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: 160-10857-1
TestAmerica Sample Delivery Group: SL1772
Client Project/Site: S,W,I,A ,X SAFS- GROUNDWATER
Revision: 1

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

Attn: General Mailbox

Authorized for release by:
5/27/2015 3:08:46 PM

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

LINKS

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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.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Chain of Custody 7
Definitions/Glossary 29
Method Summary 30
Sample Summary 31
Client Sample Results 32
QC Sample Results 38
QC Association Summary 46
Surrogate Summary 49

Job ID: 160-10857-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

Rev 1. - Chains of custody for samples B30D31, B30D32, B30D33 and B30CD2 have been included in the data package.

CH2MHill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
April 20, 2015
Attention: Scot Fitzgerald

SDG	: SL1772
Number of Samples	: 21 samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: March 20, 2015

II. Introduction

Between March 12 and March 20, 21 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 t this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: W15-003, S15-003, X15-004

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 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.

IV. Definitions

QCBLK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike

Job ID: 160-10857-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

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: 181116

The following compounds were outside the method recommended control limits for the minimum response factor in the continuing calibratic verification (CCV) associated with batch 18116: Acetone, 2-Butanone, 1- Butanol and 4- Methyl- 2- pentanone. A reporting limit standard (LOQV-1ug/L) was analyzed within the analytical batch and these compounds were identified; therefore, the data has been reported. The associated sample was not detected above the reporting limit for the affected analytes. (LOQV 160-181116/8)

TOX

Batch: 184934

The following samples in TOX batch 184934 exhibited bottom column results greater than 10% of the combined results of the top and bottor columns: B30D31 (160-10857-1), B30CD2 (160-10857-3), B30D32 (160-10857-4), B30CD0 (160-10880-1), B30CC6 (160-10880-2), B30D (160-10880-3), B30D27 (160-10880-4), B30D26 (160-10880-5), B30D21 (160-10959-1), B30CC2 (160-10959-2), B30D20 (160-10959-3), (160-10959-4) and (160-10880-A-5-B DU). However, the data is not believed to be adversely affected, as the samples did not contain any residual chlorine and the carbon columns were not overloaded. Thus, this excursion is attributed to column channeling and results may be reported, per method 9020B.

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

Alkalinity
Cyanide
TOC

Job ID: 160-10857-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

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

Problem and Discrepancy Report

TASL

SDG SL1772

5/21/15

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1. **The data package has the following issues:**

   There is no COC page present for the following samples: B30D31, B30D32, B30D33, B30CD2 (COC# W15-003-119). Please have it inserted into the data package.

   Resolution: *Provide appropriate correction.*

Lab Response: COCs were included in data package.

Please correct the issue and resubmit the hard copy data package.

Provide a resolution to each issue noted on the report

Page **1** of **1**

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-10857-1
SDG Number: SL1772

Login Number: 10857
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	0.2
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.	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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CH2MHill Plateau Remediation Company 821772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W15-003-119**

Collector	J.R. Zunker/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	W15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	RCRA, MARCH 2015	**Logbook No.**	HNF-N-506 70135	**Ice Chest No.**	GLOS-~~159~~ 432 RLO 3/11/15
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 0371 9324
Protocol	RCRA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30D31	N	W	MAR 11 2015	1034	1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30D31	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30D33	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30D33	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30CD2	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30CD2	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30D32	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30D32	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Zunker/CHPRC			MAR 11 2015 1155	F.M. Hall/CHPRC			MAR 11 2015 1155
F.M. Hall/CHPRC			MAR 11 2015 1400	FEDEX			
FED EX				Brian Daniels			3/12/15 0910

Matrix *

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

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

PRINTED O 1/26/2015

A-6004-842 (REV 2)

IMPORTANT!
The winter storm that brought hazardous conditions across the southeastern and northeastern U.S. Learn More

FedEx® Tracking

773103719324

Ship (P/U) date
Wed 3/11/2015 3:21 pm

RICHLAND, WA US

Delivered
Signed for by: J.CLARKE

Actual delivery :
Thur 3/12/2015 9:09 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 3/12/2015 - Thursday		
9:09 am	Delivered	EARTH CITY, MO
7:30 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:24 am	At local FedEx facility	EARTH CITY, MO
5:42 am	At destination sort facility	BERKELEY, MO
4:52 am	Departed FedEx location	MEMPHIS, TN
12:22 am	Arrived at FedEx location	MEMPHIS, TN
- 3/11/2015 - Wednesday		
5:08 pm	Left FedEx origin facility	PASCO, WA
3:21 pm	Picked up	PASCO, WA
3:09 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	773103719324	Service	FedEx Priority Overnight
Weight	52 lbs / 23.59 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	52 lbs / 23.59 kgs
Shipper reference	gws-432	Packaging	Your Packaging
Special handling section	Deliver Weekday		

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-10880-1
SDG Number: SL1772

Login Number: 10880
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	4.6
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.	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 821772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W15-003-118**

Collector	J.R. Zunker/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	W15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	RCRA, MARCH 2015	**Logbook No.**	HNF-N-506 70/34	**Ice Chest No.**	CWS-454
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 1633 6348
Protocol	RCRA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30CD0	N	W	MAR 11 2015	1430	1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30CD0	N	W	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Zunker/CHPRC			MAR 11 2015 1505	SSU-1			MAR 11 2015 1505
SSU-1			MAR 12 2015 1225	M.A. White/CHPRC			MAR 12 2015 1225
M.A. White/CHPRC			MAR 12 2015 1400	FEDEX			
FED EX				Robert C. Castillo			3-13-15 0930

Matrix *

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

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

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A-6004-842 (REV 2)

May 27, 2015 Rev. 1
1 of 8
5/27/2015

CH2MHill Plateau Remediation Company 81772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W15-003-117**

Collector	J.R. Zunker/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	W15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	RCRA, MARCH 2015	**Logbook No.**	HNF-N-506 70 / 36	**Ice Chest No.**	CWS-154
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 1633 6348
Protocol	RCRA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30CC6	N	W	MAR 11 2015	1357	1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30CC6	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30D25	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30D25	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30D27	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30D27	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30D26	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30D26	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Zunker/CHPRC			MAR 11 2015 1505	SSU-1			MAR 11 2015 1505
SSU-1			MAR 12 2015 1225	M.A. White/CHPRC			MAR 12 2015 1225
M.A. White/CHPRC			MAR 12 2015 1400	FEDEX			
FED EX				Robert L. Castillo			3-13-15 0930

Matrix *

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

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

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A-6004-842 (REV 2)

FedEx ® Tracking

773116336348

Ship (P/U) date :
Thur 3/12/2015 3:26 pm

RICHLAND, WA US

Delivered
Signed for by: B.DANIELS

Actual delivery :
Fri 3/13/2015 9:23 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 3/13/2015 - Friday		
9:23 am	Delivered	EARTH CITY, MO
7:04 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:58 am	At local FedEx facility	EARTH CITY, MO
6:00 am	At destination sort facility	BERKELEY, MO
5:14 am	Departed FedEx location	MEMPHIS, TN
12:52 am	Arrived at FedEx location	MEMPHIS, TN
- 3/12/2015 - Thursday		
5:03 pm	Left FedEx origin facility	PASCO, WA
4:40 pm	Shipment information sent to FedEx	
3:26 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	773116336348	Service	FedEx Priority Overnight
Weight	85 lbs / 38.56 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	85 lbs / 38.56 kgs
Shipper reference	gws-454	Packaging	Your Packaging
Special handling section	Deliver Weekday		

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-10891-1
SDG Number: SL1772

Login Number: 10891
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	2.3
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.	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 81772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S15-003-268**

Page 1 of 1

Collector	K.C. Patterson CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	SURV, MARCH 2015	**Logbook No.**	HNF-N-506 70 / 358	**Ice Chest No.**	~~7731 2586 0351~~ @ 3-13-15 GWS-032
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 2586 0351
Protocol	SURV	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30FL4	N	W	MAR 13 2015	0845	1x250-mL G/P	9012_CYANIDE: COMMON	14 Days	NaOH to pH >=12/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson CHPRC			MAR 13 2015 1145	M.A. White/CHPRC			MAR 13 2015 1145
M.A. White/CHPRC			MAR 13 2015 1400	FEDEX			
FED EX				Jill Clarke	Jill Clarke		3.14.15 0910

Matrix *

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

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

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company 81772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S15-003-269**

Page 1 of 1

Collector	K.C. Patterson CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	SURV, MARCH 2015	**Logbook No.**	HNF-N-506 70/38	**Ice Chest No.**	~~7731 2586 0351~~ @ 3-13-15 GWS-032
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 2586 0351
Protocol	SURV	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30FL5	N	W	MAR 13 2015	1123	1x250-mL G/P	9012_CYANIDE: COMMON	14 Days	NaOH to pH >=12/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson CHPRC			MAR 13 2015 1145	M.A. White/CHPRC			MAR 13 2015 1145
M.A. White/CHPRC			MAR 13 2015 1400				
FED EX				FEDEX			
				Jill Clarke			3.14.15 0910

Matrix *

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

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

PRINTED O 1/28/2015 A-6004-842 (REV 2)

FedEx ® Tracking

773125860351

Ship (P/U) date :
Fri 3/13/2015 3:31 pm

RICHLAND, WA US

Delivered
Signed for by : J.CLARK

Actual delivery :
Sat 3/14/2015 8:58 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 3/14/2015 - Saturday		
8:58 am	Delivered	EARTH CITY, MO
8:25 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:37 am	At local FedEx facility	EARTH CITY, MO
6:08 am	At destination sort facility	BERKELEY, MO
5:23 am	Departed FedEx location	MEMPHIS, TN
- 3/13/2015 - Friday		
3:42 pm	Shipment information sent to FedEx	
3:31 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	773125860351	Service	FedEx Priority Overnight
Weight	7 lbs / 3.18 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	7 lbs / 3.18 kgs
Shipper reference	gws-032	Packaging	Your Packaging
Special handling section	For Saturday Delivery		

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-10959-1
SDG Number: SL1772

Login Number: 10959
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	5.7
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.	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 521772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W15-003-116**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	W15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	RCRA, MARCH 2015	**Logbook No.**	HNF-N-506 74/63	**Ice Chest No.**	GW5-435
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 5986 3094
Protocol	RCRA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30D21	N	W	3-18-15	0843	1x1-L aGs*	9020_TOX: COMMON ✓	28 Days	H2SO4 to pH <2/Cool <=6C
B30D21	N	W			1x250-mL aG	9060_TOC: COMMON ✓	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30CC2	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30CC2	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30D20	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30D20	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B30D19	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B30D19	N	W	3-18-15	0843	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	K.C. Patterson/CHPRC		MAR 18 2015 1010		B.E. Briggs CHPRC	BeBriggs	MAR 18 2015 1010
B.E. Briggs CHPRC	BeBriggs		MAR 18 2015 1400	FEDEX	Robert L. Castillo		
FED EX						3.19.15	0920

Matrix *

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

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

PRINTED O 1/27/2015

A-6004-842 (REV 2)

FedEx® Tracking

773159863094

Ship (P/U) date :
Wed 3/18/2015 3:27 pm

RICHLAND, WA US

Delivered
Signed for by: J CLARKE

Actual delivery :
Thur 3/19/2015 9:09 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 3/19/2015 - Thursday		
9:09 am	Delivered	EARTH CITY, MO
6:58 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:53 am	At local FedEx facility	EARTH CITY, MO
5:34 am	At destination sort facility	BERKELEY, MO
4:49 am	Departed FedEx location	MEMPHIS, TN
12:21 am	Arrived at FedEx location	MEMPHIS, TN
- 3/18/2015 - Wednesday		
5:03 pm	Left FedEx origin facility	PASCO, WA
3:40 pm	Shipment information sent to FedEx	
3:27 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	773159863094	Service	FedEx Priority Overnight
Weight	65 lbs / 29.48 kgs	Dimensions	28x16x16 in.
Delivered To	Shipping/Receiving	Total pieces	1
Total shipment weight	65 lbs / 29.48 kgs	Shipper reference	gws-435
Packaging	Your Packaging	Special handling section	Deliver Weekday

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-10982-1
SDG Number: SL1772

Login Number: 10982
List Number: 1
Creator: Daniels, Brian J

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	0.4
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.	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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CH2MHill Plateau Remediation Company SL-1772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **S15-003-265**

Collector	S.W. King/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	SURV, MARCH 2015	**Logbook No.**	HNF-N-506 70 / 40	**Ice Chest No.**	GWS-273
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 7069 0899
Protocol	SURV	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30FH4	N	W	MAR 19 2015	1125	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
S.W. King/CHPRC	[signature]	MAR 19 2015 1300	B.E. Briggs/CHPRC	[signature]	MAR 19 2015 1300
B.E. Briggs/CHPRC	[signature]	MAR 19 2015 1400	FEDEX		
FED EX			Brian Daniels	[signature]	3/20/15 0910

Matrix *

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

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

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company 521772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W15-003-136**

Collector	S.W. King/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	W15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	RCRA, MARCH 2015	**Logbook No.**	HNF-N-506 7040	**Ice Chest No.**	GWS-273
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 7069 0899
Protocol	RCRA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30CW2	N	W	MAR 19 2015	1125	4x40-mL aGs*	8260_VOA_GCMS: COMMON; 8260_VOA_GCMS: GW 01	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
S.W. King/CHPRC			MAR 19 2015 1300	B.E. Briggs/CHPRC	BeBriggs		MAR 19 2015 1300
B.E. Briggs/CHPRC	BeBriggs		MAR 19 2015 1400	FEDEX			
FED EX				Brian Daniels	B—		3/20/15 0910

Matrix *

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

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

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL1772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-004-141**

Collector	S.W. King/CHPRC	**Contact/Requester**	WATERS-HUSTED, K	**Telephone No.**	376-4650
SAF No.	X15-004	**Sampling Origin**	HANFORD SITE	**Purchase Order/Charge Code**	300071
Project Title	GW Sitewide Surv, FY15	**Logbook No.**	HNF-N-506 70 / 40	**Ice Chest No.**	GWS-273
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 7069 0899
Protocol	SURV	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Batch with A, I, S, and W SAFs.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30HN3	N	W	MAR 19 2015	0840	4x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
S.W. King/CHPRC			MAR 19 2015 1300	B.E. Briggs/CHPRC			MAR 19 2015 1300
B.E. Briggs/CHPRC			MAR 19 2015 1400	FEDEX			
FED EX				Brian Daniels			3/20/15 0910

Matrix *

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

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

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company 81772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W15-003-137**

Collector	S.W. King/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	W15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	RCRA, MARCH 2015	**Logbook No.**	HNF-N-506 70 / 40	**Ice Chest No.**	GWS-273
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 7069 0899
Protocol	RCRA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30CX2	N	W	MAR 19 2015	0840	4x40-mL aGs*	8260_VOA_GCMS: COMMON; 8260_VOA_GCMS: GW 01	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
S.W. King/CHPRC		Scott King	MAR 19 2015 1300	B.E. Briggs/CHPRC		BeBriggs	MAR 19 2015 1300
B.E. Briggs/CHPRC		BeBriggs	MAR 19 2015 1400	FEDEX			
FED EX				Brian Daniels		B-l	3/20/15 0910

Matrix *

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

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

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A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company 821772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W15-003-135**

Page 1 of 1

Collector	D.J. Woehle/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	W15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	RCRA, MARCH 2015	**Logbook No.**	HNF-N-506 74/64	**Ice Chest No.**	GWS-273
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 7069 0899
Protocol	RCRA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30CV9	N	W	MAR 19 2015	1051	4x40-mL aGs*	8260_VOA_GCMS: COMMON; 8260_VOA_GCMS: GW 01	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC	D. Hubell		MAR 19 2015 1300	B.E. Briggs/CHPRC		Be Briggs	MAR 19 2015 1300
B.E. Briggs/CHPRC		Be Briggs	MAR 19 2015 1400	FEDEX			
FED EX				Brian Daniels		B	3/20/15 0910

Matrix *

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

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

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CH2MHill Plateau Remediation Company 521772

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **W15-003-138**

Page 1 of 1

Collector	D.J. Woehle/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	W15-003	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071
Project Title	RCRA, MARCH 2015	**Logbook No.**	HNF-N-506 74 164	**Ice Chest No.**	GWS-273
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7731 7069 0899
Protocol	RCRA	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	N/A

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

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B30CX7	N	W	MAR 19 2015	0842	4x40-mL aGs*	8260_VOA_GCMS: COMMON; 8260_VOA_GCMS: GW 01	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC			MAR 19 2015 1300	B.E. Briggs/CHPRC			MAR 19 2015 1300
B.E. Briggs/CHPRC			MAR 19 2015 1400	FEDEX			
FED EX				Brian Daniels			3/20/15 0910

Matrix *

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

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

PRINTED O 1/28/2015

A-6004-842 (REV 2)

FedEx ® Tracking

773170690899

Ship (P/U) date :
Thur 3/19/2015 3:25 pm

RICHLAND, WA US

Delivered
Signed for by: B.DANIELS

Actual delivery :
Fri 3/20/2015 9:04 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 3/20/2015 - Friday		
9:04 am	Delivered	EARTH CITY, MO
6:47 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:42 am	At local FedEx facility	EARTH CITY, MO
5:24 am	At destination sort facility	BERKELEY, MO
4:34 am	Departed FedEx location	MEMPHIS, TN
12:28 am	Arrived at FedEx location	MEMPHIS, TN
- 3/19/2015 - Thursday		
3:55 pm	Shipment information sent to FedEx	
3:25 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	773170690899	Service	FedEx Priority Overnight
Weight	18 lbs / 8.16 kgs	Dimensions	13x10x15 in.
Delivered To	Shipping/Receiving	Total pieces	1
Total shipment weight	18 lbs / 8.16 kgs	Shipper reference	GWS-273
Packaging	Your Packaging	Special handling section	Deliver Weekday

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS VOA TICs

Qualifier	Qualifier Description
N	Presumptive evidence of material.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL

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: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-10857-1
SDG: SL1772

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL SL
310.1	Alkalinity	MCAWW	TAL SL
9012B	Cyanide, Total andor Amenable	SW846	TAL SL
9020B	Organic Halides, Total (TOX)	SW846	TAL SL
9060	Organic Carbon, Total (TOC)	SW846	TAL SL

Protocol References:

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: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-10857-1
SDG: SL1772

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-10857-1	B30D31	Water	03/11/15 10:34	03/12/15 09:10
160-10857-2	B30D33	Water	03/11/15 10:34	03/12/15 09:10
160-10857-3	B30CD2	Water	03/11/15 10:34	03/12/15 09:10
160-10857-4	B30D32	Water	03/11/15 10:34	03/12/15 09:10
160-10880-1	B30CD0	Water	03/11/15 14:30	03/13/15 09:30
160-10880-2	B30CC6	Water	03/11/15 13:57	03/13/15 09:30
160-10880-3	B30D25	Water	03/11/15 13:57	03/13/15 09:30
160-10880-4	B30D27	Water	03/11/15 13:57	03/13/15 09:30
160-10880-5	B30D26	Water	03/11/15 13:57	03/13/15 09:30
160-10891-1	B30FL4	Water	03/13/15 06:45	03/14/15 09:10
160-10891-2	B30FL5	Water	03/13/15 11:23	03/14/15 09:10
160-10959-1	B30D21	Water	03/18/15 08:43	03/19/15 09:20
160-10959-2	B30CC2	Water	03/18/15 08:43	03/19/15 09:20
160-10959-3	B30D20	Water	03/18/15 08:43	03/19/15 09:20
160-10959-4	B30D19	Water	03/18/15 08:43	03/19/15 09:20
160-10982-1	B30FH4	Water	03/19/15 11:25	03/20/15 09:10
160-10982-2	B30CW2	Water	03/19/15 11:25	03/20/15 09:10
160-10982-3	B30HN3	Water	03/19/15 08:40	03/20/15 09:10
160-10982-4	B30CX2	Water	03/19/15 08:40	03/20/15 09:10
160-10982-5	B30CV9	Water	03/19/15 10:51	03/20/15 09:10
160-10982-6	B30CX7	Water	03/19/15 08:42	03/20/15 09:10

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

Client Sample ID: B30CW2 — **Lab Sample ID: 160-10982-2**
Date Collected: 03/19/15 11:25 — **Matrix: Water**
Date Received: 03/20/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 14:40	1
1,1,2-Trichloroethane	0.15	U	1.0	0.15	ug/L			03/25/15 14:40	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 14:40	1
1,1-Dichloroethene	0.080	U	1.0	0.080	ug/L			03/25/15 14:40	1
1,2-Dichloroethane	0.10	U	1.0	0.10	ug/L			03/25/15 14:40	1
1,4-Dichlorobenzene	0.12	U	1.0	0.12	ug/L			03/25/15 14:40	1
1-Butanol	12	U	50	12	ug/L			03/25/15 14:40	1
2-Butanone (MEK)	0.52	U	5.0	0.52	ug/L			03/25/15 14:40	1
4-Methyl-2-pentanone (MIBK)	0.12	U	5.0	0.12	ug/L			03/25/15 14:40	1
Acetone	0.34	U	2.0	0.34	ug/L			03/25/15 14:40	1
Benzene	0.060	U	1.0	0.060	ug/L			03/25/15 14:40	1
Carbon disulfide	0.050	U	1.0	0.050	ug/L			03/25/15 14:40	1
Carbon tetrachloride	0.13	U	1.0	0.13	ug/L			03/25/15 14:40	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/25/15 14:40	1
Chloroform	0.10	U	1.0	0.10	ug/L			03/25/15 14:40	1
cis-1,2-Dichloroethylene	0.090	U	1.0	0.090	ug/L			03/25/15 14:40	1
Ethyl Cyanide	1.4	U	10	1.4	ug/L			03/25/15 14:40	1
Ethylbenzene	0.090	U	1.0	0.090	ug/L			03/25/15 14:40	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			03/25/15 14:40	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			03/25/15 14:40	1
Tetrahydrofuran	1.1	U	10	1.1	ug/L			03/25/15 14:40	1
Toluene	0.070	U	1.0	0.070	ug/L			03/25/15 14:40	1
trans-1,2-Dichloroethylene	0.080	U	1.0	0.080	ug/L			03/25/15 14:40	1
Trichloroethene	**0.33**	**J**	1.0	0.25	ug/L			03/25/15 14:40	1
Vinyl chloride	0.080	U	2.0	0.080	ug/L			03/25/15 14:40	1
Xylenes, Total	0.20	U	3.0	0.20	ug/L			03/25/15 14:40	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*03/25/15 14:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*75 - 129*		*03/25/15 14:40*	*1*
4-Bromofluorobenzene (Surr)	*120*		*81 - 130*		*03/25/15 14:40*	*1*
Dibromofluoromethane (Surr)	*98*		*81 - 124*		*03/25/15 14:40*	*1*
Toluene-d8 (Surr)	*122*		*87 - 128*		*03/25/15 14:40*	*1*

Client Sample ID: B30HN3 — **Lab Sample ID: 160-10982-3**
Date Collected: 03/19/15 08:40 — **Matrix: Water**
Date Received: 03/20/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 11:32	1
1,1,2-Trichloroethane	0.15	U	1.0	0.15	ug/L			03/25/15 11:32	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 11:32	1
1,1-Dichloroethene	0.080	U	1.0	0.080	ug/L			03/25/15 11:32	1
1,2-Dichloroethane	0.10	U	1.0	0.10	ug/L			03/25/15 11:32	1
2-Butanone (MEK)	0.52	U	5.0	0.52	ug/L			03/25/15 11:32	1
4-Methyl-2-pentanone (MIBK)	0.12	U	5.0	0.12	ug/L			03/25/15 11:32	1
Acetone	0.34	U	2.0	0.34	ug/L			03/25/15 11:32	1
Benzene	0.060	U	1.0	0.060	ug/L			03/25/15 11:32	1
Carbon disulfide	0.050	U	1.0	0.050	ug/L			03/25/15 11:32	1

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

Client Sample ID: B30HN3 — **Lab Sample ID: 160-10982-3**
Date Collected: 03/19/15 08:40 — **Matrix: Water**
Date Received: 03/20/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.13	U	1.0	0.13	ug/L			03/25/15 11:32	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/25/15 11:32	1
Chloroform	0.10	U	1.0	0.10	ug/L			03/25/15 11:32	1
Ethylbenzene	0.090	U	1.0	0.090	ug/L			03/25/15 11:32	1
Methylene Chloride	**9.7**		1.0	0.27	ug/L			03/25/15 11:32	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			03/25/15 11:32	1
Toluene	0.070	U	1.0	0.070	ug/L			03/25/15 11:32	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			03/25/15 11:32	1
Vinyl chloride	0.080	U	2.0	0.080	ug/L			03/25/15 11:32	1
Xylenes, Total	0.20	U	3.0	0.20	ug/L			03/25/15 11:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*03/25/15 11:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 129*		*03/25/15 11:32*	*1*
4-Bromofluorobenzene (Surr)	*119*		*81 - 130*		*03/25/15 11:32*	*1*
Dibromofluoromethane (Surr)	*97*		*81 - 124*		*03/25/15 11:32*	*1*
Toluene-d8 (Surr)	*122*		*87 - 128*		*03/25/15 11:32*	*1*

Client Sample ID: B30CX2 — **Lab Sample ID: 160-10982-4**
Date Collected: 03/19/15 08:40 — **Matrix: Water**
Date Received: 03/20/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 15:04	1
1,1,2-Trichloroethane	0.15	U	1.0	0.15	ug/L			03/25/15 15:04	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 15:04	1
1,1-Dichloroethene	0.080	U	1.0	0.080	ug/L			03/25/15 15:04	1
1,2-Dichloroethane	0.10	U	1.0	0.10	ug/L			03/25/15 15:04	1
1,4-Dichlorobenzene	0.12	U	1.0	0.12	ug/L			03/25/15 15:04	1
1-Butanol	12	U	50	12	ug/L			03/25/15 15:04	1
2-Butanone (MEK)	0.52	U	5.0	0.52	ug/L			03/25/15 15:04	1
4-Methyl-2-pentanone (MIBK)	0.12	U	5.0	0.12	ug/L			03/25/15 15:04	1
Acetone	0.34	U	2.0	0.34	ug/L			03/25/15 15:04	1
Benzene	0.060	U	1.0	0.060	ug/L			03/25/15 15:04	1
Carbon disulfide	0.050	U	1.0	0.050	ug/L			03/25/15 15:04	1
Carbon tetrachloride	0.13	U	1.0	0.13	ug/L			03/25/15 15:04	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/25/15 15:04	1
Chloroform	0.10	U	1.0	0.10	ug/L			03/25/15 15:04	1
cis-1,2-Dichloroethylene	**2.4**		1.0	0.090	ug/L			03/25/15 15:04	1
Ethyl Cyanide	1.4	U	10	1.4	ug/L			03/25/15 15:04	1
Ethylbenzene	0.090	U	1.0	0.090	ug/L			03/25/15 15:04	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			03/25/15 15:04	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			03/25/15 15:04	1
Tetrahydrofuran	1.1	U	10	1.1	ug/L			03/25/15 15:04	1
Toluene	0.070	U	1.0	0.070	ug/L			03/25/15 15:04	1
trans-1,2-Dichloroethylene	0.080	U	1.0	0.080	ug/L			03/25/15 15:04	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			03/25/15 15:04	1
Vinyl chloride	0.080	U	2.0	0.080	ug/L			03/25/15 15:04	1
Xylenes, Total	0.20	U	3.0	0.20	ug/L			03/25/15 15:04	1

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

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	93	N	ug/L		2.85			03/25/15 15:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		75 - 129		03/25/15 15:04	1
4-Bromofluorobenzene (Surr)	123		81 - 130		03/25/15 15:04	1
Dibromofluoromethane (Surr)	100		81 - 124		03/25/15 15:04	1
Toluene-d8 (Surr)	121		87 - 128		03/25/15 15:04	1

Client Sample ID: B30CV9 — **Lab Sample ID: 160-10982-5**
Date Collected: 03/19/15 10:51 — **Matrix: Water**
Date Received: 03/20/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 15:27	1
1,1,2-Trichloroethane	0.15	U	1.0	0.15	ug/L			03/25/15 15:27	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 15:27	1
1,1-Dichloroethene	0.080	U	1.0	0.080	ug/L			03/25/15 15:27	1
1,2-Dichloroethane	0.10	U	1.0	0.10	ug/L			03/25/15 15:27	1
1,4-Dichlorobenzene	0.12	U	1.0	0.12	ug/L			03/25/15 15:27	1
1-Butanol	12	U	50	12	ug/L			03/25/15 15:27	1
2-Butanone (MEK)	0.52	U	5.0	0.52	ug/L			03/25/15 15:27	1
4-Methyl-2-pentanone (MIBK)	0.12	U	5.0	0.12	ug/L			03/25/15 15:27	1
Acetone	0.34	U	2.0	0.34	ug/L			03/25/15 15:27	1
Benzene	0.060	U	1.0	0.060	ug/L			03/25/15 15:27	1
Carbon disulfide	0.050	U	1.0	0.050	ug/L			03/25/15 15:27	1
Carbon tetrachloride	0.13	U	1.0	0.13	ug/L			03/25/15 15:27	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/25/15 15:27	1
Chloroform	0.10	U	1.0	0.10	ug/L			03/25/15 15:27	1
cis-1,2-Dichloroethylene	0.090	U	1.0	0.090	ug/L			03/25/15 15:27	1
Ethyl Cyanide	1.4	U	10	1.4	ug/L			03/25/15 15:27	1
Ethylbenzene	0.090	U	1.0	0.090	ug/L			03/25/15 15:27	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			03/25/15 15:27	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			03/25/15 15:27	1
Tetrahydrofuran	1.1	U	10	1.1	ug/L			03/25/15 15:27	1
Toluene	0.070	U	1.0	0.070	ug/L			03/25/15 15:27	1
trans-1,2-Dichloroethylene	0.080	U	1.0	0.080	ug/L			03/25/15 15:27	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			03/25/15 15:27	1
Vinyl chloride	0.080	U	2.0	0.080	ug/L			03/25/15 15:27	1
Xylenes, Total	0.20	U	3.0	0.20	ug/L			03/25/15 15:27	1

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Unknown	93	N	ug/L		2.84			03/25/15 15:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		75 - 129		03/25/15 15:27	1
4-Bromofluorobenzene (Surr)	122		81 - 130		03/25/15 15:27	1
Dibromofluoromethane (Surr)	99		81 - 124		03/25/15 15:27	1
Toluene-d8 (Surr)	123		87 - 128		03/25/15 15:27	1

Client Sample ID: B30CX7 — **Lab Sample ID: 160-10982-6**
Date Collected: 03/19/15 08:42 — **Matrix: Water**
Date Received: 03/20/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 15:50	1

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

Client Sample ID: B30CX7 — **Lab Sample ID: 160-10982-6**
Date Collected: 03/19/15 08:42 — **Matrix: Water**
Date Received: 03/20/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.15	U	1.0	0.15	ug/L			03/25/15 15:50	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 15:50	1
1,1-Dichloroethene	0.080	U	1.0	0.080	ug/L			03/25/15 15:50	1
1,2-Dichloroethane	0.10	U	1.0	0.10	ug/L			03/25/15 15:50	1
1,4-Dichlorobenzene	0.12	U	1.0	0.12	ug/L			03/25/15 15:50	1
1-Butanol	12	U	50	12	ug/L			03/25/15 15:50	1
2-Butanone (MEK)	0.52	U	5.0	0.52	ug/L			03/25/15 15:50	1
4-Methyl-2-pentanone (MIBK)	0.12	U	5.0	0.12	ug/L			03/25/15 15:50	1
Acetone	0.34	U	2.0	0.34	ug/L			03/25/15 15:50	1
Benzene	0.060	U	1.0	0.060	ug/L			03/25/15 15:50	1
Carbon disulfide	0.050	U	1.0	0.050	ug/L			03/25/15 15:50	1
Carbon tetrachloride	0.13	U	1.0	0.13	ug/L			03/25/15 15:50	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/25/15 15:50	1
Chloroform	0.10	U	1.0	0.10	ug/L			03/25/15 15:50	1
cis-1,2-Dichloroethylene	0.090	U	1.0	0.090	ug/L			03/25/15 15:50	1
Ethyl Cyanide	1.4	U	10	1.4	ug/L			03/25/15 15:50	1
Ethylbenzene	0.090	U	1.0	0.090	ug/L			03/25/15 15:50	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			03/25/15 15:50	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			03/25/15 15:50	1
Tetrahydrofuran	1.1	U	10	1.1	ug/L			03/25/15 15:50	1
Toluene	0.070	U	1.0	0.070	ug/L			03/25/15 15:50	1
trans-1,2-Dichloroethylene	0.080	U	1.0	0.080	ug/L			03/25/15 15:50	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			03/25/15 15:50	1
Vinyl chloride	0.080	U	2.0	0.080	ug/L			03/25/15 15:50	1
Xylenes, Total	0.20	U	3.0	0.20	ug/L			03/25/15 15:50	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*03/25/15 15:50*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 129*		*03/25/15 15:50*	*1*
4-Bromofluorobenzene (Surr)	*126*		*81 - 130*		*03/25/15 15:50*	*1*
Dibromofluoromethane (Surr)	*99*		*81 - 124*		*03/25/15 15:50*	*1*
Toluene-d8 (Surr)	*122*		*87 - 128*		*03/25/15 15:50*	*1*

General Chemistry

Client Sample ID: B30D31 — **Lab Sample ID: 160-10857-1**
Date Collected: 03/11/15 10:34 — **Matrix: Water**
Date Received: 03/12/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**6.0**		5.0	1.8	ug/L		04/07/15 13:00	04/08/15 13:39	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			03/27/15 10:35	1

Client Sample ID: B30D33 — **Lab Sample ID: 160-10857-2**
Date Collected: 03/11/15 10:34 — **Matrix: Water**
Date Received: 03/12/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**4.8**	**B**	5.0	1.8	ug/L		04/07/15 13:00	04/08/15 14:12	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			03/27/15 10:48	1

General Chemistry

Client Sample ID: B30CD2 — **Lab Sample ID: 160-10857-3**
Date Collected: 03/11/15 10:34 — **Matrix: Water**
Date Received: 03/12/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**7.8**		5.0	1.8	ug/L		04/07/15 15:00	04/08/15 14:45	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			03/27/15 10:59	1

Client Sample ID: B30D32 — **Lab Sample ID: 160-10857-4**
Date Collected: 03/11/15 10:34 — **Matrix: Water**
Date Received: 03/12/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**9.2**		5.0	1.8	ug/L		04/07/15 15:00	04/08/15 15:34	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			03/27/15 11:11	1

Client Sample ID: B30CD0 — **Lab Sample ID: 160-10880-1**
Date Collected: 03/11/15 14:30 — **Matrix: Water**
Date Received: 03/13/15 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**11.3**		5.0	1.8	ug/L		04/07/15 17:00	04/08/15 16:07	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 14:51	1

Client Sample ID: B30CC6 — **Lab Sample ID: 160-10880-2**
Date Collected: 03/11/15 13:57 — **Matrix: Water**
Date Received: 03/13/15 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**13.1**		5.0	1.8	ug/L		04/07/15 17:00	04/08/15 16:52	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 15:27	1

Client Sample ID: B30D25 — **Lab Sample ID: 160-10880-3**
Date Collected: 03/11/15 13:57 — **Matrix: Water**
Date Received: 03/13/15 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**13.8**		5.0	1.8	ug/L		04/08/15 11:00	04/08/15 17:26	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 15:38	1

Client Sample ID: B30D27 — **Lab Sample ID: 160-10880-4**
Date Collected: 03/11/15 13:57 — **Matrix: Water**
Date Received: 03/13/15 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**14.4**		5.0	1.8	ug/L		04/08/15 11:00	04/08/15 18:00	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 15:51	1

Client Sample ID: B30D26 — **Lab Sample ID: 160-10880-5**
Date Collected: 03/11/15 13:57 — **Matrix: Water**
Date Received: 03/13/15 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**12.5**		5.0	1.8	ug/L		04/08/15 12:00	04/08/15 18:50	1
Total Organic Carbon	**0.39**	**B**	1.0	0.35	mg/L			04/04/15 16:02	1

Client Sample ID: B30FL4 — **Lab Sample ID: 160-10891-1**
Date Collected: 03/13/15 06:45 — **Matrix: Water**
Date Received: 03/14/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	2.9	U	5.0	2.9	ug/L		03/16/15 11:13	03/18/15 19:52	1

General Chemistry

Client Sample ID: B30FL5 — **Lab Sample ID: 160-10891-2**
Date Collected: 03/13/15 11:23 — **Matrix: Water**
Date Received: 03/14/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**24.3**		5.0	2.9	ug/L		03/16/15 11:13	03/18/15 19:56	1

Client Sample ID: B30D21 — **Lab Sample ID: 160-10959-1**
Date Collected: 03/18/15 08:43 — **Matrix: Water**
Date Received: 03/19/15 09:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**14.6**		5.0	1.8	ug/L		04/08/15 13:00	04/08/15 20:43	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 16:14	1

Client Sample ID: B30CC2 — **Lab Sample ID: 160-10959-2**
Date Collected: 03/18/15 08:43 — **Matrix: Water**
Date Received: 03/19/15 09:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**12.1**		5.0	1.8	ug/L		04/08/15 14:00	04/08/15 21:15	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 17:01	1

Client Sample ID: B30D20 — **Lab Sample ID: 160-10959-3**
Date Collected: 03/18/15 08:43 — **Matrix: Water**
Date Received: 03/19/15 09:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**16.6**		5.0	1.8	ug/L		04/08/15 14:00	04/08/15 22:05	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 17:13	1

Client Sample ID: B30D19 — **Lab Sample ID: 160-10959-4**
Date Collected: 03/18/15 08:43 — **Matrix: Water**
Date Received: 03/19/15 09:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	**13.1**		5.0	1.8	ug/L		04/08/15 15:00	04/08/15 23:11	1
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 17:25	1

Client Sample ID: B30FH4 — **Lab Sample ID: 160-10982-1**
Date Collected: 03/19/15 11:25 — **Matrix: Water**
Date Received: 03/20/15 09:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**105**		5.0	0.54	mg/L			03/26/15 10:19	1
Bicarbonate Alkalinity	**105**		5.0	0.54	mg/L			03/26/15 10:19	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			03/26/15 10:19	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			03/26/15 10:19	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-10857-1
SDG: SL1772

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

Lab Sample ID: MB 160-181116/9
Matrix: Water
Analysis Batch: 181116

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 10:46	1
1,1,2-Trichloroethane	0.15	U	1.0	0.15	ug/L			03/25/15 10:46	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			03/25/15 10:46	1
1,1-Dichloroethene	0.080	U	1.0	0.080	ug/L			03/25/15 10:46	1
1,2-Dichloroethane	0.10	U	1.0	0.10	ug/L			03/25/15 10:46	1
1,4-Dichlorobenzene	0.12	U	1.0	0.12	ug/L			03/25/15 10:46	1
1-Butanol	12	U	50	12	ug/L			03/25/15 10:46	1
2-Butanone (MEK)	0.52	U	5.0	0.52	ug/L			03/25/15 10:46	1
4-Methyl-2-pentanone (MIBK)	0.12	U	5.0	0.12	ug/L			03/25/15 10:46	1
Acetone	0.34	U	2.0	0.34	ug/L			03/25/15 10:46	1
Benzene	0.060	U	1.0	0.060	ug/L			03/25/15 10:46	1
Carbon disulfide	0.050	U	1.0	0.050	ug/L			03/25/15 10:46	1
Carbon tetrachloride	0.13	U	1.0	0.13	ug/L			03/25/15 10:46	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/25/15 10:46	1
Chloroform	0.10	U	1.0	0.10	ug/L			03/25/15 10:46	1
cis-1,2-Dichloroethylene	0.090	U	1.0	0.090	ug/L			03/25/15 10:46	1
Ethyl Cyanide	1.4	U	10	1.4	ug/L			03/25/15 10:46	1
Ethylbenzene	0.090	U	1.0	0.090	ug/L			03/25/15 10:46	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			03/25/15 10:46	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			03/25/15 10:46	1
Tetrahydrofuran	1.1	U	10	1.1	ug/L			03/25/15 10:46	1
Toluene	0.070	U	1.0	0.070	ug/L			03/25/15 10:46	1
trans-1,2-Dichloroethylene	0.080	U	1.0	0.080	ug/L			03/25/15 10:46	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			03/25/15 10:46	1
Vinyl chloride	0.080	U	2.0	0.080	ug/L			03/25/15 10:46	1
Xylenes, Total	0.20	U	3.0	0.20	ug/L			03/25/15 10:46	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Naphthalene	*0.426*	*J*	*ug/L*		*16.37*	*91-20-3*		*03/25/15 10:46*	*1*
Tentatively Identified Compound	*None*		*ug/L*					*03/25/15 10:46*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 129*		*03/25/15 10:46*	*1*
4-Bromofluorobenzene (Surr)	*119*		*81 - 130*		*03/25/15 10:46*	*1*
Dibromofluoromethane (Surr)	*93*		*81 - 124*		*03/25/15 10:46*	*1*
Toluene-d8 (Surr)	*121*		*87 - 128*		*03/25/15 10:46*	*1*

Lab Sample ID: LCS 160-181116/6
Matrix: Water
Analysis Batch: 181116

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	9.99		ug/L		100	85 - 116
1,1,2-Trichloroethane	10.0	9.51		ug/L		95	80 - 120
1,1-Dichloroethane	10.0	10.1		ug/L		101	80 - 120
1,1-Dichloroethene	10.0	10.4		ug/L		104	80 - 120
1,2-Dichloroethane	10.0	9.56		ug/L		96	80 - 115

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

Lab Sample ID: LCS 160-181116/6
Matrix: Water
Analysis Batch: 181116

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	10.0	10.0		ug/L		100	80 - 120
1-Butanol	250	196		ug/L		78	62 - 128
2-Butanone (MEK)	10.0	9.92		ug/L		99	67 - 127
4-Methyl-2-pentanone (MIBK)	10.0	10.4		ug/L		104	75 - 126
Acetone	10.0	9.33		ug/L		93	69 - 129
Benzene	10.0	10.1		ug/L		101	80 - 120
Carbon disulfide	10.0	10.4		ug/L		104	80 - 121
Carbon tetrachloride	10.0	10.4		ug/L		104	83 - 125
Chlorobenzene	10.0	9.99		ug/L		100	80 - 120
Chloroform	10.0	10.0		ug/L		100	80 - 120
cis-1,2-Dichloroethylene	10.0	10.2		ug/L		102	80 - 120
Ethyl Cyanide	100	95.3		ug/L		95	77 - 121
Ethylbenzene	10.0	9.94		ug/L		99	80 - 120
Methylene Chloride	10.0	9.36		ug/L		94	80 - 120
Tetrachloroethene	10.0	10.4		ug/L		104	83 - 123
Tetrahydrofuran	20.0	18.1		ug/L		91	71 - 124
Toluene	10.0	10.6		ug/L		106	80 - 120
trans-1,2-Dichloroethylene	10.0	10.1		ug/L		101	80 - 120
Trichloroethene	10.0	10.1		ug/L		101	80 - 120
Vinyl chloride	10.0	10.0		ug/L		100	77 - 122
Xylenes, Total	20.0	21.9		ug/L		110	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 129*
4-Bromofluorobenzene (Surr)	*107*		*81 - 130*
Dibromofluoromethane (Surr)	*99*		*81 - 124*
Toluene-d8 (Surr)	*111*		*87 - 128*

Lab Sample ID: LCSD 160-181116/7
Matrix: Water
Analysis Batch: 181116

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
1,1,1-Trichloroethane	10.0	10.1		ug/L		101	85 - 116	1	20
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	80 - 120	8	20
1,1-Dichloroethane	10.0	9.87		ug/L		99	80 - 120	3	20
1,1-Dichloroethene	10.0	10.1		ug/L		101	80 - 120	2	20
1,2-Dichloroethane	10.0	9.51		ug/L		95	80 - 115	0	20
1,4-Dichlorobenzene	10.0	9.86		ug/L		99	80 - 120	1	20
1-Butanol	250	228		ug/L		91	62 - 128	15	20
2-Butanone (MEK)	10.0	10.3		ug/L		103	67 - 127	4	20
4-Methyl-2-pentanone (MIBK)	10.0	11.6		ug/L		116	75 - 126	11	20
Acetone	10.0	9.19		ug/L		92	69 - 129	1	20
Benzene	10.0	10.1		ug/L		101	80 - 120	0	20
Carbon disulfide	10.0	10.0		ug/L		100	80 - 121	3	20
Carbon tetrachloride	10.0	10.3		ug/L		103	83 - 125	1	20
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120	2	20
Chloroform	10.0	9.71		ug/L		97	80 - 120	3	20

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

Lab Sample ID: LCSD 160-181116/7
Matrix: Water
Analysis Batch: 181116

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
cis-1,2-Dichloroethylene	10.0	10.7		ug/L		107	80 - 120	5	20
Ethyl Cyanide	100	107		ug/L		107	77 - 121	11	20
Ethylbenzene	10.0	9.98		ug/L		100	80 - 120	0	20
Methylene Chloride	10.0	9.58		ug/L		96	80 - 120	2	20
Tetrachloroethene	10.0	10.2		ug/L		102	83 - 123	2	20
Tetrahydrofuran	20.0	20.6		ug/L		103	71 - 124	13	20
Toluene	10.0	10.7		ug/L		107	80 - 120	1	20
trans-1,2-Dichloroethylene	10.0	10.1		ug/L		101	80 - 120	0	20
Trichloroethene	10.0	10.5		ug/L		105	80 - 120	5	20
Vinyl chloride	10.0	9.93		ug/L		99	77 - 122	1	20
Xylenes, Total	20.0	22.4		ug/L		112	80 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 129*
4-Bromofluorobenzene (Surr)	*110*		*81 - 130*
Dibromofluoromethane (Surr)	*98*		*81 - 124*
Toluene-d8 (Surr)	*114*		*87 - 128*

Lab Sample ID: 160-10982-3 MS
Matrix: Water
Analysis Batch: 181116

Client Sample ID: B30HN3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.070	U	10.0	10.0		ug/L		100	82 - 124
1,1,2-Trichloroethane	0.15	U	10.0	9.47		ug/L		95	80 - 120
1,1-Dichloroethane	0.070	U	10.0	9.64		ug/L		96	80 - 122
1,1-Dichloroethene	0.080	U	10.0	9.99		ug/L		100	80 - 120
1,2-Dichloroethane	0.10	U	10.0	8.95		ug/L		89	80 - 120
1,4-Dichlorobenzene	0.12	U	10.0	9.91		ug/L		99	80 - 120
1-Butanol	12	U	250	169		ug/L		68	58 - 144
2-Butanone (MEK)	0.52	U	10.0	8.69		ug/L		87	53 - 145
4-Methyl-2-pentanone (MIBK)	0.12	U	10.0	9.04		ug/L		90	70 - 131
Acetone	0.34	U	10.0	8.49		ug/L		85	50 - 137
Benzene	0.060	U	10.0	10.1		ug/L		101	80 - 120
Carbon disulfide	0.050	U	10.0	9.96		ug/L		100	80 - 121
Carbon tetrachloride	0.13	U	10.0	10.3		ug/L		103	77 - 131
Chlorobenzene	0.15	U	10.0	10.4		ug/L		104	80 - 120
Chloroform	0.10	U	10.0	9.88		ug/L		99	80 - 120
cis-1,2-Dichloroethylene	0.090	U	10.0	10.3		ug/L		103	80 - 120
Ethyl Cyanide	1.4	U	100	87.7		ug/L		88	67 - 141
Ethylbenzene	0.090	U	10.0	10.0		ug/L		100	84 - 125
Methylene Chloride	9.7		10.0	19.0		ug/L		93	80 - 120
Tetrachloroethene	0.18	U	10.0	10.4		ug/L		104	80 - 126
Tetrahydrofuran	1.1	U	20.0	17.8		ug/L		89	65 - 136
Toluene	0.070	U	10.0	10.8		ug/L		108	85 - 123
trans-1,2-Dichloroethylene	0.080	U	10.0	10.3		ug/L		103	80 - 120
Trichloroethene	0.25	U	10.0	8.83		ug/L		88	81 - 125
Vinyl chloride	0.080	U	10.0	9.88		ug/L		99	70 - 129

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

Lab Sample ID: 160-10982-3 MS — **Client Sample ID: B30HN3**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181116

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Xylenes, Total	0.20	U	20.0	22.5		ug/L		113	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 129*
4-Bromofluorobenzene (Surr)	*108*		*81 - 130*
Dibromofluoromethane (Surr)	*100*		*81 - 124*
Toluene-d8 (Surr)	*114*		*87 - 128*

Lab Sample ID: 160-10982-3 MSD — **Client Sample ID: B30HN3**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181116

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.070	U	10.0	10.0		ug/L		100	82 - 124	0	20
1,1,2-Trichloroethane	0.15	U	10.0	9.53		ug/L		95	80 - 120	1	20
1,1-Dichloroethane	0.070	U	10.0	9.63		ug/L		96	80 - 122	0	20
1,1-Dichloroethene	0.080	U	10.0	9.86		ug/L		99	80 - 120	1	20
1,2-Dichloroethane	0.10	U	10.0	9.13		ug/L		91	80 - 120	2	20
1,4-Dichlorobenzene	0.12	U	10.0	9.94		ug/L		99	80 - 120	0	20
1-Butanol	12	U	250	203		ug/L		81	58 - 144	18	20
2-Butanone (MEK)	0.52	U	10.0	8.73		ug/L		87	53 - 145	1	20
4-Methyl-2-pentanone (MIBK)	0.12	U	10.0	9.09		ug/L		91	70 - 131	1	20
Acetone	0.34	U	10.0	8.47		ug/L		85	50 - 137	0	20
Benzene	0.060	U	10.0	9.95		ug/L		99	80 - 120	1	20
Carbon disulfide	0.050	U	10.0	9.76		ug/L		98	80 - 121	2	20
Carbon tetrachloride	0.13	U	10.0	10.2		ug/L		102	77 - 131	1	20
Chlorobenzene	0.15	U	10.0	10.2		ug/L		102	80 - 120	2	20
Chloroform	0.10	U	10.0	9.89		ug/L		99	80 - 120	0	20
cis-1,2-Dichloroethylene	0.090	U	10.0	10.8		ug/L		108	80 - 120	5	20
Ethyl Cyanide	1.4	U	100	89.1		ug/L		89	67 - 141	2	20
Ethylbenzene	0.090	U	10.0	9.76		ug/L		98	84 - 125	3	20
Methylene Chloride	9.7		10.0	19.2		ug/L		95	80 - 120	1	20
Tetrachloroethene	0.18	U	10.0	10.2		ug/L		102	80 - 126	2	20
Tetrahydrofuran	1.1	U	20.0	17.3		ug/L		87	65 - 136	3	20
Toluene	0.070	U	10.0	10.8		ug/L		108	85 - 123	0	20
trans-1,2-Dichloroethylene	0.080	U	10.0	10.2		ug/L		102	80 - 120	2	20
Trichloroethene	0.25	U	10.0	8.69		ug/L		87	81 - 125	2	20
Vinyl chloride	0.080	U	10.0	9.78		ug/L		98	70 - 129	1	20
Xylenes, Total	0.20	U	20.0	22.2		ug/L		111	80 - 120	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 129*
4-Bromofluorobenzene (Surr)	*108*		*81 - 130*
Dibromofluoromethane (Surr)	*101*		*81 - 124*
Toluene-d8 (Surr)	*111*		*87 - 128*

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-181512/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181512

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.54	U	5.0	0.54	mg/L			03/26/15 10:19	1
Bicarbonate Alkalinity	0.54	U	5.0	0.54	mg/L			03/26/15 10:19	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			03/26/15 10:19	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			03/26/15 10:19	1

Lab Sample ID: HLCS 160-181512/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181512

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	379.0		mg/L		95	90 - 110
Bicarbonate Alkalinity	400	379.0		mg/L		95	90 - 110

Lab Sample ID: LCS 160-181512/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181512

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	190.0		mg/L		95	90 - 110
Bicarbonate Alkalinity	200	190.0		mg/L		95	90 - 110

Lab Sample ID: 160-10982-1 MS — **Client Sample ID: B30FH4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181512

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	105		100	198.0		mg/L		93	80 - 120
Bicarbonate Alkalinity	105		100	198.0		mg/L		93	80 - 120

Lab Sample ID: 160-10982-1 DU — **Client Sample ID: B30FH4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181512

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	105		104.0		mg/L		1	20
Bicarbonate Alkalinity	105		104.0		mg/L		1	20
Carbonate Alkalinity	0.54	U	0.54	U	mg/L		NC	20
Hydroxide Alkalinity	0.54	U	0.54	U	mg/L		NC	20

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 160-179477/25-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 180049 — **Prep Batch: 179477**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	2.9	U	5.0	2.9	ug/L		03/16/15 11:09	03/18/15 19:18	1

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

Lab Sample ID: HLCS 160-179477/27-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 180049 — **Prep Batch: 179477**

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	400	378.2		ug/L		95	85 - 115

Lab Sample ID: LCS 160-179477/26-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 180049 — **Prep Batch: 179477**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	200	199.9		ug/L		100	85 - 115

Lab Sample ID: 160-10780-G-4-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 180049 — **Prep Batch: 179477**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	94.1		200	290.0		ug/L		98	66 - 120

Lab Sample ID: 160-10780-G-4-B DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 180049 — **Prep Batch: 179477**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cyanide, Total	94.1		94.32		ug/L		0.2	20

Method: 9020B - Organic Halides, Total (TOX)

Lab Sample ID: MB 160-184933/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184934 — **Prep Batch: 184933**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	1.8	U	5.0	1.8	ug/L		04/08/15 10:00	04/08/15 12:31	1

Lab Sample ID: LCS 160-184933/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184934 — **Prep Batch: 184933**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Halogens, Total Organic	100	98.10		ug/L		98	90 - 116

Lab Sample ID: 160-10880-5 MS — **Client Sample ID: B30D26**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184934 — **Prep Batch: 184933**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Halogens, Total Organic	12.5		100	108.1		ug/L		96	85 - 117

Method: 9020B - Organic Halides, Total (TOX) (Continued)

Lab Sample ID: 160-10959-3 MS — **Client Sample ID: B30D20**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184934 — **Prep Batch: 184933**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Halogens, Total Organic	16.6		100	105.7		ug/L		89	85 - 117

Lab Sample ID: 160-10880-5 DU — **Client Sample ID: B30D26**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184934 — **Prep Batch: 184933**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Halogens, Total Organic	12.5		12.82		ug/L		3	20

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 160-181839/62 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181839

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			03/27/15 04:59	1

Lab Sample ID: LCS 160-181839/63 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181839

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: 160-10878-D-1 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181839

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.6		5.00	6.93		mg/L		107	76 - 120

Lab Sample ID: 160-10878-D-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 181839

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	1.6		1.57		mg/L		2	20

Lab Sample ID: MB 160-184122/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184122

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.35	U	1.0	0.35	mg/L			04/04/15 14:23	1

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

Lab Sample ID: LCS 160-184122/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184122

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			10.0	9.93		mg/L		99	90 - 110		

Lab Sample ID: 160-10880-1 MS — **Client Sample ID: B30CD0**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184122

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	0.35	U	5.00	5.36		mg/L		107	76 - 120		

Lab Sample ID: 160-10880-1 DU — **Client Sample ID: B30CD0**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 184122

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	0.35	U		0.35	U	mg/L				NC	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-10857-1
SDG: SL1772

GC/MS VOA

Analysis Batch: 181116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10982-2	B30CW2	Total/NA	Water	8260C	
160-10982-3	B30HN3	Total/NA	Water	8260C	
160-10982-3 MS	B30HN3	Total/NA	Water	8260C	
160-10982-3 MSD	B30HN3	Total/NA	Water	8260C	
160-10982-4	B30CX2	Total/NA	Water	8260C	
160-10982-5	B30CV9	Total/NA	Water	8260C	
160-10982-6	B30CX7	Total/NA	Water	8260C	
LCS 160-181116/6	Lab Control Sample	Total/NA	Water	8260C	
LCSD 160-181116/7	Lab Control Sample Dup	Total/NA	Water	8260C	
MB 160-181116/9	Method Blank	Total/NA	Water	8260C	

General Chemistry

Prep Batch: 179477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10780-G-4-B DU	Duplicate	Total/NA	Water	9010C	
160-10780-G-4-C MS	Matrix Spike	Total/NA	Water	9010C	
160-10891-1	B30FL4	Total/NA	Water	9010C	
160-10891-2	B30FL5	Total/NA	Water	9010C	
HLCS 160-179477/27-A	Lab Control Sample	Total/NA	Water	9010C	
LCS 160-179477/26-A	Lab Control Sample	Total/NA	Water	9010C	
MB 160-179477/25-A	Method Blank	Total/NA	Water	9010C	

Analysis Batch: 180049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10780-G-4-B DU	Duplicate	Total/NA	Water	9012B	179477
160-10780-G-4-C MS	Matrix Spike	Total/NA	Water	9012B	179477
160-10891-1	B30FL4	Total/NA	Water	9012B	179477
160-10891-2	B30FL5	Total/NA	Water	9012B	179477
HLCS 160-179477/27-A	Lab Control Sample	Total/NA	Water	9012B	179477
LCS 160-179477/26-A	Lab Control Sample	Total/NA	Water	9012B	179477
MB 160-179477/25-A	Method Blank	Total/NA	Water	9012B	179477

Analysis Batch: 181512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10982-1	B30FH4	Total/NA	Water	310.1	
160-10982-1 DU	B30FH4	Total/NA	Water	310.1	
160-10982-1 MS	B30FH4	Total/NA	Water	310.1	
HLCS 160-181512/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-181512/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-181512/1	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 181839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10857-1	B30D31	Total/NA	Water	9060	
160-10857-2	B30D33	Total/NA	Water	9060	
160-10857-3	B30CD2	Total/NA	Water	9060	
160-10857-4	B30D32	Total/NA	Water	9060	
160-10878-D-1 DU	Duplicate	Total/NA	Water	9060	
160-10878-D-1 MS	Matrix Spike	Total/NA	Water	9060	

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-10857-1
SDG: SL1772

General Chemistry (Continued)

Analysis Batch: 181839 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-181839/63	Lab Control Sample	Total/NA	Water	9060	
MB 160-181839/62	Method Blank	Total/NA	Water	9060	

Analysis Batch: 184122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10880-1	B30CD0	Total/NA	Water	9060	
160-10880-1 DU	B30CD0	Total/NA	Water	9060	
160-10880-1 MS	B30CD0	Total/NA	Water	9060	
160-10880-2	B30CC6	Total/NA	Water	9060	
160-10880-3	B30D25	Total/NA	Water	9060	
160-10880-4	B30D27	Total/NA	Water	9060	
160-10880-5	B30D26	Total/NA	Water	9060	
160-10959-1	B30D21	Total/NA	Water	9060	
160-10959-2	B30CC2	Total/NA	Water	9060	
160-10959-3	B30D20	Total/NA	Water	9060	
160-10959-4	B30D19	Total/NA	Water	9060	
LCS 160-184122/5	Lab Control Sample	Total/NA	Water	9060	
MB 160-184122/4	Method Blank	Total/NA	Water	9060	

Prep Batch: 184933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10857-1	B30D31	Total/NA	Water	Carbon Trap	
160-10857-2	B30D33	Total/NA	Water	Carbon Trap	
160-10857-3	B30CD2	Total/NA	Water	Carbon Trap	
160-10857-4	B30D32	Total/NA	Water	Carbon Trap	
160-10880-1	B30CD0	Total/NA	Water	Carbon Trap	
160-10880-2	B30CC6	Total/NA	Water	Carbon Trap	
160-10880-3	B30D25	Total/NA	Water	Carbon Trap	
160-10880-4	B30D27	Total/NA	Water	Carbon Trap	
160-10880-5	B30D26	Total/NA	Water	Carbon Trap	
160-10880-5 DU	B30D26	Total/NA	Water	Carbon Trap	
160-10880-5 MS	B30D26	Total/NA	Water	Carbon Trap	
160-10959-1	B30D21	Total/NA	Water	Carbon Trap	
160-10959-2	B30CC2	Total/NA	Water	Carbon Trap	
160-10959-3	B30D20	Total/NA	Water	Carbon Trap	
160-10959-3 MS	B30D20	Total/NA	Water	Carbon Trap	
160-10959-4	B30D19	Total/NA	Water	Carbon Trap	
LCS 160-184933/2-A	Lab Control Sample	Total/NA	Water	Carbon Trap	
MB 160-184933/1-A	Method Blank	Total/NA	Water	Carbon Trap	

Analysis Batch: 184934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10857-1	B30D31	Total/NA	Water	9020B	184933
160-10857-2	B30D33	Total/NA	Water	9020B	184933
160-10857-3	B30CD2	Total/NA	Water	9020B	184933
160-10857-4	B30D32	Total/NA	Water	9020B	184933
160-10880-1	B30CD0	Total/NA	Water	9020B	184933
160-10880-2	B30CC6	Total/NA	Water	9020B	184933
160-10880-3	B30D25	Total/NA	Water	9020B	184933
160-10880-4	B30D27	Total/NA	Water	9020B	184933
160-10880-5	B30D26	Total/NA	Water	9020B	184933

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-10857-1
SDG: SL1772

General Chemistry (Continued)

Analysis Batch: 184934 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-10880-5 DU	B30D26	Total/NA	Water	9020B	184933
160-10880-5 MS	B30D26	Total/NA	Water	9020B	184933
160-10959-1	B30D21	Total/NA	Water	9020B	184933
160-10959-2	B30CC2	Total/NA	Water	9020B	184933
160-10959-3	B30D20	Total/NA	Water	9020B	184933
160-10959-3 MS	B30D20	Total/NA	Water	9020B	184933
160-10959-4	B30D19	Total/NA	Water	9020B	184933
LCS 160-184933/2-A	Lab Control Sample	Total/NA	Water	9020B	184933
MB 160-184933/1-A	Method Blank	Total/NA	Water	9020B	184933

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-10857-1
SDG: SL1772

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(75-129)	(81-130)	(81-124)	(87-128)
160-10982-2	B30CW2	95	120	98	122
160-10982-3	B30HN3	97	119	97	122
160-10982-3 MS	B30HN3	93	108	100	114
160-10982-3 MSD	B30HN3	94	108	101	111
160-10982-4	B30CX2	101	123	100	121
160-10982-5	B30CV9	100	122	99	123
160-10982-6	B30CX7	100	126	99	122
LCS 160-181116/6	Lab Control Sample	98	107	99	111
LCSD 160-181116/7	Lab Control Sample Dup	103	110	98	114
MB 160-181116/9	Method Blank	102	119	93	121

Surrogate Legend

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