

January 29, 2016

Reference No. 012610

City of Bay City WWTP Attn: IPP Coordinator 2905 North Water Street Bay City, Michigan U.S.A. 48708

To whom it may concern:

#### Re: Semi-Annual Compliance Report (July 1 to December 31, 2015) RACER Bay City Industrial Land Bay City, Michigan

The following letter has been prepared by GHD on behalf of Revitalizing Auto Communities Environmental Response Trust (RACER) in accordance with Part 4 Section 3 of Industrial User (IU) permit No. 120807 as the semi-annual compliance report for the period July 1 to December 31, 2015 for RACER's groundwater treatment system located at the north end of Crotty Street in Bay City, Michigan (Site).

The groundwater treatment system did not operate between July 1 and August 24, 2015 as a result of the blower motor requiring repair. Following the installation of the repaired blower motor on August 24, 2015, the treatment system ran consistently for the remainder of the semi-annual period.

Table 1 presents the results of the required semi-annual effluent sample collected from the RACER groundwater treatment system on December 10, 2015. Attachment 1 presents a copy of the laboratory analytical report. The analytical results did not identify an exceedance of the daily maximum discharge levels specified in the permit, and there were no other conditions, events or circumstances identified that did not meet other permit requirements. Table 2 presents the flow readings collected periodically from the flow meter.

The RACER groundwater treatment system is operated and maintained by Steve Hoevemeyer (GHD) who maintains the designation of Waste Treatment Plan Operator – Industrial or Commercial (A-1d Impoundment, A-2b Filtration of Wastewater, B-2c Oil-Water Separation, and B-3b Carbon Adsorption).

See Attachment 2 for the certification statement prepared in accordance with Section 106-23(d) of the Bay City sewer ordinance.



Should you have any questions on the above, please do not hesitate to contact us.

Sincerely,

GHD Michael Tomka, P.E.

JEP/kf/4

cc: Grant Trigger (RACER) Dave Favero (RACER)

Encl.

Table 1 – Effluent Results Summary

Table 2 – Flow Meter Readings

Attachment 1 – Laboratory Analytical Report

Attachment 2 - Certification Statement

#### Table 1

#### **Analytical Results Summary** Effluent Sampling **Bay City Industrial Land** Bay City, Michigan

Sample Location: W-12610-121015-SSH-1115 Sample ID: Sample Date: 12/10/2015 **Parameters** Units **Daily Maximum** (Bay City Industrial User Permit) VOAs Vinyl chloride mg/L 0.002 0.001 U Metals Cadmium mg/L 0.057 0.002 U Chromium mg/L 6.812 0.005 U Copper mg/L 0.02 U 1.476 Iron mg/L 0.1 U 0.632 Lead mg/L 0.003 U 0.0002 U Mercury mg/L ND Nickel 2.548 0.02 U mg/L Silver mg/L 0.2 0.005 U Pesticides Aroclor-1016 (PCB-1016) mg/L ND 0.0001 U Aroclor-1221 (PCB-1221) mg/L ND 0.0001 U Aroclor-1232 (PCB-1232) mg/L ND 0.0001 U Aroclor-1242 (PCB-1242) mg/L ND 0.0001 U Aroclor-1248 (PCB-1248) mg/L ND 0.0001 U Aroclor-1254 (PCB-1254) 0.0001 U ND mg/L Aroclor-1260 (PCB-1260) mg/L ND 0.0001 U Wet Ammonia mg/L 30 3.4 Biochemical oxygen demand (BOD) mg/L 835 9.3 Chemical oxygen demand (COD) 10 U mg/L 1670 Oil and grease (HEM), polar mg/L 4.8 U 100 pH, lab s.u. 6.5 to 11.0 7.75 HF Phosphorus mg/L 13.8 0.10 U Total suspended solids (TSS) 1336 4.0 U mg/L

Footnotes:

b Result Detected in the Unseeded Control blank (USB).

HF Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

U Not detected at the associated reporting limit.

# effluent-GWTS

#### Table 2

#### Flow Meter Readings Bay City Industrial Land Bay City, Michigan

Date	Flow Meter reading (gallons)	Cumulative Total: (gallons)	Volume to be invoiced annually (july to June 30)	Comments
16-Jun-14 28-Jul-14	4593 4593	18950 18950	18950	- City invoiced for discharge
18-Aug-14	4593	18950		
5-Sep-14	6337	20694		- Collected effluent sample
23-Sep-14	11504	25861		- Collected endent sample
23-Oct-14	31004	45361		
26-Nov-14	31004	45361		
29-Dec-14	31004	45361		
27-Jan-15	31004	45361		
13-Feb-15	46303	60660		
16-Mar-15				- Collected effluent sample
19-Mar-15	67425	81782		
30-Apr-15	175234	189591		
6-May-15	197766	212123		
18-Jun-15	224490	238847		
25-Jun-15	232315	246672		
30-Jun-15	232315	246672	227722	
29-Jul-15	232315	246672		
28-Aug-15	241397	255754		
29-Sep-15	252638	266995		
30-Oct-15	260771	275128		
23-Nov-15	289731	304088		
10-Dec-15				<ul> <li>Collected effluent sample</li> </ul>
30-Dec-15	351550	365907		

# **Attachment 1**



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

## TestAmerica Laboratories, Inc.

TestAmerica Canton 4101 Shuffel Street NW North Canton, OH 44720 Tel: (330)497-9396

## TestAmerica Job ID: 240-59001-1 Client Project/Site: 12610-T03, RACER Bay City

For:

GHD Services Inc. 14496 Sheldon Road, Suite 200 Plymouth, Michigan 48170

Attn: Rawa Fleisher

enuse DHeckler

Authorized for release by: 12/29/2015 10:14:52 AM

Denise Heckler, Project Manager II (330)966-9477 denise.heckler@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.

..... Links **Review your project** results through **Total** Access Have a Question? Ask-The Expert Visit us at: www.testamericainc.com

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## Job ID: 240-59001-1

#### Laboratory: TestAmerica Canton

Narrative

## **CASE NARRATIVE**

## **Client: GHD Services Inc.**

## Project: 12610-T03, RACER Bay City

## Report Number: 240-59001-1

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.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

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

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

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

#### <u>RECEIPT</u>

The samples were received on 12/11/2015; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.4 C.

#### VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples W-12610-121015-SSH-1115 (240-59001-1) and TB-12610-121015-SSH-1215 (240-59001-2) were analyzed for volatile organic compounds (GCMS) in accordance with EPA Method 624. The samples were analyzed on 12/15/2015 and 12/16/2015.

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

#### POLYCHLORINATED BIPHENYLS (PCBS)

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 608. The samples were prepared on 12/12/2015 and analyzed on 12/15/2015.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required. All of the samples in this data set analyzed for PCBs were subjected to the sulfuric acid cleanup procedure before instrumental analysis, per EPA Method 3665A.

## Job ID: 240-59001-1 (Continued)

#### Laboratory: TestAmerica Canton (Continued)

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 240-210536.

The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: W-12610-121015-SSH-1115 (240-59001-1). Reagents: 2316599, 1848564, 2333858.

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

#### TOTAL RECOVERABLE METALS (ICP)

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for total recoverable metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 12/14/2015 and analyzed on 12/15/2015.

Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: W-12610-121015-SSH-1115 (240-59001-1). The continuing calibration blanks and method blanks may not support the lower PQL.

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

#### MERCURY

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for mercury in accordance with EPA Method 245.1. The samples were prepared on 12/14/2015 and analyzed on 12/15/2015.

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

#### HEM AND SGT-HEM

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for HEM and SGT-HEM in accordance with EPA Method 1664A. The samples were analyzed on 12/22/2015.

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

#### TOTAL SUSPENDED SOLIDS

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 12/15/2015.

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

#### AMMONIA

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for ammonia in accordance with EPA Method 350.2. The samples were prepared and analyzed on 12/22/2015.

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

#### CHEMICAL OXYGEN DEMAND

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for chemical oxygen demand in accordance with EPA Method 410.4. The samples were analyzed on 12/14/2015.

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

#### **TOTAL PHOSPHORUS**

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for total phosphorus in accordance with SM 4500 P E. The samples were prepared on 12/28/2015 and analyzed on 12/29/2015.

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

#### **BIOCHEMICAL OXYGEN DEMAND**

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for Biochemical oxygen demand in accordance with SM 5210B. The

## Job ID: 240-59001-1 (Continued)

#### Laboratory: TestAmerica Canton (Continued)

samples were analyzed on 12/11/2015.

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

#### <u>PH</u>

Sample W-12610-121015-SSH-1115 (240-59001-1) was analyzed for pH in accordance with SM 4500 H+ B. The samples were analyzed past the method recommended 15 minute holding time on 12/11/2015.

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

## Qualifiers

## GC/MS VOA

GC/MS VO/	A	4
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	 5
GC Semi V	ΟΑ	
Qualifier	Qualifier Description	6
U	Indicates the analyte was analyzed for but not detected.	
Metals		
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	 6
<b>General Ch</b>	emistry	0
Qualifier	Qualifier Description	3
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.	
U	Indicates the analyte was 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	

GFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or add

DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration

 DLC
 Decision level concentration

 MDA
 Minimum detectable activity

EDL Estimated Detection Limit

MDC Minimum detectable concentration

MDL Method Detection Limit

ML Minimum Level (Dioxin)

 NC
 Not Calculated

 ND
 Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control

RER Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)

TEQ Toxicity Equivalent Quotient (Dioxin)

Lab Sample ID	Client Sample ID	Matrix	Collected Received
240-59001-1	W-12610-121015-SSH-1115	Water	12/10/15 08:30 12/11/15 09:30
240-59001-2	TB-12610-121015-SSH-1215	Water	12/10/15 08:45 12/11/15 09:30

## **Detection Summary**

No Detections.

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#### Lab Sample ID: 240-59001-1 Client Sample ID: W-12610-121015-SSH-1115 Unit Dil Fac D Method Analyte **Result Qualifier** RL Prep Type Total/NA 2.0 mg/L Ammonia (as N) 3.4 350.2 1 7.75 HF 0.100 SU 4500 H+ B-2000 Total/NA pН 1 **Biochemical Oxygen Demand** 9.3 2.0 mg/L 1 5210B-2001 Total/NA Client Sample ID: TB-12610-121015-SSH-1215 Lab Sample ID: 240-59001-2

#### This Detection Summary does not include radiochemical test results.

## **Method Summary**

#### Client: GHD Services Inc. Project/Site: 12610-T03, RACER Bay City

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL CAN
608	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL CAN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL CAN
245.1	Mercury (CVAA)	EPA	TAL CAN
1664A	HEM and SGT-HEM	1664A	TAL CAN
350.2	Nitrogen, Ammonia, Distillation	MCAWW	TAL CAN
410.4	COD	MCAWW	TAL CAN
500 H+ B-2000	рН	SM	TAL CAN
5210B-2001	BOD, 5-Day	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM4500 P E-1999	Phosphorus	SM	TAL CAN

#### **Protocol References:**

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions. SM = "Standard Methods For The Examination Of Water And Wastewater",

#### Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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## Method: 624 - Volatile Organic Compounds (GC/MS)

Client Sample ID: W-12610-121015-SSH-1115         Lab Sample ID: 240-5900           Date Collected: 12/10/15 08:30         Matrix: Wa           Date Received: 12/11/15 09:30         Matrix: Wa								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	ug/L			12/15/15 08:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		61 - 120		-		12/15/15 08:02	1
1,2-Dichloroethane-d4 (Surr)	91		78 - 125				12/15/15 08:02	1
Toluene-d8 (Surr)	94		80 - 120				12/15/15 08:02	1

## Method: 624 - Volatile Organic Compounds (GC/MS)

Client Sample ID: TB-12610-121015-SSH-1215 Date Collected: 12/10/15 08:45 Date Received: 12/11/15 09:30							Lab Sample ID: 240-59001-2 Matrix: Water				
Analyte Vinyl chloride		Qualifier	<b>RL</b> 1.0	Unit ug/L	D	Prepared	Analyzed 12/16/15 04:14	Dil Fac			
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	84		61 - 120				12/16/15 04:14	1			
1,2-Dichloroethane-d4 (Surr)	91		78 - 125				12/16/15 04:14	1			
Toluene-d8 (Surr)	93		80 - 120				12/16/15 04:14	1			

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## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Date Collected: 12/10/15 (	Client Sample ID: W-12610-121015-SSH-1115 Pate Collected: 12/10/15 08:30 Pate Received: 12/11/15 09:30							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:27	1
Aroclor-1221	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:27	1
Aroclor-1232	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:27	1
Aroclor-1242	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:27	1
Aroclor-1248	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:27	1
Aroclor-1254	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:27	1
Aroclor-1260	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:27	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	60		10 - 114			12/12/15 08:14	12/15/15 15:27	1
Tetrachloro-m-xylene	32		15 - 131			12/12/15 08:14	12/15/15 15:27	1

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## Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: W-12610-121015-SSH-1115 Date Collected: 12/10/15 08:30 Date Received: 12/11/15 09:30							Lab Sample ID: 240-59001 Matrix: Wat				
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac			
Silver	5.0	U –	5.0	ug/L		12/14/15 09:30	12/15/15 19:32	1			
Cadmium	2.0	U	2.0	ug/L		12/14/15 09:30	12/15/15 19:32	1			
Chromium	5.0	U	5.0	ug/L		12/14/15 09:30	12/15/15 19:32	1			
Copper	20	U	20	ug/L		12/14/15 09:30	12/15/15 19:32	1			
Iron	100	U	100	ug/L		12/14/15 09:30	12/15/15 19:32	1			
Nickel	20	U	20	ug/L		12/14/15 09:30	12/15/15 19:32	1			
Lead	3.0	U	3.0	ug/L		12/14/15 09:30	12/15/15 19:32	1			

## **Client Sample Results**

Client: GHD Services Inc. Project/Site: 12610-T03, RACER Bay City

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## Method: 245.1 - Mercury (CVAA)

Client Sample ID: W-12610-121015-SSH-1115 Date Collected: 12/10/15 08:30							Lab San	nple ID: 240-5 Matrix:	
	Date Received: 12/11/15 09:30								
	Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Mercury	0.20	U	0.20	ug/L		12/14/15 14:00	12/15/15 12:34	1

## **General Chemistry**

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Client Sample ID: W-12610-12* Date Collected: 12/10/15 08:30		115				Lab San	nple ID: 240-5 Matrix:	
Date Received: 12/11/15 09:30								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.8	U	4.8	mg/L			12/22/15 08:10	1
Ammonia (as N)	3.4		2.0	mg/L		12/22/15 06:45	12/22/15 10:43	1
Chemical Oxygen Demand	10	U	10	mg/L			12/14/15 12:12	1
pН	7.75	HF	0.100	SU			12/11/15 16:43	1
Biochemical Oxygen Demand	9.3		2.0	mg/L			12/11/15 15:44	1
Total Suspended Solids	4.0	U	4.0	mg/L			12/15/15 10:39	1
Total Phosphorus as P	0.10	U	0.10	mg/L		12/28/15 05:19	12/29/15 04:48	1

## **GC/MS VOA**

#### Analysis Batch: 210776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	624	
LCS 240-210776/6	Lab Control Sample	Total/NA	Water	624	
MB 240-210776/7	Method Blank	Total/NA	Water	624	
 Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Lab Sample ID 240-59001-2	Client Sample ID TB-12610-121015-SSH-1215	Prep Type Total/NA	Matrix Water	624	Prep Batch
	•				Prep Batch

## GC Semi VOA

#### Prep Batch: 210536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	3520C	
LCS 240-210536/14-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-210536/13-A	Method Blank	Total/NA	Water	3520C	
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	608	210536
LCS 240-210536/14-A	Lab Control Sample	Total/NA	Water	608	210536
LC3 240-210330/14-A					

## **Metals**

#### Prep Batch: 210685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total Recoverable	Water	200.7	
240-59001-1 MS	W-12610-121015-SSH-1115	Total Recoverable	Water	200.7	
240-59001-1 MSD	W-12610-121015-SSH-1115	Total Recoverable	Water	200.7	
LCS 240-210685/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-210685/1-A	Method Blank	Total Recoverable	Water	200.7	

#### Prep Batch: 210689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	245.1	
240-59001-1 MS	W-12610-121015-SSH-1115	Total/NA	Water	245.1	
240-59001-1 MSD	W-12610-121015-SSH-1115	Total/NA	Water	245.1	
LCS 240-210689/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-210689/1-A	Method Blank	Total/NA	Water	245.1	

#### Analysis Batch: 211008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total Recoverable	Water	200.7 Rev 4.4	210685
240-59001-1 MS	W-12610-121015-SSH-1115	Total Recoverable	Water	200.7 Rev 4.4	210685
240-59001-1 MSD	W-12610-121015-SSH-1115	Total Recoverable	Water	200.7 Rev 4.4	210685
LCS 240-210685/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	210685
MB 240-210685/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	210685

## Metals (Continued)

#### Analysis Batch: 211084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	245.1	210689
240-59001-1 MS	W-12610-121015-SSH-1115	Total/NA	Water	245.1	210689
240-59001-1 MSD	W-12610-121015-SSH-1115	Total/NA	Water	245.1	210689
_CS 240-210689/2-A	Lab Control Sample	Total/NA	Water	245.1	210689
MB 240-210689/1-A	Method Blank	Total/NA	Water	245.1	210689

## **General Chemistry**

#### Analysis Batch: 210450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	5210B-2001	
LCS 240-210450/3	Lab Control Sample	Total/NA	Water	5210B-2001	
SCB 240-210450/2	Method Blank	Total/NA	Water	5210B-2001	
USB 240-210450/1	Method Blank	Total/NA	Water	5210B-2001	
_					

#### Analysis Batch: 210511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	4500 H+ B-2000	
LCS 240-210511/2	Lab Control Sample	Total/NA	Water	4500 H+ B-2000	

#### Analysis Batch: 210663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	410.4	
240-59001-1 MS	W-12610-121015-SSH-1115	Total/NA	Water	410.4	
LCS 240-210663/38	Lab Control Sample	Total/NA	Water	410.4	
MB 240-210663/37	Method Blank	Total/NA	Water	410.4	

#### Analysis Batch: 210870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	SM 2540D	
LCS 240-210870/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-210870/1	Method Blank	Total/NA	Water	SM 2540D	

#### Analysis Batch: 211886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	1664A	
LCS 240-211886/2	Lab Control Sample	Total/NA	Water	1664A	
MB 240-211886/1	Method Blank	Total/NA	Water	1664A	

#### Prep Batch: 211941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	Distill/Ammonia	
LCS 240-211941/2-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
MB 240-211941/1-A	Method Blank	Total/NA	Water	Distill/Ammonia	

#### Analysis Batch: 211946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	350.2	211941
LCS 240-211941/2-A	Lab Control Sample	Total/NA	Water	350.2	211941
MB 240-211941/1-A	Method Blank	Total/NA	Water	350.2	211941

## **General Chemistry (Continued)**

## Prep Batch: 212355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	365.2/365.3/365	
240-59001-1 MS	W-12610-121015-SSH-1115	Total/NA	Water	365.2/365.3/365	
240-59001-1 MSD	W-12610-121015-SSH-1115	Total/NA	Water	365.2/365.3/365	
LCS 240-212355/11-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
MB 240-212355/10-A	Method Blank	Total/NA	Water	365.2/365.3/365	
nalysis Batch: 2123	95				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-59001-1	W-12610-121015-SSH-1115	Total/NA	Water	SM4500 P E-1999	212355
240-59001-1 MS	W-12610-121015-SSH-1115	Total/NA	Water	SM4500 P E-1999	212355
240-59001-1 MSD	W-12610-121015-SSH-1115	Total/NA	Water	SM4500 P E-1999	212355
LCS 240-212355/11-A	Lab Control Sample	Total/NA	Water	SM4500 P E-1999	212355
MB 240-212355/10-A	Method Blank	Total/NA	Water	SM4500 P E-1999	212355

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## Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-2	10776/7							Clie	ent San	ple ID: Metho	
Matrix: Water										Prep Type: T	otal/NA
Analysis Batch: 210776											
		MB					_	_			
Analyte	Re:		Qualifier			Unit	D	P	repared	Analyzed	Dil Fa
Vinyl chloride		1.0	U	1.0		ug/L				12/14/15 18:05	
		MB	МВ								
Surrogate	%Recov	very	Qualifier	Limits				F	Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)		88		61 - 120					•	12/14/15 18:05	
1,2-Dichloroethane-d4 (Surr)		90		78 - 125						12/14/15 18:05	
Toluene-d8 (Surr)		94		80 - 120						12/14/15 18:05	
Lab Sample ID: LCS 240-	210776/6						Clien	t Sa	mple ID	: Lab Control	Sampl
Matrix: Water										Prep Type: T	
Analysis Batch: 210776											
				Spike	LCS	LCS				%Rec.	
Analyte				Added	Result	Qualifier	Unit	D	%Rec	Limits	
Vinyl chloride	·			20.0	16.2		ug/L		81	10 - 251	
	LCS	100									
Surrogate	%Recovery		lifior	Limits							
-	- <u>- 86</u>	Quai		61 - 120							
				01 = 120							
				78 125							
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2	90 97			78 - 125 80 - 120				Clie	ent Sarr	nple ID: Metho Prep Type: T	
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water	90 97 1 <b>0952/7</b>							Clie	ent Sam		
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952	90 97 1 <b>0952/7</b>	MB		80 - 120		Unit				Prep Type: T	otal/N/
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte	90 97 1 <b>0952/7</b>	sult	Qualifier	80 - 120 RL			D		ent Sarr Prepared	Prep Type: To Analyzed	otal/N/ Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte	90 97 1 <b>0952/7</b> Re:	sult 1.0	Qualifier U	80 - 120		Unit ug/L	D			Prep Type: T	otal/N/ Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride	90 97 • <b>10952/7</b> Re:	sult 1.0 <i>MB</i>	Qualifier U MB	80 - 120 RL			D	P	Prepared	Prep Type: T Analyzed 12/15/15 19:40	otal/N/ Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate	90 97 • <b>10952/7</b> Re:	sult 1.0 <i>MB</i>	Qualifier U	80 - 120 			<u>D</u>	P		Prep Type: To Analyzed	Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr)	90 97 • <b>10952/7</b> Re:	sult 1.0 MB very	Qualifier U MB	80 - 120 			<u>D</u>	P	Prepared	Prep Type: T Analyzed 12/15/15 19:40 Analyzed	
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr)	90 97 • <b>10952/7</b> Re:	sult 1.0 MB very 73	Qualifier U MB	80 - 120 			<u>D</u>	P	Prepared	Prep Type: T Analyzed 12/15/15 19:40 Analyzed 12/15/15 19:40	Dil Fa Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr)	90 97 210952/7 Re: %Recov	sult 1.0 MB very 73 86	Qualifier U MB	80 - 120 RL 1.0 Limits 61 - 120 78 - 125				 F	Prepared Prepared	Analyzed           12/15/15 19:40           Analyzed           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40	Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-2	90 97 210952/7 Re: %Recov	sult 1.0 MB very 73 86	Qualifier U MB	80 - 120 RL 1.0 Limits 61 - 120 78 - 125				 F	Prepared Prepared	Analyzed           12/15/15         19:40           4         12/15/15         19:40           12/15/15         19:40         12/15/15         19:40           12/15/15         19:40         12/15/15         19:40	Dil Fa Dil Fa Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-2 Matrix: Water	90 97 210952/7 Re: %Recov	sult 1.0 MB very 73 86	Qualifier U MB	80 - 120 80 - 120 <b></b>		ug/L		 F	Prepared Prepared	Analyzed           12/15/15 19:40           Analyzed           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40           12/15/15 19:40	Dil Fa Dil Fa Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-2 Matrix: Water Analysis Batch: 210952	90 97 210952/7 Re: %Recov	sult 1.0 MB very 73 86	Qualifier U MB	80 - 120 RL 1.0 Limits 61 - 120 78 - 125 80 - 120 Spike		LCS		 F	Prepared Prepared	Prep Type: T Analyzed 12/15/15 19:40 Analyzed 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 C: Lab Control S Prep Type: T %Rec.	Dil Fa Dil Fa Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-2 Matrix: Water Analysis Batch: 210952 Analyte	90 97 210952/7 Re: %Recov	sult 1.0 MB very 73 86	Qualifier U MB	80 - 120 RL 1.0 Limits 61 - 120 78 - 125 80 - 120 Spike Added	Result	LCS Qualifier	Clien	 F	Prepared Prepared mple ID %Rec	Prep Type: T Analyzed 12/15/15 19:40 Analyzed 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 C: Lab Control S Prep Type: T %Rec. Limits	Dil Fa Dil Fa Dil Fa
4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride	90 97 210952/7 Re: %Recov	sult 1.0 MB very 73 86	Qualifier U MB	80 - 120 RL 1.0 Limits 61 - 120 78 - 125 80 - 120 Spike		LCS Qualifier	Clien	  t Sa	Prepared Prepared	Prep Type: T Analyzed 12/15/15 19:40 Analyzed 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 C: Lab Control S Prep Type: T %Rec.	Dil Fa Dil Fa Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-2 Matrix: Water Analysis Batch: 210952 Analyte	90 97 10952/7 <u>Re:</u> 210952/6	sult 1.0 MB very 73 86 89	Qualifier U MB Qualifier	80 - 120 RL 1.0 Limits 61 - 120 78 - 125 80 - 120 Spike Added	Result	LCS Qualifier	Clien	  t Sa	Prepared Prepared mple ID %Rec	Prep Type: T Analyzed 12/15/15 19:40 Analyzed 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 C: Lab Control S Prep Type: T %Rec. Limits	Otal/N/ Dil Fa Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-5 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride	90 97 10952/7 	sult 1.0 MB very 73 86 89 LCS	Qualifier U MB Qualifier	80 - 120 80 - 120 RL 1.0 Limits 61 - 120 78 - 125 80 - 120 Spike Added 20.0	Result	LCS Qualifier	Clien	  t Sa	Prepared Prepared mple ID %Rec	Prep Type: T Analyzed 12/15/15 19:40 Analyzed 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 C: Lab Control S Prep Type: T %Rec. Limits	Dil Fa Dil Fa Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate	90 97 10952/7 	sult 1.0 MB very 73 86 89 LCS	Qualifier U MB Qualifier	80 - 120 80 - 120 RL 1.0 2.0 80 - 120 78 - 125 80 - 120 Spike Added 20.0 Limits	Result	LCS Qualifier	Clien	  t Sa	Prepared Prepared mple ID %Rec	Prep Type: T Analyzed 12/15/15 19:40 Analyzed 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 C: Lab Control S Prep Type: T %Rec. Limits	Dil Fa Dil Fa Dil Fa
1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: MB 240-2 Matrix: Water Analysis Batch: 210952 Analyte Vinyl chloride Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr) Lab Sample ID: LCS 240-2 Matrix: Water Analysis Batch: 210952 Analyte	90 97 10952/7 	sult 1.0 MB very 73 86 89 LCS	Qualifier U MB Qualifier	80 - 120 80 - 120 RL 1.0 Limits 61 - 120 78 - 125 80 - 120 Spike Added 20.0	Result	LCS Qualifier	Clien	  t Sa	Prepared Prepared mple ID %Rec	Prep Type: T Analyzed 12/15/15 19:40 Analyzed 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 12/15/15 19:40 C: Lab Control S Prep Type: T %Rec. Limits	Dil Fa Dil Fa Dil Fa

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## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 240-210 Matrix: Water	536/13-A						le ID: Method Prep Type: To		
Analysis Batch: 210803							Prep Batch:		
-	MB	MB							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac	
Aroclor-1016	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:45	1	
Aroclor-1221	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:45	1	
Aroclor-1232	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:45	1	
Aroclor-1242	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:45	1	
Aroclor-1248	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:45	1	
Aroclor-1254	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:45	1	
Aroclor-1260	0.10	U	0.10	ug/L		12/12/15 08:14	12/15/15 15:45	1	
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
DCB Decachlorobiphenyl	68		10 - 114			12/12/15 08:14	12/15/15 15:45	1	
Tetrachloro-m-xylene	67		15 - 131			12/12/15 08:14	12/15/15 15:45	1	

#### Lab Sample ID: LCS 240-210536/14-A Matrix: Water Analysis Batch: 210803

Analysis Datch. 210003	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Aroclor-1016	2.50	1.71		ug/L		68	50 - 114	_
Aroclor-1260	2.50	1.83		ug/L		73	8 - 127	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
DCB Decachlorobiphenyl	50		10_114
Tetrachloro-m-xylene	64		15 - 131

## Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-210685/1-A Matrix: Water Analysis Batch: 211008 MB MB						Prep Type	le ID: Method : Total Recov Prep Batch: 2	verable
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	5.0	U –	5.0	ug/L		12/14/15 09:30	12/15/15 12:22	1
Cadmium	2.0	U	2.0	ug/L		12/14/15 09:30	12/15/15 12:22	1
Chromium	5.0	U	5.0	ug/L		12/14/15 09:30	12/15/15 12:22	1
Copper	20	U	20	ug/L		12/14/15 09:30	12/15/15 12:22	1
Iron	100	U	100	ug/L		12/14/15 09:30	12/15/15 12:22	1
Nickel	20	U	20	ug/L		12/14/15 09:30	12/15/15 12:22	1
Lead	3.0	U	3.0	ug/L		12/14/15 09:30	12/15/15 12:22	1

#### Lab Sample ID: LCS 240-210685/2-A **Matrix: Water** Analysis Batch: 211008

Analysis Batch: 211008	Spike	LCS	LCS				Prep Batch: %Rec.	210685
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Silver	50.0	51.2		ug/L		102	85 - 115	
Cadmium	50.0	50.8		ug/L		102	85 - 115	
Chromium	200	188		ug/L		94	85 - 115	

**TestAmerica** Canton

**Client Sample ID: Lab Control Sample** 

**Prep Type: Total Recoverable** 

## 12/29/2015

4 5 6

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## Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 210536 Spike

Added

250

1000

500

500

LCS LCS

237

971

487

471

**Result Qualifier** 

Unit

ug/L

ug/L

Lab Sample ID: LCS 240-210685/2-A

**Matrix: Water** 

Analyte

Copper

Iron

Nickel

Lead

Analysis Batch: 211008

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

**Prep Type: Total Recoverable** 

%Rec.

Limits

85 - 115

85 - 115

**Prep Batch: 210685** 

**Client Sample ID: Lab Control Sample** 

# 1 2 3 4 5 6 7 8 9

10

ug/L 97 85-115 ug/L 94 85-115 Client Sample ID: W-12610-121015-SSH-1115 Prep Type: Total Recoverable Prep Batch: 210685

Client Sample ID: W-12610-121015-SSH-1115

**Prep Type: Total Recoverable** 

D %Rec

95

97

Lab Sample ID: 240-59001-1 MS
Matrix: Water
Analysis Batch: 211008

Analysis Batch. 211000	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	•	Qualifier	Added	-	Qualifier	Unit	D	%Rec	Limits	
Silver	5.0	U	50.0	52.9		ug/L		106	75 - 125	
Cadmium	2.0	U	50.0	55.7		ug/L		111	75 - 125	
Chromium	5.0	U	200	186		ug/L		93	75 - 125	
Copper	20	U	250	265		ug/L		103	75 - 125	
Iron	100	U	1000	1020		ug/L		93	75 - 125	1
Nickel	20	U	500	502		ug/L		100	75 - 125	
Lead	3.0	U	500	473		ug/L		95	75 - 125	÷,

## Lab Sample ID: 240-59001-1 MSD Matrix: Water

Analysis Batch: 211008									Prep Ba	atch: 21	0685	
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Silver	5.0	U	50.0	52.7		ug/L		105	75 - 125	0	20	
Cadmium	2.0	U	50.0	55.0		ug/L		110	75 - 125	1	20	
Chromium	5.0	U	200	187		ug/L		93	75 - 125	0	20	
Copper	20	U	250	261		ug/L		102	75 - 125	2	20	
Iron	100	U	1000	1030		ug/L		95	75 - 125	1	20	
Nickel	20	U	500	498		ug/L		99	75 - 125	1	20	
Lead	3.0	U	500	468		ug/L		94	75 - 125	1	20	

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-21068 Matrix: Water Analysis Batch: 211084		МВ					Clie		ple ID: Metho Prep Type: T Prep Batch:	otal/NA
Analyte	Result	Qualifier		RL	Unit	D	P	repared	Analyzed	Dil Fac
Mercury	0.20	U		0.20	ug/L		12/1	4/15 14:00	12/15/15 12:31	1
Lab Sample ID: LCS 240-2106 Matrix: Water Analysis Batch: 211084	89/2-A					Clien	it Sar		Lab Control Prep Type: T Prep Batch:	otal/NA
			Spike	LCS	S LCS				%Rec.	
Analyte			Added	Resul	t Qualifier	Unit	D	%Rec	Limits	
Mercury			5.00	4.70	0	ug/L		94	85 - 115	

Analyte

Ammonia (as N)

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#### Method: 245.1 - Mercury (CVAA) (Continued) Lab Sample ID: 240-59001-1 MS Client Sample ID: W-12610-121015-SSH-1115 **Matrix: Water** Prep Type: Total/NA Analysis Batch: 211084 **Prep Batch: 210689** Sample Sample Spike MS MS %Rec. Analyte **Result Qualifier** Added Result Qualifier Unit D %Rec Limits 1.00 0.20 U 0.990 ug/L 99 70 - 130 Mercury Lab Sample ID: 240-59001-1 MSD Client Sample ID: W-12610-121015-SSH-1115 Matrix: Water Prep Type: Total/NA Analysis Batch: 211084 Prep Batch: 210689 Sample Sample Spike MSD MSD %Rec. RPD **Result Qualifier** Added RPD Limit Analyte **Result Qualifier** Limits Unit D %Rec Mercury 0.20 U 1.00 0.971 ug/L 97 70 - 130 2 20 Method: 1664A - HEM and SGT-HEM Lab Sample ID: MB 240-211886/1 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Analysis Batch: 211886 MB MB Analyte **Result Qualifier** RL Unit D Prepared Analyzed Dil Fac HEM 5.0 U 5.0 12/22/15 08:10 mg/L Lab Sample ID: LCS 240-211886/2 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 211886 LCS LCS Spike %Rec. Added **Result Qualifier** Limits Analyte Unit D %Rec HEM 40.0 36.0 mg/L 90 78 - 114 Method: 350.2 - Nitrogen, Ammonia, Distillation Lab Sample ID: MB 240-211941/1-A **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Analysis Batch: 211946 **Prep Batch: 211941**

	MB	мв						
Analyte	Result	Qualifier	RL	Un	nit D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	2.0	U	2.0	mg	g/L	12/22/15 06:45	12/22/15 10:37	1
Lab Sample ID: LCS 240-2119 Matrix: Water Analysis Batch: 211946	41/2-A		Spike	LCS LCS	Client		Lab Control S Prep Type: To Prep Batch: 3 %Rec.	otal/NA

**Result Qualifier** 

11.2

Unit

mg/L

D %Rec

101

Limits

85 - 114

Added

11.1

....

RL

MB MB

10 U

**Result Qualifier** 

Lab Sample ID: MB 240-210663/37

Method: 410.4 - COD

Analysis Batch: 210663

Chemical Oxygen Demand

Matrix: Water

Analyte

Analyzed

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

Dil Fac

Chemical Oxygen Demand	10 U		10	mg/L				12/14/15 12:00 1	0
Lab Sample ID: LCS 240-210663/38					Clier	nt Sai	mple ID	: Lab Control Sample	7
Matrix: Water Analysis Batch: 210663								Prep Type: Total/NA	8
		Spike	LCS	LCS				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	9
Chemical Oxygen Demand		68.0	61.9		mg/L		91	90 - 110	
Lab Sample ID: 240-59001-1 MS				Clie	ent Sam	ple ID	): W-126	610-121015-SSH-1115	10
Matrix: Water								Prep Type: Total/NA	4.4
Analysis Batch: 210663									
Sampl	e Sample	e Spike	MS	MS				%Rec.	4.0
Analyte Resul	lt Qualifi	ier Added	Result	Qualifier	Unit	D	%Rec	Limits	12

mg/L

Unit

D

Prepared

107

90 - 110

#### Method: 4500 H+ B-2000 - pH

Lab Sample ID: LCS 240-210511/2 Matrix: Water Analysis Batch: 210511				Clie	ent Sai	nple ID	: Lab Control Sample Prep Type: Total/NA
	Spike	LCS	LCS				%Rec.
Analyte	Added 6.15	<b>Result</b> 6.180	Qualifier	Unit SU	D	%Rec 100	Limits 97 - 103

57.5

50.0

#### Method: 5210B-2001 - BOD, 5-Day

Lab Sample ID: SCB 240-210450/2 Matrix: Water Analysis Batch: 210450								Clie	ent Sam	ple ID: Metho Prep Type: T	
Analysis Batch. 210450	SCB	SCB									
Analyte	Result	Qualifier		RL		Unit		D P	repared	Analyzed	Dil Fac
Biochemical Oxygen Demand	2.0	U		2.0		mg/L				12/11/15 12:44	1
Lab Sample ID: USB 240-210450/1 Matrix: Water Analysis Batch: 210450								Clie	ent Sam	ple ID: Metho Prep Type: T	
	USB	USB									
Analyte	Result	Qualifier		RL		Unit		D P	repared	Analyzed	Dil Fac
Biochemical Oxygen Demand	2.0	U		2.0		mg/L				12/11/15 12:42	1
Lab Sample ID: LCS 240-210450/3 Matrix: Water Analysis Batch: 210450							Clie	nt Sa	mple ID	: Lab Control : Prep Type: T	
			Spike		LCS	LCS				%Rec.	
Analyte			Added		Result	Qualifier	Unit	D	%Rec	Limits	
Biochemical Oxygen Demand			198		206		mg/L		104	85_115	

Method: SM 2540D - Solids, Total Suspended (TSS)

## **Client Sample ID: Method Blank** T - 4 - 1/11 A

5

10

Lab Sample ID: MB 240-210870/1 Matrix: Water	l								CIIE	ant ogli	ple ID: M Prep Ty		
Analysis Batch: 210870												00.10	
	N	MB MB											
Analyte	Res	ult Qualifier		RL		Unit		D	Р	repared	Analyz	zed	Dil Fac
Total Suspended Solids	2	4.0 U		4.0		mg/L		_			12/15/15	10:39	1
Lab Sample ID: LCS 240-210870/	2						Cli	ent	Sai	mple ID	: Lab Cor	ntrol S	ample
Matrix: Water											Prep Ty	pe: To	tal/NA
Analysis Batch: 210870													
			Spike		LCS	LCS					%Rec.		
Analyte			Added		Result	Qualifier	Unit		D	%Rec	Limits		
Total Suspended Solids			74.4		65.0		mg/L			87	73 - 113		
Nethod: SM4500 P E-1999 -	Phos	phorus											
Lab Sample ID: MB 240-212355/1	<b>0-A</b>								Clie	ent Sam	ple ID: M	ethod	Blank
Matrix: Water											Prep Ty	pe: To	tal/NA
Analysis Batch: 212395											Prep Ba	atch: 2	12355
-	N	AB MB											
Analyte		ult Qualifier		RL		Unit		D		repared	Analyz		Dil Fac
Total Phosphorus as P	0.	10 U		0.10		mg/L		_	12/2	8/15 05:1	7 12/29/15	04:48	1
Lab Sample ID: LCS 240-212355/	11-A						Cli	ent	Sai	mple ID	: Lab Cor	ntrol S	ample
Matrix: Water											Prep Ty	pe: To	tal/NA
Analysis Batch: 212395											Prep Ba	atch: 2	12355
			Spike		LCS	LCS					%Rec.		
Analyte			Added			Qualifier	Unit		D	%Rec	Limits		
Total Phosphorus as P			6.79		6.63		mg/L			98	53 - 134		
Lab Sample ID: 240-59001-1 MS						Cli	ent Sai	mpl	e ID	): W-12	610-12101	5-SSF	1-1115
Matrix: Water											Prep Ty		
Analysis Batch: 212395											Prep Ba	atch: 2	12355
	ample S	•	Spike		-	MS					%Rec.		
· <b>,</b> · ·		Qualifier	Added			Qualifier	Unit		D	%Rec	Limits		
Total Phosphorus as P	0.10 L	J	0.500		0.521		mg/L			104	10 - 199		
Lab Sample ID: 240-59001-1 MSI	)					Cli	ent Sai	mpl	e ID	): W-120	61 <mark>0-121</mark> 01		
Matrix: Water											Prep Ty		
Analysis Batch: 212395											Prep Ba	atch: 2	
	ample S	•	Spike		-	MSD			_	~-	%Rec.		RPD
		Qualifier	Added			Qualifier	Unit		D	%Rec	Limits	RPD	Limi
Total Phosphorus as P	0.10 L	J	0.500		0.514		mg/L			103	10 - 199	1	20

Prep Type: Total/NA

## Method: 624 - Volatile Organic Compounds (GC/MS)

Matrix: Water					Prep Type: Total/NA
-			Pe	ercent Surrog	ate Recovery (Acceptance Limits)
		BFB	12DCE	TOL	
Lab Sample ID	Client Sample ID	(61-120)	(78-125)	(80-120)	
240-59001-1	W-12610-121015-SSH-1115	83	91	94	
240-59001-2	TB-12610-121015-SSH-1215	84	91	93	
LCS 240-210776/6	Lab Control Sample	86	90	97	
LCS 240-210952/6	Lab Control Sample	78	93	92	
MB 240-210776/7	Method Blank	88	90	94	
MB 240-210952/7	Method Blank	73	86	89	
Surrogate Legend					
BFB = 4-Bromofluoro	bbenzene (Surr)				
12DCE = 1,2-Dichlor	oethane-d4 (Surr)				
TOL = Toluene-d8 (S	Surr)				

## Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

-			Perc	ent Surrogate Recovery (Accepta	nce Limits)
		DCB2	TCX2	······································	,
Lab Sample ID	Client Sample ID	(10-114)	(15-131)		
40-59001-1	W-12610-121015-SSH-1115	60	32		
LCS 240-210536/14-A	Lab Control Sample	50	64		
MB 240-210536/13-A	Method Blank	68	67		

#### Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

#### Client Sample ID: W-12610-121015-SSH-1115 Date Collected: 12/10/15 08:30 Date Received: 12/11/15 09:30

Lab Sample ID: 240-59001-1 Matrix: Water

> 5 6 7

> > 12

	Batch	Batch		Dilution	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	210776	12/15/15 08:02	TJL1	TAL CAN
Total/NA	Prep	3520C			210536	12/12/15 08:14	JDR	TAL CAN
Total/NA	Analysis	608		1	210803	12/15/15 15:27	LSH	TAL CAN
Total Recoverable	Prep	200.7			210685	12/14/15 09:30	WKD	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	211008	12/15/15 19:32	KLC	TAL CAN
Total/NA	Prep	245.1			210689	12/14/15 14:00	WKD	TAL CAN
Total/NA	Analysis	245.1		1	211084	12/15/15 12:34	WAL	TAL CAN
Total/NA	Analysis	1664A		1	211886	12/22/15 08:10	BLW	TAL CAN
otal/NA	Prep	Distill/Ammonia			211941	12/22/15 06:45	JAS	TAL CAN
otal/NA	Analysis	350.2		1	211946	12/22/15 10:43	JAS	TAL CAN
Total/NA	Analysis	410.4		1	210663	12/14/15 12:12	TPH	TAL CAN
Fotal/NA	Analysis	4500 H+ B-2000		1	210511	12/11/15 16:43	GNR	TAL CAN
Fotal/NA	Analysis	5210B-2001		1	210450	12/11/15 15:44	DTN	TAL CAN
Total/NA	Analysis	SM 2540D		1	210870	12/15/15 10:39	GNR	TAL CAN
otal/NA	Prep	365.2/365.3/365			212355	12/28/15 05:19	TPH	TAL CAN
Total/NA	Analysis	SM4500 P E-1999		1	212395	12/29/15 04:48	TPH	TAL CAN

#### Client Sample ID: TB-12610-121015-SSH-1215 Date Collected: 12/10/15 08:45 Date Received: 12/11/15 09:30

#### Lab Sample ID: 240-59001-2 Matrix: Water

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	210952	12/16/15 04:14	TJL1	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

## **Certification Summary**

#### Client: GHD Services Inc. Project/Site: 12610-T03, RACER Bay City

# 2 3 4 5 6 7 8 9 10 11 12

Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date	
California	NELAP	9	01144CA	06-30-14 *	
California	State Program	9	2927	04-30-17	
Connecticut	State Program	1	PH-0590	12-31-15	
Illinois	NELAP	5	200004	07-31-16	
Kansas	NELAP	7	E-10336	01-31-16 *	
Kentucky (UST)	State Program	4	58	02-26-16	
Kentucky (WW)	State Program	4	98016	12-31-15	
L-A-B	DoD ELAP		L2315	07-18-16	
Vinnesota	NELAP	5	039-999-348	12-31-15	
Nevada	State Program	9	OH-000482008A	07-31-16	
New Jersey	NELAP	2	OH001	06-30-16	
New York	NELAP	2	10975	03-31-16	
Ohio VAP	State Program	5	CL0024	09-14-17	
Oregon	NELAP	10	4062	02-23-16	
Pennsylvania	NELAP	3	68-00340	08-31-16	
Texas	NELAP	6	T104704517-15-5	08-31-16	
JSDA	Federal		P330-13-00319	11-26-16	
/irginia	NELAP	3	460175	09-14-16	
Vashington	State Program	10	C971	01-12-16	1
Vest Virginia DEP	State Program	3	210	12-31-15	
Wisconsin	State Program	5	999518190	08-31-16	

\* Certification renewal pending - certification considered valid.



TestAmerica Laboratories, Inc.

# CHAIN OF CUSTODY AND RECEIVING DOCUMENTS



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 12/29/2015

 4101 Shuffel Street, N.W.
 North Canton, OH 44720
 tel 330.497.9396
 fax 330.497.0772
 www.testamericainc.com

TestAmerica Laboratories Inc	TAL-8210 (0713)	COC No: (223)8	f of L COCs	Sampler: S Hourwar		Walk-in Client:	Lab Sampling:	lob / SDG No -			Sample Specific Notes:												ined longer than 1 month)	Months			I herm ID No.:	Date/Time:	Date/Time:	Date/Time: 1/15 920	2 3 4 5
ecord 122378		2	HUMU Carrier: HUNEX	•	<u>_</u>		مر بریم	1	· · · · · · · · · · · · · · · · · · ·	19	よ い い い い												Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	C Disnocal hv Lah		Cooler Temp ("Ch. Obeld: County"		Company:	Company:	ry by: Company:	8 9 10 11
of Cust	NPDES CRA 0	Site Contact:	🔈  Lab Contact: 🖸	nd Time	A WORKING DAYS		/ <u>/</u> //		əlqm			W X X X X X X X X	TR I WW X	•								4	r the sample in the	Unknown				Date/Time:	Date/Time: Received by:	Date/Time: Received in Lab/Date/ty by:	13 2 14
1-7) CI.Y	Regulatory Program:		Iel/Fax:	<b>ງະ</b> ເຊັ Analysis Turna		AT if different for				Sample Sample (C=Comb	Date Time G=Grab)	15 12/10/150830 C.G	с С	•								4=HNO3; 5=NaOH; 6= Other 2.3	Please List any EPA Waste	ant 🗌 Poison B 🚦		Circtordiv Seal No.		CHD I'Ale		Company:	
TestAmerica Michigan 10448 Citation Drive Suite 200 Brighton, NI 48116 Phone 810 229 2253 Fax		3 1	<b></b>		te/zip: 77 ly	e 334-453-	Project Name: Raci Trinch Rout	520 12610 -01	24006238		Sample Identification	W-12610-121015-55H ~ 11	18-12610-121015-554-121		F	ag	29	of	31		Harr	Preservation Used 1= Ice, 2= HCI; 3= H2SO4;	Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Comments Section if the lab is to dispose of the sample.	On-Hazard Elammable Sk	Special Instructions/QC Requirements & Comments.	Custody Seals Intact: 7 vac 7 vac		reminquisment by.	Relinquished by: 66	Reinquished by:	, , ,

Client <u>GND</u>	Site NameCooler unpacked by:
Cooler Received on 12/11/15	Opened on 17/11/15
FedEx: 1 <sup>st</sup> Grd	
Receipt After-hours: Drop-off D	Date/Time Storage Location
TestAmerica Cooler #	Foam Box Client Godler Box Other
Packing material used: Bu	
COOLANT: Wet Ice	
1. Cooler temperature upon rece	eipt
	Observed Cooler TempC Corrected Cooler Temp°C
IR GUN# 48 (CF -0.3 °C	C) Observed Cooler Temp. 1.7 °C Corrected Cooler Temp. 1.4 °C See Multiple
	C) Observed Cooler Temp. <u>°C Corrected Cooler Temp.</u> <u>°C Cooler Form</u> C) Observed Cooler Temp. <u>°C Corrected Cooler Temp.</u> °C
2. Were custody seals on the ou	· · · · · · · · · · · · · · · · · · ·
	outside of the cooler(s) signed & dated?
	bottle(s) or bottle kits (LLHg/MeHg)?
<ol> <li>Shippers' packing slip attache</li> </ol>	
<ol> <li>Did custody papers accompar</li> </ol>	
	nquished & signed in the appropriate place?
	collected the samples clearly identified on the COC? (Yes No
7. Did all bottles arrive in good	
8. Could all bottle labels be recc	onciled with the COC?
9. Were correct bottle(s) used fo	or the test(s) indicated?
	to perform indicated analyses? The No
11. Were sample(s) at the correct	
12. Were VOAs on the COC?	Yes No
13. Were air bubbles >6 mm in ar	ny VOA vials? Yes NO NA
14. Was a $\bigvee OA$ trip blank present	nt in the cooler(s)? Trip Blank Lot #BS7348NB (C) No
	blank present?  Yes yo    Date  by    via Verbal Voice Mail Other
Concerning	Date by via Verbal Voice Mail Other
4. CHAIN OF CUSTODY & S	SAMPLE DISCREPANCIES Samples processed by:
·	
5. SAMPLE CONDITION	
	were received after the recommended holding time had expired
15. SAMPLE CONDITION Sample(s) Sample(s)	were received after the recommended holding time had expired. were received in a broken container.
Sample(s) Sample(s)	were received in a broken container.
Sample(s) Sample(s) Sample(s)	were received in a broken container. were received with bubble >6 mm in diameter. (Notify PM)
Sample(s)Sample(s)Sample(s)Sample(s)Sample(s)SAMPLE PRESERVATION	were received in a broken container. were received with bubble >6 mm in diameter. (Notify PM)
ample(s)ample(s)ample(s)ample(s)ample(s)ample(s)ample(s)	were received in a broken container. were received with bubble >6 mm in diameter. (Notify PM)
mple(s)	were received in a broken container. were received with bubble >6 mm in diameter. (Notify PM)

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Ref: SOP NC-SC-0005, Sample Receiving X:\X-Drive Document Control\SOPs\Work Instructions\Word Version Work Instructions\WI-NC-099W-112315 Cooler Receipt Form.doc djl

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## Login Container Summary Report

240-59001

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Client Sample ID	<u>Lab ID</u>	Container Type	<u>pH</u>	<u>Preservative</u> Added (mls)	<u>Lot #</u>
W-12610-121015-SSH-1115 W-12610-121015-SSH-1115 W-12610-121015-SSH-1115	240-59001-E-1 240-59001-F-1 _240-59001-J-1	Plastic 500ml - with Sulfuric Acid Plastic 500ml - with Nitric Acid Amber Glass 1 liter - Sulfuric Acid	<2 <2		
W-12610-121015-SSH-1115	240-59001-K-1	Amber Glass 1 liter - Sulfuric Acid			
		· · ·			
anna a sha she anna a she da she anna a she da she anna a she anna	and the second secon			<u> </u>	<u>,</u>
					•
	.,				
Page 1 of 1		Page 31 of 31			12/29/2015

# **Attachment 2**

#### **Certification Statement**

"I, <u>David Favero</u>, certify under penalty of law that this document (January 29, 2016 GHD Semi-Annual Compliance Report (July 1 to December 31, 2015)), and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

David Saven

Jan 28, 2016

RACER Deputy Cleanup Manager - Michigan

(Date)