



March 15, 2019

Reference No. 012607

Ms. Tessy Jose
City of Detroit
Great Lakes Water Authority
Industrial Waste Control Division
303 S. Livernois Avenue
Detroit, Michigan 48209

Dear Ms. Jose:

**Re: DWSD Semi Annual Report – SD6 94508
(September 2018 through February 2019)
12950 Eckles Road
Livonia, Michigan 48150
Permit No.: SD6 94508**

GHD Services Inc. (GHD) is providing the attached documents for the reporting requirements of Special Discharge Permit SD6 94508 for the period of September 2018 through February 2019 for the RACER Eckles Road Site located at 12950 Eckles Road, Livonia, Michigan.

Special Discharge Permit SD6 94508 was issued in June 2011, renewed in June 2015 and is effective through June 30, 2019. A Permit Renewal/Reapplication form is currently being prepared for submittal to Great Lakes Water Authority (GLWA).

As previously discussed, RACER implemented a United States Environmental Protection Agency (U.S. EPA) approved remedial alternative consisting of in-situ chemical reduction (ISCR) of dissolved chromium and nickel through chemical injections into the impacted groundwater, essentially treating the groundwater in the subsurface. Full-scale ISCR injections were conducted in 2016 with follow-up targeted ISCR injections conducted in 2017. ISCR performance groundwater monitoring and evaluation were conducted through 2017 with supplemental groundwater samples collected in 2018.

As presented in the Modification of Groundwater Treatment System Request dated October 12, 2018 and submitted to GLWA, the current City of Detroit Water and Sewerage Department (DWSD) Special Discharge Permit effluent limits for the Eckles Road Site groundwater treatment plant (GWTP) are 3.98 mg/L for nickel and 2.77 mg/L for total chromium, which are more stringent than the general limits (5.0 mg/L for nickel and 25.0 mg/L for chromium). As a result of the ISCR injections, GWTP influent concentrations have been less than the DWSD permit effluent limits based on laboratory analysis performed weekly since January 2018. A summary of the GWTP influent sample results is provided in Table 1 and on Figure 1. GLWA approved the request to modify the Groundwater Treatment System processes in a letter dated October 22, 2018. A clarification letter was submitted to GLWA on October 25, 2018. Modified operation of the Groundwater Treatment System (elimination of chemical use/pH adjustment) began on December 3, 2018, as well as the required effluent sampling included in the GLWA approval.

Additionally, RACER temporarily ceased operations of the Groundwater Treatment System on December 20, 2018. The Groundwater Treatment System operations were ceased to evaluate groundwater



elevations and potential future minimum dewatering requirements. RACER plans to continue to implement dewatering activities on an as-needed basis to prevent flooding until final portions of the remedial alternative can be implemented and approval to discontinue dewatering (and therefore discontinue discharge to the sanitary sewer system) can be obtained from U.S. EPA. If approval to discontinue dewatering is received from U.S. EPA then no discharge will be necessary and the existing Special Discharge Permit can be terminated. The approximate schedule for receiving approval from U.S. EPA to discontinue dewatering activities through the groundwater extraction system and hence the need for operating and discharging to the sanitary sewer system is in 2019-2020.

It is noted that the schedule to obtain approval from U.S. EPA to discontinue groundwater extraction has been complicated by recent sampling results. As previously discussed, RACER collected groundwater samples to evaluate the potential presence of Per- and Polyfluoroalkyl Substances (PFAS) in groundwater at the Site. Based on detections of specific PFAS, the GWTP influent and effluent were also sampled for the analysis of PFAS in June 2018 and August 2018. A summary of results was provided in the March 2018 to August 2018 Semi-Annual Report. A PFAS Best Management Program (BMP) Plan is currently under development and will be submitted to GLWA for review.

Section D: Reporting Requirements

- Reporting Period: September 1, 2018 to February 28, 2019.
- Dates of Sampling: September 5, 2018; October 3, 2018; November 7, 2018; December 5, 2018; December 12, 2018; and December 19, 2018. Laboratory analytical report are attached.
- The groundwater treatment plant had a scheduled shut down for a one week period in May and for a one week period around the July 4th Holiday period.
- All samples were collected from the effluent sampling port of Tank T12.
- Total Monthly Discharges (gallons):
 - September 2018: 651,176
 - October 2018: 636,826
 - November 2018: 710,292
 - December 2018: 455,998
 - January 2019: 0
 - February 2019: 0
- Total Flow to Date (since 2000): 187,437,855 gallons.
- Signature of GHD's authorized representative who is knowledgeable of the remediation Site's discharge.

GHD certifies that the discharge complied with the permit discharge limits.



Please contact me at (248) 893-3400 if you require further information or clarification.

Sincerely,

GHD

A handwritten signature in blue ink, appearing to read "Chris Meincke", with a stylized flourish at the end.

Christopher J. Meincke, P.E.

CJM/ds/21

Encl.

cc: Dave Favero, RACER

Figure 1
GWTP Influent Concentrations - Eckles Road Site

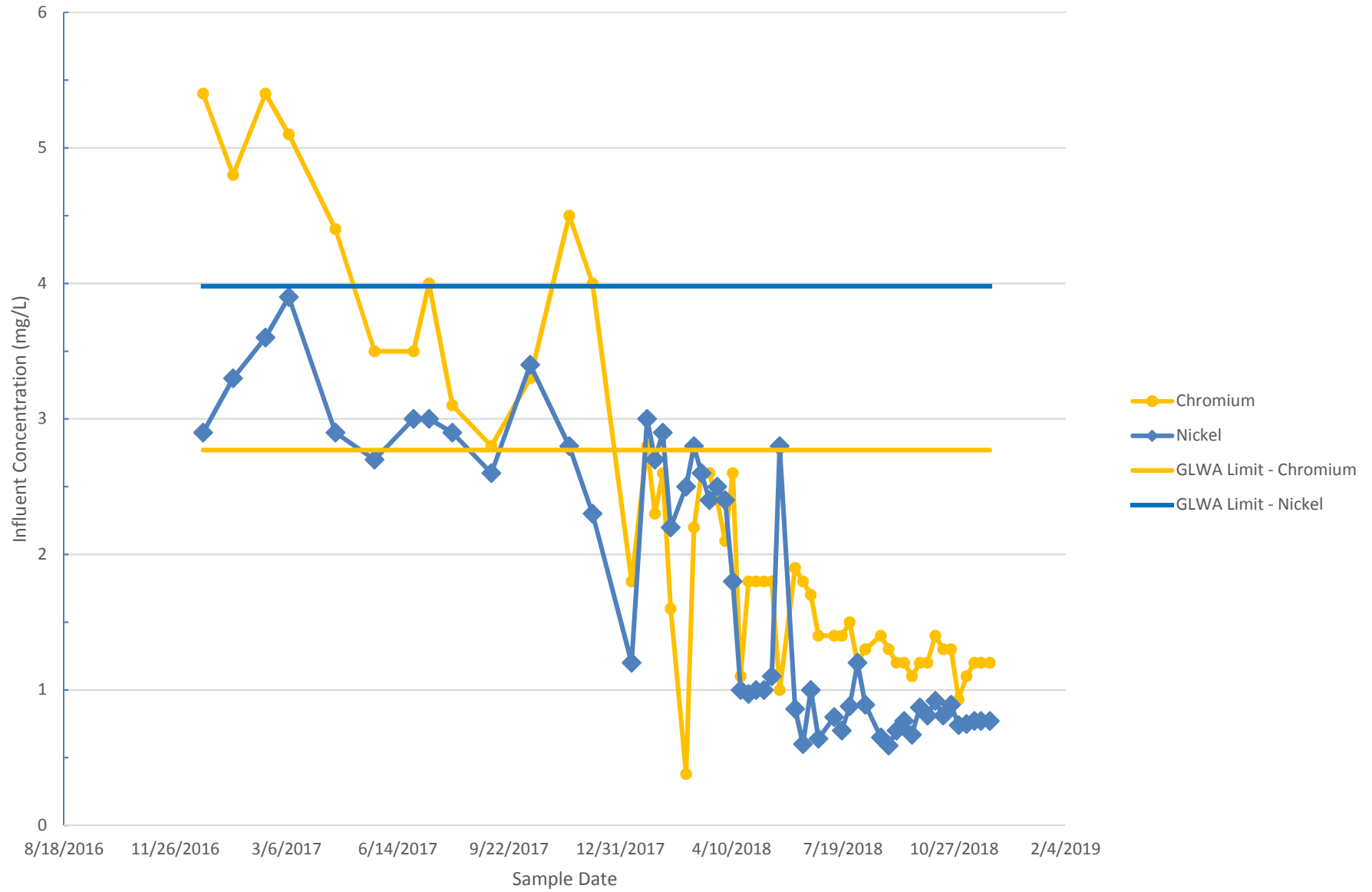


Table 1

Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	WT-012607-122116-EE-002	WT-012607-011717-EE-002	WT-012607-021517-EE-001	WT-012607-030817-EE-002	WT-012607-041917-EE-002	WT-012607-052417-EE-002
Sample Date:		Effluent Limits	12/21/2016	1/17/2017	2/15/2017	3/8/2017	4/19/2017	5/24/2017
Sample Type:								
Parameters	Units							
Metals								
Chromium	mg/L	2.77	5.4	4.8	5.4	5.1	4.4	3.5
Chromium VI (hexavalent)	mg/L		5.2	--	4.4	4.2	3.8	3.3
Nickel	mg/L	3.98	2.9	3.3	3.6	3.9	2.9	2.7

Notes:

U - Not detected at the associated reporting limit.

H - Sample was prepped or analyzed beyond the specified holding time.

"--" - Parameter was not analyzed for in specified sample

Table 1

Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	WT-012607-062817-EE-002	WT-012607-071217-EE-002	WT-012607-080217-EE-002	WT-012607-090617-EE-002	WT-012607-101117-EE-002	WT-012607-111517-EE-002
Sample Date:		Effluent Limits	6/28/2017	7/12/2017	8/2/2017	9/6/2017	10/11/2017	11/15/2017
Sample Type:								
Parameters	Units							
Metals								
Chromium	mg/L	2.77	3.5	4	3.1	2.8	3.3	4.5
Chromium VI (hexavalent)	mg/L		2.5	0.0050 U	2.1	2.7 H	--	4.1
Nickel	mg/L	3.98	3	3	2.9	2.6	3.4	2.8

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Table 1

Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	WT-012607-120617-EE-002	WT-012607-011018	WT-012607-012418-EE-002	WT-012607-013118-EE-002	WT-012607A-020718-EE-002	WT-012607-021418-EE-002	WT-012607-022818-EE-002
Sample Date:		Effluent Limits	12/6/2017	1/10/2018	1/24/2018	1/31/2018	2/7/2018	2/14/2018	2/28/2018
Sample Type:									
Parameters	Units								
Metals									
Chromium	mg/L	2.77	4.0	1.8	2.8	2.3	2.6	1.6	0.38
Chromium VI (hexavalent)	mg/L		2.8	1.1	2.4	2.3	2.4	--	0.30
Nickel	mg/L	3.98	2.3	1.2	3.0	2.7	2.9	2.2	2.5

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Table 1

Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	WT-012607-030718-EE-002	WT-012607-031418-EE-002	WT-012607-032118-EE-102	WT-012607-032818-EE-002	WT-012607-040418-EE-002	WT-012607-041118-EE-002	WT-012607-041818-EE-002
Sample Date:		Effluent Limits	3/7/2018	3/14/2018	3/21/2018	3/28/2018	4/4/2018	4/11/2018	4/18/2018
Sample Type:									
Parameters	Units								
Metals									
Chromium	mg/L	2.77	2.2	2.6	2.6	2.4	2.1	2.6	1.1
Chromium VI (hexavalent)	mg/L		0.038 H	2.4	2.1	2.1	1.9	1.7	0.76
Nickel	mg/L	3.98	2.8	2.6	2.4	2.5	2.4	1.8	1.0

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Table 1

Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	WT-012607-042518-EE-002	WT-012607-050218-EE-002	WT-012607-050918-EE-002	WT-012607-051618-EE-002	WT-012607-052318-EE-002	WT-012607-060618-EE-002	WT-012607-061318-EE-002
Sample Date:		Effluent Limits	4/25/2018	5/2/2018	5/9/2018	5/16/2018	5/23/2018	6/6/2018	6/13/2018
Sample Type:									
Parameters	Units								
Metals									
Chromium	mg/L	2.77	1.8	1.8	1.8	1.8	1.0	1.9	1.8
Chromium VI (hexavalent)	mg/L		1.1	1.5	1.7	1.5	0.63	0.18	1.6
Nickel	mg/L	3.98	0.97	1.0	1.0	1.1	2.8	0.86	0.60

Notes:

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"-"- Parameter was not analyzed for in specified sample

Table 1

Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	W-012607-062018-EE-002	W-012607-062718-EE-002	WT-012607-071118-EE-002	WT-012607-071818-EE-002	WT-012607-072518-EE-002	WT-012607-080118-EE-002	WT-012607-080818-EE-002
Sample Date:		Effluent Limits	6/20/2018	6/27/2018	7/11/2018	7/18/2018	7/25/2018	8/1/2018	8/8/2018
Sample Type:									
Parameters	Units								
Metals									
Chromium	mg/L	2.77	1.7	1.4	1.4	1.4	1.5	1.2	1.3
Chromium VI (hexavalent)	mg/L		1.5	0.96	1.7	1.3	1.3	1.0	1.2
Nickel	mg/L	3.98	1.0	0.64	0.80	0.70	0.88	1.2	0.89

Notes:

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Table 1

Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	WW-012607-082218-EE-002	WW-012607-082918-EE-002	WW-012607-090518-EE-002	W-012607-091218-EE-002	W-012607-091918-EE-002	W-012607-092618-EE-002	WW-012607-100318-EE-002
Sample Date:		Effluent Limits	8/22/2018	8/29/2018	9/5/2018	9/12/2018	9/19/2018	9/26/2018	10/3/2018
Sample Type:									
Parameters	Units								
Metals									
Chromium	mg/L	2.77	1.4	1.3	1.2	1.2	1.1	1.2	1.2
Chromium VI (hexavalent)	mg/L		1.2	0.23	0.12	0.76	1.1	1.0	1.1
Nickel	mg/L	3.98	0.65	0.59	0.70	0.77	0.67	0.87	0.81

Notes:

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"-"- Parameter was not analyzed for in specified sample

Table 1
Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	WW-012607-T01Y18-EE-002	WW-012607-101718-EE-002	WW-012607-102418-EE-002	WW-012607-103118-EE-002	WW-012607-110718-EE-002	WW-012607-111418-EE-002
Sample Date:		Effluent Limits	10/10/2018	10/17/2018	10/24/2018	10/31/2018	11/7/2018	11/14/2018
Sample Type:								
Parameters	Units							
Metals								
Chromium	mg/L	2.77	1.4	1.3	1.3	0.93	1.1	1.2
Chromium VI (hexavalent)	mg/L		1.1	1.1 U	2.4	0.17	1.0	0.95
Nickel	mg/L	3.98	0.92	0.81	0.89	0.74	0.75	0.77

Notes:
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"-"- Parameter was not analyzed for in specified sample

Table 1

Analytical Results of GWTP Influent Samples
Eckles Road Site
Livonia, Michigan

Sample Location:		GLWA	GWTP Influent	GWTP Influent
Sample Identification:		Special Discharge Permit	WW-012607-112018-EE-002	WW-012607-112818-EE-002
Sample Date:		Effluent Limits	11/20/2018	11/28/2018
Sample Type:				
Parameters	Units			
Metals				
Chromium	mg/L	2.77	1.2	1.2
Chromium VI (hexavalent)	mg/L		1.1	0.90
Nickel	mg/L	3.98	0.77	0.77

Notes:

U - Not detected at the associated reporting limit.

H - Sample was prepped or analyzed beyond the specified holding time.

"-" - Parameter was not analyzed for in specified sample

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - September 2018**

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
09/01/18	None	None			
09/02/18	None	None			
09/03/18	None	None	On-Site	0	
09/04/18	None	None	On-Site	51,313	
09/05/18	None	None	On-Site & Sampled	44,260	
09/06/18	None	None	On-Site	46,746	
09/07/18	None	None	On-Site	39,738	
09/08/18	None	None			
09/09/18	None	None			
09/10/18	None	None	On-Site	0	
09/11/18	None	None	On-Site	46,414	
09/12/18	None	None	On-Site	45,138	
09/13/18	None	None	On-Site	40,756	
09/14/18	None	None	On-Site	40,985	
09/15/18	None	None			
09/16/18	None	None			
09/17/18	None	None	On-Site	471	
09/18/18	None	None	On-Site	43,672	
09/19/18	None	None	On-Site	46,201	
09/20/18	None	None	On-Site	35,020	
09/21/18	None	None	On-Site	0	
09/22/18	None	None			
09/23/18	None	None			
09/24/18	None	None	On-Site	1,808	
09/25/18	None	None	On-Site	46,779	
09/26/18	None	None	On-Site	47,368	
09/27/18	None	None	On-Site	42,563	
09/28/18	None	None	On-Site	31,946	
09/29/18	None	None			
09/30/18	None	None			

Total Monthly Discharge (gal)

651,176

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - October 2018**

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
10/01/18	None	None	On-Site	4,718	
10/02/18	None	None	On-Site	46,519	
10/03/18	None	None	On-Site & Sampled	52,805	
10/04/18	None	None	On-Site	32,660	
10/05/18	None	None			
10/06/18	None	None			
10/07/18	None	None			
10/08/18	None	None	On-Site	597	
10/09/18	None	None	On-Site	47,625	
10/10/18	None	None	On-Site	49,709	
10/11/18	None	None	On-Site	38,535	
10/12/18	None	None			
10/13/18	None	None			
10/14/18	None	None			
10/15/18	None	None	On-Site	171	
10/16/18	None	None	On-Site	55,439	
10/17/18	None	None	On-Site	34,965	
10/18/18	None	None			
10/19/18	None	None			
10/20/18	None	None			
10/21/18	None	None			
10/22/18	None	None	On-Site	594	
10/23/18	None	None	On-Site	39,869	
10/24/18	None	None	On-Site	52,085	
10/25/18	None	None	On-Site	41,598	
10/26/18	None	None	On-Site	43,838	
10/27/18	None	None			
10/28/18	None	None			
10/29/18	None	None	On-Site	1,145	
10/30/18	None	None	On-Site	48,064	
10/31/18	None	None	On-Site	45,890	

Total Monthly Discharge (gal)

636,826

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log - November 2018

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
11/01/18	None	None	On-Site	39,906	
11/02/18	None	None	On-Site	42,769	
11/03/18	None	None			
11/04/18	None	None			
11/05/18	None	None	On-Site	336	
11/06/18	None	None	On-Site	39,080	
11/07/18	None	None	On-Site & Sampled	52,422	
11/08/18	None	None	On-Site	41,627	
11/09/18	None	None	On-Site	38,126	
11/10/18	None	None			
11/11/18	None	None			
11/12/18	None	None	On-Site	294	
11/13/18	None	None	On-Site	48,055	
11/14/18	None	None	On-Site	45,082	
11/15/18	None	None	On-Site	36,984	
11/16/18	None	None	On-Site	36,081	
11/17/18	None	None			
11/18/18	None	None			
11/19/18	None	None	On-Site	455	
11/20/18	None	None	On-Site	41,160	
11/21/18	None	None	On-Site	31,741	System shut down for Thanksgiving weekend
11/22/18	None	None			
11/23/18	None	None			
11/24/18	None	None			
11/25/18	None	None	On-Site	330	
11/26/18	None	None	On-Site	55,145	
11/27/18	None	None	On-Site	44,852	
11/28/18	None	None	On-Site	36,538	
11/29/18	None	None	On-Site	42,120	
11/30/18	None	None	On-Site	37,188	

Total Monthly Discharge (gal) 710,292

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - December 2018**

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
12/01/18	None	None			
12/02/18	None	None			
12/03/18	None	None	On-Site	2,728	
12/04/18	None	None	On-Site	43,289	
12/05/18	None	None	On-Site & Sampled	36,943	
12/06/18	None	None	On-Site	35,737	
12/07/18	None	None	On-Site	37,328	
12/08/18	None	None			
12/09/18	None	None			
12/10/18	None	None	On-Site	3,721	
12/11/18	None	None	On-Site	48,018	
12/12/18	None	None	On-Site	36,636	
12/13/18	None	None	On-Site	37,187	
12/14/18	None	None	On-Site	42,776	
12/15/18	None	None			
12/16/18	None	None			
12/17/18	None	None	On-Site	1,050	
12/18/18	None	None	On-Site	44,947	
12/19/18	None	None	On-Site	50,579	
12/20/18	None	None	On-Site	35,059	System shut down
12/21/18	None	None			
12/22/18	None	None			
12/23/18	None	None			
12/24/18	None	None			
12/25/18	None	None			
12/26/18	None	None			
12/27/18	None	None			
12/28/18	None	None			
12/29/18	None	None			
12/30/18	None	None			
12/31/18	None	None			

Total Monthly Discharge (gal)

455,998

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - January 2019**

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
01/01/19	None	None			GWTP Shutdown Month of January
01/02/19	None	None			
01/03/19	None	None			
01/04/19	None	None			
01/05/19	None	None			
01/06/19	None	None			
01/07/19	None	None			
01/08/19	None	None			
01/09/19	None	None			
01/10/19	None	None			
01/11/19	None	None			
01/12/19	None	None			
01/13/19	None	None			
01/14/19	None	None			
01/15/19	None	None			
01/16/19	None	None			
01/17/19	None	None			
01/18/19	None	None			
01/19/19	None	None			
01/20/19	None	None			
01/21/19	None	None			
01/22/19	None	None			
01/23/19	None	None			
01/24/19	None	None			
01/25/19	None	None			
01/26/19	None	None			
01/27/19	None	None			
01/28/19	None	None			
01/29/19	None	None			
01/30/19	None	None			
01/31/19	None	None			

Total Monthly Discharge (gal)

0

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log - February 2019

Date	Inspection Visits	Changes or Replacements of Treatment System	Samples Taken	Quantities of Groundwater Discharged / Day - GAL	Notes
02/01/19	None	None			GWTP Shutdown Month of February
02/02/19	None	None			
02/03/19	None	None			
02/04/19	None	None			
02/05/19	None	None			
02/06/19	None	None			
02/07/19	None	None			
02/08/19	None	None			
02/09/19	None	None			
02/10/19	None	None			
02/11/19	None	None			
02/12/19	None	None			
02/13/19	None	None			
02/14/19	None	None			
02/15/19	None	None			
02/16/19	None	None			
02/17/19	None	None			
02/18/19	None	None			
02/19/19	None	None			
02/20/19	None	None			
02/21/19	None	None			
02/22/19	None	None			
02/23/19	None	None			
02/24/19	None	None			
02/25/19	None	None			
02/26/19	None	None			
02/27/19	None	None			
02/28/19	None	None			

Total Monthly Discharge (gal)

0

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log- ISCO Sample Analyses - September 2018**

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
9/1/2018	9/1/2018					
9/2/2018	9/2/2018					
9/3/2018	9/3/2018	8.82	0.10	0.00	0.50	
9/4/2018	9/4/2018	9.16	0.10	0.00	0.05	
9/5/2018	9/5/2018	9.04	0.13	0.00	0.05	
9/6/2018	9/6/2018	9.09	0.09	0.00	0.05	
9/7/2018	9/7/2018	9.10	0.10	0.00	0.05	
9/8/2018	9/8/2018					
9/9/2018	9/9/2018					
9/10/2018	9/10/2018	8.26	0.09	0.00	0.05	
9/11/2018	9/11/2018	9.24	0.05	0.00	0.05	
9/12/2018	9/12/2018	9.25	0.05	0.00	0.05	
9/13/2018	9/13/2018	9.25	0.06	0.00	0.05	
9/14/2018	9/14/2018	9.30	0.06	0.00	0.05	
9/15/2018	9/15/2018					
9/16/2018	9/16/2018					
9/17/2018	9/17/2018	8.42	0.05	0.00	0.05	
9/18/2018	9/18/2018	9.17	0.17	0.00	0.05	
9/19/2018	9/19/2018	9.16	0.12	0.00	0.05	
9/20/2018	9/20/2018	9.13	0.21	0.00	0.05	
9/21/2018	9/21/2018					
9/22/2018	9/22/2018					
9/23/2018	9/23/2018					
9/24/2018	9/24/2018	8.48	0.15	0.00	0.05	
9/25/2018	9/25/2018	9.41	0.08	0.00	0.05	
9/26/2018	9/26/2018	9.41	0.10	0.00	0.05	
9/27/2018	9/27/2018	9.44	0.04	0.00	0.05	
9/28/2018	9/28/2018	9.62	0.07	0.00	0.05	
9/29/2018	9/29/2018					
9/30/2018	9/30/2018					

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log- ISCO Sample Analyses - October 2018

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
10/1/2018	10/1/2018	9.20	0.05	0.00	0.05	
10/2/2018	10/2/2018	9.18	0.08	0.00	0.05	
10/3/2018	10/3/2018	9.13	0.07	0.00	0.05	
10/4/2018	10/4/2018	9.15	0.06	0.00	0.05	
10/5/2018	10/5/2018					
10/6/2018	10/6/2018					
10/7/2018	10/7/2018					
10/8/2018	10/8/2018	8.09	0.05	0.00	0.05	
10/9/2018	10/9/2018	9.27	0.06	0.80	0.90	
10/10/2018	10/10/2018	9.13	0.08	0.00	0.05	
10/11/2018	10/11/2018	9.20	0.10	0.00	0.05	
10/12/2018	10/12/2018					
10/13/2018	10/13/2018					
10/14/2018	10/14/2018					
10/15/2018	10/15/2018	8.24	0.05	0.00	0.05	
10/16/2018	10/16/2018	9.36	0.06	0.00	0.05	
10/17/2018	10/17/2018	9.27	0.06	0.00	0.05	
10/18/2018	10/18/2018					
10/19/2018	10/19/2018					
10/20/2018	10/20/2018					
10/21/2018	10/21/2018					
10/22/2018	10/22/2018	8.14	0.05	0.00	0.05	
10/23/2018	10/23/2018	9.41	0.05	0.00	0.05	
10/24/2018	10/24/2018	9.47	0.05	0.00	0.05	
10/25/2018	10/25/2018	9.60	0.05	0.00	0.05	
10/26/2018	10/26/2018	9.56	0.05	0.00	0.05	
10/27/2018	10/27/2018					
10/28/2018	10/28/2018					
10/29/2018	10/29/2018	8.97	0.05	0.00	0.05	
10/30/2018	10/30/2018	9.62	0.05	0.00	0.05	
10/31/2018	10/31/2018	9.93	0.05	0.00	0.05	

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log- ISCO Sample Analyses - November 2018**

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
11/1/2018	11/1/2018	9.75				
11/2/2018	11/2/2018	9.66	0.05	0.00	0.05	
11/3/2018	11/3/2018					
11/4/2018	11/4/2018					
11/5/2018	11/5/2018	7.85	0.05	0.00	0.05	
11/6/2018	11/6/2018	9.34	0.05	0.00	0.05	
11/7/2018	11/7/2018	9.43	0.05	0.00	0.05	
11/8/2018	11/8/2018	9.40	0.15	0.00	0.05	
11/9/2018	11/9/2018	9.44	0.05	0.00	0.05	
11/10/2018	11/10/2018					
11/11/2018	11/11/2018					
11/12/2018	11/12/2018	6.97	0.05	0.00	0.05	
11/13/2018	11/13/2018	9.80	0.04	0.00	0.05	
11/14/2018	11/14/2018	9.69	0.02	0.00	0.05	
11/15/2018	11/15/2018	9.77	0.02	0.00	0.05	
11/16/2018	11/16/2018	9.74	0.04	0.00	0.05	
11/17/2018	11/17/2018					
11/18/2018	11/18/2018					
11/19/2018	11/19/2018	8.17	0.04	0.00	0.05	
11/20/2018	11/20/2018	9.57	0.06	0.00	0.05	
11/21/2018	11/21/2018	9.87	0.05	0.00	0.05	System shut down for Thanksgiving weekend
11/22/2018	11/22/2018					
11/23/2018	11/23/2018					
11/24/2018	11/24/2018					
11/25/2018	11/25/2018	9.48	0.04	0.00	0.05	
11/26/2018	11/26/2018	10.24	0.04	0.00	0.05	
11/27/2018	11/27/2018	9.96	0.02	0.00	0.05	
11/28/2018	11/28/2018	10.21	0.02	0.00	0.05	
11/29/2018	11/29/2018	10.71	0.02	0.00	0.05	
11/30/2018	11/30/2018	9.94	0.09	0.00	0.05	

SECTION D: REPORTING REQUIREMENTS/b) iii)**12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log- ISCO Sample Analyses - December 2018**

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
12/1/2018	12/1/2018					
12/2/2018	12/2/2018					
12/3/2018	12/3/2018	8.44	0.04	0.00	0.05	
12/4/2018	12/4/2018	7.71	0.54	0.90	1.00	
12/5/2018	12/5/2018	7.77	0.56	0.90	1.00	
12/6/2018	12/6/2018	7.64	0.56	0.90	1.00	
12/7/2018	12/7/2018	7.71	0.72	0.90	1.00	
12/8/2018	12/8/2018					
12/9/2018	12/9/2018					
12/10/2018	12/10/2018	7.29	0.75	0.90	1.00	
12/11/2018	12/11/2018	7.59	0.52	0.90	1.00	
12/12/2018	12/12/2018	7.61	0.71	0.90	1.00	
12/13/2018	12/13/2018	7.59	0.60	0.90	1.00	
12/14/2018	12/14/2018	7.58	0.45	0.90	1.00	
12/15/2018	12/15/2018					
12/16/2018	12/16/2018					
12/17/2018	12/17/2018	7.53	0.50	0.90	1.00	
12/18/2018	12/18/2018	7.66	0.74	0.90	1.00	
12/19/2018	12/19/2018	7.57	0.63	0.90	1.00	
12/20/2018	12/20/2018	7.62	0.72	0.90	1.00	System shut down
12/21/2018	12/21/2018					
12/22/2018	12/22/2018					
12/23/2018	12/23/2018					
12/24/2018	12/24/2018					
12/25/2018	12/25/2018					
12/26/2018	12/26/2018					
12/27/2018	12/27/2018					
12/28/2018	12/28/2018					
12/29/2018	12/29/2018					
12/30/2018	12/30/2018					
12/31/2018	12/31/2018					

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log- ISCO Sample Analyses - January 2019

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
1/1/2019	1/1/2019					System shut down for January
1/2/2019	1/2/2019					
1/3/2019	1/3/2019					
1/4/2019	1/4/2019					
1/5/2019	1/5/2019					
1/6/2019	1/6/2019					
1/7/2019	1/7/2019					
1/8/2019	1/8/2019					
1/9/2019	1/9/2019					
1/10/2019	1/10/2019					
1/11/2019	1/11/2019					
1/12/2019	1/12/2019					
1/13/2019	1/13/2019					
1/14/2019	1/14/2019					
1/15/2019	1/15/2019					
1/16/2019	1/16/2019					
1/17/2019	1/17/2019					
1/18/2019	1/18/2019					
1/19/2019	1/19/2019					
1/20/2019	1/20/2019					
1/21/2019	1/21/2019					
1/22/2019	1/22/2019					
1/23/2019	1/23/2019					
1/24/2019	1/24/2019					
1/25/2019	1/25/2019					
1/26/2019	1/26/2019					
1/27/2019	1/27/2019					
1/28/2019	1/28/2019					
1/29/2019	1/29/2019					
1/30/2019	1/30/2019					
1/31/2019	1/31/2019					

SECTION D: REPORTING REQUIREMENTS/b) iii)
12950 Eckles Road
Livonia, MI 48150
Permit No.: SD6-94508
Maintenance Log- ISCO Sample Analyses - February 2019

	Permit Limits	5-11.5	3.98 mg/L	N/A	2.77 mg/L	
DATE	SAMPLE DATE	pH	(mg/L) NICKEL	(mg/L) HEX Cr	(mg/L) TOTAL Cr	NOTES
2/1/2019	2/1/2019					System shut down for February
2/2/2019	2/2/2019					
2/3/2019	2/3/2019					
2/4/2019	2/4/2019					
2/5/2019	2/5/2019					
2/6/2019	2/6/2019					
2/7/2019	2/7/2019					
2/8/2019	2/8/2019					
2/9/2019	2/9/2019					
2/10/2019	2/10/2019					
2/11/2019	2/11/2019					
2/12/2019	2/12/2019					
2/13/2019	2/13/2019					
2/14/2019	2/14/2019					
2/15/2019	2/15/2019					
2/16/2019	2/16/2019					
2/17/2019	2/17/2019					
2/18/2019	2/18/2019					
2/19/2019	2/19/2019					
2/20/2019	2/20/2019					
2/21/2019	2/21/2019					
2/22/2019	2/22/2019					
2/23/2019	2/23/2019					
2/24/2019	2/24/2019					
2/25/2019	2/25/2019					
2/26/2019	2/26/2019					
2/27/2019	2/27/2019					
2/28/2019	2/28/2019					

Attachment A

GWTP Influent Sample

Laboratory Analytical Reports

Attachment B
GWTP Effluent Sample
Laboratory Analytical Reports

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-100792-1

Client Project/Site: 12607, RACER Eckles Rd

For:

GHD Services Inc.

26850 Haggerty Rd.

Farmington Hills, Michigan 48331

Attn: Ms. Ruth Mickle



Authorized for release by:

9/19/2018 10:29:03 AM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Job ID: 240-100792-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-100792-1

Comments

No additional comments.

Receipt

The sample was received on 9/6/2018 10:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.0° C.

GC Semi VOA

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

Metals

Method(s) 200.7 Rev 4.4: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: WT-012607-090518-EE-001 (240-100792-1). The continuing calibration blanks and method blanks may not support the lower PQL.

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

General Chemistry

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

Organic Prep

Method(s) 3520C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-344245.

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
L	A negative instrument reading had an absolute value greater than the reporting limit

General Chemistry

Qualifier	Qualifier Description
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.
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)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-100792-1	WT-012607-090518-EE-001	Water	09/05/18 13:20	09/06/18 10:00

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Client Sample ID: WT-012607-090518-EE-001

Lab Sample ID: 240-100792-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.060		0.010	mg/L	1		200.7 Rev 4.4	Total
Zinc	0.046		0.020	mg/L	1		200.7 Rev 4.4	Recoverable
								Total
								Recoverable

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Method	Method Description	Protocol	Laboratory
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
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
200.7	Preparation, Total Recoverable Metals	EPA	TAL CAN
245.1	Preparation, Mercury	EPA	TAL CAN
3520C	Liquid-Liquid Extraction (Continuous)	SW846	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

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

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

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

Client Sample ID: WT-012607-090518-EE-001

Date Collected: 09/05/18 13:20

Date Received: 09/06/18 10:00

Lab Sample ID: 240-100792-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.096	U	0.096	ug/L		09/07/18 07:24	09/12/18 11:36	1
Aroclor-1221	0.096	U	0.096	ug/L		09/07/18 07:24	09/12/18 11:36	1
Aroclor-1232	0.096	U	0.096	ug/L		09/07/18 07:24	09/12/18 11:36	1
Aroclor-1242	0.096	U	0.096	ug/L		09/07/18 07:24	09/12/18 11:36	1
Aroclor-1248	0.096	U	0.096	ug/L		09/07/18 07:24	09/12/18 11:36	1
Aroclor-1254	0.096	U	0.096	ug/L		09/07/18 07:24	09/12/18 11:36	1
Aroclor-1260	0.096	U	0.096	ug/L		09/07/18 07:24	09/12/18 11:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	52		10 - 114			09/07/18 07:24	09/12/18 11:36	1
Tetrachloro-m-xylene	59		15 - 131			09/07/18 07:24	09/12/18 11:36	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

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

Client Sample ID: WT-012607-090518-EE-001

Date Collected: 09/05/18 13:20

Date Received: 09/06/18 10:00

Lab Sample ID: 240-100792-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		09/07/18 14:00	09/11/18 05:46	1
Nickel	0.060		0.010	mg/L		09/07/18 14:00	09/11/18 05:46	1
Lead	0.050	U	0.050	mg/L		09/07/18 14:00	09/11/18 21:07	1
Zinc	0.046		0.020	mg/L		09/07/18 14:00	09/11/18 05:46	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-012607-090518-EE-001

Date Collected: 09/05/18 13:20

Date Received: 09/06/18 10:00

Lab Sample ID: 240-100792-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		09/07/18 14:00	09/10/18 14:26	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

General Chemistry

Client Sample ID: WT-012607-090518-EE-001

Date Collected: 09/05/18 13:20

Date Received: 09/06/18 10:00

Lab Sample ID: 240-100792-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.8	U	4.8	mg/L			09/18/18 18:05	1
Cr (VI)	0.0050	U	0.0050	mg/L			09/06/18 10:33	1
Total Suspended Solids	4.0	U	4.0	mg/L			09/10/18 11:16	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

GC Semi VOA

Prep Batch: 344245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total/NA	Water	3520C	
MB 240-344245/9-A	Method Blank	Total/NA	Water	3520C	
LCS 240-344245/10-A	Lab Control Sample	Total/NA	Water	3520C	

Analysis Batch: 344864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total/NA	Water	608	344245
MB 240-344245/9-A	Method Blank	Total/NA	Water	608	344245
LCS 240-344245/10-A	Lab Control Sample	Total/NA	Water	608	344245

Metals

Prep Batch: 344310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total Recoverable	Water	200.7	
MB 240-344310/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 240-344310/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Prep Batch: 344311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total/NA	Water	245.1	
MB 240-344311/1-A	Method Blank	Total/NA	Water	245.1	
LCS 240-344311/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 344621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total/NA	Water	245.1	344311
MB 240-344311/1-A	Method Blank	Total/NA	Water	245.1	344311
LCS 240-344311/2-A	Lab Control Sample	Total/NA	Water	245.1	344311

Analysis Batch: 344627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total Recoverable	Water	200.7 Rev 4.4	344310
MB 240-344310/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	344310
LCS 240-344310/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	344310

Analysis Batch: 344908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total Recoverable	Water	200.7 Rev 4.4	344310
MB 240-344310/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	344310
LCS 240-344310/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	344310

General Chemistry

Analysis Batch: 344099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total/NA	Water	3500-Cr B-2009	
MB 240-344099/3	Method Blank	Total/NA	Water	3500-Cr B-2009	
LCS 240-344099/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	

TestAmerica Canton

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

General Chemistry (Continued)

Analysis Batch: 344584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total/NA	Water	SM 2540D	
MB 240-344584/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 240-344584/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 345990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-100792-1	WT-012607-090518-EE-001	Total/NA	Water	1664A	
MB 240-345990/1	Method Blank	Total/NA	Water	1664A	
LCS 240-345990/2	Lab Control Sample	Total/NA	Water	1664A	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

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

Lab Sample ID: MB 240-344245/9-A

Matrix: Water

Analysis Batch: 344864

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 344245

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		09/07/18 07:24	09/12/18 08:51	1
Aroclor-1221	0.10	U	0.10	ug/L		09/07/18 07:24	09/12/18 08:51	1
Aroclor-1232	0.10	U	0.10	ug/L		09/07/18 07:24	09/12/18 08:51	1
Aroclor-1242	0.10	U	0.10	ug/L		09/07/18 07:24	09/12/18 08:51	1
Aroclor-1248	0.10	U	0.10	ug/L		09/07/18 07:24	09/12/18 08:51	1
Aroclor-1254	0.10	U	0.10	ug/L		09/07/18 07:24	09/12/18 08:51	1
Aroclor-1260	0.10	U	0.10	ug/L		09/07/18 07:24	09/12/18 08:51	1
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	57		10 - 114			09/07/18 07:24	09/12/18 08:51	1
Tetrachloro-m-xylene	62		15 - 131			09/07/18 07:24	09/12/18 08:51	1

Lab Sample ID: LCS 240-344245/10-A

Matrix: Water

Analysis Batch: 344864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 344245

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	1.70		ug/L		68	50 - 114
Aroclor-1260	2.50	1.97		ug/L		79	8 - 127
Surrogate	%Recovery	LCS Qualifier	Limits				
DCB Decachlorobiphenyl	70		10 - 114				
Tetrachloro-m-xylene	65		15 - 131				

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-344310/1-A

Matrix: Water

Analysis Batch: 344627

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 344310

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		09/07/18 14:00	09/11/18 05:05	1
Nickel	0.010	U	0.010	mg/L		09/07/18 14:00	09/11/18 05:05	1
Zinc	0.020	U	0.020	mg/L		09/07/18 14:00	09/11/18 05:05	1

Lab Sample ID: MB 240-344310/1-A

Matrix: Water

Analysis Batch: 344908

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 344310

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.050	U	0.050	mg/L		09/07/18 14:00	09/11/18 20:58	1

Lab Sample ID: LCS 240-344310/2-A

Matrix: Water

Analysis Batch: 344627

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 344310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.181		mg/L		90	85 - 115

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

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

Lab Sample ID: LCS 240-344310/2-A
Matrix: Water
Analysis Batch: 344627

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 344310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nickel	0.500	0.477		mg/L		95	85 - 115
Zinc	0.500	0.504		mg/L		101	85 - 115

Lab Sample ID: LCS 240-344310/2-A
Matrix: Water
Analysis Batch: 344908

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 344310

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	0.500	0.490		mg/L		98	85 - 115

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-344311/1-A
Matrix: Water
Analysis Batch: 344621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344311

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U L	0.00020	mg/L		09/07/18 14:00	09/10/18 14:04	1

Lab Sample ID: LCS 240-344311/2-A
Matrix: Water
Analysis Batch: 344621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344311

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00504		mg/L		101	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-345990/1
Matrix: Water
Analysis Batch: 345990

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			09/18/18 17:09	1

Lab Sample ID: LCS 240-345990/2
Matrix: Water
Analysis Batch: 345990

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	31.90		mg/L		80	78 - 114

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-344099/3

Matrix: Water

Analysis Batch: 344099

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L	-		09/06/18 09:02	1

Lab Sample ID: LCS 240-344099/4

Matrix: Water

Analysis Batch: 344099

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.275		mg/L	-	110	80 - 123

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

Lab Sample ID: MB 240-344584/1

Matrix: Water

Analysis Batch: 344584

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L	-		09/10/18 11:16	1

Lab Sample ID: LCS 240-344584/2

Matrix: Water

Analysis Batch: 344584

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	90.9	89.0		mg/L	-	98	64 - 120

TestAmerica Canton

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCBP2 (10-114)	TCX2 (15-131)
240-100792-1	WT-012607-090518-EE-001	52	59
LCS 240-344245/10-A	Lab Control Sample	70	65
MB 240-344245/9-A	Method Blank	57	62

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Client Sample ID: WT-012607-090518-EE-001

Lab Sample ID: 240-100792-1

Date Collected: 09/05/18 13:20

Matrix: Water

Date Received: 09/06/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			344245	09/07/18 07:24	SDE	TAL CAN
Total/NA	Analysis	608		1	344864	09/12/18 11:36	LSH	TAL CAN
Total Recoverable	Prep	200.7			344310	09/07/18 14:00	MBB	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	344627	09/11/18 05:46	WKD	TAL CAN
Total Recoverable	Prep	200.7			344310	09/07/18 14:00	MBB	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	344908	09/11/18 21:07	WKD	TAL CAN
Total/NA	Prep	245.1			344311	09/07/18 14:00	MBB	TAL CAN
Total/NA	Analysis	245.1		1	344621	09/10/18 14:26	DSH	TAL CAN
Total/NA	Analysis	1664A		1	345990	09/18/18 18:05	JWW	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	344099	09/06/18 10:33	MMM	TAL CAN
Total/NA	Analysis	SM 2540D		1	344584	09/10/18 11:16	MAC	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-100792-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Canton

Phone: 810.229.2763 Fax:

Regulatory Progra

☐ DW ☐ NPDES

other:

11

TAL-8210 (0713)

Company Name: GWH		Client Contact	
Address: 26850 Haggerty Rd			
City/State/Zip: Farmington Hills MI			
Phone: (248) 843-3400			
Fax:			
Project Name: RACER - GUTPHONIA			
Site: hivemic			
PO # 012607-701718-03			
Sample Identification			
WT-012607-090518-EC-001			
Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	# of Cont.
9/5/18	1320	C	1
Matrix			
WT			
Analysis Turnaround Time			
☐ CALENDAR DAYS ☒ WORKING DAYS TAT if different from Below: _____ ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			
Project Manager: Chris Mendenhall			
Tel/Fax:			
Site Contact: E Engler			
Lab Contact: D Hedden			
COG No: 1 of 2			
Sampler:			
For Lab Use Only:			
Walk-in Client:			
Lab Sampling:			
Job / SDG No.:			
Sample Specific Notes:			
Effluent Composite			
 240-100792 Chain of Custody			
Filtered Sample (Y/N)			
Perform MS / MSD (Y/N)			
PCBs			
MTCM			
Metals			
TSS, HCLC			
2211			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months			
Possible Hazard Identification:			
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.			
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown			
Special Instructions/QC Requirements & Comments:			
Custody Seal No.:			
Relinquished by: E. Engler			
Relinquished by:			
Relinquished by:			
Custody Seals Intact: ☐ Yes ☐ No			
Cooler Temp. (°C):			
Obs'd:			
Cor'd:			
Therm ID No.:			
Received by: per			
Date/Time: 9/5/18			
Company: GWH			
Received by:			
Date/Time:			
Company:			
Received in Laboratory by:			
Date/Time:			
Company:			

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 100792

Canton Facility

Client GADSite Name

Cooler unpacked by:

Cooler Received on 9-6-18Opened on 9-6-18POPFedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Receipt After-hours: Drop-off Date/Time

Storage Location

TestAmerica Cooler # Foam Box Client Cooler Box OtherPacking material used: Bubble Wrap Foam Plastic Bag None OtherCOOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

☐ See Multiple Cooler FormIR GUN# IR-8 (CF +0 °C) Observed Cooler Temp. 6.0 °C Corrected Cooler Temp. 6.0 °CIR GUN #36 (CF -0.3°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes Yes No-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No-Were tamper/custody seals intact and uncompromised? Yes No NA3. Shippers' packing slip attached to the cooler(s)? Yes No4. Did custody papers accompany the sample(s)? Yes No5. Were the custody papers relinquished & signed in the appropriate place? Yes No6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No7. Did all bottles arrive in good condition (Unbroken)? Yes No8. Could all bottle labels be reconciled with the COC? Yes No9. Were correct bottle(s) used for the test(s) indicated? Yes No10. Sufficient quantity received to perform indicated analyses? Yes No11. Are these work share samples? Yes No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC84915113. Were VOAs on the COC? Yes No14. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes No16. Was a LL Hg or Me Hg trip blank present? Yes NoContacted PM Date by via Verbal Voice Mail OtherConcerning Tests that are not
checked for pH by
Receiving:VOAs
Oil and Grease
TOC

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

POP

18. SAMPLE CONDITION

Sample(s) were received after the recommended holding time had expired.Sample(s) were received in a broken container.Sample(s) were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) were further preserved in the laboratory.Time preserved: Preservative(s) added/Lot number(s):

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservative</u> <u>Added (mls)</u>	<u>Lot #</u>
WT-012607-090518-EE-001	240-100792-B-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-012607-090518-EE-001	240-100792-E-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
WT-012607-090518-EE-001	240-100792-F-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____

TestAmerica

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: 240-102301-1

Client Project/Site: 12607, RACER Eckles Rd

For:

GHD Services Inc.

26850 Haggerty Rd.

Farmington Hills, Michigan 48331

Attn: Ms. Ruth Mickle



Authorized for release by:

10/17/2018 4:44:25 PM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

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results through

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Job ID: 240-102301-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-102301-1

Comments

The bottles were labeled EE-001; the COC was EE-002. The sample ID should be EE-001.

Receipt

The sample was received on 10/4/2018 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3° C.

GC Semi VOA

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

Metals

Method(s) 200.7 Rev 4.4: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: WT-012607-100318-EE-001 (240-102301-1). The continuing calibration blanks and method blanks may not support the lower PQL.

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

General Chemistry

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

Organic Prep

Method(s) 3520C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-348681.

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
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.
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)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-102301-1	WT-012607-100318-EE-001	Water	10/03/18 17:45	10/04/18 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Client Sample ID: WT-012607-100318-EE-001

Lab Sample ID: 240-102301-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.086		0.010	mg/L	1		200.7 Rev 4.4	Total
Total Suspended Solids	4.0		4.0	mg/L	1		SM 2540D	Recoverable Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Method	Method Description	Protocol	Laboratory
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
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
200.7	Preparation, Total Recoverable Metals	EPA	TAL CAN
245.1	Preparation, Mercury	EPA	TAL CAN
3520C	Liquid-Liquid Extraction (Continuous)	SW846	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

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

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

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

Client Sample ID: WT-012607-100318-EE-001

Date Collected: 10/03/18 17:45

Date Received: 10/04/18 09:30

Lab Sample ID: 240-102301-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		10/05/18 06:54	10/09/18 15:30	1
Aroclor-1221	0.095	U	0.095	ug/L		10/05/18 06:54	10/09/18 15:30	1
Aroclor-1232	0.095	U	0.095	ug/L		10/05/18 06:54	10/09/18 15:30	1
Aroclor-1242	0.095	U	0.095	ug/L		10/05/18 06:54	10/09/18 15:30	1
Aroclor-1248	0.095	U	0.095	ug/L		10/05/18 06:54	10/09/18 15:30	1
Aroclor-1254	0.095	U	0.095	ug/L		10/05/18 06:54	10/09/18 15:30	1
Aroclor-1260	0.095	U	0.095	ug/L		10/05/18 06:54	10/09/18 15:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	72		10 - 114			10/05/18 06:54	10/09/18 15:30	1
Tetrachloro-m-xylene	67		15 - 131			10/05/18 06:54	10/09/18 15:30	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

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

Client Sample ID: WT-012607-100318-EE-001

Date Collected: 10/03/18 17:45

Date Received: 10/04/18 09:30

Lab Sample ID: 240-102301-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		10/05/18 10:01	10/08/18 11:34	1
Nickel	0.086		0.010	mg/L		10/05/18 10:01	10/08/18 11:34	1
Lead	0.050	U	0.050	mg/L		10/05/18 10:01	10/08/18 11:34	1
Zinc	0.020	U	0.020	mg/L		10/05/18 10:01	10/08/18 11:34	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-012607-100318-EE-001

Date Collected: 10/03/18 17:45

Date Received: 10/04/18 09:30

Lab Sample ID: 240-102301-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		10/05/18 12:00	10/09/18 10:24	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

General Chemistry

Client Sample ID: WT-012607-100318-EE-001

Date Collected: 10/03/18 17:45

Date Received: 10/04/18 09:30

Lab Sample ID: 240-102301-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.8	U	4.8	mg/L			10/17/18 13:08	1
Cr (VI)	0.0050	U	0.0050	mg/L			10/04/18 14:11	1
Total Suspended Solids	4.0		4.0	mg/L			10/05/18 12:44	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

GC Semi VOA

Prep Batch: 348681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total/NA	Water	3520C	
MB 240-348681/16-A	Method Blank	Total/NA	Water	3520C	
LCS 240-348681/17-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 240-348681/18-A	Lab Control Sample Dup	Total/NA	Water	3520C	

Analysis Batch: 349093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total/NA	Water	608	348681
MB 240-348681/16-A	Method Blank	Total/NA	Water	608	348681
LCS 240-348681/17-A	Lab Control Sample	Total/NA	Water	608	348681
LCSD 240-348681/18-A	Lab Control Sample Dup	Total/NA	Water	608	348681

Metals

Prep Batch: 348750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total Recoverable	Water	200.7	
MB 240-348750/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 240-348750/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Prep Batch: 348755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total/NA	Water	245.1	
MB 240-348755/1-A	Method Blank	Total/NA	Water	245.1	
LCS 240-348755/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 348953

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total Recoverable	Water	200.7 Rev 4.4	348750
MB 240-348750/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	348750
LCS 240-348750/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	348750

Analysis Batch: 349260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total/NA	Water	245.1	348755
MB 240-348755/1-A	Method Blank	Total/NA	Water	245.1	348755
LCS 240-348755/2-A	Lab Control Sample	Total/NA	Water	245.1	348755

General Chemistry

Analysis Batch: 348542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total/NA	Water	3500-Cr B-2009	
MB 240-348542/3	Method Blank	Total/NA	Water	3500-Cr B-2009	
LCS 240-348542/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 348782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total/NA	Water	SM 2540D	
MB 240-348782/1	Method Blank	Total/NA	Water	SM 2540D	

TestAmerica Canton

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

General Chemistry (Continued)

Analysis Batch: 348782 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-348782/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 350518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-102301-1	WT-012607-100318-EE-001	Total/NA	Water	1664A	
MB 240-350518/1	Method Blank	Total/NA	Water	1664A	
LCS 240-350518/2	Lab Control Sample	Total/NA	Water	1664A	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

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

Lab Sample ID: MB 240-348681/16-A

Matrix: Water

Analysis Batch: 349093

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 348681

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		10/05/18 06:54	10/09/18 09:02	1
Aroclor-1221	0.10	U	0.10	ug/L		10/05/18 06:54	10/09/18 09:02	1
Aroclor-1232	0.10	U	0.10	ug/L		10/05/18 06:54	10/09/18 09:02	1
Aroclor-1242	0.10	U	0.10	ug/L		10/05/18 06:54	10/09/18 09:02	1
Aroclor-1248	0.10	U	0.10	ug/L		10/05/18 06:54	10/09/18 09:02	1
Aroclor-1254	0.10	U	0.10	ug/L		10/05/18 06:54	10/09/18 09:02	1
Aroclor-1260	0.10	U	0.10	ug/L		10/05/18 06:54	10/09/18 09:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	77		10 - 114	10/05/18 06:54	10/09/18 09:02	1
Tetrachloro-m-xylene	77		15 - 131	10/05/18 06:54	10/09/18 09:02	1

Lab Sample ID: LCS 240-348681/17-A

Matrix: Water

Analysis Batch: 349093

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 348681

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aroclor-1016	2.50	2.09		ug/L		84	50 - 114
Aroclor-1260	2.50	2.00		ug/L		80	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	72		10 - 114
Tetrachloro-m-xylene	73		15 - 131

Lab Sample ID: LCSD 240-348681/18-A

Matrix: Water

Analysis Batch: 349093

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 348681

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aroclor-1016	2.50	1.94		ug/L		78	50 - 114	3	30
Aroclor-1260	2.50	1.99		ug/L		79	8 - 127	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	79		10 - 114
Tetrachloro-m-xylene	69		15 - 131

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-348750/1-A

Matrix: Water

Analysis Batch: 348953

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 348750

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		10/05/18 10:01	10/08/18 09:32	1
Nickel	0.010	U	0.010	mg/L		10/05/18 10:01	10/08/18 09:32	1
Lead	0.050	U	0.050	mg/L		10/05/18 10:01	10/08/18 09:32	1
Zinc	0.020	U	0.020	mg/L		10/05/18 10:01	10/08/18 09:32	1

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Lab Sample ID: LCS 240-348750/2-A
Matrix: Water
Analysis Batch: 348953

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 348750

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.194		mg/L		97	85 - 115
Nickel	0.500	0.509		mg/L		102	85 - 115
Lead	0.500	0.497		mg/L		99	85 - 115
Zinc	0.500	0.520		mg/L		104	85 - 115

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-348755/1-A
Matrix: Water
Analysis Batch: 349260

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 348755

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		10/05/18 12:00	10/09/18 09:32	1

Lab Sample ID: LCS 240-348755/2-A
Matrix: Water
Analysis Batch: 349260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 348755

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00460		mg/L		92	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-350518/1
Matrix: Water
Analysis Batch: 350518

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			10/17/18 10:18	1

Lab Sample ID: LCS 240-350518/2
Matrix: Water
Analysis Batch: 350518

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	35.40		mg/L		89	78 - 114

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-348542/3
Matrix: Water
Analysis Batch: 348542

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			10/04/18 09:52	1

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Method: 3500-Cr B-2009 - Chromium, Hexavalent (Continued)

Lab Sample ID: LCS 240-348542/4

Matrix: Water

Analysis Batch: 348542

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.275		mg/L		110	80 - 123

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

Lab Sample ID: MB 240-348782/1

Matrix: Water

Analysis Batch: 348782

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L			10/05/18 12:44	1

Lab Sample ID: LCS 240-348782/2

Matrix: Water

Analysis Batch: 348782

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	31.4	25.0		mg/L		80	64 - 120

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCBP2 (10-114)	TCX2 (15-131)
240-102301-1	WT-012607-100318-EE-001	72	67
LCS 240-348681/17-A	Lab Control Sample	72	73
LCSD 240-348681/18-A	Lab Control Sample Dup	79	69
MB 240-348681/16-A	Method Blank	77	77

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Client Sample ID: WT-012607-100318-EE-001

Lab Sample ID: 240-102301-1

Date Collected: 10/03/18 17:45

Matrix: Water

Date Received: 10/04/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			348681	10/05/18 06:54	SDE	TAL CAN
Total/NA	Analysis	608		1	349093	10/09/18 15:30	KMG	TAL CAN
Total Recoverable	Prep	200.7			348750	10/05/18 10:01	WKD	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	348953	10/08/18 11:34	KLC	TAL CAN
Total/NA	Prep	245.1			348755	10/05/18 12:00	WKD	TAL CAN
Total/NA	Analysis	245.1		1	349260	10/09/18 10:24	WKD	TAL CAN
Total/NA	Analysis	1664A		1	350518	10/17/18 13:08	ACR	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	348542	10/04/18 14:11	BLW	TAL CAN
Total/NA	Analysis	SM 2540D		1	348782	10/05/18 12:44	ACR	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-102301-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-18 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Canton

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 102301

Canton Facility

Client EAD Site Name _____ Cooler unpacked by: SL
 Cooler Received on 10/4/18 Opened on 10/4/18
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time

Storage Location

TestAmerica Cooler # 1A Foam Box Client Cooler Box Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
 IR GUN# IR-8 (CF +0.9 °C) Observed Cooler Temp. 3.4 °C Corrected Cooler Temp. 4.3 °C
 IR GUN #36 (CF +0.6 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA

3. Shippers' packing slip attached to the cooler(s)? Yes No

4. Did custody papers accompany the sample(s)? Yes No

5. Were the custody papers relinquished & signed in the appropriate place? Yes No

6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels be reconciled with the COC? Yes No

9. Were correct bottle(s) used for the test(s) indicated? Yes No

10. Sufficient quantity received to perform indicated analyses? Yes No

11. Are these work share samples? Yes No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA

13. Were VOAs on the COC? Yes No

14. Were air bubbles >6 mm in any VOA vials? Yes  Larger than this. Yes No NA

15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No

16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not
checked for pH by
Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: JR

Sample I.D. on bottle is EE-001 with same date & time

Sample I.D. on Chain is WT-012607-10035-EE-002, will log per the I.D. on the bottle

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> pH	<u>Preservative</u> Added (mls)	<u>Lot #</u>
WT-012607-100318-EE-001	240-102301-B-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-012607-100318-EE-001	240-102301-E-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
WT-012607-100318-EE-001	240-102301-F-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-104074-1

Client Project/Site: 12607, RACER Eckles Rd

For:

GHD Services Inc.

26850 Haggerty Rd.

Farmington Hills, Michigan 48331

Attn: Ms. Ruth Mickle



Authorized for release by:

11/17/2018 3:50:11 PM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Job ID: 240-104074-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-104074-1

Comments

Per GHD, the sample collection date is 11-7.

Receipt

The sample was received on 11/8/2018 9:45 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.9° C.

GC Semi VOA

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

Metals

Method(s) 200.7 Rev 4.4, 6010B: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: WT-012607-110718-EE-001 (240-104074-1). The continuing calibration blanks and method blanks may not support the lower PQL.

Method(s) 245.1, 7470A: Hot block take out temperature for prep batch 354559 was below the recommended 90-95C range. Analysis of the QC show acceptable recoveries and therefore suggest sample results were unaffected.

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

General Chemistry

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

Organic Prep

Method(s) 3520C, 608: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-354852.

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
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.
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)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-104074-1	WT-012607-110718-EE-001	Water	11/07/18 15:30	11/08/18 09:45

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Client Sample ID: WT-012607-110718-EE-001

Lab Sample ID: 240-104074-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Zinc	0.087		0.020	mg/L	1		200.7 Rev 4.4	Total
Total Suspended Solids	8.0		4.0	mg/L	1		SM 2540D	Recoverable Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Method	Method Description	Protocol	Laboratory
608.3	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
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
200.7	Preparation, Total Recoverable Metals	EPA	TAL CAN
245.1	Preparation, Mercury	EPA	TAL CAN
608	Liquid-Liquid Extraction (Continuous)	40CFR136A	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

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

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: WT-012607-110718-EE-001

Date Collected: 11/07/18 15:30

Date Received: 11/08/18 09:45

Lab Sample ID: 240-104074-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.096	U	0.096	ug/L		11/12/18 06:31	11/14/18 16:35	1
Aroclor-1221	0.096	U	0.096	ug/L		11/12/18 06:31	11/14/18 16:35	1
Aroclor-1232	0.096	U	0.096	ug/L		11/12/18 06:31	11/14/18 16:35	1
Aroclor-1242	0.096	U	0.096	ug/L		11/12/18 06:31	11/14/18 16:35	1
Aroclor-1248	0.096	U	0.096	ug/L		11/12/18 06:31	11/14/18 16:35	1
Aroclor-1254	0.096	U	0.096	ug/L		11/12/18 06:31	11/14/18 16:35	1
Aroclor-1260	0.096	U	0.096	ug/L		11/12/18 06:31	11/14/18 16:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	53		10 - 114			11/12/18 06:31	11/14/18 16:35	1
Tetrachloro-m-xylene	64		15 - 131			11/12/18 06:31	11/14/18 16:35	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

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

Client Sample ID: WT-012607-110718-EE-001

Date Collected: 11/07/18 15:30

Date Received: 11/08/18 09:45

Lab Sample ID: 240-104074-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		11/09/18 14:00	11/12/18 18:31	1
Nickel	0.010	U	0.010	mg/L		11/09/18 14:00	11/12/18 18:31	1
Lead	0.050	U	0.050	mg/L		11/09/18 14:00	11/12/18 18:31	1
Zinc	0.087		0.020	mg/L		11/09/18 14:00	11/12/18 18:31	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-012607-110718-EE-001

Date Collected: 11/07/18 15:30

Date Received: 11/08/18 09:45

Lab Sample ID: 240-104074-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L	—	11/09/18 12:00	11/12/18 16:58	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

General Chemistry

Client Sample ID: WT-012607-110718-EE-001

Date Collected: 11/07/18 15:30

Date Received: 11/08/18 09:45

Lab Sample ID: 240-104074-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.8	U	4.8	mg/L			11/16/18 11:08	1
Cr (VI)	0.0050	U	0.0050	mg/L			11/08/18 12:29	1
Total Suspended Solids	8.0		4.0	mg/L			11/14/18 08:50	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

GC Semi VOA

Prep Batch: 354852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total/NA	Water	608	
MB 240-354852/14-A	Method Blank	Total/NA	Water	608	
LCS 240-354852/15-A	Lab Control Sample	Total/NA	Water	608	

Analysis Batch: 355413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total/NA	Water	608.3	354852
MB 240-354852/14-A	Method Blank	Total/NA	Water	608.3	354852
LCS 240-354852/15-A	Lab Control Sample	Total/NA	Water	608.3	354852

Metals

Prep Batch: 354558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total Recoverable	Water	200.7	
MB 240-354558/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 240-354558/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Prep Batch: 354559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total/NA	Water	245.1	
MB 240-354559/1-A	Method Blank	Total/NA	Water	245.1	
LCS 240-354559/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 355081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total Recoverable	Water	200.7 Rev 4.4	354558
MB 240-354558/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	354558
LCS 240-354558/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	354558

Analysis Batch: 355095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total/NA	Water	245.1	354559
MB 240-354559/1-A	Method Blank	Total/NA	Water	245.1	354559
LCS 240-354559/2-A	Lab Control Sample	Total/NA	Water	245.1	354559

General Chemistry

Analysis Batch: 354379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total/NA	Water	3500-Cr B-2009	
MB 240-354379/3	Method Blank	Total/NA	Water	3500-Cr B-2009	
LCS 240-354379/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 355343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total/NA	Water	SM 2540D	
MB 240-355343/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 240-355343/2	Lab Control Sample	Total/NA	Water	SM 2540D	

TestAmerica Canton

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

General Chemistry (Continued)

Analysis Batch: 355812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-104074-1	WT-012607-110718-EE-001	Total/NA	Water	1664A	
MB 240-355812/1	Method Blank	Total/NA	Water	1664A	
LCS 240-355812/2	Lab Control Sample	Total/NA	Water	1664A	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 240-354852/14-A

Matrix: Water

Analysis Batch: 355413

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 354852

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		11/12/18 06:31	11/14/18 12:29	1
Aroclor-1221	0.10	U	0.10	ug/L		11/12/18 06:31	11/14/18 12:29	1
Aroclor-1232	0.10	U	0.10	ug/L		11/12/18 06:31	11/14/18 12:29	1
Aroclor-1242	0.10	U	0.10	ug/L		11/12/18 06:31	11/14/18 12:29	1
Aroclor-1248	0.10	U	0.10	ug/L		11/12/18 06:31	11/14/18 12:29	1
Aroclor-1254	0.10	U	0.10	ug/L		11/12/18 06:31	11/14/18 12:29	1
Aroclor-1260	0.10	U	0.10	ug/L		11/12/18 06:31	11/14/18 12:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	76		10 - 114	11/12/18 06:31	11/14/18 12:29	1
Tetrachloro-m-xylene	80		15 - 131	11/12/18 06:31	11/14/18 12:29	1

Lab Sample ID: LCS 240-354852/15-A

Matrix: Water

Analysis Batch: 355413

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 354852

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	1.49		ug/L		60	50 - 140
Aroclor-1260	2.50	1.80		ug/L		72	8 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	37		10 - 114
Tetrachloro-m-xylene	64		15 - 131

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-354558/1-A

Matrix: Water

Analysis Batch: 355081

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 354558

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		11/09/18 14:00	11/12/18 16:33	1
Nickel	0.010	U	0.010	mg/L		11/09/18 14:00	11/12/18 16:33	1
Lead	0.050	U	0.050	mg/L		11/09/18 14:00	11/12/18 16:33	1
Zinc	0.020	U	0.020	mg/L		11/09/18 14:00	11/12/18 16:33	1

Lab Sample ID: LCS 240-354558/2-A

Matrix: Water

Analysis Batch: 355081

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 354558

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.191		mg/L		96	85 - 115
Nickel	0.500	0.515		mg/L		103	85 - 115
Lead	0.500	0.499		mg/L		100	85 - 115
Zinc	0.500	0.518		mg/L		104	85 - 115

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-354559/1-A
Matrix: Water
Analysis Batch: 355095

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354559

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		11/09/18 12:00	11/12/18 16:17	1

Lab Sample ID: LCS 240-354559/2-A
Matrix: Water
Analysis Batch: 355095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354559

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00460		mg/L		92	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-355812/1
Matrix: Water
Analysis Batch: 355812

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			11/16/18 11:08	1

Lab Sample ID: LCS 240-355812/2
Matrix: Water
Analysis Batch: 355812

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	34.00		mg/L		85	78 - 114

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-354379/3
Matrix: Water
Analysis Batch: 354379

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			11/08/18 11:22	1

Lab Sample ID: LCS 240-354379/4
Matrix: Water
Analysis Batch: 354379

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.233		mg/L		93	80 - 123

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

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

Lab Sample ID: MB 240-355343/1

Matrix: Water

Analysis Batch: 355343

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L	-		11/14/18 08:50	1

Lab Sample ID: LCS 240-355343/2

Matrix: Water

Analysis Batch: 355343

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	25.5	18.0		mg/L	-	71	64 - 120

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCBP1 (10-114)	TCX1 (15-131)
240-104074-1	WT-012607-110718-EE-001	53	64
LCS 240-354852/15-A	Lab Control Sample	37	64
MB 240-354852/14-A	Method Blank	76	80

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Client Sample ID: WT-012607-110718-EE-001

Lab Sample ID: 240-104074-1

Date Collected: 11/07/18 15:30

Matrix: Water

Date Received: 11/08/18 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	608			354852	11/12/18 06:31	SDE	TAL CAN
Total/NA	Analysis	608.3		1	355413	11/14/18 16:35	CSC	TAL CAN
Total Recoverable	Prep	200.7			354558	11/09/18 14:00	MBB	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	355081	11/12/18 18:31	WKD	TAL CAN
Total/NA	Prep	245.1			354559	11/09/18 12:00	MBB	TAL CAN
Total/NA	Analysis	245.1		1	355095	11/12/18 16:58	AJC	TAL CAN
Total/NA	Analysis	1664A		1	355812	11/16/18 11:08	ACR	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		1	354379	11/08/18 12:29	BLW	TAL CAN
Total/NA	Analysis	SM 2540D		1	355343	11/14/18 08:50	MAC	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-104074-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-18 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Canton

TestAmerica Canton Sample Receipt Form/Narrative Canton Facility				Login # : <u>104074</u>
Client <u>GAD</u>		Site Name <u> </u>		Cooler unpacked by: <u>ROP</u>
Cooler Received on <u>11-8-18</u>		Opened on <u>11-8-18</u>		
FedEx: 1 st Grd ☒ Exp ☐ UPS ☐ FAS ☐ Clipper ☐ Client Drop Off ☐ TestAmerica Courier ☐ Other ☐				
Receipt After-hours: Drop-off Date/Time <u> </u>			Storage Location <u> </u>	
TestAmerica Cooler # <u>TA</u> Foam Box ☐ Client Cooler ☐ Box ☐ Other ☐ Packing material used: <u>Bubble Wrap</u> Foam ☐ Plastic Bag ☐ None ☐ Other ☐ COOLANT: <u>Wet Ice</u> Blue Ice ☐ Dry Ice ☐ Water ☐ None ☐				
1. Cooler temperature upon receipt ☐ See Multiple Cooler Form IR GUN# IR-8 (CF +0.9 °C) Observed Cooler Temp. <u>4.0</u> °C Corrected Cooler Temp. <u>4.9</u> °C IR GUN #36 (CF +0.6 °C) Observed Cooler Temp. <u> </u> °C Corrected Cooler Temp. <u> </u> °C				
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u> Yes ☒ No ☐ -Were the seals on the outside of the cooler(s) signed & dated? Yes ☒ No ☐ NA ☐ -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes ☒ No ☐ -Were tamper/custody seals intact and uncompromised? Yes ☒ No ☐ NA ☐				
3. Shippers' packing slip attached to the cooler(s)? Yes ☒ No ☐ 4. Did custody papers accompany the sample(s)? Yes ☒ No ☐ 5. Were the custody papers relinquished & signed in the appropriate place? Yes ☒ No ☐ 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes ☒ No ☐ 7. Did all bottles arrive in good condition (Unbroken)? Yes ☒ No ☐ 8. Could all bottle labels be reconciled with the COC? Yes ☒ No ☐ 9. Were correct bottle(s) used for the test(s) indicated? Yes ☒ No ☐ 10. Sufficient quantity received to perform indicated analyses? Yes ☒ No ☐ 11. Are these work share samples? Yes ☒ No ☐				
If yes, Questions 12-16 have been checked at the originating laboratory.				
12. Were all preserved sample(s) at the correct pH upon receipt? Yes ☒ No ☐ NA ☐ pH Strip Lot# <u>HC850248</u>				
13. Were VOAs on the COC? Yes ☒ No ☐				
14. Were air bubbles >6 mm in any VOA vials? ☒ Larger than this. Yes ☒ No ☐ NA ☐				
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # <u> </u> Yes ☒ No ☐				
16. Was a LL Hg or Me Hg trip blank present? Yes ☒ No ☐				
Contacted PM <u> </u> Date <u> </u> by <u> </u> via Verbal Voice Mail Other <u> </u>				
Concerning <u> </u>				

Tests that are not
checked for pH by
Receiving:

 VOAs
Oil and Grease
TOC

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES 	Samples processed by: <u>ROP</u>
18. SAMPLE CONDITION Sample(s) <u> </u> were received after the recommended holding time had expired. Sample(s) <u> </u> were received in a broken container. Sample(s) <u> </u> were received with bubble >6 mm in diameter. (Notify PM)	
19. SAMPLE PRESERVATION Sample(s) <u> </u> were further preserved in the laboratory. Time preserved: <u> </u> Preservative(s) added/Lot number(s): <u> </u>	

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservative</u> <u>Added (mls)</u>	<u>Lot #</u>
WT-012607-110718-EE-001	240-104074-B-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-012607-110718-EE-001	240-104074-C-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
WT-012607-110718-EE-001	240-104074-D-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-105286-1

Client Project/Site: 12607, RACER Eckles Rd

For:

GHD Services Inc.

26850 Haggerty Rd.

Farmington Hills, Michigan 48331

Attn: Ms. Ruth Mickle



Authorized for release by:

12/18/2018 9:37:57 AM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

LINKS

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results through

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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.

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Job ID: 240-105286-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative
240-105286-1

Comments

No additional comments.

Receipt

The samples were received on 12/6/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

Metals

Method(s) 200.7 Rev 4.4, 6010B, 6010D: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: W-012607-120518-EE-001 (240-105286-1). The continuing calibration blanks and method blanks may not support the lower PQL.

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

General Chemistry

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
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.
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)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-105286-1	W-012607-120518-EE-001	Water	12/05/18 14:00	12/06/18 09:50

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Client Sample ID: W-012607-120518-EE-001

Lab Sample ID: 240-105286-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	1.2		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.71		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Cr (VI)	0.91		0.025	mg/L	5		3500-Cr B-2009	Total/NA
Total Suspended Solids	7.0		4.0	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Method	Method Description	Protocol	Laboratory
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
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
200.7	Preparation, Total Recoverable Metals	EPA	TAL CAN
245.1	Preparation, Mercury	EPA	TAL CAN

Protocol References:

1664A = EPA-821-98-002
EPA = US Environmental Protection Agency
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

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

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

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	1.2		0.050	mg/L		12/07/18 14:00	12/11/18 21:12	1
Nickel	0.71		0.010	mg/L		12/07/18 14:00	12/11/18 21:12	1
Lead	0.050	U	0.050	mg/L		12/07/18 14:00	12/11/18 21:12	1
Zinc	0.020	U	0.020	mg/L		12/07/18 14:00	12/11/18 21:12	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Method: 245.1 - Mercury (CVAA)

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L	—	12/07/18 12:00	12/10/18 18:19	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

General Chemistry

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L			12/17/18 12:54	1
Cr (VI)	0.91		0.025	mg/L			12/06/18 13:30	5
Total Suspended Solids	7.0		4.0	mg/L			12/12/18 15:09	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Metals

Prep Batch: 358825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total Recoverable	Water	200.7	
MB 240-358825/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 240-358825/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Prep Batch: 358826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	245.1	
MB 240-358826/1-A	Method Blank	Total/NA	Water	245.1	
LCS 240-358826/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 359141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	245.1	358826
MB 240-358826/1-A	Method Blank	Total/NA	Water	245.1	358826
LCS 240-358826/2-A	Lab Control Sample	Total/NA	Water	245.1	358826

Analysis Batch: 359454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total Recoverable	Water	200.7 Rev 4.4	358825
MB 240-358825/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	358825
LCS 240-358825/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	358825

General Chemistry

Analysis Batch: 358597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	3500-Cr B-2009	
MB 240-358597/3	Method Blank	Total/NA	Water	3500-Cr B-2009	
LCS 240-358597/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	

Analysis Batch: 359628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	SM 2540D	
MB 240-359628/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 240-359628/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 360370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	1664A	
MB 240-360370/1	Method Blank	Total/NA	Water	1664A	
LCS 240-360370/2	Lab Control Sample	Total/NA	Water	1664A	

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-358825/1-A

Matrix: Water

Analysis Batch: 359454

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 358825

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		12/07/18 14:00	12/11/18 19:16	1
Nickel	0.010	U	0.010	mg/L		12/07/18 14:00	12/11/18 19:16	1
Lead	0.050	U	0.050	mg/L		12/07/18 14:00	12/11/18 19:16	1
Zinc	0.020	U	0.020	mg/L		12/07/18 14:00	12/11/18 19:16	1

Lab Sample ID: LCS 240-358825/2-A

Matrix: Water

Analysis Batch: 359454

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 358825

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.212		mg/L		106	85 - 115
Nickel	0.500	0.500		mg/L		100	85 - 115
Lead	0.500	0.492		mg/L		98	85 - 115
Zinc	0.500	0.516		mg/L		103	85 - 115

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-358826/1-A

Matrix: Water

Analysis Batch: 359141

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358826

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		12/07/18 12:00	12/10/18 17:27	1

Lab Sample ID: LCS 240-358826/2-A

Matrix: Water

Analysis Batch: 359141

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358826

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00495		mg/L		99	85 - 115

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-360370/1

Matrix: Water

Analysis Batch: 360370

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L			12/17/18 12:54	1

Lab Sample ID: LCS 240-360370/2

Matrix: Water

Analysis Batch: 360370

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	36.10		mg/L		90	78 - 114

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-358597/3
Matrix: Water
Analysis Batch: 358597

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L	-		12/06/18 07:51	1

Lab Sample ID: LCS 240-358597/4
Matrix: Water
Analysis Batch: 358597

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.251		mg/L	-	100	80 - 123

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

Lab Sample ID: MB 240-359628/1
Matrix: Water
Analysis Batch: 359628

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	mg/L	-		12/12/18 15:09	1

Lab Sample ID: LCS 240-359628/2
Matrix: Water
Analysis Batch: 359628

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	25.5	20.0		mg/L	-	78	64 - 120

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Client Sample ID: W-012607-120518-EE-001

Lab Sample ID: 240-105286-1

Date Collected: 12/05/18 14:00

Matrix: Water

Date Received: 12/06/18 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.7			358825	12/07/18 14:00	SLD	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	359454	12/11/18 21:12	KLC	TAL CAN
Total/NA	Prep	245.1			358826	12/07/18 12:00	SLD	TAL CAN
Total/NA	Analysis	245.1		1	359141	12/10/18 18:19	AJC	TAL CAN
Total/NA	Analysis	1664A		1	360370	12/17/18 12:54	MMM	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		5	358597	12/06/18 13:30	MMM	TAL CAN
Total/NA	Analysis	SM 2540D		1	359628	12/12/18 15:09	AMT	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-18 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Canton

TestAmerica Michigan
10448 Citation Drive
Suite 200
Brighton, MI 48116
Phone: 810.229.2763 Fax:

MICHIGAN
190

Chain of Custody Record
2403 5880

231142

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Company Name: GWH		Client Contact		Project Manager: Chris Matthews		Site Contact: Erik Gwinn		Date: 12/5/18		COC No: 1 of 1	
Address: 26650 Blagden Rd		City/State/Zip: Farmington Hills, MI 48334		Phone: (248) 243-3400		Fax: (248) 243-3400		Lab Contact: Erik Gwinn		Carrier: TestAmerica FUGER	
Project Name: RACEN GWRP LUMIC		Site: LUMIC WH		PO # 012607-TU1718-03		Analysis Turnaround Time ☐ CALENDAR DAYS ☐ WORKING DAYS TAT if different from Below: ☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		For Lab Use Only: Walk-In Client: ☐ Lab Sampling: ☐		Job / SDG No.: ☐	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes:		
W-012607-120518-EE-001		12/5/18	1400	C	WTR	1			Effluent		
Trip Blank		12/5/18							Composite		
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other											
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.											
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown											
Special Instructions/QC Requirements & Comments:											
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C): Obs'd:		Cor'd:		Therm ID No.:			
Relinquished by: E. Gwinn		Company: GWH		Date/Time: 12/5/18		Received by: [Signature]		Company: FUGER		Date/Time: 12-6-18 950	
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:	
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:	



240-105286 Chain of Custody

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 105286

Canton Facility

Client CHD

Site Name _____

Cooler unpacked by: MSCooler Received on 12-6-18Opened on 12-6-18FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____

Storage Location _____

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____Packing material used: Bubble Wrap Foam Plastic Bag None Other _____COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

☐ See Multiple Cooler Form

IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

IR GUN #36 (CF +0°C) Observed Cooler Temp. 2.2 °C Corrected Cooler Temp. 2.2 °C2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No-Were tamper/custody seals intact and uncompromised? Yes No NA3. Shippers' packing slip attached to the cooler(s)? Yes No4. Did custody papers accompany the sample(s)? Yes No5. Were the custody papers relinquished & signed in the appropriate place? Yes No6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No7. Did all bottles arrive in good condition (Unbroken)? Yes No8. Could all bottle labels be reconciled with the COC? Yes No9. Were correct bottle(s) used for the test(s) indicated? Yes No10. Sufficient quantity received to perform indicated analyses? Yes No11. Are these work share samples? Yes No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC85459213. Were VOAs on the COC? Yes No14. Were air bubbles >6 mm in any VOA vials? Yes No NA15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B82790 IVB Yes No16. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: MS

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservative</u> <u>Added (mls)</u>	<u>Lot #</u>
W-012607-120518-EE-001	240-105286-J-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
W-012607-120518-EE-001	240-105286-S-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
W-012607-120518-EE-001	240-105286-T-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-105286-2

Client Project/Site: 12607, RACER Eckles Rd

For:

GHD Services Inc.

26850 Haggerty Rd.

Farmington Hills, Michigan 48331

Attn: Ms. Ruth Mickle



Authorized for release by:

12/13/2018 1:08:59 PM

Denise Heckler, Project Manager II

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Job ID: 240-105286-2

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-105286-2

Comments

No additional comments.

Receipt

The samples were received on 12/6/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

GC/MS VOA

Method(s) 624.1: The following samples were received preserved with hydrochloric acid: W-012607-120518-EE-001 (240-105286-1) and TRIP BLANK (240-105286-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

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

GC/MS Semi VOA

Method(s) 625.1: The continuing calibration verification (CCV) associated with batch 240-359023 recovered above the upper control limit for 2,2'-oxybis[1-chloropropane]. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported.

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

GC Semi VOA

Method(s) 608.3: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: W-012607-120518-EE-001 (240-105286-1). 3934169, 3800132, 3869666.

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

Organic Prep

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-358793.

Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 240-359261.

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

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

GC Semi VOA

Qualifier	Qualifier Description
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.
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)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-105286-1	W-012607-120518-EE-001	Water	12/05/18 14:00	12/06/18 09:50
240-105286-2	TRIP BLANK	Water	12/05/18 00:00	12/06/18 09:50

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Detection Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Client Sample ID: W-012607-120518-EE-001

Lab Sample ID: 240-105286-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	1.8		1.0	0.17	ug/L	1		624.1	Total/NA
1,1,1-Trichloroethane	1.2		1.0	0.24	ug/L	1		624.1	Total/NA
2,3,7,8-TCDD	NEG				NONE	1		625	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-105286-2

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL CAN
625	Dioxin Screen (GC/MS SIM)	40CFR136A	TAL CAN
625.1	Semivolatile Organic Compounds (GC/MS)	40CFR136A	TAL CAN
608.3	Organochlorine Pesticides in Water	40CFR136A	TAL CAN
608.3	Polychlorinated Biphenyls (PCBs) (GC)	40CFR136A	TAL CAN
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL CAN
608	Liquid-Liquid Extraction (Continuous)	40CFR136A	TAL CAN
625	Liquid-Liquid Extraction	40CFR136A	TAL CAN

Protocol References:

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

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

Laboratory References:

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

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			12/08/18 14:18	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/08/18 14:18	1
Toluene	1.0	U	1.0	0.14	ug/L			12/08/18 14:18	1
Vinyl chloride	2.0	U	2.0	0.20	ug/L			12/08/18 14:18	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/08/18 14:18	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			12/08/18 14:18	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/08/18 14:18	1
Bromomethane	2.0	U	2.0	0.42	ug/L			12/08/18 14:18	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/08/18 14:18	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/08/18 14:18	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			12/08/18 14:18	1
Chloroethane	2.0	U	2.0	0.83	ug/L			12/08/18 14:18	1
2-Chloroethyl vinyl ether	2.0	U	2.0	0.26	ug/L			12/08/18 14:18	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/08/18 14:18	1
Chloromethane	2.0	U	2.0	0.20	ug/L			12/08/18 14:18	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/08/18 14:18	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/08/18 14:18	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			12/08/18 14:18	1
1,1-Dichloroethane	1.8		1.0	0.17	ug/L			12/08/18 14:18	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/08/18 14:18	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/08/18 14:18	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/08/18 14:18	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/08/18 14:18	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/08/18 14:18	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/08/18 14:18	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/08/18 14:18	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/08/18 14:18	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/08/18 14:18	1
1,1,1-Trichloroethane	1.2		1.0	0.24	ug/L			12/08/18 14:18	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/08/18 14:18	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/08/18 14:18	1
Acrolein	20	U	20	2.1	ug/L			12/08/18 14:18	1
Acrylonitrile	20	U	20	1.1	ug/L			12/08/18 14:18	1
1,3-Dichloropropene, Total	2.0	U	2.0	1.3	ug/L			12/08/18 14:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		79 - 120		12/08/18 14:18	1
1,2-Dichloroethane-d4 (Surr)	85		70 - 121		12/08/18 14:18	1
Toluene-d8 (Surr)	90		70 - 123		12/08/18 14:18	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: TRIP BLANK

Date Collected: 12/05/18 00:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			12/08/18 14:41	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/08/18 14:41	1
Toluene	1.0	U	1.0	0.14	ug/L			12/08/18 14:41	1
Vinyl chloride	2.0	U	2.0	0.20	ug/L			12/08/18 14:41	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/08/18 14:41	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			12/08/18 14:41	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/08/18 14:41	1
Bromomethane	2.0	U	2.0	0.42	ug/L			12/08/18 14:41	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/08/18 14:41	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/08/18 14:41	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			12/08/18 14:41	1
Chloroethane	2.0	U	2.0	0.83	ug/L			12/08/18 14:41	1
2-Chloroethyl vinyl ether	2.0	U	2.0	0.26	ug/L			12/08/18 14:41	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/08/18 14:41	1
Chloromethane	2.0	U	2.0	0.20	ug/L			12/08/18 14:41	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/08/18 14:41	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/08/18 14:41	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			12/08/18 14:41	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/08/18 14:41	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/08/18 14:41	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/08/18 14:41	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/08/18 14:41	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/08/18 14:41	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/08/18 14:41	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/08/18 14:41	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/08/18 14:41	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/08/18 14:41	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/08/18 14:41	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/08/18 14:41	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/08/18 14:41	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/08/18 14:41	1
Acrolein	20	U	20	2.1	ug/L			12/08/18 14:41	1
Acrylonitrile	20	U	20	1.1	ug/L			12/08/18 14:41	1
1,3-Dichloropropene, Total	2.0	U	2.0	1.3	ug/L			12/08/18 14:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		79 - 120		12/08/18 14:41	1
1,2-Dichloroethane-d4 (Surr)	87		70 - 121		12/08/18 14:41	1
Toluene-d8 (Surr)	91		70 - 123		12/08/18 14:41	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	9.5	U	9.5	0.16	ug/L		12/07/18 08:30	12/10/18 16:14	1
Benzo[a]pyrene	9.5	U	9.5	0.16	ug/L		12/07/18 08:30	12/10/18 16:14	1
Benzo[b]fluoranthene	9.5	U	9.5	0.15	ug/L		12/07/18 08:30	12/10/18 16:14	1
Benzo[g,h,i]perylene	9.5	U	9.5	0.17	ug/L		12/07/18 08:30	12/10/18 16:14	1
Acenaphthene	9.5	U	9.5	0.16	ug/L		12/07/18 08:30	12/10/18 16:14	1
Acenaphthylene	9.5	U	9.5	0.12	ug/L		12/07/18 08:30	12/10/18 16:14	1
Anthracene	9.5	U	9.5	0.13	ug/L		12/07/18 08:30	12/10/18 16:14	1
Benzo[k]fluoranthene	9.5	U	9.5	0.13	ug/L		12/07/18 08:30	12/10/18 16:14	1
Butyl benzyl phthalate	9.5	U	9.5	0.63	ug/L		12/07/18 08:30	12/10/18 16:14	1
Bis(2-chloroethoxy)methane	9.5	U	9.5	0.43	ug/L		12/07/18 08:30	12/10/18 16:14	1
Bis(2-chloroethyl)ether	9.5	U	9.5	0.38	ug/L		12/07/18 08:30	12/10/18 16:14	1
Bis(2-ethylhexyl) phthalate	9.5	U	9.5	2.1	ug/L		12/07/18 08:30	12/10/18 16:14	1
bis (2-chloroisopropyl) ether	9.5	U	9.5	0.52	ug/L		12/07/18 08:30	12/10/18 16:14	1
4-Bromophenyl phenyl ether	9.5	U	9.5	0.48	ug/L		12/07/18 08:30	12/10/18 16:14	1
2-Chloronaphthalene	9.5	U	9.5	0.46	ug/L		12/07/18 08:30	12/10/18 16:14	1
4-Chlorophenyl phenyl ether	9.5	U	9.5	0.52	ug/L		12/07/18 08:30	12/10/18 16:14	1
Chrysene	9.5	U	9.5	0.18	ug/L		12/07/18 08:30	12/10/18 16:14	1
Dibenz(a,h)anthracene	9.5	U	9.5	0.14	ug/L		12/07/18 08:30	12/10/18 16:14	1
Di-n-butyl phthalate	9.5	U	9.5	1.7	ug/L		12/07/18 08:30	12/10/18 16:14	1
3,3'-Dichlorobenzidine	9.5	U	9.5	1.1	ug/L		12/07/18 08:30	12/10/18 16:14	1
Diethyl phthalate	9.5	U	9.5	3.6	ug/L		12/07/18 08:30	12/10/18 16:14	1
Dimethyl phthalate	9.5	U	9.5	0.49	ug/L		12/07/18 08:30	12/10/18 16:14	1
2,4-Dinitrotoluene	9.5	U	9.5	2.0	ug/L		12/07/18 08:30	12/10/18 16:14	1
2,6-Dinitrotoluene	9.5	U	9.5	2.0	ug/L		12/07/18 08:30	12/10/18 16:14	1
Di-n-octyl phthalate	9.5	U	9.5	0.78	ug/L		12/07/18 08:30	12/10/18 16:14	1
Fluoranthene	9.5	U	9.5	0.15	ug/L		12/07/18 08:30	12/10/18 16:14	1
Fluorene	9.5	U	9.5	0.16	ug/L		12/07/18 08:30	12/10/18 16:14	1
Hexachlorobenzene	9.5	U	9.5	0.15	ug/L		12/07/18 08:30	12/10/18 16:14	1
Hexachlorobutadiene	9.5	U	9.5	0.52	ug/L		12/07/18 08:30	12/10/18 16:14	1
Hexachloroethane	9.5	U	9.5	0.38	ug/L		12/07/18 08:30	12/10/18 16:14	1
Indeno[1,2,3-cd]pyrene	9.5	U	9.5	0.13	ug/L		12/07/18 08:30	12/10/18 16:14	1
Isophorone	9.5	U	9.5	0.31	ug/L		12/07/18 08:30	12/10/18 16:14	1
Naphthalene	9.5	U	9.5	0.10	ug/L		12/07/18 08:30	12/10/18 16:14	1
Nitrobenzene	9.5	U	9.5	0.49	ug/L		12/07/18 08:30	12/10/18 16:14	1
N-Nitrosodi-n-propylamine	9.5	U	9.5	0.24	ug/L		12/07/18 08:30	12/10/18 16:14	1
Phenanthrene	9.5	U	9.5	0.16	ug/L		12/07/18 08:30	12/10/18 16:14	1
Pyrene	9.5	U	9.5	0.17	ug/L		12/07/18 08:30	12/10/18 16:14	1
1,2,4-Trichlorobenzene	9.5	U	9.5	0.41	ug/L		12/07/18 08:30	12/10/18 16:14	1
4-Chloro-3-methylphenol	9.5	U	9.5	0.28	ug/L		12/07/18 08:30	12/10/18 16:14	1
2-Chlorophenol	9.5	U	9.5	0.26	ug/L		12/07/18 08:30	12/10/18 16:14	1
2,4-Dichlorophenol	9.5	U	9.5	0.25	ug/L		12/07/18 08:30	12/10/18 16:14	1
2,4-Dimethylphenol	9.5	U	9.5	0.49	ug/L		12/07/18 08:30	12/10/18 16:14	1
2,4-Dinitrophenol	48	U	48	5.9	ug/L		12/07/18 08:30	12/10/18 16:14	1
4,6-Dinitro-2-methylphenol	48	U	48	2.7	ug/L		12/07/18 08:30	12/10/18 16:14	1
2-Nitrophenol	9.5	U	9.5	0.54	ug/L		12/07/18 08:30	12/10/18 16:14	1
4-Nitrophenol	48	U	48	2.1	ug/L		12/07/18 08:30	12/10/18 16:14	1
Pentachlorophenol	9.5	U	9.5	3.0	ug/L		12/07/18 08:30	12/10/18 16:14	1
Phenol	9.5	U	9.5	0.12	ug/L		12/07/18 08:30	12/10/18 16:14	1
2,4,6-Trichlorophenol	9.5	U	9.5	1.7	ug/L		12/07/18 08:30	12/10/18 16:14	1

TestAmerica Canton

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzidine	4.8	U	4.8	1.8	ug/L		12/07/18 08:30	12/10/18 16:14	1
Hexachlorocyclopentadiene	9.5	U	9.5	1.7	ug/L		12/07/18 08:30	12/10/18 16:14	1
N-Nitrosodimethylamine	0.95	U	0.95	0.21	ug/L		12/07/18 08:30	12/10/18 16:14	1
N-Nitrosodiphenylamine	9.5	U	9.5	0.42	ug/L		12/07/18 08:30	12/10/18 16:14	1
1,2-Diphenylhydrazine	0.95	U	0.95	0.41	ug/L		12/07/18 08:30	12/10/18 16:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorophenol	44		10 - 120				12/07/18 08:30	12/10/18 16:14	1
2,4,6-Tribromophenol	86		28 - 120				12/07/18 08:30	12/10/18 16:14	1
Nitrobenzene-d5	83		32 - 120				12/07/18 08:30	12/10/18 16:14	1
Phenol-d5	30		10 - 120				12/07/18 08:30	12/10/18 16:14	1
Terphenyl-d14	57		23 - 127				12/07/18 08:30	12/10/18 16:14	1
2-Fluorobiphenyl (Surr)	73		38 - 120				12/07/18 08:30	12/10/18 16:14	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 625 - Dioxin Screen (GC/MS SIM)

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	NEG				NONE		12/07/18 08:38	12/11/18 07:34	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 608.3 - Organochlorine Pesticides in Water

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.048	U	0.048	0.0023	ug/L		12/07/18 11:49	12/13/18 10:49	1
alpha-BHC	0.048	U	0.048	0.0019	ug/L		12/07/18 11:49	12/13/18 10:49	1
beta-BHC	0.048	U	0.048	0.0044	ug/L		12/07/18 11:49	12/13/18 10:49	1
delta-BHC	0.048	U	0.048	0.0041	ug/L		12/07/18 11:49	12/13/18 10:49	1
gamma-BHC (Lindane)	0.048	U	0.048	0.0024	ug/L		12/07/18 11:49	12/13/18 10:49	1
Chlordane (technical)	0.48	U	0.48	0.044	ug/L		12/07/18 11:49	12/13/18 10:49	1
4,4'-DDD	0.048	U	0.048	0.0050	ug/L		12/07/18 11:49	12/13/18 10:49	1
4,4'-DDE	0.048	U	0.048	0.0041	ug/L		12/07/18 11:49	12/13/18 10:49	1
4,4'-DDT	0.048	U	0.048	0.0046	ug/L		12/07/18 11:49	12/13/18 10:49	1
Dieldrin	0.048	U	0.048	0.0022	ug/L		12/07/18 11:49	12/13/18 10:49	1
Endosulfan I	0.048	U	0.048	0.0035	ug/L		12/07/18 11:49	12/13/18 10:49	1
Endosulfan II	0.048	U	0.048	0.0022	ug/L		12/07/18 11:49	12/13/18 10:49	1
Endosulfan sulfate	0.048	U	0.048	0.0035	ug/L		12/07/18 11:49	12/13/18 10:49	1
Endrin	0.048	U	0.048	0.0024	ug/L		12/07/18 11:49	12/13/18 10:49	1
Endrin aldehyde	0.048	U	0.048	0.0044	ug/L		12/07/18 11:49	12/13/18 10:49	1
Heptachlor	0.048	U	0.048	0.0031	ug/L		12/07/18 11:49	12/13/18 10:49	1
Heptachlor epoxide	0.048	U	0.048	0.0025	ug/L		12/07/18 11:49	12/13/18 10:49	1
Toxaphene	1.9	U	1.9	0.055	ug/L		12/07/18 11:49	12/13/18 10:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	62		10 - 120				12/07/18 11:49	12/13/18 10:49	1
Tetrachloro-m-xylene	50		33 - 120				12/07/18 11:49	12/13/18 10:49	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	0.053	ug/L		12/07/18 11:44	12/11/18 09:10	1
Aroclor-1221	0.095	U	0.095	0.054	ug/L		12/07/18 11:44	12/11/18 09:10	1
Aroclor-1232	0.095	U	0.095	0.070	ug/L		12/07/18 11:44	12/11/18 09:10	1
Aroclor-1242	0.095	U	0.095	0.072	ug/L		12/07/18 11:44	12/11/18 09:10	1
Aroclor-1248	0.095	U	0.095	0.048	ug/L		12/07/18 11:44	12/11/18 09:10	1
Aroclor-1254	0.095	U	0.095	0.038	ug/L		12/07/18 11:44	12/11/18 09:10	1
Aroclor-1260	0.095	U	0.095	0.044	ug/L		12/07/18 11:44	12/11/18 09:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	55		10 - 114				12/07/18 11:44	12/11/18 09:10	1
Tetrachloro-m-xylene	58		15 - 131				12/07/18 11:44	12/11/18 09:10	1

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

GC/MS VOA

Analysis Batch: 358935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	624.1	
240-105286-2	TRIP BLANK	Total/NA	Water	624.1	
MB 240-358935/8	Method Blank	Total/NA	Water	624.1	
LCS 240-358935/6	Lab Control Sample	Total/NA	Water	624.1	
240-105286-1 MS	W-012607-120518-EE-001	Total/NA	Water	624.1	
240-105286-1 MSD	W-012607-120518-EE-001	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 358786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	625	
MB 240-358786/11-A	Method Blank	Total/NA	Water	3510C	
LCS 240-358786/12-A	Lab Control Sample	Total/NA	Water	3510C	

Prep Batch: 358793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	3510C	
MB 240-358793/3-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 359023

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	625.1	358786
MB 240-358786/11-A	Method Blank	Total/NA	Water	625.1	358786
LCS 240-358786/12-A	Lab Control Sample	Total/NA	Water	625.1	358786

Analysis Batch: 359075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	625	358793
MB 240-358793/3-A	Method Blank	Total/NA	Water	625	358793

GC Semi VOA

Prep Batch: 358850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	608	
MB 240-358850/23-A	Method Blank	Total/NA	Water	608	
LCS 240-358850/24-A	Lab Control Sample	Total/NA	Water	608	

Prep Batch: 358851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	608	
MB 240-358851/9-A	Method Blank	Total/NA	Water	608	
LCS 240-358851/10-A	Lab Control Sample	Total/NA	Water	608	

Analysis Batch: 359209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	608.3	358850
MB 240-358850/23-A	Method Blank	Total/NA	Water	608.3	358850
LCS 240-358850/24-A	Lab Control Sample	Total/NA	Water	608.3	358850

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QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

GC Semi VOA (Continued)

Analysis Batch: 359729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105286-1	W-012607-120518-EE-001	Total/NA	Water	608.3	358851
MB 240-358851/9-A	Method Blank	Total/NA	Water	608.3	358851
LCS 240-358851/10-A	Lab Control Sample	Total/NA	Water	608.3	358851

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-358935/8

Matrix: Water

Analysis Batch: 358935

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.13	ug/L			12/08/18 12:43	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			12/08/18 12:43	1
Toluene	1.0	U	1.0	0.14	ug/L			12/08/18 12:43	1
Vinyl chloride	2.0	U	2.0	0.20	ug/L			12/08/18 12:43	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			12/08/18 12:43	1
Dichlorobromomethane	1.0	U	1.0	0.17	ug/L			12/08/18 12:43	1
Bromoform	1.0	U	1.0	0.76	ug/L			12/08/18 12:43	1
Bromomethane	2.0	U	2.0	0.42	ug/L			12/08/18 12:43	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			12/08/18 12:43	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			12/08/18 12:43	1
Chlorodibromomethane	1.0	U	1.0	0.39	ug/L			12/08/18 12:43	1
Chloroethane	2.0	U	2.0	0.83	ug/L			12/08/18 12:43	1
2-Chloroethyl vinyl ether	2.0	U	2.0	0.26	ug/L			12/08/18 12:43	1
Chloroform	1.0	U	1.0	0.13	ug/L			12/08/18 12:43	1
Chloromethane	2.0	U	2.0	0.20	ug/L			12/08/18 12:43	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/08/18 12:43	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			12/08/18 12:43	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			12/08/18 12:43	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			12/08/18 12:43	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			12/08/18 12:43	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			12/08/18 12:43	1
trans-1,2-Dichloroethene	0.50	U	0.50	0.19	ug/L			12/08/18 12:43	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			12/08/18 12:43	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			12/08/18 12:43	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			12/08/18 12:43	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			12/08/18 12:43	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			12/08/18 12:43	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			12/08/18 12:43	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			12/08/18 12:43	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			12/08/18 12:43	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			12/08/18 12:43	1
Acrolein	20	U	20	2.1	ug/L			12/08/18 12:43	1
Acrylonitrile	20	U	20	1.1	ug/L			12/08/18 12:43	1
1,3-Dichloropropene, Total	2.0	U	2.0	1.3	ug/L			12/08/18 12:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		79 - 120		12/08/18 12:43	1
1,2-Dichloroethane-d4 (Surr)	85		70 - 121		12/08/18 12:43	1
Toluene-d8 (Surr)	91		70 - 123		12/08/18 12:43	1

Lab Sample ID: LCS 240-358935/6

Matrix: Water

Analysis Batch: 358935

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	21.4		ug/L		107	65 - 135
Ethylbenzene	20.0	19.8		ug/L		99	60 - 140
Toluene	20.0	22.2		ug/L		111	70 - 130

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-358935/6

Matrix: Water

Analysis Batch: 358935

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	20.0	23.8		ug/L		119	5 - 195
Xylenes, Total	40.0	38.6		ug/L		97	80 - 120
Dichlorobromomethane	20.0	18.9		ug/L		95	65 - 135
Bromoform	20.0	16.2		ug/L		81	70 - 130
Bromomethane	20.0	19.4		ug/L		97	15 - 185
Carbon tetrachloride	20.0	16.5		ug/L		82	70 - 130
Chlorobenzene	20.0	20.4		ug/L		102	65 - 135
Chlorodibromomethane	20.0	18.1		ug/L		90	70 - 135
Chloroethane	20.0	21.2		ug/L		106	40 - 160
2-Chloroethyl vinyl ether	20.0	25.9		ug/L		129	0 - 225
Chloroform	20.0	19.6		ug/L		98	70 - 135
Chloromethane	20.0	21.1		ug/L		106	0 - 205
1,2-Dichlorobenzene	20.0	19.0		ug/L		95	65 - 135
1,3-Dichlorobenzene	20.0	19.0		ug/L		95	70 - 130
1,4-Dichlorobenzene	20.0	19.2		ug/L		96	65 - 135
1,1-Dichloroethane	20.0	21.5		ug/L		107	70 - 130
1,1-Dichloroethene	20.0	21.9		ug/L		109	50 - 150
1,2-Dichloroethane	20.0	20.8		ug/L		104	70 - 130
trans-1,2-Dichloroethene	20.0	20.4		ug/L		102	70 - 130
1,2-Dichloropropane	20.0	24.1		ug/L		120	35 - 165
cis-1,3-Dichloropropene	20.0	21.9		ug/L		109	25 - 127
trans-1,3-Dichloropropene	20.0	21.1		ug/L		105	50 - 150
Methylene Chloride	20.0	20.1		ug/L		101	60 - 140
1,1,2,2-Tetrachloroethane	20.0	25.5		ug/L		128	60 - 140
Tetrachloroethene	20.0	17.7		ug/L		88	70 - 130
1,1,1-Trichloroethane	20.0	16.5		ug/L		83	70 - 130
1,1,2-Trichloroethane	20.0	23.5		ug/L		117	70 - 130
Trichloroethene	20.0	18.2		ug/L		91	65 - 135
Acrolein	100	70.6		ug/L		71	60 - 140
Acrylonitrile	200	251		ug/L		126	60 - 140
1,3-Dichloropropene, Total	40.0	43.0		ug/L		108	61 - 128

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		79 - 120
1,2-Dichloroethane-d4 (Surr)	86		70 - 121
Toluene-d8 (Surr)	94		70 - 123

Lab Sample ID: 240-105286-1 MS

Matrix: Water

Analysis Batch: 358935

Client Sample ID: W-012607-120518-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	1.0	U	20.0	20.1		ug/L		101	37 - 151
Ethylbenzene	1.0	U	20.0	17.9		ug/L		90	37 - 162
Toluene	1.0	U	20.0	20.3		ug/L		101	47 - 150
Vinyl chloride	2.0	U	20.0	25.4		ug/L		127	0 - 251
Xylenes, Total	2.0	U	40.0	35.7		ug/L		89	67 - 120
Dichlorobromomethane	1.0	U	20.0	17.6		ug/L		88	35 - 155

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QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-105286-1 MS

Matrix: Water

Analysis Batch: 358935

Client Sample ID: W-012607-120518-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromoform	1.0	U	20.0	14.7		ug/L		73	45 - 169
Bromomethane	2.0	U	20.0	20.2		ug/L		101	0 - 242
Carbon tetrachloride	1.0	U	20.0	16.0		ug/L		80	70 - 140
Chlorobenzene	1.0	U	20.0	19.0		ug/L		95	37 - 160
Chlorodibromomethane	1.0	U	20.0	16.6		ug/L		83	53 - 149
Chloroethane	2.0	U	20.0	22.1		ug/L		110	14 - 230
2-Chloroethyl vinyl ether	2.0	U	20.0	2.0	U	ug/L		0	0 - 305
Chloroform	1.0	U	20.0	18.9		ug/L		94	51 - 138
Chloromethane	2.0	U	20.0	29.4		ug/L		147	0 - 273
1,2-Dichlorobenzene	1.0	U	20.0	18.4		ug/L		92	18 - 190
1,3-Dichlorobenzene	1.0	U	20.0	17.9		ug/L		90	59 - 156
1,4-Dichlorobenzene	1.0	U	20.0	18.0		ug/L		90	18 - 190
1,1-Dichloroethane	1.8		20.0	22.3		ug/L		103	59 - 155
1,1-Dichloroethene	1.0	U	20.0	20.4		ug/L		102	0 - 234
1,2-Dichloroethane	1.0	U	20.0	19.7		ug/L		98	49 - 155
trans-1,2-Dichloroethene	0.50	U	20.0	19.8		ug/L		99	54 - 156
1,2-Dichloropropane	1.0	U	20.0	22.6		ug/L		113	0 - 210
cis-1,3-Dichloropropene	1.0	U	20.0	19.9		ug/L		100	0 - 227
trans-1,3-Dichloropropene	1.0	U	20.0	18.8		ug/L		94	17 - 183
Methylene Chloride	5.0	U	20.0	20.3		ug/L		101	0 - 221
1,1,2,2-Tetrachloroethane	1.0	U	20.0	24.0		ug/L		120	46 - 157
Tetrachloroethene	1.0	U	20.0	17.0		ug/L		85	64 - 148
1,1,1-Trichloroethane	1.2		20.0	18.5		ug/L		86	52 - 162
1,1,2-Trichloroethane	1.0	U	20.0	21.3		ug/L		107	52 - 150
Trichloroethene	1.0	U	20.0	17.5		ug/L		88	70 - 157
Acrolein	20	U	100	73.5		ug/L		73	40 - 160
Acrylonitrile	20	U	200	233		ug/L		117	40 - 160
1,3-Dichloropropene, Total	2.0	U	40.0	38.7		ug/L		97	45 - 124

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		79 - 120
1,2-Dichloroethane-d4 (Surr)	87		70 - 121
Toluene-d8 (Surr)	94		70 - 123

Lab Sample ID: 240-105286-1 MSD

Matrix: Water

Analysis Batch: 358935

Client Sample ID: W-012607-120518-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	1.0	U	20.0	20.9		ug/L		104	37 - 151	4	61
Ethylbenzene	1.0	U	20.0	18.7		ug/L		94	37 - 162	4	63
Toluene	1.0	U	20.0	21.3		ug/L		106	47 - 150	5	41
Vinyl chloride	2.0	U	20.0	25.1		ug/L		126	0 - 251	1	66
Xylenes, Total	2.0	U	40.0	37.0		ug/L		93	67 - 120	4	25
Dichlorobromomethane	1.0	U	20.0	18.7		ug/L		93	35 - 155	6	56
Bromoform	1.0	U	20.0	16.2		ug/L		81	45 - 169	10	42
Bromomethane	2.0	U	20.0	20.2		ug/L		101	0 - 242	0	61
Carbon tetrachloride	1.0	U	20.0	16.4		ug/L		82	70 - 140	2	41

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-105286-1 MSD

Matrix: Water

Analysis Batch: 358935

Client Sample ID: W-012607-120518-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene	1.0	U	20.0	19.7		ug/L		99	37 - 160	4	53
Chlorodibromomethane	1.0	U	20.0	17.7		ug/L		89	53 - 149	6	50
Chloroethane	2.0	U	20.0	22.1		ug/L		110	14 - 230	0	78
2-Chloroethyl vinyl ether	2.0	U	20.0	2.0	U	ug/L		0	0 - 305	NC	71
Chloroform	1.0	U	20.0	19.4		ug/L		97	51 - 138	3	54
Chloromethane	2.0	U	20.0	29.3		ug/L		146	0 - 273	0	60
1,2-Dichlorobenzene	1.0	U	20.0	18.5		ug/L		93	18 - 190	1	57
1,3-Dichlorobenzene	1.0	U	20.0	18.0		ug/L		90	59 - 156	0	43
1,4-Dichlorobenzene	1.0	U	20.0	18.2		ug/L		91	18 - 190	1	57
1,1-Dichloroethane	1.8		20.0	23.0		ug/L		106	59 - 155	3	40
1,1-Dichloroethene	1.0	U	20.0	21.2		ug/L		106	0 - 234	4	32
1,2-Dichloroethane	1.0	U	20.0	20.7		ug/L		103	49 - 155	5	49
trans-1,2-Dichloroethene	0.50	U	20.0	20.5		ug/L		103	54 - 156	4	45
1,2-Dichloropropane	1.0	U	20.0	23.1		ug/L		115	0 - 210	2	55
cis-1,3-Dichloropropene	1.0	U	20.0	20.9		ug/L		105	0 - 227	5	58
trans-1,3-Dichloropropene	1.0	U	20.0	20.4		ug/L		102	17 - 183	8	86
Methylene Chloride	5.0	U	20.0	20.8		ug/L		104	0 - 221	3	28
1,1,2,2-Tetrachloroethane	1.0	U	20.0	25.0		ug/L		125	46 - 157	4	61
Tetrachloroethene	1.0	U	20.0	17.3		ug/L		86	64 - 148	2	39
1,1,1-Trichloroethane	1.2		20.0	18.7		ug/L		87	52 - 162	1	36
1,1,2-Trichloroethane	1.0	U	20.0	22.4		ug/L		112	52 - 150	5	45
Trichloroethene	1.0	U	20.0	18.1		ug/L		90	70 - 157	3	48
Acrolein	20	U	100	77.2		ug/L		77	40 - 160	5	60
Acrylonitrile	20	U	200	251		ug/L		126	40 - 160	7	60
1,3-Dichloropropene, Total	2.0	U	40.0	41.3		ug/L		103	45 - 124	6	28

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		79 - 120
1,2-Dichloroethane-d4 (Surr)	85		70 - 121
Toluene-d8 (Surr)	94		70 - 123

Method: 625 - Dioxin Screen (GC/MS SIM)

Lab Sample ID: MB 240-358793/3-A

Matrix: Water

Analysis Batch: 359075

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358793

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	NEG				NONE		12/07/18 08:38	12/10/18 14:10	1

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-358786/11-A

Matrix: Water

Analysis Batch: 359023

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358786

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	10	U	10	0.17	ug/L		12/07/18 08:30	12/10/18 10:28	1

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-358786/11-A

Matrix: Water

Analysis Batch: 359023

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358786

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]pyrene	10	U	10	0.17	ug/L		12/07/18 08:30	12/10/18 10:28	1
Benzo[b]fluoranthene	10	U	10	0.15	ug/L		12/07/18 08:30	12/10/18 10:28	1
Benzo[g,h,i]perylene	10	U	10	0.18	ug/L		12/07/18 08:30	12/10/18 10:28	1
Acenaphthene	10	U	10	0.17	ug/L		12/07/18 08:30	12/10/18 10:28	1
Acenaphthylene	10	U	10	0.13	ug/L		12/07/18 08:30	12/10/18 10:28	1
Anthracene	10	U	10	0.14	ug/L		12/07/18 08:30	12/10/18 10:28	1
Benzo[k]fluoranthene	10	U	10	0.14	ug/L		12/07/18 08:30	12/10/18 10:28	1
Butyl benzyl phthalate	10	U	10	0.67	ug/L		12/07/18 08:30	12/10/18 10:28	1
Bis(2-chloroethoxy)methane	10	U	10	0.46	ug/L		12/07/18 08:30	12/10/18 10:28	1
Bis(2-chloroethyl)ether	10	U	10	0.40	ug/L		12/07/18 08:30	12/10/18 10:28	1
Bis(2-ethylhexyl) phthalate	10	U	10	2.2	ug/L		12/07/18 08:30	12/10/18 10:28	1
bis (2-chloroisopropyl) ether	10	U	10	0.55	ug/L		12/07/18 08:30	12/10/18 10:28	1
4-Bromophenyl phenyl ether	10	U	10	0.50	ug/L		12/07/18 08:30	12/10/18 10:28	1
2-Chloronaphthalene	10	U	10	0.48	ug/L		12/07/18 08:30	12/10/18 10:28	1
4-Chlorophenyl phenyl ether	10	U	10	0.55	ug/L		12/07/18 08:30	12/10/18 10:28	1
Chrysene	10	U	10	0.19	ug/L		12/07/18 08:30	12/10/18 10:28	1
Dibenz(a,h)anthracene	10	U	10	0.15	ug/L		12/07/18 08:30	12/10/18 10:28	1
Di-n-butyl phthalate	10	U	10	1.8	ug/L		12/07/18 08:30	12/10/18 10:28	1
3,3'-Dichlorobenzidine	10	U	10	1.2	ug/L		12/07/18 08:30	12/10/18 10:28	1
Diethyl phthalate	10	U	10	3.8	ug/L		12/07/18 08:30	12/10/18 10:28	1
Dimethyl phthalate	10	U	10	0.52	ug/L		12/07/18 08:30	12/10/18 10:28	1
2,4-Dinitrotoluene	10	U	10	2.1	ug/L		12/07/18 08:30	12/10/18 10:28	1
2,6-Dinitrotoluene	10	U	10	2.1	ug/L		12/07/18 08:30	12/10/18 10:28	1
Di-n-octyl phthalate	10	U	10	0.82	ug/L		12/07/18 08:30	12/10/18 10:28	1
Fluoranthene	10	U	10	0.16	ug/L		12/07/18 08:30	12/10/18 10:28	1
Fluorene	10	U	10	0.17	ug/L		12/07/18 08:30	12/10/18 10:28	1
Hexachlorobenzene	10	U	10	0.16	ug/L		12/07/18 08:30	12/10/18 10:28	1
Hexachlorobutadiene	10	U	10	0.54	ug/L		12/07/18 08:30	12/10/18 10:28	1
Hexachloroethane	10	U	10	0.40	ug/L		12/07/18 08:30	12/10/18 10:28	1
Indeno[1,2,3-cd]pyrene	10	U	10	0.14	ug/L		12/07/18 08:30	12/10/18 10:28	1
Isophorone	10	U	10	0.32	ug/L		12/07/18 08:30	12/10/18 10:28	1
Naphthalene	10	U	10	0.11	ug/L		12/07/18 08:30	12/10/18 10:28	1
Nitrobenzene	10	U	10	0.51	ug/L		12/07/18 08:30	12/10/18 10:28	1
N-Nitrosodi-n-propylamine	10	U	10	0.25	ug/L		12/07/18 08:30	12/10/18 10:28	1
Phenanthrene	10	U	10	0.17	ug/L		12/07/18 08:30	12/10/18 10:28	1
Pyrene	10	U	10	0.18	ug/L		12/07/18 08:30	12/10/18 10:28	1
1,2,4-Trichlorobenzene	10	U	10	0.43	ug/L		12/07/18 08:30	12/10/18 10:28	1
4-Chloro-3-methylphenol	10	U	10	0.30	ug/L		12/07/18 08:30	12/10/18 10:28	1
2-Chlorophenol	10	U	10	0.27	ug/L		12/07/18 08:30	12/10/18 10:28	1
2,4-Dichlorophenol	10	U	10	0.26	ug/L		12/07/18 08:30	12/10/18 10:28	1
2,4-Dimethylphenol	10	U	10	0.52	ug/L		12/07/18 08:30	12/10/18 10:28	1
2,4-Dinitrophenol	50	U	50	6.2	ug/L		12/07/18 08:30	12/10/18 10:28	1
4,6-Dinitro-2-methylphenol	50	U	50	2.8	ug/L		12/07/18 08:30	12/10/18 10:28	1
2-Nitrophenol	10	U	10	0.56	ug/L		12/07/18 08:30	12/10/18 10:28	1
4-Nitrophenol	50	U	50	2.2	ug/L		12/07/18 08:30	12/10/18 10:28	1
Pentachlorophenol	10	U	10	3.1	ug/L		12/07/18 08:30	12/10/18 10:28	1
Phenol	10	U	10	0.13	ug/L		12/07/18 08:30	12/10/18 10:28	1
2,4,6-Trichlorophenol	10	U	10	1.8	ug/L		12/07/18 08:30	12/10/18 10:28	1

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-358786/11-A

Matrix: Water

Analysis Batch: 359023

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358786

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzidine	5.0	U	5.0	1.9	ug/L		12/07/18 08:30	12/10/18 10:28	1
Hexachlorocyclopentadiene	10	U	10	1.8	ug/L		12/07/18 08:30	12/10/18 10:28	1
N-Nitrosodimethylamine	1.0	U	1.0	0.22	ug/L		12/07/18 08:30	12/10/18 10:28	1
N-Nitrosodiphenylamine	10	U	10	0.44	ug/L		12/07/18 08:30	12/10/18 10:28	1
1,2-Diphenylhydrazine	1.0	U	1.0	0.43	ug/L		12/07/18 08:30	12/10/18 10:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorophenol	65		10 - 120	12/07/18 08:30	12/10/18 10:28	1
2,4,6-Tribromophenol	56		28 - 120	12/07/18 08:30	12/10/18 10:28	1
Nitrobenzene-d5	87		32 - 120	12/07/18 08:30	12/10/18 10:28	1
Phenol-d5	50		10 - 120	12/07/18 08:30	12/10/18 10:28	1
Terphenyl-d14	90		23 - 127	12/07/18 08:30	12/10/18 10:28	1
2-Fluorobiphenyl (Surr)	80		38 - 120	12/07/18 08:30	12/10/18 10:28	1

Lab Sample ID: LCS 240-358786/12-A

Matrix: Water

Analysis Batch: 359023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358786

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzo[a]anthracene	20.0	17.0		ug/L		85	33 - 143
Benzo[a]pyrene	20.0	15.7		ug/L		78	17 - 163
Benzo[b]fluoranthene	20.0	16.1		ug/L		81	24 - 159
Benzo[g,h,i]perylene	20.0	18.5		ug/L		93	0 - 219
Acenaphthene	20.0	14.2		ug/L		71	47 - 145
Acenaphthylene	20.0	14.5		ug/L		73	33 - 145
Anthracene	20.0	16.1		ug/L		80	27 - 133
Benzo[k]fluoranthene	20.0	16.6		ug/L		83	11 - 162
Butyl benzyl phthalate	20.0	15.6		ug/L		78	0 - 152
Bis(2-chloroethoxy)methane	20.0	17.9		ug/L		90	33 - 184
Bis(2-chloroethyl)ether	20.0	17.5		ug/L		88	12 - 158
Bis(2-ethylhexyl) phthalate	20.0	15.9		ug/L		79	8 - 158
bis (2-chloroisopropyl) ether	20.0	29.5		ug/L		148	36 - 166
4-Bromophenyl phenyl ether	20.0	17.3		ug/L		87	53 - 127
2-Chloronaphthalene	20.0	15.7		ug/L		79	60 - 120
4-Chlorophenyl phenyl ether	20.0	14.9		ug/L		74	25 - 158
Chrysene	20.0	16.8		ug/L		84	17 - 168
Dibenz(a,h)anthracene	20.0	16.6		ug/L		83	0 - 227
Di-n-butyl phthalate	20.0	16.0		ug/L		80	1 - 120
3,3'-Dichlorobenzidine	40.0	30.6		ug/L		77	0 - 262
Diethyl phthalate	20.0	13.9		ug/L		70	0 - 120
Dimethyl phthalate	20.0	12.1		ug/L		60	0 - 120
2,4-Dinitrotoluene	20.0	16.4		ug/L		82	39 - 139
2,6-Dinitrotoluene	20.0	15.9		ug/L		79	50 - 158
Di-n-octyl phthalate	20.0	13.8		ug/L		69	4 - 146
Fluoranthene	20.0	17.4		ug/L		87	26 - 137
Fluorene	20.0	15.0		ug/L		75	59 - 121
Hexachlorobenzene	20.0	16.8		ug/L		84	0 - 152
Hexachlorobutadiene	20.0	14.4		ug/L		72	24 - 120

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 625.1 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-358786/12-A

Matrix: Water

Analysis Batch: 359023

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358786

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hexachloroethane	20.0	15.1		ug/L		76	40 - 120
Indeno[1,2,3-cd]pyrene	20.0	16.9		ug/L		85	0 - 171
Isophorone	20.0	18.8		ug/L		94	21 - 196
Naphthalene	20.0	14.8		ug/L		74	21 - 133
Nitrobenzene	20.0	19.1		ug/L		96	35 - 180
N-Nitrosodi-n-propylamine	20.0	20.1		ug/L		100	0 - 230
Phenanthrene	20.0	15.9		ug/L		79	54 - 120
Pyrene	20.0	16.5		ug/L		82	52 - 120
1,2,4-Trichlorobenzene	20.0	14.2		ug/L		71	44 - 142
4-Chloro-3-methylphenol	20.0	16.4		ug/L		82	22 - 147
2-Chlorophenol	20.0	16.0		ug/L		80	23 - 134
2,4-Dichlorophenol	20.0	15.3		ug/L		76	39 - 135
2,4-Dimethylphenol	20.0	16.7		ug/L		84	32 - 120
2,4-Dinitrophenol	40.0	19.3	J	ug/L		48	0 - 191
4,6-Dinitro-2-methylphenol	40.0	31.3	J	ug/L		78	0 - 181
2-Nitrophenol	20.0	15.8		ug/L		79	29 - 182
4-Nitrophenol	40.0	22.3	J	ug/L		56	0 - 132
Pentachlorophenol	40.0	18.0		ug/L		45	14 - 176
Phenol	20.0	10.6		ug/L		53	5 - 120
2,4,6-Trichlorophenol	20.0	15.7		ug/L		79	37 - 144
Benzidine	40.0	18.2		ug/L		46	5 - 120
Hexachlorocyclopentadiene	20.0	13.9		ug/L		70	19 - 120
N-Nitrosodimethylamine	20.0	14.8		ug/L		74	10 - 120
N-Nitrosodiphenylamine	20.0	16.5		ug/L		83	55 - 120
1,2-Diphenylhydrazine	20.0	19.5		ug/L		98	43 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorophenol	73		10 - 120
2,4,6-Tribromophenol	77		28 - 120
Nitrobenzene-d5	92		32 - 120
Phenol-d5	61		10 - 120
Terphenyl-d14	90		23 - 127
2-Fluorobiphenyl (Surr)	81		38 - 120

Method: 608.3 - Organochlorine Pesticides in Water

Lab Sample ID: MB 240-358851/9-A

Matrix: Water

Analysis Batch: 359729

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358851

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.050	U	0.050	0.0024	ug/L		12/07/18 11:49	12/13/18 10:12	1
alpha-BHC	0.050	U	0.050	0.0020	ug/L		12/07/18 11:49	12/13/18 10:12	1
beta-BHC	0.050	U	0.050	0.0046	ug/L		12/07/18 11:49	12/13/18 10:12	1
delta-BHC	0.050	U	0.050	0.0043	ug/L		12/07/18 11:49	12/13/18 10:12	1
gamma-BHC (Lindane)	0.050	U	0.050	0.0025	ug/L		12/07/18 11:49	12/13/18 10:12	1
Chlordane (technical)	0.50	U	0.50	0.047	ug/L		12/07/18 11:49	12/13/18 10:12	1
4,4'-DDD	0.050	U	0.050	0.0053	ug/L		12/07/18 11:49	12/13/18 10:12	1

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 608.3 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: MB 240-358851/9-A

Matrix: Water

Analysis Batch: 359729

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358851

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	0.050	U	0.050	0.0043	ug/L		12/07/18 11:49	12/13/18 10:12	1
4,4'-DDT	0.050	U	0.050	0.0048	ug/L		12/07/18 11:49	12/13/18 10:12	1
Dieldrin	0.050	U	0.050	0.0023	ug/L		12/07/18 11:49	12/13/18 10:12	1
Endosulfan I	0.050	U	0.050	0.0037	ug/L		12/07/18 11:49	12/13/18 10:12	1
Endosulfan II	0.050	U	0.050	0.0023	ug/L		12/07/18 11:49	12/13/18 10:12	1
Endosulfan sulfate	0.050	U	0.050	0.0037	ug/L		12/07/18 11:49	12/13/18 10:12	1
Endrin	0.050	U	0.050	0.0025	ug/L		12/07/18 11:49	12/13/18 10:12	1
Endrin aldehyde	0.050	U	0.050	0.0046	ug/L		12/07/18 11:49	12/13/18 10:12	1
Heptachlor	0.050	U	0.050	0.0033	ug/L		12/07/18 11:49	12/13/18 10:12	1
Heptachlor epoxide	0.050	U	0.050	0.0026	ug/L		12/07/18 11:49	12/13/18 10:12	1
Toxaphene	2.0	U	2.0	0.058	ug/L		12/07/18 11:49	12/13/18 10:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	54		10 - 120	12/07/18 11:49	12/13/18 10:12	1
Tetrachloro-m-xylene	66		33 - 120	12/07/18 11:49	12/13/18 10:12	1

Lab Sample ID: LCS 240-358851/10-A

Matrix: Water

Analysis Batch: 359729

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358851

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aldrin	0.200	0.134		ug/L		67	42 - 140
alpha-BHC	0.200	0.132		ug/L		66	37 - 140
beta-BHC	0.200	0.140		ug/L		70	17 - 147
delta-BHC	0.200	0.151		ug/L		75	19 - 140
gamma-BHC (Lindane)	0.200	0.108		ug/L		54	32 - 140
4,4'-DDD	0.200	0.173		ug/L		86	31 - 141
4,4'-DDE	0.200	0.166		ug/L		83	30 - 145
4,4'-DDT	0.200	0.192		ug/L		96	25 - 160
Dieldrin	0.200	0.136		ug/L		68	36 - 146
Endosulfan I	0.200	0.133		ug/L		67	45 - 153
Endosulfan II	0.200	0.145		ug/L		73	0 - 202
Endosulfan sulfate	0.200	0.185		ug/L		92	26 - 144
Endrin	0.200	0.156		ug/L		78	30 - 147
Endrin aldehyde	0.200	0.158		ug/L		79	47 - 120
Heptachlor	0.200	0.138		ug/L		69	34 - 140
Heptachlor epoxide	0.200	0.145		ug/L		73	37 - 142

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	81		10 - 120
Tetrachloro-m-xylene	54		33 - 120

TestAmerica Canton

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 240-358850/23-A

Matrix: Water

Analysis Batch: 359209

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 358850

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	0.056	ug/L		12/07/18 11:44	12/11/18 08:08	1
Aroclor-1221	0.10	U	0.10	0.057	ug/L		12/07/18 11:44	12/11/18 08:08	1
Aroclor-1232	0.10	U	0.10	0.074	ug/L		12/07/18 11:44	12/11/18 08:08	1
Aroclor-1242	0.10	U	0.10	0.076	ug/L		12/07/18 11:44	12/11/18 08:08	1
Aroclor-1248	0.10	U	0.10	0.050	ug/L		12/07/18 11:44	12/11/18 08:08	1
Aroclor-1254	0.10	U	0.10	0.040	ug/L		12/07/18 11:44	12/11/18 08:08	1
Aroclor-1260	0.10	U	0.10	0.046	ug/L		12/07/18 11:44	12/11/18 08:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	49		10 - 114	12/07/18 11:44	12/11/18 08:08	1
Tetrachloro-m-xylene	75		15 - 131	12/07/18 11:44	12/11/18 08:08	1

Lab Sample ID: LCS 240-358850/24-A

Matrix: Water

Analysis Batch: 359209

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 358850

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	1.74		ug/L		70	50 - 140
Aroclor-1260	2.50	2.12		ug/L		85	8 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	73		10 - 114
Tetrachloro-m-xylene	65		15 - 131

TestAmerica Canton

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (79-120)	DCA (70-121)	TOL (70-123)
240-105286-1	W-012607-120518-EE-001	85	85	90
240-105286-1 MS	W-012607-120518-EE-001	86	87	94
240-105286-1 MSD	W-012607-120518-EE-001	88	85	94
240-105286-2	TRIP BLANK	83	87	91
LCS 240-358935/6	Lab Control Sample	89	86	94
MB 240-358935/8	Method Blank	86	85	91

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

Method: 625.1 - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		2FP (10-120)	TBP (28-120)	NBZ (32-120)	PHL (10-120)	TPHL (23-127)	FBP (38-120)
240-105286-1	W-012607-120518-EE-001	44	86	83	30	57	73
LCS 240-358786/12-A	Lab Control Sample	73	77	92	61	90	81
MB 240-358786/11-A	Method Blank	65	56	87	50	90	80

Surrogate Legend

2FP = 2-Fluorophenol

TBP = 2,4,6-Tribromophenol

NBZ = Nitrobenzene-d5

PHL = Phenol-d5

TPHL = Terphenyl-d14

FBP = 2-Fluorobiphenyl (Surr)

Method: 608.3 - Organochlorine Pesticides in Water

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCBP1 (10-120)	DCBP2 (10-120)	TCX1 (33-120)	TCX2 (33-120)
240-105286-1	W-012607-120518-EE-001	62	53	50	48
LCS 240-358851/10-A	Lab Control Sample	81	80	54	52
MB 240-358851/9-A	Method Blank	54	52	66	65

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Method: 608.3 - Polychlorinated Biphenyls (PCBs) (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCBP1 (10-114)	TCX1 (15-131)
240-105286-1	W-012607-120518-EE-001	55	58
LCS 240-358850/24-A	Lab Control Sample	73	65
MB 240-358850/23-A	Method Blank	49	75

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Client Sample ID: W-012607-120518-EE-001

Date Collected: 12/05/18 14:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	358935	12/08/18 14:18	HMB	TAL CAN
Total/NA	Prep	3510C			358793	12/07/18 08:38	ACS	TAL CAN
Total/NA	Analysis	625		1	359075	12/11/18 07:34	MRU	TAL CAN
Total/NA	Prep	625			358786	12/07/18 08:30	ACS	TAL CAN
Total/NA	Analysis	625.1		1	359023	12/10/18 16:14	MRU	TAL CAN
Total/NA	Prep	608			358850	12/07/18 11:44	BMB	TAL CAN
Total/NA	Analysis	608.3		1	359209	12/11/18 09:10	CSC	TAL CAN
Total/NA	Prep	608			358851	12/07/18 11:49	BMB	TAL CAN
Total/NA	Analysis	608.3		1	359729	12/13/18 10:49	BPM	TAL CAN

Client Sample ID: TRIP BLANK

Date Collected: 12/05/18 00:00

Date Received: 12/06/18 09:50

Lab Sample ID: 240-105286-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	358935	12/08/18 14:41	HMB	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105286-2

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-18 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Canton

TestAmerica Michigan
10448 Citation Drive
Suite 200
Brighton, MI 48116
Phone: 810.229.2763 Fax:

MICHIGAN
190

Chain of Custody Record
2403 5880

231142

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other:

Company Name: GWH		Client Contact		Project Manager: Chris Matthews		Site Contact: Erik Gwinn		Date: 12/5/18		COC No: 1 of 1	
Address: 26650 Blysscott Rd		City/State/Zip: Farmington Hills, MI 48334		Phone: (248) 243-3400		Fax: (248) 243-3400		Lab Contact: Erik Gwinn		Carrier: TestAmerica FUGEA	
Project Name: RACEN GWRP LUMIC		Site: LUMIC WH		PO # 012607-TU1718-03		Analysis Turnaround Time ☐ CALENDAR DAYS ☐ WORKING DAYS TAT if different from Below: ☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		For Lab Use Only: Walk-In Client: ☐ Lab Sampling: ☐		Job / SDG No.: ☐	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.	
W-012607-120518-EE-001		12/5/18		1400		C		WTR		221186	
Trip Blank		12/5/18								1	
Sample Specific Notes: Effluent Composite											
240-105286 Chain of Custody											
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)											
☐ Return to Client ☒ Disposal by Lab ☐ Archive for Months											
Special Instructions/QC Requirements & Comments:											
Custody Seals Intact: ☐ Yes ☐ No											
Relinquished by: <i>E. Gwinn</i>											
Relinquished by: <i>E. Gwinn</i>											
Relinquished by: <i>E. Gwinn</i>											
Cooler Temp. (°C): Obs'd: <i>12/5/18</i> Cor'd: <i>12/5/18</i> Therm ID No.: <i>950</i>											
Received by: <i>E. Gwinn</i> Company: <i>AC</i>											
Received by: <i>E. Gwinn</i> Company: <i>AC</i>											
Received in Laboratory by: <i>E. Gwinn</i> Company: <i>AC</i>											

TestAmerica Canton Sample Receipt Form/Narrative

Login #: 105286

Canton Facility

Client CHD Site Name _____ Cooler unpacked by: [Signature]
 Cooler Received on 12-6-18 Opened on 12-6-18
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time

Storage Location

TestAmerica Cooler # TA Foam Box Client Cooler Box Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
 IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #36 (CF +0°C) Observed Cooler Temp. 2.2 °C Corrected Cooler Temp. 2.2 °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels be reconciled with the COC? Yes No
 9. Were correct bottle(s) used for the test(s) indicated? Yes No
 10. Sufficient quantity received to perform indicated analyses? Yes No
 11. Are these work share samples? Yes No
 If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC854592
 13. Were VOAs on the COC? Yes No
 14. Were air bubbles >6 mm in any VOA vials? Yes No NA
 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B82790 IVB Yes No
 16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not
checked for pH by
Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

MS

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container pH</u>	<u>Preservative Added (mls)</u>	<u>Lot #</u>
W-012607-120518-EE-001	240-105286-J-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
W-012607-120518-EE-001	240-105286-S-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____
W-012607-120518-EE-001	240-105286-T-1	Amber Glass 1 liter - Sulfuric Acid	_____	_____	_____

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-105687-1

Client Project/Site: 12607, RACER Eckles Rd

For:

GHD Services Inc.

26850 Haggerty Rd.

Farmington Hills, Michigan 48331

Attn: Ms. Ruth Mickle



Authorized for release by:

12/20/2018 9:14:07 AM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

LINKS

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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.

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Job ID: 240-105687-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative 240-105687-1

Comments

No additional comments.

Receipt

The sample was received on 12/13/2018 9:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8° C.

Metals

Method(s) 200.7 Rev 4.4, 6010B: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: W-012607-121218-EE-002 (240-105687-1). The continuing calibration blanks and method blanks may not support the lower PQL.

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

General Chemistry

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
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.
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)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-105687-1	W-012607-121218-EE-002	Water	12/12/18 15:00	12/13/18 09:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Client Sample ID: W-012607-121218-EE-002

Lab Sample ID: 240-105687-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	1.0		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.68		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Cr (VI)	0.89		0.050	mg/L	10		3500-Cr B-2009	Total
								Recoverable
								Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Method	Method Description	Protocol	Laboratory
200.7 Rev 4.4	Metals (ICP)	EPA	TAL CAN
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
200.7	Preparation, Total Recoverable Metals	EPA	TAL CAN

Protocol References:

EPA = US Environmental Protection Agency

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

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

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

Client Sample ID: W-012607-121218-EE-002

Date Collected: 12/12/18 15:00

Date Received: 12/13/18 09:30

Lab Sample ID: 240-105687-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	1.0		0.050	mg/L		12/14/18 14:00	12/18/18 21:53	1
Nickel	0.68		0.010	mg/L		12/14/18 14:00	12/18/18 21:53	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

General Chemistry

Client Sample ID: W-012607-121218-EE-002

Date Collected: 12/12/18 15:00

Date Received: 12/13/18 09:30

Lab Sample ID: 240-105687-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.89		0.050	mg/L			12/13/18 12:53	10

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Metals

Prep Batch: 360066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105687-1	W-012607-121218-EE-002	Total Recoverable	Water	200.7	
MB 240-360066/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 240-360066/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 360726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105687-1	W-012607-121218-EE-002	Total Recoverable	Water	200.7 Rev 4.4	360066
MB 240-360066/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	360066
LCS 240-360066/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	360066

General Chemistry

Analysis Batch: 359738

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-105687-1	W-012607-121218-EE-002	Total/NA	Water	3500-Cr B-2009	
MB 240-359738/3	Method Blank	Total/NA	Water	3500-Cr B-2009	
LCS 240-359738/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-360066/1-A

Matrix: Water

Analysis Batch: 360726

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 360066

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		12/14/18 14:00	12/18/18 19:52	1
Nickel	0.010	U	0.010	mg/L		12/14/18 14:00	12/18/18 19:52	1

Lab Sample ID: LCS 240-360066/2-A

Matrix: Water

Analysis Batch: 360726

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 360066

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.184		mg/L		92	85 - 115
Nickel	0.500	0.480		mg/L		96	85 - 115

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-359738/3

Matrix: Water

Analysis Batch: 359738

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			12/13/18 09:07	1

Lab Sample ID: LCS 240-359738/4

Matrix: Water

Analysis Batch: 359738

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.280		mg/L		112	80 - 123

TestAmerica Canton

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Client Sample ID: W-012607-121218-EE-002

Lab Sample ID: 240-105687-1

Date Collected: 12/12/18 15:00

Matrix: Water

Date Received: 12/13/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.7			360066	12/14/18 14:00	SLD	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	360726	12/18/18 21:53	WKD	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		10	359738	12/13/18 12:53	MMM	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-105687-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19 *
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19 *
Kentucky (UST)	State Program	4	58	02-23-19 *
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-19 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19 *
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19 *
West Virginia DEP	State Program	3	210	12-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Canton

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Phone (330) 497-9396 Fax (330) 497-0772

4.8/4.8

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Ms. Ruth Mickle Company: GHD Services Inc. Address: 26850 Haggerty Rd. City: Farmington Hills State, Zip: MI, 48331 Phone: 34023630 Email: ruth.mickle@ghd.com Project Name: 12607-weekly Influent, RACER Eckles Rd Site:		Sampler: Erik Englund Lab PM: Heckler, Denise D Phone: 248 431 7966 E-Mail: denise.heckler@testamericainc.com		Carrier Tracking No(s): FEEDA COC No: 240-48699-21067.1 Page: Page 1 of 1 Job #:	
Analysis Requested Due Date Requested: TAT Requested (days): 2 weeks PO #: 34023630 WO #: 12607 Project #: 24005880 SOW#:					
Sample Identification W-012607-121218-BE-002		Sample Date: 12/12/18	Sample Time: 1500	Sample Type (C=comp, G=grab): C	Matrix (Water, Solid, G=water, B=soil, B=soil, A=air): Water
Perform MS/MSD (Yes or No)		Field Filtered Sample (Yes or No)		3500 CR-B - Chromium, Hexavalent	
200.7 - Cr, Ni		N D		Total Number of containers	
Special Instructions/Note: Effluent composite					
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)					
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months Special Instructions/QC Requirements:					
Empty Kit Relinquished by: Relinquished by: Englund Relinquished by: Relinquished by:					
Date/Time: 12/12/18 1700 Date/Time:		Date/Time: 12/18/18 930 Date/Time:		Date/Time:	
Company: GHD Company:		Company:		Company:	
Date/Time:		Date/Time:		Date/Time:	
Custody Seals Intact: ☒ Yes ☐ No		Cooler Temperature(s) °C and Other Remarks:			

TestAmerica Canton Sample Receipt Form/Narrative

Login #: 105687

Canton Facility

Client GAD Site Name _____ Cooler unpacked by: _____
 Cooler Received on 12/13/18 Opened on 12/13/18
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time

Storage Location

TestAmerica Cooler # 1A Foam Box Client Cooler Box Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
 IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #36 (CF +0°C) Observed Cooler Temp. 4.8 °C Corrected Cooler Temp. 4.8 °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels be reconciled with the COC? Yes No
 9. Were correct bottle(s) used for the test(s) indicated? Yes No
 10. Sufficient quantity received to perform indicated analyses? Yes No
 11. Are these work share samples? Yes No
 If yes, Questions 12-16 have been checked at the originating laboratory.
 12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC854592
 13. Were VOAs on the COC? Yes No
 14. Were air bubbles >6 mm in any VOA vials?  Larger than this. Yes No NA
 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 16. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not
checked for pH by
Receiving:

VOAs
Oil and Grease
TOC

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

Ryan

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> <u>pH</u>	<u>Preservative</u> <u>Added (mls)</u>	<u>Lot #</u>
W-012607-121218-EE-002	240-105687-B-1	Plastic 250ml - with Nitric Acid	<2	_____	_____

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-106058-1

Client Project/Site: 12607, RACER Eckles Rd

For:

GHD Services Inc.

26850 Haggerty Rd.

Farmington Hills, Michigan 48331

Attn: Ms. Ruth Mickle



Authorized for release by:

12/28/2018 8:57:02 AM

Denise Heckler, Project Manager II

(330)966-9477

denise.heckler@testamericainc.com

LINKS

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results through

TotalAccess

Have a Question?



Visit us at:

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.

Table of Contents

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Case Narrative

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Job ID: 240-106058-1

Laboratory: TestAmerica Canton

Narrative

Job Narrative
240-106058-1

Comments

No additional comments.

Receipt

The sample was received on 12/20/2018 10:30 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

Metals

Method(s) 200.7 Rev 4.4, 6010B: Some requested practical quantitation limits (PQLs) on the following samples fall below the laboratory's verified standard quantitation limit: W-012607-121918-EE-002 (240-106058-1). The continuing calibration blanks and method blanks may not support the lower PQL.

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

General Chemistry

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

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
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.
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)

Sample Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-106058-1	W-012607-121918-EE-002	Water	12/19/18 14:00	12/20/18 10:30

Detection Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Client Sample ID: W-012607-121918-EE-002

Lab Sample ID: 240-106058-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	1.1		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.68		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Cr (VI)	0.89		0.050	mg/L	10		3500-Cr B-2009	Total
								Recoverable
								Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Method Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Method	Method Description	Protocol	Laboratory
200.7 Rev 4.4	Metals (ICP)	EPA	TAL CAN
3500-Cr B-2009	Chromium, Hexavalent	SM	TAL CAN
200.7	Preparation, Total Recoverable Metals	EPA	TAL CAN

Protocol References:

EPA = US Environmental Protection Agency

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

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

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

Client Sample ID: W-012607-121918-EE-002

Date Collected: 12/19/18 14:00

Date Received: 12/20/18 10:30

Lab Sample ID: 240-106058-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	1.1		0.050	mg/L		12/21/18 14:00	12/26/18 16:00	1
Nickel	0.68		0.010	mg/L		12/21/18 14:00	12/25/18 01:44	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

General Chemistry

Client Sample ID: W-012607-121918-EE-002

Date Collected: 12/19/18 14:00

Date Received: 12/20/18 10:30

Lab Sample ID: 240-106058-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.89		0.050	mg/L			12/20/18 13:28	10

QC Association Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Metals

Prep Batch: 361235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-106058-1	W-012607-121918-EE-002	Total Recoverable	Water	200.7	
MB 240-361235/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 240-361235/2-A	Lab Control Sample	Total Recoverable	Water	200.7	

Analysis Batch: 361568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-106058-1	W-012607-121918-EE-002	Total Recoverable	Water	200.7 Rev 4.4	361235
MB 240-361235/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	361235
LCS 240-361235/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	361235

Analysis Batch: 361725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-106058-1	W-012607-121918-EE-002	Total Recoverable	Water	200.7 Rev 4.4	361235

General Chemistry

Analysis Batch: 361014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-106058-1	W-012607-121918-EE-002	Total/NA	Water	3500-Cr B-2009	
MB 240-361014/3	Method Blank	Total/NA	Water	3500-Cr B-2009	
LCS 240-361014/4	Lab Control Sample	Total/NA	Water	3500-Cr B-2009	

QC Sample Results

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 240-361235/1-A

Matrix: Water

Analysis Batch: 361568

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 361235

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		12/21/18 14:00	12/25/18 00:06	1
Nickel	0.010	U	0.010	mg/L		12/21/18 14:00	12/25/18 00:06	1

Lab Sample ID: LCS 240-361235/2-A

Matrix: Water

Analysis Batch: 361568

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 361235

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.184		mg/L		92	85 - 115
Nickel	0.500	0.483		mg/L		97	85 - 115

Method: 3500-Cr B-2009 - Chromium, Hexavalent

Lab Sample ID: MB 240-361014/3

Matrix: Water

Analysis Batch: 361014

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (VI)	0.0050	U	0.0050	mg/L			12/20/18 10:56	1

Lab Sample ID: LCS 240-361014/4

Matrix: Water

Analysis Batch: 361014

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.250	0.259		mg/L		104	80 - 123

TestAmerica Canton

Lab Chronicle

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Client Sample ID: W-012607-121918-EE-002

Lab Sample ID: 240-106058-1

Date Collected: 12/19/18 14:00

Matrix: Water

Date Received: 12/20/18 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.7			361235	12/21/18 14:00	MBB	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	361568	12/25/18 01:44	WKD	TAL CAN
Total Recoverable	Prep	200.7			361235	12/21/18 14:00	MBB	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	361725	12/26/18 16:00	WKD	TAL CAN
Total/NA	Analysis	3500-Cr B-2009		10	361014	12/20/18 13:28	JESW	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: 12607, RACER Eckles Rd

TestAmerica Job ID: 240-106058-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19 *
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-19
Kansas	NELAP	7	E-10336	01-31-19 *
Kentucky (UST)	State Program	4	58	02-23-19 *
Kentucky (WW)	State Program	4	98016	12-31-18 *
Minnesota	NELAP	5	039-999-348	12-31-19 *
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19 *
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-18-10	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
Washington	State Program	10	C971	01-12-19 *
West Virginia DEP	State Program	3	210	12-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Canton

$$\begin{array}{r} 26 \\ 26 \\ \hline 52 \end{array}$$

Chain of Custody Record

Client Information					
Carrier Tracking No(s): 240-48699-21067.1					
Page: Page 1 of 1					
Job #:					
Analysis Requested					
Due Date Requested:					
TAT Requested (days): 2 Wks					
PO #: 34023630					
WO #: 12607					
Project #: 24005880					
SSOW#:					
Address: 26850 Haggerty Rd.					
City: Farmington Hills					
State, Zip: MI, 48331					
Phone:					
Email: ruth.mickle@ghd.com					
Project Name: 12607-weekly Influent, RACER Eckles Rd					
Site:					
Sample Identification					
W-012607-121918-E-E-002					
Sample Date: 12/19/18					
Sample Time: 1400					
Sample Type (C=comp, G=grab): c					
Matrix (Water, Solid, Other): Water					
Field Filtered Sample (Yes or No)					
Perform MS/MSD (Yes or No)					
3500_CR_B - Chromium, Hexavalent					
200.7 - Cr, Ni					
Total Number of containers					
Special Instructions/Note: Effluent samples Composite					
Preservation Codes:					
A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SZO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify) Other:					
Possible Hazard Identification					
Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological ☐					
Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by:					
Relinquished by: [Signature]					
Date: 12/19/17					
Time: 1600					
Company: [Signature]					
Relinquished by:					
Date/Time:					
Relinquished by:					
Date/Time:					
Custody Seal No.: A Yes A No					
Custody Seals Intact:					
Cooler Temperature(s) °C and Other Remarks:					

TestAmerica Canton Sample Receipt Form/Narrative

Login #: 106058

Canton Facility

Client GHD Services Inc Site Name _____Cooler unpacked by: MJDCooler Received on 12-20-18Opened on 12-20-18FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time

Storage Location _____

TestAmerica Cooler # 7A Foam Box Client Cooler Box Other _____Packing material used: Bubble Wrap Foam Plastic Bag None Other _____COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

☐ See Multiple Cooler Form

IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

IR GUN #36 (CF +0°C) Observed Cooler Temp. 2.2 °C Corrected Cooler Temp. 2.2 °C2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No-Were tamper/custody seals intact and uncompromised? Yes No NA3. Shippers' packing slip attached to the cooler(s)? Yes No4. Did custody papers accompany the sample(s)? Yes No5. Were the custody papers relinquished & signed in the appropriate place? Yes No6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No7. Did all bottles arrive in good condition (Unbroken)? Yes No8. Could all bottle labels be reconciled with the COC? Yes No9. Were correct bottle(s) used for the test(s) indicated? Yes No10. Sufficient quantity received to perform indicated analyses? Yes No11. Are these work share samples? Yes No

If yes, Questions 12-16 have been checked at the originating laboratory.

12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC85459213. Were VOAs on the COC? Yes No14. Were air bubbles >6 mm in any VOA vials? Yes No NA15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No16. Was a LL Hg or Me Hg trip blank present? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____

Concerning _____

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by: MS

18. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

Temperature readings: _____

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container pH</u>	<u>Preservative Added (mls)</u>	<u>Lot #</u>
W-012607-121918-EE-002	240-106058-B-1	Plastic 250ml - with Nitric Acid	<2	_____	_____