

JULY 18, 2017

# 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: 160-23015-1

TestAmerica Sample Delivery Group: SL2576  
Client Project/Site: I17-008

For:

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

Attn: Mr. Scot Fitzgerald



Authorized for release by:  
7/18/2017 2:25:39 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*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.*

1

2

3

4

5

6

7

8

9

10

11



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Case Narrative . . . . .	3
Chain of Custody . . . . .	5
Definitions/Glossary . . . . .	11
Method Summary . . . . .	12
Sample Summary . . . . .	13
Client Sample Results . . . . .	14
QC Sample Results . . . . .	15
QC Association Summary . . . . .	17
Surrogate Summary . . . . .	18

**Job ID: 160-23015-1**

**Laboratory: TestAmerica St. Louis**

**Narrative**

**CASE NARRATIVE**

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

---

SDG : SL2576  
Number of Samples : 2 samples  
Sample Matrix : Water  
Data Deliverable : Summary  
Date SDG Closed : June 28, 2017

---

II. Introduction

On June 24 and 28, 2 samples were received by TestAmerica - St. Louis for analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: I17-008

III. Analytical Results/ Methodology

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

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

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

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

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

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

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

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



**Job ID: 160-23015-1 (Continued)**

**Laboratory: TestAmerica St. Louis (Continued)**

IV. Definitions

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

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

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

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

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

**WTPH Diesel**

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Reviewed and approved:

Jayna Awalt  
St. Louis Project Manager

**Login Sample Receipt Checklist**

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-23071-1  
SDG Number: SL2576

**Login Number: 23071**

**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	0.3°
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 (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



<b>CH2M Hill Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C.# <b>I17-008-275</b>
				Page 1 of 1
<b>Collector:</b> Juan Aguilar CH2MRC	<b>Contact/Requester:</b> Karen Waters-Husted	<b>Telephone No.:</b> 509-376-4650		
<b>SAF No.:</b> I17-008	<b>Sampling Origin:</b> Hanford Site	<b>Purchase Order/Charge Code:</b> 303064		
<b>Project Title:</b> 100-NR-2 GW-OU Monitoring Apat	<b>Logbook No.:</b> HNF-N-506-34125	<b>Ice Chest No.:</b> 6-23-589		
<b>Shipped To (Lab):</b> TestAmerica St. Louis	<b>Method of Shipment:</b> Commercial Carrier	<b>Bill of Lading/Air Bill No.:</b> 77950605896		
<b>Protocol:</b> CERCLA	<b>Priority:</b> 30 Days	<b>Offsite Property No.:</b> N/A		
<b>POSSIBLE SAMPLE HAZARDS/REMARK</b> ** ** 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		<b>SPECIAL INSTRUCTIONS</b> N/A		
<b>Sample No.:</b> B39N79	<b>Filter:</b> N	<b>Date:</b> 6-27-17	<b>Time:</b> 0813	<b>No/Type Container:</b> 4x1-L aG
		<b>Sample Analysis</b> WTPH_DIESEL: COMMON		<b>Holding Time:</b> 14/40 Days
				<b>Preservative:</b> HCl to pH <2 / Cool <=6C

<b>Relinquished By:</b> Juan Aguilar Print First and Last Name	Signature 	JUN 27 2017 Date/Time	JUN 27 2017 Date/Time	Received By: Curt Hoffman Print First and Last Name	Signature 	JUN 27 2017 Date/Time	Matrix * DS = Drum Solids DL = Drum Liquid T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
<b>Relinquished By:</b> Curt Hoffman GHPRC Print First and Last Name	Signature 	JUN 27 2017 Date/Time	JUN 27 2017 Date/Time	Received By: FEDEX Print First and Last Name	Signature 	JUN 27 2017 Date/Time	
<b>Relinquished By:</b> Print First and Last Name	Signature 	JUN 27 2017 Date/Time	JUN 27 2017 Date/Time	Received By: Print First and Last Name	Signature 	JUN 27 2017 Date/Time	
<b>Relinquished By:</b> Print First and Last Name	Signature 	JUN 27 2017 Date/Time	JUN 27 2017 Date/Time	Received By: Print First and Last Name	Signature 	JUN 27 2017 Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method (e.g., Return to customer, per lab procedure, used in process):		Disposed By:		Date/Time:	



My Profile | Support | Locations | English | Search or tracking number | Subi



Shipping | Tracking | Manage | Learn

FedEx Office®

Login

### FedEx® Tracking

**779506058960**

Ship date:

**Tue 6/27/2017**

RICHLAND, WA US

Actual delivery:

**Wed 6/28/2017 9:04 am**

EARTH CITY, MO US

**Delivered**

Signed for by: B.DANIELS

#### Travel History

Date/Time	Activity	Location
<b>6/28/2017 - Wednesday</b>		
9:04 am	Delivered	EARTH CITY, MO
7:13 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:05 am	At local FedEx facility	EARTH CITY, MO
5:14 am	At destination sort facility	BERKELEY, MO
4:24 am	Departed FedEx location	MEMPHIS, TN
12:25 am	Arrived at FedEx location	MEMPHIS, TN
<b>6/27/2017 - Tuesday</b>		
4:50 pm	Left FedEx origin facility	PASCO, WA
3:27 pm	Shipment information sent to FedEx	
3:15 pm	Picked up	PASCO, WA

#### Shipment Facts

<b>Tracking number</b>	779506058960	<b>Service</b>	FedEx Standard Overnight
<b>Weight</b>	77 lbs / 34.93 kgs	<b>Dimensions</b>	28x16x16 in.
<b>Delivered To</b>	Shipping/Receiving	<b>Total pieces</b>	1
<b>Total shipment weight</b>	77 lbs / 34.93 kgs	<b>Terms</b>	Recipient
<b>Shipper reference</b>	GWS-589	<b>Packaging</b>	Your Packaging
<b>Special handling section</b>	Deliver Weekday, Additional Handling Surcharge	<b>Standard transit</b>	6/28/2017 by 3:00 pm



Search or tracking number | Subi

**Customer Focus**  
 New Customer Center  
 Small Business Center  
 Service Guide  
 Customer Support

**Company Information**  
 About FedEx  
 Careers  
 Investor Relations  
 Subscribe to FedEx email

**Featured Services**  
 FedEx Delivery Manager  
 FedEx Critical Inventory Logistics  
 FedEx SameDay  
 FedEx Home Delivery  
 FedEx TechConnect  
 FedEx HealthCare Solutions  
 Online Retail Solutions  
 Packaging Services  
 Ancillary Clearance Services

**Other Resources**  
 FedEx Compatible  
 Developer Resource Center  
 FedEx Ship Manager Software  
 FedEx Mobile

**Companies**  
 FedEx Express  
 FedEx Ground  
 FedEx Office  
 FedEx Freight  
 FedEx Custom Critical  
 FedEx Trade Networks  
 FedEx Cross Border  
 FedEx Supply Chain

Follow FedEx

United States - English

Ask FedEx



### Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-23015-1

SDG Number: SL2576

Login Number: 23015

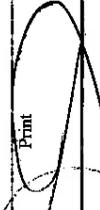
List Source: TestAmerica St. Louis

List Number: 1

Creator: Taylor, Kristene N

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	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	17.0,0.3,3.3
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 (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

<b>CH2M Hill Plateau Remediation Company</b> 92570		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C. # <b>I17-008-276</b> Page 1 of 1	
Collector Juan Aguilar CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	Purchase Order/Charge Code 303064	Ice Chest No. 625579	Bill of Lading/Air Bill No. 7794 17845 1172
SAF No. I17-008	Sampling Origin Hanford Site	Logbook No. HNF-N-506 84 / 23	Method of Shipment Commercial Carrier	Priority: 30 Days	Offsite Property No. N/A
Project Title 100-NR-2 GW-OU Monitoring Apatite B	Shipped To (Lab) TestAmerica St. Louis	Protocol CERCLA	SPECIAL INSTRUCTIONS N/A	Hold Time 30 Days	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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	Sample No. B39N89	Filter N	No/Type Container 4X1-L aG	Time 1249	Holding Time 14/40 Days
Sample No. B39N89	Sample Analysis WTPH_DIESEL: COMMON	Date 6-22-17	Date/Time JUN 22 2017	Date/Time 1414	Preservative HCl to pH <2/Cool <=6C

Relinquished By Juan Aguilar CHPRC	Sign 	Date/Time JUN 22 2017	Date/Time 1414	Received By SSU-1	Sign JUN 22 2017	Date/Time 1414	Matrix * DS <input type="checkbox"/> Drum Solids DL <input type="checkbox"/> Drum Liquids T <input type="checkbox"/> Tissue WI <input type="checkbox"/> Wipe L <input type="checkbox"/> Liquid V <input type="checkbox"/> Vegetation X <input type="checkbox"/> Other
Relinquished By SSU-1	Sign 	Date/Time JUN 23 2017	Date/Time 0700	Received By Janelle Zuniga CHPRC	Sign JUN 23 2017	Date/Time 0700	Matrix * DS <input type="checkbox"/> Drum Solids DL <input type="checkbox"/> Drum Liquids T <input type="checkbox"/> Tissue WI <input type="checkbox"/> Wipe L <input type="checkbox"/> Liquid V <input type="checkbox"/> Vegetation X <input type="checkbox"/> Other
Relinquished By Janelle Zuniga CHPRC	Sign 	Date/Time JUN 23 2017	Date/Time 1400	Received By FEDEX	Sign JUN 23 2017	Date/Time 1400	Matrix * DS <input type="checkbox"/> Drum Solids DL <input type="checkbox"/> Drum Liquids T <input type="checkbox"/> Tissue WI <input type="checkbox"/> Wipe L <input type="checkbox"/> Liquid V <input type="checkbox"/> Vegetation X <input type="checkbox"/> Other
Relinquished By HEISTEN TAYLOR	Sign 	Date/Time JUN 24 2017	Date/Time 0800	Received By FEDEX	Sign JUN 24 2017	Date/Time 0800	Matrix * DS <input type="checkbox"/> Drum Solids DL <input type="checkbox"/> Drum Liquids T <input type="checkbox"/> Tissue WI <input type="checkbox"/> Wipe L <input type="checkbox"/> Liquid V <input type="checkbox"/> Vegetation X <input type="checkbox"/> Other
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By HEISTEN TAYLOR	Date/Time JUN 24 2017	Disposed By HEISTEN TAYLOR	Date/Time JUN 24 2017	Disposed By HEISTEN TAYLOR	Date/Time JUN 24 2017



[My Profile](#) [Support](#) [Locations](#) [English](#)  [Sub](#)



[Shipping](#) [Tracking](#) [Manage](#) [Learn](#) [FedEx Office®](#)

[Login](#)

**IMPORTANT!**

FedEx has now returned to standard operations in areas of the U.S. recently affected by Tropical Storm Cindy. [Learn More](#)

### FedEx® Tracking

**779478451172**

Ship date:  
Fri 6/23/2017

Actual delivery:  
Sat 6/24/2017 8:33 am

RICHLAND, WA US

**Delivered**  
*Signed for by: J.CLARK*

EARTH CITY, MO US

#### Travel History

Date/Time	Activity	Location
<b>6/24/2017 - Saturday</b>		
8:33 am	Delivered	EARTH CITY, MO
8:01 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:56 am	At local FedEx facility	EARTH CITY, MO
5:16 am	At destination sort facility	BERKELEY, MO
4:29 am	Departed FedEx location	MEMPHIS, TN
12:14 am	Arrived at FedEx location	MEMPHIS, TN
<b>6/23/2017 - Friday</b>		
4:47 pm	Left FedEx origin facility	PASCO, WA
3:17 pm	Picked up	PASCO, WA
10:48 am	Shipment information sent to FedEx	

#### Shipment Facts

<b>Tracking number</b>	779478451172	<b>Service</b>	FedEx Priority Overnight
<b>Weight</b>	87 lbs / 39.46 kgs	<b>Delivered To</b>	Shipping/Receiving
<b>Total pieces</b>	1	<b>Total shipment weight</b>	87 lbs / 39.46 kgs
<b>Terms</b>	Recipient	<b>Shipper reference</b>	GWS-579
<b>Packaging</b>	Your Packaging	<b>Special handling section</b>	For Saturday Delivery
<b>Standard transit</b>	6/24/2017 by 12:00 pm		



[Sub](#)

**Customer Focus**  
[New Customer Center](#)  
[Small Business Center](#)  
[Service Guide](#)  
[Customer Support](#)

**Company Information**  
[About FedEx](#)  
[Careers](#)  
[Investor Relations](#)  
[Subscribe to FedEx email](#)

**Featured Services**  
[FedEx Delivery Manager](#)  
[FedEx Critical Inventory Logistics](#)  
[FedEx SameDay](#)  
[FedEx Home Delivery](#)  
[FedEx TechConnect](#)  
[FedEx HealthCare Solutions](#)  
[Online Retail Solutions](#)  
[Packaging Services](#)  
[Ancillary Clearance Services](#)

**Other Resources**  
[FedEx Compatible](#)  
[Developer Resource Center](#)  
[FedEx Ship Manager Software](#)  
[FedEx Mobile](#)

**Companies**  
[FedEx Express](#)  
[FedEx Ground](#)  
[FedEx Office](#)  
[FedEx Freight](#)  
[FedEx Custom Critical](#)  
[FedEx Trade Networks](#)  
[FedEx Cross Border](#)  
[FedEx Supply Chain](#)

[Follow FedEx](#)

[United States - English](#)

Ask FedEx



**Qualifiers**

**GC Semi VOA**

Qualifier	Qualifier Description
U	Analyzed for but not detected.

**Glossary**

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



JULY 18, 2017  
**Method Summary**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: I17-008

TestAmerica Job ID: 160-23015-1  
SDG: SL2576

---

<b>Method</b>	<b>Method Description</b>	<b>Protocol</b>	<b>Laboratory</b>
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL SL

---

**Protocol References:**

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



JULY 18, 2017  
**Sample Summary**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: I17-008

TestAmerica Job ID: 160-23015-1  
SDG: SL2576

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collected</b>	<b>Received</b>
160-23015-1	B39N89	Water	06/22/17 12:49	06/24/17 08:40
160-23071-1	B39N79	Water	06/27/17 08:13	06/28/17 09:15

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

JULY 18 2017  
**Client Sample Results**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: I17-008

TestAmerica Job ID: 160-23015-1  
 SDG: SL2576

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

**Client Sample ID: B39N89**  
**Date Collected: 06/22/17 12:49**  
**Date Received: 06/24/17 08:40**

**Lab Sample ID: 160-23015-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.049	U	0.49	0.049	mg/L		06/27/17 13:10	07/06/17 13:28	1
Surrogate	%Recovery	Qualifier	Limits						
<i>o</i> -Terphenyl	61		47 - 136						
							Prepared	Analyzed	Dil Fac
							06/27/17 13:10	07/06/17 13:28	1

**Client Sample ID: B39N79**  
**Date Collected: 06/27/17 08:13**  
**Date Received: 06/28/17 09:15**

**Lab Sample ID: 160-23071-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.049	U	0.49	0.049	mg/L		06/30/17 10:15	07/10/17 21:15	1
Surrogate	%Recovery	Qualifier	Limits						
<i>o</i> -Terphenyl	76		47 - 136						
							Prepared	Analyzed	Dil Fac
							06/30/17 10:15	07/10/17 21:15	1

JULY 18 2017  
**QC Sample Results**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: I17-008

TestAmerica Job ID: 160-23015-1  
 SDG: SL2576

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

**Lab Sample ID: MB 160-315529/1-A**  
**Matrix: Water**  
**Analysis Batch: 316261**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 315529**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.050	U	0.50	0.050	mg/L		06/27/17 13:10	07/06/17 10:48	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	69		47 - 136				06/27/17 13:10	07/06/17 10:48	1

**Lab Sample ID: LCS 160-315529/2-A**  
**Matrix: Water**  
**Analysis Batch: 316261**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 315529**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	2.50	1.45		mg/L		58	30 - 100
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>o</i> -Terphenyl	76		47 - 136				

**Lab Sample ID: 160-23000-B-5-A MS**  
**Matrix: Water**  
**Analysis Batch: 316261**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 315529**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	0.047	U	2.36	1.06		mg/L		45	28 - 115
Surrogate	MS %Recovery	MS Qualifier	Limits						
<i>o</i> -Terphenyl	59		47 - 136						

**Lab Sample ID: 160-23000-C-5-A MSD**  
**Matrix: Water**  
**Analysis Batch: 316261**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 315529**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	0.047	U	2.43	1.29		mg/L		53	28 - 115	20	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
<i>o</i> -Terphenyl	71		47 - 136								

**Lab Sample ID: MB 160-315901/1-A**  
**Matrix: Water**  
**Analysis Batch: 316763**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 315901**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.050	U	0.50	0.050	mg/L		06/30/17 10:15	07/10/17 20:22	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	82		47 - 136				06/30/17 10:15	07/10/17 20:22	1

TestAmerica St. Louis

JULY 18 2017  
**QC Sample Results**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: I17-008

TestAmerica Job ID: 160-23015-1  
 SDG: SL2576

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

**Lab Sample ID: LCS 160-315901/2-A**  
**Matrix: Water**  
**Analysis Batch: 316763**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 315901**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	2.50	1.64		mg/L		65	30 - 100
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
<i>o-Terphenyl</i>	85		47 - 136				

**Lab Sample ID: 160-23071-1 MS**  
**Matrix: Water**  
**Analysis Batch: 316763**

**Client Sample ID: B39N79**  
**Prep Type: Total/NA**  
**Prep Batch: 315901**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	0.049	U	2.49	1.82		mg/L		73	28 - 115
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
<i>o-Terphenyl</i>	83		47 - 136						

**Lab Sample ID: 160-23071-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 316763**

**Client Sample ID: B39N79**  
**Prep Type: Total/NA**  
**Prep Batch: 315901**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	0.049	U	2.45	1.52		mg/L		62	28 - 115	18	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
<i>o-Terphenyl</i>	81		47 - 136								

JULY 18, 2017  
**QC Association Summary**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: I17-008

TestAmerica Job ID: 160-23015-1  
 SDG: SL2576

**GC Semi VOA**

**Prep Batch: 315529**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23015-1	B39N89	Total/NA	Water	3510C	
MB 160-315529/1-A	Method Blank	Total/NA	Water	3510C	
LCS 160-315529/2-A	Lab Control Sample	Total/NA	Water	3510C	
160-23000-B-5-A MS	Matrix Spike	Total/NA	Water	3510C	
160-23000-C-5-A MSD	Matrix Spike Duplicate	Total/NA	Water	3510C	

**Prep Batch: 315901**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23071-1	B39N79	Total/NA	Water	3510C	
MB 160-315901/1-A	Method Blank	Total/NA	Water	3510C	
LCS 160-315901/2-A	Lab Control Sample	Total/NA	Water	3510C	
160-23071-1 MS	B39N79	Total/NA	Water	3510C	
160-23071-1 MSD	B39N79	Total/NA	Water	3510C	

**Analysis Batch: 316261**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23015-1	B39N89	Total/NA	Water	8015B	315529
MB 160-315529/1-A	Method Blank	Total/NA	Water	8015B	315529
LCS 160-315529/2-A	Lab Control Sample	Total/NA	Water	8015B	315529
160-23000-B-5-A MS	Matrix Spike	Total/NA	Water	8015B	315529
160-23000-C-5-A MSD	Matrix Spike Duplicate	Total/NA	Water	8015B	315529

**Analysis Batch: 316763**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-23071-1	B39N79	Total/NA	Water	8015B	315901
MB 160-315901/1-A	Method Blank	Total/NA	Water	8015B	315901
LCS 160-315901/2-A	Lab Control Sample	Total/NA	Water	8015B	315901
160-23071-1 MS	B39N79	Total/NA	Water	8015B	315901
160-23071-1 MSD	B39N79	Total/NA	Water	8015B	315901

JULY 18 2017  
**Surrogate Summary**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: I17-008

TestAmerica Job ID: 160-23015-1  
SDG: SL2576

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

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Surrogate Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	OTPH1 (47-136)
160-23000-B-5-A MS	Matrix Spike	59
160-23000-C-5-A MSD	Matrix Spike Duplicate	71
160-23015-1	B39N89	61
160-23071-1	B39N79	76
160-23071-1 MS	B39N79	83
160-23071-1 MSD	B39N79	81
LCS 160-315529/2-A	Lab Control Sample	76
LCS 160-315901/2-A	Lab Control Sample	85
MB 160-315529/1-A	Method Blank	69
MB 160-315901/1-A	Method Blank	82

**Surrogate Legend**

OTPH = o-Terphenyl

