Sampling - Soil 20		SAF NO. F17-009		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>NA</i>		FIELD LOGBOOK NO. <i>NA</i>	ACTUAL SAMPLE DEPTH <i>102.0 - 104.0</i>	COA 302632		METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. <i>NA</i>		BILL OF LADING/AIR BILL NO. <i>NA</i>			

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.	PRESERVATION				Cool <=6C	Cool <=6C	Cool <=6C	Cool <=6C
		HOLDING TIME				14/40 Days	14/40 Days	28 Days	28 Days
		TYPE OF CONTAINER				Gs	aG	G/P	G/P
		NO. OF CONTAINER(S)				1	1	1	1
		VOLUME				<i>120ml TC</i> <i>4oz 7/14/17</i>	120mL	250mL	<i>60ml</i> <i>4oz 7/14/17 TC</i>
SPECIAL HANDLING AND/OR STORAGE NA		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	WTPH, KEROSENE; COMMON;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	350, L AMMONIUM; 9012, CYANIDE; COMMON;		

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B3BMR3	SOIL	7/14/17	1300	X	X	X	X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>Patrick Brice</i>	DATE/TIME <i>7/14/17 1550</i>	RECEIVED BY/STORED IN <i>Jan Russell</i>	DATE/TIME <i>7/14/17 1550</i>	TRVL-17-175 (1) 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate}; (2) 7471_MERCURY_CV: COMMON (SOLIDS); 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Copper, Lead, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Antimony, Arsenic, Manganese, Nickel, Silver, Uranium};	
RELINQUISHED BY/REMOVED FROM <i>Jan Russell</i>	DATE/TIME <i>7/14/17 1620</i>	RECEIVED BY/STORED IN <i>A. Rogers</i>	DATE/TIME <i>7/14/17 1620</i>		
RELINQUISHED BY/REMOVED FROM <i>FedEx</i>	DATE/TIME <i>7-18-17</i>	RECEIVED BY/STORED IN <i>Jill Clarke</i>	DATE/TIME <i>7-18-17 0910</i>		
RELINQUISHED BY/REMOVED FROM <i>Fed Ex</i>	DATE/TIME	RECEIVED BY/STORED IN <i>Jill Clarke</i>	DATE/TIME <i>7-18-17 0910</i>		
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
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CH2Mhill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F17-009-662	PAGE 1 OF 1
COLLECTOR <i>P. Brice</i> 912590		COMPANY CONTACT FITZGERALD, SL	TELEPHONE NO. 373-7495	PROJECT COORDINATOR FITZGERALD, SL		PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9497, Core 11, B391.R2		PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Sampling - Soil 20		SAF NO. F17-009		AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. NA		FIELD LOGBOOK NO. NA	ACTUAL SAMPLE DEPTH 102.0 - 104.0		COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. NA		BILL OF LADING/AIR BILL NO. NA			

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.	PRESERVATION		Cool <=6C	None	Cool <=6C	None	Cool <=6C	Cool <=6C
		HOLDING TIME		28 Days	6 Months	28 Days	ASAP	28 Days	28 Days
		TYPE OF CONTAINER		aG	P	G/P	G/P	aG	aG
		NO. OF CONTAINER(S)		1	1	1	1	1	1
		VOLUME		120mL	60mL ^{7/14/17} 402	250mL	60mL ^{7/14/17} 402	120mL	120mL
		SPECIAL HANDLING AND/OR STORAGE NA		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
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B3BMR4	SOIL	7/14/17	1300	X	X	X	X	X	X

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CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-17-175; ** All Cations, TIC and TOC requesting Water Extraction (WE) shall use a 1:1 ratio. (1) 9060_TIC: COMMON {Total Inorganic Carbon}; 9060_TOC: COMMON {Total organic carbon}; ✓ (2) 6010_METALS_ICP_WE: COMMON {Aluminum, Barium, Calcium, Chromium, Iron, Magnesium, Manganese, Potassium, Silicon, Sodium}; ✓ (3) 9050_CONDUCTIVITY_WE: COMMON {Specific Conductance}; ✓ (4) 9045_pH (Non-Aqueous)_WE: COMMON {pH Measurement}; ✓
<i>Patrick Brice</i>	PBS 7/14/17 1550	<i>Jen Russell</i>	PBS 7/14/17 1550	
<i>Jen Russell</i>	PBS 7/14/17 1620	<i>A. Rogers</i>	TARL 7/14/17 1620	
<i>Fed Ex</i>	7/18/17	<i>Jill Clarke</i>	7/18/17 0910	

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



CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F17-009-639	PAGE 1 OF 1
COLLECTOR <i>P. Bru</i> <i>SL259D</i>		COMPANY CONTACT FITZGERALD, SL	TELEPHONE NO. 373-7495	PROJECT COORDINATOR FITZGERALD, SL	PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9497, Core 3, B39LN6		PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Sampling - Soil 20		SAF NO. F17-009	AIR QUALITY <input type="checkbox"/>	
ICE CHEST NO. <i>NA</i>		FIELD LOGBOOK NO. <i>NA</i>	ACTUAL SAMPLE DEPTH <i>41.7-43.2</i>	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL	
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. <i>NA</i>	<i>60.7 - JE 7/13/17</i>	BILL OF LADING/AIR BILL NO. <i>NA</i>		

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.	PRESERVATION	Cool <=6C	None	Cool <=6C	None	Cool <=6C	Cool <=6C
		HOLDING TIME	28 Days	6 Months	28 Days	ASAP	28 Days	28 Days
		TYPE OF CONTAINER	aG	P	G/P	G/P	aG	aG
		NO. OF CONTAINER(S)	1	1	1	1	1	1
		VOLUME	120mL	60mL <i>4oz</i>	250mL	60mL <i>4oz</i>	120mL <i>4oz</i>	120mL <i>4oz</i>
		SPECIAL HANDLING AND/OR STORAGE	NA	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

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B3BMN1	SOIL	7/13/17	0930	X	X	X	X	X	X

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>Jan Russell Jan Russell PBS 7/13/17 1400</i>	RECEIVED BY/STORED IN <i>RJ Lee</i> GTL Refrigerator 7/13/17 1400	TRVL-17-175; ** All Cations, TIC and TOC requesting Water Extraction (WE) shall use a 1:1 ratio. (1) 9060_TIC: COMMON {Total Inorganic Carbon}; 9060_TOC: COMMON {Total organic carbon}; (2) 6010_METALS_ICP_WE: COMMON {Aluminum, Barium, Calcium, Chromium, Iron, Magnesium, Manganese, Potassium, Silicon, Sodium}; (3) 9050_CONDUCTIVITY_WE: COMMON {Specific Conductance}; (4) 9045_pH (Non-Aqueous)_WE: COMMON {pH Measurement};
RELINQUISHED BY/REMOVED FROM <i>RJ Lee</i> GTL Refrigerator 7/14/17 1410	RECEIVED BY/STORED IN <i>PBS</i> Jan Russell Jan Russell 7/14/17 1410	
RELINQUISHED BY/REMOVED FROM <i>Jan Russell Jan Russell PBS 7/14/17 1420</i>	RECEIVED BY/STORED IN <i>A. ROGERS, TARL</i> A. ROGERS, TARL 7/14/17 1420	
RELINQUISHED BY/REMOVED FROM <i>FED EX</i> FED EX 7/18/17	RECEIVED BY/STORED IN <i>Jill Clarke</i> Jill Clarke 7.18.17	
RELINQUISHED BY/REMOVED FROM <i>Fed Ex</i> Fed Ex 7.18.17	RECEIVED BY/STORED IN <i>Jill Clarke Jill Clarke 7.18.17 0910</i> Jill Clarke 7.18.17 0910	
RELINQUISHED BY/REMOVED FROM	RECEIVED BY/STORED IN	

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

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FedEx® Tracking

779661019271

Ship date:
Mon 7/17/2017

RICHLAND, WA US

Actual delivery:
Tue 7/18/2017 9:01 am

EARTH CITY, MO US

Delivered
Signed for by: B.DANIELS

Travel History

Date/Time	Activity	Location
7/18/2017 - Tuesday		
9:01 am	Delivered	EARTH CITY, MO
7:22 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:14 am	At local FedEx facility	EARTH CITY, MO
5:41 am	At destination sort facility	BERKELEY, MO
4:53 am	Departed FedEx location	MEMPHIS, TN
12:16 am	Arrived at FedEx location	MEMPHIS, TN
7/17/2017 - Monday		
4:59 pm	Left FedEx origin facility	PASCO, WA
3:16 pm	Picked up	PASCO, WA
11:25 am	Shipment information sent to FedEx	

Shipment Facts

Tracking number	779661019271	Service	FedEx Standard Overnight
Weight	28 lbs / 12.7 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	28 lbs / 12.7 kgs
Terms	Recipient	Shipper reference	FLH
Packaging	Your Packaging	Special handling section	Deliver Weekday, Additional Handling Surcharge
Standard transit	7/18/2017 by 3:00 pm		



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 Small Business Center
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 FedEx Ground
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 FedEx Custom Critical
 FedEx Trade Networks
 FedEx Cross Border
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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
o	LCS, LCSD: Recovery exceeds upper or lower control limits.
U	Analyzed for but not detected.
X	See case narrative notes for explanation of the 'X' flag

GC Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.

Metals

Qualifier	Qualifier Description
N	Recovery exceeds upper or lower control limits
U	Analyzed for but not detected.
D	The reported value is from a dilution.
X	See case narrative notes for explanation of the 'X' flag
y	Duplicate analysis not within control limits.
B	Estimated result. Result is less than the RL, but greater than MDL

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.
N	MS, MSD: Spike recovery is outside acceptance limits.
B	Estimated result. Result is less than the RL, but greater than MDL
y	Duplicate analysis not within control limits.
D	The reported value is from a dilution.

Glossary

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

Method Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Method	Method Description	Protocol	Laboratory
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SL
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL SL
6010C	Metals (ICP)	SW846	TAL SL
6020A	Metals (ICP/MS)	SW846	TAL SL
7471B	Mercury (CVAA)	SW846	TAL SL
350.1	Nitrogen, Ammonia	MCAWW	TAL SL
9012B	Cyanide, Total and/or Amenable	SW846	TAL SL
9040C	pH	SW846	TAL SL
9050A	Specific Conductance	SW846	TAL SL
9060	Total Inorganic Carbon	SW846	TAL SL
9060	Organic Carbon, Total (TOC)	SW846	TAL SL
9060	Carbon, Total and Total Inorganic	SW846	TAL SL
Moisture	Percent Moisture	EPA	TAL SL

Protocol References:

- EPA = US Environmental Protection Agency
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



Sample Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-23370-1	B3BMN0	Soil	07/13/17 09:30	07/18/17 09:10
160-23370-2	B3BMN7	Soil	07/13/17 12:30	07/18/17 09:10
160-23370-3	B3BMP2	Soil	07/14/17 10:45	07/18/17 09:10
160-23370-4	B3BMP7	Soil	07/14/17 10:45	07/18/17 09:10
160-23370-5	B3BMR3	Soil	07/14/17 13:00	07/18/17 09:10
160-23370-6	B3BMR4	Soil	07/14/17 13:00	07/18/17 09:10
160-23370-7	B3BMR4	Water	07/14/17 13:00	07/18/17 09:10
160-23370-8	B3BMN1	Soil	07/13/17 09:30	07/18/17 09:10
160-23370-9	B3BMN1	Water	07/13/17 09:30	07/18/17 09:10



Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: B3BMN0
Date Collected: 07/13/17 09:30
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-1
Matrix: Soil
Percent Solids: 98.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyl phosphate	47	U o	340	47	ug/Kg	☼	07/21/17 09:57	07/25/17 13:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	65		47 - 125				07/21/17 09:57	07/25/17 13:26	1
2-Fluorobiphenyl (Surr)	78		59 - 110				07/21/17 09:57	07/25/17 13:26	1
2-Fluorophenol (Surr)	75		54 - 102				07/21/17 09:57	07/25/17 13:26	1
Nitrobenzene-d5 (Surr)	84		44 - 120				07/21/17 09:57	07/25/17 13:26	1
Phenol-d5 (Surr)	73		51 - 104				07/21/17 09:57	07/25/17 13:26	1
Terphenyl-d14 (Surr)	96		59 - 98				07/21/17 09:57	07/25/17 13:26	1

Client Sample ID: B3BMN7
Date Collected: 07/13/17 12:30
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-2
Matrix: Soil
Percent Solids: 98.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyl phosphate	47	U o	330	47	ug/Kg	☼	07/21/17 09:57	07/25/17 15:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	61		47 - 125				07/21/17 09:57	07/25/17 15:11	1
2-Fluorobiphenyl (Surr)	74		59 - 110				07/21/17 09:57	07/25/17 15:11	1
2-Fluorophenol (Surr)	71		54 - 102				07/21/17 09:57	07/25/17 15:11	1
Nitrobenzene-d5 (Surr)	81		44 - 120				07/21/17 09:57	07/25/17 15:11	1
Phenol-d5 (Surr)	69		51 - 104				07/21/17 09:57	07/25/17 15:11	1
Terphenyl-d14 (Surr)	86		59 - 98				07/21/17 09:57	07/25/17 15:11	1

Client Sample ID: B3BMP2
Date Collected: 07/14/17 10:45
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-3
Matrix: Soil
Percent Solids: 97.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyl phosphate	47	U o	340	47	ug/Kg	☼	07/21/17 09:57	07/25/17 15:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	65		47 - 125				07/21/17 09:57	07/25/17 15:46	1
2-Fluorobiphenyl (Surr)	82		59 - 110				07/21/17 09:57	07/25/17 15:46	1
2-Fluorophenol (Surr)	78		54 - 102				07/21/17 09:57	07/25/17 15:46	1
Nitrobenzene-d5 (Surr)	89		44 - 120				07/21/17 09:57	07/25/17 15:46	1
Phenol-d5 (Surr)	76		51 - 104				07/21/17 09:57	07/25/17 15:46	1
Terphenyl-d14 (Surr)	97		59 - 98				07/21/17 09:57	07/25/17 15:46	1

Client Sample ID: B3BMP7
Date Collected: 07/14/17 10:45
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-4
Matrix: Soil
Percent Solids: 97.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyl phosphate	47	U o	340	47	ug/Kg	☼	07/21/17 09:57	07/25/17 16:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	56		47 - 125				07/21/17 09:57	07/25/17 16:20	1
2-Fluorobiphenyl (Surr)	78		59 - 110				07/21/17 09:57	07/25/17 16:20	1
2-Fluorophenol (Surr)	73		54 - 102				07/21/17 09:57	07/25/17 16:20	1
Nitrobenzene-d5 (Surr)	83		44 - 120				07/21/17 09:57	07/25/17 16:20	1
Phenol-d5 (Surr)	70		51 - 104				07/21/17 09:57	07/25/17 16:20	1
Terphenyl-d14 (Surr)	91		59 - 98				07/21/17 09:57	07/25/17 16:20	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Client Sample ID: B3BMR3
Date Collected: 07/14/17 13:00
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-5
Matrix: Soil
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyl phosphate	48	U o	350	48	ug/Kg	☼	07/21/17 09:57	07/25/17 16:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	61		47 - 125				07/21/17 09:57	07/25/17 16:55	1
2-Fluorobiphenyl (Surr)	59		59 - 110				07/21/17 09:57	07/25/17 16:55	1
2-Fluorophenol (Surr)	55		54 - 102				07/21/17 09:57	07/25/17 16:55	1
Nitrobenzene-d5 (Surr)	59		44 - 120				07/21/17 09:57	07/25/17 16:55	1
Phenol-d5 (Surr)	55		51 - 104				07/21/17 09:57	07/25/17 16:55	1
Terphenyl-d14 (Surr)	92		59 - 98				07/21/17 09:57	07/25/17 16:55	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: B3BMN0
Date Collected: 07/13/17 09:30
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-1
Matrix: Soil
Percent Solids: 98.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	2.5	U	25	2.5	mg/Kg	☼	07/21/17 10:27	08/16/17 16:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	91		49 - 133				07/21/17 10:27	08/16/17 16:40	1

Client Sample ID: B3BMN7
Date Collected: 07/13/17 12:30
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-2
Matrix: Soil
Percent Solids: 98.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	2.5	U	25	2.5	mg/Kg	☼	07/21/17 10:27	08/16/17 17:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	84		49 - 133				07/21/17 10:27	08/16/17 17:06	1

Client Sample ID: B3BMP2
Date Collected: 07/14/17 10:45
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-3
Matrix: Soil
Percent Solids: 97.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	2.5	U	25	2.5	mg/Kg	☼	07/21/17 10:27	08/16/17 18:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	97		49 - 133				07/21/17 10:27	08/16/17 18:24	1

Client Sample ID: B3BMP7
Date Collected: 07/14/17 10:45
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-4
Matrix: Soil
Percent Solids: 97.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	2.5	U	25	2.5	mg/Kg	☼	07/21/17 10:27	08/16/17 18:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	78		49 - 133				07/21/17 10:27	08/16/17 18:50	1

Client Sample ID: B3BMR3
Date Collected: 07/14/17 13:00
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-5
Matrix: Soil
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	2.6	U	26	2.6	mg/Kg	☼	07/21/17 10:27	08/16/17 19:16	1

TestAmerica St. Louis

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	77		49 - 133	07/21/17 10:27	08/16/17 19:16	1

Method: 6010C - Metals (ICP)

Client Sample ID: B3BMR4
 Date Collected: 07/14/17 13:00
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-7
 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	10700	N	200	50.0	ug/L		08/07/17 11:06	08/11/17 16:18	1
Barium	62.8		50.0	15.0	ug/L		08/07/17 11:06	08/11/17 16:18	1
Calcium	2200		1000	300	ug/L		08/07/17 11:06	08/11/17 16:18	1
Iron	10300		100	30.0	ug/L		08/07/17 11:06	08/11/17 16:18	1
Magnesium	3110		1000	300	ug/L		08/07/17 11:06	08/11/17 16:18	1
Manganese	209		15.0	4.0	ug/L		08/07/17 11:06	08/11/17 16:18	1
Potassium	8630		5000	1500	ug/L		08/07/17 11:06	08/11/17 16:18	1
Sodium	1110000	D	20000	6000	ug/L		08/07/17 11:06	08/14/17 14:09	20
Silicon	27000	D	8000	2500	ug/L		08/07/17 11:06	08/14/17 14:09	20
Chromium	49.9		10.0	3.0	ug/L		08/07/17 11:06	08/11/17 16:18	1

Client Sample ID: B3BMN1
 Date Collected: 07/13/17 09:30
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-9
 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	11500	N	200	50.0	ug/L		08/07/17 11:06	08/11/17 16:23	1
Barium	228		50.0	15.0	ug/L		08/07/17 11:06	08/11/17 16:23	1
Calcium	13500		1000	300	ug/L		08/07/17 11:06	08/11/17 16:23	1
Iron	11700		100	30.0	ug/L		08/07/17 11:06	08/11/17 16:23	1
Magnesium	5970		1000	300	ug/L		08/07/17 11:06	08/11/17 16:23	1
Manganese	230		15.0	4.0	ug/L		08/07/17 11:06	08/11/17 16:23	1
Potassium	5480		5000	1500	ug/L		08/07/17 11:06	08/11/17 16:23	1
Sodium	6880	D	5000	1500	ug/L		08/07/17 11:06	08/14/17 18:14	5
Silicon	31700	D	2000	625	ug/L		08/07/17 11:06	08/14/17 18:14	5
Chromium	8.4	B	10.0	3.0	ug/L		08/07/17 11:06	08/11/17 16:23	1

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B3BMN0
 Date Collected: 07/13/17 09:30
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-1
 Matrix: Soil
 Percent Solids: 98.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4590	D	4.4	1.8	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Antimony	0.49	U D	1.2	0.49	mg/Kg	☼	08/07/17 14:37	08/10/17 17:33	5
Arsenic	2.2	D	0.88	0.35	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Barium	55.5	D	1.8	0.44	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Cadmium	0.057	D	0.044	0.021	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Chromium	8.1	D	0.88	0.40	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Copper	12.2	D	0.88	0.35	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Lead	3.1	D	0.27	0.11	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Manganese	260	D	0.44	0.18	mg/Kg	☼	08/07/17 14:35	08/10/17 23:34	2
Nickel	10.3	D	0.44	0.18	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Selenium	0.60	D	0.44	0.28	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Silver	0.066	U D	0.18	0.066	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2
Uranium	0.43	D	0.088	0.035	mg/Kg	☼	08/07/17 14:35	08/10/17 03:31	2

TestAmerica St. Louis

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Client Sample ID: B3BMN7
Date Collected: 07/13/17 12:30
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-2
Matrix: Soil
Percent Solids: 98.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	4830	D	4.6	1.9	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Antimony	0.47	U D	1.2	0.47	mg/Kg	☼	08/07/17 14:37	08/10/17 18:05	5
Arsenic	2.1	D	0.93	0.37	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Barium	67.2	D	1.9	0.46	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Cadmium	0.036	B D	0.046	0.022	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Chromium	8.4	D	0.93	0.42	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Copper	13.0	D	0.93	0.37	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Lead	6.1	D	0.28	0.12	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Manganese	228	D	0.46	0.19	mg/Kg	☼	08/07/17 14:35	08/11/17 00:00	2
Nickel	6.7	D	0.46	0.19	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Selenium	0.47	D	0.46	0.30	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Silver	0.069	U D	0.19	0.069	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2
Uranium	0.42	D	0.093	0.037	mg/Kg	☼	08/07/17 14:35	08/10/17 03:58	2

Client Sample ID: B3BMP2
Date Collected: 07/14/17 10:45
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-3
Matrix: Soil
Percent Solids: 97.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	5870	D	4.7	1.9	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Antimony	0.65	B D	1.2	0.47	mg/Kg	☼	08/07/17 14:37	08/10/17 18:10	5
Arsenic	3.4	D	0.93	0.37	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Barium	54.3	D	1.9	0.47	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Cadmium	0.071	D	0.047	0.022	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Chromium	13.2	D	0.93	0.42	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Copper	10.8	D	0.93	0.37	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Lead	4.1	D	0.28	0.12	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Manganese	320	D	0.47	0.19	mg/Kg	☼	08/07/17 14:35	08/11/17 00:07	2
Nickel	17.3	D	0.47	0.19	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Selenium	0.47	D	0.47	0.30	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Silver	0.070	U D	0.19	0.070	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2
Uranium	0.55	D	0.093	0.037	mg/Kg	☼	08/07/17 14:35	08/10/17 04:05	2

Client Sample ID: B3BMP7
Date Collected: 07/14/17 10:45
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-4
Matrix: Soil
Percent Solids: 97.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	5920	D	4.6	1.8	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Antimony	0.46	U D	1.1	0.46	mg/Kg	☼	08/07/17 14:37	08/10/17 18:14	5
Arsenic	7.0	D	0.92	0.37	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Barium	63.2	D	1.8	0.46	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Cadmium	0.084	D	0.046	0.022	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Chromium	22.4	D	0.92	0.41	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Copper	11.6	D	0.92	0.37	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Lead	5.4	D	0.28	0.11	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Manganese	304	D	0.46	0.18	mg/Kg	☼	08/07/17 14:35	08/11/17 00:14	2
Nickel	16.7	D	0.46	0.18	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Selenium	0.55	D	0.46	0.29	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Silver	0.069	U D	0.18	0.069	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2
Uranium	0.88	D	0.092	0.037	mg/Kg	☼	08/07/17 14:35	08/10/17 04:32	2

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B3BMR3
 Date Collected: 07/14/17 13:00
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-5
 Matrix: Soil
 Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	7670	D	4.8	1.9	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Antimony	0.52	U D	1.3	0.52	mg/Kg	☼	08/07/17 14:37	08/10/17 18:19	5
Arsenic	5.1	D	0.95	0.38	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Barium	79.2	D	1.9	0.48	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Cadmium	0.11	D	0.048	0.023	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Chromium	17.1	D	0.95	0.43	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Copper	16.3	D	0.95	0.38	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Lead	5.4	D	0.29	0.12	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Manganese	362	D	0.48	0.19	mg/Kg	☼	08/07/17 14:35	08/11/17 00:41	2
Nickel	18.0	D	0.48	0.19	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Selenium	0.76	D	0.48	0.31	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Silver	0.072	U D	0.19	0.072	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2
Uranium	0.68	D	0.095	0.038	mg/Kg	☼	08/07/17 14:35	08/10/17 04:38	2

Method: 7471B - Mercury (CVAA)

Client Sample ID: B3BMN0
 Date Collected: 07/13/17 09:30
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-1
 Matrix: Soil
 Percent Solids: 98.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0099	U N	0.030	0.0099	mg/Kg	☼	07/24/17 09:55	07/24/17 18:05	1

Client Sample ID: B3BMN7
 Date Collected: 07/13/17 12:30
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-2
 Matrix: Soil
 Percent Solids: 98.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010	U N	0.031	0.010	mg/Kg	☼	07/24/17 09:55	07/24/17 18:19	1

Client Sample ID: B3BMP2
 Date Collected: 07/14/17 10:45
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-3
 Matrix: Soil
 Percent Solids: 97.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010	U N	0.031	0.010	mg/Kg	☼	07/24/17 09:55	07/24/17 18:22	1

Client Sample ID: B3BMP7
 Date Collected: 07/14/17 10:45
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-4
 Matrix: Soil
 Percent Solids: 97.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010	U N	0.031	0.010	mg/Kg	☼	07/24/17 09:55	07/24/17 18:24	1

Client Sample ID: B3BMR3
 Date Collected: 07/14/17 13:00
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-5
 Matrix: Soil
 Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.011	U N	0.033	0.011	mg/Kg	☼	07/24/17 09:55	07/24/17 18:26	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

General Chemistry

Client Sample ID: B3BMN0
Date Collected: 07/13/17 09:30
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-1
Matrix: Soil
Percent Solids: 98.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.64	N	0.51	0.23	mg/Kg	☼	08/10/17 16:50	08/10/17 18:38	1
Cyanide, Total	0.11	U	0.51	0.11	mg/Kg	☼	07/24/17 16:20	07/25/17 12:10	1

Client Sample ID: B3BMN7
Date Collected: 07/13/17 12:30
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-2
Matrix: Soil
Percent Solids: 98.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.68	N	0.51	0.23	mg/Kg	☼	08/10/17 16:50	08/10/17 18:45	1
Cyanide, Total	0.11	U	0.51	0.11	mg/Kg	☼	07/24/17 16:20	07/25/17 12:20	1

Client Sample ID: B3BMP2
Date Collected: 07/14/17 10:45
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-3
Matrix: Soil
Percent Solids: 97.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	1.7	N	0.51	0.23	mg/Kg	☼	08/10/17 16:50	08/10/17 18:47	1
Cyanide, Total	0.11	U	0.51	0.11	mg/Kg	☼	07/24/17 16:20	07/25/17 12:24	1

Client Sample ID: B3BMP7
Date Collected: 07/14/17 10:45
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-4
Matrix: Soil
Percent Solids: 97.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	1.5	N	0.51	0.23	mg/Kg	☼	08/10/17 16:50	08/10/17 18:50	1
Cyanide, Total	0.11	U	0.51	0.11	mg/Kg	☼	07/24/17 16:20	07/25/17 12:34	1

Client Sample ID: B3BMR3
Date Collected: 07/14/17 13:00
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-5
Matrix: Soil
Percent Solids: 94.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.76	N	0.52	0.23	mg/Kg	☼	08/10/17 16:50	08/11/17 11:58	1
Cyanide, Total	0.12	U	0.53	0.12	mg/Kg	☼	07/24/17 16:20	07/25/17 12:37	1

Client Sample ID: B3BMR4
Date Collected: 07/14/17 13:00
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-6
Matrix: Soil

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	84.5	B y	100	33.4	mg/Kg		08/09/17 17:39	08/10/17 19:01	1
Total Inorganic Carbon	1920		100	33.4	mg/Kg			08/11/17 13:57	1

Client Sample ID: B3BMR4
Date Collected: 07/14/17 13:00
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	9.57		0.100	0.100	SU			08/01/17 20:24	1
Specific Conductance	4740		1.00	0.0970	uS/cm			08/01/17 21:35	1

Client Sample ID: B3BMN1
Date Collected: 07/13/17 09:30
Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-8
Matrix: Soil

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	33.6	B	100	33.4	mg/Kg		08/09/17 17:39	08/10/17 19:23	1
Total Inorganic Carbon	915		100	33.4	mg/Kg			08/11/17 13:57	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

General Chemistry

Client Sample ID: B3BMN1
 Date Collected: 07/13/17 09:30
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-9
 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.94		0.100	0.100	SU			08/01/17 20:17	1
Specific Conductance	116		1.00	0.0970	uS/cm			08/01/17 21:23	1

General Chemistry - DL

Client Sample ID: B3BMR4
 Date Collected: 07/14/17 13:00
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-7
 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Inorganic Carbon	36.1	D	5.0	2.5	mg/L			08/08/17 20:01	5
Total Organic Carbon	69.9	D	10.0	5.0	mg/L			08/08/17 06:08	10

Client Sample ID: B3BMN1
 Date Collected: 07/13/17 09:30
 Date Received: 07/18/17 09:10

Lab Sample ID: 160-23370-9
 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Inorganic Carbon	5.9	D	5.0	2.5	mg/L			08/08/17 20:17	5
Total Organic Carbon	14.5	D	10.0	5.0	mg/L			08/08/17 06:20	10

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-318471/1-A

Matrix: Solid

Analysis Batch: 319010

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 318471

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyl phosphate	46	U	330	46	ug/Kg		07/21/17 09:57	07/25/17 12:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	68		47 - 125	07/21/17 09:57	07/25/17 12:18	1
2-Fluorobiphenyl (Surr)	72		59 - 110	07/21/17 09:57	07/25/17 12:18	1
2-Fluorophenol (Surr)	72		54 - 102	07/21/17 09:57	07/25/17 12:18	1
Nitrobenzene-d5 (Surr)	80		44 - 120	07/21/17 09:57	07/25/17 12:18	1
Phenol-d5 (Surr)	71		51 - 104	07/21/17 09:57	07/25/17 12:18	1
Terphenyl-d14 (Surr)	100	X	59 - 98	07/21/17 09:57	07/25/17 12:18	1

Lab Sample ID: LCS 160-318471/2-A

Matrix: Solid

Analysis Batch: 319010

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 318471

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Tributyl phosphate	3330	1100	o	ug/Kg		33	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	39	X	47 - 125
2-Fluorobiphenyl (Surr)	44	X	59 - 110
2-Fluorophenol (Surr)	43	X	54 - 102
Nitrobenzene-d5 (Surr)	47		44 - 120
Phenol-d5 (Surr)	40	X	51 - 104
Terphenyl-d14 (Surr)	49	X	59 - 98

Lab Sample ID: 160-23370-1 MS

Matrix: Soil

Analysis Batch: 319010

Client Sample ID: B3BMN0

Prep Type: Total/NA

Prep Batch: 318471

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Tributyl phosphate	47	U o	3380	2650		ug/Kg	☼	79	50 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	78		47 - 125
2-Fluorobiphenyl (Surr)	75		59 - 110
2-Fluorophenol (Surr)	74		54 - 102
Nitrobenzene-d5 (Surr)	82		44 - 120
Phenol-d5 (Surr)	74		51 - 104
Terphenyl-d14 (Surr)	87		59 - 98

Lab Sample ID: 160-23370-1 MSD

Matrix: Soil

Analysis Batch: 319010

Client Sample ID: B3BMN0

Prep Type: Total/NA

Prep Batch: 318471

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Tributyl phosphate	47	U o	3390	2740		ug/Kg	☼	81	50 - 150	3	30

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-23370-1 MSD
Matrix: Soil
Analysis Batch: 319010

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 318471

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	80		47 - 125
2-Fluorobiphenyl (Surr)	78		59 - 110
2-Fluorophenol (Surr)	76		54 - 102
Nitrobenzene-d5 (Surr)	85		44 - 120
Phenol-d5 (Surr)	74		51 - 104
Terphenyl-d14 (Surr)	87		59 - 98

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 160-318475/1-A
Matrix: Solid
Analysis Batch: 322495

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 318475

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	2.4	U	25	2.4	mg/Kg		07/21/17 10:27	08/16/17 15:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	93		49 - 133	07/21/17 10:27	08/16/17 15:47	1

Lab Sample ID: LCS 160-318475/2-A
Matrix: Solid
Analysis Batch: 322495

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 318475

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	83.3	66.1		mg/Kg		79	57 - 105

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	96		49 - 133

Lab Sample ID: 160-23370-2 MS
Matrix: Soil
Analysis Batch: 322495

Client Sample ID: B3BMN7
Prep Type: Total/NA
Prep Batch: 318475

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	2.5	U	84.5	70.5		mg/Kg	☼	83	34 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl	98		49 - 133

Lab Sample ID: 160-23370-2 MSD
Matrix: Soil
Analysis Batch: 322495

Client Sample ID: B3BMN7
Prep Type: Total/NA
Prep Batch: 318475

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2.5	U	84.6	73.2		mg/Kg	☼	87	34 - 150	4	30

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Surrogate	MSD %Recovery	MSD Qualifier	Limits
<i>o</i> -Terphenyl	101		49 - 133

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 160-321216/1-A
 Matrix: Water
 Analysis Batch: 321957

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 321216

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aluminum	50.0	U	200	50.0	ug/L		08/07/17 11:06	08/11/17 16:09	1
Barium	15.0	U	50.0	15.0	ug/L		08/07/17 11:06	08/11/17 16:09	1
Calcium	300	U	1000	300	ug/L		08/07/17 11:06	08/11/17 16:09	1
Iron	30.0	U	100	30.0	ug/L		08/07/17 11:06	08/11/17 16:09	1
Magnesium	300	U	1000	300	ug/L		08/07/17 11:06	08/11/17 16:09	1
Manganese	4.0	U	15.0	4.0	ug/L		08/07/17 11:06	08/11/17 16:09	1
Potassium	1500	U	5000	1500	ug/L		08/07/17 11:06	08/11/17 16:09	1
Sodium	300	U	1000	300	ug/L		08/07/17 11:06	08/11/17 16:09	1
Silicon	125	U	400	125	ug/L		08/07/17 11:06	08/11/17 16:09	1
Chromium	3.0	U	10.0	3.0	ug/L		08/07/17 11:06	08/11/17 16:09	1

Lab Sample ID: LCS 160-321216/2-A
 Matrix: Water
 Analysis Batch: 321957

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 321216

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	Limits
Barium	1000	1014		ug/L		101	80 - 120	
Calcium	10000	10270		ug/L		103	80 - 120	
Iron	10000	10000		ug/L		100	80 - 120	
Magnesium	10000	9695		ug/L		97	80 - 120	
Manganese	1000	1002		ug/L		100	80 - 120	
Potassium	10000	9591		ug/L		96	80 - 120	
Sodium	10000	9883		ug/L		99	80 - 120	
Silicon	5000	4616		ug/L		92	80 - 120	
Chromium	1000	1007		ug/L		101	80 - 120	

Lab Sample ID: 160-23370-9 MS
 Matrix: Water
 Analysis Batch: 321957

Client Sample ID: B3BMN1
 Prep Type: Total/NA
 Prep Batch: 321216

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier		Result	Qualifier					
Aluminum	11500	N	10000	25700	N	ug/L		142		75 - 125
Barium	228		1000	1278		ug/L		105		75 - 125
Calcium	13500		10000	23720		ug/L		103		75 - 125
Iron	11700		10000	22050		ug/L		104		75 - 125
Magnesium	5970		10000	16310		ug/L		103		75 - 125
Manganese	230		1000	1240		ug/L		101		75 - 125
Potassium	5480		10000	16730		ug/L		113		75 - 125
Chromium	8.4	B	1000	1024		ug/L		102		75 - 125

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 160-23370-9 MS

Matrix: Water

Analysis Batch: 322161

Client Sample ID: B3BMN1

Prep Type: Total/NA

Prep Batch: 321216

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Sodium	6880	D	10000	16900	D	ug/L		100	75 - 125
Silicon	31700	D	5000	43620	D X	ug/L		237	75 - 125

Lab Sample ID: 160-23370-9 MSD

Matrix: Water

Analysis Batch: 321957

Client Sample ID: B3BMN1

Prep Type: Total/NA

Prep Batch: 321216

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum	11500	N	10000	25740	N	ug/L		143	75 - 125	0	20
Barium	228		1000	1290		ug/L		106	75 - 125	1	20
Calcium	13500		10000	23570		ug/L		101	75 - 125	1	20
Iron	11700		10000	21850		ug/L		102	75 - 125	1	20
Magnesium	5970		10000	16000		ug/L		100	75 - 125	2	20
Manganese	230		1000	1233		ug/L		100	75 - 125	1	20
Potassium	5480		10000	16870		ug/L		114	75 - 125	1	20
Chromium	8.4	B	1000	1024		ug/L		102	75 - 125	0	20

Lab Sample ID: 160-23370-9 MSD

Matrix: Water

Analysis Batch: 322161

Client Sample ID: B3BMN1

Prep Type: Total/NA

Prep Batch: 321216

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Sodium	6880	D	10000	16800	D	ug/L		99	75 - 125	1	20
Silicon	31700	D	5000	43780	D X	ug/L		241	75 - 125	0	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-321254/1-A

Matrix: Solid

Analysis Batch: 321571

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 321254

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.9	U D	4.8	1.9	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Arsenic	0.38	U D	0.96	0.38	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Barium	0.48	U D	1.9	0.48	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Cadmium	0.023	U D	0.048	0.023	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Chromium	0.43	U D	0.96	0.43	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Copper	0.38	U D	0.96	0.38	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Lead	0.12	U D	0.29	0.12	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Nickel	0.19	U D	0.48	0.19	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Selenium	0.31	U D	0.48	0.31	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Silver	0.072	U D	0.19	0.072	mg/Kg		08/07/17 14:35	08/10/17 03:11	2
Uranium	0.038	U D	0.096	0.038	mg/Kg		08/07/17 14:35	08/10/17 03:11	2

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 160-321254/1-A
Matrix: Solid
Analysis Batch: 321811

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 321254

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.19	U D	0.48	0.19	mg/Kg		08/07/17 14:35	08/10/17 23:14	2

Lab Sample ID: LCS 160-321254/2-A
Matrix: Solid
Analysis Batch: 321571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 321254
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Uranium	91.2	91.54	D	mg/Kg		100	80 - 120

Lab Sample ID: LCSSRM 160-321254/3-A
Matrix: Solid
Analysis Batch: 321571

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 321254
%Rec.

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Aluminum	8080	6394	D	mg/Kg		79.1	39.6 - 160.9
Arsenic	145	146.7	D	mg/Kg		101.1	70.3 - 136.6
Barium	209	206.5	D	mg/Kg		98.8	73.7 - 126.8
Cadmium	87.6	85.52	D	mg/Kg		97.6	73.3 - 126.7
Chromium	143	135.3	D	mg/Kg		94.6	69.9 - 129.4
Copper	173	180.8	D	mg/Kg		104.5	75.1 - 124.3
Lead	146	146.8	D	mg/Kg		100.6	73.3 - 126.7
Nickel	129	133.1	D	mg/Kg		103.2	73.0 - 127.1
Selenium	178	187.4	D	mg/Kg		105.3	68.0 - 131.5
Silver	31.3	31.28	D	mg/Kg		99.9	65.2 - 134.5

Lab Sample ID: LCSSRM 160-321254/3-A
Matrix: Solid
Analysis Batch: 321811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 321254
%Rec.

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Manganese	309	327.1	D	mg/Kg		105.9	74.8 - 125.2

Lab Sample ID: 160-23370-1 MS
Matrix: Soil
Analysis Batch: 321571

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 321254
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aluminum	4590	D	959	7284	D X	mg/Kg	☼	281	75 - 125
Arsenic	2.2	D	95.9	91.46	D	mg/Kg	☼	93	75 - 125
Barium	55.5	D	95.9	153.3	D	mg/Kg	☼	102	75 - 125
Cadmium	0.057	D	95.8	96.18	D	mg/Kg	☼	100	75 - 125

TestAmerica St. Louis

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-23370-1 MS
Matrix: Soil
Analysis Batch: 321571

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 321254
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Chromium	8.1	D	95.9	97.24	D	mg/Kg	☼	93	75 - 125
Copper	12.2	D	95.9	98.78	D	mg/Kg	☼	90	75 - 125
Lead	3.1	D	95.9	96.98	D	mg/Kg	☼	98	75 - 125
Nickel	10.3	D	95.9	98.49	D	mg/Kg	☼	92	75 - 125
Selenium	0.60	D	47.9	46.27	D	mg/Kg	☼	95	75 - 125
Silver	0.066	U D	19.2	19.55	D	mg/Kg	☼	102	75 - 125
Uranium	0.43	D	95.9	98.39	D	mg/Kg	☼	102	75 - 125

Lab Sample ID: 160-23370-1 MS
Matrix: Soil
Analysis Batch: 321811

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 321254
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Manganese	260	D	95.9	342.9	D	mg/Kg	☼	86	75 - 125

Lab Sample ID: 160-23370-1 MSD
Matrix: Soil
Analysis Batch: 321571

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 321254
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aluminum	4590	D	898	6184	D X	mg/Kg	☼	177	75 - 125	16	30
Arsenic	2.2	D	89.8	85.65	D	mg/Kg	☼	93	75 - 125	7	30
Barium	55.5	D	89.8	145.4	D	mg/Kg	☼	100	75 - 125	5	30
Cadmium	0.057	D	89.8	88.75	D	mg/Kg	☼	99	75 - 125	8	30
Chromium	8.1	D	89.8	91.87	D	mg/Kg	☼	93	75 - 125	6	30
Copper	12.2	D	89.8	92.05	D	mg/Kg	☼	89	75 - 125	7	30
Lead	3.1	D	89.8	89.49	D	mg/Kg	☼	96	75 - 125	8	30
Nickel	10.3	D	89.8	105.9	D	mg/Kg	☼	106	75 - 125	7	30
Selenium	0.60	D	44.9	41.57	D	mg/Kg	☼	91	75 - 125	11	30
Silver	0.066	U D	18.0	18.12	D	mg/Kg	☼	101	75 - 125	8	30
Uranium	0.43	D	89.8	90.66	D	mg/Kg	☼	100	75 - 125	8	30

Lab Sample ID: 160-23370-1 MSD
Matrix: Soil
Analysis Batch: 321811

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 321254
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Manganese	260	D	89.8	369.8	D	mg/Kg	☼	122	75 - 125	8	30

Lab Sample ID: MB 160-321256/1-A
Matrix: Solid
Analysis Batch: 321728

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 321256

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.18	U D	0.46	0.18	mg/Kg		08/07/17 14:37	08/10/17 17:25	2

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 160-321256/2-A
Matrix: Solid
Analysis Batch: 321728

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 321256

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	47.0	46.06	D	mg/Kg		98	21 - 251

Lab Sample ID: 160-23370-1 MS
Matrix: Soil
Analysis Batch: 321728

Client Sample ID: B3BMNO
Prep Type: Total/NA
Prep Batch: 321256

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Antimony	0.49	U D	50.2	49.90	D	mg/Kg	☼	99	75 - 125

Lab Sample ID: 160-23370-1 MSD
Matrix: Soil
Analysis Batch: 321728

Client Sample ID: B3BMNO
Prep Type: Total/NA
Prep Batch: 321256

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Antimony	0.49	U D	48.6	47.64	D	mg/Kg	☼	98	75 - 125	5	30

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 160-318875/1-A
Matrix: Solid
Analysis Batch: 318984

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 318875

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010	U	0.030	0.010	mg/Kg		07/24/17 09:55	07/24/17 18:01	1

Lab Sample ID: LCSSRM 160-318875/2-A
Matrix: Solid
Analysis Batch: 318984

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 318875

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	Limits
Mercury	9.36	7.10	D	mg/Kg		75.8	51.3 - 148.5

Lab Sample ID: 160-23370-1 MS
Matrix: Soil
Analysis Batch: 318984

Client Sample ID: B3BMNO
Prep Type: Total/NA
Prep Batch: 318875

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	0.0099	U N	0.823	0.540	N	mg/Kg	☼	66	80 - 120

Lab Sample ID: 160-23370-1 MSD
Matrix: Soil
Analysis Batch: 318984

Client Sample ID: B3BMNO
Prep Type: Total/NA
Prep Batch: 318875

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Mercury	0.0099	U N	0.823	0.212	N y	mg/Kg	☼	26	80 - 120	87	30

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 160-321695/1-A
Matrix: Solid
Analysis Batch: 321814

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 321695

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.22	U	0.50	0.22	mg/Kg		08/10/17 16:50	08/10/17 18:28	1

Lab Sample ID: LCS 160-321695/2-A
Matrix: Solid
Analysis Batch: 321814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 321695

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	5.00	5.01		mg/Kg		100	90 - 110

Lab Sample ID: 160-23370-1 MS
Matrix: Soil
Analysis Batch: 321814

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 321695

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Ammonia (as N)	0.64	N	5.08	7.48	N	mg/Kg	☼	135	90 - 110

Lab Sample ID: 160-23370-1 DU
Matrix: Soil
Analysis Batch: 321814

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 321695

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	RPD	Limit
Ammonia (as N)	0.64	N	5.08	0.699		mg/Kg	☼	9	30

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 160-318944/1-A
Matrix: Solid
Analysis Batch: 319136

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 318944

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.11	U	0.50	0.11	mg/Kg		07/24/17 16:20	07/25/17 11:53	1

Lab Sample ID: HLCS 160-318944/3-A
Matrix: Solid
Analysis Batch: 319136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 318944

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	4.80	4.72		mg/Kg		98	85 - 115

Lab Sample ID: LCS 160-318944/2-A
Matrix: Solid
Analysis Batch: 319136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 318944

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	2.40	2.41		mg/Kg		101	85 - 115

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 9012B - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: 160-23370-1 MS
Matrix: Soil
Analysis Batch: 319136

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 318944
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cyanide, Total	0.11	U	2.45	2.50		mg/Kg	☒	102	60 - 130

Lab Sample ID: 160-23370-1 DU
Matrix: Soil
Analysis Batch: 319136

Client Sample ID: B3BMN0
Prep Type: Total/NA
Prep Batch: 318944

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Cyanide, Total	0.11	U	0.11	U	mg/Kg	☒	NC	30

Method: 9040C - pH

Lab Sample ID: LCS 160-320258/5
Matrix: Water
Analysis Batch: 320258

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.970		SU		100	99.0 - 101.0

Lab Sample ID: 160-23370-9 DU
Matrix: Water
Analysis Batch: 320258

Client Sample ID: B3BMN1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
pH	8.94		8.940		SU		0	5

Method: 9050A - Specific Conductance

Lab Sample ID: MB 160-320264/2
Matrix: Water
Analysis Batch: 320264

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	0.310	B	1.00	0.0970	uS/cm			08/01/17 21:15	1

Lab Sample ID: LCS 160-320264/3
Matrix: Water
Analysis Batch: 320264

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	500	500.0		uS/cm		100	85 - 115

Lab Sample ID: 160-23370-9 MS
Matrix: Water
Analysis Batch: 320264

Client Sample ID: B3BMN1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Specific Conductance	116		1410	1501		uS/cm		98	75 - 125

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Method: 9050A - Specific Conductance (Continued)

Lab Sample ID: 160-23370-9 DU
 Matrix: Water
 Analysis Batch: 320264

Client Sample ID: B3BMN1
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	116		115.8		uS/cm		0.09	20

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 160-321358/64
 Matrix: Water
 Analysis Batch: 321358

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.50	U	1.0	0.50	mg/L			08/08/17 05:16	1

Lab Sample ID: LCS 160-321358/65
 Matrix: Water
 Analysis Batch: 321358

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.84		mg/L		98	90 - 110

Lab Sample ID: LCSD 160-321358/66
 Matrix: Water
 Analysis Batch: 321358

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	10.0	9.78		mg/L		98	90 - 110	1	20

Lab Sample ID: MB 160-321534/8-A
 Matrix: Solid
 Analysis Batch: 321701

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 321534

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	33.4	U	100	33.4	mg/Kg		08/09/17 17:39	08/10/17 18:48	1

Lab Sample ID: LCS 160-321534/9-A
 Matrix: Solid
 Analysis Batch: 321701

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 321534

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	6180	5337		mg/Kg		86	49 - 117

Lab Sample ID: 160-23370-6 MS
 Matrix: Soil
 Analysis Batch: 321701

Client Sample ID: B3BMR4
 Prep Type: Total/NA
 Prep Batch: 321534

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	84.5	B y	1000	1030		mg/Kg		95	50 - 150

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Method: 9060 - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 160-23370-6 DU
 Matrix: Soil
 Analysis Batch: 321701

Client Sample ID: B3BMR4
 Prep Type: Total/NA
 Prep Batch: 321534

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Organic Carbon	84.5	B y	34.77	B y	mg/Kg		83	30

Method: 9060 - Carbon, Total and Total Inorganic

Lab Sample ID: MB 160-321477/4
 Matrix: Water
 Analysis Batch: 321477

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Inorganic Carbon	0.50	U	1.0	0.50	mg/L			08/08/17 19:11	1

Lab Sample ID: LCS 160-321477/5
 Matrix: Water
 Analysis Batch: 321477

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Inorganic Carbon	10.0	10.29		mg/L		103	85 - 129

Lab Sample ID: LCSD 160-321477/6
 Matrix: Water
 Analysis Batch: 321477

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Inorganic Carbon	10.0	10.45		mg/L		104	85 - 129	2	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

GC/MS Semi VOA

Prep Batch: 318471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	3550C	
160-23370-2	B3BMN7	Total/NA	Soil	3550C	
160-23370-3	B3BMP2	Total/NA	Soil	3550C	
160-23370-4	B3BMP7	Total/NA	Soil	3550C	
160-23370-5	B3BMR3	Total/NA	Soil	3550C	
MB 160-318471/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 160-318471/2-A	Lab Control Sample	Total/NA	Solid	3550C	
160-23370-1 MS	B3BMN0	Total/NA	Soil	3550C	
160-23370-1 MSD	B3BMN0	Total/NA	Soil	3550C	

Analysis Batch: 319010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	8270D	318471
160-23370-2	B3BMN7	Total/NA	Soil	8270D	318471
160-23370-3	B3BMP2	Total/NA	Soil	8270D	318471
160-23370-4	B3BMP7	Total/NA	Soil	8270D	318471
160-23370-5	B3BMR3	Total/NA	Soil	8270D	318471
MB 160-318471/1-A	Method Blank	Total/NA	Solid	8270D	318471
LCS 160-318471/2-A	Lab Control Sample	Total/NA	Solid	8270D	318471
160-23370-1 MS	B3BMN0	Total/NA	Soil	8270D	318471
160-23370-1 MSD	B3BMN0	Total/NA	Soil	8270D	318471

GC Semi VOA

Prep Batch: 318475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	3550C	
160-23370-2	B3BMN7	Total/NA	Soil	3550C	
160-23370-3	B3BMP2	Total/NA	Soil	3550C	
160-23370-4	B3BMP7	Total/NA	Soil	3550C	
160-23370-5	B3BMR3	Total/NA	Soil	3550C	
MB 160-318475/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 160-318475/2-A	Lab Control Sample	Total/NA	Solid	3550C	
160-23370-2 MS	B3BMN7	Total/NA	Soil	3550C	
160-23370-2 MSD	B3BMN7	Total/NA	Soil	3550C	

Analysis Batch: 322495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	8015B	318475
160-23370-2	B3BMN7	Total/NA	Soil	8015B	318475
160-23370-3	B3BMP2	Total/NA	Soil	8015B	318475
160-23370-4	B3BMP7	Total/NA	Soil	8015B	318475
160-23370-5	B3BMR3	Total/NA	Soil	8015B	318475
MB 160-318475/1-A	Method Blank	Total/NA	Solid	8015B	318475
LCS 160-318475/2-A	Lab Control Sample	Total/NA	Solid	8015B	318475
160-23370-2 MS	B3BMN7	Total/NA	Soil	8015B	318475
160-23370-2 MSD	B3BMN7	Total/NA	Soil	8015B	318475

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009TestAmerica Job ID: 160-23370-1
SDG: SL2590

Metals

Prep Batch: 318875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	7471B	
160-23370-2	B3BMN7	Total/NA	Soil	7471B	
160-23370-3	B3BMP2	Total/NA	Soil	7471B	
160-23370-4	B3BMP7	Total/NA	Soil	7471B	
160-23370-5	B3BMR3	Total/NA	Soil	7471B	
MB 160-318875/1-A	Method Blank	Total/NA	Solid	7471B	
LCSSRM 160-318875/2-A	Lab Control Sample	Total/NA	Solid	7471B	
160-23370-1 MS	B3BMN0	Total/NA	Soil	7471B	
160-23370-1 MSD	B3BMN0	Total/NA	Soil	7471B	

Analysis Batch: 318984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	7471B	318875
160-23370-2	B3BMN7	Total/NA	Soil	7471B	318875
160-23370-3	B3BMP2	Total/NA	Soil	7471B	318875
160-23370-4	B3BMP7	Total/NA	Soil	7471B	318875
160-23370-5	B3BMR3	Total/NA	Soil	7471B	318875
MB 160-318875/1-A	Method Blank	Total/NA	Solid	7471B	318875
LCSSRM 160-318875/2-A	Lab Control Sample	Total/NA	Solid	7471B	318875
160-23370-1 MS	B3BMN0	Total/NA	Soil	7471B	318875
160-23370-1 MSD	B3BMN0	Total/NA	Soil	7471B	318875

Prep Batch: 321216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-7	B3BMR4	Total/NA	Water	3010A	
160-23370-9	B3BMN1	Total/NA	Water	3010A	
MB 160-321216/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-321216/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-23370-9 MS	B3BMN1	Total/NA	Water	3010A	
160-23370-9 MSD	B3BMN1	Total/NA	Water	3010A	

Prep Batch: 321254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	3050B	
160-23370-2	B3BMN7	Total/NA	Soil	3050B	
160-23370-3	B3BMP2	Total/NA	Soil	3050B	
160-23370-4	B3BMP7	Total/NA	Soil	3050B	
160-23370-5	B3BMR3	Total/NA	Soil	3050B	
MB 160-321254/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 160-321254/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSSRM 160-321254/3-A	Lab Control Sample	Total/NA	Solid	3050B	
160-23370-1 MS	B3BMN0	Total/NA	Soil	3050B	
160-23370-1 MSD	B3BMN0	Total/NA	Soil	3050B	

Prep Batch: 321256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	3050B-Sb	
160-23370-2	B3BMN7	Total/NA	Soil	3050B-Sb	
160-23370-3	B3BMP2	Total/NA	Soil	3050B-Sb	
160-23370-4	B3BMP7	Total/NA	Soil	3050B-Sb	
160-23370-5	B3BMR3	Total/NA	Soil	3050B-Sb	

TestAmerica St. Louis

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

Metals (Continued)

Prep Batch: 321256 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-321256/1-A	Method Blank	Total/NA	Solid	3050B-Sb	
LCS 160-321256/2-A	Lab Control Sample	Total/NA	Solid	3050B-Sb	
160-23370-1 MS	B3BMN0	Total/NA	Soil	3050B-Sb	
160-23370-1 MSD	B3BMN0	Total/NA	Soil	3050B-Sb	

Analysis Batch: 321571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	6020A	321254
160-23370-2	B3BMN7	Total/NA	Soil	6020A	321254
160-23370-3	B3BMP2	Total/NA	Soil	6020A	321254
160-23370-4	B3BMP7	Total/NA	Soil	6020A	321254
160-23370-5	B3BMR3	Total/NA	Soil	6020A	321254
MB 160-321254/1-A	Method Blank	Total/NA	Solid	6020A	321254
LCS 160-321254/2-A	Lab Control Sample	Total/NA	Solid	6020A	321254
LCSSRM 160-321254/3-A	Lab Control Sample	Total/NA	Solid	6020A	321254
160-23370-1 MS	B3BMN0	Total/NA	Soil	6020A	321254
160-23370-1 MSD	B3BMN0	Total/NA	Soil	6020A	321254

Analysis Batch: 321728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	6020A	321256
160-23370-2	B3BMN7	Total/NA	Soil	6020A	321256
160-23370-3	B3BMP2	Total/NA	Soil	6020A	321256
160-23370-4	B3BMP7	Total/NA	Soil	6020A	321256
160-23370-5	B3BMR3	Total/NA	Soil	6020A	321256
MB 160-321256/1-A	Method Blank	Total/NA	Solid	6020A	321256
LCS 160-321256/2-A	Lab Control Sample	Total/NA	Solid	6020A	321256
160-23370-1 MS	B3BMN0	Total/NA	Soil	6020A	321256
160-23370-1 MSD	B3BMN0	Total/NA	Soil	6020A	321256

Analysis Batch: 321811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	6020A	321254
160-23370-2	B3BMN7	Total/NA	Soil	6020A	321254
160-23370-3	B3BMP2	Total/NA	Soil	6020A	321254
160-23370-4	B3BMP7	Total/NA	Soil	6020A	321254
160-23370-5	B3BMR3	Total/NA	Soil	6020A	321254
MB 160-321254/1-A	Method Blank	Total/NA	Solid	6020A	321254
LCSSRM 160-321254/3-A	Lab Control Sample	Total/NA	Solid	6020A	321254
160-23370-1 MS	B3BMN0	Total/NA	Soil	6020A	321254
160-23370-1 MSD	B3BMN0	Total/NA	Soil	6020A	321254

Analysis Batch: 321957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-7	B3BMR4	Total/NA	Water	6010C	321216
160-23370-9	B3BMN1	Total/NA	Water	6010C	321216
MB 160-321216/1-A	Method Blank	Total/NA	Water	6010C	321216
LCS 160-321216/2-A	Lab Control Sample	Total/NA	Water	6010C	321216
160-23370-9 MS	B3BMN1	Total/NA	Water	6010C	321216
160-23370-9 MSD	B3BMN1	Total/NA	Water	6010C	321216

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009TestAmerica Job ID: 160-23370-1
SDG: SL2590

Metals (Continued)

Analysis Batch: 322135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-7	B3BMR4	Total/NA	Water	6010C	321216

Analysis Batch: 322161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-9	B3BMN1	Total/NA	Water	6010C	321216
160-23370-9 MS	B3BMN1	Total/NA	Water	6010C	321216
160-23370-9 MSD	B3BMN1	Total/NA	Water	6010C	321216

General Chemistry

Analysis Batch: 318040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	Moisture	
160-23370-2	B3BMN7	Total/NA	Soil	Moisture	
160-23370-3	B3BMP2	Total/NA	Soil	Moisture	
160-23370-4	B3BMP7	Total/NA	Soil	Moisture	
160-23370-5	B3BMR3	Total/NA	Soil	Moisture	
160-23370-6	B3BMR4	Total/NA	Soil	Moisture	
160-23370-8	B3BMN1	Total/NA	Soil	Moisture	
160-23370-8 DU	B3BMN1	Total/NA	Soil	Moisture	

Prep Batch: 318944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	9010C	
160-23370-2	B3BMN7	Total/NA	Soil	9010C	
160-23370-3	B3BMP2	Total/NA	Soil	9010C	
160-23370-4	B3BMP7	Total/NA	Soil	9010C	
160-23370-5	B3BMR3	Total/NA	Soil	9010C	
MB 160-318944/1-A	Method Blank	Total/NA	Solid	9010C	
HLCS 160-318944/3-A	Lab Control Sample	Total/NA	Solid	9010C	
LCS 160-318944/2-A	Lab Control Sample	Total/NA	Solid	9010C	
160-23370-1 MS	B3BMN0	Total/NA	Soil	9010C	
160-23370-1 DU	B3BMN0	Total/NA	Soil	9010C	

Analysis Batch: 319136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	9012B	318944
160-23370-2	B3BMN7	Total/NA	Soil	9012B	318944
160-23370-3	B3BMP2	Total/NA	Soil	9012B	318944
160-23370-4	B3BMP7	Total/NA	Soil	9012B	318944
160-23370-5	B3BMR3	Total/NA	Soil	9012B	318944
MB 160-318944/1-A	Method Blank	Total/NA	Solid	9012B	318944
HLCS 160-318944/3-A	Lab Control Sample	Total/NA	Solid	9012B	318944
LCS 160-318944/2-A	Lab Control Sample	Total/NA	Solid	9012B	318944
160-23370-1 MS	B3BMN0	Total/NA	Soil	9012B	318944
160-23370-1 DU	B3BMN0	Total/NA	Soil	9012B	318944

Analysis Batch: 320258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-7	B3BMR4	Total/NA	Water	9040C	

TestAmerica St. Louis

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

General Chemistry (Continued)

Analysis Batch: 320258 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-9	B3BMN1	Total/NA	Water	9040C	
LCS 160-320258/5	Lab Control Sample	Total/NA	Water	9040C	
160-23370-9 DU	B3BMN1	Total/NA	Water	9040C	

Analysis Batch: 320264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-7	B3BMR4	Total/NA	Water	9050A	
160-23370-9	B3BMN1	Total/NA	Water	9050A	
MB 160-320264/2	Method Blank	Total/NA	Water	9050A	
LCS 160-320264/3	Lab Control Sample	Total/NA	Water	9050A	
160-23370-9 MS	B3BMN1	Total/NA	Water	9050A	
160-23370-9 DU	B3BMN1	Total/NA	Water	9050A	

Analysis Batch: 321358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-7 - DL	B3BMR4	Total/NA	Water	9060	
160-23370-9 - DL	B3BMN1	Total/NA	Water	9060	
MB 160-321358/64	Method Blank	Total/NA	Water	9060	
LCS 160-321358/65	Lab Control Sample	Total/NA	Water	9060	
LCSD 160-321358/66	Lab Control Sample Dup	Total/NA	Water	9060	

Analysis Batch: 321477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-7 - DL	B3BMR4	Total/NA	Water	9060	
160-23370-9 - DL	B3BMN1	Total/NA	Water	9060	
MB 160-321477/4	Method Blank	Total/NA	Water	9060	
LCS 160-321477/5	Lab Control Sample	Total/NA	Water	9060	
LCSD 160-321477/6	Lab Control Sample Dup	Total/NA	Water	9060	

Prep Batch: 321534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-6	B3BMR4	Total/NA	Soil	None	
160-23370-8	B3BMN1	Total/NA	Soil	None	
MB 160-321534/8-A	Method Blank	Total/NA	Solid	None	
LCS 160-321534/9-A	Lab Control Sample	Total/NA	Solid	None	
160-23370-6 MS	B3BMR4	Total/NA	Soil	None	
160-23370-6 DU	B3BMR4	Total/NA	Soil	None	

Prep Batch: 321695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	DILeach_Prep	
160-23370-2	B3BMN7	Total/NA	Soil	DILeach_Prep	
160-23370-3	B3BMP2	Total/NA	Soil	DILeach_Prep	
160-23370-4	B3BMP7	Total/NA	Soil	DILeach_Prep	
160-23370-5	B3BMR3	Total/NA	Soil	DILeach_Prep	
MB 160-321695/1-A	Method Blank	Total/NA	Solid	DILeach_Prep	
LCS 160-321695/2-A	Lab Control Sample	Total/NA	Solid	DILeach_Prep	
160-23370-1 MS	B3BMN0	Total/NA	Soil	DILeach_Prep	
160-23370-1 DU	B3BMN0	Total/NA	Soil	DILeach_Prep	

TestAmerica St. Louis

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
 Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
 SDG: SL2590

General Chemistry (Continued)

Analysis Batch: 321701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-6	B3BMR4	Total/NA	Soil	9060	321534
160-23370-8	B3BMN1	Total/NA	Soil	9060	321534
MB 160-321534/8-A	Method Blank	Total/NA	Solid	9060	321534
LCS 160-321534/9-A	Lab Control Sample	Total/NA	Solid	9060	321534
160-23370-6 MS	B3BMR4	Total/NA	Soil	9060	321534
160-23370-6 DU	B3BMR4	Total/NA	Soil	9060	321534

Analysis Batch: 321814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-1	B3BMN0	Total/NA	Soil	350.1	321695
160-23370-2	B3BMN7	Total/NA	Soil	350.1	321695
160-23370-3	B3BMP2	Total/NA	Soil	350.1	321695
160-23370-4	B3BMP7	Total/NA	Soil	350.1	321695
160-23370-5	B3BMR3	Total/NA	Soil	350.1	321695
MB 160-321695/1-A	Method Blank	Total/NA	Solid	350.1	321695
LCS 160-321695/2-A	Lab Control Sample	Total/NA	Solid	350.1	321695
160-23370-1 MS	B3BMN0	Total/NA	Soil	350.1	321695
160-23370-1 DU	B3BMN0	Total/NA	Soil	350.1	321695

Analysis Batch: 321841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23370-6	B3BMR4	Total/NA	Soil	9060	
160-23370-8	B3BMN1	Total/NA	Soil	9060	

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Soil

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (47-125)	FBP (59-110)	2FP (54-102)	NBZ (44-120)	PHL (51-104)	TPH (59-98)
160-23370-1	B3BMN0	65	78	75	84	73	96
160-23370-1 MS	B3BMN0	78	75	74	82	74	87
160-23370-1 MSD	B3BMN0	80	78	76	85	74	87
160-23370-2	B3BMN7	61	74	71	81	69	86
160-23370-3	B3BMP2	65	82	78	89	76	97
160-23370-4	B3BMP7	56	78	73	83	70	91
160-23370-5	B3BMR3	61	59	55	59	55	92

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)

TPH = Terphenyl-d14 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		TBP (47-125)	FBP (59-110)	2FP (54-102)	NBZ (44-120)	PHL (51-104)	TPH (59-98)
LCS 160-318471/2-A	Lab Control Sample	39 X	44 X	43 X	47	40 X	49 X
MB 160-318471/1-A	Method Blank	68	72	72	80	71	100 X

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)

FBP = 2-Fluorobiphenyl (Surr)

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)

TPH = Terphenyl-d14 (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Soil

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		OTPH1 (49-133)
160-23370-1	B3BMN0	91
160-23370-2	B3BMN7	84
160-23370-2 MS	B3BMN7	98
160-23370-2 MSD	B3BMN7	101
160-23370-3	B3BMP2	97
160-23370-4	B3BMP7	78
160-23370-5	B3BMR3	77

Surrogate Legend

OTPH = o-Terphenyl

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-009

TestAmerica Job ID: 160-23370-1
SDG: SL2590

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTPH1 (49-133)
LCS 160-318475/2-A	Lab Control Sample	96
MB 160-318475/1-A	Method Blank	93

Surrogate Legend

OTPH = o-Terphenyl

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11