TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
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Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-107483-1
TestAmerica Sample Delivery Group: DN0340
Client Project/Site: W18-003 / X18-005 / S18-003

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

Attn: Mr. Scot Fitzgerald

Darlene Bandy

Authorized for release by:
4/16/2018 3:11:28 PM

Darlene Bandy, Project Manager I
(303)736-0100
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LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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: 280-107483-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: CH2M Hill Plateau Remediation Company

Project: W18-003 / X18-005 / S18-003

Report Number: 280-107483-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

The Chain of Custody requests “6020_METALS_ICPMS: GW 01” analysis. Service List “6020_METALS_ICPMS: GW 01” includes Thorium, and while TestAmerica Denver holds Washington State (WDOE) accreditation for method 6020B, Thorium is not on the accreditation certificate at this time. Please note that Thorium is on TestAmerica Denver's primary ORELAP certification, and TestAmerica Denver is pursuing full WDOE accreditation for this element. As instructed by the client, the laboratory proceeded with the requested Thorium analyses by method 6020B.

The laboratory is not able to achieve project specified Highest Allowable Practical Quantitation Limits (HAPQL limits) for several analytes. These include: Boron 6010D, Beryllium 6020B, Silver 6020B, Tin 6020B, Ethyl Cyanide 8260B. All analytes met statistical limits, unless otherwise detailed in the individual sections below. As instructed by the client, the data is reported.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 3/16/2018 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5º C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples B3HL18 (280-107483-1), B3H049 (280-107483-2), B3HL77 (280-107483-3) and B3HL43 (280-107483-6) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/23/2018.

The following samples were received preserved with hydrochloric acid: B3HL18 (280-107483-1), B3HL43 (280-107483-6), B3HL43 (280-107483-6[MS]) and B3HL43 (280-107483-6[MSD]). The requested target analyte list includes Acrolein and Acrylonitrile, and the SOP indicates that sample volume for these analytes should be unpreserved or preserved to a pH of 4-5.

Methylene Chloride, a common laboratory contaminant, was detected in method blank MB 280-408927/6 at a level exceeding the reporting limit. Because this common laboratory contaminant was present in the method blank at a level that was less than five times the RL, corrective action is not needed (SIR18-0634). If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Methylene Chloride, a common laboratory contaminant, failed the recovery criteria high for LCS 280-408927/4, and all associated results have been flagged "o". Two samples associated with this LCS were non-detect for the affected analyte; however, one sample had a detection greater than the RL. The samples are more than 2x out of hold; therefore, as instructed by the client, the data have been qualified and reported (SIR18-0634).

Job ID: 280-107483-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

2-Hexanone and Ethyl methacrylate failed the recovery criteria low for the MS of sample B3HL43 (280-107483-6) in batch 280-408927, and cis-1,2-Dichloroethene failed the recovery criteria high for the MSD; all associated results have been flagged "T". 2-Butanone (MEK) and 4-Methyl-2-pentanone (MIBK) exceeded the RPD limit for the MS/MSD, and the MSD results have been flagged "y". The acceptable LCS data for these analytes demonstrate that the analytical system was operating within control; therefore, corrective action is not needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)
Sample B3HL77 (280-107483-3) was analyzed for semivolatile organic compounds (GC-MS) in accordance with SW-846 8270D. The samples were prepared on 03/22/2018 and analyzed on 04/09/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP)
Samples B3HK84 (280-107483-4) and B3HK89 (280-107483-5) were analyzed for Total Metals (ICP) in accordance with EPA SW846 6010D. The samples were prepared on 03/30/2018 and analyzed on 04/03/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL METALS (ICP/MS)
Samples B3HK84 (280-107483-4) and B3HK89 (280-107483-5) were analyzed for Total Metals (ICP/MS) in accordance with SW846 6020B. The samples were prepared on 03/30/2018 and analyzed on 04/02/2018 and 04/05/2018.

The Chain of Custody requests “6020_METALS_ICPMS: GW 01” analysis. Service List “6020_METALS_ICPMS: GW 01” includes Thorium, and while TestAmerica Denver holds Washington State (WDOE) accreditation for method 6020B, Thorium is not on the accreditation certificate at this time. Please note that Thorium is on TestAmerica Denver's primary ORELAP certification, and TestAmerica Denver is pursuing full WDOE accreditation for this element. As instructed by the client, the laboratory proceeded with the requested Thorium analyses by method 6020B.

Antimony was detected in method blank MB 280-409210/1-A at a level that was above the method detection limit, below the reporting limit, but greater than half the reporting limit. The value should be considered an estimate, and has been flagged. The associated samples were non-detect or less than the RL for this element; therefore, corrective action is not needed.

Zinc was detected in method blank MB 280-409210/1-A at a level that was above the method detection limit but below half the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL and the method blank concentration was greater than 5% of the sample concentration, the result has been flagged.

The accuracy and precision of Strontium in the MS/MSD performed on sample B3HK89 (280-107483-5) in prep batch 280-409210 could not be reliably calculated due to the sample concentration reading greater than four times the spike amount. Control limits are not applicable and the MS/MSD results have been flagged “X”.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY
Samples B3HK84 (280-107483-4) and B3HK89 (280-107483-5) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 03/27/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ALKALINITY
Samples B3HL18 (280-107483-1) and B3HL43 (280-107483-6) were analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 03/22/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 280-107483-1 (Continued)

Laboratory: TestAmerica Denver (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:

Darlene Bandy
Project Manager

SAMPLE ISSUE RESOLUTION (SIR) REPORT

SIR Number: SIR18-0634
Rev. Number: 0
Date Initiated: 04/16/2018

SAMPLE EVENT INFORMATION

SAF NUM(S): W18-003, X18-005

LABORATORY: TADN

SAMPLING INFORMATION

NUMBER OF SAMPLES: 3

SAMPLE NUMBERS: B3H049, B3HL18, B3HL43

SAMPLE MATRIX: WATER

SDG NUM(S): DN0340

ISSUE BACKGROUND

CLASS: Laboratory Issue

TYPE: Quality Control Failure

DESCRIPTION: Method 8260B: The LCS associated with analysis batch 280-408927 exhibited a 154% recovery for Methylene chloride, a common laboratory contaminant. This recovery is above both TestAmerica Denver's standard control limits of 54-141% and the project-specific limits of 70-130%. The analyst noted that Methylene Chloride was present in the method blank at a detection of 2.24 ug/L, which is greater than the RL of 2.00 ug/L but less than 5x the RL. It can be noted that the MS/MSD recoveries performed on sample B3HL43 were within control limits. Please note that samples B3HL18 and B3HL43 (both SAF W18-003) are non-detect for this analyte. The result for sample B3H049 (SAF X18-005) is 12 ug/L Methylene chloride, which is greater than the RL of 2.00 ug/L. Samples are outside 2x hold time.

RESOLUTION

PROPOSED RESOLUTION: TADN proposes to either report this in-hold data with appropriate o flags and narrate the anomaly, to re-analyze out of 2x hold, or to reject this analysis.

FINAL RESOLUTION: Accept first proposed resolution - report results with flags and narration.

SUBMITTED BY:

BANDY, DF 04/16/2018

ACCEPTED BY:

FITZGERALD, SL 04/16/2018

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 280-107483-1
SDG Number: DN0340

Login Number: 107483
List Number: 1
Creator: Dedio, Michael T

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	70 CPM
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	1.5 C
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").	True	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

70lbs

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # W18-003-231 Page 1 of 1

Collector: Ivan Schaeffer /CHPRC SDG# DN0340	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506 -98/58	**Ice Chest No.:** GWS-347
Shipped To (Lab): TestAmerica Denver	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7800 9573 6853
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9181

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

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HL18	N	W	3-15-18	1232	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B3HL18	N	W	3-15-18	1232	5x40-mL aGs*	8260_VOA_GCMS_IX: COMMON REV 1	14 Days	HCl or H2SO4 to pH <2 / Cool <=6C

280-107483 Chain of Custody

1.6, -0.1 IA#3 BB 3-16-18

Relinquished By:	Received By:
Ivan Schaeffer /CHPRC — Print First and Last Name; Signature; MAR 15 2018 1325 Date/Time	Lesly Wall /CHPRC — Print First and Last Name; Signature; MAR 15 2018 1325 Date/Time
Lesly Wall /CHPRC — Print First and Last Name; Signature; MAR 15 2018 1400 Date/Time	FEDEX — Print First and Last Name; Signature; Date/Time
FedEx — Print First and Last Name; Signature; Date/Time	Michael T. Pedio — Print First and Last Name; Signature; 3/16/18 9:30 Date/Time
Relinquished By: — Print First and Last Name; Signature; Date/Time	Received By: — Print First and Last Name; Signature; Date/Time

Matrix *

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

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

Printed On 2/6/2018 FSR ID = FSR57422 A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X18-005-145 Page 1 of 1

Collector:	~~MIKE ESPARZA~~ CHPRC SOG# DN0340	**Contact/Requester:**	WATERS-HUSTED, K	**Telephone No.:**	376-4650
SAF No.:	X18-005	**Sampling Origin:**	Hanford Site	**Purchase Order/Charge Code:**	300071
Project Title:	Groundwater Background Study,	**Logbook No.:**	HNF-N-506 99 / 17	**Ice Chest No.:**	GWS-347
Shipped To (Lab):	TestAmerica Denver	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.:**	780095736853
Protocol	SURV	**Priority:**	30 Days	**Offsite Property No.:**	9181

POSSIBLE SAMPLE HAZARDS/REMARK
*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
Batch with A, I, S, and W SAFs.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3H049	N	W	MAR 15 2018	0830	5x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2 / Cool <=6C

Relinquished By:	Signature	Date/Time	Received By:	Signature	Date/Time
~~Mike Esparza~~ /CHPRC		MAR 15 2018 1130	Troy Bacon CHPRC		MAR 15 2018 1130
Relinquished By: Troy Bacon CHPRC		MAR 15 2018 1400	Received By: FEDEX		
Relinquished By: FedEx			Received By: Michael T. Gedio		3/16/18 9:30
Relinquished By:			Received By:		

Matrix *

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

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

Printed On 11/21/2017 FSR ID = FSR54037 A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# S18-003-442 Page 1 of 1

Collector: MIKE ESPARZA CHPRC SDG# DN0340	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: S18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: CERCLA, MARCH 2018	**Logbook No.:** HNF-N-506 99 / 17	**Ice Chest No.:** GWS-347
Shipped To (Lab): TestAmerica Denver	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 780095736853
Protocol CERCLA	**Priority:** 30 Days	**Offsite Property No.:** 9181

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

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HL77	N	W	MAR 15 2018	0820	5x40-mL aGs*	8260_VOA_GCMS: GW 05	14 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3HL77	N	W			4x1-L aG	8270_SVOA_GCMS: GW 02	7/40 Days	Cool <=6C

Relinquished By:	Received By:
Mike Esparza CHPRC — Mike Esparza — MAR 15 2018 1130 (Print First and Last Name / Signature / Date/Time)	Troy Bacon CHPRC — Troy L. Bacon — 1130 MAR 15 2018 (Print First and Last Name / Signature / Date/Time)
Troy Bacon CHPRC — Troy L. Bacon — MAR 15 2018 1400 (Print First and Last Name / Signature / Date/Time)	FEDEX (Print First and Last Name / Signature / Date/Time)
FedEx (Print First and Last Name / Signature / Date/Time)	Michael T. Dalio — 3/16/18 9:30 (Print First and Last Name / Signature / Date/Time)
(Print First and Last Name / Signature / Date/Time)	(Print First and Last Name / Signature / Date/Time)

Matrix *

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

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

Printed On 2/26/2018 FSR ID = FSR58273 A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# W18-003-118 Page 1 of 1

Collector: Juan Aguilar /CHPRC SOG# DN0340	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506-98158	**Ice Chest No.:** GLOS-347
Shipped To (Lab): TestAmerica Denver	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 780695736853
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9181

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

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK84	N	W	3-15-18	0806	1x500-mL G/P	7470_MERCURY_CV: COMMON (AQUEOUS); 6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	28 Days	HNO3 to pH <2
B3HK89	Y	W	3-15-18	0806	1x500-mL G/P	7470_MERCURY_CV: COMMON (AQUEOUS); 6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	28 Days	HNO3 to pH <2

Relinquished By	Print First and Last Name	Signature	Date/Time	Received By	Print First and Last Name	Signature	Date/Time
Juan Aguilar /CHPRC			MAR 15 2018 0930	Tim Calleway /CHPRC			MAR 15 2018 0930
Tim Calleway /CHPRC			MAR 15 2018 1015	Lesly Wall /CHPRC			MAR 15 2018 1015
Lesly Wall /CHPRC			MAR 15 2018 1400	FEDEX			
FedEx				Michael T. Dedio			3/16/18 9:30

Matrix *

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

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

Printed On 1/15/2018 FSR ID = FSR57221 A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C.# W18-003-240 Page 1 of 1

Collector: Juan Aguilar /CHPRC SDG# DN0340	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506-98158	**Ice Chest No.:** GWS-347
Shipped To (Lab): TestAmerica Denver	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 780095736853
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9181

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

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HL43	N	W	3-15-18	0901	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B3HL43	N	W	3-15-18	0901	5x40-mL aGs*	8260_VOA_GCMS_IX: COMMON REV 1	14 Days	HCl or H2SO4 to pH <2 / Cool <=6C

Relinquished By: Juan Aguilar /CHPRC		MAR 15 2018 0930	Received By: Tim Callaway /CHPRC		MAR 15 2018 0930
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By: Tim Callaway /CHPRC		MAR 15 2018 1015	Received By: Lesly Wall /CHPRC		MAR 15 2018 1015
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By: Lesly Wall /CHPRC		MAR 15 2018 1400	Received By: FEDEX		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Relinquished By: Fed Ex			Received By: Michael T. Delio		3/16/18 9:30
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time

Matrix *

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

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

Printed On 2/6/2018 FSR ID = FSR57361 A-6004-842 (REV 3)

IMPORTANT!
FedEx is closely monitoring the winter storms across portions of the U.S. Learn More

FedEx ® Tracking

780095736853

Ship date		Actual delivery
Thu 3/15/2018		**Fri 3/16/2018 9:14 am**
Richland, WA US	**Delivered** *Signed for by: B.BURTNESS*	ARVADA, CO US

Travel History

Date/Time	Activity	Location
3/16/2018 - Friday		
9:14 am	Delivered	ARVADA, CO
9:14 am	Delivered	ARVADA, CO
8:29 am	On FedEx vehicle for delivery	ARVADA, CO
7:30 am	At local FedEx facility	ARVADA, CO
5:43 am	At local FedEx facility	DENVER, CO
4:58 am	At destination sort facility	DENVER, CO
3:54 am	Departed FedEx location	MEMPHIS, TN
12:41 am	Arrived at FedEx location	MEMPHIS, TN
3/15/2018 - Thursday		
4:47 pm	Left FedEx origin facility	PASCO, WA
3:57 pm	Shipment information sent to FedEx	
3:18 pm	Picked up	PASCO, WA

Shipment Facts

Tracking Number	780095736853	**Service**	FedEx Priority Overnight
Weight	70 lbs / 31.75 kgs	**Signature services**	Direct signature required
Delivered To	Shipping/Receiving	**Total pieces**	1
Total shipment weight	70 lbs / 31.75 kgs	**Terms**	Third Party
Shipper reference	ptr# 9181/cooler# gws-347	**Packaging**	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge, Direct Signature Required	**Standard transit**	3/16/2018 by 10:30 am

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.
T	MS, MSD: Recovery exceeds upper or lower control limits.
o	LCS, LCSD: Recovery exceeds upper or lower control limits.
B	Analyte was found in the associated method blank as well as in the sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
y	Duplicate analysis not within control limits.

GC/MS VOA TICs

Qualifier	Qualifier Description
N	Presumptive evidence of material.
J	Indicates an Estimated Value for TICs

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.

GC/MS Semi VOA TICs

Qualifier	Qualifier Description
J	Indicates an Estimated Value for TICs
N	Presumptive evidence of material.

Metals

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL
C	The analyte was detected in both the sample and the associated QC blank, and the sample concentration was </= 5X the blank concentration.
X	See case narrative notes for explanation of the 'X' flag

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.

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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003 / X18-005 / S18-003

TestAmerica Job ID: 280-107483-1
SDG: DN0340

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL DEN
6010D	Metals (ICP)	SW846	TAL DEN
6020B	Metals (ICP/MS)	SW846	TAL DEN
7470A	Mercury (CVAA)	SW846	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003 / X18-005 / S18-003

TestAmerica Job ID: 280-107483-1
SDG: DN0340

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-107483-1	B3HL18	Water	03/15/18 12:32	03/16/18 09:30
280-107483-2	B3H049	Water	03/15/18 08:20	03/16/18 09:30
280-107483-3	B3HL77	Water	03/15/18 08:20	03/16/18 09:30
280-107483-4	B3HK84	Water	03/15/18 08:06	03/16/18 09:30
280-107483-5	B3HK89	Water	03/15/18 08:06	03/16/18 09:30
280-107483-6	B3HL43	Water	03/15/18 09:01	03/16/18 09:30

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

Client Sample ID: B3HL18
Date Collected: 03/15/18 12:32
Date Received: 03/16/18 09:30

Lab Sample ID: 280-107483-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.21	U	1.0	0.21	ug/L			03/23/18 23:42	1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			03/23/18 23:42	1
1,1,2,2-Tetrachloroethane	0.21	U	1.0	0.21	ug/L			03/23/18 23:42	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			03/23/18 23:42	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			03/23/18 23:42	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			03/23/18 23:42	1
1,2,3-Trichloropropane	0.33	U	2.5	0.33	ug/L			03/23/18 23:42	1
1,2-Dibromo-3-Chloropropane	0.47	U	5.0	0.47	ug/L			03/23/18 23:42	1
1,2-Dibromoethane	0.18	U	1.0	0.18	ug/L			03/23/18 23:42	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			03/23/18 23:42	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			03/23/18 23:42	1
1,4-Dichlorobenzene	0.16	U	1.0	0.16	ug/L			03/23/18 23:42	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			03/23/18 23:42	1
2-Hexanone	1.7	U T	5.0	1.7	ug/L			03/23/18 23:42	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			03/23/18 23:42	1
Acetone	1.9	U	10	1.9	ug/L			03/23/18 23:42	1
Acetonitrile	9.6	U	30	9.6	ug/L			03/23/18 23:42	1
Acrolein	2.8	U	20	2.8	ug/L			03/23/18 23:42	1
Acrylonitrile	1.4	U	20	1.4	ug/L			03/23/18 23:42	1
Allyl chloride	0.17	U	2.0	0.17	ug/L			03/23/18 23:42	1
Benzene	0.16	U	1.0	0.16	ug/L			03/23/18 23:42	1
Bromodichloromethane	0.17	U	1.0	0.17	ug/L			03/23/18 23:42	1
Bromoform	0.19	U	1.0	0.19	ug/L			03/23/18 23:42	1
Bromomethane	0.21	U	2.0	0.21	ug/L			03/23/18 23:42	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			03/23/18 23:42	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/18 23:42	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			03/23/18 23:42	1
Chloroethane	0.41	U	2.0	0.41	ug/L			03/23/18 23:42	1
Chloroform	0.16	U	1.0	0.16	ug/L			03/23/18 23:42	1
Chloromethane	0.30	U	2.0	0.30	ug/L			03/23/18 23:42	1
Chloroprene	0.21	U	1.0	0.21	ug/L			03/23/18 23:42	1
cis-1,2-Dichloroethene	0.15	U T	1.0	0.15	ug/L			03/23/18 23:42	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			03/23/18 23:42	1
Dibromochloromethane	0.17	U	1.0	0.17	ug/L			03/23/18 23:42	1
Dibromomethane	0.17	U	1.0	0.17	ug/L			03/23/18 23:42	1
Dichlorodifluoromethane	0.31	U	2.0	0.31	ug/L			03/23/18 23:42	1
Ethyl Cyanide	3.7	U	20	3.7	ug/L			03/23/18 23:42	1
Ethyl methacrylate	0.86	U T	3.0	0.86	ug/L			03/23/18 23:42	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			03/23/18 23:42	1
Iodomethane	0.23	U	1.0	0.23	ug/L			03/23/18 23:42	1
Isobutyl alcohol	37	U	110	37	ug/L			03/23/18 23:42	1
Methacrylonitrile	1.6	U	10	1.6	ug/L			03/23/18 23:42	1
Methyl methacrylate	1.1	U	4.0	1.1	ug/L			03/23/18 23:42	1
Methylene Chloride	0.32	U o	2.0	0.32	ug/L			03/23/18 23:42	1
Styrene	0.17	U	1.0	0.17	ug/L			03/23/18 23:42	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			03/23/18 23:42	1
Toluene	0.17	U	1.0	0.17	ug/L			03/23/18 23:42	1
trans-1,2-Dichloroethylene	0.15	U	1.0	0.15	ug/L			03/23/18 23:42	1
trans-1,3-Dichloropropene	0.19	U	3.0	0.19	ug/L			03/23/18 23:42	1

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

Client Sample ID: B3HL18 — **Lab Sample ID: 280-107483-1**
Date Collected: 03/15/18 12:32 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,4-Dichloro-2-butene	0.80	U	3.0	0.80	ug/L			03/23/18 23:42	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			03/23/18 23:42	1
Trichloromonofluoromethane	0.29	U	2.0	0.29	ug/L			03/23/18 23:42	1
Vinyl acetate	0.94	U	3.0	0.94	ug/L			03/23/18 23:42	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			03/23/18 23:42	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			03/23/18 23:42	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*1.3*	*N*	*ug/L*		*6.17*			*03/23/18 23:42*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*		*03/23/18 23:42*	*1*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*03/23/18 23:42*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*03/23/18 23:42*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*03/23/18 23:42*	*1*

Client Sample ID: B3H049 — **Lab Sample ID: 280-107483-2**
Date Collected: 03/15/18 08:20 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			03/23/18 23:23	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			03/23/18 23:23	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			03/23/18 23:23	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			03/23/18 23:23	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			03/23/18 23:23	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			03/23/18 23:23	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			03/23/18 23:23	1
Acetone	**14**		10	1.9	ug/L			03/23/18 23:23	1
Benzene	0.16	U	1.0	0.16	ug/L			03/23/18 23:23	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			03/23/18 23:23	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/18 23:23	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			03/23/18 23:23	1
Chloroform	0.16	U	1.0	0.16	ug/L			03/23/18 23:23	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			03/23/18 23:23	1
Methylene Chloride	**12**	**B o**	2.0	0.32	ug/L			03/23/18 23:23	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			03/23/18 23:23	1
Toluene	0.17	U	1.0	0.17	ug/L			03/23/18 23:23	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			03/23/18 23:23	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			03/23/18 23:23	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			03/23/18 23:23	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*03/23/18 23:23*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*03/23/18 23:23*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*03/23/18 23:23*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 130*		*03/23/18 23:23*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*03/23/18 23:23*	*1*

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

Client Sample ID: B3HL77 — **Lab Sample ID: 280-107483-3**
Date Collected: 03/15/18 08:20 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.27	J	1.0	0.19	ug/L			03/23/18 23:04	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*03/23/18 23:04*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*03/23/18 23:04*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*03/23/18 23:04*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*03/23/18 23:04*	*1*
Toluene-d8 (Surr)	*104*		*70 - 130*		*03/23/18 23:04*	*1*

Client Sample ID: B3HL43 — **Lab Sample ID: 280-107483-6**
Date Collected: 03/15/18 09:01 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.21	U	1.0	0.21	ug/L			03/23/18 21:27	1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			03/23/18 21:27	1
1,1,2,2-Tetrachloroethane	0.21	U	1.0	0.21	ug/L			03/23/18 21:27	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			03/23/18 21:27	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			03/23/18 21:27	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			03/23/18 21:27	1
1,2,3-Trichloropropane	0.33	U	2.5	0.33	ug/L			03/23/18 21:27	1
1,2-Dibromo-3-Chloropropane	0.47	U	5.0	0.47	ug/L			03/23/18 21:27	1
1,2-Dibromoethane	0.18	U	1.0	0.18	ug/L			03/23/18 21:27	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			03/23/18 21:27	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			03/23/18 21:27	1
1,4-Dichlorobenzene	0.16	U	1.0	0.16	ug/L			03/23/18 21:27	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			03/23/18 21:27	1
2-Hexanone	1.7	U T	5.0	1.7	ug/L			03/23/18 21:27	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			03/23/18 21:27	1
Acetone	1.9	U	10	1.9	ug/L			03/23/18 21:27	1
Acetonitrile	9.6	U	30	9.6	ug/L			03/23/18 21:27	1
Acrolein	2.8	U	20	2.8	ug/L			03/23/18 21:27	1
Acrylonitrile	1.4	U	20	1.4	ug/L			03/23/18 21:27	1
Allyl chloride	0.17	U	2.0	0.17	ug/L			03/23/18 21:27	1
Benzene	0.16	U	1.0	0.16	ug/L			03/23/18 21:27	1
Bromodichloromethane	0.17	U	1.0	0.17	ug/L			03/23/18 21:27	1
Bromoform	0.19	U	1.0	0.19	ug/L			03/23/18 21:27	1
Bromomethane	0.21	U	2.0	0.21	ug/L			03/23/18 21:27	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			03/23/18 21:27	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/18 21:27	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			03/23/18 21:27	1
Chloroethane	0.41	U	2.0	0.41	ug/L			03/23/18 21:27	1
Chloroform	0.16	U	1.0	0.16	ug/L			03/23/18 21:27	1
Chloromethane	0.30	U	2.0	0.30	ug/L			03/23/18 21:27	1
Chloroprene	0.21	U	1.0	0.21	ug/L			03/23/18 21:27	1
cis-1,2-Dichloroethene	0.15	U T	1.0	0.15	ug/L			03/23/18 21:27	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			03/23/18 21:27	1
Dibromochloromethane	0.17	U	1.0	0.17	ug/L			03/23/18 21:27	1
Dibromomethane	0.17	U	1.0	0.17	ug/L			03/23/18 21:27	1

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

Client Sample ID: B3HL43 — **Lab Sample ID: 280-107483-6**
Date Collected: 03/15/18 09:01 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.31	U	2.0	0.31	ug/L			03/23/18 21:27	1
Ethyl Cyanide	3.7	U	20	3.7	ug/L			03/23/18 21:27	1
Ethyl methacrylate	0.86	U T	3.0	0.86	ug/L			03/23/18 21:27	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			03/23/18 21:27	1
Iodomethane	0.23	U	1.0	0.23	ug/L			03/23/18 21:27	1
Isobutyl alcohol	37	U	110	37	ug/L			03/23/18 21:27	1
Methacrylonitrile	1.6	U	10	1.6	ug/L			03/23/18 21:27	1
Methyl methacrylate	1.1	U	4.0	1.1	ug/L			03/23/18 21:27	1
Methylene Chloride	0.32	U o	2.0	0.32	ug/L			03/23/18 21:27	1
Styrene	0.17	U	1.0	0.17	ug/L			03/23/18 21:27	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			03/23/18 21:27	1
Toluene	0.17	U	1.0	0.17	ug/L			03/23/18 21:27	1
trans-1,2-Dichloroethylene	0.15	U	1.0	0.15	ug/L			03/23/18 21:27	1
trans-1,3-Dichloropropene	0.19	U	3.0	0.19	ug/L			03/23/18 21:27	1
trans-1,4-Dichloro-2-butene	0.80	U	3.0	0.80	ug/L			03/23/18 21:27	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			03/23/18 21:27	1
Trichloromonofluoromethane	0.29	U	2.0	0.29	ug/L			03/23/18 21:27	1
Vinyl acetate	0.94	U	3.0	0.94	ug/L			03/23/18 21:27	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			03/23/18 21:27	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			03/23/18 21:27	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*03/23/18 21:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 130*		*03/23/18 21:27*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*03/23/18 21:27*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*03/23/18 21:27*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*		*03/23/18 21:27*	*1*

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

Client Sample ID: B3HL77 — **Lab Sample ID: 280-107483-3**
Date Collected: 03/15/18 08:20 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.53	U	9.5	0.53	ug/L		03/22/18 11:20	04/09/18 22:53	1
Methyl methanesulfonate	0.95	U	9.5	0.95	ug/L		03/22/18 11:20	04/09/18 22:53	1
N-Nitrosodi-n-propylamine	0.33	U	9.5	0.33	ug/L		03/22/18 11:20	04/09/18 22:53	1
Pentachlorophenol	19	U	48	19	ug/L		03/22/18 11:20	04/09/18 22:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Butane, 2-methoxy-2-methyl-	*37*	*N J*	*ug/L*		*2.01*	*994-05-8*	*03/22/18 11:20*	*04/09/18 22:53*	*1*
Unknown	*39*	*N*	*ug/L*		*3.22*		*03/22/18 11:20*	*04/09/18 22:53*	*1*
p-Xylene	*61*	*N J*	*ug/L*		*3.53*	*106-42-3*	*03/22/18 11:20*	*04/09/18 22:53*	*1*
1-Propene, 1,2,3-trichloro-, (Z)-	*8.9*	*N J*	*ug/L*		*4.13*	*13116-57-9*	*03/22/18 11:20*	*04/09/18 22:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*99*		*42 - 130*	*03/22/18 11:20*	*04/09/18 22:53*	*1*
2-Fluorobiphenyl (Surr)	*83*		*48 - 130*	*03/22/18 11:20*	*04/09/18 22:53*	*1*
2-Fluorophenol (Surr)	*81*		*41 - 130*	*03/22/18 11:20*	*04/09/18 22:53*	*1*

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

Client Sample ID: B3HL77 — **Lab Sample ID: 280-107483-3**
Date Collected: 03/15/18 08:20 — **Matrix: Water**
Date Received: 03/16/18 09:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5 (Surr)	*85*		*42 - 130*	*03/22/18 11:20*	*04/09/18 22:53*	*1*
Phenol-d5 (Surr)	*82*		*45 - 130*	*03/22/18 11:20*	*04/09/18 22:53*	*1*
Terphenyl-d14 (Surr)	*86*		*20 - 130*	*03/22/18 11:20*	*04/09/18 22:53*	*1*

Method: 6010D - Metals (ICP)

Client Sample ID: B3HK84 — **Lab Sample ID: 280-107483-4**
Date Collected: 03/15/18 08:06 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**20.6**	**B**	100	4.4	ug/L		03/30/18 07:31	04/03/18 22:18	1
Calcium	**69100**		200	34.5	ug/L		03/30/18 07:31	04/03/18 22:18	1
Iron	**26.5**	**B**	100	22.0	ug/L		03/30/18 07:31	04/03/18 22:18	1
Magnesium	**20700**		200	10.7	ug/L		03/30/18 07:31	04/03/18 22:18	1
Potassium	**8670**		3000	237	ug/L		03/30/18 07:31	04/03/18 22:18	1
Sodium	**29200**		1000	117	ug/L		03/30/18 07:31	04/03/18 22:18	1
Vanadium	**22.6**		10.0	1.1	ug/L		03/30/18 07:31	04/03/18 22:18	1

Client Sample ID: B3HK89 — **Lab Sample ID: 280-107483-5**
Date Collected: 03/15/18 08:06 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**21.0**	**B**	100	4.4	ug/L		03/30/18 07:31	04/03/18 22:20	1
Calcium	**70100**		200	34.5	ug/L		03/30/18 07:31	04/03/18 22:20	1
Iron	22.0	U	100	22.0	ug/L		03/30/18 07:31	04/03/18 22:20	1
Magnesium	**21300**		200	10.7	ug/L		03/30/18 07:31	04/03/18 22:20	1
Potassium	**8820**		3000	237	ug/L		03/30/18 07:31	04/03/18 22:20	1
Sodium	**30000**		1000	117	ug/L		03/30/18 07:31	04/03/18 22:20	1
Vanadium	**22.8**		10.0	1.1	ug/L		03/30/18 07:31	04/03/18 22:20	1

Method: 6020B - Metals (ICP/MS)

Client Sample ID: B3HK84 — **Lab Sample ID: 280-107483-4**
Date Collected: 03/15/18 08:06 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9.2	U	50.0	9.2	ug/L		03/30/18 07:31	04/02/18 16:34	1
Antimony	0.40	U	2.0	0.40	ug/L		03/30/18 07:31	04/02/18 16:34	1
Arsenic	**5.7**		5.0	0.33	ug/L		03/30/18 07:31	04/02/18 16:34	1
Barium	**55.2**		1.0	0.29	ug/L		03/30/18 07:31	04/02/18 16:34	1
Beryllium	0.080	U	1.0	0.080	ug/L		03/30/18 07:31	04/05/18 11:27	1
Cadmium	0.27	U	1.0	0.27	ug/L		03/30/18 07:31	04/02/18 16:34	1
Chromium	**2.6**		2.0	0.50	ug/L		03/30/18 07:31	04/02/18 16:34	1
Cobalt	0.054	U	1.0	0.054	ug/L		03/30/18 07:31	04/02/18 16:34	1
Copper	0.56	U	2.0	0.56	ug/L		03/30/18 07:31	04/05/18 11:27	1
Lead	0.18	U	1.0	0.18	ug/L		03/30/18 07:31	04/02/18 16:34	1
Manganese	0.31	U	1.0	0.31	ug/L		03/30/18 07:31	04/02/18 16:34	1
Molybdenum	**2.0**		2.0	0.14	ug/L		03/30/18 07:31	04/02/18 16:34	1
Nickel	0.30	U	2.0	0.30	ug/L		03/30/18 07:31	04/02/18 16:34	1
Selenium	**6.9**		5.0	0.70	ug/L		03/30/18 07:31	04/05/18 11:27	1

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

Client Sample ID: B3HK84 — **Lab Sample ID: 280-107483-4**
Date Collected: 03/15/18 08:06 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.033	U	5.0	0.033	ug/L		03/30/18 07:31	04/02/18 16:34	1
Strontium	**339**		10.0	0.30	ug/L		03/30/18 07:31	04/02/18 16:34	1
Thallium	0.050	U	1.0	0.050	ug/L		03/30/18 07:31	04/02/18 16:34	1
Thorium	1.2	U	5.0	1.2	ug/L		03/30/18 07:31	04/05/18 11:27	1
Tin	0.77	U	10.0	0.77	ug/L		03/30/18 07:31	04/02/18 16:34	1
Uranium	**8.0**		1.0	0.050	ug/L		03/30/18 07:31	04/05/18 11:27	1
Zinc	2.0	U	10.0	2.0	ug/L		03/30/18 07:31	04/02/18 16:34	1

Client Sample ID: B3HK89 — **Lab Sample ID: 280-107483-5**
Date Collected: 03/15/18 08:06 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9.2	U	50.0	9.2	ug/L		03/30/18 07:31	04/02/18 16:37	1
Antimony	**0.44**	**B C**	2.0	0.40	ug/L		03/30/18 07:31	04/02/18 16:37	1
Arsenic	**6.3**		5.0	0.33	ug/L		03/30/18 07:31	04/02/18 16:37	1
Barium	**60.9**		1.0	0.29	ug/L		03/30/18 07:31	04/02/18 16:37	1
Beryllium	0.080	U	1.0	0.080	ug/L		03/30/18 07:31	04/05/18 11:30	1
Cadmium	0.27	U	1.0	0.27	ug/L		03/30/18 07:31	04/02/18 16:37	1
Chromium	**3.0**		2.0	0.50	ug/L		03/30/18 07:31	04/02/18 16:37	1
Cobalt	0.054	U	1.0	0.054	ug/L		03/30/18 07:31	04/02/18 16:37	1
Copper	0.56	U	2.0	0.56	ug/L		03/30/18 07:31	04/05/18 11:30	1
Lead	0.18	U	1.0	0.18	ug/L		03/30/18 07:31	04/02/18 16:37	1
Manganese	0.31	U	1.0	0.31	ug/L		03/30/18 07:31	04/02/18 16:37	1
Molybdenum	**1.8**	**B**	2.0	0.14	ug/L		03/30/18 07:31	04/02/18 16:37	1
Nickel	0.30	U	2.0	0.30	ug/L		03/30/18 07:31	04/02/18 16:37	1
Selenium	**6.7**		5.0	0.70	ug/L		03/30/18 07:31	04/05/18 11:30	1
Silver	0.033	U	5.0	0.033	ug/L		03/30/18 07:31	04/02/18 16:37	1
Strontium	**387**		10.0	0.30	ug/L		03/30/18 07:31	04/02/18 16:37	1
Thallium	0.050	U	1.0	0.050	ug/L		03/30/18 07:31	04/02/18 16:37	1
Thorium	1.2	U	5.0	1.2	ug/L		03/30/18 07:31	04/05/18 11:30	1
Tin	0.77	U	10.0	0.77	ug/L		03/30/18 07:31	04/02/18 16:37	1
Uranium	**8.1**		1.0	0.050	ug/L		03/30/18 07:31	04/05/18 11:30	1
Zinc	2.0	U	10.0	2.0	ug/L		03/30/18 07:31	04/02/18 16:37	1

Method: 7470A - Mercury (CVAA)

Client Sample ID: B3HK84 — **Lab Sample ID: 280-107483-4**
Date Collected: 03/15/18 08:06 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.027	U	0.20	0.027	ug/L		03/27/18 11:46	03/27/18 18:25	1

Client Sample ID: B3HK89 — **Lab Sample ID: 280-107483-5**
Date Collected: 03/15/18 08:06 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.027	U	0.20	0.027	ug/L		03/27/18 11:46	03/27/18 18:27	1

General Chemistry

Client Sample ID: B3HL18 — **Lab Sample ID: 280-107483-1**
Date Collected: 03/15/18 12:32 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	82200		5000	1070	ug/L			03/22/18 18:31	1

Client Sample ID: B3HL43 — **Lab Sample ID: 280-107483-6**
Date Collected: 03/15/18 09:01 — **Matrix: Water**
Date Received: 03/16/18 09:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	85700		5000	1070	ug/L			03/22/18 18:18	1

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

Lab Sample ID: MB 280-408927/6
Matrix: Water
Analysis Batch: 408927

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.21	U	1.0	0.21	ug/L			03/23/18 20:19	1
1,1,1-Trichloroethane	0.16	U	1.0	0.16	ug/L			03/23/18 20:19	1
1,1,2,2-Tetrachloroethane	0.21	U	1.0	0.21	ug/L			03/23/18 20:19	1
1,1,2-Trichloroethane	0.27	U	1.0	0.27	ug/L			03/23/18 20:19	1
1,1-Dichloroethane	0.22	U	1.0	0.22	ug/L			03/23/18 20:19	1
1,1-Dichloroethene	0.23	U	1.0	0.23	ug/L			03/23/18 20:19	1
1,2,3-Trichloropropane	0.33	U	2.5	0.33	ug/L			03/23/18 20:19	1
1,2-Dibromo-3-Chloropropane	0.47	U	5.0	0.47	ug/L			03/23/18 20:19	1
1,2-Dibromoethane	0.18	U	1.0	0.18	ug/L			03/23/18 20:19	1
1,2-Dichloroethane	0.13	U	1.0	0.13	ug/L			03/23/18 20:19	1
1,2-Dichloropropane	0.18	U	1.0	0.18	ug/L			03/23/18 20:19	1
1,4-Dichlorobenzene	0.16	U	1.0	0.16	ug/L			03/23/18 20:19	1
2-Butanone (MEK)	2.0	U	6.0	2.0	ug/L			03/23/18 20:19	1
2-Hexanone	1.7	U	5.0	1.7	ug/L			03/23/18 20:19	1
4-Methyl-2-pentanone (MIBK)	0.98	U	5.0	0.98	ug/L			03/23/18 20:19	1
Acetone	1.9	U	10	1.9	ug/L			03/23/18 20:19	1
Acetonitrile	9.6	U	30	9.6	ug/L			03/23/18 20:19	1
Acrolein	2.8	U	20	2.8	ug/L			03/23/18 20:19	1
Acrylonitrile	1.4	U	20	1.4	ug/L			03/23/18 20:19	1
Allyl chloride	0.17	U	2.0	0.17	ug/L			03/23/18 20:19	1
Benzene	0.16	U	1.0	0.16	ug/L			03/23/18 20:19	1
Bromodichloromethane	0.17	U	1.0	0.17	ug/L			03/23/18 20:19	1
Bromoform	0.19	U	1.0	0.19	ug/L			03/23/18 20:19	1
Bromomethane	0.21	U	2.0	0.21	ug/L			03/23/18 20:19	1
Carbon disulfide	0.45	U	2.0	0.45	ug/L			03/23/18 20:19	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/18 20:19	1
Chlorobenzene	0.17	U	1.0	0.17	ug/L			03/23/18 20:19	1
Chloroethane	0.41	U	2.0	0.41	ug/L			03/23/18 20:19	1
Chloroform	0.16	U	1.0	0.16	ug/L			03/23/18 20:19	1
Chloromethane	0.30	U	2.0	0.30	ug/L			03/23/18 20:19	1
Chloroprene	0.21	U	1.0	0.21	ug/L			03/23/18 20:19	1
cis-1,2-Dichloroethene	0.15	U	1.0	0.15	ug/L			03/23/18 20:19	1
cis-1,3-Dichloropropene	0.16	U	1.0	0.16	ug/L			03/23/18 20:19	1
Dibromochloromethane	0.17	U	1.0	0.17	ug/L			03/23/18 20:19	1
Dibromomethane	0.17	U	1.0	0.17	ug/L			03/23/18 20:19	1
Dichlorodifluoromethane	0.31	U	2.0	0.31	ug/L			03/23/18 20:19	1
Ethyl Cyanide	3.7	U	20	3.7	ug/L			03/23/18 20:19	1
Ethyl methacrylate	0.86	U	3.0	0.86	ug/L			03/23/18 20:19	1
Ethylbenzene	0.16	U	1.0	0.16	ug/L			03/23/18 20:19	1
Iodomethane	0.23	U	1.0	0.23	ug/L			03/23/18 20:19	1
Isobutyl alcohol	37	U	110	37	ug/L			03/23/18 20:19	1
Methacrylonitrile	1.6	U	10	1.6	ug/L			03/23/18 20:19	1
Methyl methacrylate	1.1	U	4.0	1.1	ug/L			03/23/18 20:19	1
Methylene Chloride	2.24		2.0	0.32	ug/L			03/23/18 20:19	1
Styrene	0.17	U	1.0	0.17	ug/L			03/23/18 20:19	1
Tetrachloroethene	0.20	U	1.0	0.20	ug/L			03/23/18 20:19	1
Toluene	0.17	U	1.0	0.17	ug/L			03/23/18 20:19	1
trans-1,2-Dichloroethylene	0.15	U	1.0	0.15	ug/L			03/23/18 20:19	1

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

Lab Sample ID: MB 280-408927/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408927

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,3-Dichloropropene	0.19	U	3.0	0.19	ug/L			03/23/18 20:19	1
trans-1,4-Dichloro-2-butene	0.80	U	3.0	0.80	ug/L			03/23/18 20:19	1
Trichloroethene	0.16	U	1.0	0.16	ug/L			03/23/18 20:19	1
Trichloromonofluoromethane	0.29	U	2.0	0.29	ug/L			03/23/18 20:19	1
Vinyl acetate	0.94	U	3.0	0.94	ug/L			03/23/18 20:19	1
Vinyl chloride	0.10	U	1.0	0.10	ug/L			03/23/18 20:19	1
Xylenes, Total	0.19	U	2.0	0.19	ug/L			03/23/18 20:19	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Unknown	*1.28*	*N*	*ug/L*		*6.18*			*03/23/18 20:19*	*1*
Acetic acid, 2-ethylhexyl ester	*1.67*	*N J*	*ug/L*		*12.20*	*103-09-3*		*03/23/18 20:19*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*03/23/18 20:19*	*1*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*03/23/18 20:19*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 130*		*03/23/18 20:19*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/23/18 20:19*	*1*

Lab Sample ID: LCS 280-408927/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408927

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetonitrile	50.0	58.8		ug/L		118	70 - 130
Chloroprene	5.00	5.79		ug/L		116	70 - 130
Ethyl Cyanide	50.0	58.9		ug/L		118	70 - 130
Methacrylonitrile	50.0	56.7		ug/L		113	70 - 130
Methyl methacrylate	10.0	9.43		ug/L		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*70 - 130*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

Lab Sample ID: LCS 280-408927/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408927

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	5.00	5.33		ug/L		107	70 - 130
1,1,1-Trichloroethane	5.00	6.07		ug/L		121	70 - 130
1,1,2,2-Tetrachloroethane	5.00	4.70		ug/L		94	70 - 130
1,1,2-Trichloroethane	5.00	5.39		ug/L		108	70 - 130
1,1-Dichloroethane	5.00	5.79		ug/L		116	70 - 130
1,1-Dichloroethene	5.00	5.68		ug/L		114	70 - 130
1,2,3-Trichloropropane	5.00	4.67		ug/L		93	70 - 130

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

Lab Sample ID: LCS 280-408927/4
Matrix: Water
Analysis Batch: 408927

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	5.00	4.36	J	ug/L		87	70 - 130
1,2-Dibromoethane	5.00	4.70		ug/L		94	70 - 130
1,2-Dichloroethane	5.00	5.43		ug/L		109	70 - 130
1,2-Dichloropropane	5.00	5.58		ug/L		112	70 - 130
1,4-Dichlorobenzene	5.00	5.04		ug/L		101	70 - 130
2-Butanone (MEK)	20.0	19.4		ug/L		97	70 - 130
2-Hexanone	20.0	16.6		ug/L		83	70 - 130
4-Methyl-2-pentanone (MIBK)	20.0	18.9		ug/L		95	70 - 130
Acetone	20.0	21.0		ug/L		105	70 - 130
Acrolein	50.0	40.0		ug/L		80	70 - 130
Acrylonitrile	50.0	53.2		ug/L		106	70 - 130
Allyl chloride	5.00	5.76		ug/L		115	70 - 130
Benzene	5.00	5.71		ug/L		114	70 - 130
Bromodichloromethane	5.00	5.50		ug/L		110	70 - 130
Bromoform	5.00	4.49		ug/L		90	70 - 130
Bromomethane	5.00	5.50		ug/L		110	70 - 130
Carbon disulfide	5.00	5.88		ug/L		118	70 - 130
Carbon tetrachloride	5.00	6.27		ug/L		125	70 - 130
Chlorobenzene	5.00	5.08		ug/L		102	70 - 130
Chloroethane	5.00	5.42		ug/L		108	70 - 130
Chloroform	5.00	5.69		ug/L		114	70 - 130
Chloromethane	5.00	5.11		ug/L		102	70 - 130
cis-1,2-Dichloroethene	5.00	5.47		ug/L		109	70 - 130
cis-1,3-Dichloropropene	5.00	4.65		ug/L		93	70 - 130
Dibromochloromethane	5.00	4.68		ug/L		94	70 - 130
Dibromomethane	5.00	5.42		ug/L		108	70 - 130
Dichlorodifluoromethane	5.00	5.48		ug/L		110	70 - 130
Ethyl methacrylate	5.00	4.29		ug/L		86	70 - 130
Ethylbenzene	5.00	5.23		ug/L		105	70 - 130
Iodomethane	5.00	5.57		ug/L		111	70 - 130
Isobutyl alcohol	125	113		ug/L		91	70 - 130
Methylene Chloride	5.00	7.69	o	ug/L		154	70 - 130
Styrene	5.00	4.87		ug/L		97	70 - 130
Tetrachloroethene	5.00	5.40		ug/L		108	70 - 130
Toluene	5.00	5.63		ug/L		113	70 - 130
trans-1,2-Dichloroethylene	5.00	5.90		ug/L		118	70 - 130
trans-1,3-Dichloropropene	5.00	4.87		ug/L		97	70 - 130
trans-1,4-Dichloro-2-butene	5.00	4.91		ug/L		98	70 - 130
Trichloroethene	5.00	5.49		ug/L		110	70 - 130
Trichloromonofluoromethane	5.00	6.52		ug/L		130	70 - 130
Vinyl acetate	10.0	8.61		ug/L		86	70 - 130
Vinyl chloride	5.00	5.34		ug/L		107	70 - 130
Xylenes, Total	10.0	10.5		ug/L		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*

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

Lab Sample ID: LCS 280-408927/4
Matrix: Water
Analysis Batch: 408927

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

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: 280-107483-6 MS
Matrix: Water
Analysis Batch: 408927

Client Sample ID: B3HL43
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	0.21	U	5.00	5.01		ug/L		100	70 - 130
1,1,1-Trichloroethane	0.16	U	5.00	6.07		ug/L		121	70 - 130
1,1,2,2-Tetrachloroethane	0.21	U	5.00	4.12		ug/L		82	70 - 130
1,1,2-Trichloroethane	0.27	U	5.00	4.53		ug/L		91	70 - 130
1,1-Dichloroethane	0.22	U	5.00	5.57		ug/L		111	70 - 130
1,1-Dichloroethene	0.23	U	5.00	5.78		ug/L		116	70 - 130
1,2,3-Trichloropropane	0.33	U	5.00	4.26		ug/L		85	70 - 130
1,2-Dibromo-3-Chloropropane	0.47	U	5.00	3.66	J	ug/L		73	70 - 130
1,2-Dibromoethane	0.18	U	5.00	4.19		ug/L		84	70 - 130
1,2-Dichloroethane	0.13	U	5.00	4.80		ug/L		96	70 - 130
1,2-Dichloropropane	0.18	U	5.00	5.10		ug/L		102	70 - 130
1,4-Dichlorobenzene	0.16	U	5.00	4.83		ug/L		97	70 - 130
2-Butanone (MEK)	2.0	U	20.0	14.8		ug/L		74	70 - 130
2-Hexanone	1.7	U T	20.0	12.7	T	ug/L		63	70 - 130
4-Methyl-2-pentanone (MIBK)	0.98	U	20.0	14.1		ug/L		71	70 - 130
Acetone	1.9	U	20.0	18.4		ug/L		92	70 - 130
Acrolein	2.8	U	50.0	46.0		ug/L		92	70 - 130
Acrylonitrile	1.4	U	50.0	43.5		ug/L		87	70 - 130
Allyl chloride	0.17	U	5.00	5.59		ug/L		112	70 - 130
Benzene	0.16	U	5.00	5.51		ug/L		110	70 - 130
Bromodichloromethane	0.17	U	5.00	4.93		ug/L		99	70 - 130
Bromoform	0.19	U	5.00	3.76		ug/L		75	70 - 130
Bromomethane	0.21	U	5.00	5.38		ug/L		108	70 - 130
Carbon disulfide	0.45	U	5.00	5.85		ug/L		117	70 - 130
Carbon tetrachloride	0.19	U	5.00	6.31		ug/L		126	70 - 130
Chlorobenzene	0.17	U	5.00	5.00		ug/L		100	70 - 130
Chloroethane	0.41	U	5.00	5.43		ug/L		109	70 - 130
Chloroform	0.16	U	5.00	5.49		ug/L		110	70 - 130
Chloromethane	0.30	U	5.00	4.99		ug/L		100	70 - 130
cis-1,2-Dichloroethene	0.15	U T	5.00	5.15		ug/L		103	70 - 103
cis-1,3-Dichloropropene	0.16	U	5.00	4.23		ug/L		85	70 - 130
Dibromochloromethane	0.17	U	5.00	4.07		ug/L		81	70 - 130
Dibromomethane	0.17	U	5.00	4.63		ug/L		93	70 - 130
Dichlorodifluoromethane	0.31	U	5.00	5.40		ug/L		108	70 - 130
Ethyl methacrylate	0.86	U T	5.00	3.46	T	ug/L		69	70 - 130
Ethylbenzene	0.16	U	5.00	5.32		ug/L		106	70 - 130
Iodomethane	0.23	U	5.00	5.37		ug/L		107	70 - 130
Isobutyl alcohol	37	U	125	113		ug/L		91	70 - 130
Methylene Chloride	0.32	U o	5.00	5.00		ug/L		100	70 - 130
Styrene	0.17	U	5.00	4.66		ug/L		93	70 - 130
Tetrachloroethene	0.20	U	5.00	5.66		ug/L		113	70 - 130

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

Lab Sample ID: 280-107483-6 MS — **Client Sample ID: B3HL43**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408927

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	0.17	U	5.00	5.50		ug/L		110	70 - 130
trans-1,2-Dichloroethylene	0.15	U	5.00	5.77		ug/L		115	70 - 130
trans-1,3-Dichloropropene	0.19	U	5.00	4.19		ug/L		84	70 - 130
trans-1,4-Dichloro-2-butene	0.80	U	5.00	4.05		ug/L		81	70 - 130
Trichloroethene	0.16	U	5.00	5.39		ug/L		108	70 - 130
Trichloromonofluoromethane	0.29	U	5.00	6.47		ug/L		129	70 - 130
Vinyl acetate	0.94	U	10.0	9.61		ug/L		96	70 - 130
Vinyl chloride	0.10	U	5.00	5.33		ug/L		107	70 - 130
Xylenes, Total	0.19	U	10.0	10.4		ug/L		104	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*70 - 130*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*
Dibromofluoromethane (Surr)	*98*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*

Lab Sample ID: 280-107483-6 MS — **Client Sample ID: B3HL43**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408927

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetonitrile	9.6	U	50.0	61.2		ug/L		122	70 - 130
Chloroprene	0.21	U	5.00	5.44		ug/L		109	70 - 130
Ethyl Cyanide	3.7	U	50.0	60.0		ug/L		120	70 - 130
Methacrylonitrile	1.6	U	50.0	58.0		ug/L		116	70 - 130
Methyl methacrylate	1.1	U	10.0	9.77		ug/L		98	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*

Lab Sample ID: 280-107483-6 MSD — **Client Sample ID: B3HL43**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408927

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	0.21	U	5.00	5.23		ug/L		105	70 - 130	4	20
1,1,1-Trichloroethane	0.16	U	5.00	6.00		ug/L		120	70 - 130	1	20
1,1,2,2-Tetrachloroethane	0.21	U	5.00	4.45		ug/L		89	70 - 130	8	20
1,1,2-Trichloroethane	0.27	U	5.00	5.10		ug/L		102	70 - 130	12	20
1,1-Dichloroethane	0.22	U	5.00	5.68		ug/L		114	70 - 130	2	20
1,1-Dichloroethene	0.23	U	5.00	5.73		ug/L		115	70 - 130	1	20
1,2,3-Trichloropropane	0.33	U	5.00	4.52		ug/L		90	70 - 130	6	20
1,2-Dibromo-3-Chloropropane	0.47	U	5.00	3.98	J	ug/L		80	70 - 130	8	20
1,2-Dibromoethane	0.18	U	5.00	4.48		ug/L		90	70 - 130	7	20
1,2-Dichloroethane	0.13	U	5.00	5.21		ug/L		104	70 - 130	8	20

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

Lab Sample ID: 280-107483-6 MSD
Matrix: Water
Analysis Batch: 408927

Client Sample ID: B3HL43
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dichloropropane	0.18	U	5.00	5.45		ug/L		109	70 - 130	7	20
1,4-Dichlorobenzene	0.16	U	5.00	4.98		ug/L		100	70 - 130	3	20
2-Butanone (MEK)	2.0	U	20.0	23.8	y	ug/L		119	70 - 130	47	20
2-Hexanone	1.7	U T	20.0	15.5		ug/L		77	70 - 130	20	20
4-Methyl-2-pentanone (MIBK)	0.98	U	20.0	17.4	y	ug/L		87	70 - 130	21	20
Acetone	1.9	U	20.0	19.7		ug/L		98	70 - 130	7	20
Acrolein	2.8	U	50.0	50.8		ug/L		102	70 - 130	10	20
Acrylonitrile	1.4	U	50.0	50.6		ug/L		101	70 - 130	15	20
Allyl chloride	0.17	U	5.00	5.70		ug/L		114	70 - 130	2	20
Benzene	0.16	U	5.00	5.61		ug/L		112	70 - 130	2	20
Bromodichloromethane	0.17	U	5.00	5.23		ug/L		105	70 - 130	6	20
Bromoform	0.19	U	5.00	4.27		ug/L		85	70 - 130	13	20
Bromomethane	0.21	U	5.00	5.52		ug/L		110	70 - 130	3	20
Carbon disulfide	0.45	U	5.00	5.82		ug/L		116	70 - 130	0	20
Carbon tetrachloride	0.19	U	5.00	6.22		ug/L		124	70 - 130	1	20
Chlorobenzene	0.17	U	5.00	5.09		ug/L		102	70 - 130	2	20
Chloroethane	0.41	U	5.00	5.50		ug/L		110	70 - 130	1	20
Chloroform	0.16	U	5.00	5.69		ug/L		114	70 - 130	4	20
Chloromethane	0.30	U	5.00	5.16		ug/L		103	70 - 130	3	20
cis-1,2-Dichloroethene	0.15	U T	5.00	5.40	T	ug/L		108	70 - 103	5	20
cis-1,3-Dichloropropene	0.16	U	5.00	4.46		ug/L		89	70 - 130	5	20
Dibromochloromethane	0.17	U	5.00	4.45		ug/L		89	70 - 130	9	20
Dibromomethane	0.17	U	5.00	5.18		ug/L		104	70 - 130	11	20
Dichlorodifluoromethane	0.31	U	5.00	5.48		ug/L		110	70 - 130	2	20
Ethyl methacrylate	0.86	U T	5.00	4.05		ug/L		81	70 - 130	16	20
Ethylbenzene	0.16	U	5.00	5.27		ug/L		105	70 - 130	1	20
Iodomethane	0.23	U	5.00	5.56		ug/L		111	70 - 130	3	20
Isobutyl alcohol	37	U	125	111		ug/L		89	70 - 130	2	20
Methylene Chloride	0.32	U o	5.00	5.24		ug/L		105	70 - 130	5	20
Styrene	0.17	U	5.00	4.82		ug/L		96	70 - 130	3	20
Tetrachloroethene	0.20	U	5.00	5.39		ug/L		108	70 - 130	5	20
Toluene	0.17	U	5.00	5.58		ug/L		112	70 - 130	1	20
trans-1,2-Dichloroethylene	0.15	U	5.00	5.87		ug/L		117	70 - 130	2	20
trans-1,3-Dichloropropene	0.19	U	5.00	4.78		ug/L		96	70 - 130	13	20
trans-1,4-Dichloro-2-butene	0.80	U	5.00	4.64		ug/L		93	70 - 130	13	20
Trichloroethene	0.16	U	5.00	5.43		ug/L		109	70 - 130	1	20
Trichloromonofluoromethane	0.29	U	5.00	6.42		ug/L		128	70 - 130	1	20
Vinyl acetate	0.94	U	10.0	10.9		ug/L		109	70 - 130	12	20
Vinyl chloride	0.10	U	5.00	5.42		ug/L		108	70 - 130	2	20
Xylenes, Total	0.19	U	10.0	10.4		ug/L		104	70 - 130	0	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*70 - 130*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*
Dibromofluoromethane (Surr)	*99*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

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

Lab Sample ID: 280-107483-6 MSD **Client Sample ID: B3HL43**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 408927

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetonitrile	9.6	U	50.0	60.0		ug/L		120	70 - 130	2	20
Chloroprene	0.21	U	5.00	5.38		ug/L		108	70 - 130	1	20
Ethyl Cyanide	3.7	U	50.0	60.9		ug/L		122	70 - 130	2	20
Methacrylonitrile	1.6	U	50.0	57.9		ug/L		116	70 - 130	0	20
Methyl methacrylate	1.1	U	10.0	10.1		ug/L		101	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*104*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

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

Lab Sample ID: MB 280-408738/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 410639 **Prep Batch: 408738**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	0.56	U	10	0.56	ug/L		03/22/18 11:20	04/09/18 16:36	1
Methyl methanesulfonate	1.0	U	10	1.0	ug/L		03/22/18 11:20	04/09/18 16:36	1
N-Nitrosodi-n-propylamine	0.35	U	10	0.35	ug/L		03/22/18 11:20	04/09/18 16:36	1
Pentachlorophenol	20	U	50	20	ug/L		03/22/18 11:20	04/09/18 16:36	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*				*03/22/18 11:20*	*04/09/18 16:36*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*95*		*42 - 130*	*03/22/18 11:20*	*04/09/18 16:36*	*1*
2-Fluorobiphenyl (Surr)	*82*		*48 - 130*	*03/22/18 11:20*	*04/09/18 16:36*	*1*
2-Fluorophenol (Surr)	*83*		*41 - 130*	*03/22/18 11:20*	*04/09/18 16:36*	*1*
Nitrobenzene-d5 (Surr)	*86*		*42 - 130*	*03/22/18 11:20*	*04/09/18 16:36*	*1*
Phenol-d5 (Surr)	*83*		*45 - 130*	*03/22/18 11:20*	*04/09/18 16:36*	*1*
Terphenyl-d14 (Surr)	*88*		*20 - 130*	*03/22/18 11:20*	*04/09/18 16:36*	*1*

Lab Sample ID: LCS 280-408738/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 410639 **Prep Batch: 408738**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-ethylhexyl) phthalate	80.0	63.8		ug/L		80	62 - 130
N-Nitrosodi-n-propylamine	80.0	63.7		ug/L		80	56 - 130
Pentachlorophenol	160	153		ug/L		96	43 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*97*		*42 - 130*

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

Lab Sample ID: LCS 280-408738/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410639 — **Prep Batch: 408738**

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	83		48 - 130
2-Fluorophenol (Surr)	75		41 - 130
Nitrobenzene-d5 (Surr)	80		42 - 130
Phenol-d5 (Surr)	77		45 - 130
Terphenyl-d14 (Surr)	85		20 - 130

Lab Sample ID: 280-107483-3 MS — **Client Sample ID: B3HL77**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410639 — **Prep Batch: 408738**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-ethylhexyl) phthalate	0.53	U	77.8	61.8		ug/L		79	62 - 126
N-Nitrosodi-n-propylamine	0.33	U	77.8	62.7		ug/L		81	56 - 120
Pentachlorophenol	19	U	156	144		ug/L		93	43 - 126

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	96		42 - 130
2-Fluorobiphenyl (Surr)	78		48 - 130
2-Fluorophenol (Surr)	77		41 - 130
Nitrobenzene-d5 (Surr)	85		42 - 130
Phenol-d5 (Surr)	79		45 - 130
Terphenyl-d14 (Surr)	83		20 - 130

Lab Sample ID: 280-107483-3 MSD — **Client Sample ID: B3HL77**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410639 — **Prep Batch: 408738**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	0.53	U	76.8	65.8		ug/L		86	62 - 126	6	30
N-Nitrosodi-n-propylamine	0.33	U	76.8	65.1		ug/L		85	56 - 120	4	30
Pentachlorophenol	19	U	154	148		ug/L		96	43 - 126	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	103		42 - 130
2-Fluorobiphenyl (Surr)	88		48 - 130
2-Fluorophenol (Surr)	83		41 - 130
Nitrobenzene-d5 (Surr)	92		42 - 130
Phenol-d5 (Surr)	84		45 - 130
Terphenyl-d14 (Surr)	88		20 - 130

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003 / X18-005 / S18-003

TestAmerica Job ID: 280-107483-1
SDG: DN0340

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 280-409209/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410128 — **Prep Batch: 409209**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	4.4	U	100	4.4	ug/L		03/30/18 07:31	04/03/18 22:13	1
Calcium	34.5	U	200	34.5	ug/L		03/30/18 07:31	04/03/18 22:13	1
Iron	22.0	U	100	22.0	ug/L		03/30/18 07:31	04/03/18 22:13	1
Magnesium	10.7	U	200	10.7	ug/L		03/30/18 07:31	04/03/18 22:13	1
Potassium	237	U	3000	237	ug/L		03/30/18 07:31	04/03/18 22:13	1
Sodium	117	U	1000	117	ug/L		03/30/18 07:31	04/03/18 22:13	1
Vanadium	1.1	U	10.0	1.1	ug/L		03/30/18 07:31	04/03/18 22:13	1

Lab Sample ID: LCS 280-409209/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410128 — **Prep Batch: 409209**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1059		ug/L		106	80 - 120
Calcium	50000	49920		ug/L		100	80 - 120
Iron	1000	1009		ug/L		101	80 - 120
Magnesium	50000	52870		ug/L		106	80 - 120
Potassium	50000	51020		ug/L		102	80 - 120
Sodium	50000	51440		ug/L		103	80 - 120
Vanadium	500	515.2		ug/L		103	80 - 120

Lab Sample ID: 280-107483-5 MS — **Client Sample ID: B3HK89**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410128 — **Prep Batch: 409209**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	21.0	B	1000	1066		ug/L		105	75 - 125
Calcium	70100		50000	119400		ug/L		99	75 - 125
Iron	22.0	U	1000	1034		ug/L		103	75 - 125
Magnesium	21300		50000	72590		ug/L		103	75 - 125
Potassium	8820		50000	59880		ug/L		102	75 - 125
Sodium	30000		50000	80480		ug/L		101	75 - 125
Vanadium	22.8		500	534.7		ug/L		102	75 - 125

Lab Sample ID: 280-107483-5 MSD — **Client Sample ID: B3HK89**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410128 — **Prep Batch: 409209**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	21.0	B	1000	1078		ug/L		106	75 - 125	1	20
Calcium	70100		50000	120000		ug/L		100	75 - 125	1	20
Iron	22.0	U	1000	1017		ug/L		102	75 - 125	2	20
Magnesium	21300		50000	74100		ug/L		106	75 - 125	2	20
Potassium	8820		50000	60520		ug/L		103	75 - 125	1	20
Sodium	30000		50000	81700		ug/L		103	75 - 125	2	20
Vanadium	22.8		500	542.3		ug/L		104	75 - 125	1	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 280-409210/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409965 — **Prep Batch: 409210**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	9.2	U	50.0	9.2	ug/L		03/30/18 07:31	04/02/18 16:26	1
Antimony	1.42	B	2.0	0.40	ug/L		03/30/18 07:31	04/02/18 16:26	1
Arsenic	0.33	U	5.0	0.33	ug/L		03/30/18 07:31	04/02/18 16:26	1
Barium	0.29	U	1.0	0.29	ug/L		03/30/18 07:31	04/02/18 16:26	1
Cadmium	0.27	U	1.0	0.27	ug/L		03/30/18 07:31	04/02/18 16:26	1
Chromium	0.50	U	2.0	0.50	ug/L		03/30/18 07:31	04/02/18 16:26	1
Cobalt	0.054	U	1.0	0.054	ug/L		03/30/18 07:31	04/02/18 16:26	1
Lead	0.18	U	1.0	0.18	ug/L		03/30/18 07:31	04/02/18 16:26	1
Manganese	0.31	U	1.0	0.31	ug/L		03/30/18 07:31	04/02/18 16:26	1
Molybdenum	0.14	U	2.0	0.14	ug/L		03/30/18 07:31	04/02/18 16:26	1
Nickel	0.30	U	2.0	0.30	ug/L		03/30/18 07:31	04/02/18 16:26	1
Silver	0.033	U	5.0	0.033	ug/L		03/30/18 07:31	04/02/18 16:26	1
Strontium	0.30	U	10.0	0.30	ug/L		03/30/18 07:31	04/02/18 16:26	1
Thallium	0.050	U	1.0	0.050	ug/L		03/30/18 07:31	04/02/18 16:26	1
Tin	0.77	U	10.0	0.77	ug/L		03/30/18 07:31	04/02/18 16:26	1
Zinc	4.81	B	10.0	2.0	ug/L		03/30/18 07:31	04/02/18 16:26	1

Lab Sample ID: MB 280-409210/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410384 — **Prep Batch: 409210**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.080	U	1.0	0.080	ug/L		03/30/18 07:31	04/05/18 11:20	1
Copper	0.56	U	2.0	0.56	ug/L		03/30/18 07:31	04/05/18 11:20	1
Selenium	0.70	U	5.0	0.70	ug/L		03/30/18 07:31	04/05/18 11:20	1
Thorium	1.2	U	5.0	1.2	ug/L		03/30/18 07:31	04/05/18 11:20	1
Uranium	0.050	U	1.0	0.050	ug/L		03/30/18 07:31	04/05/18 11:20	1

Lab Sample ID: LCS 280-409210/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409965 — **Prep Batch: 409210**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	400	371.6		ug/L		93	80 - 120
Antimony	40.0	36.12		ug/L		90	80 - 120
Arsenic	40.0	36.64		ug/L		92	80 - 120
Barium	40.0	37.47		ug/L		94	80 - 120
Cadmium	40.0	35.00		ug/L		88	80 - 120
Chromium	40.0	36.82		ug/L		92	80 - 120
Cobalt	40.0	38.22		ug/L		96	80 - 120
Lead	40.0	39.21		ug/L		98	80 - 120
Manganese	40.0	38.98		ug/L		97	80 - 120
Molybdenum	40.0	36.99		ug/L		92	80 - 120
Nickel	40.0	38.61		ug/L		97	80 - 120
Silver	40.0	40.62		ug/L		102	80 - 120
Strontium	40.0	41.08		ug/L		103	80 - 120
Thallium	40.0	38.33		ug/L		96	80 - 120
Tin	40.0	37.72		ug/L		94	80 - 120

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

Lab Sample ID: LCS 280-409210/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409965 — **Prep Batch: 409210**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	40.0	36.76		ug/L		92	80 - 120

Lab Sample ID: LCS 280-409210/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410384 — **Prep Batch: 409210**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	40.0	40.47		ug/L		101	80 - 120
Copper	40.0	42.86		ug/L		107	80 - 120
Selenium	40.0	40.07		ug/L		100	80 - 120
Thorium	40.0	43.98		ug/L		110	80 - 120
Uranium	40.0	43.54		ug/L		109	80 - 120

Lab Sample ID: 280-107483-5 MS — **Client Sample ID: B3HK89**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409965 — **Prep Batch: 409210**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	9.2	U	400	389.9		ug/L		97	75 - 125
Antimony	0.44	B C	40.0	40.25		ug/L		100	75 - 125
Arsenic	6.3		40.0	43.36		ug/L		93	75 - 125
Barium	60.9		40.0	96.29		ug/L		89	75 - 125
Cadmium	0.27	U	40.0	37.87		ug/L		95	75 - 125
Chromium	3.0		40.0	41.22		ug/L		95	75 - 125
Cobalt	0.054	U	40.0	37.91		ug/L		95	75 - 125
Lead	0.18	U	40.0	40.19		ug/L		100	75 - 125
Manganese	0.31	U	40.0	38.06		ug/L		95	75 - 125
Molybdenum	1.8	B	40.0	41.69		ug/L		100	75 - 125
Nickel	0.30	U	40.0	38.89		ug/L		97	75 - 125
Silver	0.033	U	40.0	41.70		ug/L		104	75 - 125
Strontium	387		40.0	402.8	X	ug/L		40	75 - 125
Thallium	0.050	U	40.0	39.81		ug/L		100	75 - 125
Tin	0.77	U	40.0	40.95		ug/L		102	75 - 125
Zinc	2.0	U	40.0	37.34		ug/L		93	75 - 125

Lab Sample ID: 280-107483-5 MS — **Client Sample ID: B3HK89**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410384 — **Prep Batch: 409210**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	0.080	U	40.0	39.75		ug/L		99	75 - 125
Copper	0.56	U	40.0	41.30		ug/L		103	75 - 125
Selenium	6.7		40.0	46.41		ug/L		99	75 - 125
Thorium	1.2	U	40.0	42.54		ug/L		106	75 - 125
Uranium	8.1		40.0	50.92		ug/L		107	75 - 125

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

Lab Sample ID: 280-107483-5 MSD — **Client Sample ID: B3HK89**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409965 — **Prep Batch: 409210**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	9.2	U	400	415.2		ug/L		104	75 - 125	6	20
Antimony	0.44	B C	40.0	42.02		ug/L		104	75 - 125	4	20
Arsenic	6.3		40.0	45.12		ug/L		97	75 - 125	4	20
Barium	60.9		40.0	100.1		ug/L		98	75 - 125	4	20
Cadmium	0.27	U	40.0	40.21		ug/L		101	75 - 125	6	20
Chromium	3.0		40.0	42.34		ug/L		98	75 - 125	3	20
Cobalt	0.054	U	40.0	39.12		ug/L		98	75 - 125	3	20
Lead	0.18	U	40.0	41.50		ug/L		104	75 - 125	3	20
Manganese	0.31	U	40.0	40.70		ug/L		102	75 - 125	7	20
Molybdenum	1.8	B	40.0	44.79		ug/L		107	75 - 125	7	20
Nickel	0.30	U	40.0	39.83		ug/L		100	75 - 125	2	20
Silver	0.033	U	40.0	43.03		ug/L		108	75 - 125	3	20
Strontium	387		40.0	436.1	X	ug/L		123	75 - 125	8	20
Thallium	0.050	U	40.0	41.21		ug/L		103	75 - 125	3	20
Tin	0.77	U	40.0	43.83		ug/L		110	75 - 125	7	20
Zinc	2.0	U	40.0	38.34		ug/L		96	75 - 125	3	20

Lab Sample ID: 280-107483-5 MSD — **Client Sample ID: B3HK89**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 410384 — **Prep Batch: 409210**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	0.080	U	40.0	41.60		ug/L		104	75 - 125	5	20
Copper	0.56	U	40.0	42.39		ug/L		106	75 - 125	3	20
Selenium	6.7		40.0	47.06		ug/L		101	75 - 125	1	20
Thorium	1.2	U	40.0	43.38		ug/L		108	75 - 125	2	20
Uranium	8.1		40.0	51.85		ug/L		109	75 - 125	2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 280-409177/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409326 — **Prep Batch: 409177**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.027	U	0.20	0.027	ug/L		03/27/18 11:46	03/27/18 17:32	1

Lab Sample ID: LCS 280-409177/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409326 — **Prep Batch: 409177**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.08		ug/L		102	80 - 120

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 280-107483-5 MS — **Client Sample ID: B3HK89**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409326 — **Prep Batch: 409177**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	0.027	U	5.00	5.13		ug/L		103	75 - 125		

Lab Sample ID: 280-107483-5 MSD — **Client Sample ID: B3HK89**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 409326 — **Prep Batch: 409177**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.027	U	5.00	5.06		ug/L		101	75 - 125	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-408887/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408887

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	1070	U	5000	1070	ug/L			03/22/18 18:11	1

Lab Sample ID: LCS 280-408887/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408887

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity as CaCO3			200000	186700		ug/L		93	80 - 120		

Lab Sample ID: LCSD 280-408887/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408887

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3			200000	187700		ug/L		94	80 - 120	1	20

Lab Sample ID: 280-107483-6 DU — **Client Sample ID: B3HL43**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 408887

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity as CaCO3	85700			84500		ug/L				1	20

GC/MS VOA

Analysis Batch: 408927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-1	B3HL18	Total/NA	Water	8260B	
280-107483-2	B3H049	Total/NA	Water	8260B	
280-107483-3	B3HL77	Total/NA	Water	8260B	
280-107483-6	B3HL43	Total/NA	Water	8260B	
MB 280-408927/6	Method Blank	Total/NA	Water	8260B	
LCS 280-408927/10	Lab Control Sample	Total/NA	Water	8260B	
LCS 280-408927/4	Lab Control Sample	Total/NA	Water	8260B	
280-107483-6 MS	B3HL43	Total/NA	Water	8260B	
280-107483-6 MS	B3HL43	Total/NA	Water	8260B	
280-107483-6 MSD	B3HL43	Total/NA	Water	8260B	
280-107483-6 MSD	B3HL43	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 408738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-3	B3HL77	Total/NA	Water	3520C	
MB 280-408738/1-A	Method Blank	Total/NA	Water	3520C	
LCS 280-408738/2-A	Lab Control Sample	Total/NA	Water	3520C	
280-107483-3 MS	B3HL77	Total/NA	Water	3520C	
280-107483-3 MSD	B3HL77	Total/NA	Water	3520C	

Analysis Batch: 410639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-3	B3HL77	Total/NA	Water	8270D	408738
MB 280-408738/1-A	Method Blank	Total/NA	Water	8270D	408738
LCS 280-408738/2-A	Lab Control Sample	Total/NA	Water	8270D	408738
280-107483-3 MS	B3HL77	Total/NA	Water	8270D	408738
280-107483-3 MSD	B3HL77	Total/NA	Water	8270D	408738

Metals

Prep Batch: 409177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-4	B3HK84	Total/NA	Water	7470A	
280-107483-5	B3HK89	Total/NA	Water	7470A	
MB 280-409177/1-A	Method Blank	Total/NA	Water	7470A	
LCS 280-409177/2-A	Lab Control Sample	Total/NA	Water	7470A	
280-107483-5 MS	B3HK89	Total/NA	Water	7470A	
280-107483-5 MSD	B3HK89	Total/NA	Water	7470A	

Prep Batch: 409209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-4	B3HK84	Total/NA	Water	3010A	
280-107483-5	B3HK89	Total/NA	Water	3010A	
MB 280-409209/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-409209/2-A	Lab Control Sample	Total/NA	Water	3010A	
280-107483-5 MS	B3HK89	Total/NA	Water	3010A	
280-107483-5 MSD	B3HK89	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 409210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-4	B3HK84	Total/NA	Water	3020A	
280-107483-5	B3HK89	Total/NA	Water	3020A	
MB 280-409210/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-409210/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-107483-5 MS	B3HK89	Total/NA	Water	3020A	
280-107483-5 MSD	B3HK89	Total/NA	Water	3020A	

Analysis Batch: 409326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-4	B3HK84	Total/NA	Water	7470A	409177
280-107483-5	B3HK89	Total/NA	Water	7470A	409177
MB 280-409177/1-A	Method Blank	Total/NA	Water	7470A	409177
LCS 280-409177/2-A	Lab Control Sample	Total/NA	Water	7470A	409177
280-107483-5 MS	B3HK89	Total/NA	Water	7470A	409177
280-107483-5 MSD	B3HK89	Total/NA	Water	7470A	409177

Analysis Batch: 409965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-4	B3HK84	Total/NA	Water	6020B	409210
280-107483-5	B3HK89	Total/NA	Water	6020B	409210
MB 280-409210/1-A	Method Blank	Total/NA	Water	6020B	409210
LCS 280-409210/2-A	Lab Control Sample	Total/NA	Water	6020B	409210
280-107483-5 MS	B3HK89	Total/NA	Water	6020B	409210
280-107483-5 MSD	B3HK89	Total/NA	Water	6020B	409210

Analysis Batch: 410128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-4	B3HK84	Total/NA	Water	6010D	409209
280-107483-5	B3HK89	Total/NA	Water	6010D	409209
MB 280-409209/1-A	Method Blank	Total/NA	Water	6010D	409209
LCS 280-409209/2-A	Lab Control Sample	Total/NA	Water	6010D	409209
280-107483-5 MS	B3HK89	Total/NA	Water	6010D	409209
280-107483-5 MSD	B3HK89	Total/NA	Water	6010D	409209

Analysis Batch: 410384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-4	B3HK84	Total/NA	Water	6020B	409210
280-107483-5	B3HK89	Total/NA	Water	6020B	409210
MB 280-409210/1-A	Method Blank	Total/NA	Water	6020B	409210
LCS 280-409210/2-A	Lab Control Sample	Total/NA	Water	6020B	409210
280-107483-5 MS	B3HK89	Total/NA	Water	6020B	409210
280-107483-5 MSD	B3HK89	Total/NA	Water	6020B	409210

General Chemistry

Analysis Batch: 408887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-107483-1	B3HL18	Total/NA	Water	SM 2320B	
280-107483-6	B3HL43	Total/NA	Water	SM 2320B	
MB 280-408887/6	Method Blank	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 408887 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-408887/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-408887/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
280-107483-6 DU	B3HL43	Total/NA	Water	SM 2320B	

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: W18-003 / X18-005 / S18-003

TestAmerica Job ID: 280-107483-1
SDG: DN0340

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
280-107483-1	B3HL18	93	89	102	97
280-107483-2	B3H049	98	93	107	103
280-107483-3	B3HL77	95	95	104	104
280-107483-6	B3HL43	85	96	98	105
280-107483-6 MS	B3HL43	87	89	98	101
280-107483-6 MS	B3HL43	93	96	102	97
280-107483-6 MSD	B3HL43	89	88	99	98
280-107483-6 MSD	B3HL43	95	96	104	96
LCS 280-408927/10	Lab Control Sample	91	94	101	96
LCS 280-408927/4	Lab Control Sample	94	88	102	98
MB 280-408927/6	Method Blank	98	90	105	99

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPHL
Lab Sample ID	Client Sample ID	(42-130)	(48-130)	(41-130)	(42-130)	(45-130)	(20-130)
280-107483-3	B3HL77	99	83	81	85	82	86
280-107483-3 MS	B3HL77	96	78	77	85	79	83
280-107483-3 MSD	B3HL77	103	88	83	92	84	88
LCS 280-408738/2-A	Lab Control Sample	97	83	75	80	77	85
MB 280-408738/1-A	Method Blank	95	82	83	86	83	88

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPHL = Terphenyl-d14 (Surr)