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: 160-16819-1
TestAmerica Sample Delivery Group: SL2163
Client Project/Site: F16-020

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

Attn: Mr. Scot Fitzgerald

Authorized for release by:
5/6/2016 5:23:45 PM

Jayna Awalt, Project Manager II
(314)298-8566
jayna.awalt@testamericainc.com

LINKS

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Have a Question? Ask The Expert

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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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Job ID: 160-16819-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
May 6, 2016
Attention: Scot Fitzgerald

SDG	: SL2163
Number of Samples	: 2 samples
Sample Matrix	: Soil
Data Deliverable	: Summary
Date SDG Closed	: April 7, 2016

II. Introduction

On April 7, 2 samples were received by TestAmerica - St. Louis for chemical 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: F16-020

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 flagging unless otherwise noted in the case narrative.

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 (June 2014), Boron will be reported for Metals using method 6010. Boron will no longer be reported by method 6020.

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.

Job ID: 160-16819-1 (Continued)

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 analyses, the sample result is greater than the MDL but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** - For organic analyses, the sample is estimated and less than the RL.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For Metals analyses, per standard practice, all solid 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. These dilutions do not necessitate qualification unless otherwise noted in the case narrative.
- **N** - For inorganics 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.
- **M**- For inorganic analyses, the precision was outside control 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.

Volatiles

Batch: 244912

The following compounds did not meet the minimum relative response factor limits in the continuing calibration verification (CCV) associated with batch 160-244912: Acetone and 2-Butanone (MEK). A low-level LOQV was analyzed at the reporting limit (5ug/L) and the affected analytes were detected. Target analytes recovering above the reporting limit will be qualified and reported. (CCVIS 160-244912/3)

The matrix spike duplicate (MSD) recoveries for preparation batch 160-244911 and analytical batch 160-244912 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control samples (LCS/LCSD) recoveries were within acceptance limits. (160-16819-C-2-B MSD)

Semivolatiles

Batch: 246224

The continuing calibration verification (CCV) associated with batch 160-246838 recovered above the upper control limit for Tributyl phosphate. The sample associated with this CCV was non-detect for the affected analyte; therefore, the data have been reported. (CCV 160-246838/4)

PCBs

Job ID: 160-16819-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Batch: 246896

The ICV is outside the upper QC limit for PCB-1016. The sample will only require re-analysis if PCB-1016 is detected above the reporting limits. The ICV is outside the upper QC limit for one peak of 5 for PCB-1221 and PCB-1254; however, the average for these analytes are within the QC limits. No further action is required. (MB 160-246378/1-A)

Anions

Batch: 244998

The following matrix spike (MS) recovered outside control limits for Nitrite (85%) in Anion batch 160-244999: (160-16744-C-1-C 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.

The following samples in Anion batch 160-244999 were analyzed with an initial calibration verification (ICV) that recovered above the upper control limit of 110% for Nitrite, at 111% recovery: B353Y7 (160-16819-1). However, these samples all have Nitrite results below the reporting limit (RL), and thus were not significantly affected by the potential high bias for Nitrite found in the ICV.

The following samples in Anion batch 160-244999 are linked to a sample/sample duplicate that have an RPD of 23% for Nitrate: B353Y7 (160-16819-1). 23% is acceptable RPD for soil samples, as the RPD limit is 30% for soils. However, method 300 was incorrectly set up to show a 20% RPD limit for soils in TALS. This RPD limit for soils is being corrected by the QA department.

ICPMS Metals

Batch: 246904

The following samples were diluted due to the nature of the sample matrix. The samples were high in salts, which cause internal standard and QC failures when the samples are run at a lesser dilution: B353Y7 (160-16819-1), (160-16694-A-1-C MS), (160-16694-A-1-D MSD) and (160-16694-A-1-B SD). Elevated reporting limits (RLs) are provided. This analyte has been qualified accordingly with a "D" flag in the associated samples.

Batch: 246914

The following samples were diluted due to the nature of the sample matrix. The samples were high in salts, which cause internal standard and QC failures when the samples are run at a lesser dilution: B353Y7 (160-16819-1), (160-16835-C-4-B), (160-16835-C-4-C MS), (160-16835-C-4-D MSD) and (160-16835-C-4-B 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 aluminum, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 160-245941 and analytical batch 160-246914 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria. (160-16835-C-4-C MS) and (160-16835-C-4-D MSD)

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-245941 and analytical batch 160-246914 were outside control limits for manganese. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. (160-16835-C-4-C MS) and (160-16835-C-4-D MSD) This analyte has been qualified accordingly with an "N" flag in the associated samples.

Ammonia

Batch: 247637

The following matrix spike (MS) in NH3 preparation batch 160-247486 and analytical batch 160-247637 was outside control limits: (160-16819-A-1-J 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.

Case Narrative

Job ID: 160-16819-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

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

Mercury
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

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-16819-1
SDG Number: SL2163

Login Number: 16819
List Number: 1
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (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			F16-020-438	PAGE 1 OF 1
COLLECTOR: D. Wright / [signature]	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 8H	DATA TURNAROUND
SAMPLING LOCATION: C9507, Core 1 SL2163	PROJECT DESIGNATION: 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling		SAF NO.: F16-020	AIR QUALITY ☐	30 Days / 30 Days
ICE CHEST NO.: GWS-154	FIELD LOGBOOK NO.: HNF-N-507-33-66	ACTUAL SAMPLE DEPTH: 0-5 FT	COA: 302632	METHOD OF SHIPMENT: FEDERAL EXPRESS	ORIGINAL
SHIPPED TO: TestAmerica St. Louis	OFFSITE PROPERTY NO.: N/A		BILL OF LADING/AIR BILL NO.: 7760 5599 8806		

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. NA

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B353Y4~~
APR 05 2016

PRESERVATION	Cool <=6C	Cool <=6C	Cool <=6C	None	Cool <=6C	Cool <=6C
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	28 Days	28 Days/48 Hours
TYPE OF CONTAINER	aG	aG	aG	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1
VOLUME	120mL	120mL	250mL	60mL	60mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	WTPH_KEROSENE: COMMON;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	350.1_AMMONIA: COMMON; 9012_CYANIDE: COMMON;	SEE ITEM (4) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B353Y7	SOIL	APR 05 2016	0840	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: D. Wright / [signature]	DATE/TIME: APR 05 2016 1345	RECEIVED BY/STORED IN: SSU-1 (B)	DATE/TIME: APR 05 2016 1345
RELINQUISHED BY/REMOVED FROM: SSU #1	DATE/TIME: APR 06 2016 1030	RECEIVED BY/STORED IN: Troy Bacon CHPRC Troy L. Bacon	DATE/TIME: APR 06 2016 1030
RELINQUISHED BY/REMOVED FROM: Troy Bacon CHPRC Troy L. Bacon	DATE/TIME: APR 06 2016 1430	RECEIVED BY/STORED IN: FEDEX	DATE/TIME:
RELINQUISHED BY/REMOVED FROM: FEDEX	DATE/TIME:	RECEIVED BY/STORED IN: JILL CLARKE Jill Clarke	DATE/TIME: 4-7-16 0820
RELINQUISHED BY/REMOVED FROM	DATE/TIME:	RECEIVED BY/STORED IN	DATE/TIME:
RELINQUISHED BY/REMOVED FROM	DATE/TIME:	RECEIVED BY/STORED IN	DATE/TIME:
RELINQUISHED BY/REMOVED FROM	DATE/TIME:	RECEIVED BY/STORED IN	DATE/TIME:

SPECIAL INSTRUCTIONS
PORTION 1B
(1) 8270_SVOA_GCMS: COMMON {Phenol}; 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate};
(2) 8082_PCB_GC: COMMON; 8082_PCB_GC: COMMON (Add-on) {Aroclor-1262, Aroclor-1268};
(3) 6020_METALS_ICPMS: COMMON {Aluminum, Antimony, Barium, Cadmium, Chromium, Copper, Lead, Selenium, Silver}; 6020_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 7471_MERCURY_CV: COMMON (SOLIDS);
(4) 300.0_ANIONS_IC: COMMON; 300.0_ANIONS_IC: COMMON (Add-on) {Phosphate};

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

PRINTED ON 3/30/2016 FSR ID = FSR31155 TRVL NUM = TRVL-16-117 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F16-020-437	PAGE 1 OF 1
COLLECTOR D. Wright	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8H	DATA TURNAROUND
SAMPLING LOCATION C9507, Core 1 SL2163	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling		SAF NO. F16-020	AIR QUALITY ☐	30 Days / 30 Days
ICE CHEST NO. GWS-154	FIELD LOGBOOK NO. HNF-N-507-33-66	ACTUAL SAMPLE DEPTH 0-5 Ft	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO TestAmerica St. Louis	OFFSITE PROPERTY NO. N/A			BILL OF LADING/AIR BILL NO. 7760 5599 8806	

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. NA

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B353Y4~~ MW
APR 05 2016

PRESERVATION	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B353Y6	SOIL	APR 05 2016	0840	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM D. Wright	DATE/TIME APR 05 2016 1345	RECEIVED BY/STORED IN SSU-1 (C)	DATE/TIME APR 05 2016 1345
RELINQUISHED BY/REMOVED FROM SSU #1	DATE/TIME APR 06 2016 1030	RECEIVED BY/STORED IN Troy Bacon CHPRC Troy L. Bacon	DATE/TIME APR 06 2016 1030
RELINQUISHED BY/REMOVED FROM Troy Bacon CHPRC Troy L. Bacon	DATE/TIME APR 06 2016 1900	RECEIVED BY/STORED IN FEDEX	DATE/TIME
RELINQUISHED BY/REMOVED FROM FEDEX	DATE/TIME	RECEIVED BY/STORED IN JILL CLARKE Jill Clarke	DATE/TIME 4-7-16 0920
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
PORTION 1B
(1) 5035/8260_VOA: LOW LEVEL: COMMON {1,1,1-Trichloroethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 2-Butanone, 4-Methyl-2-pentanone, Acetone, Benzene, Carbon tetrachloride, Chlorobenzene, Chloroform, Ethylbenzene, Methylene chloride, Tetrachloroethene, Toluene, Trichloroethene, Xylenes (total)}; 5035/8260_VOA: LOW LEVEL: COMMON (Add-On) {cis-1,2-Dichloroethylene, n-Butylbenzene, trans-1,2-Dichloroethylene};

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

PRINTED ON 3/30/2016 FSR ID = FSR31155 TRVL NUM = TRVL-16-117 A-6003-618 (REV 2)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: 200 west C9507 Core 1 F16-020-~~438~~ 437 OS 4-4-16

Sampler Initials and Date:

Sample Number [1]	Sample Suffix	Initial Weight [2] (grams)	Total Weight [3] (grams)	Soil Weight [4] (grams)
B35346	K	29.5	35.1	5.6
B35346	L	29.2	36.0	6.8
B35346	M	29.3	36.5	7.2
B35346	N	29.1	35.9	6.8
B35346	P	29.3	36.7	7.4

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

PASS - 7129162726 - Due 2-3-17

FedEx ® Tracking

776055998806

Ship date:
Wed 4/06/2016

RICHLAND, WA US

Delivered
Signed for by: J.CLARKE

Actual delivery:
Thu 4/07/2016 9:17 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 4/07/2016 - Thursday		
9:17 am	Delivered	EARTH CITY, MO
7:04 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:56 am	At local FedEx facility	EARTH CITY, MO
5:08 am	At destination sort facility	BERKELEY, MO
4:17 am	Departed FedEx location	MEMPHIS, TN
- 4/06/2016 - Wednesday		
5:09 pm	Left FedEx origin facility	PASCO, WA
4:07 pm	Shipment information sent to FedEx	
3:23 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	776055998806	**Service**	FedEx Standard Overnight
Weight	60 lbs / 27.22 kgs	**Dimensions**	29x16x16 in.
Delivered To	Shipping/Receiving	**Total pieces**	1
Total shipment weight	60 lbs / 27.22 kgs	**Terms**	Recipient
Shipper reference	GWS-154	**Packaging**	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge		

© FedEx 1995-2016

Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.
T	MS, MSD: Recovery exceeds upper or lower control limits.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
U	Analyzed for but not detected.
N	MS, MSD: Spike recovery is outside acceptance limits.

Metals

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL
N	Recovery exceeds upper or lower control limits

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.
N	MS, MSD: Spike recovery is outside acceptance limits.

Glossary

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

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SL
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SL
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL SL
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL SL
300.0	Anions, Ion Chromatography	MCAWW	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 andor Amenable	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: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-16819-1	B353Y7	Soil	04/05/16 08:40	04/07/16 09:20
160-16819-2	B353Y6	Soil	04/05/16 08:40	04/07/16 09:20

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 8260C - Volatile Organic Compounds by GC/MS

Client Sample ID: B353Y6
Date Collected: 04/05/16 08:40
Date Received: 04/07/16 09:20

Lab Sample ID: 160-16819-2
Matrix: Soil
Percent Solids: 96.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.33	U	3.8	0.33	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
1,1-Dichloroethane	0.30	U	3.8	0.30	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
1,2-Dichloroethane	0.67	U	3.8	0.67	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
2-Butanone (MEK)	1.5	U	15	1.5	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
4-Methyl-2-pentanone (MIBK)	0.56	U	15	0.56	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Acetone	5.0	U T	15	5.0	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Benzene	0.19	U	3.8	0.19	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Carbon tetrachloride	0.39	U	3.8	0.39	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Chlorobenzene	0.29	U	3.8	0.29	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Chloroform	0.29	U	3.8	0.29	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
cis-1,2-Dichloroethylene	0.46	U	3.8	0.46	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Ethylbenzene	0.23	U	3.8	0.23	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Methylene Chloride	1.2	U	3.8	1.2	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
n-Butylbenzene	0.46	U	3.8	0.46	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Tetrachloroethene	0.24	U	3.8	0.24	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Toluene	0.54	U	3.8	0.54	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
trans-1,2-Dichloroethylene	0.72	U	3.8	0.72	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Trichloroethene	0.30	U	3.8	0.30	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1
Xylenes, Total	0.65	U	7.7	0.65	ug/Kg	☼	04/07/16 15:50	04/07/16 21:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*67 - 132*	*04/07/16 15:50*	*04/07/16 21:46*	*1*
4-Bromofluorobenzene (Surr)	*99*		*59 - 150*	*04/07/16 15:50*	*04/07/16 21:46*	*1*
Dibromofluoromethane (Surr)	*95*		*53 - 143*	*04/07/16 15:50*	*04/07/16 21:46*	*1*
Toluene-d8 (Surr)	*97*		*74 - 135*	*04/07/16 15:50*	*04/07/16 21:46*	*1*

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

Client Sample ID: B353Y7
Date Collected: 04/05/16 08:40
Date Received: 04/07/16 09:20

Lab Sample ID: 160-16819-1
Matrix: Soil
Percent Solids: 95.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	35	U	340	35	ug/Kg	☼	04/13/16 12:07	04/19/16 16:06	1
Tributyl phosphate	48	U	340	48	ug/Kg	☼	04/13/16 12:07	04/19/16 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*73*		*47 - 125*	*04/13/16 12:07*	*04/19/16 16:06*	*1*
2-Fluorobiphenyl (Surr)	*91*		*59 - 110*	*04/13/16 12:07*	*04/19/16 16:06*	*1*
2-Fluorophenol (Surr)	*88*		*54 - 102*	*04/13/16 12:07*	*04/19/16 16:06*	*1*
Nitrobenzene-d5 (Surr)	*74*		*44 - 120*	*04/13/16 12:07*	*04/19/16 16:06*	*1*
Phenol-d5 (Surr)	*101*		*51 - 104*	*04/13/16 12:07*	*04/19/16 16:06*	*1*
Terphenyl-d14 (Surr)	*91*		*59 - 98*	*04/13/16 12:07*	*04/19/16 16:06*	*1*

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

Client Sample ID: B353Y7
Date Collected: 04/05/16 08:40
Date Received: 04/07/16 09:20

Lab Sample ID: 160-16819-1
Matrix: Soil
Percent Solids: 95.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	0.35	U	26	0.35	mg/Kg	☼	04/15/16 08:45	04/18/16 18:45	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	77		49 - 133	04/15/16 08:45	04/18/16 18:45	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: B353Y7 — **Lab Sample ID: 160-16819-1**
Date Collected: 04/05/16 08:40 — **Matrix: Soil**
Date Received: 04/07/16 09:20 — **Percent Solids: 95.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	430	U	980	430	ug/Kg		04/18/16 09:21	04/21/16 10:26	1
Aroclor 1221	430	U	980	430	ug/Kg		04/18/16 09:21	04/21/16 10:26	1
Aroclor 1232	430	U	980	430	ug/Kg		04/18/16 09:21	04/21/16 10:26	1
Aroclor 1242	430	U	980	430	ug/Kg		04/18/16 09:21	04/21/16 10:26	1
Aroclor 1248	430	U	980	430	ug/Kg		04/18/16 09:21	04/21/16 10:26	1
Aroclor 1254	290	U	980	290	ug/Kg		04/18/16 09:21	04/21/16 10:26	1
Aroclor 1260	290	U	980	290	ug/Kg		04/18/16 09:21	04/21/16 10:26	1
Aroclor 1262	290	U	980	290	ug/Kg		04/18/16 09:21	04/21/16 10:26	1
Aroclor 1268	290	U	980	290	ug/Kg		04/18/16 09:21	04/21/16 10:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	89		33 - 150	04/18/16 09:21	04/21/16 10:26	1

Method: 300.0 - Anions, Ion Chromatography

Client Sample ID: B353Y7 — **Lab Sample ID: 160-16819-1**
Date Collected: 04/05/16 08:40 — **Matrix: Soil**
Date Received: 04/07/16 09:20 — **Percent Solids: 95.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.18**	**B**	1.0	0.15	mg/Kg	☼	04/08/16 16:30	04/08/16 22:02	1
Nitrate as N	**0.20**	**B**	0.21	0.057	mg/Kg	☼	04/08/16 16:30	04/08/16 22:02	1
Nitrite as N	**0.076**	**B N**	0.21	0.058	mg/Kg	☼	04/08/16 16:30	04/08/16 22:02	1
Sulfate	**0.92**	**B**	5.2	0.52	mg/Kg	☼	04/08/16 16:30	04/08/16 22:02	1
Chloride	**0.72**	**B**	2.1	0.21	mg/Kg	☼	04/08/16 16:30	04/08/16 22:02	1
Phosphate	0.59	U	5.2	0.59	mg/Kg	☼	04/08/16 16:30	04/08/16 22:02	1

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B353Y7 — **Lab Sample ID: 160-16819-1**
Date Collected: 04/05/16 08:40 — **Matrix: Soil**
Date Received: 04/07/16 09:20 — **Percent Solids: 95.6**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**8350**	**D**	22.7	7.6	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Antimony	0.30	U	2.3	0.30	mg/Kg	☼	04/12/16 08:58	04/19/16 19:00	10
Arsenic	**4.8**	**D**	4.5	1.2	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Barium	**105**	**D**	9.1	0.43	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Cadmium	**0.093**	**B D**	0.23	0.073	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Chromium	**9.9**	**D**	4.5	2.0	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Copper	**19.7**	**D**	4.5	0.46	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Lead	**6.0**	**D**	1.4	0.45	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Manganese	**562**	**D N**	2.3	0.35	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Nickel	**13.7**	**D**	2.3	0.49	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Selenium	**1.8**	**B D**	2.3	0.72	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Silver	0.11	U	0.91	0.11	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10
Uranium	**0.72**	**D**	0.45	0.090	mg/Kg	☼	04/14/16 10:39	04/20/16 01:42	10

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 7471B - Mercury (CVAA)

Client Sample ID: B353Y7
Date Collected: 04/05/16 08:40
Date Received: 04/07/16 09:20

Lab Sample ID: 160-16819-1
Matrix: Soil
Percent Solids: 95.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.089**		0.032	0.011	mg/Kg	☼	04/11/16 09:20	04/11/16 16:00	1

General Chemistry

Client Sample ID: B353Y7
Date Collected: 04/05/16 08:40
Date Received: 04/07/16 09:20

Lab Sample ID: 160-16819-1
Matrix: Soil
Percent Solids: 95.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	**0.69**	**N**	0.52	0.096	mg/Kg	☼	04/23/16 17:30	04/23/16 19:18	1
Cyanide, Total	0.12	U	0.52	0.12	mg/Kg	☼	04/18/16 17:20	04/18/16 21:23	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 160-244911/1-A
Matrix: Solid
Analysis Batch: 244912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 244911

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.43	U	5.0	0.43	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
1,1-Dichloroethane	0.39	U	5.0	0.39	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
1,2-Dichloroethane	0.87	U	5.0	0.87	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
2-Butanone (MEK)	1.9	U	20	1.9	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
4-Methyl-2-pentanone (MIBK)	0.73	U	20	0.73	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Acetone	6.5	U	20	6.5	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Benzene	0.25	U	5.0	0.25	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Carbon tetrachloride	0.51	U	5.0	0.51	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Chlorobenzene	0.38	U	5.0	0.38	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Chloroform	0.38	U	5.0	0.38	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
cis-1,2-Dichloroethylene	0.60	U	5.0	0.60	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Ethylbenzene	0.30	U	5.0	0.30	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Methylene Chloride	1.6	U	5.0	1.6	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
n-Butylbenzene	0.60	U	5.0	0.60	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Tetrachloroethene	0.32	U	5.0	0.32	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Toluene	0.70	U	5.0	0.70	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
trans-1,2-Dichloroethylene	0.94	U	5.0	0.94	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Trichloroethene	0.39	U	5.0	0.39	ug/Kg		04/07/16 15:50	04/07/16 17:55	1
Xylenes, Total	0.85	U	10	0.85	ug/Kg		04/07/16 15:50	04/07/16 17:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*67 - 132*	*04/07/16 15:50*	*04/07/16 17:55*	*1*
4-Bromofluorobenzene (Surr)	*100*		*59 - 150*	*04/07/16 15:50*	*04/07/16 17:55*	*1*
Dibromofluoromethane (Surr)	*100*		*53 - 143*	*04/07/16 15:50*	*04/07/16 17:55*	*1*
Toluene-d8 (Surr)	*101*		*74 - 135*	*04/07/16 15:50*	*04/07/16 17:55*	*1*

Lab Sample ID: LCS 160-244911/2-A
Matrix: Solid
Analysis Batch: 244912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 244911

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	54.0		ug/Kg		108	71 - 127
1,1-Dichloroethane	50.0	51.0		ug/Kg		102	80 - 120
1,2-Dichloroethane	50.0	52.7		ug/Kg		105	68 - 128
2-Butanone (MEK)	50.0	48.4		ug/Kg		97	41 - 140
4-Methyl-2-pentanone (MIBK)	50.0	50.7		ug/Kg		101	67 - 130
Acetone	50.0	54.3		ug/Kg		109	39 - 140
Benzene	50.0	49.8		ug/Kg		100	80 - 120
Carbon tetrachloride	50.0	56.0		ug/Kg		112	68 - 130
Chlorobenzene	50.0	50.6		ug/Kg		101	80 - 120
Chloroform	50.0	51.7		ug/Kg		103	78 - 120
cis-1,2-Dichloroethylene	50.0	49.1		ug/Kg		98	80 - 121
Ethylbenzene	50.0	50.8		ug/Kg		102	79 - 126
Methylene Chloride	50.0	47.9		ug/Kg		96	76 - 120
n-Butylbenzene	50.0	51.3		ug/Kg		103	77 - 132
Tetrachloroethene	50.0	49.9		ug/Kg		100	76 - 126
Toluene	50.0	49.8		ug/Kg		100	76 - 136
trans-1,2-Dichloroethylene	50.0	49.9		ug/Kg		100	76 - 122

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 160-244911/2-A
Matrix: Solid
Analysis Batch: 244912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 244911

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	50.0	52.2		ug/Kg		104	66 - 130
Xylenes, Total	100	101		ug/Kg		101	79 - 132

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*67 - 132*
4-Bromofluorobenzene (Surr)	*98*		*59 - 150*
Dibromofluoromethane (Surr)	*103*		*53 - 143*
Toluene-d8 (Surr)	*102*		*74 - 135*

Lab Sample ID: LCSD 160-244911/3-A
Matrix: Solid
Analysis Batch: 244912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 244911

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	51.8		ug/Kg		104	71 - 127	4	20
1,1-Dichloroethane	50.0	49.4		ug/Kg		99	80 - 120	3	20
1,2-Dichloroethane	50.0	52.6		ug/Kg		105	68 - 128	0	20
2-Butanone (MEK)	50.0	47.1		ug/Kg		94	41 - 140	3	20
4-Methyl-2-pentanone (MIBK)	50.0	48.8		ug/Kg		98	67 - 130	4	20
Acetone	50.0	54.6		ug/Kg		109	39 - 140	1	20
Benzene	50.0	48.6		ug/Kg		97	80 - 120	3	20
Carbon tetrachloride	50.0	53.8		ug/Kg		108	68 - 130	4	20
Chlorobenzene	50.0	49.0		ug/Kg		98	80 - 120	3	20
Chloroform	50.0	49.9		ug/Kg		100	78 - 120	3	20
cis-1,2-Dichloroethylene	50.0	48.5		ug/Kg		97	80 - 121	1	20
Ethylbenzene	50.0	48.2		ug/Kg		96	79 - 126	5	20
Methylene Chloride	50.0	48.2		ug/Kg		96	76 - 120	1	20
n-Butylbenzene	50.0	48.6		ug/Kg		97	77 - 132	5	20
Tetrachloroethene	50.0	47.7		ug/Kg		95	76 - 126	5	20
Toluene	50.0	47.6		ug/Kg		95	76 - 136	5	20
trans-1,2-Dichloroethylene	50.0	49.1		ug/Kg		98	76 - 122	2	20
Trichloroethene	50.0	50.0		ug/Kg		100	66 - 130	4	20
Xylenes, Total	100	96.3		ug/Kg		96	79 - 132	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*67 - 132*
4-Bromofluorobenzene (Surr)	*95*		*59 - 150*
Dibromofluoromethane (Surr)	*101*		*53 - 143*
Toluene-d8 (Surr)	*101*		*74 - 135*

Lab Sample ID: 160-16819-2 MS
Matrix: Soil
Analysis Batch: 244912

Client Sample ID: B353Y6
Prep Type: Total/NA
Prep Batch: 244911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.33	U	36.2	39.7		ug/Kg	☼	110	80 - 120
1,1-Dichloroethane	0.30	U	36.2	37.8		ug/Kg	☼	104	80 - 120
1,2-Dichloroethane	0.67	U	36.2	41.8		ug/Kg	☼	116	78 - 117

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 160-16819-2 MS
Matrix: Soil
Analysis Batch: 244912

Client Sample ID: B353Y6
Prep Type: Total/NA
Prep Batch: 244911

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Butanone (MEK)	1.5	U	36.2	37.5		ug/Kg	☼	104	69 - 124
4-Methyl-2-pentanone (MIBK)	0.56	U	36.2	39.7		ug/Kg	☼	110	73 - 125
Acetone	5.0	U T	36.2	49.8		ug/Kg	☼	138	54 - 139
Benzene	0.19	U	36.2	37.4		ug/Kg	☼	104	80 - 120
Carbon tetrachloride	0.39	U	36.2	40.3		ug/Kg	☼	111	80 - 120
Chlorobenzene	0.29	U	36.2	36.6		ug/Kg	☼	101	80 - 120
Chloroform	0.29	U	36.2	39.3		ug/Kg	☼	109	80 - 120
cis-1,2-Dichloroethylene	0.46	U	36.2	36.9		ug/Kg	☼	102	80 - 120
Ethylbenzene	0.23	U	36.2	36.1		ug/Kg	☼	100	80 - 120
Methylene Chloride	1.2	U	36.2	36.6		ug/Kg	☼	101	77 - 123
n-Butylbenzene	0.46	U	36.2	33.8		ug/Kg	☼	94	80 - 120
Tetrachloroethene	0.24	U	36.2	34.2		ug/Kg	☼	94	80 - 120
Toluene	0.54	U	36.2	36.0		ug/Kg	☼	100	80 - 124
trans-1,2-Dichloroethylene	0.72	U	36.2	35.9		ug/Kg	☼	99	80 - 120
Trichloroethene	0.30	U	36.2	40.4		ug/Kg	☼	112	79 - 120
Xylenes, Total	0.65	U	72.3	72.3		ug/Kg	☼	100	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*115*		*67 - 132*
4-Bromofluorobenzene (Surr)	*104*		*59 - 150*
Dibromofluoromethane (Surr)	*104*		*53 - 143*
Toluene-d8 (Surr)	*100*		*74 - 135*

Lab Sample ID: 160-16819-2 MSD
Matrix: Soil
Analysis Batch: 244912

Client Sample ID: B353Y6
Prep Type: Total/NA
Prep Batch: 244911

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.33	U	38.3	41.2		ug/Kg	☼	108	80 - 120	4	20
1,1-Dichloroethane	0.30	U	38.3	39.8		ug/Kg	☼	104	80 - 120	5	20
1,2-Dichloroethane	0.67	U	38.3	42.7		ug/Kg	☼	111	78 - 117	2	20
2-Butanone (MEK)	1.5	U	38.3	38.6		ug/Kg	☼	101	69 - 124	3	20
4-Methyl-2-pentanone (MIBK)	0.56	U	38.3	40.2		ug/Kg	☼	105	73 - 125	1	20
Acetone	5.0	U T	38.3	57.4	T	ug/Kg	☼	150	54 - 139	14	20
Benzene	0.19	U	38.3	38.4		ug/Kg	☼	100	80 - 120	3	20
Carbon tetrachloride	0.39	U	38.3	41.8		ug/Kg	☼	109	80 - 120	4	20
Chlorobenzene	0.29	U	38.3	37.5		ug/Kg	☼	98	80 - 120	2	20
Chloroform	0.29	U	38.3	40.4		ug/Kg	☼	106	80 - 120	3	20
cis-1,2-Dichloroethylene	0.46	U	38.3	37.7		ug/Kg	☼	99	80 - 120	2	20
Ethylbenzene	0.23	U	38.3	36.3		ug/Kg	☼	95	80 - 120	1	20
Methylene Chloride	1.2	U	38.3	37.3		ug/Kg	☼	97	77 - 123	2	20
n-Butylbenzene	0.46	U	38.3	32.2		ug/Kg	☼	84	80 - 120	5	20
Tetrachloroethene	0.24	U	38.3	34.2		ug/Kg	☼	89	80 - 120	0	20
Toluene	0.54	U	38.3	37.2		ug/Kg	☼	97	80 - 124	3	20
trans-1,2-Dichloroethylene	0.72	U	38.3	37.4		ug/Kg	☼	98	80 - 120	4	20
Trichloroethene	0.30	U	38.3	40.5		ug/Kg	☼	106	79 - 120	0	20
Xylenes, Total	0.65	U	76.6	71.5		ug/Kg	☼	93	80 - 120	1	20

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 160-16819-2 MSD
Matrix: Soil
Analysis Batch: 244912

Client Sample ID: B353Y6
Prep Type: Total/NA
Prep Batch: 244911

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	112		67 - 132
4-Bromofluorobenzene (Surr)	103		59 - 150
Dibromofluoromethane (Surr)	105		53 - 143
Toluene-d8 (Surr)	101		74 - 135

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

Lab Sample ID: MB 160-245640/1-A
Matrix: Solid
Analysis Batch: 246224

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245640

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	33	U	330	33	ug/Kg		04/13/16 12:07	04/15/16 19:02	1
Tributyl phosphate	46	U	330	46	ug/Kg		04/13/16 12:07	04/15/16 19:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	54		47 - 125	04/13/16 12:07	04/15/16 19:02	1
2-Fluorobiphenyl (Surr)	77		59 - 110	04/13/16 12:07	04/15/16 19:02	1
2-Fluorophenol (Surr)	78		54 - 102	04/13/16 12:07	04/15/16 19:02	1
Nitrobenzene-d5 (Surr)	76		44 - 120	04/13/16 12:07	04/15/16 19:02	1
Phenol-d5 (Surr)	73		51 - 104	04/13/16 12:07	04/15/16 19:02	1
Terphenyl-d14 (Surr)	80		59 - 98	04/13/16 12:07	04/15/16 19:02	1

Lab Sample ID: LCS 160-245640/2-A
Matrix: Solid
Analysis Batch: 246224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245640

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	6670	4250		ug/Kg		64	50 - 96

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	81		47 - 125
2-Fluorobiphenyl (Surr)	82		59 - 110
2-Fluorophenol (Surr)	70		54 - 102
Nitrobenzene-d5 (Surr)	76		44 - 120
Phenol-d5 (Surr)	71		51 - 104
Terphenyl-d14 (Surr)	77		59 - 98

Lab Sample ID: 160-16819-1 MS
Matrix: Soil
Analysis Batch: 246224

Client Sample ID: B353Y7
Prep Type: Total/NA
Prep Batch: 245640

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	35	U	6940	4460		ug/Kg	☼	64	41 - 100

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	83		47 - 125

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

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

Lab Sample ID: 160-16819-1 MS
Matrix: Soil
Analysis Batch: 246224

Client Sample ID: B353Y7
Prep Type: Total/NA
Prep Batch: 245640

Surrogate	MS %Recovery	MS Qualifier	Limits
2-Fluorobiphenyl (Surr)	95		59 - 110
2-Fluorophenol (Surr)	71		54 - 102
Nitrobenzene-d5 (Surr)	76		44 - 120
Phenol-d5 (Surr)	74		51 - 104
Terphenyl-d14 (Surr)	91		59 - 98

Lab Sample ID: 160-16819-1 MSD
Matrix: Soil
Analysis Batch: 246224

Client Sample ID: B353Y7
Prep Type: Total/NA
Prep Batch: 245640

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	35	U	6930	4180		ug/Kg	☼	60	41 - 100	7	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	75		47 - 125
2-Fluorobiphenyl (Surr)	84		59 - 110
2-Fluorophenol (Surr)	72		54 - 102
Nitrobenzene-d5 (Surr)	78		44 - 120
Phenol-d5 (Surr)	69		51 - 104
Terphenyl-d14 (Surr)	81		59 - 98

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

Lab Sample ID: MB 160-246197/1-A
Matrix: Solid
Analysis Batch: 246442

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 246197

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Kerosene (C9-C16)	0.33	U	25	0.33	mg/Kg		04/15/16 08:45	04/18/16 17:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	79		49 - 133	04/15/16 08:45	04/18/16 17:51	1

Lab Sample ID: LCS 160-246197/2-A
Matrix: Solid
Analysis Batch: 246442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 246197

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	83.3	59.5		mg/Kg		71	57 - 105

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	70		49 - 133

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

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

Lab Sample ID: 160-16819-1 MS — **Client Sample ID: B353Y7**
Matrix: Soil — **Prep Type: Total/NA**
Analysis Batch: 246442 — **Prep Batch: 246197**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	0.35	U	86.9	61.3		mg/Kg	☼	70	34 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
o-Terphenyl	*73*		*49 - 133*

Lab Sample ID: 160-16819-1 MSD — **Client Sample ID: B353Y7**
Matrix: Soil — **Prep Type: Total/NA**
Analysis Batch: 246442 — **Prep Batch: 246197**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	0.35	U	87.1	58.4		mg/Kg	☼	67	34 - 150	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
o-Terphenyl	*70*		*49 - 133*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 160-246378/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246896 — **Prep Batch: 246378**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	440	U	1000	440	ug/Kg		04/18/16 09:21	04/20/16 14:09	1
Aroclor 1221	440	U	1000	440	ug/Kg		04/18/16 09:21	04/20/16 14:09	1
Aroclor 1232	440	U	1000	440	ug/Kg		04/18/16 09:21	04/20/16 14:09	1
Aroclor 1242	440	U	1000	440	ug/Kg		04/18/16 09:21	04/20/16 14:09	1
Aroclor 1248	440	U	1000	440	ug/Kg		04/18/16 09:21	04/20/16 14:09	1
Aroclor 1254	300	U	1000	300	ug/Kg		04/18/16 09:21	04/20/16 14:09	1
Aroclor 1260	300	U	1000	300	ug/Kg		04/18/16 09:21	04/20/16 14:09	1
Aroclor 1262	300	U	1000	300	ug/Kg		04/18/16 09:21	04/20/16 14:09	1
Aroclor 1268	300	U	1000	300	ug/Kg		04/18/16 09:21	04/20/16 14:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*86*		*33 - 150*	*04/18/16 09:21*	*04/20/16 14:09*	*1*

Lab Sample ID: LCS 160-246378/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246896 — **Prep Batch: 246378**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	5000	5640		ug/Kg		113	75 - 135
Aroclor 1260	5000	4740		ug/Kg		95	71 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*94*		*33 - 150*

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Lab Sample ID: 160-16819-1 MS — **Client Sample ID: B353Y7**
Matrix: Soil — **Prep Type: Total/NA**
Analysis Batch: 247000 — **Prep Batch: 246378**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor 1016	430	U	4900	5780		ug/Kg		118	22 - 140
Aroclor 1260	290	U	4900	4680		ug/Kg		95	36 - 135

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*93*		*33 - 150*

Lab Sample ID: 160-16819-1 MSD — **Client Sample ID: B353Y7**
Matrix: Soil — **Prep Type: Total/NA**
Analysis Batch: 247000 — **Prep Batch: 246378**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016	430	U	4850	5180		ug/Kg		107	22 - 140	11	30
Aroclor 1260	290	U	4850	4360		ug/Kg		90	36 - 135	7	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*101*		*33 - 150*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 160-244997/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 244998 — **Prep Batch: 244997**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.14	U	1.0	0.14	mg/Kg		04/08/16 16:30	04/08/16 19:22	1
Nitrate as N	0.055	U	0.20	0.055	mg/Kg		04/08/16 16:30	04/08/16 19:22	1
Nitrite as N	0.055	U	0.20	0.055	mg/Kg		04/08/16 16:30	04/08/16 19:22	1
Sulfate	0.50	U	5.0	0.50	mg/Kg		04/08/16 16:30	04/08/16 19:22	1
Chloride	0.20	U	2.0	0.20	mg/Kg		04/08/16 16:30	04/08/16 19:22	1
Phosphate	0.56	U	5.0	0.56	mg/Kg		04/08/16 16:30	04/08/16 19:22	1

Lab Sample ID: LCS 160-244997/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 244998 — **Prep Batch: 244997**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	9.97	9.97		mg/Kg		100	90 - 110
Nitrate as N	3.99	4.05		mg/Kg		102	90 - 110
Nitrite as N	1.60	1.47		mg/Kg		92	90 - 110
Sulfate	79.8	78.9		mg/Kg		99	90 - 110
Chloride	19.9	19.9		mg/Kg		100	90 - 110
Phosphate	79.8	77.7		mg/Kg		97	90 - 110

Lab Sample ID: 160-16744-C-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 244998 — **Prep Batch: 244997**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.16	B	20.8	20.9		mg/Kg	☼	100	90 - 110
Nitrate as N	1.8		4.16	6.00		mg/Kg	☼	101	90 - 110

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 160-16744-C-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 244999 — **Prep Batch: 244997**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.057	U N	1.04	0.883	N	mg/Kg	☼	85	90 - 110
Sulfate	57		41.6	97.8		mg/Kg	☼	99	90 - 110
Chloride	1.9	B	20.8	21.9		mg/Kg	☼	96	90 - 110
Phosphate	0.59	U	41.6	40.1		mg/Kg	☼	96	90 - 110

Lab Sample ID: 160-16744-C-1-B DU — **Client Sample ID: Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 244998 — **Prep Batch: 244997**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.16	B	0.15	U	mg/Kg	☼	NC	20
Nitrate as N	1.8		2.28		mg/Kg	☼	23	20
Nitrite as N	0.057	U N	0.057	U	mg/Kg	☼	NC	20
Sulfate	57		65.3		mg/Kg	☼	14	20
Chloride	1.9	B	2.02	B	mg/Kg	☼	6	20
Phosphate	0.59	U	0.59	U	mg/Kg	☼	NC	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-242926/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246904 — **Prep Batch: 242926**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.055	U	0.42	0.055	mg/Kg		04/12/16 09:00	04/19/16 17:54	2

Lab Sample ID: LCSSRM 160-242926/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246904 — **Prep Batch: 242926**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	88.8	152.7		mg/Kg		171.9	22.0 - 259.0

Lab Sample ID: 160-16694-A-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246904 — **Prep Batch: 242926**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.28	U	44.2	42.81	D	mg/Kg	☼	97	75 - 125

Lab Sample ID: 160-16694-A-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246904 — **Prep Batch: 242926**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.28	U	44.6	43.35	D	mg/Kg	☼	97	75 - 125	1	30

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

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

Lab Sample ID: MB 160-245941/1-A
Matrix: Solid
Analysis Batch: 246914

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 245941

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.6	U	4.8	1.6	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Arsenic	0.25	U	0.95	0.25	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Barium	0.090	U	1.9	0.090	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Cadmium	0.015	U	0.048	0.015	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Chromium	0.43	U	0.95	0.43	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Copper	0.096	U	0.95	0.096	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Lead	0.095	U	0.29	0.095	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Manganese	0.074	U	0.48	0.074	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Nickel	0.10	U	0.48	0.10	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Selenium	0.15	U	0.48	0.15	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Silver	0.023	U	0.19	0.023	mg/Kg		04/14/16 10:39	04/20/16 00:21	2
Uranium	0.019	U	0.095	0.019	mg/Kg		04/14/16 10:39	04/20/16 00:21	2

Lab Sample ID: LCS 160-245941/2-A
Matrix: Solid
Analysis Batch: 246914

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245941

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium	95.6	95.57		mg/Kg		100	80 - 120

Lab Sample ID: LCSSRM 160-245941/3-A
Matrix: Solid
Analysis Batch: 246914

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 245941

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	7460	6654		mg/Kg		89.2	37.3 - 162.2
Arsenic	139	145.8		mg/Kg		104.9	70.4 - 140.3
Barium	203	200.5		mg/Kg		98.8	73.4 - 127.1
Cadmium	96.0	96.65		mg/Kg		100.7	73.2 - 127.1
Chromium	136	131.0		mg/Kg		96.3	69.9 - 129.4
Copper	168	177.4		mg/Kg		105.6	75.6 - 125.0
Lead	133	135.5		mg/Kg		101.9	72.9 - 127.8
Manganese	297	325.2		mg/Kg		109.5	74.4 - 125.6
Nickel	123	133.8		mg/Kg		108.8	73.1 - 128.5
Selenium	177	189.6		mg/Kg		107.1	67.8 - 131.6
Silver	40.2	40.45		mg/Kg		100.6	66.2 - 134.1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

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

Lab Sample ID: 160-16835-C-4-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246914 — **Prep Batch: 245941**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	7130	D	1010	10500	D	mg/Kg	☼	334	75 - 125
Arsenic	4.5	B D	101	108.9	D	mg/Kg	☼	104	75 - 125
Barium	90.1	D	101	191.2	D	mg/Kg	☼	100	75 - 125
Cadmium	0.11	B D	101	101.9	D	mg/Kg	☼	101	75 - 125
Chromium	8.4	D	101	109.1	D	mg/Kg	☼	100	75 - 125
Copper	14.5	D	101	120.4	D	mg/Kg	☼	105	75 - 125
Lead	5.6	D	101	106.4	D	mg/Kg	☼	100	75 - 125
Manganese	400	D N	101	543.2	D N	mg/Kg	☼	143	75 - 125
Nickel	11.0	D	101	121.3	D	mg/Kg	☼	110	75 - 125
Selenium	1.4	B D	50.3	51.82	D	mg/Kg	☼	100	75 - 125
Silver	0.20	B D	20.1	20.50	D	mg/Kg	☼	101	75 - 125
Uranium	0.45	B D	101	103.0	D	mg/Kg	☼	102	75 - 125

Lab Sample ID: 160-16835-C-4-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246914 — **Prep Batch: 245941**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	7130	D	1070	10610	D	mg/Kg	☼	325	75 - 125	1	30
Arsenic	4.5	B D	107	116.9	D	mg/Kg	☼	105	75 - 125	7	30
Barium	90.1	D	107	201.0	D	mg/Kg	☼	104	75 - 125	5	30
Cadmium	0.11	B D	107	110.5	D	mg/Kg	☼	103	75 - 125	8	30
Chromium	8.4	D	107	116.9	D	mg/Kg	☼	101	75 - 125	7	30
Copper	14.5	D	107	129.1	D	mg/Kg	☼	107	75 - 125	7	30
Lead	5.6	D	107	113.7	D	mg/Kg	☼	101	75 - 125	7	30
Manganese	400	D N	107	567.3	D N	mg/Kg	☼	157	75 - 125	4	30
Nickel	11.0	D	107	127.6	D	mg/Kg	☼	109	75 - 125	5	30
Selenium	1.4	B D	53.5	57.10	D	mg/Kg	☼	104	75 - 125	10	30
Silver	0.20	B D	21.4	22.16	D	mg/Kg	☼	103	75 - 125	8	30
Uranium	0.45	B D	107	111.1	D	mg/Kg	☼	103	75 - 125	8	30

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 160-245058/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 245330 — **Prep Batch: 245058**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010	U	0.031	0.010	mg/Kg		04/11/16 09:20	04/11/16 15:50	1

Lab Sample ID: 160-16819-1 MS — **Client Sample ID: B353Y7**
Matrix: Soil — **Prep Type: Total/NA**
Analysis Batch: 245330 — **Prep Batch: 245058**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.089		0.796	0.930		mg/Kg	☼	106	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: 160-16819-1 MSD — **Client Sample ID: B353Y7**
Matrix: Soil — **Prep Type: Total/NA**
Analysis Batch: 245330 — **Prep Batch: 245058**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.089		0.798	0.908		mg/Kg	☼	103	80 - 120	2	30

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 160-247486/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 247637 — **Prep Batch: 247486**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.092	U	0.50	0.092	mg/Kg		04/23/16 17:30	04/23/16 19:13	1

Lab Sample ID: LCS 160-247486/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 247637 — **Prep Batch: 247486**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	5.00	5.35		mg/Kg		107	90 - 110

Lab Sample ID: 160-16819-1 MS — **Client Sample ID: B353Y7**
Matrix: Soil — **Prep Type: Total/NA**
Analysis Batch: 247637 — **Prep Batch: 247486**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.69	N	5.21	6.48	N	mg/Kg	☼	111	90 - 110

Lab Sample ID: 160-16819-1 DU — **Client Sample ID: B353Y7**
Matrix: Soil — **Prep Type: Total/NA**
Analysis Batch: 247637 — **Prep Batch: 247486**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Ammonia (as N)	0.69	N	0.559		mg/Kg	☼	20	30

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 160-246439/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246823 — **Prep Batch: 246439**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.11	U	0.50	0.11	mg/Kg		04/18/16 17:20	04/18/16 20:56	1

Lab Sample ID: HLCS 160-246439/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 246823 — **Prep Batch: 246439**

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	4.80	4.44		mg/Kg		92	85 - 115

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: LCS 160-246439/2-A
Matrix: Solid
Analysis Batch: 246823

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 246439

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			2.40	2.17		mg/Kg		91	85 - 115		

Lab Sample ID: 160-16819-1 MS
Matrix: Soil
Analysis Batch: 246823

Client Sample ID: B353Y7
Prep Type: Total/NA
Prep Batch: 246439

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total	0.12	U	2.51	2.20		mg/Kg	☼	88	60 - 130		

Lab Sample ID: 160-16819-1 DU
Matrix: Soil
Analysis Batch: 246823

Client Sample ID: B353Y7
Prep Type: Total/NA
Prep Batch: 246439

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cyanide, Total	0.12	U		0.12	U	mg/Kg	☼			NC	30

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

GC/MS VOA

Prep Batch: 244911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-2	B353Y6	Total/NA	Soil	5035	
160-16819-2 MS	B353Y6	Total/NA	Soil	5035	
160-16819-2 MSD	B353Y6	Total/NA	Soil	5035	
LCS 160-244911/2-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 160-244911/3-A	Lab Control Sample Dup	Total/NA	Solid	5035	
MB 160-244911/1-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 244912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-2	B353Y6	Total/NA	Soil	8260C	244911
160-16819-2 MS	B353Y6	Total/NA	Soil	8260C	244911
160-16819-2 MSD	B353Y6	Total/NA	Soil	8260C	244911
LCS 160-244911/2-A	Lab Control Sample	Total/NA	Solid	8260C	244911
LCSD 160-244911/3-A	Lab Control Sample Dup	Total/NA	Solid	8260C	244911
MB 160-244911/1-A	Method Blank	Total/NA	Solid	8260C	244911

GC/MS Semi VOA

Prep Batch: 245640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	3550C	
160-16819-1 MS	B353Y7	Total/NA	Soil	3550C	
160-16819-1 MSD	B353Y7	Total/NA	Soil	3550C	
LCS 160-245640/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 160-245640/1-A	Method Blank	Total/NA	Solid	3550C	

Analysis Batch: 246224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1 MS	B353Y7	Total/NA	Soil	8270D	245640
160-16819-1 MSD	B353Y7	Total/NA	Soil	8270D	245640
LCS 160-245640/2-A	Lab Control Sample	Total/NA	Solid	8270D	245640
MB 160-245640/1-A	Method Blank	Total/NA	Solid	8270D	245640

Analysis Batch: 246838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	8270D	245640

GC Semi VOA

Prep Batch: 246197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	3550C	
160-16819-1 MS	B353Y7	Total/NA	Soil	3550C	
160-16819-1 MSD	B353Y7	Total/NA	Soil	3550C	
LCS 160-246197/2-A	Lab Control Sample	Total/NA	Solid	3550C	
MB 160-246197/1-A	Method Blank	Total/NA	Solid	3550C	

Prep Batch: 246378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	3580A	

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

GC Semi VOA (Continued)

Prep Batch: 246378 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1 MS	B353Y7	Total/NA	Soil	3580A	
160-16819-1 MSD	B353Y7	Total/NA	Soil	3580A	
LCS 160-246378/2-A	Lab Control Sample	Total/NA	Solid	3580A	
MB 160-246378/1-A	Method Blank	Total/NA	Solid	3580A	

Analysis Batch: 246442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	8015B	246197
160-16819-1 MS	B353Y7	Total/NA	Soil	8015B	246197
160-16819-1 MSD	B353Y7	Total/NA	Soil	8015B	246197
LCS 160-246197/2-A	Lab Control Sample	Total/NA	Solid	8015B	246197
MB 160-246197/1-A	Method Blank	Total/NA	Solid	8015B	246197

Analysis Batch: 246896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-246378/2-A	Lab Control Sample	Total/NA	Solid	8082A	246378
MB 160-246378/1-A	Method Blank	Total/NA	Solid	8082A	246378

Analysis Batch: 247000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	8082A	246378
160-16819-1 MS	B353Y7	Total/NA	Soil	8082A	246378
160-16819-1 MSD	B353Y7	Total/NA	Soil	8082A	246378

HPLC/IC

Prep Batch: 244997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16744-C-1-B DU	Duplicate	Total/NA	Solid	DILeach_Prep	
160-16744-C-1-C MS	Matrix Spike	Total/NA	Solid	DILeach_Prep	
160-16819-1	B353Y7	Total/NA	Soil	DILeach_Prep	
LCS 160-244997/2-A	Lab Control Sample	Total/NA	Solid	DILeach_Prep	
MB 160-244997/1-A	Method Blank	Total/NA	Solid	DILeach_Prep	

Analysis Batch: 244998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16744-C-1-B DU	Duplicate	Total/NA	Solid	300.0	244997
160-16744-C-1-C MS	Matrix Spike	Total/NA	Solid	300.0	244997
160-16819-1	B353Y7	Total/NA	Soil	300.0	244997
LCS 160-244997/2-A	Lab Control Sample	Total/NA	Solid	300.0	244997
MB 160-244997/1-A	Method Blank	Total/NA	Solid	300.0	244997

Analysis Batch: 244999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16744-C-1-B DU	Duplicate	Total/NA	Solid	300.0	244997
160-16744-C-1-C MS	Matrix Spike	Total/NA	Solid	300.0	244997
160-16819-1	B353Y7	Total/NA	Soil	300.0	244997
LCS 160-244997/2-A	Lab Control Sample	Total/NA	Solid	300.0	244997
MB 160-244997/1-A	Method Blank	Total/NA	Solid	300.0	244997

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Metals

Prep Batch: 242926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16694-A-1-C MS	Matrix Spike	Total/NA	Solid	3050B	
160-16694-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	
160-16819-1	B353Y7	Total/NA	Soil	3050B	
LCSSRM 160-242926/2-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 160-242926/1-A	Method Blank	Total/NA	Solid	3050B	

Prep Batch: 245058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	7471B	
160-16819-1 MS	B353Y7	Total/NA	Soil	7471B	
160-16819-1 MSD	B353Y7	Total/NA	Soil	7471B	
MB 160-245058/1-A	Method Blank	Total/NA	Solid	7471B	

Analysis Batch: 245330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	7471B	245058
160-16819-1 MS	B353Y7	Total/NA	Soil	7471B	245058
160-16819-1 MSD	B353Y7	Total/NA	Soil	7471B	245058
MB 160-245058/1-A	Method Blank	Total/NA	Solid	7471B	245058

Prep Batch: 245941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	3050B	
160-16835-C-4-C MS	Matrix Spike	Total/NA	Solid	3050B	
160-16835-C-4-D MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	
LCS 160-245941/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSSRM 160-245941/3-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 160-245941/1-A	Method Blank	Total/NA	Solid	3050B	

Analysis Batch: 246904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16694-A-1-C MS	Matrix Spike	Total/NA	Solid	6020A	242926
160-16694-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	6020A	242926
160-16819-1	B353Y7	Total/NA	Soil	6020A	242926
LCSSRM 160-242926/2-A	Lab Control Sample	Total/NA	Solid	6020A	242926
MB 160-242926/1-A	Method Blank	Total/NA	Solid	6020A	242926

Analysis Batch: 246914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	6020A	245941
160-16835-C-4-C MS	Matrix Spike	Total/NA	Solid	6020A	245941
160-16835-C-4-D MSD	Matrix Spike Duplicate	Total/NA	Solid	6020A	245941
LCS 160-245941/2-A	Lab Control Sample	Total/NA	Solid	6020A	245941
LCSSRM 160-245941/3-A	Lab Control Sample	Total/NA	Solid	6020A	245941
MB 160-245941/1-A	Method Blank	Total/NA	Solid	6020A	245941

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

General Chemistry

Analysis Batch: 244933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16810-A-1 DU	Duplicate	Total/NA	Solid	Moisture	
160-16819-1	B353Y7	Total/NA	Soil	Moisture	

Analysis Batch: 245564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-2	B353Y6	Total/NA	Soil	Moisture	
160-16853-A-4 DU	Duplicate	Total/NA	Solid	Moisture	

Prep Batch: 246439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	9010C	
160-16819-1 DU	B353Y7	Total/NA	Soil	9010C	
160-16819-1 MS	B353Y7	Total/NA	Soil	9010C	
HLCS 160-246439/3-A	Lab Control Sample	Total/NA	Solid	9010C	
LCS 160-246439/2-A	Lab Control Sample	Total/NA	Solid	9010C	
MB 160-246439/1-A	Method Blank	Total/NA	Solid	9010C	

Analysis Batch: 246823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	9012B	246439
160-16819-1 DU	B353Y7	Total/NA	Soil	9012B	246439
160-16819-1 MS	B353Y7	Total/NA	Soil	9012B	246439
HLCS 160-246439/3-A	Lab Control Sample	Total/NA	Solid	9012B	246439
LCS 160-246439/2-A	Lab Control Sample	Total/NA	Solid	9012B	246439
MB 160-246439/1-A	Method Blank	Total/NA	Solid	9012B	246439

Prep Batch: 247486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	DILeach_Prep	
160-16819-1 DU	B353Y7	Total/NA	Soil	DILeach_Prep	
160-16819-1 MS	B353Y7	Total/NA	Soil	DILeach_Prep	
LCS 160-247486/2-A	Lab Control Sample	Total/NA	Solid	DILeach_Prep	
MB 160-247486/1-A	Method Blank	Total/NA	Solid	DILeach_Prep	

Analysis Batch: 247637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16819-1	B353Y7	Total/NA	Soil	350.1	247486
160-16819-1 DU	B353Y7	Total/NA	Soil	350.1	247486
160-16819-1 MS	B353Y7	Total/NA	Soil	350.1	247486
LCS 160-247486/2-A	Lab Control Sample	Total/NA	Solid	350.1	247486
MB 160-247486/1-A	Method Blank	Total/NA	Solid	350.1	247486

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Soil **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(67-132)	(59-150)	(53-143)	(74-135)
160-16819-2	B353Y6	103	99	95	97
160-16819-2 MS	B353Y6	115	104	104	100
160-16819-2 MSD	B353Y6	112	103	105	101

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(67-132)	(59-150)	(53-143)	(74-135)
LCS 160-244911/2-A	Lab Control Sample	106	98	103	102
LCSD 160-244911/3-A	Lab Control Sample Dup	105	95	101	101
MB 160-244911/1-A	Method Blank	107	100	100	101

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

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

Matrix: Soil **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(47-125)	(59-110)	(54-102)	(44-120)	(51-104)	(59-98)
160-16819-1	B353Y7	73	91	88	74	101	91
160-16819-1 MS	B353Y7	83	95	71	76	74	91
160-16819-1 MSD	B353Y7	75	84	72	78	69	81

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)

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(47-125)	(59-110)	(54-102)	(44-120)	(51-104)	(59-98)
LCS 160-245640/2-A	Lab Control Sample	81	82	70	76	71	77
MB 160-245640/1-A	Method Blank	54	77	78	76	73	80

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**

		Percent Surrogate Recovery (Acceptance Limits)
		OTPH1
Lab Sample ID	Client Sample ID	(49-133)
160-16819-1	B353Y7	77
160-16819-1 MS	B353Y7	73
160-16819-1 MSD	B353Y7	70

Surrogate Legend

OTPH = o-Terphenyl

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTPH1
Lab Sample ID	Client Sample ID	(49-133)
LCS 160-246197/2-A	Lab Control Sample	70
MB 160-246197/1-A	Method Blank	79

Surrogate Legend

OTPH = o-Terphenyl

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Soil **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCB1
Lab Sample ID	Client Sample ID	(33-150)
160-16819-1	B353Y7	89
160-16819-1 MS	B353Y7	93
160-16819-1 MSD	B353Y7	101

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F16-020

TestAmerica Job ID: 160-16819-1
SDG: SL2163

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	**Client Sample ID**	**DCB1 (33-150)**							
LCS 160-246378/2-A	Lab Control Sample	94							
MB 160-246378/1-A	Method Blank	86							

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)