



**CONESTOGA-ROVERS  
& ASSOCIATES**

14496 Sheldon Road, Suite 200, Plymouth, Michigan 48170  
Telephone: (734) 453-5123 Fax: (734) 453-5201  
[www.CRAworld.com](http://www.CRAworld.com)

September 13, 2013

Reference No. 012607

Ms. Tessy Jose  
City of Detroit  
Water and Sewerage Department  
Industrial Waste Control Division  
303 S. Livernois Avenue  
Detroit, Michigan 48209

Dear Ms. Jose:

Re: DWSD Semi-Annual Report  
(March 2012 through August 2013)  
12950 Eckles Road  
Livonia, Michigan 48150  
Permit No.: SD6-94508

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Conestoga-Rovers & Associates, Inc. (CRA) is providing the attached documents for the reporting requirements of Special Discharge Permit SD6-94508 for the period of March 2013 through August 2013.

Special Discharge Permit SD6-94508 was issued in June 2011 and is effective July 1, 2011 through June 30, 2015.

#### SECTION D: REPORTING REQUIREMENTS

- Reporting Period: March 1, 2013 to August 31, 2013
- Dates of Sampling: March 20, 2013; April 17, 2013; May 29, 2013; June 12, 2013; July 10, 2013; and August 21, 2013
- All samples were collected from the effluent sampling port of Tank T12
- Total Monthly Discharges:
  - March 2013: 386,647
  - April 2013: 472,293
  - May 2013: 320,816
  - June 2013: 378,368
  - July 2013: 416,787
  - August 2013: 515,338

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Equal  
Employment Opportunity  
Employer

REGISTERED COMPANY FOR  
**ISO 9001**  
ENGINEERING DESIGN



**CONESTOGA-ROVERS  
& ASSOCIATES**

September 13, 2013

- 2 -

Reference No. 012607

- Total Flow to Date: 147,509,987 gallons
- Signature of CRA's authorized representative who is knowledgeable of the remediation site's discharge

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

Please contact me at (734) 453-5123 if you require further information or clarification.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Christopher J. Meincke, P.E.

CM/ds/6/Det.

Encl.

cc: Dave Favero, RACER

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - March 2013**

<b>Date</b>	<b>Inspection Visits</b>	<b>Changes or Replacements of Treatment System</b>	<b>Samples Taken</b>	<b>Quantities of Groundwater Discharged / Day - GAL</b>	<b>Notes</b>
03/01/13	None	None	On-Site	26,785	
03/02/13	None	None			
03/03/13	None	None			
03/04/13	None	None	On-Site	2,291	
03/05/13	None	None	On-Site	25,085	
03/06/13	None	None	On-Site	20,925	
03/07/13	None	None	On-Site	27,736	
03/08/13	None	None	On-Site	21,674	
03/09/13	None	None	On-Site	12,974	
03/10/13	None	None	On-Site	27,105	
03/11/13	None	None	On-Site	21,519	
03/12/13	None	None	On-Site	24,815	
03/13/13	None	None			
03/14/13	None	None			
03/15/13	None	None			
03/16/13	None	None			
03/17/13	None	None			
03/18/13	None	None	On-Site	2,454	
03/19/13	None	None	On-Site	26,943	
03/20/13	None	None	On-site & Sampled	21,053	
03/21/13	None	None	On-Site	19,439	
03/22/13	None	None	On-Site	18,781	
03/23/13	None	None			
03/24/13	None	None			
03/25/13	None	None	On-Site	4,462	
03/26/13	None	None	On-Site	23,717	
03/27/13	None	None	On-Site	9,847	
03/28/13	None	None	On-Site	24,895	
03/29/13	None	None	On-Site	24,147	
03/30/13	None	None			
03/31/13	None	None			

Total Monthly Discharge (gal)

386,647

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - April 2013**

<b>Date</b>	<b>Inspection Visits</b>	<b>Changes or Replacements of Treatment System</b>	<b>Samples Taken</b>	<b>Quantities of Groundwater Discharged / Day - GAL</b>	<b>Notes</b>
04/01/13	None	None	On-Site	2,363	
04/02/13	None	None	On-Site	27,335	
04/03/13	None	None	On-Site	23,630	
04/04/13	None	None	On-Site	27,165	
04/05/13	None	None	On-Site	22,178	
04/06/13	None	None			
04/07/13	None	None			
04/08/13	None	None	On-Site	2,013	
04/09/13	None	None	On-Site	21,719	
04/10/13	None	None	On-Site	20,866	
04/11/13	None	None	On-Site	26,236	
04/12/13	None	None	On-Site	19,887	
04/13/13	None	None			
04/14/13	None	None			
04/15/13	None	None	On-Site	1,377	
04/16/13	None	None	On-Site	23,190	
04/17/13	None	None	On-site & Sampled	24,473	
04/18/13	None	None	On-Site	25,175	
04/19/13	None	None	On-Site	19,446	
04/20/13	None	None			
04/21/13	None	None			
04/22/13	None	None	On-Site	4,615	
04/23/13	None	None	On-Site	33,573	
04/24/13	None	None	On-Site	31,468	
04/25/13	None	None	On-Site	39,555	
04/26/13	None	None	On-Site	39,917	
04/27/13	None	None			
04/28/13	None	None			
04/29/13	None	None	On-Site	1,945	
04/30/13	None	None	On-Site	34,166	

Total Monthly Discharge (gal)

472,293

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - May 2013**

<b>Date</b>	<b>Inspection Visits</b>	<b>Changes or Replacements of Treatment System</b>	<b>Samples Taken</b>	<b>Quantities of Groundwater Discharged / Day - GAL</b>	<b>Notes</b>
05/01/13	None	None	On-Site	25,564	
05/02/13	None	None	On-Site	32,280	
05/03/13	None	None	On-Site	20,715	
05/04/13	None	None			
05/05/13	None	None			
05/06/13	None	None	On-Site	1,181	
05/07/13	None	None	On-Site	29,900	
05/08/13	None	None	On-Site	24,715	
05/09/13	None	None			System down - low pH T 4
05/10/13	None	None			System down - low pH T 4
05/11/13	None	None			
05/12/13	None	None			
05/13/13	None	None	On-Site	14,068	
05/14/13	None	None	On-Site	18,841	
05/15/13	None	None	On-Site	22,441	
05/16/13	None	None	On-Site	18,357	
05/17/13	None	None			System down - sludge pump not working
05/18/13	None	None			
05/19/13	None	None			
05/20/13	None	None			System down - sludge pump not working
05/21/13	None	None			System down - sludge pump not working
05/22/13	None	None			System down - sludge pump not working
05/23/13	None	None			System down - sludge pump not working
05/24/13	None	None			System down - sludge pump not working
05/25/13	None	None			
05/26/13	None	None			
05/27/13	None	None	On-Site	19,480	
05/28/13	None	None	On-Site	17,772	
05/29/13	None	None	On-site & Sampled	33,395	
05/30/13	None	None	On-Site	26,459	
05/31/13	None	None	On-Site	15,647	

Total Monthly Discharge (gal)

320,816

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - June 2013**

<b>Date</b>	<b>Inspection Visits</b>	<b>Changes or Replacements of Treatment System</b>	<b>Samples Taken</b>	<b>Quantities of Groundwater Discharged / Day - GAL</b>	<b>Notes</b>
06/01/13	None	None			
06/02/13	None	None			
06/03/13	None	None	On-Site		
06/04/13	None	None	On-Site		
06/05/13	None	None	On-Site		
06/06/13	None	None	On-Site	13,379	
06/07/13	None	None	On-Site	39,292	
06/08/13	None	None			
06/09/13	None	None			
06/10/13	None	None	On-Site	1,059	
06/11/13	None	None	On-Site	21,694	
06/12/13	None	None	On-site & Sampled	42,610	
06/13/13	None	None	On-Site	20,301	
06/14/13	None	None	On-Site	26,384	
06/15/13	None	None			
06/16/13	None	None			
06/17/13	None	None	On-Site	15,815	
06/18/13	None	None	On-Site	22,940	
06/19/13	None	None	On-Site	27,145	
06/20/13	None	None	On-Site	23,499	
06/21/13	None	None	On-Site	20,036	
06/22/13	None	None			
06/23/13	None	None			
06/24/13	None	None	On-Site	2,208	
06/25/13	None	None	On-Site	23,812	
06/26/13	None	None	On-Site	17,819	
06/27/13	None	None	On-Site	39,470	
06/28/13	None	None	On-Site	20,905	
06/29/13	None	None			
06/30/13	None	None			

Total Monthly Discharge (gal)

378,368

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - July 2013**

<b>Date</b>	<b>Inspection Visits</b>	<b>Changes or Replacements of Treatment System</b>	<b>Samples Taken</b>	<b>Quantities of Groundwater Discharged / Day - GAL</b>	<b>Notes</b>
07/01/13	None	None	On-Site	1,257	
07/02/13	None	None	On-Site	28,803	
07/03/13	None	None	On-Site	27,200	
07/04/13	None	None			
07/05/13	None	None			
07/06/13	None	None			
07/07/13	None	None			
07/08/13	None	None	On-Site	6,145	
07/09/13	None	None	On-Site	44,925	
07/10/13	None	None	On-site & Sampled	51,092	
07/11/13	None	None	On-Site	40,509	
07/12/13	None	None	On-Site	32,904	
07/13/13	None	None			
07/14/13	None	None			
07/15/13	None	None	On-Site	1,592	
07/16/13	None	None	On-Site	20,457	
07/17/13	None	None	On-Site	33,757	
07/18/13	None	None	On-Site	12,410	
07/19/13	None	None	On-Site	29,657	
07/20/13	None	None			
07/21/13	None	None			
07/22/13	None	None			System down - computer control panel down
07/23/13	None	None			System down - computer control panel down
07/24/13	None	None	On-Site	1,064	
07/25/13	None	None	On-Site	5,923	
07/26/13	None	None	On-Site	19,074	
07/27/13	None	None			
07/28/13	None	None			
07/29/13	None	None	On-Site	18,448	
07/30/13	None	None	On-Site	28,731	
07/31/13	None	None	On-Site	12,839	

Total Monthly Discharge (gal)

416,787

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log - August 2013**

<b>Date</b>	<b>Inspection Visits</b>	<b>Changes or Replacements of Treatment System</b>	<b>Samples Taken</b>	<b>Quantities of Groundwater Discharged / Day - GAL</b>	<b>Notes</b>
08/01/13	None	None	On-Site	53,438	
08/02/13	None	None	On-Site	16,956	
08/03/13	None	None			
08/04/13	None	None			
08/05/13	None	None	On-Site	1,076	
08/06/13	None	None	On-Site	39,259	
08/07/13	None	None	On-Site	32,164	
08/08/13	None	None	On-Site	23,904	
08/09/13	None	None	On-Site	24,108	
08/10/13	None	None	On-Site	17,268	
08/11/13	None	None	On-Site	19,068	
08/12/13	None	None	On-Site	54,574	
08/13/13	None	None	On-Site	22,762	
08/14/13	None	None			
08/15/13	None	None			
08/16/13	None	None			
08/17/13	None	None			
08/18/13	None	None			
08/19/13	None	None	On-Site	3,198	
08/20/13	None	None	On-Site	52,194	
08/21/13	None	None	On-site & Sampled	17,862	
08/22/13	None	None	On-Site	17,966	
08/23/13	None	None	On-Site	12,778	
08/24/13	None	None			
08/25/13	None	None			
08/26/13	None	None	On-Site	8,251	
08/27/13	None	None	On-Site	24,197	
08/28/13	None	None	On-Site	18,756	
08/29/13	None	None	On-Site	15,021	
08/30/13	None	None	On-Site	40,536	
08/31/13	None	None			

Total Monthly Discharge (gal)

515,338



**SECTION D: REPORTING REQUIREMENTS/b) iii)**  
**12950 Eckles Road**  
**Livonia, MI 48150**  
**Permit No.: SD6-94508**  
**Maintenance Log- ISCO Sample Analyses - March 2013**

	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
3/1/2013	3/1/2013	9.17	0.08	0.05	0.30	
3/2/2013	3/2/2013					
3/3/2013	3/3/2013					
3/4/2013	3/4/2013	8.72	0.05	0.05	0.15	
3/5/2013	3/5/2013	9.05	0.05	0.00	0.20	
3/6/2013	3/6/2013	9.11	0.07	0.00	0.25	
3/7/2013	3/7/2013	9.09	0.05	0.00	0.05	
3/8/2013	3/8/2013	9.02	0.07	0.00	0.25	
3/9/2013	3/9/2013	8.44	0.09	0.00	0.05	
3/10/2013	3/10/2013	9.09	0.06	0.00	0.05	
3/11/2013	3/11/2013	9.07	0.05	0.00	0.25	
3/12/2013	3/12/2013	9.15	0.08	0.00	0.00	
3/13/2013	3/13/2013					
3/14/2013	3/14/2013					
3/15/2013	3/15/2013					
3/16/2013	3/16/2013					
3/17/2013	3/17/2013					
3/18/2013	3/18/2013	8.26	0.05	0.00	0.00	
3/19/2013	3/19/2013	9.37	0.05	0.00	0.00	
3/20/2013	3/20/2013	9.29	0.12	0.00	0.05	
3/21/2013	3/21/2013	9.31	0.06	0.00	0.00	
3/22/2013	3/22/2013	9.39	0.07	0.00	0.00	
3/23/2013	3/23/2013					
3/24/2013	3/24/2013					
3/25/2013	3/25/2013	8.91	0.08	0.00	0.00	
3/26/2013	3/26/2013	9.30	0.09	0.00	0.00	
3/27/2013	3/27/2013	8.77	0.28	0.00	0.00	
3/28/2013	3/28/2013	9.28	0.11	0.00	0.00	
3/29/2013	3/29/2013	9.29	0.13	0.00	0.00	
3/30/2013	3/30/2013					
3/31/2013	3/31/2013					

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log- ISCO Sample Analyses - April 2013**

	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
4/1/2013	4/1/2013	8.72	0.13	0.00	0.00	
4/2/2013	4/2/2013	8.92	0.09	0.00	0.00	
4/3/2013	4/3/2013	8.94	0.07	0.00	0.00	
4/4/2013	4/4/2013	8.88	0.08	0.00	0.10	
4/5/2013	4/5/2013	8.91	0.08	0.00	0.05	
4/6/2013	4/6/2013					
4/7/2013	4/7/2013					
4/8/2013	4/8/2013	8.41	0.08	0.00	0.05	
4/9/2013	4/9/2013	8.88	0.06	0.00	0.20	
4/10/2013	4/10/2013	8.86	0.08	0.00	0.20	
4/11/2013	4/11/2013	8.92	0.08	0.00	0.25	
4/12/2013	4/12/2013	8.88	0.10	0.00	0.15	
4/13/2013	4/13/2013					
4/14/2013	4/14/2013					
4/15/2013	4/15/2013	8.64	0.06	0.00	0.05	
4/16/2013	4/16/2013	9.17	0.07	0.00	0.20	
4/17/2013	4/17/2013	9.17	0.09	0.00	0.20	
4/18/2013	4/18/2013	9.10	0.09	0.00	0.25	
4/19/2013	4/19/2013	9.17	0.07	0.00	0.05	
4/20/2013	4/20/2013					
4/21/2013	4/21/2013					
4/22/2013	4/22/2013	9.09	0.04	0.00	0.00	
4/23/2013	4/23/2013	9.26	0.12	0.00	0.25	
4/24/2013	4/24/2013	9.23	0.11	0.00	0.00	
4/25/2013	4/25/2013	9.36	0.10	0.00	0.00	
4/26/2013	4/26/2013	9.35	0.09	0.00	0.00	
4/27/2013	4/27/2013					
4/28/2013	4/28/2013					
4/29/2013	4/29/2013	8.57	0.08	0.00	0.00	
4/30/2013	4/30/2013	9.10	0.12	0.00	0.00	

**SECTION D: REPORTING REQUIREMENTS/b) iii)**  
**12950 Eckles Road**  
**Livonia, MI 48150**  
**Permit No.: SD6-94508**  
**Maintenance Log- ISCO Sample Analyses - May 2013**

	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
5/1/2013	5/1/2013	9.04	0.16	0.00	0.05	
5/2/2013	5/2/2013	9.09	0.22	0.00	0.00	
5/3/2013	5/3/2013	9.05	0.14	0.00	0.00	
5/4/2013	5/4/2013					
5/5/2013	5/5/2013					
5/6/2013	5/6/2013	8.64	0.09	0.00	0.00	
5/7/2013	5/7/2013	8.94	0.39	0.00	0.00	
5/8/2013	5/8/2013	8.85	0.20	0.00	0.00	
5/9/2013	5/9/2013					System down - low pH T 4
5/10/2013	5/10/2013					System down - low pH T 4
5/11/2013	5/11/2013					
5/12/2013	5/12/2013					
5/13/2013	5/13/2013	7.89	0.26	0.00	0.00	
5/14/2013	5/14/2013	9.11	0.07	0.00	0.05	
5/15/2013	5/15/2013	8.91	0.10	0.00	0.30	
5/16/2013	5/16/2013	9.02	0.06	0.00	0.10	
5/17/2013	5/17/2013					System down - sludge pump not working
5/18/2013	5/18/2013					
5/19/2013	5/19/2013					
5/20/2013	5/20/2013					System down - sludge pump not working
5/21/2013	5/21/2013					System down - sludge pump not working
5/22/2013	5/22/2013					System down - sludge pump not working
5/23/2013	5/23/2013					System down - sludge pump not working
5/24/2013	5/24/2013					System down - sludge pump not working
5/25/2013	5/25/2013					
5/26/2013	5/26/2013					
5/27/2013	5/27/2013	8.00	0.13	0.00	0.00	
5/28/2013	5/28/2013	9.13	0.07	0.00	0.05	
5/29/2013	5/29/2013	8.94	0.11	0.00	0.45	
5/30/2013	5/30/2013	8.95	0.14	0.00	0.45	
5/31/2013	5/31/2013					

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log- ISCO Sample Analyses - June 2013**

	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
6/1/2013	6/1/2013					
6/2/2013	6/2/2013					
6/3/2013	6/3/2013					System Down - sand filter flow meter broken
6/4/2013	6/4/2013					System Down - sand filter flow meter broken
6/5/2013	6/5/2013	8.54	0.06	0.00	0.05	
6/6/2013	6/6/2013	8.92	0.12	0.00	0.15	
6/7/2013	6/7/2013	8.88	0.09	0.00	0.00	
6/8/2013	6/8/2013					
6/9/2013	6/9/2013					
6/10/2013	6/10/2013	8.91	0.05	0.00	0.00	
6/11/2013	6/11/2013	9.25	0.07	0.00	0.00	
6/12/2013	6/12/2013	9.10	0.07	0.00	0.10	
6/13/2013	6/13/2013	9.10	0.07	0.00	0.05	
6/14/2013	6/14/2013	9.08	0.12	0.00	0.10	
6/15/2013	6/15/2013					
6/16/2013	6/16/2013					
6/17/2013	6/17/2013	8.33	0.08	0.00	0.00	
6/18/2013	6/18/2013	9.16	0.07	0.00	0.00	
6/19/2013	6/19/2013	9.14	0.08	0.00	0.05	
6/20/2013	6/20/2013	9.08	0.09	0.00	0.05	
6/21/2013	6/21/2013	9.06	0.09	0.00	0.05	
6/22/2013	6/22/2013					
6/23/2013	6/23/2013					
6/24/2013	6/24/2013	8.50	0.08	0.00	0.00	
6/25/2013	6/25/2013	8.96	0.13	0.00	0.20	
6/26/2013	6/26/2013	8.97	0.09	0.00	0.00	
6/27/2013	6/27/2013	8.98	0.09	0.00	0.05	
6/28/2013	6/28/2013	8.96	0.14	0.00	0.05	
6/29/2013	6/29/2013					
6/30/2013	6/30/2013					

**SECTION D: REPORTING REQUIREMENTS/b) iii)**  
**12950 Eckles Road**  
**Livonia, MI 48150**  
**Permit No.: SD6-94508**  
**Maintenance Log- ISCO Sample Analyses - July 2013**

	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
7/1/2013	7/1/2013	8.29	0.09	0.00	0.00	
7/2/2013	7/2/2013	8.75	0.06	0.00	0.10	
7/3/2013	7/3/2013	8.76	0.10	0.00	0.00	
7/4/2013	7/4/2013					
7/5/2013	7/5/2013					
7/6/2013	7/6/2013					
7/7/2013	7/7/2013					
7/8/2013	7/8/2013	8.04	0.09	0.00	0.00	
7/9/2013	7/9/2013	9.00	0.07	0.00	0.05	
7/10/2013	7/10/2013	9.34	0.17	0.00	0.10	
7/11/2013	7/11/2013	9.26	0.05	0.00	0.05	
7/12/2013	7/12/2013	9.26	0.10	0.00	0.00	
7/13/2013	7/13/2013					
7/14/2013	7/14/2013					
7/15/2013	7/15/2013	8.55	0.24	0.00	0.05	
7/16/2013	7/16/2013	8.09	0.40	0.15	0.25	
7/17/2013	7/17/2013	8.98	0.07	0.05	0.20	
7/18/2013	7/18/2013	8.99	0.07	0.00	0.05	
7/19/2013	7/19/2013	9.02	0.11	0.00	0.05	
7/20/2013	7/20/2013					
7/21/2013	7/21/2013					
7/22/2013	7/22/2013					System down - computer control panel down
7/23/2013	7/23/2013					System down - computer control panel down
7/24/2013	7/24/2013	8.15	0.07	0.00	0.25	
7/25/2013	7/25/2013	8.75	0.08	0.00	0.05	
7/26/2013	7/26/2013	8.84	0.06	0.00	0.00	
7/27/2013	7/27/2013					
7/28/2013	7/28/2013					
7/29/2013	7/29/2013	7.97	0.10	0.00	0.00	
7/30/2013	7/30/2013	8.80	0.06	0.00	0.20	
7/31/2013	7/31/2013	8.76	0.05	0.10	0.35	

**SECTION D: REPORTING REQUIREMENTS/b) iii)****12950 Eckles Road****Livonia, MI 48150****Permit No.: SD6-94508****Maintenance Log- ISCO Sample Analyses - August 2013**

	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
8/1/2013	8/1/2013	7.30	1.10	0.00	0.30	
8/2/2013	8/2/2013	8.71	0.08	0.00	0.15	
8/3/2013	8/3/2013					
8/4/2013	8/4/2013					
8/5/2013	8/5/2013	8.19	0.04	0.00	0.05	
8/6/2013	8/6/2013	9.09	0.21	0.00	0.10	
8/7/2013	8/7/2013	9.20	0.25	0.00	0.12	
8/8/2013	8/8/2013	9.05	0.04	0.10	0.10	
8/9/2013	8/9/2013	9.05	0.07	0.05	0.10	
8/10/2013	8/10/2013	9.11	0.08	0.00	0.05	
8/11/2013	8/11/2013	9.15	0.06	0.00	0.00	
8/12/2013	8/12/2013	9.14	0.05	0.00	0.00	
8/13/2013	8/13/2013	7.58	0.44	0.00	0.44	
8/14/2013	8/14/2013					
8/15/2013	8/15/2013					
8/16/2013	8/16/2013					
8/17/2013	8/17/2013					
8/18/2013	8/18/2013					
8/19/2013	8/19/2013	7.78	0.38	0.00	0.40	
8/20/2013	8/20/2013	8.91	0.12	0.00	0.10	
8/21/2013	8/21/2013	8.85	0.08	0.00	0.20	
8/22/2013	8/22/2013	8.82	0.09	0.00	0.20	
8/23/2013	8/23/2013	9.06	0.09	0.00	0.20	
8/24/2013	8/24/2013					
8/25/2013	8/25/2013					
8/26/2013	8/26/2013	8.53	0.09	0.00	0.20	
8/27/2013	8/27/2013	8.93	0.14	0.00	0.15	
8/28/2013	8/28/2013	8.92	0.08	0.00	0.15	
8/29/2013	8/29/2013	9.14	0.08	0.00	0.40	
8/30/2013	8/30/2013	9.23	0.16	0.00	0.40	
8/31/2013	8/31/2013					

# 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: 240-22237-1

Client Project/Site: 12607-T01Y13-012, RACER Livonia

For:

Conestoga-Rovers & Associates, Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Mr. Paul Wiseman



Authorized for release by:

4/4/2013 8:58:41 AM

Denise Heckler

Project Manager II

[denise.heckler@testamericainc.com](mailto: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: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

**Job ID: 240-22237-1**

**Laboratory: TestAmerica Canton**

**Narrative**

### CASE NARRATIVE

**Client: Conestoga-Rovers & Associates, Inc.**

**Project: 12607-T01Y13-012, RACER Livonia**

**Report Number: 240-22237-1**

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

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

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

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

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

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

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

#### **RECEIPT**

The samples were received on 03/21/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.8 C.

#### **POLYCHLORINATED BIPHENYLS (PCBS)**

Sample WT-12607-032013-EE-001 (240-22237-1) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 608. The samples were prepared on 03/28/2013 and analyzed on 04/02/2013.

No difficulties were encountered during the PCBs analysis.

All quality control parameters were within the acceptance limits.

#### **TOTAL RECOVERABLE METALS (ICP)**

Sample WT-12607-032013-EE-001 (240-22237-1) was analyzed for total recoverable metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 03/22/2013 and analyzed on 03/25/2013.

Zinc was detected in method blank MB 240-79102/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

### Job ID: 240-22237-1 (Continued)

#### Laboratory: TestAmerica Canton (Continued)

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

#### MERCURY

Sample WT-12607-032013-EE-001 (240-22237-1) was analyzed for mercury in accordance with EPA Method 245.1. The samples were prepared and analyzed on 03/22/2013.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

#### HEM

Sample WT-12607-032013-EE-001 (240-22237-1) was analyzed for HEM in accordance with EPA Method 1664A. The samples were prepared and analyzed on 04/02/2013.

No difficulties were encountered during the HEM analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL SUSPENDED SOLIDS

Sample WT-12607-032013-EE-001 (240-22237-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 03/25/2013.

No difficulties were encountered during the TSS analysis.

All quality control parameters were within the acceptance limits.

#### HEXAVALENT CHROMIUM

Sample WT-12607-032013-EE-001 (240-22237-1) was analyzed for hexavalent chromium in accordance with SM 3500 CR D. The samples were analyzed on 03/21/2013.

Cr (VI) failed the recovery criteria low for the MS/MSD of sample WT-12607-032013-EE-001 (240-22237-1) in batch 240-79011.

No other difficulties were encountered during the hexavalent chromium analysis.

All other quality control parameters were within the acceptance limits.

## Definitions/Glossary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

### 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.
F	MS or MSD exceeds the control limits

### Glossary

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

## Sample Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-22237-1	WT-12607-032013-EE-001	Water	03/20/13 16:00	03/21/13 10:00

## Detection Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

**Client Sample ID: WT-12607-032013-EE-001**

**Lab Sample ID: 240-22237-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.10		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.14		0.010	mg/L	1		200.7 Rev 4.4	Recoverable Total
Total Suspended Solids	5.0		4.0	mg/L	1		SM 2540D	Recoverable Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

## Method Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

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
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM 3500 CR D	Chromium, Hexavalent	SM	TAL CAN

### Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

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: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

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

Client Sample ID: WT-12607-032013-EE-001

Date Collected: 03/20/13 16:00

Date Received: 03/21/13 10:00

Lab Sample ID: 240-22237-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.096	U	0.096	ug/L		03/28/13 08:51	04/02/13 02:28	1
Aroclor-1221	0.096	U	0.096	ug/L		03/28/13 08:51	04/02/13 02:28	1
Aroclor-1232	0.096	U	0.096	ug/L		03/28/13 08:51	04/02/13 02:28	1
Aroclor-1242	0.096	U	0.096	ug/L		03/28/13 08:51	04/02/13 02:28	1
Aroclor-1248	0.096	U	0.096	ug/L		03/28/13 08:51	04/02/13 02:28	1
Aroclor-1254	0.096	U	0.096	ug/L		03/28/13 08:51	04/02/13 02:28	1
Aroclor-1260	0.096	U	0.096	ug/L		03/28/13 08:51	04/02/13 02:28	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	63		10 - 114			03/28/13 08:51	04/02/13 02:28	1
Tetrachloro-m-xylene	67		15 - 131			03/28/13 08:51	04/02/13 02:28	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

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

Client Sample ID: WT-12607-032013-EE-001

Date Collected: 03/20/13 16:00

Date Received: 03/21/13 10:00

Lab Sample ID: 240-22237-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.10		0.050	mg/L		03/22/13 07:57	03/25/13 16:25	1
Nickel	0.14		0.010	mg/L		03/22/13 07:57	03/25/13 16:25	1
Lead	0.050	U	0.050	mg/L		03/22/13 07:57	03/25/13 16:25	1
Zinc	0.020	U	0.020	mg/L		03/22/13 07:57	03/25/13 16:25	1



## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

### Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-12607-032013-EE-001

Date Collected: 03/20/13 16:00

Date Received: 03/21/13 10:00

Lab Sample ID: 240-22237-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		03/22/13 13:00	03/22/13 16:25	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

### General Chemistry

Client Sample ID: WT-12607-032013-EE-001

Date Collected: 03/20/13 16:00

Date Received: 03/21/13 10:00

Lab Sample ID: 240-22237-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L		04/02/13 08:33	04/02/13 08:33	1
<b>Total Suspended Solids</b>	<b>5.0</b>		4.0	mg/L			03/25/13 09:34	1
Cr (VI)	0.0050	U	0.0050	0.0020 mg/L			03/21/13 11:11	1

# QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

## GC Semi VOA

### Prep Batch: 79736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total/NA	Water	3520C	
LCS 240-79736/17-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-79736/16-A	Method Blank	Total/NA	Water	3520C	

### Analysis Batch: 80177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total/NA	Water	608	79736
LCS 240-79736/17-A	Lab Control Sample	Total/NA	Water	608	79736

### Analysis Batch: 80300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-79736/16-A	Method Blank	Total/NA	Water	608	79736

## Metals

### Prep Batch: 79102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total Recoverable	Water	200.7	
240-22237-1 MS	WT-12607-032013-EE-001	Total Recoverable	Water	200.7	
240-22237-1 MSD	WT-12607-032013-EE-001	Total Recoverable	Water	200.7	
LCS 240-79102/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-79102/1-A	Method Blank	Total Recoverable	Water	200.7	

### Prep Batch: 79108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total/NA	Water	245.1	
LCS 240-79108/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-79108/1-A	Method Blank	Total/NA	Water	245.1	

### Analysis Batch: 79179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total/NA	Water	245.1	79108
LCS 240-79108/2-A	Lab Control Sample	Total/NA	Water	245.1	79108
MB 240-79108/1-A	Method Blank	Total/NA	Water	245.1	79108

### Analysis Batch: 79437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total Recoverable	Water	200.7 Rev 4.4	79102
240-22237-1 MS	WT-12607-032013-EE-001	Total Recoverable	Water	200.7 Rev 4.4	79102
240-22237-1 MSD	WT-12607-032013-EE-001	Total Recoverable	Water	200.7 Rev 4.4	79102
LCS 240-79102/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	79102
MB 240-79102/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	79102

## General Chemistry

### Analysis Batch: 79011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total/NA	Water	SM 3500 CR D	
240-22237-1 MS	WT-12607-032013-EE-001	Total/NA	Water	SM 3500 CR D	
240-22237-1 MSD	WT-12607-032013-EE-001	Total/NA	Water	SM 3500 CR D	

TestAmerica Canton

## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

### General Chemistry (Continued)

#### Analysis Batch: 79011 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-79011/4	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
MB 240-79011/3	Method Blank	Total/NA	Water	SM 3500 CR D	

#### Analysis Batch: 79302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total/NA	Water	SM 2540D	
LCS 240-79302/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-79302/1	Method Blank	Total/NA	Water	SM 2540D	

#### Prep Batch: 80205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total/NA	Water	1664A	
240-22237-1 MS	WT-12607-032013-EE-001	Total/NA	Water	1664A	
LCS 240-80205/2-A	Lab Control Sample	Total/NA	Water	1664A	
MB 240-80205/1-A	Method Blank	Total/NA	Water	1664A	

#### Analysis Batch: 80234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-22237-1	WT-12607-032013-EE-001	Total/NA	Water	1664A	80205
240-22237-1 MS	WT-12607-032013-EE-001	Total/NA	Water	1664A	80205
LCS 240-80205/2-A	Lab Control Sample	Total/NA	Water	1664A	80205
MB 240-80205/1-A	Method Blank	Total/NA	Water	1664A	80205

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

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

Lab Sample ID: MB 240-79736/16-A

Matrix: Water

Analysis Batch: 80300

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 79736

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		03/28/13 08:51	04/02/13 15:49	1
Aroclor-1221	0.10	U	0.10	ug/L		03/28/13 08:51	04/02/13 15:49	1
Aroclor-1232	0.10	U	0.10	ug/L		03/28/13 08:51	04/02/13 15:49	1
Aroclor-1242	0.10	U	0.10	ug/L		03/28/13 08:51	04/02/13 15:49	1
Aroclor-1248	0.10	U	0.10	ug/L		03/28/13 08:51	04/02/13 15:49	1
Aroclor-1254	0.10	U	0.10	ug/L		03/28/13 08:51	04/02/13 15:49	1
Aroclor-1260	0.10	U	0.10	ug/L		03/28/13 08:51	04/02/13 15:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	69		10 - 114	03/28/13 08:51	04/02/13 15:49	1
Tetrachloro-m-xylene	65		15 - 131	03/28/13 08:51	04/02/13 15:49	1

Lab Sample ID: LCS 240-79736/17-A

Matrix: Water

Analysis Batch: 80177

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 79736

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	10.0	9.10		ug/L		91	50 - 114
Aroclor-1260	10.0	9.48		ug/L		95	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	80		10 - 114
Tetrachloro-m-xylene	76		15 - 131

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

Lab Sample ID: MB 240-79102/1-A

Matrix: Water

Analysis Batch: 79437

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 79102

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		03/22/13 07:57	03/25/13 16:18	1
Nickel	0.010	U	0.010	mg/L		03/22/13 07:57	03/25/13 16:18	1
Lead	0.050	U	0.050	mg/L		03/22/13 07:57	03/25/13 16:18	1
Zinc	0.0367		0.020	mg/L		03/22/13 07:57	03/25/13 16:18	1

Lab Sample ID: LCS 240-79102/2-A

Matrix: Water

Analysis Batch: 79437

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 79102

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.190		mg/L		95	85 - 115
Nickel	0.500	0.481		mg/L		96	85 - 115
Lead	0.500	0.475		mg/L		95	85 - 115
Zinc	0.500	0.501		mg/L		100	85 - 115

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# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

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

Lab Sample ID: 240-22237-1 MS

Matrix: Water

Analysis Batch: 79437

Client Sample ID: WT-12607-032013-EE-001

Prep Type: Total Recoverable

Prep Batch: 79102

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.10		0.200	0.300		mg/L		98	75 - 125
Nickel	0.14		0.500	0.664		mg/L		104	75 - 125
Lead	0.050	U	0.500	0.499		mg/L		100	75 - 125
Zinc	0.020	U	0.500	0.535		mg/L		107	75 - 125

Lab Sample ID: 240-22237-1 MSD

Matrix: Water

Analysis Batch: 79437

Client Sample ID: WT-12607-032013-EE-001

Prep Type: Total Recoverable

Prep Batch: 79102

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.10		0.200	0.308		mg/L		102	75 - 125	2	20
Nickel	0.14		0.500	0.670		mg/L		105	75 - 125	1	20
Lead	0.050	U	0.500	0.499		mg/L		100	75 - 125	0	20
Zinc	0.020	U	0.500	0.535		mg/L		107	75 - 125	0	20

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-79108/1-A

Matrix: Water

Analysis Batch: 79179

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 79108

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		03/22/13 13:00	03/22/13 16:09	1

Lab Sample ID: LCS 240-79108/2-A

Matrix: Water

Analysis Batch: 79179

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 79108

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00456		mg/L		91	85 - 115

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-80205/1-A

Matrix: Water

Analysis Batch: 80234

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 80205

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L		04/02/13 08:33	04/02/13 08:33	1

Lab Sample ID: LCS 240-80205/2-A

Matrix: Water

Analysis Batch: 80234

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 80205

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	33.4		mg/L		84	78 - 114

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# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

## Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: 240-22237-1 MS

Matrix: Water

Analysis Batch: 80234

Client Sample ID: WT-12607-032013-EE-001

Prep Type: Total/NA

Prep Batch: 80205

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	4.7	U	38.1	39.6		mg/L		104	78 - 114

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

Lab Sample ID: MB 240-79302/1

Matrix: Water

Analysis Batch: 79302

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			03/25/13 09:34	1

Lab Sample ID: LCS 240-79302/2

Matrix: Water

Analysis Batch: 79302

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	76.1	72.0		mg/L		95	73 - 113

## Method: SM 3500 CR D - Chromium, Hexavalent

Lab Sample ID: MB 240-79011/3

Matrix: Water

Analysis Batch: 79011

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			03/21/13 11:09	1

Lab Sample ID: LCS 240-79011/4

Matrix: Water

Analysis Batch: 79011

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	0.244		mg/L		98	80 - 118

Lab Sample ID: 240-22237-1 MS

Matrix: Water

Analysis Batch: 79011

Client Sample ID: WT-12607-032013-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.0050	U	0.250	0.0430	F	mg/L		17	41 - 136

Lab Sample ID: 240-22237-1 MSD

Matrix: Water

Analysis Batch: 79011

Client Sample ID: WT-12607-032013-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
Cr (VI)	0.0050	U	0.250	0.0455	F	mg/L		18	41 - 136	6	20

TestAmerica Canton

## Surrogate Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB1 (10-114)	TCX1 (15-131)
240-22237-1	WT-12607-032013-EE-001	63	67
LCS 240-79736/17-A	Lab Control Sample	80	76
MB 240-79736/16-A	Method Blank	69	65
<b>Surrogate Legend</b>			
DCB = DCB Decachlorobiphenyl			
TCX = Tetrachloro-m-xylene			



## Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

**Client Sample ID: WT-12607-032013-EE-001**

**Lab Sample ID: 240-22237-1**

**Date Collected: 03/20/13 16:00**

**Matrix: Water**

**Date Received: 03/21/13 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			79736	03/28/13 08:51	SE	TAL CAN
Total/NA	Analysis	608		1	80177	04/02/13 02:28	LH	TAL CAN
Total/NA	Prep	245.1			79108	03/22/13 13:00	LM	TAL CAN
Total/NA	Analysis	245.1		1	79179	03/22/13 16:25	SG	TAL CAN
Total Recoverable	Prep	200.7			79102	03/22/13 07:57	LM	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	79437	03/25/13 16:25	SG	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	79011	03/21/13 11:11	AM	TAL CAN
Total/NA	Analysis	SM 2540D		1	79302	03/25/13 09:34	AM	TAL CAN
Total/NA	Analysis	1664A		1	80234	04/02/13 08:33	NP	TAL CAN
Total/NA	Prep	1664A			80205	04/02/13 08:33	NP	TAL CAN

### Laboratory References:

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

## Certification Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Livonia

TestAmerica Job ID: 240-22237-1

### Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAP	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAP	5	200004	07-31-13
Kansas	NELAP	7	E-10336	01-31-14
Kentucky	State Program	4	58	06-30-13
L-A-B	DoD ELAP		L2315	07-28-13
Minnesota	NELAP	5	039-999-348	12-31-13
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAP	2	OH001	06-30-13
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAP	3	68-00340	08-31-13
Texas	NELAP	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAP	3	460175	09-14-13
Washington	State Program	10	C971	01-12-14
West Virginia DEP	State Program	3	210	12-31-13
Wisconsin	State Program	5	999518190	08-31-13

Project No/Phase/Task Code: 12607-TO1Y13-003		Laboratory Name: Test America		Lab Location: N Canton, OH		SSOW ID: 12607-TO1Y13-003	
Project Name: RACER Livonia GWTP		Lab Contact: Denise Heckler		Lab Quote No:		Cooler No:	
Project Location: Livonia, MI		CONTAINER QUANTITY & PRESERVATION		ANALYSIS REQUESTED (See Back of COC for Definitions)		Carrier:	
Chemistry Contact: Paul Wiseman		SAMPLE TYPE		Total Containers/Sample		Airbill No:	
Sampler(s): Erik Engnell		Matrix Code		Other:		Date Shipped:	
SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)		DATE (mm/dd/yyyy)		TIME (hh:mm)		COMMENTS/SPECIAL INSTRUCTIONS:	
WT-12607-032013-EE-001		3/20/13		1600		WT C	
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## TestAmerica Canton Sample Receipt Form/Narrative

Login # : 22237

Client CRA Site Name Livonia By: [Signature]  
Cooler Received on 3-21-13 Opened on 3-21-13 (Signature)  
FedEx: 1<sup>st</sup> Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other \_\_\_\_\_  
TestAmerica Cooler # \_\_\_\_\_ 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  
IR GUN# 1 (CF -2 °C) Observed Sample Temp. 5.8 °C Corrected Sample Temp. 3.8 °C  
IR GUN# 4G (CF 0 °C) Observed Sample Temp. \_\_\_\_\_ °C Corrected Sample Temp. \_\_\_\_\_ °C  
IR GUN# 5G (CF 0 °C) Observed Sample Temp. \_\_\_\_\_ °C Corrected Sample Temp. \_\_\_\_\_ °C  
IR GUN# 8 (CF 0 °C) Observed Sample Temp. \_\_\_\_\_ °C Corrected Sample Temp. \_\_\_\_\_ °C
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity \_\_\_\_\_ Yes No  
-Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA  
-Were custody seals on the bottle(s)? Yes No
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. Did all bottles arrive in good condition (Unbroken)? Yes No
7. Could all bottle labels be reconciled with the COC? Yes No
8. Were correct bottle(s) used for the test(s) indicated? Yes No
9. Sufficient quantity received to perform indicated analyses? Yes No
10. Were sample(s) at the correct pH upon receipt? Yes No NA
11. Were VOAs on the COC? Yes No
12. Were air bubbles >6 mm in any VOA vials? Yes No NA
13. Was a trip blank present in the cooler(s)? Yes No

☐ Multiple on Back

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_  
Concerning \_\_\_\_\_

**14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES****15. 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)

Sample(s) \_\_\_\_\_ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 031512-HNO<sub>3</sub>; Sulfuric Acid Lot# 051012-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide Lot# 121809-NaOH; Hydrochloric Acid Lot# 041911-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH. What time was preservative added to sample(s)? \_\_\_\_\_

# 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: 240-23350-1

Client Project/Site: 12607-T01Y13-012, RACER Eckles Rd

For:

Conestoga-Rovers & Associates, Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Mr. Paul Wiseman



Authorized for release by:

4/30/2013 8:12:39 AM

Denise Heckler

Project Manager II

[denise.heckler@testamericainc.com](mailto:denise.heckler@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



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[www.testamericainc.com](http://www.testamericainc.com)

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

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

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## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

**Job ID: 240-23350-1**

**Laboratory: TestAmerica Canton**

**Narrative**

### CASE NARRATIVE

**Client: Conestoga-Rovers & Associates, Inc.**

**Project: 12607-T01Y13-012, RACER Eckles Rd**

**Report Number: 240-23350-1**

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

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

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

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

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

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

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

#### **RECEIPT**

The samples were received on 04/18/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.4 C.

#### **POLYCHLORINATED BIPHENYLS (PCBS)**

Sample WT-12607-041713-EE-001 (240-23350-1) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 608. The samples were prepared on 04/24/2013 and analyzed on 04/25/2013.

No difficulties were encountered during the PCBs analysis.

All quality control parameters were within the acceptance limits.

#### **TOTAL RECOVERABLE METALS (ICP)**

Sample WT-12607-041713-EE-001 (240-23350-1) was analyzed for total recoverable metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 04/22/2013 and analyzed on 04/23/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.



## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

### Job ID: 240-23350-1 (Continued)

#### Laboratory: TestAmerica Canton (Continued)

##### MERCURY

Sample WT-12607-041713-EE-001 (240-23350-1) was analyzed for mercury in accordance with EPA Method 245.1. The samples were prepared on 04/19/2013 and analyzed on 04/22/2013.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

##### HEM

Sample WT-12607-041713-EE-001 (240-23350-1) was analyzed for HEM in accordance with EPA Method 1664A. The samples were prepared and analyzed on 04/29/2013.

No difficulties were encountered during the HEM analysis.

All quality control parameters were within the acceptance limits.

##### TOTAL SUSPENDED SOLIDS

Sample WT-12607-041713-EE-001 (240-23350-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 04/23/2013.

No difficulties were encountered during the TSS analysis.

All quality control parameters were within the acceptance limits.

##### HEXAVALENT CHROMIUM

Sample WT-12607-041713-EE-001 (240-23350-1) was analyzed for hexavalent chromium in accordance with SM 3500 CR D. The samples were analyzed on 04/18/2013.

No difficulties were encountered during the hexavalent chromium analysis.

All quality control parameters were within the acceptance limits.

## Definitions/Glossary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

### 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.
$\alpha$	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Sample Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-23350-1	WT-12607-041713-EE-001	Water	04/17/13 13:00	04/18/13 09:00

## Detection Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

**Client Sample ID: WT-12607-041713-EE-001**

**Lab Sample ID: 240-23350-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.23		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.19		0.010	mg/L	1		200.7 Rev 4.4	Recoverable Total
Total Suspended Solids	17		4.0	mg/L	1		SM 2540D	Recoverable Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

## Method Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

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
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM 3500 CR D	Chromium, Hexavalent	SM	TAL CAN

### Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

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: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

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

Client Sample ID: WT-12607-041713-EE-001

Date Collected: 04/17/13 13:00

Date Received: 04/18/13 09:00

Lab Sample ID: 240-23350-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		04/24/13 12:24	04/25/13 16:01	1
Aroclor-1221	0.095	U	0.095	ug/L		04/24/13 12:24	04/25/13 16:01	1
Aroclor-1232	0.095	U	0.095	ug/L		04/24/13 12:24	04/25/13 16:01	1
Aroclor-1242	0.095	U	0.095	ug/L		04/24/13 12:24	04/25/13 16:01	1
Aroclor-1248	0.095	U	0.095	ug/L		04/24/13 12:24	04/25/13 16:01	1
Aroclor-1254	0.095	U	0.095	ug/L		04/24/13 12:24	04/25/13 16:01	1
Aroclor-1260	0.095	U	0.095	ug/L		04/24/13 12:24	04/25/13 16:01	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	52		10 - 114			04/24/13 12:24	04/25/13 16:01	1
Tetrachloro-m-xylene	79		15 - 131			04/24/13 12:24	04/25/13 16:01	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

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

Client Sample ID: WT-12607-041713-EE-001

Date Collected: 04/17/13 13:00

Date Received: 04/18/13 09:00

Lab Sample ID: 240-23350-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.23		0.050	mg/L		04/22/13 08:20	04/23/13 18:43	1
Nickel	0.19		0.010	mg/L		04/22/13 08:20	04/23/13 18:43	1
Lead	0.050	U	0.050	mg/L		04/22/13 08:20	04/23/13 18:43	1
Zinc	0.020	U	0.020	mg/L		04/22/13 08:20	04/23/13 18:43	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

### Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-12607-041713-EE-001

Date Collected: 04/17/13 13:00

Date Received: 04/18/13 09:00

Lab Sample ID: 240-23350-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		04/19/13 12:45	04/22/13 12:19	1



## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

### General Chemistry

Client Sample ID: WT-12607-041713-EE-001

Date Collected: 04/17/13 13:00

Date Received: 04/18/13 09:00

Lab Sample ID: 240-23350-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L		04/29/13 08:26	04/29/13 09:28	1
<b>Total Suspended Solids</b>	<b>17</b>		4.0	mg/L			04/23/13 11:30	1
Cr (VI)	0.0050	U	0.0050	mg/L			04/18/13 11:28	1

## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

### GC Semi VOA

#### Prep Batch: 83375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total/NA	Water	3510C	
LCS 240-83375/10-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-83375/9-A	Method Blank	Total/NA	Water	3510C	

#### Analysis Batch: 83554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total/NA	Water	608	83375
LCS 240-83375/10-A	Lab Control Sample	Total/NA	Water	608	83375
MB 240-83375/9-A	Method Blank	Total/NA	Water	608	83375

### Metals

#### Prep Batch: 82638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total/NA	Water	245.1	
LCS 240-82638/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-82638/1-A	Method Blank	Total/NA	Water	245.1	

#### Prep Batch: 82916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total Recoverable	Water	200.7	
240-23350-1 MS	WT-12607-041713-EE-001	Total Recoverable	Water	200.7	
240-23350-1 MSD	WT-12607-041713-EE-001	Total Recoverable	Water	200.7	
LCS 240-82916/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-82916/1-A	Method Blank	Total Recoverable	Water	200.7	

#### Analysis Batch: 83068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total/NA	Water	245.1	82638
LCS 240-82638/2-A	Lab Control Sample	Total/NA	Water	245.1	82638
MB 240-82638/1-A	Method Blank	Total/NA	Water	245.1	82638

#### Analysis Batch: 83125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total Recoverable	Water	200.7 Rev 4.4	82916
240-23350-1 MS	WT-12607-041713-EE-001	Total Recoverable	Water	200.7 Rev 4.4	82916
240-23350-1 MSD	WT-12607-041713-EE-001	Total Recoverable	Water	200.7 Rev 4.4	82916
LCS 240-82916/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	82916
MB 240-82916/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	82916

### General Chemistry

#### Analysis Batch: 82493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total/NA	Water	SM 3500 CR D	
LCS 240-82493/4	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
MB 240-82493/3	Method Blank	Total/NA	Water	SM 3500 CR D	

TestAmerica Canton

## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

### General Chemistry (Continued)

#### Analysis Batch: 83180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total/NA	Water	SM 2540D	
LCS 240-83180/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-83180/1	Method Blank	Total/NA	Water	SM 2540D	

#### Prep Batch: 83919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total/NA	Water	1664A	
LCS 240-83919/2-A	Lab Control Sample	Total/NA	Water	1664A	
MB 240-83919/1-A	Method Blank	Total/NA	Water	1664A	

#### Analysis Batch: 83938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-23350-1	WT-12607-041713-EE-001	Total/NA	Water	1664A	83919
LCS 240-83919/2-A	Lab Control Sample	Total/NA	Water	1664A	83919
MB 240-83919/1-A	Method Blank	Total/NA	Water	1664A	83919

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

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

Lab Sample ID: MB 240-83375/9-A

Matrix: Water

Analysis Batch: 83554

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 83375

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		04/24/13 12:24	04/25/13 16:15	1
Aroclor-1221	0.10	U	0.10	ug/L		04/24/13 12:24	04/25/13 16:15	1
Aroclor-1232	0.10	U	0.10	ug/L		04/24/13 12:24	04/25/13 16:15	1
Aroclor-1242	0.10	U	0.10	ug/L		04/24/13 12:24	04/25/13 16:15	1
Aroclor-1248	0.10	U	0.10	ug/L		04/24/13 12:24	04/25/13 16:15	1
Aroclor-1254	0.10	U	0.10	ug/L		04/24/13 12:24	04/25/13 16:15	1
Aroclor-1260	0.10	U	0.10	ug/L		04/24/13 12:24	04/25/13 16:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	67		10 - 114	04/24/13 12:24	04/25/13 16:15	1
Tetrachloro-m-xylene	88		15 - 131	04/24/13 12:24	04/25/13 16:15	1

Lab Sample ID: LCS 240-83375/10-A

Matrix: Water

Analysis Batch: 83554

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 83375

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	2.31		ug/L		93	50 - 114
Aroclor-1260	2.50	2.15		ug/L		86	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	64		10 - 114
Tetrachloro-m-xylene	83		15 - 131

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

Lab Sample ID: MB 240-82916/1-A

Matrix: Water

Analysis Batch: 83125

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 82916

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		04/22/13 08:20	04/23/13 18:35	1
Nickel	0.010	U	0.010	mg/L		04/22/13 08:20	04/23/13 18:35	1
Lead	0.050	U	0.050	mg/L		04/22/13 08:20	04/23/13 18:35	1
Zinc	0.020	U	0.020	mg/L		04/22/13 08:20	04/23/13 18:35	1

Lab Sample ID: LCS 240-82916/2-A

Matrix: Water

Analysis Batch: 83125

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 82916

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	0.485		mg/L		97	85 - 115
Lead	0.500	0.478		mg/L		96	85 - 115
Zinc	0.500	0.502		mg/L		100	85 - 115

TestAmerica Canton

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

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

Lab Sample ID: 240-23350-1 MS

Matrix: Water

Analysis Batch: 83125

Client Sample ID: WT-12607-041713-EE-001

Prep Type: Total Recoverable

Prep Batch: 82916

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.23		0.200	0.412		mg/L		90	75 - 125
Nickel	0.19		0.500	0.673		mg/L		97	75 - 125
Lead	0.050	U	0.500	0.479		mg/L		96	75 - 125
Zinc	0.020	U	0.500	0.500		mg/L		100	75 - 125

Lab Sample ID: 240-23350-1 MSD

Matrix: Water

Analysis Batch: 83125

Client Sample ID: WT-12607-041713-EE-001

Prep Type: Total Recoverable

Prep Batch: 82916

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.23		0.200	0.437		mg/L		102	75 - 125	6	20
Nickel	0.19		0.500	0.709		mg/L		104	75 - 125	5	20
Lead	0.050	U	0.500	0.503		mg/L		101	75 - 125	5	20
Zinc	0.020	U	0.500	0.526		mg/L		105	75 - 125	5	20

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-82638/1-A

Matrix: Water

Analysis Batch: 83068

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 82638

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		04/19/13 12:45	04/22/13 11:49	1

Lab Sample ID: LCS 240-82638/2-A

Matrix: Water

Analysis Batch: 83068

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 82638

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00482		mg/L		96	85 - 115

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-83919/1-A

Matrix: Water

Analysis Batch: 83938

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 83919

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L		04/29/13 08:26	04/29/13 09:28	1

Lab Sample ID: LCS 240-83919/2-A

Matrix: Water

Analysis Batch: 83938

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 83919

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	42.8		mg/L		107	78 - 114

TestAmerica Canton

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

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

Lab Sample ID: MB 240-83180/1

Matrix: Water

Analysis Batch: 83180

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			04/23/13 11:30	1

Lab Sample ID: LCS 240-83180/2

Matrix: Water

Analysis Batch: 83180

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	43.3	45.0		mg/L		104	73 - 113

## Method: SM 3500 CR D - Chromium, Hexavalent

Lab Sample ID: MB 240-82493/3

Matrix: Water

Analysis Batch: 82493

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			04/18/13 10:07	1

Lab Sample ID: LCS 240-82493/4

Matrix: Water

Analysis Batch: 82493

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	0.248		mg/L		99	80 - 118

TestAmerica Canton

## Surrogate Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	DCB2 (10-114)	TCX2 (15-131)
240-23350-1	WT-12607-041713-EE-001	52	79
LCS 240-83375/10-A	Lab Control Sample	64	83
MB 240-83375/9-A	Method Blank	67	88
<b>Surrogate Legend</b>			
DCB = DCB Decachlorobiphenyl			
TCX = Tetrachloro-m-xylene			

## Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

**Client Sample ID: WT-12607-041713-EE-001**

**Lab Sample ID: 240-23350-1**

**Date Collected: 04/17/13 13:00**

**Matrix: Water**

**Date Received: 04/18/13 09:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			83375	04/24/13 12:24	CC	TAL CAN
Total/NA	Analysis	608		1	83554	04/25/13 16:01	LH	TAL CAN
Total/NA	Prep	245.1			82638	04/19/13 12:45	LM	TAL CAN
Total/NA	Analysis	245.1		1	83068	04/22/13 12:19	AS	TAL CAN
Total Recoverable	Prep	200.7			82916	04/22/13 08:20	LM	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	83125	04/23/13 18:43	KC	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	82493	04/18/13 11:28	LG	TAL CAN
Total/NA	Analysis	SM 2540D		1	83180	04/23/13 11:30	CN	TAL CAN
Total/NA	Prep	1664A			83919	04/29/13 08:26	NP	TAL CAN
Total/NA	Analysis	1664A		1	83938	04/29/13 09:28	NP	TAL CAN

### Laboratory References:

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



## Certification Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-23350-1

### Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAP	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAP	5	200004	07-31-13
Kansas	NELAP	7	E-10336	01-31-14
Kentucky	State Program	4	58	06-30-13
L-A-B	DoD ELAP		L2315	07-28-13
Minnesota	NELAP	5	039-999-348	12-31-13
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAP	2	OH001	06-30-13
New York	NELAP	2	10975	04-01-14
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAP	3	68-00340	08-31-13
Texas	NELAP	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAP	3	460175	09-14-13
Washington	State Program	10	C971	01-12-14
West Virginia DEP	State Program	3	210	12-31-13
Wisconsin	State Program	5	999518190	08-31-13



CONESTOGA-ROVERS  
& ASSOCIATES

# CHAIN OF CUSTODY RECORD

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

COC NO.: PL-10320

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/Phase/Task Code: 12607-T01Y13-003		Laboratory Name: Test America		Lab Location: N Canton, OH		SSOW ID: 12607-T01Y13-012	
Project Name: RACER Livonia G WTP		Lab Contact: Denise Heckler		Lab Quote No:		Cooler No:	
Project Location: Livonia, MI		CONTAINER QUANTITY & PRESERVATION		ANALYSIS REQUESTED (See Back of COC for Definitions)			
Chemistry Contact: Paul Wiseman		SAMPLE TYPE		Carrier:			
Sampler(s): Erik Engnell		Matrix Code		Airbill No:			
Item		DATE (mm/dd/yy)		TIME (hh:mm)		Date Shipped:	
WT-12607-64713-EE-001		04/17/13		1300		COMMENTS/ SPECIAL INSTRUCTIONS:	
1		WT		C		✓	
2							
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## TestAmerica Canton Sample Receipt Form/Narrative

Login # : 23350

Canton Facility

Client

CRA

Site Name

Cooler unpacked by:

Dark N. Green

Cooler Received on

4-18-13

Opened on

4-18-13FedEx: 1<sup>st</sup> Grd Exp

UPS FAS Stetson

Client Drop Off

TestAmerica Courier

Other

TestAmerica Cooler#

241-2599

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

IR GUN# 1 (CF -0 °C) Observed Cooler Temp. 24 °CCorrected Cooler Temp. 3.4 °CIR GUN# 4G (CF +1 °C) Observed Cooler Temp. 24 °CCorrected Cooler Temp. 3.4 °CIR GUN# 5G (CF +1 °C) Observed Cooler Temp. 24 °CCorrected Cooler Temp. 3.4 °CIR GUN# 8 (CF +1 °C) Observed Cooler Temp. 24 °CCorrected Cooler Temp. 3.4 °C☐ See Multiple Cooler Form2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 0 Yes No

-Were custody seals on the outside of the cooler(s) signed &amp; dated?

Yes No NA

-Were custody seals on the bottle(s)?

Yes No

## 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 &amp; signed in the appropriate place?

Yes No

## 6. Did all bottles arrive in good condition (Unbroken)?

Yes No

## 7. Could all bottle labels be reconciled with the COC?

Yes No

## 8. Were correct bottle(s) used for the test(s) indicated?

Yes No

## 9. Sufficient quantity received to perform indicated analyses?

Yes No

## 10. Were sample(s) at the correct pH upon receipt?

Yes No NApH Strip Lot# HC256691

## 11. Were VOAs on the COC?

Yes No

## 12. Were air bubbles &gt;6 mm in any VOA vials?

Yes No NA

## 13. Was a trip blank present in the cooler(s)?

Yes No

Contacted PM

Date

by

via Verbal Voice Mail Other

Concerning

## 14. CHAIN OF CUSTODY &amp; SAMPLE DISCREPANCIES

Samples processed by:

Dark N. Green

## 15. 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 &gt;6 mm in diameter. (Notify PM)

## 16. SAMPLE PRESERVATION

Sample(s) \_\_\_\_\_

were further preserved in Sample Receiving to meet recommended pH level(s). Preservation Lot: Nitric Acid Lot# 100110-HNO<sub>3</sub>; Sulfuric Acid Lot# 051012-H<sub>2</sub>SO<sub>4</sub>; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH<sub>3</sub>COO)<sub>2</sub>ZN/NaOH.

Time preservative was added to sample(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-12607-041713-EE-001	240-23350-C-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-12607-041713-EE-001	240-23350-F-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____
WT-12607-041713-EE-001	240-23350-G-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____

# 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: 240-25032-1

Client Project/Site: 12607-T01Y13-012, RACER Eckles Rd

For:

Conestoga-Rovers & Associates, Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Mr. Paul Wiseman



Authorized for release by:

6/13/2013 9:56:43 AM

Denise Heckler, Project Manager II

[denise.heckler@testamericainc.com](mailto:denise.heckler@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

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## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

**Job ID: 240-25032-1**

**Laboratory: TestAmerica Canton**

**Narrative**

### CASE NARRATIVE

**Client: Conestoga-Rovers & Associates, Inc.**

**Project: 12607-T01Y13-012, RACER Eckles Rd**

**Report Number: 240-25032-1**

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

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

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

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

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

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

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

#### **RECEIPT**

The samples were received on 05/30/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 5.9 C.

#### **POLYCHLORINATED BIPHENYLS (PCBS)**

Sample WT-12607-052913-EE-001 (240-25032-1) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 608. The samples were prepared on 06/06/2013 and analyzed on 06/11/2013.

No difficulties were encountered during the PCBs analysis.

All quality control parameters were within the acceptance limits.

#### **TOTAL RECOVERABLE METALS (ICP)**

Sample WT-12607-052913-EE-001 (240-25032-1) was analyzed for total recoverable metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 06/03/2013 and analyzed on 06/10/2013.

No difficulties were encountered during the metals analysis.

## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

### Job ID: 240-25032-1 (Continued)

#### Laboratory: TestAmerica Canton (Continued)

All quality control parameters were within the acceptance limits.

#### MERCURY

Sample WT-12607-052913-EE-001 (240-25032-1) was analyzed for mercury in accordance with EPA Method 245.1. The samples were prepared on 05/31/2013 and analyzed on 06/03/2013.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

#### HEM

Sample WT-12607-052913-EE-001 (240-25032-1) was analyzed for HEM in accordance with EPA Method 1664A. The samples were prepared and analyzed on 06/11/2013.

No difficulties were encountered during the HEM analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL SUSPENDED SOLIDS

Sample WT-12607-052913-EE-001 (240-25032-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 06/03/2013.

No difficulties were encountered during the TSS analysis.

All quality control parameters were within the acceptance limits.

#### HEXAVALENT CHROMIUM

Sample WT-12607-052913-EE-001 (240-25032-1) was analyzed for hexavalent chromium in accordance with SM 3500 CR D. The samples were analyzed on 05/30/2013.

No difficulties were encountered during the hexavalent chromium analysis.

All quality control parameters were within the acceptance limits.



## Definitions/Glossary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

### 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.
$\alpha$	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Sample Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-25032-1	WT-12607-052913-EE-001	Water	05/29/13 15:00	05/30/13 09:15

## Detection Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

**Client Sample ID: WT-12607-052913-EE-001**

**Lab Sample ID: 240-25032-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	1.5		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	1.0		0.010	mg/L	1		200.7 Rev 4.4	Recoverable Total
Total Suspended Solids	57		4.0	mg/L	1		SM 2540D	Recoverable Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

## Method Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

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
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM 3500 CR D	Chromium, Hexavalent	SM	TAL CAN

### Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

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: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

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

Client Sample ID: WT-12607-052913-EE-001

Date Collected: 05/29/13 15:00

Date Received: 05/30/13 09:15

Lab Sample ID: 240-25032-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		06/06/13 11:59	06/11/13 09:23	1
Aroclor-1221	0.095	U	0.095	ug/L		06/06/13 11:59	06/11/13 09:23	1
Aroclor-1232	0.095	U	0.095	ug/L		06/06/13 11:59	06/11/13 09:23	1
Aroclor-1242	0.095	U	0.095	ug/L		06/06/13 11:59	06/11/13 09:23	1
Aroclor-1248	0.095	U	0.095	ug/L		06/06/13 11:59	06/11/13 09:23	1
Aroclor-1254	0.095	U	0.095	ug/L		06/06/13 11:59	06/11/13 09:23	1
Aroclor-1260	0.095	U	0.095	ug/L		06/06/13 11:59	06/11/13 09:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	41		10 - 114			06/06/13 11:59	06/11/13 09:23	1
Tetrachloro-m-xylene	67		15 - 131			06/06/13 11:59	06/11/13 09:23	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

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

Client Sample ID: WT-12607-052913-EE-001

Date Collected: 05/29/13 15:00

Date Received: 05/30/13 09:15

Lab Sample ID: 240-25032-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	1.5		0.050	mg/L		06/03/13 09:46	06/10/13 18:17	1
Nickel	1.0		0.010	mg/L		06/03/13 09:46	06/10/13 18:17	1
Lead	0.050	U	0.050	mg/L		06/03/13 09:46	06/10/13 18:17	1
Zinc	0.020	U	0.020	mg/L		06/03/13 09:46	06/10/13 18:17	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

### Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-12607-052913-EE-001

Date Collected: 05/29/13 15:00

Date Received: 05/30/13 09:15

Lab Sample ID: 240-25032-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		05/31/13 11:20	06/03/13 13:53	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

### General Chemistry

Client Sample ID: WT-12607-052913-EE-001

Date Collected: 05/29/13 15:00

Date Received: 05/30/13 09:15

Lab Sample ID: 240-25032-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L		06/11/13 08:46	06/11/13 16:47	1
<b>Total Suspended Solids</b>	<b>57</b>		4.0	mg/L			06/03/13 10:12	1
Cr (VI)	0.0050	U	0.0050	0.0020 mg/L			05/30/13 14:56	1



## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

### GC Semi VOA

#### Prep Batch: 88819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total/NA	Water	3510C	
LCS 240-88819/20-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-88819/19-A	Method Blank	Total/NA	Water	3510C	

#### Analysis Batch: 89326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total/NA	Water	608	88819
LCS 240-88819/20-A	Lab Control Sample	Total/NA	Water	608	88819
MB 240-88819/19-A	Method Blank	Total/NA	Water	608	88819

### Metals

#### Prep Batch: 87999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total/NA	Water	245.1	
LCS 240-87999/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-87999/1-A	Method Blank	Total/NA	Water	245.1	

#### Prep Batch: 88214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total Recoverable	Water	200.7	
LCS 240-88214/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-88214/1-A	Method Blank	Total Recoverable	Water	200.7	

#### Analysis Batch: 88272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total/NA	Water	245.1	87999
LCS 240-87999/2-A	Lab Control Sample	Total/NA	Water	245.1	87999
MB 240-87999/1-A	Method Blank	Total/NA	Water	245.1	87999

#### Analysis Batch: 89262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total Recoverable	Water	200.7 Rev 4.4	88214
LCS 240-88214/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	88214
MB 240-88214/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	88214

### General Chemistry

#### Analysis Batch: 87774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total/NA	Water	SM 3500 CR D	
LCS 240-87774/4	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
MB 240-87774/3	Method Blank	Total/NA	Water	SM 3500 CR D	

#### Analysis Batch: 88226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total/NA	Water	SM 2540D	
LCS 240-88226/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-88226/1	Method Blank	Total/NA	Water	SM 2540D	

TestAmerica Canton

## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

### General Chemistry (Continued)

#### Prep Batch: 89354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total/NA	Water	1664A	
LCS 240-89354/2-A	Lab Control Sample	Total/NA	Water	1664A	
MB 240-89354/1-A	Method Blank	Total/NA	Water	1664A	

#### Analysis Batch: 89482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25032-1	WT-12607-052913-EE-001	Total/NA	Water	1664A	89354
LCS 240-89354/2-A	Lab Control Sample	Total/NA	Water	1664A	89354
MB 240-89354/1-A	Method Blank	Total/NA	Water	1664A	89354

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

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

Lab Sample ID: MB 240-88819/19-A

Matrix: Water

Analysis Batch: 89326

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 88819

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		06/06/13 11:59	06/11/13 11:33	1
Aroclor-1221	0.10	U	0.10	ug/L		06/06/13 11:59	06/11/13 11:33	1
Aroclor-1232	0.10	U	0.10	ug/L		06/06/13 11:59	06/11/13 11:33	1
Aroclor-1242	0.10	U	0.10	ug/L		06/06/13 11:59	06/11/13 11:33	1
Aroclor-1248	0.10	U	0.10	ug/L		06/06/13 11:59	06/11/13 11:33	1
Aroclor-1254	0.10	U	0.10	ug/L		06/06/13 11:59	06/11/13 11:33	1
Aroclor-1260	0.10	U	0.10	ug/L		06/06/13 11:59	06/11/13 11:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	93		10 - 114	06/06/13 11:59	06/11/13 11:33	1
Tetrachloro-m-xylene	92		15 - 131	06/06/13 11:59	06/11/13 11:33	1

Lab Sample ID: LCS 240-88819/20-A

Matrix: Water

Analysis Batch: 89326

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 88819

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	2.34		ug/L		93	50 - 114
Aroclor-1260	2.50	2.84		ug/L		113	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	107		10 - 114
Tetrachloro-m-xylene	79		15 - 131

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

Lab Sample ID: MB 240-88214/1-A

Matrix: Water

Analysis Batch: 89262

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 88214

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		06/03/13 09:46	06/10/13 17:08	1
Nickel	0.010	U	0.010	mg/L		06/03/13 09:46	06/10/13 17:08	1
Lead	0.050	U	0.050	mg/L		06/03/13 09:46	06/10/13 17:08	1
Zinc	0.020	U	0.020	mg/L		06/03/13 09:46	06/10/13 17:08	1

Lab Sample ID: LCS 240-88214/2-A

Matrix: Water

Analysis Batch: 89262

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 88214

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.185		mg/L		93	85 - 115
Nickel	0.500	0.464		mg/L		93	85 - 115
Lead	0.500	0.455		mg/L		91	85 - 115
Zinc	0.500	0.476		mg/L		95	85 - 115

TestAmerica Canton

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-87999/1-A

Matrix: Water

Analysis Batch: 88272

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 87999

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		05/31/13 11:20	06/03/13 13:25	1

Lab Sample ID: LCS 240-87999/2-A

Matrix: Water

Analysis Batch: 88272

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 87999

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00469		mg/L		94	85 - 115

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-89354/1-A

Matrix: Water

Analysis Batch: 89482

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 89354

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L		06/11/13 08:46	06/11/13 16:47	1

Lab Sample ID: LCS 240-89354/2-A

Matrix: Water

Analysis Batch: 89482

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 89354

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	39.8		mg/L		100	78 - 114

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

Lab Sample ID: MB 240-88226/1

Matrix: Water

Analysis Batch: 88226

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			06/03/13 10:12	1

Lab Sample ID: LCS 240-88226/2

Matrix: Water

Analysis Batch: 88226

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	43.3	38.0		mg/L		88	73 - 113

TestAmerica Canton

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

## Method: SM 3500 CR D - Chromium, Hexavalent

Lab Sample ID: MB 240-87774/3

Matrix: Water

Analysis Batch: 87774

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	0.0020 mg/L			05/30/13 08:24	1

Lab Sample ID: LCS 240-87774/4

Matrix: Water

Analysis Batch: 87774

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	0.276		mg/L		111	80 - 118

## Surrogate Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

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

Matrix: Water

Prep Type: Total/NA

#### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2 (10-114)	TCX2 (15-131)
240-25032-1	WT-12607-052913-EE-001	41	67
LCS 240-88819/20-A	Lab Control Sample	107	79
MB 240-88819/19-A	Method Blank	93	92

#### Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

## Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25032-1

**Client Sample ID: WT-12607-052913-EE-001**

**Lab Sample ID: 240-25032-1**

**Date Collected: 05/29/13 15:00**

**Matrix: Water**

**Date Received: 05/30/13 09:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			88819	06/06/13 11:59	BM	TAL CAN
Total/NA	Analysis	608		1	89326	06/11/13 09:23	LH	TAL CAN
Total/NA	Prep	245.1			87999	05/31/13 11:20	LM	TAL CAN
Total/NA	Analysis	245.1		1	88272	06/03/13 13:53	AS	TAL CAN
Total Recoverable	Prep	200.7			88214	06/03/13 09:46	LM	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	89262	06/10/13 18:17	NJT	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	87774	05/30/13 14:56	BW	TAL CAN
Total/NA	Analysis	SM 2540D		1	88226	06/03/13 10:12	JB	TAL CAN
Total/NA	Prep	1664A			89354	06/11/13 08:46	AM	TAL CAN
Total/NA	Analysis	1664A		1	89482	06/11/13 16:47	AM	TAL CAN

### Laboratory References:

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

## Certification Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

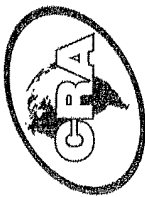
TestAmerica Job ID: 240-25032-1

### Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAP	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAP	5	200004	07-31-13
Kansas	NELAP	7	E-10336	01-31-14
Kentucky	State Program	4	58	06-30-13
L-A-B	DoD ELAP		L2315	07-28-13
Minnesota	NELAP	5	039-999-348	12-31-13
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAP	2	OH001	06-30-13
New York	NELAP	2	10975	04-01-14
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAP	3	68-00340	08-31-13
Texas	NELAP	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAP	3	460175	09-14-13
Washington	State Program	10	C971	01-12-14
West Virginia DEP	State Program	3	210	12-31-13
Wisconsin	State Program	5	999518190	08-31-13





CONESTOGA-ROVERS  
& ASSOCIATES

# CHAIN OF CUSTODY RECORD

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

COC NO.: PL-10321

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/Phase/Task Code: 12607-T01Y13-003		Laboratory Name: Test America		Lab Location: N Canton, OH		SSOW ID: 12607-T01Y13-012	
Project Name: RACER Livonia GWTP		Lab Contact: Denise Heckler		Lab Quote No:		Cooler No:	
Project Location: Livonia, MI		CONTAINER QUANTITY & PRESERVATION		ANALYSIS REQUESTED (See Back of COC for Definitions)		Carrier:	
Chemistry Contact: Paul Wiseman		SAMPLE TYPE		Total Containers/Sample		Airbill No:	
Sampler(s): Erik Engren		Matrix Code (see back of COC)		Other:		Date Shipped:	
SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)		DATE (mm/dd/yyyy)		TIME (hr:min)		COMMENTS/SPECIAL INSTRUCTIONS:	
WT-12607-052913 - EC-001		5/29/13		1500			
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240-25032 Chain of Custody

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☒ 2 Week ☐ Other: STD

Total Number of Containers: 7

All Samples in Cooler must be on COC

Notes/Special Requirements:

RELINQUISHED BY

Erik Engren

COMPANY

CRA

DATE

5/29/13

TIME

1600

RECEIVED BY

Denise Heckler

COMPANY

TAC

DATE

5/30/13

TIME

915

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE - Fully Executed Copy (CRA)

YELLOW - Receiving Laboratory Copy

PINK - Shipper

GOLDENROD - Sampling Crew

CRA Form: COC-10A (20110804)



**TestAmerica Canton Sample Receipt Form/Narrative** Login # : 25032

**Canton Facility** \_\_\_\_\_

Client CRA Site Name RA CER Cooler unpacked by: [Signature]

Cooler Received on 5-30-13 Opened on 5-30-13

FedEx: 1<sup>st</sup> Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other \_\_\_\_\_

TestAmerica Cooler # 260-041 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

- Cooler temperature upon receipt  
 IR GUN# 1 (CF -0 °C) Observed Cooler Temp. 5.9 °C Corrected Cooler Temp. 5.9 °C  
 IR GUN# 4G (CF +1 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN# 5G (CF +1 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN# 8 (CF +1 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C
- Were custody seals on the outside of the cooler(s)? If Yes Quantity \_\_\_\_\_ Yes No  
 -Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA  
 -Were custody seals on the bottle(s)? Yes No
- Shippers' packing slip attached to the cooler(s)? Yes No
- Did custody papers accompany the sample(s)? Yes No
- Were the custody papers relinquished & signed in the appropriate place? Yes No
- Did all bottles arrive in good condition (Unbroken)? Yes No
- Could all bottle labels be reconciled with the COC? Yes No
- Were correct bottle(s) used for the test(s) indicated? Yes No
- Sufficient quantity received to perform indicated analyses? Yes No
- Were sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC379740
- Were VOAs on the COC? Yes No
- Were air bubbles >6 mm in any VOA vials? Yes No NA
- Was a trip blank present in the cooler(s)? Yes No

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_

Concerning \_\_\_\_\_

**14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**

Samples processed by: [Signature]

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**15. 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)

**16. 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>
WT-12607-052913-EE-001	240-25032-C-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-12607-052913-EE-001	240-25032-F-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____
WT-12607-052913-EE-001	240-25032-G-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____

# 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: 240-25665-1

Client Project/Site: 12607-T01Y13-012, RACER Eckles Rd

For:

Conestoga-Rovers & Associates, Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Mr. Paul Wiseman



Authorized for release by:

6/27/2013 5:20:36 PM

Denise Heckler, Project Manager II

[denise.heckler@testamericainc.com](mailto:denise.heckler@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

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## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

**Job ID: 240-25665-1**

**Laboratory: TestAmerica Canton**

### Narrative

#### CASE NARRATIVE

**Client: Conestoga-Rovers & Associates, Inc.**

**Project: 12607-T01Y13-012, RACER Eckles Rd**

**Report Number: 240-25665-1**

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

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

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

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

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

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

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

#### RECEIPT

The samples were received on 06/13/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 4.6 C.

#### POLYCHLORINATED BIPHENYLS (PCBS)

Sample WT-12607-061213-EE-001 (240-25665-1) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 608. The samples were prepared on 06/18/2013 and analyzed on 06/19/2013.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 90277.

No difficulties were encountered during the PCBs analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL RECOVERABLE METALS (ICP)

Sample WT-12607-061213-EE-001 (240-25665-1) was analyzed for total recoverable metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 06/14/2013 and analyzed on 06/17/2013.

Zinc was detected in method blank MB 240-89874/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

### Job ID: 240-25665-1 (Continued)

#### Laboratory: TestAmerica Canton (Continued)

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

#### MERCURY

Sample WT-12607-061213-EE-001 (240-25665-1) was analyzed for mercury in accordance with EPA Method 245.1. The samples were prepared and analyzed on 06/14/2013.

The continuing calibration verification (CCV) for Mercury associated with prep batch 89877 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data has been reported.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

#### HEM

Sample WT-12607-061213-EE-001 (240-25665-1) was analyzed for HEM in accordance with EPA Method 1664A. The samples were prepared and analyzed on 06/27/2013.

No difficulties were encountered during the HEM analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL SUSPENDED SOLIDS

Sample WT-12607-061213-EE-001 (240-25665-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 06/14/2013.

No difficulties were encountered during the TSS analysis.

All quality control parameters were within the acceptance limits.

#### HEXAVALENT CHROMIUM

Sample WT-12607-061213-EE-001 (240-25665-1) was analyzed for hexavalent chromium in accordance with SM 3500 CR D. The samples were analyzed on 06/13/2013.

No difficulties were encountered during the hexavalent chromium analysis.

All quality control parameters were within the acceptance limits.



## Definitions/Glossary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

### Qualifiers

#### GC Semi VOA

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

#### Metals

Qualifier	Qualifier Description
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
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.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)



## Sample Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-25665-1	WT-12607-061213-EE-001	Water	06/12/13 14:00	06/13/13 09:20

## Detection Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

**Client Sample ID: WT-12607-061213-EE-001**

**Lab Sample ID: 240-25665-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.16		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.15		0.010	mg/L	1		200.7 Rev 4.4	Recoverable Total
Total Suspended Solids	5.0		4.0	mg/L	1		SM 2540D	Recoverable Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

## Method Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

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
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM 3500 CR D	Chromium, Hexavalent	SM	TAL CAN

### Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

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: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

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

Client Sample ID: WT-12607-061213-EE-001

Date Collected: 06/12/13 14:00

Date Received: 06/13/13 09:20

Lab Sample ID: 240-25665-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		06/18/13 09:34	06/19/13 15:47	1
Aroclor-1221	0.095	U	0.095	ug/L		06/18/13 09:34	06/19/13 15:47	1
Aroclor-1232	0.095	U	0.095	ug/L		06/18/13 09:34	06/19/13 15:47	1
Aroclor-1242	0.095	U	0.095	ug/L		06/18/13 09:34	06/19/13 15:47	1
Aroclor-1248	0.095	U	0.095	ug/L		06/18/13 09:34	06/19/13 15:47	1
Aroclor-1254	0.095	U	0.095	ug/L		06/18/13 09:34	06/19/13 15:47	1
Aroclor-1260	0.095	U	0.095	ug/L		06/18/13 09:34	06/19/13 15:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	38		10 - 114			06/18/13 09:34	06/19/13 15:47	1
Tetrachloro-m-xylene	64		15 - 131			06/18/13 09:34	06/19/13 15:47	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

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

Client Sample ID: WT-12607-061213-EE-001

Date Collected: 06/12/13 14:00

Date Received: 06/13/13 09:20

Lab Sample ID: 240-25665-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.16		0.050	mg/L		06/14/13 07:24	06/17/13 11:28	1
Nickel	0.15		0.010	mg/L		06/14/13 07:24	06/17/13 11:28	1
Lead	0.050	U	0.050	mg/L		06/14/13 07:24	06/17/13 11:28	1
Zinc	0.020	U	0.020	mg/L		06/14/13 07:24	06/17/13 11:28	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

### Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-12607-061213-EE-001

Date Collected: 06/12/13 14:00

Date Received: 06/13/13 09:20

Lab Sample ID: 240-25665-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U ^	0.00020	mg/L		06/14/13 11:00	06/14/13 15:02	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

### General Chemistry

Client Sample ID: WT-12607-061213-EE-001

Date Collected: 06/12/13 14:00

Date Received: 06/13/13 09:20

Lab Sample ID: 240-25665-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L		06/27/13 08:34	06/27/13 10:51	1
<b>Total Suspended Solids</b>	<b>5.0</b>		4.0	mg/L			06/14/13 10:51	1
Cr (VI)	0.0050	U	0.0050	mg/L			06/13/13 11:17	1

## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

### GC Semi VOA

#### Prep Batch: 90277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total/NA	Water	3510C	
LCS 240-90277/7-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-90277/6-A	Method Blank	Total/NA	Water	3510C	

#### Analysis Batch: 90526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total/NA	Water	608	90277
LCS 240-90277/7-A	Lab Control Sample	Total/NA	Water	608	90277
MB 240-90277/6-A	Method Blank	Total/NA	Water	608	90277

### Metals

#### Prep Batch: 89874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total Recoverable	Water	200.7	
240-25665-1 MS	WT-12607-061213-EE-001	Total Recoverable	Water	200.7	
240-25665-1 MSD	WT-12607-061213-EE-001	Total Recoverable	Water	200.7	
LCS 240-89874/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-89874/1-A	Method Blank	Total Recoverable	Water	200.7	

#### Prep Batch: 89877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total/NA	Water	245.1	
240-25665-1 MS	WT-12607-061213-EE-001	Total/NA	Water	245.1	
240-25665-1 MSD	WT-12607-061213-EE-001	Total/NA	Water	245.1	
LCS 240-89877/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-89877/1-A	Method Blank	Total/NA	Water	245.1	

#### Analysis Batch: 89984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total/NA	Water	245.1	89877
240-25665-1 MS	WT-12607-061213-EE-001	Total/NA	Water	245.1	89877
240-25665-1 MSD	WT-12607-061213-EE-001	Total/NA	Water	245.1	89877
LCS 240-89877/2-A	Lab Control Sample	Total/NA	Water	245.1	89877
MB 240-89877/1-A	Method Blank	Total/NA	Water	245.1	89877

#### Analysis Batch: 90103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total Recoverable	Water	200.7 Rev 4.4	89874
240-25665-1 MS	WT-12607-061213-EE-001	Total Recoverable	Water	200.7 Rev 4.4	89874
240-25665-1 MSD	WT-12607-061213-EE-001	Total Recoverable	Water	200.7 Rev 4.4	89874
LCS 240-89874/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	89874
MB 240-89874/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	89874

### General Chemistry

#### Analysis Batch: 89720

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total/NA	Water	SM 3500 CR D	
LCS 240-89720/3	Lab Control Sample	Total/NA	Water	SM 3500 CR D	

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## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

### General Chemistry (Continued)

#### Analysis Batch: 89720 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-89720/8	Method Blank	Total/NA	Water	SM 3500 CR D	

#### Analysis Batch: 89948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total/NA	Water	SM 2540D	
LCS 240-89948/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-89948/1	Method Blank	Total/NA	Water	SM 2540D	

#### Prep Batch: 91658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total/NA	Water	1664A	
LCS 240-91658/2-A	Lab Control Sample	Total/NA	Water	1664A	
MB 240-91658/1-A	Method Blank	Total/NA	Water	1664A	

#### Analysis Batch: 91689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-25665-1	WT-12607-061213-EE-001	Total/NA	Water	1664A	91658
LCS 240-91658/2-A	Lab Control Sample	Total/NA	Water	1664A	91658
MB 240-91658/1-A	Method Blank	Total/NA	Water	1664A	91658

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

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

Lab Sample ID: MB 240-90277/6-A

Matrix: Water

Analysis Batch: 90526

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 90277

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		06/18/13 09:34	06/19/13 16:03	1
Aroclor-1221	0.10	U	0.10	ug/L		06/18/13 09:34	06/19/13 16:03	1
Aroclor-1232	0.10	U	0.10	ug/L		06/18/13 09:34	06/19/13 16:03	1
Aroclor-1242	0.10	U	0.10	ug/L		06/18/13 09:34	06/19/13 16:03	1
Aroclor-1248	0.10	U	0.10	ug/L		06/18/13 09:34	06/19/13 16:03	1
Aroclor-1254	0.10	U	0.10	ug/L		06/18/13 09:34	06/19/13 16:03	1
Aroclor-1260	0.10	U	0.10	ug/L		06/18/13 09:34	06/19/13 16:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	54		10 - 114	06/18/13 09:34	06/19/13 16:03	1
Tetrachloro-m-xylene	64		15 - 131	06/18/13 09:34	06/19/13 16:03	1

Lab Sample ID: LCS 240-90277/7-A

Matrix: Water

Analysis Batch: 90526

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 90277

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	2.24		ug/L		90	50 - 114
Aroclor-1260	2.50	2.07		ug/L		83	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	55		10 - 114
Tetrachloro-m-xylene	77		15 - 131

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

Lab Sample ID: MB 240-89874/1-A

Matrix: Water

Analysis Batch: 90103

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 89874

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		06/14/13 07:24	06/17/13 11:20	1
Nickel	0.010	U	0.010	mg/L		06/14/13 07:24	06/17/13 11:20	1
Lead	0.050	U	0.050	mg/L		06/14/13 07:24	06/17/13 11:20	1
Zinc	0.0638		0.020	mg/L		06/14/13 07:24	06/17/13 11:20	1

Lab Sample ID: LCS 240-89874/2-A

Matrix: Water

Analysis Batch: 90103

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 89874

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.193		mg/L		96	85 - 115
Nickel	0.500	0.487		mg/L		97	85 - 115
Lead	0.500	0.467		mg/L		93	85 - 115
Zinc	0.500	0.547		mg/L		109	85 - 115

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# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

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

Lab Sample ID: 240-25665-1 MS

Matrix: Water

Analysis Batch: 90103

Client Sample ID: WT-12607-061213-EE-001

Prep Type: Total Recoverable

Prep Batch: 89874

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.16		0.200	0.326		mg/L		84	75 - 125
Nickel	0.15		0.500	0.608		mg/L		91	75 - 125
Lead	0.050	U	0.500	0.443		mg/L		89	75 - 125
Zinc	0.020	U	0.500	0.479		mg/L		96	75 - 125

Lab Sample ID: 240-25665-1 MSD

Matrix: Water

Analysis Batch: 90103

Client Sample ID: WT-12607-061213-EE-001

Prep Type: Total Recoverable

Prep Batch: 89874

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.16		0.200	0.353		mg/L		97	75 - 125	8	20
Nickel	0.15		0.500	0.660		mg/L		102	75 - 125	8	20
Lead	0.050	U	0.500	0.475		mg/L		95	75 - 125	7	20
Zinc	0.020	U	0.500	0.519		mg/L		104	75 - 125	8	20

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-89877/1-A

Matrix: Water

Analysis Batch: 89984

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 89877

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U ^	0.00020	mg/L		06/14/13 11:00	06/14/13 14:59	1

Lab Sample ID: LCS 240-89877/2-A

Matrix: Water

Analysis Batch: 89984

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 89877

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00524	^	mg/L		105	85 - 115

Lab Sample ID: 240-25665-1 MS

Matrix: Water

Analysis Batch: 89984

Client Sample ID: WT-12607-061213-EE-001

Prep Type: Total/NA

Prep Batch: 89877

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00020	U ^	0.00100	0.00116	^	mg/L		116	70 - 130

Lab Sample ID: 240-25665-1 MSD

Matrix: Water

Analysis Batch: 89984

Client Sample ID: WT-12607-061213-EE-001

Prep Type: Total/NA

Prep Batch: 89877

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.00020	U ^	0.00100	0.00113	^	mg/L		113	70 - 130	3	20

TestAmerica Canton

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-91658/1-A

Matrix: Water

Analysis Batch: 91689

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 91658

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L		06/27/13 08:34	06/27/13 10:51	1

Lab Sample ID: LCS 240-91658/2-A

Matrix: Water

Analysis Batch: 91689

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 91658

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	33.5		mg/L		84	78 - 114

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

Lab Sample ID: MB 240-89948/1

Matrix: Water

Analysis Batch: 89948

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			06/14/13 10:51	1

Lab Sample ID: LCS 240-89948/2

Matrix: Water

Analysis Batch: 89948

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	43.3	43.0		mg/L		99	73 - 113

## Method: SM 3500 CR D - Chromium, Hexavalent

Lab Sample ID: MB 240-89720/8

Matrix: Water

Analysis Batch: 89720

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			06/13/13 09:12	1

Lab Sample ID: LCS 240-89720/3

Matrix: Water

Analysis Batch: 89720

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	0.256		mg/L		102	80 - 118

TestAmerica Canton

## Surrogate Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

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

Matrix: Water

Prep Type: Total/NA

#### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2 (10-114)	TCX2 (15-131)
240-25665-1	WT-12607-061213-EE-001	38	64
LCS 240-90277/7-A	Lab Control Sample	55	77
MB 240-90277/6-A	Method Blank	54	64

#### Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

## Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

**Client Sample ID: WT-12607-061213-EE-001**

**Lab Sample ID: 240-25665-1**

**Date Collected: 06/12/13 14:00**

**Matrix: Water**

**Date Received: 06/13/13 09:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			90277	06/18/13 09:34	BM	TAL CAN
Total/NA	Analysis	608		1	90526	06/19/13 15:47	LH	TAL CAN
Total/NA	Prep	245.1			89877	06/14/13 11:00	LM	TAL CAN
Total/NA	Analysis	245.1		1	89984	06/14/13 15:02	SG	TAL CAN
Total Recoverable	Prep	200.7			89874	06/14/13 07:24	LM	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	90103	06/17/13 11:28	NJT	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	89720	06/13/13 11:17	NP	TAL CAN
Total/NA	Analysis	SM 2540D		1	89948	06/14/13 10:51	KG	TAL CAN
Total/NA	Prep	1664A			91658	06/27/13 08:34	NP	TAL CAN
Total/NA	Analysis	1664A		1	91689	06/27/13 10:51	NP	TAL CAN

### Laboratory References:

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

## Certification Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01Y13-012, RACER Eckles Rd

TestAmerica Job ID: 240-25665-1

### Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAP	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAP	5	200004	07-31-13
Kansas	NELAP	7	E-10336	01-31-14
Kentucky	State Program	4	58	06-30-13
L-A-B	DoD ELAP		L2315	07-28-13
Minnesota	NELAP	5	039-999-348	12-31-13
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAP	2	OH001	06-30-13
New York	NELAP	2	10975	04-01-14
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAP	3	68-00340	08-31-13
Texas	NELAP	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAP	3	460175	09-14-13
Washington	State Program	10	C971	01-12-14
West Virginia DEP	State Program	3	210	12-31-13
Wisconsin	State Program	5	999518190	08-31-13



14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170  
Phone: (734) 453-5123 Fax: (734) 453-5701

COC NO. PL-10000

(See Reverse Side for Instructions)

Project No/Phase/Task Code: 12607-TO1Y13-003		Laboratory Name: Test America		Lab Location: N Canton, OH		SSOW ID: 12607-TO1Y13-003	
Project Name: RACER Livonia GWTP		Lab Contact: Denise Heckler		Lab Quote No:		Cooler No:	
Project Location: Livonia, MI		CONTAINER QUANTITY & PRESERVATION		ANALYSIS REQUESTED (See Back of COC for Definitions)		Carrier:	
Chemistry Contact: Paul Wiseman		SAMPLE TYPE		Total Containers/Sample		Airbill No:	
Sampler(s): Erik Engnell		Matrix Code		Other:		Date Shipped:	
SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)		DATE (mm/dd/yyyy)		TIME (hr:min)		COMMENTS/SPECIAL INSTRUCTIONS:	
WT-12607-061213-EE-001		6/12/13		1400			
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**THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT -- ALL FIELDS MUST BE COMPLETED ACCURATELY**

WHITE – Fully Executed Copy (CRA)

YELLOW – Receiving Laboratory Copy

PINK – Shipper

**GOLDENROD – Sampling Crew**

CRA Form: COC-10A (20110804)



**TestAmerica Canton Sample Receipt Form/Narrative**

 Login # : 25665
**Canton Facility**

Client <u>CRA</u>	Site Name _____	Cooler unpacked by: <u>[Signature]</u>
Cooler received on <u>6-13-13</u>	Opened on <u>6-13-13</u>	
FedEx: <input type="checkbox"/> 1st <input checked="" type="checkbox"/> Exp <input type="checkbox"/> UPS <input type="checkbox"/> FAS <input type="checkbox"/> Stetson <input type="checkbox"/> Client Drop Off <input type="checkbox"/> TestAmerica Courier <input type="checkbox"/> Other _____		
TestAmerica Cooler # <u>2002341</u> Foam Box <input type="checkbox"/> Client Cooler <input type="checkbox"/> Box <input type="checkbox"/> Other _____		
Packing material used: <u>Bubble Wrap</u> Foam <input type="checkbox"/> Plastic Bag <input type="checkbox"/> None <input type="checkbox"/> Other _____		
COOLANT: <u>Wet Ice</u> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> Water <input type="checkbox"/> None <input type="checkbox"/>		

1. Cooler temperature upon receipt
 

IR GUN# 1 (CF -1 °C) Observed Cooler Temp. _____ °C	Corrected Cooler Temp. _____ °C	<input type="checkbox"/> See Multiple Cooler Form out of service
IR GUN# 4G (CF 0 °C) Observed Cooler Temp. <u>4.6</u> °C	Corrected Cooler Temp. <u>4.6</u> °C	
IR GUN# 5G (CF +1 °C) Observed Cooler Temp. _____ °C	Corrected Cooler Temp. _____ °C	
IR GUN# 8 (CF -2 °C) Observed Cooler Temp. _____ °C	Corrected Cooler Temp. _____ °C	
2. Were custody seals on the outside of the cooler(s)? If Yes Quantity \_\_\_\_\_ Yes ☒ No ☒
  - Were custody seals on the outside of the cooler(s) signed & dated? Yes ☒ No ☒ NA
  - Were custody seals on the bottle(s)? Yes ☒ No ☒
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. Did all bottles arrive in good condition (Unbroken)? ☒ Yes ☒ No
7. Could all bottle labels be reconciled with the COC? ☒ Yes ☒ No
8. Were correct bottle(s) used for the test(s) indicated? ☒ Yes ☒ No
9. Sufficient quantity received to perform indicated analyses? ☒ Yes ☒ No
10. Were sample(s) at the correct pH upon receipt? ☒ Yes ☒ No ☒ NA pH Strip Lot# HC379740
11. Were VOAs on the COC? ☒ Yes ☒ No
12. Were air bubbles >6 mm in any VOA vials? ☒ Yes ☒ No ☒ NA
13. Was a trip blank present in the cooler(s)? ☒ Yes ☒ No

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_  
Concerning \_\_\_\_\_

**14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**

 Samples processed by: [Signature]
**15. 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)

**16. 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>
WT-12607-061213-EE-001	240-25665-D-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-12607-061213-EE-001	240-25665-E-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____
WT-12607-061213-EE-001	240-25665-F-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____

# 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: 240-26680-1

Client Project/Site: 012607-T01Y13-03, RACER Eckles Rd

For:

Conestoga-Rovers & Associates, Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Mr. Paul Wiseman



Authorized for release by:

7/22/2013 9:23:46 AM

Denise Heckler, Project Manager II

[denise.heckler@testamericainc.com](mailto:denise.heckler@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

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## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

**Job ID: 240-26680-1**

**Laboratory: TestAmerica Canton**

### Narrative

#### CASE NARRATIVE

**Client: Conestoga-Rovers & Associates, Inc.**

**Project: 012607-T01Y13-03, RACER Eckles Rd**

**Report Number: 240-26680-1**

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

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

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

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

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

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

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

#### RECEIPT

The samples were received on 07/11/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.0 C.

#### POLYCHLORINATED BIPHENYLS (PCBS)

Sample WT-12607-071013-EE-001 (240-26680-1) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 608. The samples were prepared on 07/12/2013 and analyzed on 07/16/2013.

No difficulties were encountered during the PCBs analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL RECOVERABLE METALS (ICP)

Sample WT-12607-071013-EE-001 (240-26680-1) was analyzed for total recoverable metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 07/12/2013 and analyzed on 07/15/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

### Job ID: 240-26680-1 (Continued)

#### Laboratory: TestAmerica Canton (Continued)

##### MERCURY

Sample WT-12607-071013-EE-001 (240-26680-1) was analyzed for mercury in accordance with EPA Method 245.1. The samples were prepared on 07/12/2013 and analyzed on 07/15/2013.

No difficulties were encountered during the mercury analysis.

All quality control parameters were within the acceptance limits.

##### N-HEXANE EXTRACTABLE MATERIAL

Sample WT-12607-071013-EE-001 (240-26680-1) was analyzed for n-hexane extractable material in accordance with EPA Method 1664A. The samples were prepared and analyzed on 07/19/2013.

No difficulties were encountered during the HEM analysis.

All quality control parameters were within the acceptance limits.

##### TOTAL SUSPENDED SOLIDS

Sample WT-12607-071013-EE-001 (240-26680-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 07/12/2013.

No difficulties were encountered during the TSS analysis.

All quality control parameters were within the acceptance limits.

##### HEXAVALENT CHROMIUM

Sample WT-12607-071013-EE-001 (240-26680-1) was analyzed for hexavalent chromium in accordance with SM 3500 CR D. The samples were analyzed on 07/11/2013.

Cr (VI) failed the recovery criteria low for the MS of sample WT-12607-071013-EE-001MS (240-26680-1) in batch 240-93350.

Cr (VI) failed the recovery criteria low for the MSD of sample WT-12607-071013-EE-001MSD (240-26680-1) in batch 240-93350. Cr (VI) exceeded the RPD limit. Matrix interference is suspected.

No other difficulties were encountered during the hexavalent chromium analysis.

All other quality control parameters were within the acceptance limits.

## Definitions/Glossary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

### 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.
F	MS or MSD exceeds the control limits
F	RPD of the MS and MSD exceeds the control limits

### Glossary

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

## Sample Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-26680-1	WT-12607-071013-EE-001	Water	07/10/13 17:00	07/11/13 09:15



## Detection Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

**Client Sample ID: WT-12607-071013-EE-001**

**Lab Sample ID: 240-26680-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.26		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.22		0.010	mg/L	1		200.7 Rev 4.4	Recoverable
Total Suspended Solids	40		4.0	mg/L	1		SM 2540D	Total
								Recoverable
								Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

## Method Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

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
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM 3500 CR D	Chromium, Hexavalent	SM	TAL CAN

### Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

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: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

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

Client Sample ID: WT-12607-071013-EE-001

Date Collected: 07/10/13 17:00

Date Received: 07/11/13 09:15

Lab Sample ID: 240-26680-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	ug/L		07/12/13 08:45	07/16/13 13:03	1
Aroclor-1221	0.095	U	0.095	ug/L		07/12/13 08:45	07/16/13 13:03	1
Aroclor-1232	0.095	U	0.095	ug/L		07/12/13 08:45	07/16/13 13:03	1
Aroclor-1242	0.095	U	0.095	ug/L		07/12/13 08:45	07/16/13 13:03	1
Aroclor-1248	0.095	U	0.095	ug/L		07/12/13 08:45	07/16/13 13:03	1
Aroclor-1254	0.095	U	0.095	ug/L		07/12/13 08:45	07/16/13 13:03	1
Aroclor-1260	0.095	U	0.095	ug/L		07/12/13 08:45	07/16/13 13:03	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	74		10 - 114			07/12/13 08:45	07/16/13 13:03	1
Tetrachloro-m-xylene	72		15 - 131			07/12/13 08:45	07/16/13 13:03	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

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

Client Sample ID: WT-12607-071013-EE-001

Date Collected: 07/10/13 17:00

Date Received: 07/11/13 09:15

Lab Sample ID: 240-26680-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.26		0.050	mg/L		07/12/13 07:16	07/15/13 14:18	1
Nickel	0.22		0.010	mg/L		07/12/13 07:16	07/15/13 14:18	1
Lead	0.050	U	0.050	mg/L		07/12/13 07:16	07/15/13 14:18	1
Zinc	0.020	U	0.020	mg/L		07/12/13 07:16	07/15/13 14:18	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

### Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-12607-071013-EE-001

Date Collected: 07/10/13 17:00

Date Received: 07/11/13 09:15

Lab Sample ID: 240-26680-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		07/12/13 07:26	07/15/13 12:24	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

### General Chemistry

Client Sample ID: WT-12607-071013-EE-001

Date Collected: 07/10/13 17:00

Date Received: 07/11/13 09:15

Lab Sample ID: 240-26680-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L		07/19/13 08:38	07/19/13 09:14	1
<b>Total Suspended Solids</b>	<b>40</b>		4.0	mg/L			07/12/13 08:24	1
Cr (VI)	0.0050	U	0.0050	mg/L			07/11/13 15:43	1

## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

### GC Semi VOA

#### Prep Batch: 93459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total/NA	Water	3510C	
LCS 240-93459/10-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-93459/9-A	Method Blank	Total/NA	Water	3510C	

#### Analysis Batch: 93813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total/NA	Water	608	93459
LCS 240-93459/10-A	Lab Control Sample	Total/NA	Water	608	93459
MB 240-93459/9-A	Method Blank	Total/NA	Water	608	93459

### Metals

#### Prep Batch: 93440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total Recoverable	Water	200.7	
LCS 240-93440/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-93440/1-A	Method Blank	Total Recoverable	Water	200.7	

#### Prep Batch: 93441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total/NA	Water	245.1	
LCS 240-93441/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-93441/1-A	Method Blank	Total/NA	Water	245.1	

#### Analysis Batch: 93668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total Recoverable	Water	200.7 Rev 4.4	93440
LCS 240-93440/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	93440
MB 240-93440/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	93440

#### Analysis Batch: 93711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total/NA	Water	245.1	93441
LCS 240-93441/2-A	Lab Control Sample	Total/NA	Water	245.1	93441
MB 240-93441/1-A	Method Blank	Total/NA	Water	245.1	93441

### General Chemistry

#### Analysis Batch: 93350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total/NA	Water	SM 3500 CR D	
240-26680-1 MS	WT-12607-071013-EE-001	Total/NA	Water	SM 3500 CR D	
240-26680-1 MSD	WT-12607-071013-EE-001	Total/NA	Water	SM 3500 CR D	
LCS 240-93350/4	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
MB 240-93350/3	Method Blank	Total/NA	Water	SM 3500 CR D	

#### Analysis Batch: 93455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total/NA	Water	SM 2540D	
LCS 240-93455/2	Lab Control Sample	Total/NA	Water	SM 2540D	

TestAmerica Canton

## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

### General Chemistry (Continued)

#### Analysis Batch: 93455 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-93455/1	Method Blank	Total/NA	Water	SM 2540D	

#### Prep Batch: 94232

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total/NA	Water	1664A	
240-26680-1 MS	WT-12607-071013-EE-001	Total/NA	Water	1664A	
LCS 240-94232/2-A	Lab Control Sample	Total/NA	Water	1664A	
MB 240-94232/1-A	Method Blank	Total/NA	Water	1664A	

#### Analysis Batch: 94235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-26680-1	WT-12607-071013-EE-001	Total/NA	Water	1664A	94232
240-26680-1 MS	WT-12607-071013-EE-001	Total/NA	Water	1664A	94232
LCS 240-94232/2-A	Lab Control Sample	Total/NA	Water	1664A	94232
MB 240-94232/1-A	Method Blank	Total/NA	Water	1664A	94232



# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

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

Lab Sample ID: MB 240-93459/9-A

Matrix: Water

Analysis Batch: 93813

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 93459

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		07/12/13 08:45	07/16/13 14:14	1
Aroclor-1221	0.10	U	0.10	ug/L		07/12/13 08:45	07/16/13 14:14	1
Aroclor-1232	0.10	U	0.10	ug/L		07/12/13 08:45	07/16/13 14:14	1
Aroclor-1242	0.10	U	0.10	ug/L		07/12/13 08:45	07/16/13 14:14	1
Aroclor-1248	0.10	U	0.10	ug/L		07/12/13 08:45	07/16/13 14:14	1
Aroclor-1254	0.10	U	0.10	ug/L		07/12/13 08:45	07/16/13 14:14	1
Aroclor-1260	0.10	U	0.10	ug/L		07/12/13 08:45	07/16/13 14:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	98		10 - 114	07/12/13 08:45	07/16/13 14:14	1
Tetrachloro-m-xylene	83		15 - 131	07/12/13 08:45	07/16/13 14:14	1

Lab Sample ID: LCS 240-93459/10-A

Matrix: Water

Analysis Batch: 93813

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 93459

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	3.50	2.20		ug/L		63	50 - 114
Aroclor-1260	3.50	2.30		ug/L		66	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	72		10 - 114
Tetrachloro-m-xylene	62		15 - 131

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

Lab Sample ID: MB 240-93440/1-A

Matrix: Water

Analysis Batch: 93668

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 93440

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		07/12/13 07:16	07/15/13 13:26	1
Nickel	0.010	U	0.010	mg/L		07/12/13 07:16	07/15/13 13:26	1
Lead	0.050	U	0.050	mg/L		07/12/13 07:16	07/15/13 13:26	1
Zinc	0.020	U	0.020	mg/L		07/12/13 07:16	07/15/13 13:26	1

Lab Sample ID: LCS 240-93440/2-A

Matrix: Water

Analysis Batch: 93668

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 93440

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.199		mg/L		100	85 - 115
Nickel	0.500	0.492		mg/L		98	85 - 115
Lead	0.500	0.498		mg/L		100	85 - 115
Zinc	0.500	0.519		mg/L		104	85 - 115

TestAmerica Canton

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-93441/1-A

Matrix: Water

Analysis Batch: 93711

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 93441

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		07/12/13 07:26	07/15/13 12:10	1

Lab Sample ID: LCS 240-93441/2-A

Matrix: Water

Analysis Batch: 93711

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 93441

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00458		mg/L		92	85 - 115

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-94232/1-A

Matrix: Water

Analysis Batch: 94235

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 94232

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L		07/19/13 08:38	07/19/13 09:14	1

Lab Sample ID: LCS 240-94232/2-A

Matrix: Water

Analysis Batch: 94235

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 94232

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	36.2		mg/L		91	78 - 114

Lab Sample ID: 240-26680-1 MS

Matrix: Water

Analysis Batch: 94235

Client Sample ID: WT-12607-071013-EE-001

Prep Type: Total/NA

Prep Batch: 94232

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	4.7	U	38.1	34.5		mg/L		91	78 - 114

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

Lab Sample ID: MB 240-93455/1

Matrix: Water

Analysis Batch: 93455

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			07/12/13 08:24	1

Lab Sample ID: LCS 240-93455/2

Matrix: Water

Analysis Batch: 93455

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	43.3	39.0		mg/L		90	73 - 113

TestAmerica Canton

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

## Method: SM 3500 CR D - Chromium, Hexavalent

Lab Sample ID: MB 240-93350/3

Matrix: Water

Analysis Batch: 93350

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			07/11/13 15:40	1

Lab Sample ID: LCS 240-93350/4

Matrix: Water

Analysis Batch: 93350

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	0.234		mg/L		94	80 - 118

Lab Sample ID: 240-26680-1 MS

Matrix: Water

Analysis Batch: 93350

Client Sample ID: WT-12607-071013-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.0050	U	0.250	0.0656	F	mg/L		26	41 - 136

Lab Sample ID: 240-26680-1 MSD

Matrix: Water

Analysis Batch: 93350

Client Sample ID: WT-12607-071013-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
Cr (VI)	0.0050	U	0.250	0.0255	F	mg/L		10	41 - 136	88	20

TestAmerica Canton

## Surrogate Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

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

Matrix: Water

Prep Type: Total/NA

#### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2 (10-114)	TCX2 (15-131)
240-26680-1	WT-12607-071013-EE-001	74	72
LCS 240-93459/10-A	Lab Control Sample	72	62
MB 240-93459/9-A	Method Blank	98	83

#### Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

## Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

**Client Sample ID: WT-12607-071013-EE-001**

**Lab Sample ID: 240-26680-1**

**Date Collected: 07/10/13 17:00**

**Matrix: Water**

**Date Received: 07/11/13 09:15**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			93459	07/12/13 08:45	CSC	TAL CAN
Total/NA	Analysis	608		1	93813	07/16/13 13:03	CVD	TAL CAN
Total Recoverable	Prep	200.7			93440	07/12/13 07:16	LPM	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	93668	07/15/13 14:18	NJT	TAL CAN
Total/NA	Prep	245.1			93441	07/12/13 07:26	LPM	TAL CAN
Total/NA	Analysis	245.1		1	93711	07/15/13 12:24	ADS	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	93350	07/11/13 15:43	LKG	TAL CAN
Total/NA	Analysis	SM 2540D		1	93455	07/12/13 08:24	KMG	TAL CAN
Total/NA	Prep	1664A			94232	07/19/13 08:38	NMP	TAL CAN
Total/NA	Analysis	1664A		1	94235	07/19/13 09:14	NMP	TAL CAN

### Laboratory References:

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

## Certification Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 012607-T01Y13-03, RACER Eckles Rd

TestAmerica Job ID: 240-26680-1

### Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAP	4	E87225	06-30-14
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200004	07-31-13
Kansas	NELAP	7	E-10336	01-31-14
Kentucky	State Program	4	58	06-30-14
L-A-B	DoD ELAP		L2315	07-28-13
Minnesota	NELAP	5	039-999-348	12-31-13
Nevada	State Program	9	OH-000482008A	07-31-13 *
New Jersey	NELAP	2	OH001	06-30-14
New York	NELAP	2	10975	04-01-14
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAP	3	68-00340	08-31-13
Texas	NELAP	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAP	3	460175	09-14-13
Washington	State Program	10	C971	01-12-14
Wisconsin	State Program	5	999518190	08-31-13

\* Expired certification is currently pending renewal and is considered valid.

TestAmerica Canton



CONESTOGA-ROVERS  
& ASSOCIATES

# CHAIN OF CUSTODY RECORD

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

COC NO: PL-10922

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/Phase/Task Code: 12607-10113-003		Laboratory Name: Test America		Lab Location: N. Canton, OH		SSOW ID: 12607-10113-003	
Project Name: RACER Livonia GWTP		Lab Contact: Denise Hecker		Lab Quote No:		Cooler No:	
Project Location: Livonia, MI		CONTAINER QUANTITY & PRESERVATION		ANALYSIS REQUESTED (See Back of COC for Definitions)		Carrier:	
Chemistry Contact: Paul Wiseman		SAMPLE TYPE		Total Containers/Sample		Airbill No:	
Sampler(s): Erik Engnell		Grab (g) or Comp (c)		Other:		Date Shipped:	
Matrix Code		(see back of COC)		EnCorres 3x5-g, 1x25-g		MS/MSD Request	
DATE (mm/dd/yyyy)		DATE (mm/dd/yyyy)		TIME (hh:mm)		COMMENTS/SPECIAL INSTRUCTIONS:	
WT-12607-071013-EE-001		7/10/13		1700 WT			
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## TestAmerica Canton Sample Receipt Form/Narrative

Login # :

Canton Facility

Cooler unpacked by:

Client

Site Name

Cooler Received on

Opened on

FedEx: 1<sup>st</sup> Grd Exp

UPS

FAS

Stetson

Client Drop Off

TestAmerica Courier

Other

TestAmerica Cooler #

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

IR GUN# A (CF -1 °C) Observed Cooler Temp. °C

Corrected Cooler Temp. °C

IR GUN# 4 (CF 0 °C) Observed Cooler Temp. 2.0 °C

Corrected Cooler Temp. 2.0 °C

IR GUN# 5 (CF +1 °C) Observed Cooler Temp. °C

Corrected Cooler Temp. °C

IR GUN# 8 (CF -0 °C) Observed Cooler Temp. °C

Corrected Cooler Temp. °C

☐ See Multiple  
Cooler Form

## 2. Were custody seals on the outside of the cooler(s)? If Yes Quantity

Yes No

-Were custody seals on the outside of the cooler(s) signed &amp; dated?

Yes No NA

-Were custody seals on the bottle(s)?

Yes No

## 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 &amp; signed in the appropriate place?

Yes No

## 6. Did all bottles arrive in good condition (Unbroken)?

Yes No

## 7. Could all bottle labels be reconciled with the COC?

Yes No

## 8. Were correct bottle(s) used for the test(s) indicated?

Yes No

## 9. Sufficient quantity received to perform indicated analyses?

Yes No

## 10. Were sample(s) at the correct pH upon receipt?

Yes No NA

## 11. Were VOAs on the COC?

Yes No

## 12. Were air bubbles &gt;6 mm in any VOA vials?

Yes No NA

## 13. Was a trip blank present in the cooler(s)?

Yes No

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other

Concerning

## 14. CHAIN OF CUSTODY &amp; SAMPLE DISCREPANCIES

Samples processed by:

## 15. 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 &gt;6 mm in diameter. (Notify PM)

## 16. 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>
WT-12607-071013-EE-001	240-26680-A-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-12607-071013-EE-001	240-26680-E-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____
WT-12607-071013-EE-001	240-26680-F-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____

# 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: 240-28201-1

Client Project/Site: 12607-T01-012, RACER Eckles Rd

For:

Conestoga-Rovers & Associates, Inc.

14496 Sheldon Road, Suite 200

Plymouth, Michigan 48170

Attn: Mr. Paul Wiseman



Authorized for release by:

9/5/2013 7:56:43 AM

Denise Heckler, Project Manager II

[denise.heckler@testamericainc.com](mailto:denise.heckler@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

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

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

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## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

**Job ID: 240-28201-1**

**Laboratory: TestAmerica Canton**

### Narrative

## CASE NARRATIVE

**Client: Conestoga-Rovers & Associates, Inc.**

**Project: 12607-T01-012, RACER Eckles Rd**

**Report Number: 240-28201-1**

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

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

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

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

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

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

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

### RECEIPT

The samples were received on 08/22/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 6.0 C.

### POLYCHLORINATED BIPHENYLS (PCBS)

Sample WT-12607-082113-EE-001 (240-28201-1) was analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 608. The samples were prepared on 08/27/2013 and analyzed on 08/28/2013.

Aroclor-1016 failed the recovery criteria high for LCS 240-99117/7-A.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 99117.

No other difficulties were encountered during the PCBs analysis.

All other quality control parameters were within the acceptance limits.

### TOTAL RECOVERABLE METALS (ICP)

Sample WT-12607-082113-EE-001 (240-28201-1) was analyzed for total recoverable metals (ICP) in accordance with EPA Method 200.7. The samples were prepared on 08/23/2013 and analyzed on 08/27/2013.

## Case Narrative

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

### Job ID: 240-28201-1 (Continued)

#### Laboratory: TestAmerica Canton (Continued)

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### MERCURY

Sample WT-12607-082113-EE-001 (240-28201-1) was analyzed for mercury in accordance with EPA Method 245.1. The samples were prepared on 08/27/2013 and analyzed on 08/28/2013.

No difficulties were encountered during the mercury analysis.

All other quality control parameters were within the acceptance limits.

#### N-HEXANE EXTRACTABLE MATERIAL

Sample WT-12607-082113-EE-001 (240-28201-1) was analyzed for n-hexane extractable material in accordance with EPA Method 1664A. The samples were prepared and analyzed on 09/04/2013.

No difficulties were encountered during the HEM analysis.

All other quality control parameters were within the acceptance limits.

#### TOTAL SUSPENDED SOLIDS

Sample WT-12607-082113-EE-001 (240-28201-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 08/23/2013.

No difficulties were encountered during the TSS analysis.

All quality control parameters were within the acceptance limits.

#### HEXAVALENT CHROMIUM

Sample WT-12607-082113-EE-001 (240-28201-1) was analyzed for hexavalent chromium in accordance with SM 3500 CR D. The samples were analyzed on 08/22/2013.

No difficulties were encountered during the hexavalent chromium analysis.

All quality control parameters were within the acceptance limits.

## Definitions/Glossary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

### Qualifiers

#### GC Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD exceeds the control limits
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.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## Sample Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-28201-1	WT-12607-082113-EE-001	Water	08/21/13 16:00	08/22/13 09:10

## Detection Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

**Client Sample ID: WT-12607-082113-EE-001**

**Lab Sample ID: 240-28201-1**

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.27		0.050	mg/L	1		200.7 Rev 4.4	Total
Nickel	0.18		0.010	mg/L	1		200.7 Rev 4.4	Recoverable Total
Total Suspended Solids	14		4.0	mg/L	1		SM 2540D	Recoverable Total/NA
Cr (VI)	0.051		0.0050	mg/L	1		SM 3500 CR D	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton



## Method Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

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
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CAN
SM 3500 CR D	Chromium, Hexavalent	SM	TAL CAN

### Protocol References:

1664A = EPA-821-98-002

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

EPA = US Environmental Protection Agency

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: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

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

Client Sample ID: WT-12607-082113-EE-001

Date Collected: 08/21/13 16:00

Date Received: 08/22/13 09:10

Lab Sample ID: 240-28201-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U *	0.095	ug/L		08/27/13 10:31	08/28/13 13:00	1
Aroclor-1221	0.095	U	0.095	ug/L		08/27/13 10:31	08/28/13 13:00	1
Aroclor-1232	0.095	U	0.095	ug/L		08/27/13 10:31	08/28/13 13:00	1
Aroclor-1242	0.095	U	0.095	ug/L		08/27/13 10:31	08/28/13 13:00	1
Aroclor-1248	0.095	U	0.095	ug/L		08/27/13 10:31	08/28/13 13:00	1
Aroclor-1254	0.095	U	0.095	ug/L		08/27/13 10:31	08/28/13 13:00	1
Aroclor-1260	0.095	U	0.095	ug/L		08/27/13 10:31	08/28/13 13:00	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	67		10 - 114			08/27/13 10:31	08/28/13 13:00	1
Tetrachloro-m-xylene	88		15 - 131			08/27/13 10:31	08/28/13 13:00	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

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

Client Sample ID: WT-12607-082113-EE-001

Date Collected: 08/21/13 16:00

Date Received: 08/22/13 09:10

Lab Sample ID: 240-28201-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.27		0.050	mg/L		08/23/13 09:52	08/27/13 16:19	1
Nickel	0.18		0.010	mg/L		08/23/13 09:52	08/27/13 16:19	1
Lead	0.050	U	0.050	mg/L		08/23/13 09:52	08/27/13 16:19	1
Zinc	0.020	U	0.020	mg/L		08/23/13 09:52	08/27/13 16:19	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

### Method: 245.1 - Mercury (CVAA)

Client Sample ID: WT-12607-082113-EE-001

Date Collected: 08/21/13 16:00

Date Received: 08/22/13 09:10

Lab Sample ID: 240-28201-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		08/27/13 15:00	08/28/13 10:12	1

## Client Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

### General Chemistry

Client Sample ID: WT-12607-082113-EE-001

Date Collected: 08/21/13 16:00

Date Received: 08/22/13 09:10

Lab Sample ID: 240-28201-1

Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	4.7	U	4.7	mg/L		09/04/13 08:07	09/04/13 08:07	1
Total Suspended Solids	14		4.0	mg/L			08/23/13 08:18	1
Cr (VI)	0.051		0.0050	mg/L			08/22/13 10:48	1

# QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

## GC Semi VOA

### Prep Batch: 99117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total/NA	Water	3510C	
LCS 240-99117/7-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-99117/6-A	Method Blank	Total/NA	Water	3510C	

### Analysis Batch: 99336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total/NA	Water	608	99117
LCS 240-99117/7-A	Lab Control Sample	Total/NA	Water	608	99117
MB 240-99117/6-A	Method Blank	Total/NA	Water	608	99117

## Metals

### Prep Batch: 98687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total Recoverable	Water	200.7	
240-28201-1 MS	WT-12607-082113-EE-001	Total Recoverable	Water	200.7	
240-28201-1 MSD	WT-12607-082113-EE-001	Total Recoverable	Water	200.7	
LCS 240-98687/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
MB 240-98687/1-A	Method Blank	Total Recoverable	Water	200.7	

### Prep Batch: 99086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total/NA	Water	245.1	
LCS 240-99086/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 240-99086/1-A	Method Blank	Total/NA	Water	245.1	

### Analysis Batch: 99113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total Recoverable	Water	200.7 Rev 4.4	98687
240-28201-1 MS	WT-12607-082113-EE-001	Total Recoverable	Water	200.7 Rev 4.4	98687
240-28201-1 MSD	WT-12607-082113-EE-001	Total Recoverable	Water	200.7 Rev 4.4	98687
LCS 240-98687/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	98687
MB 240-98687/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	98687

### Analysis Batch: 99388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total/NA	Water	245.1	99086
LCS 240-99086/2-A	Lab Control Sample	Total/NA	Water	245.1	99086
MB 240-99086/1-A	Method Blank	Total/NA	Water	245.1	99086

## General Chemistry

### Analysis Batch: 98522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total/NA	Water	SM 3500 CR D	
240-28201-1 MS	WT-12607-082113-EE-001	Total/NA	Water	SM 3500 CR D	
240-28201-1 MSD	WT-12607-082113-EE-001	Total/NA	Water	SM 3500 CR D	
LCS 240-98522/4	Lab Control Sample	Total/NA	Water	SM 3500 CR D	
MB 240-98522/3	Method Blank	Total/NA	Water	SM 3500 CR D	

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## QC Association Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

### General Chemistry (Continued)

#### Analysis Batch: 98654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total/NA	Water	SM 2540D	
LCS 240-98654/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 240-98654/1	Method Blank	Total/NA	Water	SM 2540D	

#### Prep Batch: 100029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total/NA	Water	1664A	
LCS 240-100029/2-A	Lab Control Sample	Total/NA	Water	1664A	
MB 240-100029/1-A	Method Blank	Total/NA	Water	1664A	

#### Analysis Batch: 100051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-28201-1	WT-12607-082113-EE-001	Total/NA	Water	1664A	100029
LCS 240-100029/2-A	Lab Control Sample	Total/NA	Water	1664A	100029
MB 240-100029/1-A	Method Blank	Total/NA	Water	1664A	100029

# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

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

Lab Sample ID: MB 240-99117/6-A

Matrix: Water

Analysis Batch: 99336

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 99117

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	ug/L		08/27/13 10:31	08/28/13 14:11	1
Aroclor-1221	0.10	U	0.10	ug/L		08/27/13 10:31	08/28/13 14:11	1
Aroclor-1232	0.10	U	0.10	ug/L		08/27/13 10:31	08/28/13 14:11	1
Aroclor-1242	0.10	U	0.10	ug/L		08/27/13 10:31	08/28/13 14:11	1
Aroclor-1248	0.10	U	0.10	ug/L		08/27/13 10:31	08/28/13 14:11	1
Aroclor-1254	0.10	U	0.10	ug/L		08/27/13 10:31	08/28/13 14:11	1
Aroclor-1260	0.10	U	0.10	ug/L		08/27/13 10:31	08/28/13 14:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	85		10 - 114	08/27/13 10:31	08/28/13 14:11	1
Tetrachloro-m-xylene	86		15 - 131	08/27/13 10:31	08/28/13 14:11	1

Lab Sample ID: LCS 240-99117/7-A

Matrix: Water

Analysis Batch: 99336

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 99117

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	3.04	*	ug/L		122	50 - 114
Aroclor-1260	2.50	2.80		ug/L		112	8 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	97		10 - 114
Tetrachloro-m-xylene	96		15 - 131

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

Lab Sample ID: MB 240-98687/1-A

Matrix: Water

Analysis Batch: 99113

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 98687

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.050	U	0.050	mg/L		08/23/13 09:52	08/27/13 16:07	1
Nickel	0.010	U	0.010	mg/L		08/23/13 09:52	08/27/13 16:07	1
Lead	0.050	U	0.050	mg/L		08/23/13 09:52	08/27/13 16:07	1
Zinc	0.020	U	0.020	mg/L		08/23/13 09:52	08/27/13 16:07	1

Lab Sample ID: LCS 240-98687/2-A

Matrix: Water

Analysis Batch: 99113

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 98687

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.200	0.208		mg/L		104	85 - 115
Nickel	0.500	0.515		mg/L		103	85 - 115
Lead	0.500	0.504		mg/L		101	85 - 115
Zinc	0.500	0.530		mg/L		106	85 - 115

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# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

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

Lab Sample ID: 240-28201-1 MS

Matrix: Water

Analysis Batch: 99113

Client Sample ID: WT-12607-082113-EE-001

Prep Type: Total Recoverable

Prep Batch: 98687

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.27		0.200	0.477		mg/L		104	75 - 125
Nickel	0.18		0.500	0.693		mg/L		103	75 - 125
Lead	0.050	U	0.500	0.509		mg/L		102	75 - 125
Zinc	0.020	U	0.500	0.534		mg/L		105	75 - 125

Lab Sample ID: 240-28201-1 MSD

Matrix: Water

Analysis Batch: 99113

Client Sample ID: WT-12607-082113-EE-001

Prep Type: Total Recoverable

Prep Batch: 98687

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.27		0.200	0.478		mg/L		105	75 - 125	0	20
Nickel	0.18		0.500	0.694		mg/L		103	75 - 125	0	20
Lead	0.050	U	0.500	0.511		mg/L		102	75 - 125	0	20
Zinc	0.020	U	0.500	0.538		mg/L		106	75 - 125	1	20

## Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 240-99086/1-A

Matrix: Water

Analysis Batch: 99388

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 99086

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00020	U	0.00020	mg/L		08/27/13 15:00	08/28/13 09:42	1

Lab Sample ID: LCS 240-99086/2-A

Matrix: Water

Analysis Batch: 99388

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 99086

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00462		mg/L		92	85 - 115

## Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 240-100029/1-A

Matrix: Water

Analysis Batch: 100051

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 100029

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	5.0	U	5.0	mg/L		09/04/13 08:07	09/04/13 08:07	1

Lab Sample ID: LCS 240-100029/2-A

Matrix: Water

Analysis Batch: 100051

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 100029

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	40.0	31.6		mg/L		79	78 - 114

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# QC Sample Results

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

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

Lab Sample ID: MB 240-98654/1

Matrix: Water

Analysis Batch: 98654

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			08/23/13 08:18	1

Lab Sample ID: LCS 240-98654/2

Matrix: Water

Analysis Batch: 98654

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	29.0	27.0		mg/L		93	73 - 113

## Method: SM 3500 CR D - Chromium, Hexavalent

Lab Sample ID: MB 240-98522/3

Matrix: Water

Analysis Batch: 98522

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			08/22/13 10:48	1

Lab Sample ID: LCS 240-98522/4

Matrix: Water

Analysis Batch: 98522

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	0.271		mg/L		108	80 - 118

Lab Sample ID: 240-28201-1 MS

Matrix: Water

Analysis Batch: 98522

Client Sample ID: WT-12607-082113-EE-001

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cr (VI)	0.051		0.250	0.285		mg/L		94	41 - 136

Lab Sample ID: 240-28201-1 MSD

Matrix: Water

Analysis Batch: 98522

Client Sample ID: WT-12607-082113-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
Cr (VI)	0.051		0.250	0.277		mg/L		90	41 - 136	3	20

TestAmerica Canton

## Surrogate Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

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

Matrix: Water

Prep Type: Total/NA

#### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2 (10-114)	TCX2 (15-131)
240-28201-1	WT-12607-082113-EE-001	67	88
LCS 240-99117/7-A	Lab Control Sample	97	96
MB 240-99117/6-A	Method Blank	85	86

#### Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

## Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

**Client Sample ID: WT-12607-082113-EE-001**

**Lab Sample ID: 240-28201-1**

**Date Collected: 08/21/13 16:00**

**Matrix: Water**

**Date Received: 08/22/13 09:10**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			99117	08/27/13 10:31	MPM	TAL CAN
Total/NA	Analysis	608		1	99336	08/28/13 13:00	DEB	TAL CAN
Total Recoverable	Prep	200.7			98687	08/23/13 09:52	LPM	TAL CAN
Total Recoverable	Analysis	200.7 Rev 4.4		1	99113	08/27/13 16:19	KLC	TAL CAN
Total/NA	Prep	245.1			99086	08/27/13 15:00	LPM	TAL CAN
Total/NA	Analysis	245.1		1	99388	08/28/13 10:12	ADS	TAL CAN
Total/NA	Prep	1664A			100029	09/04/13 08:07	BLW	TAL CAN
Total/NA	Analysis	1664A		1	100051	09/04/13 08:07	BLW	TAL CAN
Total/NA	Analysis	SM 3500 CR D		1	98522	08/22/13 10:48	LKG	TAL CAN
Total/NA	Analysis	SM 2540D		1	98654	08/23/13 08:18	KMG	TAL CAN

### Laboratory References:

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

## Certification Summary

Client: Conestoga-Rovers & Associates, Inc.  
Project/Site: 12607-T01-012, RACER Eckles Rd

TestAmerica Job ID: 240-28201-1

### Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	NELAP	9	01144CA	06-30-14
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAP	4	E87225	06-30-14
Georgia	State Program	4	N/A	06-30-14
Illinois	NELAP	5	200004	07-31-13 *
Kansas	NELAP	7	E-10336	01-31-14
Kentucky	State Program	4	58	06-30-14
L-A-B	DoD ELAP		L2315	07-18-16
Nevada	State Program	9	OH-000482008A	07-31-14
New Jersey	NELAP	2	OH001	06-30-14
New York	NELAP	2	10975	04-01-14
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAP	3	68-00340	08-31-13 *
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAP	3	460175	09-14-13
Washington	State Program	10	C971	01-12-14
Wisconsin	State Program	5	999518190	08-31-14

\* Expired certification is currently pending renewal and is considered valid.

TestAmerica Canton



CONESTOGA-ROVERS  
& ASSOCIATES

# CHAIN OF CUSTODY RECORD

Co.O

COC NO.: PL-11002

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/Phase/Task Code: 12607-T01Y13-003		Laboratory Name: Test America		Lab Location: N. Canton, OH		SSOW ID: 12607-T01Y13-012	
Project Name: RACER Livonia GWTP		Lab Contact: Denise Hockler		Lab Quote No:		Cooler No:	
Project Location: Livonia, MI		CONTAINER QUANTITY & PRESERVATION		ANALYSIS REQUESTED (See Back of COC for Definitions)		Carrier:	
Chemistry Contact: Paul Wiseman, CRA						Airbill No:	
Sampler(s): Erik Enggren, CRA		SAMPLE TYPE		Total Containers/Sample		Date Shipped:	
SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)		DATE (mm/dd/yyyy)		TIME (hh:mm)		COMMENTS/ SPECIAL INSTRUCTIONS:	
WT - 12607-082113-EE-001		9/21/13		1500			
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Login # : 28201

### Canton Facility

Client CRA Site Name PA-con

Cooler unpacked by:

Cooler Received on 8/22/13 Opened on 8/22/13

FedEx: 1<sup>st</sup> Grd Exp UPS FAS Stetson Client Drop Off TestAmerica Courier Other

TestAmerica Cooler #	Foam Box	Client Cooler	Box	Other
260-131				

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: ☒ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ Water ☐ None

1. Cooler temperature upon receipt

IR GUN#	A	(CF -1 °C)	Observed Cooler Temp.	°C	Corrected Cooler Temp.	°C
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IR GUN# 4 (CF 0 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

IR GUN# 5 (CF +1 °C) Observed Cooler Temp. °C Corrected Cooler Temp. °C

IR GUN# 8 (CF -0 °C) Observed Cooler Temp. 6.0 °C Corrected Cooler Temp. 6.0 °C

☐ See Multiple Cooler Form

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity

-Were custody seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were custody seals on the bottle(s)? Yes No

3. Shippers' packing slip attached to the cooler(s)?

4. Did custody papers accompany the sample(s)?

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

6. Did all bottles arrive in good condition (Unbroken)?

7. Could all bottle labels be reconciled with the COC?

8. Were correct bottle(s) used for the test(s) indicated?

9. Sufficient quantity received to perform indicated analyses?

10. Were sample(s) at the correct pH upon receipt?

11. Were VOAs on the COC?

12. Were air bubbles >6 mm in any VOA vials?

13. Was a trip blank present in the cooler(s)?

Contacted PM	Date	by	via Verbal	Voice Mail	Other
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Concerning

#### 14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Samples processed by:

## 15. 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)

## 16. 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-12607-082113-EE-001	240-28201-B-1	Plastic 500ml - with Nitric Acid	<2	_____	_____
WT-12607-082113-EE-001	240-28201-E-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____
WT-12607-082113-EE-001	240-28201-F-1	Amber Glass 1 liter - Sulfuric Acid	<2	_____	_____