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ENVIRONMENT

Ms. Susan Kaelber-Matlock
Saginaw Bay District Office
Michigan Department of Environmental Quality
401 Ketchum Street, Suite B
Bay City, Michigan 48708

Subject:
2014 Annual Report; RACER Trust, Saginaw Plant 2 Landfill (aka the Peninsula)
Saginaw, Michigan

Date:
January 5, 2015

Contact:
Scott Clearwater

Phone:
810.225.1921

Email:
scott.clearwater@arcadis-us.com

Our ref:
B0086991.2014

Dear Ms. Kaelber-Matlock:

This annual progress report presents a summary of the work activities conducted during the period of December 2013 through December 2014 for the Revitalizing Automotive Communities Environmental Response (RACER) Trust Plant 2 Landfill (aka the Peninsula), Site 13280 (the Site). This report also provides a summary of the work activities anticipated for the next 12 month period.

**Key Correspondence**

The key correspondence between ARCADIS, RACER, and the Michigan Department of Environmental Quality (MDEQ) are as follows:

- ARCADIS received approval on June 6, 2014, during a telephone call with Susan Kaelber-Matlock (MDEQ), to conduct additional groundwater sampling in accordance with an email memorandum that was approved by the MDEQ on September 17, 2012.

- Site discussion and budget meeting was held with ARCADIS, RACER and MDEQ on October 7, 2014.

- ARCADIS submitted a letter report titled June 2014 Groundwater Surface Water Investigation Evaluation to the MDEQ on October 28, 2014. Approval was received from the MDEQ on November 10, 2014, and indicated that additional evaluation of metals in the groundwater is not warranted. Additionally, over the last three years the parameters analyzed were less than the GSI cleanup criteria.

- ARCADIS submitted a Joint Application Permit to the MDEQ on November 12, 2014, for work in the floodplain in order to allow for the installation of an engineered barrier to address direct contact exceedances in the soil.

**Site Activities**

Groundwater sampling was completed on June 19, 2014, to provide data to evaluate the potential GSI Pathway considerations related to metals, if found discharging via groundwater to the wetland area west of the Site.

The following wells were selected for sampling and analysis: TW98-111WT, MW04-122WT, MW97-104WT, MW01-118WT, TW98-109WT, MW04-123WT, MW04-124WT, and MW97-105WT. Analytical results from this sampling event are summarized in **Table 1**. Groundwater elevation measurements (**Table 2**) were collected on June 19 from the monitoring wells TW98-111WT, MW04-122WT, MW97-104WT, MW01-118WT, TW98-109WT, MW04-123WT, MW04-124WT, and MW97-105WT. The groundwater elevation data was used to generate a groundwater contour map (**Figure 1**). Groundwater flow in the vicinity of the Site has been identified to be in a southwesterly direction towards the wetland area.

As part of the June 2014 sampling event, the groundwater surface water interface cleanup criteria under Part 201 for manganese footnote 'G' was calculated. The calculations were based on the site specific water hardness (370 mg/L $CaCO_3$) value obtained from the BBL, Inc. *Site Investigation Report* dated August 2005. Based on the calculated values, it has been determined that the manganese analytical results are below the GSI cleanup criteria for surface water protected for drinking water use (1.3E+3 ug/L) and the values for surface water not protected for drinking water use (6.2E+3 ug/L). Additionally, a generic hardness value (235 mg/L $CaCO_3$) was acquired from the *Michigan Water Chemistry Monitoring Great Lakes Tributaries 1998-2005 Report* for the nearby Saginaw River, the manganese analytical results are also below the GSI cleanup criteria for surface water protected (1.3E+3 ug/L) and not protected for drinking water use (4.2E+3 ug/L). Additional information and conclusions can be found in the *June 2014 Groundwater Surface Water Interface Evaluation* submitted to the Michigan Department of Environmental Quality (MDEQ) on October 28, 2014.

The annual groundwater sampling event at the Site was completed between September 18 and 19, 2014. Groundwater elevation measurements (**Table 2**) were collected on September 16, 2014 from monitoring wells TW98-109WT, TW98-110WT, TW98-111WT, MW04-122WT, MW01-118WT, MW04-123WT, and MW04-124WT and from select monitoring wells prior to the start of groundwater sampling activities. Monitoring well B-2R could not be located during the sampling event.

Each well was purged using low-flow methods prior to sampling until the pH, temperature, specific conductance, and dissolved oxygen values stabilized, and turbidity reached less than 5 NTUs. Groundwater samples were submitted for

analysis of total selenium, total chromium, total manganese, and total lead. Quality control samples, consisting of one duplicate, one matrix spike and one matrix spike duplicate, were also collected and submitted for laboratory analysis. All samples were submitted to TestAmerica Laboratories, located in North Canton, Ohio, for analysis.

Groundwater analytical results are summarized in **Table1** along with historical sampling results for comparative evaluation to the most recent data. Manganese was detected in all samples above laboratory detection limits. Based on the calculated values, it has been determined that the manganese analytical results are below the GSI cleanup criteria for surface water protected for drinking water use (1.3E+3 ug/L) and the values for surface water not protected for drinking water use (6.2E+3 ug/L). Lead was detected in the samples TW98-110WT, TW98-111WT, MW01-118WT, MW04-122WT, and MW04-123WT above laboratory detect limits, but below the MDEQ GSI criterion for lead. Selenium and chromium were detected in all samples collected above laboratory detection limits, but were below the MDEQ GSI criteria established for selenium and chromium.

The well gauging data and sampling logs are presented in **Attachment 1**, and the analytical laboratory report is presented in **Attachment 2**.

**Anticipated Site Activities**

Although there continues to be some uncertainty associated with the scope of the activities to be completed during the next calendar year, the following activities are planned for completion during the period from December 2014 through November 2015:

- Installation of a vegetative cover to address direct contact exceedances, and appropriate maintenance, if necessary, will be completed.

- A deed restriction survey will be completed, and the previously developed deed restrictions will be modified as needed based on current Site conditions (task is in progress), submitted for MDEQ review/approval, and filed.

- If warranted by the collected data and if deemed necessary based on discussions with the MDEQ, a No Further Action Report will be completed.

Please contact me at 810-225-1921 if you have any questions regarding the enclosed report or its attachments.

Sincerely,

ARCADIS of Michigan, LLC

Scott Clearwater
Certified Project Manager

Attachments:
Table 1 - Groundwater Analytical Summary Table
Table 2 - Groundwater Elevation Data
Figure 1 - Water Table Elevation Contour Map – June 19, 2014
Attachment 1 - Well Level Measurements and Sampling Logs
Attachment 2 - Laboratory Analytical Data

Copies:
Grant Trigger, RACER
David Favero, RACER

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**Tables**

**Table 1**
**Groundwater Analytical Summary Table**
**RACER Trust**
**Saginaw Plant 2 Landfill (aka the Peninsula)**

| Location ID | Date | Chromium (total) | Cobalt | Manganese | Lead | Selenium | Selenium (dissolved) |
|---|---|---|---|---|---|---|---|
| Groundwater Surface Water Interface Criteria & RBSLs: | | 11 | 100 | 6.2E+3 (G,X)* | 5.7E+1(G,X)* | 5 | 5 |
| TW-98-109WT | 9/15/2004 | NA | NA | NA | <1.0 | 3.3 | 2.9 |
| TW-98-109WT | 10/11/06 | NA | NA | NA | NA | 1.7 J | 1.6 J |
| TW-98-109WT | 9/19/2012 | NA | 0.87 J | 790 | 0.30 J | <5.0 | NA |
| TW-98-109WT | 9/30/2013 | 0.64 J | NA | 560 B | 0.21 J | <5.0 | NA |
| TW-98-109WT | 6/19/2014 | NA | 0.65 J | 670 B | 0.17 J | 0.38 J | <5.0 |
| TW-98-109WT | 9/19/2014 | 0.47 J, B | NA | 600 B | <3.0 | 0.49 J | NA |
| TW-98-110WT | 9/17/2004 | NA | NA | NA | <1.0 | 2.1 | 1.7 B |
| TW-98-110WT | 9/19/2012 | NA | 0.67 J | 190 | 0.20 J | <5.0 | NA |
| TW-98-110WT | 9/30/2013 | 1.9 J | NA | 240 B | 1.2 J, B | 0.51 J | NA |
| TW-98-110WT | 9/18/2014 | 0.87 J, B | NA | 220 B | 0.28 J | 0.40 J | NA |
| TW-98-111WT | 9/17/2004 | NA | NA | NA | 0.59 B | 1.9 B | 0.90 B |
| TW-98-111WT | 9/19/2012 | NA | 2.9 J | 59 | 1.0 J | <5.0 | NA |
| TW-98-111WT | 9/30/2013 | 3.9 | NA | 68 B | 1.0 J, B | <5.0 | NA |
| TW-98-111WT | 6/19/2014 | NA | 2.5 J | 68 B | 0.85 J | <5.0 | 0.58 J |
| TW-98-111WT | 9/18/2014 | 1.7 J, B | NA | 55 B | 2.0 J | 1.3 J | NA |
| MW-01-118WT | 9/16/2004 | NA | NA | NA | 3.5 | 1.1 B | 1.3 B |
| MW-01-118WT | 9/19/2012 | NA | 2.7 J | 240 | <3.0 | <5.0 | NA |
| MW-01-118WT | 9/30/2013 | 1.7 J | NA | 140 B | 0.69 J, B | <5.0 | NA |
| MW-01-118WT | 6/19/2014 | NA | 3.0 J | 210 B | 0.18 J | 0.39 J | 0.40 J |
| MW-01-118WT (DUP) | 6/19/2014 | NA | 2.9 J | 210 B | 0.22 J | <5.0 | 0.46 J |
| MW-01-118WT | 9/19/2014 | 0.86 J, B | NA | 180 B | 0.15 J | 0.48 J | NA |
| MW-04-122WT | 9/16/2004 | NA | NA | NA | 0.49 B | 0.95 B | <2.0 |
| MW-04-122WT | 9/19/2012 | 1.9 J | 3.1 J | 200 | 0.43 J | <5.0 | NA |
| MW-04-122WT | 9/30/2013 | 2.0 | NA | 180 B | 0.78 J, B | 0.70 J | NA |
| MW-04-122WT | 6/19/2014 | NA | 3.5 J | 200 B | 0.37 J | 0.56 J | 0.38 J |
| MW-04-122WT | 9/19/2014 | 1.3 J, B | NA | 210 B | 0.29 J | 0.57 J | NA |

See Notes on last page.

**Table 1**
**Groundwater Analytical Summary Table**
**RACER Trust**
**Saginaw Plant 2 Landfill (aka the Peninsula)**

| Location ID | Date | Chromium (total) | Cobalt | Manganese | Lead | Selenium | Selenium (dissolved) |
|---|---|---|---|---|---|---|---|
| Groundwater Surface Water Interface Criteria & RBSLs: | | 11 | 100 | 6.2E+3 (G,X)* | 5.7E+1(G,X)* | 5 | 5 |
| MW-04-123WT | 9/16/2004 | NA | NA | NA | <1.0 | 2.3 | 1.3 B |
| MW-04-123WT | 10/11/06 | NA | NA | NA | NA | 0.86 J | 0.83 J |
| MW-04-123WT | 9/19/2012 | NA | 3.1 J [3.1 J] | 960 [960] | <3.0 [<3.0] | <5.0 [<5.0] | NA |
| MW-04-123WT | 9/30/2013 | 0.47 J [0.39 J] | NA | 810 B [800 B] | <3.0 [<3.0] | <5.0 [<5.0] | NA |
| MW-04-123WT | 6/19/2014 | NA | 2.4 J | 920 B | 0.23 J | 0.69 J | <5.0 |
| MW-04-123WT | 9/19/2014 | 0.49 J, B | NA | 970 B | 0.34 J | 0.57 J | NA |
| MW-04-123WT (DUP) | 9/19/2014 | 0.40 J, B | NA | 930 B | 0.23 J | 0.58 J | NA |
| MW-04-124WT | 9/15/2004 | NA | NA | NA | <1.0 | **9.7** | **9.7** |
| MW-04-124WT | 12/21/2004 | NA | NA | NA | NA | **5.1** | **5.5** |
| MW-04-124WT | 9/19/2012 | NA | 0.53 J | 410 | <3.0 | <5.0 | NA |
| MW-04-124WT | 9/30/2013 | 0.97 J | NA | 580 B | 0.14 J, B | <5.0 | NA |
| MW-04-124WT | 6/19/2014 | NA | 1.2 J | 670 B | <3.0 | <5.0 | <5.0 |
| MW-04-124WT | 9/19/2014 | 0.57 J, B | NA | 680 B | <3.0 | 0.32 J | NA |
| MW-97-104WT | 6/19/2014 | NA | 0.45 J | 710 B | <3.0 | <5.0 | <5.0 |
| MW-97-105WT | 6/19/2014 | NA | 1.3 J | 330 B | 0.61 J | <5.0 U | 0.34 J |

See Notes on last page.

**Table 1**
**Groundwater Analytical Summary Table**
**RACER Trust**
**Saginaw Plant 2 Landfill (aka the Peninsula)**

**General Notes:**

1. Cleanup Criteria: Part 201 (Environmental Remediation) of the Michigan Department of Environmental Quality (MDEQ) Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451 (Revised December 30, 2013) Residential Generic Cleanup Criteria and Screening Levels.
2. Bold and shaded result denotes exceedance of criteria.
3. All results are in micrograms per liter (ug/L).
4. [ ] denotes analytical result for duplicate sample.

**Footnote:**

* GSI value was calculated using the MDEQ calculation of generic facility-specific Part 201 GSI criteria for {G} footnoted hazardous substances. A site specific hardness value of 370 mg/L of $CaCO_3$ was acquired from the *Site Investigation Report* completed by BBL dated August 2005. Generic values of 235 mg/L of CaCO3, can be found for the Saginaw River in the *Michigan Water Chemistry Monitoring Great Lakes Tributaries 1998-2005 Report.* Results are below GSI RBSLs for either calculation.

**Acronyms and Abbreviations:**

| | |
|---|---|
| B | The detected analyte is an estimated value between the instrument detection limit (IDL) and the reporting limit (RL). |
| DUP | Duplicate Sample |
| G | Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water. A value of 150 mg/L and 400 mg/L CaCO3 were used to calculate the GSI protection criteria value based on MDEQ Remediation Division Operational Memorandum No. 5 and Part 201 Cleanup Criteria Footnote (G). |
| ID | Identification |
| J | The constituent was positively identified; however, the associated numerical value is an estimated concentration only. |
| NA | Not analyzed. |
| ND/< | Not detected or under the listed detection limit. |
| RBSL | Risk Based Screening Levels |
| U | Hazardous substance may exhibit the characteristic of corrosivity as defined in 40 C.F.R. §261.22 (revised as of July 1, 2001), which is adopted by reference in these rules and is available for inspection at the DEQ, 525 West Allegan Street, Lansing, Michigan. Copies of the regulation may be purchased, at a cost as of the time of adoption of these rules of $45, from the Superintendent of Documents, Government Printing Office, Washington, DC 20401 (stock number 869-044-00155-1), or from the DEQ, RRD, 525 West Allegan Street, Lansing, Michigan 48933, at cost. |
| X | The GSI criterion shown in the generic cleanup criteria tables is not protective for surface water that is used as a drinking water source. |

**Table 2**
**Groundwater Elevation Summary Table**
**RACER Trust**
**Saginaw Plant 2 Landfill (aka the Peninsula)**

| Location I.D. | Date | Top of Casing Elevation (ft. amsl) | Depth to Water from Top of Inner Casing (feet) | Groundwater Elevation (ft. amsl) |
|---|---|---|---|---|
| MW01-118WT | 6/19/2014 | 594.44 | 8.08 | 586.36 |
| MW01-118WT | 9/16/2014 | 594.44 | 8.03 | 586.41 |
| MW01-119S1 | 9/16/2014 | 595.92 | 6.80 | 589.12 |
| MW01-119WT | 9/16/2014 | 596.24 | 7.09 | 589.15 |
| MW04-118S1 | 9/16/2014 | 596.21 | 9.75 | 586.46 |
| MW04-121S1 | 9/16/2014 | 596.45 | 11.21 | 585.24 |
| MW04-121WT | 9/16/2014 | 596.45 | 9.66 | 586.79 |
| MW04-122S1 | 9/16/2014 | 596.12 | 9.22 | 586.90 |
| MW04-122WT | 6/19/2014 | 595.84 | 9.05 | 586.79 |
| MW04-122WT | 9/16/2014 | 595.84 | 8.92 | 586.92 |
| MW04-123S1 | 9/16/2014 | 595.34 | 9.40 | 585.94 |
| MW04-123WT | 6/19/2014 | 595.50 | 9.28 | 586.22 |
| MW04-123WT | 9/16/2014 | 595.50 | 9.21 | 586.29 |
| MW04-124S1 | 9/16/2014 | 591.91 | 5.92 | 585.99 |
| MW04-124S1 Staff | 9/16/2014 | 591.91 | 0.01 | 591.90 |
| MW04-124WT | 6/19/2014 | 591.68 | 5.74 | 585.94 |
| MW04-124WT | 9/16/2014 | 591.68 | 5.66 | 586.02 |
| MW-129WT | 9/16/2014 | 588.78 | 2.92 | 585.86 |
| MW-143WT | 9/16/2014 | 598.05 | 20.25 | 577.80 |
| MW-144WT | 9/16/2014 | 594.93 | 7.45 | 587.48 |
| MW97-104S1 | 9/16/2014 | 595.01 | 7.72 | 587.29 |
| MW97-104WT | 6/19/2014 | 595.44 | 8.31 | 587.13 |
| MW97-104WT | 9/16/2014 | 595.44 | 8.24 | 587.20 |
| MW97-105S1 | 9/16/2014 | 594.94 | 8.67 | 586.27 |
| MW97-105WT | 6/19/2014 | 595.42 | 9.15 | 586.27 |
| MW97-105WT | 9/16/2014 | 595.42 | 9.12 | 586.30 |
| MW98-108S1 | 9/16/2014 | 595.70 | 8.80 | 586.90 |
| MW98-109S1 | 9/16/2014 | 594.71 | 8.36 | 586.35 |
| MW98-110S1 | 9/16/2014 | 594.25 | 5.81 | 588.44 |
| MW98-111S1 | 9/16/2014 | 595.13 | 7.18 | 587.95 |
| TW98-108WT | 9/16/2014 | 594.95 | 8.00 | 586.95 |
| TW98-109WT | 6/19/2014 | 594.63 | 8.51 | 586.12 |
| TW98-109WT | 9/16/2014 | 594.63 | 8.46 | 586.17 |
| TW98-110WT | 9/16/2014 | 595.13 | 6.87 | 588.26 |
| TW98-111WT | 6/19/2014 | 595.25 | 7.16 | 588.09 |
| TW98-111WT | 9/16/2014 | 595.25 | 6.95 | 588.30 |
| X-1A | 9/16/2014 | 599.10 | 11.72 | 587.38 |
| X-1B | 9/16/2014 | 599.07 | 12.63 | 586.44 |
| X-1CR2 | 9/16/2014 | NA | 12.31 | NA |
| B-2R | 9/16/2014 | 596.25 | CNL | NA |
| B-3R | 9/16/2014 | 609.51 | 7.58 | 601.93 |
| B-3BAUG | 9/16/2014 | NA | 12.99 | NA |

**Acronyms:**

| | | | |
|---|---|---|---|
| CNL | Could not locate | I.D. | Identification |
| ft. amsl | feet above mean sea level | NA | Not available |

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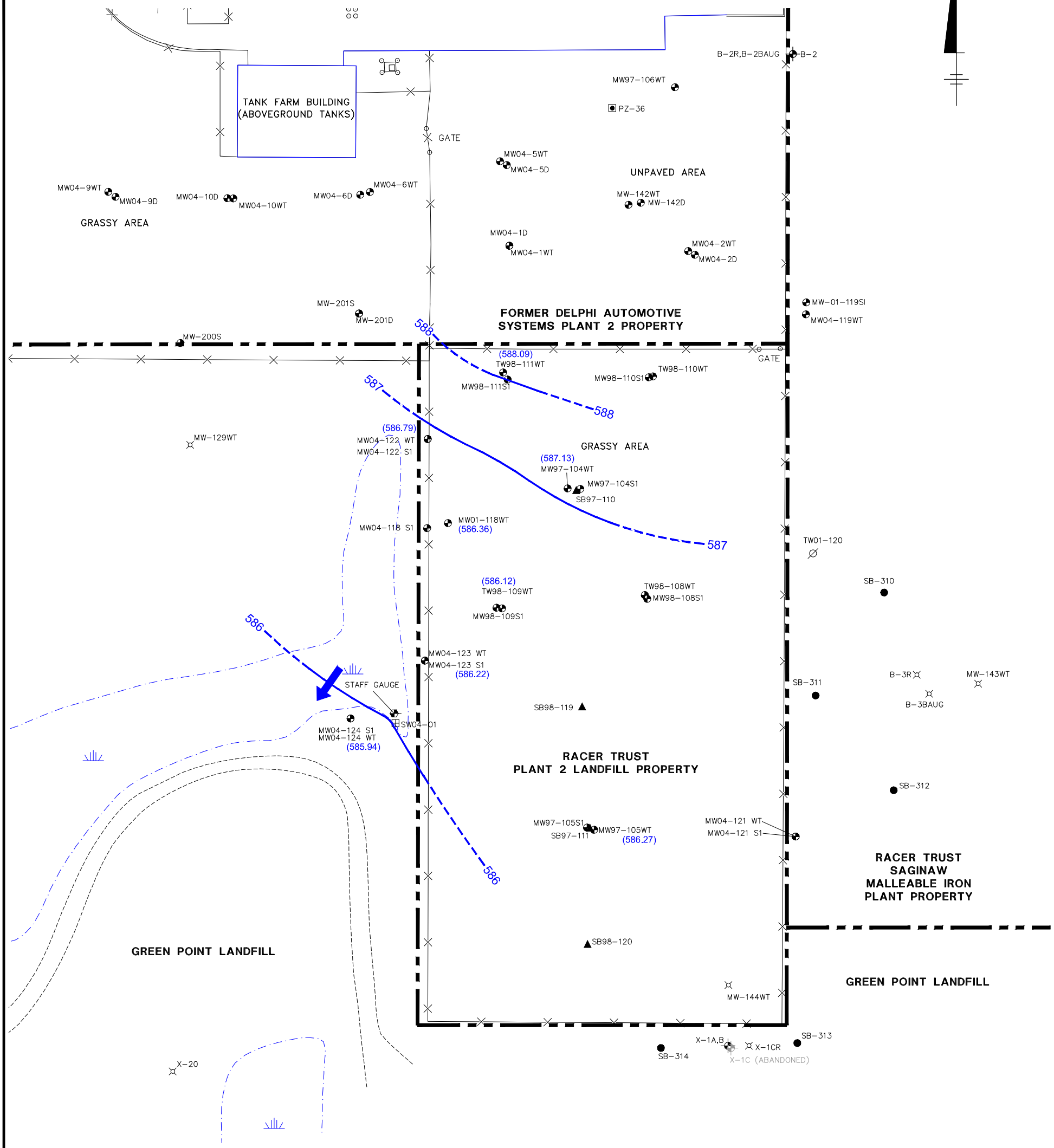
**Figures**

CITY: SYRACUSE DIV/GROUP: 141 DB: GMS LD: GMS PM: SC LYR:ON=*;OFF=*REF
G:\ENVCAD\Lansing-MI\ACT\B0064434\2014\00002\86991W02.dwg LAYOUT: 1 SAVED: 1/5/2015 8:14 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 1/5/2015 8:15 AM BY: AKENS, DAVID
XREFS: IMAGES: PROJECTNAME: ----
86991X01




LEGEND:

- PROPERTY BOUNDARY
- FENCE LINE
- B-2 — WATER TABLE MONITORING WELL
- X-1A,B,C — MONITORING WELL CLUSTER
- SB-312 — SOIL BORINGS
- MW-142D — MONITORING WELL
- TW98-108WT — TEMPORARY WELL
- SB98-120 — SOIL BORING
- PZ-36 — PIEZOMETER
- TW01-120 — GRAB GROUNDWATER SAMPLING LOCATION
- (588.09) — GROUNDWATER ELEVATION
- 588 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED, CONTOUR INTERVAL = 1.0 FEET)
- APPARENT GROUNDWATER FLOW DIRECTION

NOTES:

1. DEPTH TO WATER MEASUREMENTS TAKEN ON JUNE 19, 2014 AND WERE COLLECTED FROM THE TOP OF WELL CASING.
2. ALL ELEVATIONS ARE REFERENCED TO A MEAN SEA LEVEL SITE DATUM.
3. BASE MAP DEVELOPED FROM THE FOLLOWING:
   PHOTOGRAMMETRIC BASE MAP PREPARED BY LOCKWOOD MAPPING, INC. OF ROCHESTER, NEW YORK., AERIAL PHOTOGRAPHY CONDUCTED ON 11/11/94; AND
   BASE MAP SUPPLIED BY AIR-LAND SURVEYS, INC., AERIAL PHOTOGRAPHY WAS CONDUCTED DURING 11/90.

0 40' 80'
GRAPHIC SCALE

RACER TRUST
PLANT 2 LANDFILL
SAGINAW, MICHIGAN

# GROUNDWATER ELEVATION CONTOUR MAP JUNE 19, 2014

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FIGURE 1

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**Attachment 1**

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## Water-Level Measurement Form

Project No.: B0086991.2014.00001 Field Personnel: A. O'Neil / C. Zillio
Site Location: Saginaw, MI Date: 6/19/14
Instrument Model: Solinst W.L. Meter Instrument Serial No.: A02093 PINE #

| Well Number | Time | W.L. Measurements TD (feet) | DTW (feet) | DTP (feet) | Comments Well Locked | Lock Condition | Other Comments |
|---|---|---|---|---|---|---|---|
| MW04-123WT | 6/19/14 | 18.41 | 9.28 | – | NO | N/A | Cut lock |
| TW98-109WT | | 14.16 | 8.51 | – | NO | N/A | |
| MW01-118WT | | 15.00 | 8.08 | – | NO | N/A | Cut lock |
| TW98111WT | | 14.98 | 7.16 | – | NO | N/A | |
| MW97-105WT | | 16.21 | 9.15 | – | NO | N/A | |
| MW04-124WT | | 15.18 | 5.74 | – | NO | N/A | Cut lock |
| MW04-122WT | | 17.44 | 9.05 | – | NO | N/A | |
| MW97-104WT | ↓ | 16.23 | 8.31 | – | NO | N/A | |

W.L. Water Level
TD Total Depth
DTW Depth To Water
DTP Depth To Product

**ARCADIS**

# Water Sampling Log

Project: Racer Saginaw | Project No.: B086991.2014.01 | Page: 1 of 2

Site Location: Saginaw, MI | Date: 6/19/14

Site/Well No.: MW04-173WT | Replicate No.: N/A | Code No.: N/A

Weather: 77° Sunny | Sampling Time: Begin 1100 End 1115

## Evacuation Data

| | |
|---|---|
| Measuring Point | TOC |
| MP Elevation (ft) | N/A |
| Land Surface Elevation (ft) | N/A |
| Sounded Well Depth (ft bmp) | 18.41 |
| Depth to Water (ft bmp) | 9.28 |
| Water-Level Elevation (ft) | N/A |
| Water Column in Well (ft) | 9.13 |
| Casing Diameter/Type | 2" PVC |
| Gallons in Well | 1.48 |
| Gallons Pumped/Bailed Prior to Sampling | .11 |
| Sample Pump Intake Setting (ft bmp) | 15.91 |
| Purge Time | begin 1015 end 1115 |
| Pumping Rate (ml/min) | 50 |
| Evacuation Method | peristaltic |

## Field Parameters

| | |
|---|---|
| Temperature (°C) | 13.73 |
| SpC (mS/cm) | 4.020 |
| CND (mS/cm) | 3.154 |
| Dissolved Oxygen (%) | 2.8 |
| Dissolved Oxygen (mg/L) | .28 |
| pH (s.u.) | 6.74 |
| ORP (mV) | -63.0 |
| Turbidity (NTU) | 4.04 |
| Color | no color |
| Odor | no odor |
| Appearance | clear |
| Sampling Method | ultra low flow |
| Remarks | |

| Constituents Sampled | Container Description | Number | Preservative |
|---|---|---|---|
| Total Metals | 500ml poly | 1 | $HNO_3$ |
| Dissolved Metals | 500ml poly | 1 | $HNO_3$ |
| | | | |
| | | | |
| | | | |
| | | | |

Sampling Personnel: A. O'Neil

**Well Casing Volumes**

| Gal./Ft. | | | | | |
|---|---|---|---|---|---|
| | 0.5" = 0.01 | 1-¼" = 0.06 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1" = 0.04 | 1-½" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47 |

| | | | | | |
|---|---|---|---|---|---|
| bmp | Below measuring point | mL | Milliliter | NTU | Nephelometric turbidity units |
| °C | Degrees Celsius | mS/cm | Millisiemens per centimeter | PVC | Polyvinyl chloride |
| ft | Feet | msl | Mean sea level | s.u. | Standard units |
| gpm | Gallons per minute | N/A | Not applicable | umhos/cm | Micromhos per centimeter |
| mg/L | Milligrams per liter | NR | Not recorded | VOC | Volatile organic compounds |

**ARCADIS**

YSI/LOW FLOW SAMPLING LOG



WELL : MW04-123WT PROJ #: B0086991.2014.00001

DATE : 6/19/14 LOC: Racer Saginaw Plant 2

| Time | Temp Degree C | SpC mS/cm | CND mS/cm | DO% | DO mg/L | pH | ORP mV | Flow Rate mL/min | Turbidity NTU | DTW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1025 | 14.13 | 5.269 | 4.175 | 12.5 | 1.25 | 6.62 | -48.8 | 50 | 9.12 | 9.35 |
| 1030 | 13.89 | 5.253 | 4.139 | 6.5 | .660 | 6.64 | -52.5 | 50 | 6.47 | 9.35 |
| 1035 | 14.12 | 5.236 | 4.148 | 5.5 | .56 | 6.65 | -50.8 | 50 | 4.56 | 9.35 |
| 1040 | 13.93 | 5.062 | 3.989 | 4.2 | .43 | 6.68 | -54.4 | 50 | 3.92 | 9.35 |
| 1045 | 13.79 | 4.224 | 3.318 | 2.9 | .29 | 6.72 | -61.0 | 50 | 3.88 | 9.35 |
| 1050 | 13.75 | 4.023 | 3.157 | 2.8 | .28 | 6.73 | -61.7 | 50 | 4.01 | 9.35 |
| 1055 | 13.70 | 4.020 | 3.155 | 2.8 | .28 | 6.74 | -62.2 | 50 | 3.97 | 9.35 |
| 1100 | 13.73 | 4.020 | 3.154 | 2.8 | .28 | 6.74 | -63.0 | 50 | 4.04 | 9.35 |

| | | |
|---|---|---|
| Total Depth of Well: | 18.41 | |
| Depth To Water Before Purging: | 9.28 | |
| Depth To Water After Purging: | 9.35 | |

**ARCADIS**

# Water Sampling Log

Project Racer Saginaw | Project No. B086991.2014.01 | Page 1 of 2

Site Location Saginaw, MI | Date 6/19/14

Site/Well No. TW98-109WT | Replicate No. N/A | Code No. N/A

Weather 82° sunny | Sampling Time: Begin 1155 End 1210

**Evacuation Data**

| | |
|---|---|
| Measuring Point | TOC |
| MP Elevation (ft) | N/A |
| Land Surface Elevation (ft) | N/A |
| Sounded Well Depth (ft bmp) | 14.66 |
| Depth to Water (ft bmp) | 8.51 |
| Water-Level Elevation (ft) | N/A |
| Water Column in Well (ft) | 6.15 |
| Casing Diameter/Type | 2" PVC |
| Gallons in Well | 1.00 |
| Gallons Pumped/Bailed Prior to Sampling | .09 |
| Sample Pump Intake Setting (ft bmp) | 12.16 ft bmp |
| Purge Time | begin 1120 end 1210 |
| Pumping Rate (ml/min) | 50 |
| Evacuation Method | peristaltic |

**Field Parameters**

| | |
|---|---|
| Temperature (°C) | 13.45 |
| SpC (mS/cm) | 2.881e |
| CND (mS/cm) | 2.249 |
| Dissolved Oxygen (%) | 1.9 |
| Dissolved Oxygen (mg/L) | .19 |
| pH (s.u.) | 7.08 |
| ORP (mV) | -39.1 |
| Turbidity (NTU) | 3.59 |
| Color | no color |
| Odor | no odor |
| Appearance | clear |
| Sampling Method | ultra low flow |
| Remarks | |

| Constituents Sampled | Container Description | Number | Preservative |
|---|---|---|---|
| Total Metals | 500ml poly | 1 | $HNO_3$ |
| Dissolved Metals | 500ml poly | 1 | $HNO_3$ |
| | | | |
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Sampling Personnel A. O'Neil

**Well Casing Volumes**

| Gal./Ft. | | | | | |
|---|---|---|---|---|---|
| | 0.5" = 0.01 | 1-¼" = 0.06 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1" = 0.04 | 1-½" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47 |

| | | | | | |
|---|---|---|---|---|---|
| bmp | Below measuring point | mL | Milliliter | NTU | Nephelometric turbidity units |
| °C | Degrees Celsius | mS/cm | Millisiemens per centimeter | PVC | Polyvinyl chloride |
| ft | Feet | msl | Mean sea level | s.u. | Standard units |
| gpm | Gallons per minute | N/A | Not applicable | umhos/cm | Micromhos per centimeter |
| mg/L | Milligrams per liter | NR | Not recorded | VOC | Volatile organic compounds |

**ARCADIS**

YSI/LOW FLOW SAMPLING LOG



WELL : TW98-109WT PROJ #: B0086991.2014.00001

DATE : 6/19/14 LOC: Bacer Saginaw Plant 2

| Time | Temp Degree C | SpC mS/cm | CND mS/cm | DO% | DO mg/L | pH | ORP mV | Flow Rate mL/min | Turbidity NTU | DTW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1130 | 14.08 | 3.108 | 2.456 | 4.6 | .47 | 7.11 | -48.0 | 50 | 6.54 | 8.55 |
| 1135 | 13.76 | 2.945 | 2.312 | 3.4 | .34 | 7.10 | -49.8 | 50 | 6.44 | 8.55 |
| 1140 | 13.72 | 2.906 | 2.280 | 2.8 | .29 | 7.09 | -48.4 | 50 | 6.29 | 8.55 |
| 1145 | 13.50 | 2.885 | 2.251 | 1.9 | .20 | 7.08 | -45.2 | 50 | 4.05 | 8.55 |
| 1150 | 13.49 | 2.885 | 2.250 | 1.9 | .19 | 7.08 | -41.3 | 50 | 3.76 | 8.55 |
| 1155 | 13.45 | 2.886 | 2.249 | 1.9 | .19 | 7.08 | -39.1 | 50 | 3.59 | 8.55 |
| | | | | | | | | | | |
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**ARCADIS**

# Water Sampling Log

Project: Racer Saginaw | Project No.: B086991.2014.01 | Page: 1 of 3

Site Location: Saginaw, MI | Date: 6/19/14

Site/Well No.: MW01-118WT | Replicate No.: N/A | Code No.: N/A

Weather: 82° Sunny | Sampling Time: Begin 1250 End 1310

## Evacuation Data

| | |
|---|---|
| Measuring Point | TOC |
| MP Elevation (ft) | N/A |
| Land Surface Elevation (ft) | N/A |
| Sounded Well Depth (ft bmp) | 15.00 |
| Depth to Water (ft bmp) | 8.08 |
| Water-Level Elevation (ft) | N/A |
| Water Column in Well (ft) | 6.92 |
| Casing Diameter/Type | 2" PVC |
| Gallons in Well | 1.12 |
| Gallons Pumped/Bailed Prior to Sampling | .09 |
| Sample Pump Intake Setting (ft bmp) | 12.50ft bmp |
| Purge Time | begin 1215 end 1310 |
| Pumping Rate (ml/min) | 50 |
| Evacuation Method | peristaltic |

## Field Parameters

| | |
|---|---|
| Temperature (°C) | 14.91 |
| SpC (mS/cm) | 2.795 |
| CND (mS/cm) | 2.257 |
| Dissolved Oxygen (%) | 1.8 |
| Dissolved Oxygen (mg/L) | .18 |
| pH (s.u.) | 7.35 |
| ORP (mV) | -64.3 |
| Turbidity (NTU) | 4.36 |
| Color | no color |
| Odor | no odor |
| Appearance | clear |
| Sampling Method | ultra low flow |
| Remarks | * DUP-1 Collected |

| Constituents Sampled | Container Description | Number | Preservative |
|---|---|---|---|
| Total Metals | 500ml poly | 2 | $HNO_3$ |
| Dissolved Metals | 500ml poly | 2 | $HNO_3$ |
| | | | |
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Sampling Personnel: A. O'Neil

**Well Casing Volumes**

| Gal./Ft. | | | | | |
|---|---|---|---|---|---|
| | 0.5" = 0.01 | 1-¼" = 0.06 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1" = 0.04 | 1-½" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47 |

| | | | | | |
|---|---|---|---|---|---|
| bmp | Below measuring point | mL | Milliliter | NTU | Nephelometric turbidity units |
| °C | Degrees Celsius | mS/cm | Millisiemens per centimeter | PVC | Polyvinyl chloride |
| ft | Feet | msl | Mean sea level | s.u. | Standard units |
| gpm | Gallons per minute | N/A | Not applicable | umhos/cm | Micromhos per centimeter |
| mg/L | Milligrams per liter | NR | Not recorded | VOC | Volatile organic compounds |

**ARCADIS**

YSI/LOW FLOW SAMPLING LOG



WELL : MW01-118WT PROJ #: B0086991.2014.00001

DATE : 6/19/14 LOC: Racer Saginaw Plant 2

| Time | Temp Degree C | SpC mS/cm | CND mS/cm | DO% | DO mg/L | pH | ORP mV | Flow Rate mL/min | Turbidity NTU | DTW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1220 | 14.95 | 4.030 | 3.752 | 11.1 | 1.09 | 7.16 | -46.0 | 50 | 9.42 | 8.10 |
| 1225 | 15.22 | 3.442 | 2.791 | 4.2 | .41 | 7.31 | -69.7 | 50 | 9.09 | 8.10 |
| 1230 | 14.95 | 3.225 | 2.599 | 3.3 | .32 | 7.34 | -74.4 | 50 | 7.34 | 8.10 |
| 1235 | 15.05 | 2.933 | 2.374 | 2.2 | .22 | 7.37 | -70.2 | 50 | 6.12 | 8.10 |
| 1240 | 14.97 | 2.797 | 2.260 | 1.7 | .17 | 7.36 | -68.1 | 50 | 4.82 | 8.10 |
| 1245 | 14.95 | 2.796 | 2.258 | 1.7 | .17 | 7.35 | -67.2 | 50 | 4.79 | 8.10 |
| 1250 | 14.91 | 2.795 | 2.257 | 1.8 | .18 | 7.35 | -64.3 | 50 | 4.36 | 8.10 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Depth of Well: | | 15.00 | | | | | | | | |
| Depth To Water Before Purging: | | | 8.09 | | | | | | | |
| Depth To Water After Purging: | | | 8.10 | | | | | | | |

**ARCADIS**

# Water Sampling Log

Project: Pacer Saginaw | Project No.: B086991.2014.01 | Page: 1 of 2

Site Location: Saginaw, MI | Date: 6/19/14

Site/Well No.: TW98-111WT | Replicate No.: N/A | Code No.: N/A

Weather: 84° sunny | Sampling Time: Begin 1345 End 1405

## Evacuation Data

| | |
|---|---|
| Measuring Point | TOC |
| MP Elevation (ft) | N/A |
| Land Surface Elevation (ft) | N/A |
| Sounded Well Depth (ft bmp) | 14.98 |
| Depth to Water (ft bmp) | 7.16 |
| Water-Level Elevation (ft) | N/A |
| Water Column in Well (ft) | 7.82 |
| Casing Diameter/Type | 2" PVC |
| Gallons in Well | 1.27 |
| Gallons Pumped/Bailed Prior to Sampling | .07 |
| Sample Pump Intake Setting (ft bmp) | 12.48 ft bmp |
| Purge Time | begin 1315 end 1405 |
| Pumping Rate (ml/min) | 50 |
| Evacuation Method | peristaltic |

## Field Parameters

| | |
|---|---|
| Temperature (°C) | 15.31 |
| SpC (mS/cm) | 1.103 |
| CND (mS/cm) | .898 |
| Dissolved Oxygen (%) | 1.2 |
| Dissolved Oxygen (mg/L) | .12 |
| pH (s.u.) | 7.86 |
| ORP (mV) | -61.3 |
| Turbidity (NTU) | 2.70 |
| Color | no color |
| Odor | no odor |
| Appearance | clear |
| Sampling Method | ultra low flow |
| Remarks | *MS/MSD Collected only 2 bottles provided |

| Constituents Sampled | Container Description | Number | Preservative |
|---|---|---|---|
| Total Metals | 500ml poly | 2 | HNO3 |
| Dissolved Metals | 500ml poly | 2 | HNO3 |
| | | | |
| | | | |
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Sampling Personnel: A. O'Neil

**Well Casing Volumes**

| Gal./Ft. | | | | | |
|---|---|---|---|---|---|
| | 0.5" = 0.01 | 1-¼" = 0.06 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1" = 0.04 | 1-½" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47 |

| | | | | | |
|---|---|---|---|---|---|
| bmp | Below measuring point | mL | Milliliter | NTU | Nephelometric turbidity units |
| °C | Degrees Celsius | mS/cm | Millisiemens per centimeter | PVC | Polyvinyl chloride |
| ft | Feet | msl | Mean sea level | s.u. | Standard units |
| gpm | Gallons per minute | N/A | Not applicable | umhos/cm | Micromhos per centimeter |
| mg/L | Milligrams per liter | NR | Not recorded | VOC | Volatile organic compounds |

**ARCADIS**

YSI/LOW FLOW SAMPLING LOG



WELL : TW98-111WT PROJ #: B0086991.2014.01

DATE : 6/19/14 LOC: Baker Saginaw Plan 2

| Time | Temp Degree C | SpC mS/cm | CND mS/cm | DO% | DO mg/L | pH | ORP mV | Flow Rate mL/min | Turbidity NTU | DTW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1320 | 15.49 | 1.111 | .909 | 6.6 | .65 | 7.70 | -16.8 | 50 | 9.08 | 7.20 |
| 1325 | 15.47 | 1.109 | .907 | 3.8 | .38 | 7.71 | -33.4 | 50 | 6.72 | 7.20 |
| 1330 | 15.31 | 1.104 | .900 | 2.2 | .22 | 7.75 | -51.2 | 50 | 5.05 | 7.20 |
| 1335 | 15.28 | 1.102 | .898 | 1.3 | .13 | 7.85 | -55.5 | 50 | 3.44 | 7.20 |
| 1340 | 15.27 | 1.102 | .898 | 1.2 | .12 | 7.86 | -58.2 | 50 | 2.86 | 7.20 |
| 1345 | 15.31 | 1.103 | .898 | 1.2 | .12 | 7.86 | -61.3 | 50 | 2.70 | 7.20 |
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**ARCADIS**

# Water Sampling Log

Project _____ Project No. B0086991.2014.0001 Page 1 of 2

Site Location RACER PLANT 2 Saginaw, MI Date 6/19/14

Site/Well No. MW-97-104WT Replicate No. — Code No. —

Weather Sunny 70°F Sampling Time: Begin 1433 End 1445

**Evacuation Data**

| | |
|---|---|
| Measuring Point | TOC |
| MP Elevation (ft) | — |
| Land Surface Elevation (ft) | — |
| Sounded Well Depth (ft bmp) | 16.23 |
| Depth to Water (ft bmp) | 8.31 |
| Water-Level Elevation (ft) | — |
| Water Column in Well (ft) | 7.92 |
| Casing Diameter/Type | 2" PVC |
| Gallons in Well | 1.27 |
| Gallons Pumped/Bailed Prior to Sampling | 0.3 |
| Sample Pump Intake Setting (ft bmp) | 13.73 |
| Purge Time | begin 1355 end 1445 |
| Pumping Rate (ml/min) | 50 |
| Evacuation Method | peri pump |

**Field Parameters**

| | |
|---|---|
| Temperature (°C) | 13.32 |
| SpC (mS/cm) | 1.351 |
| CND (mS/cm) | — |
| Dissolved Oxygen (%) | 0.8 |
| Dissolved Oxygen (mg/L) | 0.08 |
| pH (s.u.) | 7.49 |
| ORP (mV) | -124.3 |
| Turbidity (NTU) | 2.20 |
| Color | Clear |
| Odor | No |
| Appearance | clear |
| Sampling Method | Ultra Low-flow |
| Remarks | |

| Constituents Sampled | Container Description | Number | Preservative |
|---|---|---|---|
| Total Metals | 500 mL plastic | 1 | $HNO_3$ |
| Dissolved Metals | 500 mL plastic | 1 | $HNO_3$ |
| | | | |
| | | | |
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| | | | |

Sampling Personnel C. Zello

**Well Casing Volumes**

| Gal./Ft. | | | | | |
|---|---|---|---|---|---|
| | 0.5" = 0.01 | 1-¼" = 0.06 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1" = 0.04 | 1-½" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47 |

| | | | | | |
|---|---|---|---|---|---|
| bmp | Below measuring point | mL | Milliliter | NTU | Nephelometric turbidity units |
| °C | Degrees Celsius | mS/cm | Millisiemens per centimeter | PVC | Polyvinyl chloride |
| ft | Feet | msl | Mean sea level | s.u. | Standard units |
| gpm | Gallons per minute | N/A | Not applicable | umhos/cm | Micromhos per centimeter |
| mg/L | Milligrams per liter | NR | Not recorded | VOC | Volatile organic compounds |

**ARCADIS**

# YSI/LOW FLOW SAMPLING LOG



WELL : MW-97-104WT PROJ #: B00869912014.00061

DATE : 6/19/14 LOC: RACER PLANT 2 Saginaw, MI

| Time | Temp Degree C | SpC mS/cm | CND mS/cm | DO% | DO mg/L | pH | ORP mV | Flow Rate mL/min | Turbidity NTU | DTW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1400 | 13.75 | 1.452 | — | 5.5 | 0.55 | 7.58 | -110.3 | 50 | 8.40 | 8.62 |
| 1405 | 13.58 | 1.410 | — | 2.3 | 0.24 | 7.50 | -114.0 | 50 | 1.58 | 8.74 |
| 1410 | 13.35 | 1.356 | — | 1.7 | 0.18 | 7.49 | -118.1 | 50 | 2.32 | 8.79 |
| 1415 | 13.22 | 1.318 | — | 1.0 | 0.11 | 7.48 | -120.1 | 50 | 2.86 | 8.81 |
| 1420 | 13.38 | 1.317 | — | 0.8 | 0.08 | 7.47 | -119.1 | 50 | 2.57 | 8.81 |
| 1425 | 13.46 | 1.333 | — | 0.8 | 0.08 | 7.48 | -122.0 | 50 | 2.40 | 8.81 |
| 1430 | 13.32 | 1.351 | — | 0.8 | 0.08 | 7.49 | -124.3 | 50 | 2.20 | 8.81 |
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| Total Depth of Well: | | | | | | | | | | |
| Depth To Water Before Purging: | | | | | | | | | | |
| Depth To Water After Purging: | | | | | | | | | | |

**ARCADIS**

# Water Sampling Log

Project _____ Project No. B0086991.2014.0001 Page 1 of 2

Site Location RACER PLANT 2. SAGINAW, MI Date 6/19/14

Site/Well No. MW-04-122WT Replicate No. — Code No. —

Weather Sunny 70°F Sampling Time: Begin 1333 End 1345

**Evacuation Data**

| | |
|---|---|
| Measuring Point | TOC |
| MP Elevation (ft) | — |
| Land Surface Elevation (ft) | — |
| Sounded Well Depth (ft bmp) | 17.44 |
| Depth to Water (ft bmp) | 9.05 |
| Water-Level Elevation (ft) | — |
| Water Column in Well (ft) | 8.39 |
| Casing Diameter/Type | 2" PVC |
| Gallons in Well | 1.34 |
| Gallons Pumped/Bailed Prior to Sampling | 0.4 |
| Sample Pump Intake Setting (ft bmp) | 14.94 |
| Purge Time | begin 1250 end 1345 |
| Pumping Rate (ml/min) | 50 |
| Evacuation Method | Peri pump |

**Field Parameters**

| | |
|---|---|
| Temperature (°C) | 14.04 |
| SpC (mS/cm) | 2.965 |
| CND (mS/cm) | — |
| Dissolved Oxygen (%) | 0.2 |
| Dissolved Oxygen (mg/L) | 0.02 |
| pH (s.u.) | 7.44 |
| ORP (mV) | -128.4 |
| Turbidity (NTU) | 2.77 |
| Color | Clear/yellow |
| Odor | No |
| Appearance | Clear |
| Sampling Method | ULTRA LOW-FLOW |
| Remarks | |

| Constituents Sampled | Container Description | Number | Preservative |
|---|---|---|---|
| Total METALS | 500 mL plastic | 1 | $HNO_3$ |
| DISSOLVED METALS | 500 mL plastic | 1 | $HNO_3$ |
| | | | |
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| | | | |

Sampling Personnel C. Zilo

**Well Casing Volumes**

| Gal./Ft. | | | | | |
|---|---|---|---|---|---|
| | 0.5" = 0.01 | 1-¼" = 0.06 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1" = 0.04 | 1-½" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47 |

| | | | | | |
|---|---|---|---|---|---|
| bmp | Below measuring point | mL | Milliliter | NTU | Nephelometric turbidity units |
| °C | Degrees Celsius | mS/cm | Millisiemens per centimeter | PVC | Polyvinyl chloride |
| ft | Feet | msl | Mean sea level | s.u. | Standard units |
| gpm | Gallons per minute | N/A | Not applicable | umhos/cm | Micromhos per centimeter |
| mg/L | Milligrams per liter | NR | Not recorded | VOC | Volatile organic compounds |

**ARCADIS**

# YSI/LOW FLOW SAMPLING LOG



WELL : MW-04-122WT PROJ #: B0086991.2014.00001

DATE : 6/19/14 LOC: RACER PLANT 2 SAGINAW, MI

| Time | Temp Degree C | SpC mS/cm | CND mS/cm | DO% | DO mg/L | pH | ORP mV | Flow Rate mL/min | Turbidity NTU | DTW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1255 | 14.34 | 6.253 | — | 6.9 | 0.64 | 7.04 | -80.3 | 50 | 4.67 | 9.40 |
| 1300 | 14.31 | 5.742 | — | 1.0 | 0.09 | 7.04 | -84.1 | 50 | 3.53 | 9.45 |
| 1305 | 14.45 | 4.732 | — | 0.7 | 0.07 | 7.14 | -98.3 | 50 | 4.23 | 9.49 |
| 1310 | 14.46 | 3.882 | — | 0.7 | 0.07 | 7.24 | -113.5 | 50 | 2.96 | 9.51 |
| 1315 | 14.27 | 3.350 | — | 0.5 | 0.05 | 7.32 | -121.4 | 50 | 2.80 | 9.52 |
| 1320 | 14.11 | 3.068 | — | 0.2 | 0.02 | 7.40 | -134.4 | 50 | 3.35 | 9.52 |
| 1325 | 14.19 | 2.991 | — | 0.2 | 0.02 | 7.42 | -133.2 | 50 | 2.99 | 9.52 |
| 1330 | 14.04 | 2.965 | — | 0.2 | 0.02 | 7.44 | -128.4 | 50 | 2.77 | 9.52 |
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| Total Depth of Well: | | | | | | | | | | |
| Depth To Water Before Purging: | | | | | | | | | | |
| Depth To Water After Purging: | | | | | | | | | | |

**ARCADIS**

# Water Sampling Log

Project: Plant 2 RACER | Project No.: B00861911.2014.00001 | Page: 1 of 2

Site Location: RACER SAGINAW, MI | Date: 6/19/14

Site/Well No.: MW-04-124WT | Replicate No.: — | Code No.: —

Weather: Sunny 70°F | Sampling Time: Begin 1228 End 1240

## Evacuation Data

| | |
|---|---|
| Measuring Point | TOC |
| MP Elevation (ft) | — |
| Land Surface Elevation (ft) | — |
| Sounded Well Depth (ft bmp) | 15.18 |
| Depth to Water (ft bmp) | 5.74 |
| Water-Level Elevation (ft) | — |
| Water Column in Well (ft) | 9.44 |
| Casing Diameter/Type | 2" PVC |
| Gallons in Well | 1.5 |
| Gallons Pumped/Bailed Prior to Sampling | 0.4 |
| Sample Pump Intake Setting (ft bmp) | 12.68 |
| Purge Time | begin 1135 end 1240 |
| Pumping Rate (ml/min) | 50 |
| Evacuation Method | Peri. pump |

## Field Parameters

| | |
|---|---|
| Temperature (°C) | 14.01 |
| SpC (mS/cm) | 1.079 |
| CND (mS/cm) | — |
| Dissolved Oxygen (%) | 0.9 |
| Dissolved Oxygen (mg/L) | 0.09 |
| pH (s.u.) | 6.87 |
| ORP (mV) | -64.7 |
| Turbidity (NTU) | 4.63 |
| Color | Clear |
| Odor | no |
| Appearance | Clear |
| Sampling Method | Ultra low-flow |
| Remarks | |

| Constituents Sampled | Container Description | Number | Preservative |
|---|---|---|---|
| Diss Metals | 500mL plastic | 1 | $HNO_3$ |
| Total Metals | 500 mL plastic | 1 | $HNO_3$ |
| | | | |
| | | | |
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| | | | |

Sampling Personnel: C. Zilio

**Well Casing Volumes**

| Gal./Ft. | | | | |
|---|---|---|---|---|
| 0.5" = 0.01 | 1-¼" = 0.06 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| 1" = 0.04 | 1-½" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47 |

| | | | | | |
|---|---|---|---|---|---|
| bmp | Below measuring point | mL | Milliliter | NTU | Nephelometric turbidity units |
| °C | Degrees Celsius | mS/cm | Millisiemens per centimeter | PVC | Polyvinyl chloride |
| ft | Feet | msl | Mean sea level | s.u. | Standard units |
| gpm | Gallons per minute | N/A | Not applicable | umhos/cm | Micromhos per centimeter |
| mg/L | Milligrams per liter | NR | Not recorded | VOC | Volatile organic compounds |

**ARCADIS**

# YSI/LOW FLOW SAMPLING LOG



WELL : MW-04-124WT PROJ #: B008691.2014.00001

DATE : 6/19/14 LOC: RACER SAGINAW, MI

| Time | Temp Degree C | SpC mS/cm | CND mS/cm | DO% | DO mg/L | pH | ORP mV | Flow Rate mL/min | Turbidity NTU | DTW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1140 | 13.32 | 1.324 | — | 13.5 | 1.31 | 7.05 | -68.9 | 50 | 37.5 | 5.90 |
| 1145 | 13.06 | 1.245 | — | 1.8 | 0.18 | 6.99 | -70.0 | 50 | 13.0 | 5.94 |
| 1150 | 13.09 | 1.198 | — | 1.5 | 0.17 | 6.94 | -71.0 | 50 | 7.13 | 5.94 |
| 1155 | 13.39 | 1.170 | — | 0.9 | 0.10 | 6.91 | -61.9 | 50 | 6.21 | 5.94 |
| 1200 | 13.64 | 1.146 | — | 0.9 | 0.09 | 6.90 | -58.6 | 50 | 5.92 | 5.94 |
| 1205 | 13.84 | 1.128 | — | 1.0 | 0.10 | 6.88 | -60.0 | 50 | 4.45 | 5.94 |
| 1210 | 13.70 | 1.114 | — | 1.0 | 0.11 | 6.88 | -65.0 | 50 | 6.96 | 5.94 |
| 1215 | 13.86 | 1.091 | — | 0.9 | 0.09 | 6.88 | -68.3 | 50 | 4.12 | 5.94 |
| 1220 | 13.93 | 1.082 | — | 0.9 | 0.09 | 6.87 | -69.0 | 50 | 3.91 | 5.94 |
| 1225 | 14.01 | 1.079 | — | 0.9 | 0.09 | 6.87 | -64.7 | 50 | 4.63 | 5.94 |
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| Total Depth of Well: | | | | | | | | | | |
| Depth To Water Before Purging: | | | | | | | | | | |
| Depth To Water After Purging: | | | | | | | | | | |

**ARCADIS**

# Water Sampling Log

Project: RACER PLANT 2 | Project No. B0086991.2014.00001 | Page 1 of 2

Site Location: RACR PLT 2 SAGINAW, MI | Date: 6/19/14

Site/Well No.: MW-97-105WT | Replicate No.: — | Code No.: —

Weather: Sunny 70°F | Sampling Time: Begin 1108 | End 1118

## Evacuation Data

| | |
|---|---|
| Measuring Point | TOC |
| MP Elevation (ft) | — |
| Land Surface Elevation (ft) | — |
| Sounded Well Depth (ft bmp) | 16.21 |
| Depth to Water (ft bmp) | 9.15 |
| Water-Level Elevation (ft) | — |
| Water Column in Well (ft) | 7.06 |
| Casing Diameter/Type | 2" PVC |
| Gallons in Well | 1.13 |
| Gallons Pumped/Bailed Prior to Sampling | 0.4 |
| Sample Pump Intake Setting (ft bmp) | 13.71 |
| Purge Time | begin 1025 end |
| Pumping Rate (ml/min) | 50 |
| Evacuation Method | Peri pump |

## Field Parameters

| | |
|---|---|
| Temperature (°C) | 13.56 |
| SpC (mS/cm) | 1.501 |
| CND (mS/cm) | — |
| Dissolved Oxygen (%) | 1.0 |
| Dissolved Oxygen (mg/L) | 0.10 |
| pH (s.u.) | 7.04 |
| ORP (mV) | -87.9 |
| Turbidity (NTU) | 3.62 |
| Color | Clear |
| Odor | No |
| Appearance | Clear |
| Sampling Method | ULTRA LOW-FLOW |
| Remarks | |

| Constituents Sampled | Container Description | Number | Preservative |
|---|---|---|---|
| DISS METALS | 500mL Plastic | 1 | $HNO_3$ |
| TOT METALS | 500 mL plastic | 1 | $HNO_3$ |
| | | | |
| | | | |
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| | | | |

Sampling Personnel: C. Zilio

**Well Casing Volumes**

| Gal./Ft. | | | | | |
|---|---|---|---|---|---|
| | 0.5" = 0.01 | 1-¼" = 0.06 | 2" = 0.16 | 3" = 0.37 | 4" = 0.65 |
| | 1" = 0.04 | 1-½" = 0.09 | 2-½" = 0.26 | 3-½" = 0.50 | 6" = 1.47 |

| | | | | | |
|---|---|---|---|---|---|
| bmp | Below measuring point | mL | Milliliter | NTU | Nephelometric turbidity units |
| °C | Degrees Celsius | mS/cm | Millisiemens per centimeter | PVC | Polyvinyl chloride |
| ft | Feet | msl | Mean sea level | s.u. | Standard units |
| gpm | Gallons per minute | N/A | Not applicable | umhos/cm | Micromhos per centimeter |
| mg/L | Milligrams per liter | NR | Not recorded | VOC | Volatile organic compounds |

**ARCADIS**

# YSI/LOW FLOW SAMPLING LOG



WELL : MW-97-105WT PROJ #: B008699.2014.00001

DATE : 6/19/14 LOC: RACR PLT 2 SAGINAW, MI

| Time | Temp Degree C | SpC mS/cm | CND mS/cm | DO% | DO mg/L | pH | ORP mV | Flow Rate mL/min | Turbidity NTU | DTW |
|---|---|---|---|---|---|---|---|---|---|---|
| 1030 | 14.52 | 1.771 | — | 3.8 | 0.38 | 7.04 | -102.2 | 50 | 15.3 | 9.43 |
| 1035 | 14.20 | 1.677 | — | 2.9 | 0.29 | 7.07 | -106.9 | 50 | 11.0 | 9.49 |
| 1040 | 13.88 | 1.599 | — | 1.9 | 0.19 | 7.08 | -108.0 | 50 | 7.66 | 9.50 |
| 1045 | 13.49 | 1.579 | — | 1.2 | 0.13 | 7.07 | -100.6 | 50 | 3.99 | 9.50 |
| 1050 | 13.44 | 1.568 | — | 1.1 | 0.11 | 7.07 | -103.1 | 50 | 5.30 | 9.50 |
| 1055 | 13.45 | 1.583 | — | 1.0 | 0.10 | 7.05 | -93.0 | 50 | 5.07 | 9.50 |
| 1100 | 13.73 | 1.584 | — | 1.0 | 0.10 | 7.04 | -82.5 | 50 | 3.33 | 9.50 |
| 1105 | 13.56 | 1.581 | — | 1.0 | 0.10 | 7.04 | -87.9 | 50 | 3.62 | 9.50 |
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| Total Depth of Well: | | | | | | | | | | |
| Depth To Water Before Purging: | | | | | | | | | | |
| Depth To Water After Purging: | | | | | | | | | | |

ARCADIS

**Attachment 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: 240-38752-1
Client Project/Site: RACER Saginaw - B0086991.2014.00001

For:
ARCADIS U.S. Inc
10559 Citation Drive
Suite 100
Brighton, Michigan 48116

Attn: Scott Clearwater

Denise Pohl

*Authorized for release by:*
*6/30/2014 9:09:41 AM*

Denise Pohl, Project Manager II
(330)966-9789
denise.pohl@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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# Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

## Qualifiers

### Metals

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| B | Compound was found in the blank and sample. |
| U | Indicates the analyte was analyzed for but not detected. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| 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) |

## Job ID: 240-38752-1

**Laboratory: TestAmerica Canton**

**Narrative**

### CASE NARRATIVE

### Client: ARCADIS U.S. Inc

### Project: RACER Saginaw - B0086991.2014.00001

### Report Number: 240-38752-1

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 6/20/2014 9:10 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2º C.

**DISSOLVED METALS (ICPMS)**

Samples MW04123WT(061914) (240-38752-1), TW98109WT(061914) (240-38752-2), MW01118WT(061914) (240-38752-3), MW97105WT(061914) (240-38752-4), MW04124WT(061914) (240-38752-5), MW04122WT(061914) (240-38752-6), TW98111WT(061914) (240-38752-7), DUP-1(061914) (240-38752-8) and MW97104WT(061914) (240-38752-9) were analyzed for dissolved metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 06/24/2014 and analyzed on 06/25/2014.

Method(s) 6020: Requested reporting limits (RL) that fall below the laboratory's verified standard quantitation limit have less certainty (i.e., are estimated) and must be used at the client's discretion. The continuing calibration blanks and method blanks may not support the lower RL.DUP-1(061914) (240-38752-8), MW01118WT(061914) (240-38752-3), MW04122WT(061914) (240-38752-6), MW04123WT(061914) (240-38752-1), MW04124WT(061914) (240-38752-5), MW97104WT(061914) (240-38752-9), MW97105WT(061914) (240-38752-4), TW98109WT(061914) (240-38752-2), TW98111WT(061914) (240-38752-7)

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

## Job ID: 240-38752-1 (Continued)

**Laboratory: TestAmerica Canton (Continued)**

**TOTAL RECOVERABLE METALS (ICPMS)**

Samples MW04123WT(061914) (240-38752-1), TW98109WT(061914) (240-38752-2), MW01118WT(061914) (240-38752-3), MW97105WT(061914) (240-38752-4), MW04124WT(061914) (240-38752-5), MW04122WT(061914) (240-38752-6), TW98111WT(061914) (240-38752-7), DUP-1(061914) (240-38752-8) and MW97104WT(061914) (240-38752-9) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 06/24/2014 and analyzed on 06/25/2014.

Manganese was detected in method blank MB 240-135889/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Method(s) 6020: Requested reporting limits (RL) that fall below the laboratory's verified standard quantitation limit have less certainty (i.e., are estimated) and must be used at the client's discretion. The continuing calibration blanks and method blanks may not support the lower RL.DUP-1(061914) (240-38752-8), MW01118WT(061914) (240-38752-3), MW04122WT(061914) (240-38752-6), MW04123WT(061914) (240-38752-1), MW04124WT(061914) (240-38752-5), MW97104WT(061914) (240-38752-9), MW97105WT(061914) (240-38752-4), TW98109WT(061914) (240-38752-2), TW98111WT(061914) (240-38752-7)

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

# Method Summary

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 6020 | Metals (ICP/MS) | SW846 | TAL CAN |

**Protocol References:**

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

**Laboratory References:**

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

# Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 240-38752-1 | MW04123WT(061914) | Water | 06/19/14 11:00 | 06/20/14 09:10 |
| 240-38752-2 | TW98109WT(061914) | Water | 06/19/14 11:55 | 06/20/14 09:10 |
| 240-38752-3 | MW01118WT(061914) | Water | 06/19/14 12:50 | 06/20/14 09:10 |
| 240-38752-4 | MW97105WT(061914) | Water | 06/19/14 11:08 | 06/20/14 09:10 |
| 240-38752-5 | MW04124WT(061914) | Water | 06/19/14 12:28 | 06/20/14 09:10 |
| 240-38752-6 | MW04122WT(061914) | Water | 06/19/14 13:33 | 06/20/14 09:10 |
| 240-38752-7 | TW98111WT(061914) | Water | 06/19/14 13:45 | 06/20/14 09:10 |
| 240-38752-8 | DUP-1(061914) | Water | 06/19/14 00:00 | 06/20/14 09:10 |
| 240-38752-9 | MW97104WT(061914) | Water | 06/19/14 14:33 | 06/20/14 09:10 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: MW04123WT(061914)**
**Date Collected: 06/19/14 11:00**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-1**
**Matrix: Water**

## Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 2.4 | J | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 14:01 | 1 |
| Lead | 0.23 | J | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 14:01 | 1 |
| Manganese | 920 | B | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 14:01 | 1 |
| Selenium | 0.69 | J | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 14:01 | 1 |

## Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 14:22 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: TW98109WT(061914)**
**Date Collected: 06/19/14 11:55**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-2**
**Matrix: Water**

### Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 0.65 | J | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 14:29 | 1 |
| Lead | 0.17 | J | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 14:29 | 1 |
| Manganese | 670 | B | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 14:29 | 1 |
| Selenium | 0.38 | J | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 14:29 | 1 |

### Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 14:36 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: MW01118WT(061914)**
**Date Collected: 06/19/14 12:50**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-3**
**Matrix: Water**

## Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 3.0 | J | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 14:43 | 1 |
| Lead | 0.18 | J | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 14:43 | 1 |
| Manganese | 210 | B | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 14:43 | 1 |
| Selenium | 0.39 | J | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 14:43 | 1 |

## Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 0.40 | J | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 14:50 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: MW97105WT(061914)**
**Date Collected: 06/19/14 11:08**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-4**
**Matrix: Water**

## Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Cobalt** | **1.3** | **J** | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 14:57 | 1 |
| **Lead** | **0.61** | **J** | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 14:57 | 1 |
| **Manganese** | **330** | **B** | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 14:57 | 1 |
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 14:57 | 1 |

## Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Selenium** | **0.34** | **J** | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 15:04 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: MW04124WT(061914)**
**Date Collected: 06/19/14 12:28**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-5**
**Matrix: Water**

## Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Cobalt** | **1.2** | **J** | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 15:11 | 1 |
| Lead | 3.0 | U | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 15:11 | 1 |
| **Manganese** | **670** | **B** | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 15:11 | 1 |
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 15:11 | 1 |

## Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 15:19 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: MW04122WT(061914)**
**Date Collected: 06/19/14 13:33**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-6**
**Matrix: Water**

### Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 3.5 | J | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 15:26 | 1 |
| Lead | 0.37 | J | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 15:26 | 1 |
| Manganese | 200 | B | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 15:26 | 1 |
| Selenium | 0.56 | J | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 15:26 | 1 |

### Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 0.38 | J | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 15:47 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: TW98111WT(061914)**
**Date Collected: 06/19/14 13:45**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-7**
**Matrix: Water**

### Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 2.5 | J | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 13:04 | 1 |
| Lead | 0.85 | J | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 13:04 | 1 |
| Manganese | 68 | B | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 13:04 | 1 |
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 13:04 | 1 |

### Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 0.58 | J | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 13:39 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: DUP-1(061914)**
**Date Collected: 06/19/14 00:00**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-8**
**Matrix: Water**

### Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 2.9 | J | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 15:54 | 1 |
| Lead | 0.22 | J | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 15:54 | 1 |
| Manganese | 210 | B | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 15:54 | 1 |
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 15:54 | 1 |

### Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 0.46 | J | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 16:01 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Client Sample ID: MW97104WT(061914)**
**Date Collected: 06/19/14 14:33**
**Date Received: 06/20/14 09:10**

**Lab Sample ID: 240-38752-9**
**Matrix: Water**

### Method: 6020 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Cobalt** | **0.45** | **J** | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 16:08 | 1 |
| Lead | 3.0 | U | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 16:08 | 1 |
| **Manganese** | **710** | **B** | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 16:08 | 1 |
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 16:08 | 1 |

### Method: 6020 - Metals (ICP/MS) - Dissolved

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 16:15 | 1 |

## Method: 6020 - Metals (ICP/MS)

**Lab Sample ID: MB 240-135889/1-A**
**Matrix: Water**
**Analysis Batch: 136221**

**Client Sample ID: Method Blank**
**Prep Type: Total Recoverable**
**Prep Batch: 135889**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 20 | U | 20 | 0.020 | ug/L | | 06/24/14 08:28 | 06/25/14 12:35 | 1 |
| Lead | 3.0 | U | 3.0 | 0.14 | ug/L | | 06/24/14 08:28 | 06/25/14 12:35 | 1 |
| Manganese | 0.475 | J | 1.0 | 0.41 | ug/L | | 06/24/14 08:28 | 06/25/14 12:35 | 1 |
| Selenium | 5.0 | U | 5.0 | 0.34 | ug/L | | 06/24/14 08:28 | 06/25/14 12:35 | 1 |

**Lab Sample ID: LCS 240-135889/2-A**
**Matrix: Water**
**Analysis Batch: 136221**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total Recoverable**
**Prep Batch: 135889**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Cobalt | 1000 | 961 | | ug/L | | 96 | 80 - 120 |
| Lead | 1000 | 918 | | ug/L | | 92 | 80 - 120 |
| Manganese | 1000 | 954 | | ug/L | | 95 | 80 - 120 |
| Selenium | 1000 | 994 | | ug/L | | 99 | 80 - 120 |

**Lab Sample ID: 240-38752-7 MS**
**Matrix: Water**
**Analysis Batch: 136221**

**Client Sample ID: TW98111WT(061914)**
**Prep Type: Total Recoverable**
**Prep Batch: 135889**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 2.5 | J | 1000 | 957 | | ug/L | | 95 | 67 - 114 |
| Lead | 0.85 | J | 1000 | 891 | | ug/L | | 89 | 73 - 115 |
| Manganese | 68 | B | 1000 | 1020 | | ug/L | | 96 | 10 - 172 |
| Selenium | 5.0 | U | 1000 | 927 | | ug/L | | 93 | 72 - 148 |

**Lab Sample ID: 240-38752-7 MSD**
**Matrix: Water**
**Analysis Batch: 136221**

**Client Sample ID: TW98111WT(061914)**
**Prep Type: Total Recoverable**
**Prep Batch: 135889**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cobalt | 2.5 | J | 1000 | 965 | | ug/L | | 96 | 67 - 114 | 1 | 20 |
| Lead | 0.85 | J | 1000 | 889 | | ug/L | | 89 | 73 - 115 | 0 | 20 |
| Manganese | 68 | B | 1000 | 1020 | | ug/L | | 95 | 10 - 172 | 0 | 20 |
| Selenium | 5.0 | U | 1000 | 933 | | ug/L | | 93 | 72 - 148 | 1 | 20 |

**Lab Sample ID: 240-38752-7 MS**
**Matrix: Water**
**Analysis Batch: 136221**

**Client Sample ID: TW98111WT(061914)**
**Prep Type: Dissolved**
**Prep Batch: 135889**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Selenium | 0.58 | J | 1000 | 919 | | ug/L | | 92 | 72 - 148 |

**Lab Sample ID: 240-38752-7 MSD**
**Matrix: Water**
**Analysis Batch: 136221**

**Client Sample ID: TW98111WT(061914)**
**Prep Type: Dissolved**
**Prep Batch: 135889**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Selenium | 0.58 | J | 1000 | 927 | | ug/L | | 93 | 72 - 148 | 1 | 20 |

## Metals

### Prep Batch: 135889

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 240-38752-1 | MW04123WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-1 | MW04123WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-2 | TW98109WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-2 | TW98109WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-3 | MW01118WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-3 | MW01118WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-4 | MW97105WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-4 | MW97105WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-5 | MW04124WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-5 | MW04124WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-6 | MW04122WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-6 | MW04122WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-7 | TW98111WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-7 | TW98111WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-7 MS | TW98111WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-7 MS | TW98111WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-7 MSD | TW98111WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-7 MSD | TW98111WT(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-8 | DUP-1(061914) | Dissolved | Water | 3005A | |
| 240-38752-8 | DUP-1(061914) | Total Recoverable | Water | 3005A | |
| 240-38752-9 | MW97104WT(061914) | Dissolved | Water | 3005A | |
| 240-38752-9 | MW97104WT(061914) | Total Recoverable | Water | 3005A | |
| LCS 240-135889/2-A | Lab Control Sample | Total Recoverable | Water | 3005A | |
| MB 240-135889/1-A | Method Blank | Total Recoverable | Water | 3005A | |

### Analysis Batch: 136221

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 240-38752-1 | MW04123WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-1 | MW04123WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-2 | TW98109WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-2 | TW98109WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-3 | MW01118WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-3 | MW01118WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-4 | MW97105WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-4 | MW97105WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-5 | MW04124WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-5 | MW04124WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-6 | MW04122WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-6 | MW04122WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-7 | TW98111WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-7 | TW98111WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-7 MS | TW98111WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-7 MS | TW98111WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-7 MSD | TW98111WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-7 MSD | TW98111WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-8 | DUP-1(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-8 | DUP-1(061914) | Total Recoverable | Water | 6020 | 135889 |
| 240-38752-9 | MW97104WT(061914) | Dissolved | Water | 6020 | 135889 |
| 240-38752-9 | MW97104WT(061914) | Total Recoverable | Water | 6020 | 135889 |
| LCS 240-135889/2-A | Lab Control Sample | Total Recoverable | Water | 6020 | 135889 |
| MB 240-135889/1-A | Method Blank | Total Recoverable | Water | 6020 | 135889 |

**Client Sample ID: MW04123WT(061914)** — **Lab Sample ID: 240-38752-1**
**Date Collected: 06/19/14 11:00** — **Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 14:22 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 14:01 | NJT | TAL CAN |

**Client Sample ID: TW98109WT(061914)** — **Lab Sample ID: 240-38752-2**
**Date Collected: 06/19/14 11:55** — **Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 14:36 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 14:29 | NJT | TAL CAN |

**Client Sample ID: MW01118WT(061914)** — **Lab Sample ID: 240-38752-3**
**Date Collected: 06/19/14 12:50** — **Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 14:50 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 14:43 | NJT | TAL CAN |

**Client Sample ID: MW97105WT(061914)** — **Lab Sample ID: 240-38752-4**
**Date Collected: 06/19/14 11:08** — **Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 15:04 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 14:57 | NJT | TAL CAN |

**Client Sample ID: MW04124WT(061914)** — **Lab Sample ID: 240-38752-5**
**Date Collected: 06/19/14 12:28** — **Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 15:19 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |

# Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

## Client Sample ID: MW04124WT(061914)

**Lab Sample ID: 240-38752-5**

**Date Collected: 06/19/14 12:28**
**Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 15:11 | NJT | TAL CAN |

## Client Sample ID: MW04122WT(061914)

**Lab Sample ID: 240-38752-6**

**Date Collected: 06/19/14 13:33**
**Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 15:47 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 15:26 | NJT | TAL CAN |

## Client Sample ID: TW98111WT(061914)

**Lab Sample ID: 240-38752-7**

**Date Collected: 06/19/14 13:45**
**Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 13:39 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 13:04 | NJT | TAL CAN |

## Client Sample ID: DUP-1(061914)

**Lab Sample ID: 240-38752-8**

**Date Collected: 06/19/14 00:00**
**Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 16:01 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 15:54 | NJT | TAL CAN |

## Client Sample ID: MW97104WT(061914)

**Lab Sample ID: 240-38752-9**

**Date Collected: 06/19/14 14:33**
**Matrix: Water**
**Date Received: 06/20/14 09:10**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Dissolved | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Dissolved | Analysis | 6020 | | 1 | 136221 | 06/25/14 16:15 | NJT | TAL CAN |
| Total Recoverable | Prep | 3005A | | | 135889 | 06/24/14 08:28 | LPM | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 136221 | 06/25/14 16:08 | NJT | TAL CAN |

# Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

**Laboratory References:**

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

# Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw - B0086991.2014.00001

TestAmerica Job ID: 240-38752-1

## Laboratory: TestAmerica Canton

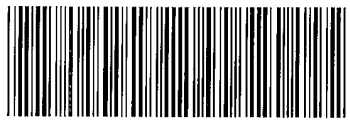
All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| California | NELAP | 9 | 01144CA | 06-30-14 * |
| Connecticut | State Program | 1 | PH-0590 | 12-31-14 |
| Florida | NELAP | 4 | E87225 | 06-30-14 * |
| Georgia | State Program | 4 | N/A | 06-30-14 * |
| Illinois | NELAP | 5 | 200004 | 07-31-14 * |
| Kansas | NELAP | 7 | E-10336 | 01-31-15 |
| Kentucky (UST) | State Program | 4 | 58 | 06-30-14 * |
| L-A-B | DoD ELAP | | L2315 | 07-18-16 |
| Minnesota | NELAP | 5 | 039-999-348 | 12-31-14 |
| Nevada | State Program | 9 | OH-000482008A | 07-31-14 * |
| New Jersey | NELAP | 2 | OH001 | 06-30-14 * |
| New York | NELAP | 2 | 10975 | 03-31-15 |
| Ohio VAP | State Program | 5 | CL0024 | 10-31-15 |
| Pennsylvania | NELAP | 3 | 68-00340 | 08-31-14 * |
| Texas | NELAP | 6 | | 08-31-14 |
| USDA | Federal | | P330-13-00319 | 11-26-16 |
| Virginia | NELAP | 3 | 460175 | 09-14-14 |
| Washington | State Program | 10 | C971 | 01-12-15 |
| West Virginia DEP | State Program | 3 | 210 | 12-31-14 |
| Wisconsin | State Program | 5 | 999518190 | 08-31-14 * |

* Certification renewal pending - certification considered valid.

TestAmerica Laboratories, Inc.

# CHAIN OF CUSTODY
# AND
# RECEIVING DOCUMENTS



240-38752 Chain of Custody

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#:

# CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM



Lab Work Order #

**Send Results to:**

| Contact & Company Name: | Telephone: |
|---|---|
| Scott Clearwater/Arcadis | (810) 225-1921 |
| **Address:** 10559 Citation Drive Suite 100 | **Fax:** (810) 229-8837 |
| **City / State / Zip:** Brighton MI 48116 | **E-mail Address:** scott.clearwater@arcadis-us.com |
| **Project Name/Location (City, State):** Racer Saginaw | **Project #:** B0086991.2014.00001 |
| **Sampler's Printed Name:** Amy O'Neil & Cooper Tillio | **Sampler's Signature:** Amy O'Neil |

| Preservative | C | C | | | | | |
|---|---|---|---|---|---|---|---|
| Filtered (✓) | | ✓ | | | | | |
| # of Containers | 1 | 1 | | | | | |
| Container Information | 4 | 4 | | | | | |

**PARAMETER ANALYSIS & METHOD**

**Keys**

**Preservation Key:**
A. $H_2SO_4$
B. HCL
C. $HNO_3$
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

**Container Information Key:**
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

**Matrix Key:**
SO - Soil; SE - Sediment; NL - NAPL/Oil; W - Water; SL - Sludge; SW - Sample Wipe; T - Tissue; A - Air; Other: _____

| Sample ID | Collection Date (2014) | Collection Time | Type (✓) Comp | Type (✓) Grab | Matrix | Total Metals * | Dissolved Metals * | REMARKS |
|---|---|---|---|---|---|---|---|---|
| MW04123WT(061914) | 6/19 | 1100 | | ✓ | GW | 1 | 1 | * Cobalt, manganese, lead, and total and dissolved selenium |
| TW98109WT(061914) | 6/19 | 1155 | | ✓ | GW | 1 | 1 | |
| MW01118WT(061914) | 6/19 | 1250 | | ✓ | GW | 1 | 1 | |
| MW97105WT(061914) | 6/19 | 1108 | | ✓ | GW | 1 | 1 | |
| MW04124WT(061914) | 6/19 | 1228 | | ✓ | GW | 1 | 1 | |
| MW04122WT(061914) | 6/19 | 1333 | | ✓ | GW | 1 | 1 | |
| TW98111WT(061914) | 6/19 | 1345 | | ✓ | GW | 2 | 2 | ← MS/MSD * Note - only had enough bottles for twice the volume |
| DUP-1(061914) | 6/19 | - | | ✓ | GW | 1 | 1 | |
| MW97104WT(061914) | 6/19 | 1433 | | ✓ | GW | 1 | 1 | |

**Special Instructions/Comments:**

☐ Special QA/QC Instructions(✓):

| Laboratory Information and Receipt | | Relinquished By | Received By | Relinquished By | Laboratory Received By |
|---|---|---|---|---|---|
| Lab Name: Test America | Cooler Custody Seal (✓) | Printed Name: Amy O'Neil | Printed Name: Terri Harlin | Printed Name: Terri Harlin | Printed Name: Ryan Rook |
| ☐ Cooler packed with ice (✓) | ☐ Intact ☐ Not Intact | Signature: Amy O'Neil | Signature: Terri Harlin | Signature: Terri Harlin | Signature: Ryan Rook |
| Specify Turnaround Requirements: | Sample Receipt: | Firm: Arcadis | Firm/Courier: TAL | Firm/Courier: TAL | Firm: TA Canton |
| Shipping Tracking #: | Condition/Cooler Temp: _____ | Date/Time: 6/19/14 1610 | Date/Time: 6/19/14 1611 | Date/Time: 6/19/14 1612 | Date/Time: 6/20/14 910 |



Distribution: WHITE – Laboratory returns with results; YELLOW – Lab copy; PINK – Retained by ARCADIS

**TestAmerica Canton Sample Receipt Form/Narrative**
**Canton Facility**

Login # : 39752

Client Arcadis Site Name

Cooler unpacked by: Ryan Rose

Cooler Received on 6/20/14 Opened on 6/20/14

FedEx: 1st (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 +2 °C) Observed Cooler Temp. ____ °C | Corrected Cooler Temp. ____ °C | ☐ See Multiple Cooler Form |
| IR GUN# 4 | (CF -2 °C) Observed Cooler Temp. ____ °C | Corrected Cooler Temp. ____ °C | |
| IR GUN# 5 | (CF +0 °C) Observed Cooler Temp. ____ °C | Corrected Cooler Temp. ____ °C | |
| IR GUN# 8 | (CF +0 °C) Observed Cooler Temp. 2.2 °C | Corrected Cooler Temp. 2.2 °C | |

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 (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# **HC302587**
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:

**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): ____

# Login Container Summary Report



Temperature readings: _____

| Client Sample ID | Lab ID | Container Type | Container pH | Preservative Added (mls) | Lot # |
|---|---|---|---|---|---|
| MW04123WT(061914) | 240-38752-A-1 | Plastic 500ml - with Nitric Acid | <2 | | |
| MW04123WT(061914) | 240-38752-B-1 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| TW98109WT(061914) | 240-38752-A-2 | Plastic 500ml - with Nitric Acid | <2 | | |
| TW98109WT(061914) | 240-38752-B-2 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| MW01118WT(061914) | 240-38752-A-3 | Plastic 500ml - with Nitric Acid | <2 | | |
| MW01118WT(061914) | 240-38752-B-3 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| MW97105WT(061914) | 240-38752-A-4 | Plastic 500ml - with Nitric Acid | <2 | | |
| MW97105WT(061914) | 240-38752-B-4 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| MW04124WT(061914) | 240-38752-A-5 | Plastic 500ml - with Nitric Acid | <2 | | |
| MW04124WT(061914) | 240-38752-B-5 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| MW04122WT(061914) | 240-38752-A-6 | Plastic 500ml - with Nitric Acid | <2 | | |
| MW04122WT(061914) | 240-38752-B-6 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| TW98111WT(061914) | 240-38752-A-7 | Plastic 500ml - with Nitric Acid | <2 | | |
| TW98111WT(061914) | 240-38752-B-7 | Plastic 500ml - with Nitric Acid | <2 | | |
| TW98111WT(061914) | 240-38752-C-7 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| TW98111WT(061914) | 240-38752-D-7 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| DUP-1(061914) | 240-38752-A-8 | Plastic 500ml - with Nitric Acid | <2 | | |
| DUP-1(061914) | 240-38752-B-8 | Plastic 500ml - w/ Nitric - Dis. | <2 | | |
| MW97104WT(061914) | 240-38752-A-9 | Plastic 500ml - with Nitric Acid | <2 | | |
| MW97104WT(061914) | 240-38752-B-9 | Plastic 500ml - w/ Nitric - Dis. | <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: 240-42187-1
Client Project/Site: RACER Saginaw Plant II - B0086991.2014

For:
ARCADIS U.S. Inc
10559 Citation Drive
Suite 100
Brighton, Michigan 48116

Attn: Scott Clearwater

Denise Pohl

*Authorized for release by:*
*9/30/2014 6:08:51 PM*

Denise Pohl, Project Manager II
(330)966-9789
denise.pohl@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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

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

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# Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

## Qualifiers

### Metals

| Qualifier | Qualifier Description |
|---|---|
| B | Compound was found in the blank and sample. |
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| U | Indicates the analyte was analyzed for but not detected. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| CFL | Contains Free Liquid |
| 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) |

## Job ID: 240-42187-1

**Laboratory: TestAmerica Canton**

**Narrative**

### CASE NARRATIVE

### Client: ARCADIS U.S. Inc

### Project: RACER Saginaw Plant II - B0086991.2014

### Report Number: 240-42187-1

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 9/20/2014 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6º C.

**TOTAL RECOVERABLE METALS (ICPMS)**

Samples TW98-110WT (091814) (240-42187-1), TW98-111 WT(091814) (240-42187-2), MW04-123WT (091914) (240-42187-3), DUP-01 (091914) (240-42187-4), TW98-109WT (091914) (240-42187-5), MW04-124WT (091914) (240-42187-6), MW01-118WT (091914) (240-42187-7) and MW04-122WT (091914) (240-42187-8) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/22/2014 and analyzed on 09/24/2014.

Chromium and Manganese were detected in method blank MB 240-147975/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Method(s) 6020: Requested reporting limits (RL) that fall below the laboratory's verified standard quantitation limit have less certainty (i.e., are estimated) and must be used at the client's discretion. The continuing calibration blanks and method blanks may not support the lower RL.DUP-01 (091914) (240-42187-4), MW01-118WT (091914) (240-42187-7), MW04-122WT (091914) (240-42187-8), MW04-123WT (091914) (240-42187-3), MW04-124WT (091914) (240-42187-6), TW98-109WT (091914) (240-42187-5), TW98-110WT (091814)

## Job ID: 240-42187-1 (Continued)

### Laboratory: TestAmerica Canton (Continued)

(240-42187-1), TW98-111 WT(091814) (240-42187-2)

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

# Method Summary

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 6020 | Metals (ICP/MS) | SW846 | TAL CAN |

**Protocol References:**

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

**Laboratory References:**

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

# Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 240-42187-1 | TW98-110WT (091814) | Water | 09/18/14 14:45 | 09/20/14 09:40 |
| 240-42187-2 | TW98-111 WT(091814) | Water | 09/18/14 17:55 | 09/20/14 09:40 |
| 240-42187-3 | MW04-123WT (091914) | Water | 09/19/14 11:00 | 09/20/14 09:40 |
| 240-42187-4 | DUP-01 (091914) | Water | 09/19/14 00:00 | 09/20/14 09:40 |
| 240-42187-5 | TW98-109WT (091914) | Water | 09/19/14 12:00 | 09/20/14 09:40 |
| 240-42187-6 | MW04-124WT (091914) | Water | 09/19/14 12:55 | 09/20/14 09:40 |
| 240-42187-7 | MW01-118WT (091914) | Water | 09/19/14 12:20 | 09/20/14 09:40 |
| 240-42187-8 | MW04-122WT (091914) | Water | 09/19/14 13:00 | 09/20/14 09:40 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

**Client Sample ID: TW98-110WT (091814)**
**Date Collected: 09/18/14 14:45**
**Date Received: 09/20/14 09:40**

**Lab Sample ID: 240-42187-1**
**Matrix: Water**

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.87 | J B | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 01:46 | 1 |
| Lead | 0.28 | J | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 01:46 | 1 |
| Manganese | 220 | B | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 01:46 | 1 |
| Selenium | 0.40 | J | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 01:46 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

**Client Sample ID: TW98-111 WT(091814)**
**Date Collected: 09/18/14 17:55**
**Date Received: 09/20/14 09:40**

**Lab Sample ID: 240-42187-2**
**Matrix: Water**

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 1.7 | J B | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 02:22 | 1 |
| Lead | 2.0 | J | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 02:22 | 1 |
| Manganese | 55 | B | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 02:22 | 1 |
| Selenium | 1.3 | J | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 02:22 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

**Client Sample ID: MW04-123WT (091914)**
**Date Collected: 09/19/14 11:00**
**Date Received: 09/20/14 09:40**

**Lab Sample ID: 240-42187-3**
**Matrix: Water**

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.49 | J B | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 02:29 | 1 |
| Lead | 0.34 | J | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 02:29 | 1 |
| Manganese | 970 | B | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 02:29 | 1 |
| Selenium | 0.57 | J | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 02:29 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

**Client Sample ID: DUP-01 (091914)**
**Date Collected: 09/19/14 00:00**
**Date Received: 09/20/14 09:40**

**Lab Sample ID: 240-42187-4**
**Matrix: Water**

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.40 | J B | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 02:36 | 1 |
| Lead | 0.23 | J | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 02:36 | 1 |
| Manganese | 930 | B | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 02:36 | 1 |
| Selenium | 0.58 | J | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 02:36 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

**Client Sample ID: TW98-109WT (091914)**
**Date Collected: 09/19/14 12:00**
**Date Received: 09/20/14 09:40**

**Lab Sample ID: 240-42187-5**
**Matrix: Water**

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chromium** | **0.47** | **J B** | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 02:58 | 1 |
| Lead | 3.0 | U | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 02:58 | 1 |
| **Manganese** | **600** | **B** | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 02:58 | 1 |
| **Selenium** | **0.49** | **J** | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 02:58 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

**Client Sample ID: MW04-124WT (091914)**
**Date Collected: 09/19/14 12:55**
**Date Received: 09/20/14 09:40**

**Lab Sample ID: 240-42187-6**
**Matrix: Water**

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chromium** | **0.57** | **J B** | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 03:05 | 1 |
| Lead | 3.0 | U | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 03:05 | 1 |
| **Manganese** | **680** | **B** | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 03:05 | 1 |
| **Selenium** | **0.32** | **J** | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 03:05 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

**Client Sample ID: MW01-118WT (091914)**
**Date Collected: 09/19/14 12:20**
**Date Received: 09/20/14 09:40**

**Lab Sample ID: 240-42187-7**
**Matrix: Water**

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.86 | J B | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 03:12 | 1 |
| Lead | 0.15 | J | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 03:12 | 1 |
| Manganese | 180 | B | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 03:12 | 1 |
| Selenium | 0.48 | J | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 03:12 | 1 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

**Client Sample ID: MW04-122WT (091914)**
**Date Collected: 09/19/14 13:00**
**Date Received: 09/20/14 09:40**

**Lab Sample ID: 240-42187-8**
**Matrix: Water**

**Method: 6020 - Metals (ICP/MS) - Total Recoverable**

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 1.3 | J B | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 03:19 | 1 |
| Lead | 0.29 | J | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 03:19 | 1 |
| Manganese | 210 | B | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 03:19 | 1 |
| Selenium | 0.57 | J | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 03:19 | 1 |

## Method: 6020 - Metals (ICP/MS)

**Lab Sample ID: MB 240-147975/1-A**
**Matrix: Water**
**Analysis Batch: 148339**

**Client Sample ID: Method Blank**
**Prep Type: Total Recoverable**
**Prep Batch: 147975**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.455 | J | 2.0 | 0.20 | ug/L | | 09/22/14 09:26 | 09/24/14 01:32 | 1 |
| Lead | 3.0 | U | 3.0 | 0.11 | ug/L | | 09/22/14 09:26 | 09/24/14 01:32 | 1 |
| Manganese | 1.11 | J | 2.0 | 1.1 | ug/L | | 09/22/14 09:26 | 09/24/14 01:32 | 1 |
| Selenium | 5.0 | U | 5.0 | 0.25 | ug/L | | 09/22/14 09:26 | 09/24/14 01:32 | 1 |

**Lab Sample ID: LCS 240-147975/2-A**
**Matrix: Water**
**Analysis Batch: 148339**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total Recoverable**
**Prep Batch: 147975**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|
| Chromium | 1000 | 1030 | | ug/L | | 103 | 80 - 120 |
| Lead | 1000 | 997 | | ug/L | | 100 | 80 - 120 |
| Manganese | 1000 | 1020 | | ug/L | | 102 | 80 - 120 |
| Selenium | 1000 | 1070 | | ug/L | | 107 | 80 - 120 |

**Lab Sample ID: 240-42187-1 MS**
**Matrix: Water**
**Analysis Batch: 148339**

**Client Sample ID: TW98-110WT (091814)**
**Prep Type: Total Recoverable**
**Prep Batch: 147975**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.87 | J B | 1000 | 1020 | | ug/L | | 102 | 72 - 110 |
| Lead | 0.28 | J | 1000 | 971 | | ug/L | | 97 | 73 - 115 |
| Manganese | 220 | B | 1000 | 1240 | | ug/L | | 102 | 10 - 172 |
| Selenium | 0.40 | J | 1000 | 975 | | ug/L | | 97 | 72 - 148 |

**Lab Sample ID: 240-42187-1 MSD**
**Matrix: Water**
**Analysis Batch: 148339**

**Client Sample ID: TW98-110WT (091814)**
**Prep Type: Total Recoverable**
**Prep Batch: 147975**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chromium | 0.87 | J B | 1000 | 999 | | ug/L | | 100 | 72 - 110 | 2 | 20 |
| Lead | 0.28 | J | 1000 | 960 | | ug/L | | 96 | 73 - 115 | 1 | 20 |
| Manganese | 220 | B | 1000 | 1200 | | ug/L | | 98 | 10 - 172 | 3 | 20 |
| Selenium | 0.40 | J | 1000 | 973 | | ug/L | | 97 | 72 - 148 | 0 | 20 |

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

## Metals

### Prep Batch: 147975

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 240-42187-1 | TW98-110WT (091814) | Total Recoverable | Water | 3005A | |
| 240-42187-1 MS | TW98-110WT (091814) | Total Recoverable | Water | 3005A | |
| 240-42187-1 MSD | TW98-110WT (091814) | Total Recoverable | Water | 3005A | |
| 240-42187-2 | TW98-111 WT(091814) | Total Recoverable | Water | 3005A | |
| 240-42187-3 | MW04-123WT (091914) | Total Recoverable | Water | 3005A | |
| 240-42187-4 | DUP-01 (091914) | Total Recoverable | Water | 3005A | |
| 240-42187-5 | TW98-109WT (091914) | Total Recoverable | Water | 3005A | |
| 240-42187-6 | MW04-124WT (091914) | Total Recoverable | Water | 3005A | |
| 240-42187-7 | MW01-118WT (091914) | Total Recoverable | Water | 3005A | |
| 240-42187-8 | MW04-122WT (091914) | Total Recoverable | Water | 3005A | |
| LCS 240-147975/2-A | Lab Control Sample | Total Recoverable | Water | 3005A | |
| MB 240-147975/1-A | Method Blank | Total Recoverable | Water | 3005A | |

### Analysis Batch: 148339

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 240-42187-1 | TW98-110WT (091814) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-1 MS | TW98-110WT (091814) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-1 MSD | TW98-110WT (091814) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-2 | TW98-111 WT(091814) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-3 | MW04-123WT (091914) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-4 | DUP-01 (091914) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-5 | TW98-109WT (091914) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-6 | MW04-124WT (091914) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-7 | MW01-118WT (091914) | Total Recoverable | Water | 6020 | 147975 |
| 240-42187-8 | MW04-122WT (091914) | Total Recoverable | Water | 6020 | 147975 |
| LCS 240-147975/2-A | Lab Control Sample | Total Recoverable | Water | 6020 | 147975 |
| MB 240-147975/1-A | Method Blank | Total Recoverable | Water | 6020 | 147975 |

## Client Sample ID: TW98-110WT (091814)

**Lab Sample ID: 240-42187-1**

**Date Collected: 09/18/14 14:45**

**Matrix: Water**

**Date Received: 09/20/14 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Prep | 3005A | | | 147975 | 09/22/14 09:26 | WAL | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 148339 | 09/24/14 01:46 | KLC | TAL CAN |

## Client Sample ID: TW98-111 WT(091814)

**Lab Sample ID: 240-42187-2**

**Date Collected: 09/18/14 17:55**

**Matrix: Water**

**Date Received: 09/20/14 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Prep | 3005A | | | 147975 | 09/22/14 09:26 | WAL | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 148339 | 09/24/14 02:22 | KLC | TAL CAN |

## Client Sample ID: MW04-123WT (091914)

**Lab Sample ID: 240-42187-3**

**Date Collected: 09/19/14 11:00**

**Matrix: Water**

**Date Received: 09/20/14 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Prep | 3005A | | | 147975 | 09/22/14 09:26 | WAL | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 148339 | 09/24/14 02:29 | KLC | TAL CAN |

## Client Sample ID: DUP-01 (091914)

**Lab Sample ID: 240-42187-4**

**Date Collected: 09/19/14 00:00**

**Matrix: Water**

**Date Received: 09/20/14 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Prep | 3005A | | | 147975 | 09/22/14 09:26 | WAL | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 148339 | 09/24/14 02:36 | KLC | TAL CAN |

## Client Sample ID: TW98-109WT (091914)

**Lab Sample ID: 240-42187-5**

**Date Collected: 09/19/14 12:00**

**Matrix: Water**

**Date Received: 09/20/14 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Prep | 3005A | | | 147975 | 09/22/14 09:26 | WAL | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 148339 | 09/24/14 02:58 | KLC | TAL CAN |

## Client Sample ID: MW04-124WT (091914)

**Lab Sample ID: 240-42187-6**

**Date Collected: 09/19/14 12:55**

**Matrix: Water**

**Date Received: 09/20/14 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Prep | 3005A | | | 147975 | 09/22/14 09:26 | WAL | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 148339 | 09/24/14 03:05 | KLC | TAL CAN |

# Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

## Client Sample ID: MW01-118WT (091914)

**Lab Sample ID: 240-42187-7**

**Date Collected: 09/19/14 12:20**

**Matrix: Water**

**Date Received: 09/20/14 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Prep | 3005A | | | 147975 | 09/22/14 09:26 | WAL | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 148339 | 09/24/14 03:12 | KLC | TAL CAN |

## Client Sample ID: MW04-122WT (091914)

**Lab Sample ID: 240-42187-8**

**Date Collected: 09/19/14 13:00**

**Matrix: Water**

**Date Received: 09/20/14 09:40**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|
| Total Recoverable | Prep | 3005A | | | 147975 | 09/22/14 09:26 | WAL | TAL CAN |
| Total Recoverable | Analysis | 6020 | | 1 | 148339 | 09/24/14 03:19 | KLC | TAL CAN |

**Laboratory References:**

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

# Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: RACER Saginaw Plant II - B0086991.2014

TestAmerica Job ID: 240-42187-1

## Laboratory: TestAmerica Canton

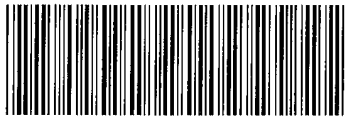
All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority | Program | EPA Region | Certification ID | Expiration Date |
|---|---|---|---|---|
| California | NELAP | 9 | 01144CA | 06-30-14 * |
| California | State Program | 9 | 2927 | 04-30-15 |
| Connecticut | State Program | 1 | PH-0590 | 12-31-14 |
| Florida | NELAP | 4 | E87225 | 06-30-15 |
| Georgia | State Program | 4 | N/A | 06-30-15 |
| Illinois | NELAP | 5 | 200004 | 07-31-15 |
| Kansas | NELAP | 7 | E-10336 | 01-31-15 |
| Kentucky (UST) | State Program | 4 | 58 | 06-30-15 |
| L-A-B | DoD ELAP | | L2315 | 07-18-16 |
| Minnesota | NELAP | 5 | 039-999-348 | 12-31-14 |
| Nevada | State Program | 9 | OH-000482008A | 07-31-15 |
| New Jersey | NELAP | 2 | OH001 | 06-30-15 |
| New York | NELAP | 2 | 10975 | 03-31-15 |
| Ohio VAP | State Program | 5 | CL0024 | 10-31-15 |
| Pennsylvania | NELAP | 3 | 68-00340 | 08-31-15 |
| Texas | NELAP | 6 | | 08-31-15 |
| USDA | Federal | | P330-13-00319 | 11-26-16 |
| Virginia | NELAP | 3 | 460175 | 09-14-15 |
| Washington | State Program | 10 | C971 | 01-12-15 |
| West Virginia DEP | State Program | 3 | 210 | 12-31-14 |
| Wisconsin | State Program | 5 | 999518190 | 08-31-15 |

* Certification renewal pending - certification considered valid.

TestAmerica Laboratories, Inc.

# CHAIN OF CUSTODY
# AND
# RECEIVING DOCUMENTS



240-42187 Chain of Custody

# Login Container Summary Report



Temperature readings: _____

| Client Sample ID | Lab ID | Container Type | Container pH | Preservative Added (mls) | Lot # |
|---|---|---|---|---|---|
| TW98-110WT (091814) | 240-42187-A-1 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |
| TW98-110WT (091814) | 240-42187-B-1 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |
| TW98-111 WT(091814) | 240-42187-A-2 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |
| MW04-123WT (091914) | 240-42187-A-3 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |
| DUP-01 (091914) | 240-42187-A-4 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |
| TW98-109WT (091914) | 240-42187-A-5 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |
| MW04-124WT (091914) | 240-42187-A-6 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |
| MW01-118WT (091914) | 240-42187-A-7 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |
| MW04-122WT (091914) | 240-42187-A-8 | Plastic 500ml - with Nitric Acid | <2 | _____ | _____ |

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

1,6

# Chain of Custody Record

055402

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

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

| Client Contact | Project Manager: K. Tempkin | Site Contact: J. Ness | Date: 9/18/14 | COC No: |
|---|---|---|---|---|
| Company Name: ARCADIS | Tel/Fax: 248 994 2320 | Lab Contact: D. Heckler | Carrier: TestAmerica | 1 of 1 COCs |
| Address: 28550 Cabot Dr Suite 500 | Analysis Turnaround Time | | | Sampler: J. Ness / B. O'Leary |
| City/State/Zip: Novi, MI 48377 | ☒ CALENDAR DAYS ☐ WORKING DAYS | | | For Lab Use Only: |
| Phone: 248 994 2240 | TAT if different from Below Standard | | | Walk-in Client: |
| Fax: 248 994 2241 | ☒ 2 weeks | | | Lab Sampling: |
| Project Name: RACER Saginaw Plant II | ☐ 1 week | | | |
| Site: RACER Trust | ☐ 2 days | | | Job / SDG No.: |
| P O # NA | ☐ 1 day | | | TA # 240068 24 |

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=Grab) | Matrix | # of Cont. | Filtered Sample (Y / N) | Perform MS / MSD (Y / N) | TAL Metals | Sample Specific Notes: |
|---|---|---|---|---|---|---|---|---|---|
| TW98-110WT(091814) | 9/18/14 | 1440 | G | W | 1 | N | N | X | |
| TW98-110WT(091814) MS/MSD | 9/18/14 | 1445 | | | 1 | N | Y | X | MS/MSD |
| TW98-111WT(091814) | 9/18/14 | 1755 | | | 1 | N | N | X | |
| MW04-123WT(091914) | 9/19/14 | 1100 | | | 1 | N | N | X | |
| DUP-01(091914) | — | — | | | 1 | N | N | X | |
| TW98-109WT(091914) | 9/19/14 | 1200 | | | 1 | N | N | X | |
| MW04-124WT(091914) | | 1255 | | | 1 | N | N | X | |
| MW01-118WT(091914) | | 1220 | | | 1 | N | N | X | |
| MW04-122WT(091914) | | 1300 | | | 1 | N | N | X | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Michigan
190

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

**Possible Hazard Identification:**
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**

☐ Return to Client ☒ Disposal by Lab ☐ Archive for_____ Months

**Special Instructions/QC Requirements & Comments:**

Standard TAT. All samples immediately packed on ice.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: |
|---|---|---|---|---|---|
| James Ness | ARCADIS | 9/18/14 1400 | | TAL | 9/19/14 14:00 |
| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: |
| | TAL | 9/19/14 15:15 | | | |
| Relinquished by: | Company: | Date/Time: | Received in Laboratory by: | Company: | Date/Time: |
| | | | | TBCANTON | 9/20/14 9:40 |

TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : 92187

Client ARCADIS Site Name RACER Trust

Cooler unpacked by: Heather Powell

Cooler Received on 9/20/14 Opened on 9/20/14

FedEx: 1st Grd (Exp) UPS FAS Stetson Client Drop Off TestAmerica Courier Other

TestAmerica Cooler # 510-48-429 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 +2 °C) | Observed Cooler Temp. ____ °C | Corrected Cooler Temp. ____ °C | ☐ See Multiple Cooler Form |
| IR GUN# 4 | (CF -2 °C) | Observed Cooler Temp. ____ °C | Corrected Cooler Temp. ____ °C | |
| IR GUN# 5 | (CF 0 °C) | Observed Cooler Temp. ____ °C | Corrected Cooler Temp. ____ °C | |
| IR GUN# 8 | (CF 0 °C) | Observed Cooler Temp. 1.6 °C | Corrected Cooler Temp. 1.6 °C | |

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 2 (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# HC412469
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): _____