

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

Subject:
Annual Progress Report – December 2011 through November 2012
RACER Trust Saginaw Malleable Iron (SMI) Plant Property and
Green Point Landfill Property
Saginaw, Michigan

Dear Ms. Kaelber-Matlock:

This annual progress report presents a summary of the work activities conducted during the period of December 2011 through November 2012 for the above-referenced Site. This progress report also provides a summary of the work activities anticipated for the next 12 month period. A December 15, 2012, submittal date for this report was established by the Michigan Department of Environmental Quality (MDEQ) in an email exchange with Ms. Susan Kaelber-Matlock dated October 12, 2011.

Key Correspondence

The key deliverables submitted to the MDEQ, EPA, or City of Saginaw are as follows:

- The annual progress report for October 2010 through November 2011 was submitted to you on December 15, 2011. The annual report was submitted in letter format by Lisa Coffey of ARCADIS on behalf of RACER Trust. The annual report included a summary of the site activities completed and presented data from the September 2011 groundwater monitoring events at the SMI and Green Point Landfill properties.
- An email dated March 13, 2012, was sent by Jason Casteel of the City of Saginaw responding to RACER's November 18, 2011 letter request to terminate the discharge permit and Consent Order.
- A letter dated May 8, 2012, was sent by Grant Trigger with RACER to the City of Saginaw (Jason Casteel) regarding the Consent Order and the

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ENVIRONMENT

Date:
December 17, 2012

Contact:
Robert Barkholz

Phone:
517.324.5057

Email:
robert.barkholz@
arcadis-us.com

Our ref:
B0050096/B0064434

Imagine the result

request to terminate permit and specifically addressed the bulk-heading that was completed at the Site.

- A letter dated May 9, 2012, was sent by Jason Casteel of the City of Saginaw to RACER issuing a Notice of Violation (NOV) and Significant Non-Compliance (SNC).
- An email dated May 22, 2012, from Rob Barkholz of ARCAIDS to Sue Kaelber-Matlock of MDEQ seeking the acceptability of using the older Part 201 Restrictive Covenant Templates and requesting clarification regarding the requirements for permanent markers.
- A letter dated June 28, 2012, was sent by Glenn Fitkin of Braun Kendrick (legal counsel to the City of Saginaw) to RACER regarding the Consent Order and the request to terminate the permit.
- A letter dated August 8, 2012, was sent by Michael Tomka of CRA on behalf of RACER to U.S. EPA (Jean Greensley) to request risk-based disposal approval pursuant to 40 CFR 761.61(c).
- A letter dated August 22, 2012, was sent by Grant Trigger of RACER to the City of Saginaw (Ms. Mason) providing a compliance plan in response to receipt of the notice of significant non-compliance.
- An email dated August 23, 2012, was sent by Lisa Coffey of ARCADIS Susan Kaelber-Matlock of MDEQ presenting field and analytical data for the September 2011 groundwater sampling events (also transmitted by mail), and discussing the repeated observation of dry wells along the Saginaw River berm at SMI.
- A transmittal dated August 23, 2012, was sent by Lisa Coffey of ARCADIS to Susan Kaelber-Matlock of MDEQ transmitting field sampling logs and the laboratory analytical report for the groundwater sampling event completed in September 2011 at SMI. The data were presented in the December 2011 annual report, and this transmittal included information to complete the project file.
- A transmittal dated August 23, 2012, was sent by Lisa Coffey of ARCADIS to Susan Kaelber-Matlock of MDEQ transmitting field sampling logs and the laboratory analytical report for the groundwater sampling event completed in September 2011 at the Green Point Landfill. The data were presented in the December 2011 annual report, and this transmittal included information to complete the project file.

- A letter dated September 14, 2012, was sent by Grant Trigger of RACER to the City of Saginaw (Ms. Mason) transmitting the quarterly and SIU permit semi-annual monitoring for outfalls CFD-01 and CFD-02 for August 2012 required under the Consent Order.
- An email dated September 14, 2012, from Rob Barkholz of ARCAIDS to Sue Kaebler-Matlock of MDEQ making modifications to the proposed groundwater sampling at the Peninsula Property, expanding the list of metals to be analyzed in samples collected from a reduced set of groundwater monitoring wells.
- A letter dated October 8, 2012, was sent by Grant Trigger of RACER to the City of Saginaw (Ms. Mason) transmitting the quarterly and SIU permit semi-annual monitoring for outfalls CFD-01 and CFD-02 for September 2012 required by the Consent Order.
- A letter dated October 18, 2012, was sent by Robert Barkholz of ARCADIS to the MDEQ seeking approval to abandon wells not part of the specified monitoring required under the Remedial Action Plan for the site.
- A permit close-out form dated October 15, 2012, was submitted by the County of Saginaw (Jim Thews), confirming the close-out of the soil erosion permit.

Meetings

- Conference call with U.S. EPA (Peter Ramanauskas) and CRA (Michael Tomka) on December 22, 2011, regarding PCBs in concrete and PCBs in soil beneath the concrete floor slab
- Conference call with U.S. EPA (Jean Greensley) and CRA (Michael Tomka) on September 5, 2012, regarding the request for risk-based disposal approval pursuant to 40 CFR 761.61(c).
- A project status meeting was held on September 6, 2012, between you, an additional representative of the MDEQ (Leonard Lipinski), RACER Trust representatives (Grant Trigger and Dave Favero), and RACER's consultants, CRA (Mike Tomka [by phone]), and ARCADIS (Rob Barkholz).

Site Activities

- During December 2011, electricity was re-routed to the re-located LNAPL building.
- On January 9, 2012, the Quench Area LNAPL Extraction system was commissioned with one automated skimmer pump operating in QPTW-10.
- In the first week of June 2012, work required to close-out the active soil erosion permit was completed.
- Sewer discharge monitoring was completed following correspondence and agreements reached between RACER and the City of Saginaw.
- The newly installed LNAPL recovery system in the Quench Pit area was operated and yielded an LNAPL extraction volume of approximately 50 gallons.
- Monthly Site inspections (including culvert cleaning) and monitoring well measurements for LNAPL.
- Groundwater samples were collected between September 10 and 18, 2012, from eight wells located in the river berm area. Three additional wells (MW-108WT, MW-110WTR, and MW-114WT) that are included in the annual monitoring program were dry and could not be sampled. Summary data tables are included in Appendix A. Wells MW-107WT, MW-111WT, and MW-185WT purged dry upon sampling. The wells were allowed to recharge until the following morning and then were sampled based on discussion with the MDEQ on September 18, 2012. The results are summarized as follows:
 - Polychlorinated biphenyls (PCBs) were detected in the filtered groundwater samples collected from monitoring wells MW-111WT at 0.082 (J) microgram per liter (ug/L) and MW-185WT at 0.041 (J) ug/L. These detections are above the laboratory reporting limits and J qualified, but below the MDEQ criterion. Results for samples collected for total analyses from these wells were non-detect. Samples were collected the following day after the wells had purged dry on the prior day. Turbidity measurements in units of nephelometric turbidity units (NTUs) prior to sampling of the wells were 5.36 NTUs (MW-111WT) and 27.7 NTUs (MW-185WT). It is pertinent to also note that the rinse blank sample that was collected by pumping laboratory-provided deionized water through unused tubing had a PCB result of 0.11 ug/L (see page 24 of the laboratory analytical package for Saginaw Malleable Iron included as Appendix

- C). New tubing was used for sampling each well, to reduce the potential for cross contamination occurring as a consequence of tubing used for sampling.
- Arsenic was detected above the groundwater surface water interface (GSI) criterion, but within acceptable concentrations established through the site mixing zone at well MW-149WT located at the north end of the river berm area.
 - Remaining results were non-detect or below applicable criteria.
 - ARCADIS recommends that groundwater monitoring and sampling be continued consistent with the approved monitoring program in the Remedial Action Plan (RAP).
- Thirteen of the fourteen wells included in the annual Green Point Landfill groundwater monitoring program were sampled on September 10 through September 18, 2012. The remaining well (X-4AR) was dry and could not be sampled. Summary data tables are included in Appendix B. Results are summarized as follows:
 - Mercury was detected in samples collected from monitoring wells upgradient of the Saginaw River in MW-117WT at 0.00014 (J) milligrams per Liter (mg/L) and in MW-118WT at 0.00017 (J) mg/L. The mercury concentrations were above the GSI criterion, but below the analytical reporting limit, and were (J) qualified. Mercury was also detected in monitoring well X-9CAUG, located adjacent to the river, at a concentration of 0.00012 (J) mg/L. The mercury concentration is above the GSI criterion, but below the analytical reporting limit and is J qualified).
 - Barium was detected at a concentration above the GSI criterion at the MW-117 monitoring well cluster. Lower barium concentrations, below the GSI criterion, were detected in samples collected from monitoring wells located adjacent to the Saginaw River (i.e. X-4 and X-9 monitoring well clusters).
 - Cyanide was detected at a concentration above the GSI criterion in the sample collected from MW-118SI; however, cyanide was not detected in samples collected from monitoring wells located adjacent to the river.
 - Arsenic was detected at a concentration above the GSI criterion in the sample collected at monitoring well X-10BR; however, lower

arsenic concentrations, below the GSI criterion, were detected at monitoring wells located adjacent to the river (i.e. X-4 and X-9 monitoring well clusters).

- Remaining results were either non-detect concentrations or were below applicable criteria.
- One well located in the south-west portion of the Green Point Landfill property (TWW-1) was sampled on September 14, 2012. This well is included in the annual monitoring program due to the discharge of volatile organic compounds to the subsurface from the neighboring property to the west. Trichloroethene, 1,1-dichloroethane, cis-1,2-dichloroethene (cis-1,2-DCE) and trans-1,2-dichloroethene were detected above laboratory detection limits, but below GSI criteria. Note that the concentration of cis-1,2-DCE in 2012 was an order of magnitude lower than the previously detected concentration in 2011 that exceeded the GSI criterion. Vinyl chloride was detected at a concentration of 40 micrograms per liter (ug/L), which is above the GSI criterion of 13 ug/L; however, the concentrations of vinyl chloride detected since September 2010 appear to be decreasing.
- Sampling logs and full analytical data packages for the September 2012 groundwater sampling events are provided in Appendix C.
- A Green Point Landfill Cap inspection was completed on September 10, 2012. No issues were found requiring maintenance response action.
- ARCADIS recommends that groundwater monitoring and sampling be continued consistent with the approved monitoring program in the Remedial Action Plan (RAP).

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 2012 through November 2013:

- An evaluation of the efficiency of the LNAPL extraction system will be made.
- Portions of the concrete slab that contain elevated concentrations of PCBs will be removed and appropriately disposed in accordance with applicable regulations.

- On-going Site OMM (Site inspection including culvert cleaning and LNAPL measurements).
- Assessment and support will be provided to RACTER in relation to termination of the Consent order and discharge monitoring.
- A deed restriction for the slab area will be developed, and the previously developed deed restrictions will be modified as needed based on current site conditions (task is in progress), submitted for MDEQ review, and filed.
- The planned construction and written content of permanent markers will be revisited and discussed with the MDEQ. Permanent markers will be installed.
- Annual groundwater monitoring in the vicinity of the Green Point Landfill and along the Saginaw River berm, as described in the RAP will be completed. Three of the monitoring wells included in the sampling program along the Saginaw River Berm (MW-108WT, MW110WTR, and MW-114WT) have been dry during the past three monitoring events, and may no longer be viable wells for understanding groundwater quality along the river berm area. An assessment will be made as to the necessity for replacement or abandonment of these wells.
- Completion of an inspection of the Green Point Landfill cap.
- Removal of a drain tile serving as a migration pathway for VOCs in water from an adjacent property.
- Abandonment of 58 two-inch diameter groundwater monitoring wells that are not associated with the long-term monitoring program.

Please contact me at 517-324-5057 if you have any questions regarding the enclosed report or its attachments.

Sincerely,

ARCADIS



Robert A. Barkholz
Principal Environmental Engineer

Attachments:

Figures

Appendix A

Appendix B

Copies:

John Fordell Leone, Department of Attorney General

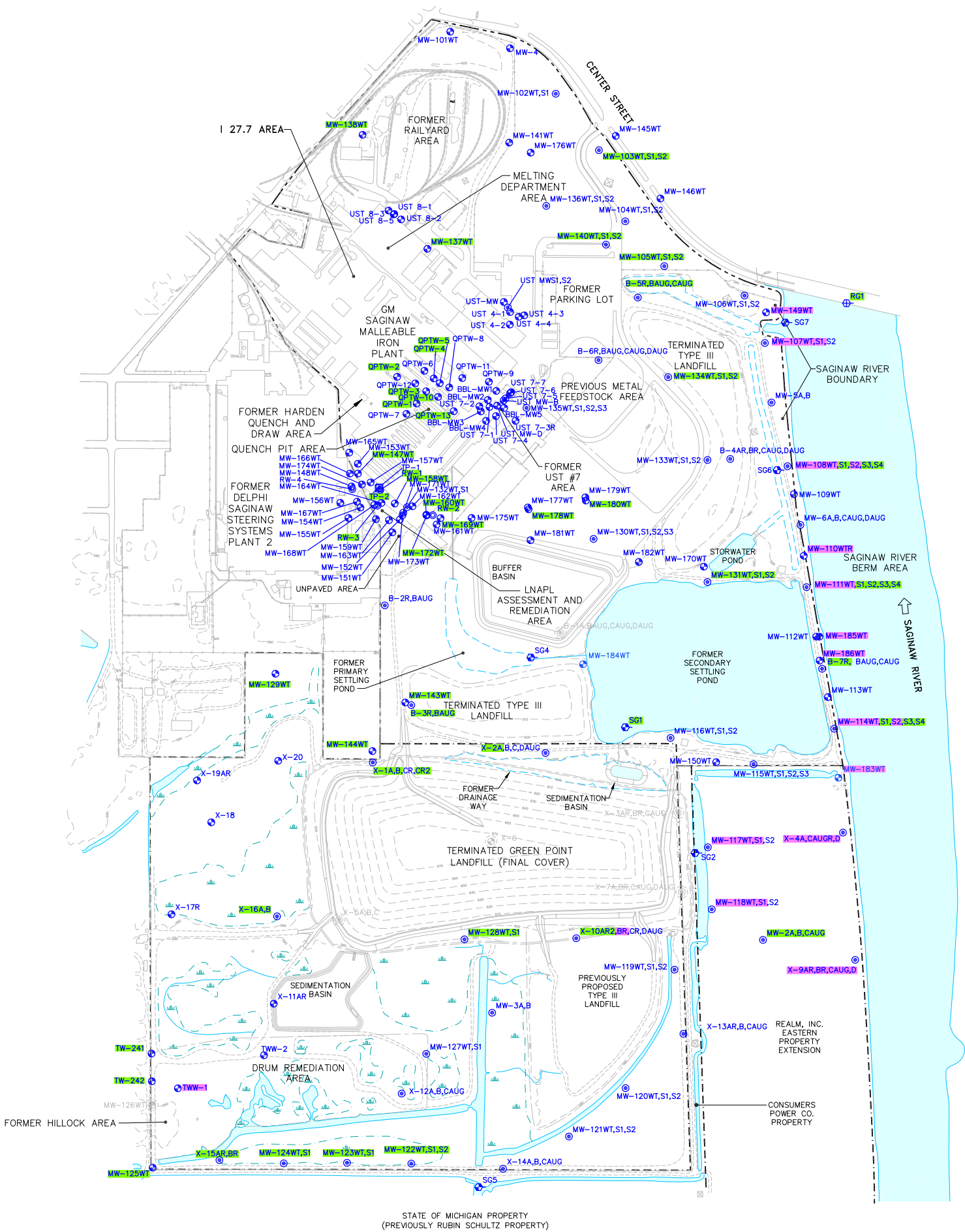
Grant Trigger, RACER

David Favero, RACER

Mike Tomka, CRA

Figures

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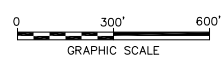


STATE OF MICHIGAN PROPERTY
(PREVIOUSLY RUBIN SCHULTZ PROPERTY)

- LEGEND:**
- GM SAGINAW MALLEABLE IRON PLANT PROPERTY LINE (APPROX.)
 - REALM, INC. PROPERTY LINE (APPROX.)
 - UNPAVED ROAD
 - GROUND SURFACE ELEVATION CONTOUR (10 FT INTERVAL)
 - FENCE LINE
 - SWAMPY AREA
 - MONITORING WELL
 - MONITORING WELL CLUSTER
 - STAFF GAUGE
 - PIEZOMETER
 - RECOVERY WELL
 - ABANDONED MONITORING WELL
 - ABANDONED MONITORING WELL CLUSTER
 - RIVER GAUGE

**RAP (7/31/08)
MONITORING PROGRAM; REVISED 12/08**

- SAMPLING AND GROUNDWATER ELEVATION MEASUREMENT LOCATION
- LNAPL AND/OR GROUNDWATER ELEVATION MEASUREMENT LOCATION



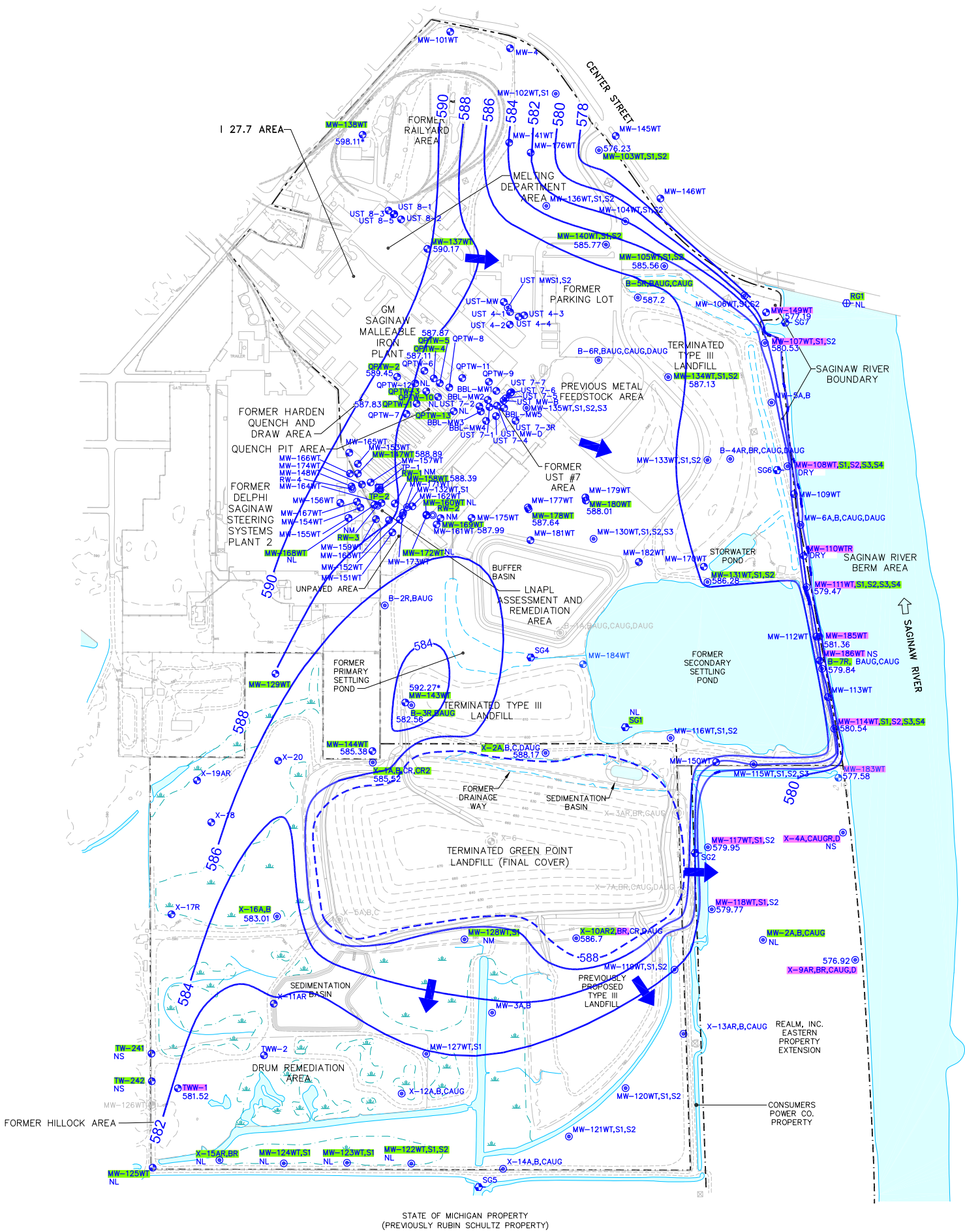
- NOTES:**
- THIS PHOTOGRAMMETRIC BASE MAP FOR THE GM SAGINAW MALLEABLE IRON PLANT AND DELPHI SAGINAW STEERING SYSTEMS PLANT 2 PROPERTIES WAS PREPARED BY LOCKWOOD MAPPING, INC. OF ROCHESTER, NEW YORK. AERIAL PHOTOGRAPHY WAS CONDUCTED ON 11/11/94. ORIGINAL LOCKWOOD MAP WAS AT A SCALE OF 1"=100' AND WAS INTERPRETED FOR TWO-FOOT CONTOURS.
 - BASE MAP HAS BEEN MODIFIED TO INCORPORATE BUFFER BASIN, SEDIMENTATION BASINS, WETLANDS MITIGATION AREA, AND GREEN POINT LANDFILL (GPL) FINAL COVER FROM THE FINAL ENGINEERING DESIGN REPORT PREPARED BY BBL FOR THE GPL, DATED JANUARY 1998.
 - VERTICAL DATUM REFERENCED TO NGVD OF 1929, HORIZONTAL DATUM REFERENCED TO MICHIGAN SPC-NAD 1983.
 - PROPERTY BOUNDARY FOR REALM, INC. DIGITIZED FROM SPICER GROUP DRAWING NO. A-21854-1, DATED 3/27/98.
 - BASE MAP INFORMATION SOUTH OF MAIN REALM, INC. PROPERTY LINE FROM AIR-LAND SURVEYS, INC. PHOTO DATE 11/90, MAPPING DATE 10/91.

SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SITE MAP



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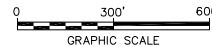
STATE OF MICHIGAN PROPERTY
(PREVIOUSLY RUBIN SCHULTZ PROPERTY)

LEGEND:

- GM SAGINAW MALLEABLE IRON PLANT PROPERTY LINE (APPROX.)
- - - REALM, INC. PROPERTY LINE (APPROX.)
- UNPAVED ROAD
- GROUND SURFACE ELEVATION CONTOUR (10 FT INTERVAL)
- FENCE LINE
- SWAMPY AREA
- MW-125WT MONITORING WELL
- MW-2A,B,CAUG MONITORING WELL CLUSTER
- SG5 STAFF GAUGE
- TP-1 PIEZOMETER
- RW-1 RECOVERY WELL
- X-6 ABANDONED MONITORING WELL
- X-5A,B,C ABANDONED MONITORING WELL CLUSTER
- RG1 RIVER GAUGE
- 580.23 GROUNDWATER ELEVATION (FEET AMSL)
- NS NOT SURVEYED
- NL NOT LOCATED
- DRY MONITORING WELL DRY AT TIME OF GAUGING
- 582 GROUNDWATER ELEVATION CONTOUR LINE (FEET AMSL), DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION

RAP (7/31/08)
MONITORING PROGRAM; REVISED 12/08

- SAMPLING AND GROUNDWATER ELEVATION MEASUREMENT LOCATION
- LNAPL AND/OR GROUNDWATER ELEVATION MEASUREMENT LOCATION



NOTES:

- THIS PHOTOGRAMMETRIC BASE MAP FOR THE GM SAGINAW MALLEABLE IRON PLANT AND DELPHI SAGINAW STEERING SYSTEMS PLANT 2 PROPERTIES WAS PREPARED BY LOCKWOOD MAPPING, INC. OF ROCHESTER, NEW YORK. AERIAL PHOTOGRAPHY WAS CONDUCTED ON 11/11/94. ORIGINAL LOCKWOOD MAP WAS AT A SCALE OF 1"=100' AND WAS INTERPRETED FOR TWO-FOOT CONTOURS.
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 - BASE MAP INFORMATION SOUTH OF MAIN REALM, INC. PROPERTY LINE FROM AIR-LAND SURVEYS, INC. PHOTO DATE 11/90, MAPPING DATE 10/91.
 - CONTOURS HAVE BEEN INFERRED IN THE AREA OF THE LANDFILL BASED ON HISTORICAL DATA.
- * ELEVATIONS AT MW-143WT AND MW-138WT WERE NOT USED FOR CONTOURING.
- * MONITORING WELLS MW-128WT NOT MEASURED DUE TO WASP NEST IN WELL; RW-1, RW-2 AND RW-3 NOT MEASURED BECAUSE THE VAULTS WERE FLOODED.

SAGINAW MALLEABLE IRON PLANT PROPERTY,
GREEN POINT LANDFILL, AND DRUM REMEDIATION AREA
SAGINAW, MICHIGAN

SITE-WIDE WATER TABLE ELEVATION
CONTOUR MAP - SEPTEMBER 11, 2012





Appendix A

Green Point Landfill Data Tables

**Table 1. Monitoring Well Construction Summary, 2012 Annual Report
RACER Trust, Green Point Landfill, Saginaw, Michigan**

Well ID	Screen Interval (ft) ¹	Screened Unit/Zone	Well Construction	Date Installed	TIC ² Elevation (ft) ³
MW-117WT	3 - 13	Water table	2" PVC	5/3/95	582.37
MW-117S1	24.2 - 29.2	Lower Sand	2" PVC	5/3/95	583.70
MW-118WT	1.6 - 11.6	Water table	2" PVC	5/2/95	582.98
MW-118S1	23.5 - 28.5	Lower Sand	2" PVC	5/2/95	583.28
MW-183WT	6-16	Water table	2" PVC	7/24/00	588.77
X-4AR	NA-8.3	Water table	2" PVC	NA	NA
X-4CAUGR	14-19	Upper Sand	2" PVC	7/24/07	NA
X-4D	40-45	Lower Sand	2" PVC	7/23/07	NA
X-9AR	3-13	Water table	2" PVC	6/2/80	586.95
X-9BR	26-31	Upper Sand	2" PVC	6/2/80	586.85
X-9CAUG	20-25	Upper Sand	2" PVC	6/2/80	586.62
X-9D	42.5-47.5	Lower Sand	2" PVC	7/23/07	NA
X-10BR	26.3-31.3	Lower Sand	2" PVC	11/6/01	592.67
TWW-1	1.5-6.5	Water table	2" PVC	1/22/97	587.31

Notes:

¹ Depths are in feet below ground surface (bgs). Note that the screened intervals of the MW-128 and X-1 well clusters have been adjusted due to the addition of riser to the wells during landfill capping.

² TIC = Top of inner casing.

³ Elevations are in feet above mean sea level (AMSL).

NA = not applicable/not available.

Table 2. Site-Wide Water Level Measurements, September 11, 2012, 2012 Annual Report
RACER Trust, Green Point Landfill, Saginaw, Michigan

Location	Reference Elevation (feet, AMSL)	Depth to Water (feet)	Groundwater Elevation (feet, AMSL)	Site Area GPL vs SMI
Sampled Monitoring Wells (Green Point Landfill)				
MW-117WT	582.37	2.42	579.95	GPL
MW-117S1	583.7	2.86	580.84	GPL
MW-118WT	582.98	3.21	579.77	GPL
MW-118S1	583.28	2.53	580.75	GPL
MW-183WT	588.77	11.19	577.58	GPL
X-4AR	NA	dry	NA	GPL
X-4CAUGR	NA	8.66	NA	GPL
X-4D	NA	4.11	NA	GPL
X-9AR	586.95	10.03	576.92	GPL
X-9BR	586.85	10.27	576.58	GPL
X-9CAUG	586.62	10.48	576.14	GPL
X-9D	NA	5.15	NA	GPL
X-10BR	592.67	11.82	580.85	GPL
TWW-1	587.31	5.79	581.52	GPL
Sampled Monitoring Wells (Saginaw Malleable Iron Plant Area)				
MW-107WT	590.65	10.12	580.53	SMI
MW-107S1	590.74	13.94	576.8	SMI
MW-108WT	590.53	dry	dry	SMI
MW-108S1	590.24	13.31	576.93	SMI
MW-110WTR	591.52	dry	dry	SMI
MW-111WT	590.95	11.48	579.47	SMI
MW-114WT	591.12	10.58	580.54	SMI
MW-114S2	591.2	13.61	577.59	SMI
MW-149WT	592.27	15.08	577.19	SMI
MW-185WT	588.67	7.31	581.36	SMI
MW-186WT	NA	11.91	NA	SMI
Nearby Monitoring Wells				
B-3R	609.51	8.45	601.06	SMI
B-3BAUG	596.54	13.98	582.56	SMI
B-5BAUG	594.17	13.19	580.98	SMI
B-5CAUG	594.23	13.25	580.98	SMI
B-5R	594.54	7.34	587.2	SMI
B-7R	591.76	11.92	579.84	SMI
MW-103S1	595.75	12.91	582.84	SMI
MW-103S2	596.34	15.66	580.68	SMI
MW-103WT	591.21	14.98	576.23	SMI
MW-105S1	593.67	12.65	581.02	SMI
MW-105S2	593.27	12.25	581.02	SMI
MW-105WT	593.35	7.79	585.56	SMI
MW-108S2	590.26	13.75	576.51	SMI
MW-108S3	589.98	9.04	580.94	SMI
MW-108S4	590.11	9.02	581.09	SMI
MW-111S1	591.14	13.51	577.63	SMI
MW-111S2	591.5	14.19	577.31	SMI
MW-111S3	591.35	9.76	581.59	SMI
MW-111S4	591.66	10.61	581.05	SMI
MW-114S1	591.13	10.96	580.17	SMI
MW-114S3	591.02	9.76	581.26	SMI
MW-114S4	591.14	NA-NF	NA	SMI
MW-122WT	584.97	NA-NF	NA	GPL
MW-122S1	584.97	NA-NF	NA	GPL
MW-122S2	585.13	NA-NF	NA	GPL
MW-123WT	584.53	NA-NF	NA	GPL
MW-124WT	585.94	NA-NF	NA	GPL
MW-124S1	586.41	NA-NF	NA	GPL
MW-125WT	586.98	NA-NF	NA	GPL
MW-128S1	594.99	NA - WASPS	NA	GPL
MW-128WT	594.96	NA - WASPS	NA	GPL
MW-129WT	587.38	NA - NF	NA	GPL
MW-131WT	592.56	6.28	586.28	SMI
MW-131S1	592.75	11.51	581.24	SMI
MW-131S2	592.39	11.18	581.21	SMI

See Notes on Page 2.

Table 2. Site-Wide Water Level Measurements, September 11, 2012, 2012 Annual Report
RACER Trust, Green Point Landfill, Saginaw, Michigan

Location	Reference Elevation (feet, AMSL)	Depth to Water (feet)	Groundwater Elevation (feet, AMSL)	Site Area GPL vs SMI
MW-134WT	594.02	6.89	587.13	SMI
MW-137WT	595.91	5.34	590.57	SMI
MW-138WT	602.39	4.28	598.11	SMI
MW-140WT	595.9	10.13	585.77	SMI
MW-140S1	595.33	14.43	580.9	SMI
MW-143WT	596.52	4.25	592.27	SMI
MW-144WT	593.25	7.87	585.38	SMI
MW-147WT	592.07	3.18	588.89	SMI
MW-158WT	591.78	3.39	588.39	SMI
MW-160WT	591.53	NA-NF	NA	SMI
MW-168WT	592.11	NA-NF	NA	SMI
MW-169WT	591.82	3.83	587.99	SMI
MW-172WT	591.51	NA-NF	NA	SMI
MW-178WT	590.35	2.71	587.64	SMI
MW-180WT	590.67	2.66	588.01	SMI
MW-2A	584.56	NA-NF	NA	GPL
MW-2B	584.56	NA-NF	NA	GPL
MW-2CAUG	585.15	NA-NF	NA	GPL
QPTW-01	591.95	4.12	587.83	SMI
QPTW-02	592.35	2.90	589.45	SMI
QPTW-03	592.13	NA-NF	NA	SMI
QPTW-04	592	4.89	587.11	SMI
QPTW-05	592.13	4.26	587.87	SMI
QPTW-10	592.15	NA-NF	NA	SMI
QPTW-13	592.36	NA-NF	NA	SMI
RG1	NA	NA-NF	NA	SMI
RW-1	NA	Vault Flooded	NA	SMI
RW-2	588.09	Vault Flooded	NA	SMI
RW-3	588.4	Vault Flooded	NA	SMI
SG1	NA	NA-NF	NA	SMI
TP-2	592.12	3.79	588.33	SMI
TW-241	NA	5.07	NA	GPL
TW-242	NA	6.29	NA	GPL
X-10AR2	594.67	4.97	589.7	GPL
X-15AR	584.61	NA-NF	NA	GPL
X-15BR	585.13	NA-NF	NA	GPL
X-16A	587.44	4.43	583.01	GPL
X-16B	587.2	4.47	582.73	GPL
X-1A	597.72	12.20	585.52	GPL
X-1B	597.69	13.39	584.3	GPL
X-1CR2	598.41	12.61	585.8	GPL
X-2A	593.12	4.95	588.17	GPL

Notes:

SMI = Saginaw Malleable Iron Plant

GPL = Green Point Landfill

Elevations are shown in feet above mean sea level (AMSL) relative to the NGVD datum of 1929.

Monitoring wells in the MW-128 and X-1 well clusters were extended during landfill capping activities. Reference elevations shown above are from August 2000 when the wells were resurveyed.

NA = not available.

NF= not found.

Table 3. Laboratory Analytical Plan, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

Well	Standard GPL Sampling List ¹	TCL VOCs	Ultra Low Flow ² Total TAL Metals
MW-117S1	X		
MW-117WT	X		
MW-118S1	X		
MW-118WT	X		
MW-183WT	X		X
X-10BR	X		
X-4A ³	X ³		X ³
X-4CAUGR	X		X
X-4D	X		X
X-9AR	X		X
X-9BR	X		X
X-9CAUG	X		X
X-9D	X		X
TWW-1		X	

Notes:

¹TAL Dissolved Metals plus cyanide, and Indicator Parameters (pH, sulfide, chloride, total dissolved solids, nitrate, nitrite, and ammonia nitrogen).

²Ultra Low Flow sampling refers to the use of a purge and sampling rate of approximately 1 liter per hour, implemented to minimize sample turbidity.

³Monitoring well was dry, and a sample could not be collected.

Table 4. Field Parameters, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

Well ID	Date Sampled	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Temperature (°C)	Turbidity (NTUs)
MW-117S1	10/01/10	1.243	0.21	-82.5	8.14	13.15	1.3
MW-117S1	09/27/11	1.7	1.26	-82.3	6.89	15.7	0.8
MW-117S1	09/13/12	1.310	. ²	-90.3	6.77	15.61	0.42
MW-117WT	10/01/10	8.45	0.11	-90	8.45	16.51	0.9
MW-117WT	09/27/11	9.535	0.68	-103	6.60	13.39	1.1
MW-117WT	09/13/12	10.33	. ²	-77.2	6.23	16.32	0.68
MW-118S1 ¹	09/27/11	1.81	1.19	-91.9	7.02	17.6	0.3
MW-118S1	09/13/12	1.803	3.82	-230.3	6.83	15.83	1.03
MW-118WT	09/30/10	3.435	0.22	-104.2	7.27	14.89	1.8
MW-118WT	09/27/11	3.261	0.71	-92.8	6.43	17.13	0.3
MW-118WT	09/27/11	2.451	1.37	-201.4	6.74	16.99	0.66
MW-183WT	09/28/10	0.633	0.33	-119.6	7.45	13.01	3.5
MW-183WT	09/28/11	0.814	0.26	-128.1	7.73	13.82	1.2
MW-183WT	09/14/12	0.962	0.25	-207.6	7.11	15.30	0.43
TWW-1	09/29/10	3.924	1.15	-54.7	6.99	15.08	9.1
TWW-1	09/21/11	2.89	3.11	-7.1	6.87	18.42	1.2
TWW-1	09/14/12	2.289	. ²	19.0	6.87	19.30	0.59
X-4AR	DRY 2010, 2011, 2012	NA	NA	NA	NA	NA	NA
X-4CAUGR	09/28/10	1.03	0.34	-79.8	7.11	12.29	1.1
X-4CAUGR	09/26/11	0.971	1.17	-97.1	6.96	17.25	1.2
X-4CAUGR	09/14/12	1.050	0.19	-293.7	6.93	11.83	0.48
X-4D	09/28/10	4.58	0.53	-146.7	7.41	13.45	1.3
X-4D	09/26/11	4.897	1.67	-105.7	7.62	15.94	0.0
X-4D	09/14/12	4.884	0.50	-208.1	7.20	11.92	0.4
X-9AR	09/29/10	0.815	0.24	-81.5	7.45	11.44	0.9
X-9AR	09/23/11	1.142	0.38	-114.8	7.09	11.63	0.0
X-9AR	09/12/12	1.056	8.20	-92.7	6.88	14.03	0.45
X-9BR	09/28/10	1.215	0.10	-93.4	7.09	14.53	0.8
X-9BR	09/23/11	1.41	0.20	-113.8	7.13	11.29	0.0
X-9BR	09/12/12	1.358	0.21	-217.9	6.69	14.02	0.97
X-9CAUG	09/28/10	0.995	0.29	-72.3	6.97	12.45	0.1
X-9CAUG	09/23/11	1.07	0.45	-116.9	7.03	12.79	0.0
X-9CAUG	09/12/12	1.132	1.98	-137.1	6.65	21.04	0.76
X-9D	09/28/10	3.257	0.41	-93.2	7.31	12.54	0.1
X-9D	09/23/11	4.27	0.56	-113.8	7.44	11.73	0.0
X-9D	09/12/12	3.510	. ²	-83.1	7.13	14.20	0.10
X-10BR	09/29/10	2.446	0.20	-101.2	6.69	14.17	1.4
X-10BR	09/22/11	1.692	0.79	-88.1	6.87	13.25	4.8
X-10BR	09/14/12	1.953	. ²	-91.6	6.59	14.58	0.42

Notes:

°C = Celsius.

mg/L = milligrams per liter.

mV = millivolts.

Table 4. Field Parameters, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

NTUs = Nephelometric Turbidity Units.

SU = Standard Units.

mS/cm = milliSiemens per centimeter.

NA = not applicable/not available.

1. Monitoring well MW-188S1 was sampled on October 10, 2010 but the sampling log was not found.
2. No reading due to faulty dissolved oxygen sensor.

Table 5. Volatile Organic Compounds in Groundwater, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

Location ID: Date Collected:	MDEQ (2012) GSI	Units	TWW-1 09/29/10	TWW-1 09/21/11	TWW-1 09/14/12
Volatile Organics					
1,1,1-Trichloroethane	89	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,1,2,2-Tetrachloroethane	78(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,1,2-trichloro-1,2,2-trifluoroethane	32	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,1,2-Trichloroethane	330(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,1-Dichloroethane	740	ug/L	ND(71)	ND(77) [ND(77)]	1.7 J [1.6 J]
1,1-Dichloroethene	130	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,2,4-Trichlorobenzene	99(X)	ug/L	ND(360)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,2-Dibromo-3-chloropropane	--	ug/L	ND(71)	ND(150) [ND(150)]	ND(8.0) [ND(8.0)]
1,2-Dibromoethane	5.7(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,2-Dichlorobenzene	13	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,2-Dichloroethane	360(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,2-Dichloropropane	230(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,3-Dichlorobenzene	28	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
1,4-Dichlorobenzene	17	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
2-Butanone	2,200	ug/L	ND(1,800)	ND(770) [ND(770)]	ND(40) [ND(40)]
2-Hexanone	ID	ug/L	ND(3,600)	ND(770) [ND(770)]	ND(40) [ND(40)]
4-Methyl-2-pentanone	ID	ug/L	ND(3,600)	ND(770) [ND(770)]	ND(40) [ND(40)]
Acetone	1,700	ug/L	ND(1,800)	ND(770) [ND(770)]	ND(40) [ND(40)]
Benzene	200(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Bromodichloromethane	ID	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Bromoform	ID	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Bromomethane	35	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Carbon Disulfide	ID	ug/L	ND(360)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Carbon Tetrachloride	45(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Chlorobenzene	25	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Chloroethane	1,100(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Chloroform	350	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Chloromethane	ID	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
cis-1,2-Dichloroethene	620	ug/L	230	1,800 [1,800]	190 [200]
cis-1,3-Dichloropropene	--	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Cyclohexane	--	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Dibromochloromethane	ID	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Dichlorodifluoromethane	ID	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Ethylbenzene	18	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Isopropylbenzene	28	ug/L	ND(360)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Methyl acetate	--	ug/L	ND(710)	ND(770) [ND(770)]	ND(40) [ND(40)]
Methyl cyclohexane	--	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Methyl tert-butyl ether	7,100(X)	ug/L	ND(360)	ND(380) [ND(380)]	ND(20) [ND(20)]
Methylene Chloride	1,500(X)	ug/L	ND(360)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Styrene	80(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Tetrachloroethene	60(X)	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Toluene	270	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
trans-1,2-Dichloroethene	1,500(X)	ug/L	ND(71)	19 [18]	2.2 J [1.3 J]
trans-1,3-Dichloropropene	--	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Trichloroethene	200(X)	ug/L	ND(71)	ND(77) [ND(77)]	0.89 J [ND(4.0)]
Trichlorofluoromethane	NA	ug/L	ND(71)	ND(77) [ND(77)]	ND(4.0) [ND(4.0)]
Vinyl Chloride	13(X)	ug/L	1,700	500 [540]	40 [48]
Total Xylenes	41	ug/L	ND(140)	ND(150) [ND(150)]	ND(8.0) [ND(8.0)]

Table 6. TAL Inorganic Constituents in Groundwater, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-117S1 10/01/10	MW-117S1 09/27/11	MW-117S1 09/13/12	MW-117WT 10/01/10	MW-117WT 09/27/11	MW-117WT 09/13/12	MW-118S1 10/01/10	MW-118S1 09/27/11	MW-118S1 09/13/12	MW-118WT 09/30/10
Inorganics												
Arsenic	0.01	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1.3 (G)	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	4.7 (G,X)	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.0000013	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.005	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	NA	mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Inorganics-Dissolved												
Arsenic (Dissolved)	0.01	mg/L	ND(0.005)	0.0016	0.0016 J	ND(0.005)	0.0025	0.0037	ND(0.005)	0.00058	0.00074	ND(0.005)
Barium (Dissolved)	1.3 (G)	mg/L	1.8 J	2	1.8 B	2.91 J	3.3	3.0 B	0.759 J	0.81	0.710 B	0.571 J
Cyanide (Dissolved)	0.0052	mg/L	ND(0.01)	NA	ND(0.010)	ND(0.01)	NA	ND(0.010)	ND(0.01)	ND(0.010)	0.011	ND(0.01)
Iron (Dissolved)	NA	mg/L	8.98	9.5	8.6	119	130	110	6.57	6.7	5.9	16.9
Manganese (Dissolved)	4.7 (G,X)	mg/L	0.307 J	0.33	0.300	4.36 J	4.7	4.1	0.395 J	0.41	0.400	0.448 J
Mercury (Dissolved)	0.0000013	mg/L	ND(0.0002)	ND(0.0002)	ND(0.00020)	ND(0.0002)	ND(0.0002)	0.00014 J	ND(0.0002)	ND(0.0002)	ND(0.00020)	ND(0.0002)
Selenium (Dissolved)	0.005	mg/L	ND(0.005)	ND(0.005)	ND(0.0050)	ND(0.005)	ND(0.005)	0.00078 J	ND(0.005)	ND(0.005)	ND(0.0050)	ND(0.005)
Sodium (Dissolved)	NA	mg/L	119	120	110	604	560	560 B	129	130	130	216

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-118WT 09/27/11	MW-118WT 09/13/12	MW-183WT 09/28/10	MW-183WT 09/28/11	MW-183WT 09/14/12	X-4CAUGR 09/28/10	X-4CAUGR 09/26/11
Inorganics									
Arsenic	0.01	mg/L	NA	NA	ND(0.00500) [0.00690]	0.00190 [0.00200]	0.0010 [0.00073 J]	ND(0.00500)	0.000740
Barium	1.3 (G)	mg/L	NA	NA	0.0382 BJ [0.0377 BJ]	0.0360 [0.0380]	0.079 B [0.085 B]	0.132 J	0.140
Iron	NA	mg/L	NA	NA	3.85 [3.63]	2.60 [2.60]	2.2 [2.1]	4.93	5.40
Manganese	4.7 (G,X)	mg/L	NA	NA	0.252 [0.248]	0.240 [0.260]	0.400 B [0.440 B^]	0.559	0.620
Mercury	0.0000013	mg/L	NA	NA	ND(0.000200) [ND(0.000200)]	ND(0.000200) [ND(0.000200)]	ND(0.00020) [ND(0.00020)]	ND(0.000200)	ND(0.000200)
Selenium	0.005	mg/L	NA	NA	ND(0.00500) [ND(0.00500)]	ND(0.00500) [ND(0.00500)]	ND(0.0050) [ND(0.0050)]	ND(0.00500)	ND(0.00500)
Sodium	NA	mg/L	NA	NA	84.5 [86.8]	87.0 [93.0]	96 [96]	54.0	44.0
Inorganics-Dissolved									
Arsenic (Dissolved)	0.01	mg/L	0.0011	0.00080 J	ND(0.005) [ND(0.005)]	0.002	0.0014 J	ND(0.005)	0.00045
Barium (Dissolved)	1.3 (G)	mg/L	0.6	0.390	0.0368 BJ [0.037 BJ]	0.039	0.078 B	0.129 J	0.13
Cyanide (Dissolved)	0.0052	mg/L	NA	NA	ND(0.01) [ND(0.01)]	NA	ND(0.010)	ND(0.01)	ND(0.010)
Iron (Dissolved)	NA	mg/L	16	11	3.06 [3.02]	2.6	2.1	5.18	5.0
Manganese (Dissolved)	4.7 (G,X)	mg/L	0.47	0.340	0.243 [0.238]	0.25	0.400 B	0.571	0.59
Mercury (Dissolved)	0.0000013	mg/L	ND(0.0002)	0.00017 J	ND(0.0002) [ND(0.0002)]	ND(0.0002)	ND(0.00020)	ND(0.0002)	ND(0.0002)
Selenium (Dissolved)	0.005	mg/L	ND(0.005)	ND(0.0050)	ND(0.005) [ND(0.005)]	ND(0.005)	0.00078 J	ND(0.005)	ND(0.005)
Sodium (Dissolved)	NA	mg/L	200	140	87.4 [85.6]	94	93	52.3	41

Table 6. TAL Inorganic Constituents in Groundwater, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

Location ID: Date Collected:	MDEQ (2012) GSI	Units	X-4CAUGR 09/14/12	X-4D 09/28/10	X-4D 09/26/11	X-4D 09/14/12	X-9AR 09/29/10	X-9AR 09/23/11	X-9AR 09/12/12	X-9BR 09/28/10	X-9BR 09/23/11	X-9BR 09/12/12
Inorganics												
Arsenic	0.01	mg/L	0.00042 J	ND(0.00500)	0.00110	0.0011	ND(0.00500)	0.000400	0.00043 J	ND(0.00500)	0.000650	0.00094 J
Barium	1.3 (G)	mg/L	0.120 B	0.0997 BJ	0.100	0.086 B	0.113 J	0.200	0.190	0.175 J	0.180	0.170
Iron	NA	mg/L	4.5	1.03	1.40	0.980	6.32	6.60	5.4	3.97	3.70	5.1
Manganese	4.7 (G,X)	mg/L	0.560 B^	0.265	0.190	0.180 B	0.380	0.770	0.790 B^	0.893	0.960	0.900 B^
Mercury	0.0000013	mg/L	ND(0.00020)	ND(0.000200)	ND(0.000200)	ND(0.00020)	ND(0.000200)	0.000150	ND(0.00020)	ND(0.000200)	0.000140	ND(0.00020)
Selenium	0.005	mg/L	ND(0.0050)	ND(0.00500)	ND(0.00500)	ND(0.0050)	ND(0.00500)	ND(0.00500)	ND(0.0050)	ND(0.00500)	ND(0.00500)	ND(0.0050)
Sodium	NA	mg/L	53	699	720	690	55.6	95.0	120	151	140	190
Inorganics-Dissolved												
Arsenic (Dissolved)	0.01	mg/L	0.00040 J	ND(0.005)	0.00094	0.00089 J	ND(0.005)	ND(0.002)	ND(0.0020)	ND(0.005)	0.00063	0.00094 J
Barium (Dissolved)	1.3 (G)	mg/L	0.120 B	0.0989 BJ	0.099	0.087 B	0.116 J	0.2	0.190	0.164 J	0.18	0.160
Cyanide (Dissolved)	0.0052	mg/L	ND(0.010)	ND(0.01)	ND(0.010)	ND(0.010)	ND(0.01)	ND(0.010)	ND(0.010)	ND(0.01)	ND(0.010)	ND(0.010)
Iron (Dissolved)	NA	mg/L	4.4	0.979	1.3	1.0	6.58	6.6	5.5	4.06	3.7	5.3
Manganese (Dissolved)	4.7 (G,X)	mg/L	0.570 B^	0.275	0.18	0.190 B^	0.388	0.75	0.780 B^	0.848	0.96	0.850 B^
Mercury (Dissolved)	0.0000013	mg/L	ND(0.00020)	ND(0.0002)	ND(0.0002)	ND(0.00020)	ND(0.0002)	0.00014	ND(0.00020)	ND(0.0002)	ND(0.0002)	ND(0.00020)
Selenium (Dissolved)	0.005	mg/L	ND(0.0050)	ND(0.005)	ND(0.005)	ND(0.0050)	ND(0.005)	ND(0.005)	ND(0.0050)	ND(0.005)	ND(0.005)	ND(0.0050)
Sodium (Dissolved)	NA	mg/L	54	708	700	690	56.4	91	120	145	140	190

Location ID: Date Collected:	MDEQ (2012) GSI	Units	X-9CAUG 09/28/10	X-9CAUG 09/23/11	X-9CAUG 09/12/12	X-9D 09/28/10	X-9D 09/23/11	X-9D 09/12/12	X-10BR 09/29/10	X-10BR 09/22/11	X-10BR 09/14/12
Inorganics											
Arsenic	0.01	mg/L	ND(0.00500)	0.00150	0.0019 J	ND(0.00500)	0.000640	0.00067 J	NA	NA	NA
Barium	1.3 (G)	mg/L	0.193 J	0.110	0.110 B	0.0930 BJ	0.100	0.084 B	NA	NA	NA
Iron	NA	mg/L	5.42	6.00	4.7	2.93	3.10	2.5	NA	NA	NA
Manganese	4.7 (G,X)	mg/L	0.760	0.350	0.340	0.132	0.130	0.110	NA	NA	NA
Mercury	0.0000013	mg/L	ND(0.000200)	ND(0.000200)	ND(0.00020)	ND(0.000200)	ND(0.000200)	ND(0.00020)	NA	NA	NA
Selenium	0.005	mg/L	ND(0.00500)	ND(0.00500)	0.00068 J	ND(0.00500)	ND(0.00500)	ND(0.0050)	NA	NA	NA
Sodium	NA	mg/L	100	54.0	47	685	690	650	NA	NA	NA
Inorganics-Dissolved											
Arsenic (Dissolved)	0.01	mg/L	ND(0.005)	0.0017	0.00012 J	ND(0.005)	0.00063	0.00083 J	0.0285	0.03	0.027
Barium (Dissolved)	1.3 (G)	mg/L	0.194 J	0.12	0.100 B	0.0903 BJ	0.095	0.088 B	0.581 J	0.63	0.570
Cyanide (Dissolved)	0.0052	mg/L	ND(0.01)	ND(0.010)	ND(0.010)	ND(0.01)	ND(0.010)	ND(0.010)	ND(0.01)	ND(0.010)	ND(0.010)
Iron (Dissolved)	NA	mg/L	5.79	6	5.2	2.67	2.9	2.7	31.7	35	30
Manganese (Dissolved)	4.7 (G,X)	mg/L	0.801	0.35	0.340	0.125	0.12	0.120	0.751	0.75	0.730 B^
Mercury (Dissolved)	0.0000013	mg/L	ND(0.0002)	0.00015	0.00012 J	ND(0.0002)	ND(0.0002)	ND(0.00020)	ND(0.0002)	ND(0.0002)	ND(0.00020)
Selenium (Dissolved)	0.005	mg/L	ND(0.005)	ND(0.005)	ND(0.0050)	ND(0.005)	ND(0.005)	ND(0.0050)	ND(0.005)	ND(0.005)	ND(0.0050)
Sodium (Dissolved)	NA	mg/L	101	55	48	679	650	680	187	190	200

Table 7. Indicator Parameters in Groundwater, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-117S1 10/01/10	MW-117S1 09/27/11	MW-117S1 09/13/12	MW-117WT 10/01/10	MW-117WT 09/27/11	MW-117WT 09/13/12	MW-118S1 10/01/10	MW-118S1 09/27/11	MW-118S1 09/13/12	MW-118WT 09/30/10	MW-118WT 09/27/11	MW-118WT 09/13/12
Miscellaneous														
Chloride	(FF)	mg/L	319	270	270	5,210	4,300	4,600	362	290	290	932	730	410
Nitrate (as N)	ID	mg/L	ND(0.1)	ND(0.10)	ND(0.10)	ND(0.1)	ND(0.10)	ND(0.10)	ND(0.1)	ND(0.10)	ND(0.10)	ND(0.1)	ND(0.10)	ND(0.10)
Nitrite (as N)	NA	mg/L	ND(0.1)	ND(0.10)	ND(0.10)	ND(5 G)	ND(2.5)	ND(5.0)	ND(0.1)	ND(0.10)	ND(0.10)	ND(1 G)	ND(1.0)	ND(0.10)
pH	6.5 to 9.0	SU	7	7.14	6.99	6.5	6.57	6.43	7	7.19	7.10	6.8	6.94	6.95
Sulfate	NA	mg/L	ND(1)	ND(1.0)	ND(1.0)	ND(1)	0.38	0.35 J	ND(1)	ND(1.0)	ND(1.0)	10	5.2	2.3
Total Dissolved Solids (TDS)	500 (EE)	mg/L	940	970	930	7,900	9,800	9,900	970	1,000	960	2,000	2,300	1,300
Ammonia Nitrogen	(CC)	mg/L	6.5	8.4	7.8	64	71	78	6.7	7.9	7.2	34	38	35

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-183WT 09/28/10	MW-183WT 09/28/11	MW-183WT 09/14/12	X-4CAUGR 09/28/10	X-4CAUGR 09/26/11	X-4CAUGR 09/14/12	X-4D 09/28/10	X-4D 09/26/11	X-4D 09/14/12	X-9AR 09/29/10
Miscellaneous												
Chloride	(FF)	mg/L	76.6 [77.4]	63 [63]	36 [46]	123	99	140	1,470	1,400	1,500	52.1
Nitrate (as N)	ID	mg/L	ND(0.1) [ND(0.1)]	ND(0.10) [ND(0.10)]	ND(0.10) [ND(0.10)]	ND(0.1)	ND(0.10)	ND(0.10)	0.13	ND(0.10)	ND(0.50)	ND(0.1)
Nitrite (as N)	NA	mg/L	ND(0.1) [ND(0.1)]	ND(0.10) [ND(0.10)]	ND(0.10) [ND(0.10)]	ND(0.1)	ND(0.10)	ND(0.10)	ND(1 G)	ND(2.0)	ND(0.10)	ND(0.1)
pH	6.5 to 9.0	SU	7.4 [7.4]	7.52 [7.47]	7.42 [7.33]	7	7.24	7.23	7.4	7.47	7.51	7
Sulfate	NA	mg/L	ND(1) [ND(1)]	11 [11]	200 [200]	0.21 B	ND(1.0)	ND(1.0)	122	150	190	0.31 B
Total Dissolved Solids (TDS)	500 (EE)	mg/L	360 [370]	410 [430]	600 [600]	570	570	630	2,500	2,800	2,400	700
Ammonia Nitrogen	(CC)	mg/L	0.8 J [0.8 J]	0.53 [0.55]	0.92 [1.1]	1.9 J	1.8	1.9	6.8 J	9.7	8.3	0.6

Location ID: Date Collected:	MDEQ (2012) GSI	Units	X-9AR 09/23/11	X-9AR 09/12/12	X-9BR 09/28/10	X-9BR 09/23/11	X-9BR 09/12/12	X-9CAUG 09/28/10	X-9CAUG 09/23/11	X-9CAUG 09/12/12	X-9D 09/28/10	X-9D 09/23/11	X-9D 09/12/12	X-10BR 09/29/10
Miscellaneous														
Chloride	(FF)	mg/L	180	180	269	250	280	200	41	34	1,520	1,400	1,400	595
Nitrate (as N)	ID	mg/L	ND(0.10)	ND(0.10)	ND(0.1)	ND(0.10)	ND(0.10)	0.034 B	ND(0.10)	ND(0.10)	ND(0.1)	ND(0.10)	ND(0.10)	ND(0.1)
Nitrite (as N)	NA	mg/L	ND(0.10)	ND(0.10)	ND(0.1)	ND(0.10)	ND(0.10)	ND(0.1)	ND(0.10)	ND(0.10)	ND(1 G)	ND(1.0)	ND(1.0)	ND(0.1)
pH	6.5 to 9.0	SU	7.45	7.15	7	7.50	7.14	7	7.52	7.15	7.3	7.73	7.45	6.7
Sulfate	NA	mg/L	ND(1.0)	ND(1.0)	ND(1)	ND(1.0)	ND(1.0)	0.26 B	0.31	ND(1.0)	220	220	200	ND(1)
Total Dissolved Solids (TDS)	500 (EE)	mg/L	750	820	880	900	980	750	690	680	2,400	2,700	2,600	1,400
Ammonia Nitrogen	(CC)	mg/L	4.3	5.0	2.9 J	6.7	7.3	4.4 J	0.55	0.69	7.4 J	8.6	7.7	4.8

Location ID: Date Collected:	MDEQ (2012) GSI	Units	X-10BR 09/22/11	X-10BR 09/14/12
Miscellaneous				
Chloride	(FF)	mg/L	540	620
Nitrate (as N)	ID	mg/L	ND(0.050)	ND(0.10)
Nitrite (as N)	NA	mg/L	ND(0.10)	ND(0.10)
pH	6.5 to 9.0	SU	6.85	6.84
Sulfate	NA	mg/L	0.36	0.59 J
Total Dissolved Solids (TDS)	500 (EE)	mg/L	1,500	1,500
Ammonia Nitrogen	(CC)	mg/L	6.0	7.9

Table 8. Notes For Groundwater Analytical Data Tables, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

General Notes:

Samples were collected by ARCADIS, and submitted to TestAmerica Laboratories in North Canton, Ohio for analysis.
 Duplicate results are presented in brackets.
 Groundwater concentrations are presented in milligrams per liter (mg/L), except where noted.
 * Monitoring well data compared to Groundwater/Surface water Interface (GSI) criteria for locations adjacent to the Saginaw River (MW-183WT, X-4A, X-4CAUGR, X-9AR, X-9BR, X-9CAUG, X-9D).
 The estimated unionized ammonia (NH₃) concentrations calculated for the monitoring wells located adjacent to the Saginaw River are based on the MDEQ default value of 7.2% of total ammonia nitrogen for warm water surface water.
 Shaded cells represent constituent concentrations that exceed Groundwater/Surface Water (GSI) Michigan Part 201 Criteria updated September 28, 2012.
 Bolded values represent a detection.

Data Qualifiers:

ND = Not detected. The value in parentheses represents the associated detection limit.
 NA = Not analyzed for this constituent.
 B = Inorganics: the detected analyte is an estimated value between the instrument detection limit (IDL) and the reporting limit (RL).
 B = Organics: the compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
 BJ = The detected analyte is an estimated concentration between the IDL and the RL.
 U = The constituent was analyzed for but not detected. The associated value is the constituent quantitation limit.
 UJ = The constituent was not detected above the reported sample quantitation limit.
 However, the reported limit is approximate and may or may not represent the actual result.
 D = Concentration is based on a diluted sample analysis.
 J = The compound/constituent was positively identified; however, the associated numerical value is an estimated concentration only.
 R = Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data shall not be used for any qualitative or quantitative purposes.

MDEQ Criteria Qualifiers:

ID = *Inadequate data* to develop criterion.
 NA = Criterion or value is *not available* or, as is the case for Csat, *not applicable*.
 NLV = Hazardous substance is *not likely to volatilize* under most conditions.

- (A) Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 pa 399, mcl 325.1005.
 (B) Background, as defined in R 299.5701(b), may be substituted if higher than the calculated cleanup criterion.
 (C) Value presented is a screening level based on the chemical-specific generic soil saturation concentration since the calculated risk-based criterion is greater than Csat. Concentrations greater than Csat are acceptable cleanup criteria for this pathway where a site-specific demonstration indicates that free-phase material containing a hazardous substance is not present.
 (D) Calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb).
 (E) Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). A notice of aesthetic impact may be employed as an institutional control mechanism if groundwater concentrations exceed the aesthetic drinking water criterion, but do not exceed the applicable health-based drinking water value provided in the following table:

Hazardous Substance	Chemical Abstract Service Number	Residential Health-Based Drinking Water Value (ug/L)	Industrial-Commercial Health-Based Drinking Water Value (ug/L)
Aluminum	7429905	300	4,100
tertiary Amyl methyl ether	994058	910	2,600
Copper	7440508	1,400	4,000
Diethyl ether	60297	3,700	10,000
Ethylbenzene	100414	700	700
Iron	7439896	2,000	5,600
Manganese	7439965	860	2,500
Methyl-tert-butyl ether (MTBE)	1634044	240	690
Toluene	108883	1,000	1,000
1,2,4-Trimethylbenzene	95636	1,000	2,900
1,3,5-Trimethylbenzene	108678	1,000	2,900
Xylenes	1330207	10,000	10,000

MDEQ Criteria Qualifiers (continued):

- (F) Criterion is based on adverse impacts to plant life and phytotoxicity.
 (G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water.
 The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water. Where water hardness exceeds 400 mg CaCO₃/L, use 400 mg CaCO₃/L for the FCV calculation. The FCV formula provides values in units of ug/L or ppb. The generic GSI criterion is the lesser of the calculated FCV, the wildlife value (WV), and the surface water human non-drinking water value (HNDV). The soil GSI protection criteria for these hazardous substances are the greater of the 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.

Hazardous Substance	FCV Formula (ug/L)	FCV Conversion Factor	WV (ug/L)	HNDV (ug/L)
Acetate	7.0362)	NA	NA	1.30E+06

Table 8. Notes For Groundwater Analytical Data Tables, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

Barium ^x	$\text{EXP}(1.0629 \cdot (\text{LnH}) + 1.1869)$	NA	NA	1.60E+05
Beryllium	$\text{EXP}(2.5279 \cdot (\text{LnH}) - 10.7689)$	NA	NA	1,200
Cadmium ^x	$(\text{EXP}(0.7852 \cdot (\text{LnH}) - 2.715)) \cdot \text{CF}$	$1.101672 - ((\text{LnH}) \cdot (0.041838))$	NA	130
Chromium (III) ^x	$(\text{EXP}(0.819 \cdot (\text{LnH}) + 0.6848)) \cdot \text{CF}$	0.86	NA	9,400
Copper	$(\text{EXP}(0.8545 \cdot (\text{LnH}) - 1.702)) \cdot \text{CF}$	0.96	NA	64,000
Lead ^x	$(\text{EXP}(0.9859 \cdot (\text{LnH}) - 1.270)) \cdot \text{CF}$	$1.46203 - ((\text{LnH}) \cdot (0.14571))$	NA	190
Manganese	$\text{EXP}(0.8784 \cdot (\text{LnH}) + 3.5385)$	NA	NA	59,000
Nickel	$(\text{EXP}(0.846 \cdot (\text{LnH}) + 0.0584)) \cdot \text{CF}$	0.997	NA	2.10E+05
Pentachlorophenol ^x	$\text{EXP}(1.005 \cdot (\text{pH}) - 5.134)$	NA	NA	2.8
Zinc	$(\text{EXP}(0.8473 \cdot (\text{LnH}) + 0.884)) \cdot \text{CF}$	0.986	NA	22,000

where,

^x =The GSI criterion developed here may not be protective for surface water that is used as a drinking water source.

- (H) Valence-specific chromium data (Cr III and Cr VI) shall be compared to the corresponding valence-specific cleanup criteria. If both Cr III and Cr VI are present in groundwater, the total concentration of both cannot exceed the drinking water criterion of 100 ug/l. If analytical data are provided for total chromium only, they shall be compared to the cleanup criteria for Cr VI. Cr III soil cleanup criterion for protection of drinking water can only be used at sites where groundwater is prevented from being used as a public water supply, currently and in the future, through an approved land or resource use restriction.
- (I) Hazardous substance may exhibit the characteristic of ignitability as defined in 40 C.F.R. §261.21 (revised as of July 1, 2001),
- (J) Hazardous substance may be present in several isomer forms. Isomer-specific concentrations shall be added together for comparison to criteria.
- (K) Hazardous substance may be flammable or explosive, or both.
- (L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules. The generic residential drinking water criterion of 4 ug/L is linked to the generic residential soil direct contact criterion of 400 mg/kg. A higher concentration in the drinking water, up to the state action level of 15 ug/L, may be allowed as a site-specific remedy and still allow for drinking water use, under Section 20120a(2) of the NREPA if soil concentrations are appropriately lower than 400 mg/kg. If a site-specific criterion is approved based on this subdivision, a notice shall be filed on the deed for all property where the groundwater concentrations will exceed 4 ug/L to provide notice of the potential for unacceptable risk if soil or groundwater concentrations increase. Acceptable combinations of site-specific soil and drinking water concentrations are presented in the following table:

Acceptable Combinations of Lead in Drinking Water and Soil

Drinking Water Concentration (ug/L)	Soil Concentration (mg/kg)
5	386-395
6	376-385
7	376-385
8	366-375
9	356-365
10	346-355
11	336-345
12	336-345
13	326-335
14	316-325
15	306-315

MDEQ Criteria Qualifiers (continued):

- (M) Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit
- (P) Amenable cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with all groundwater criteria. Total cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with soil criteria. Industrial-commercial direct contact criteria may not be protective of the potential for release of hydrogen cyanide gas. Additional land or resource use restrictions may be necessary to protect for the acute inhalation concerns associated with hydrogen cyanide gas.
- (Q) Criteria for carcinogenic polycyclic aromatic hydrocarbons were developed using relative potential potencies to benzo(a)pyrene.
- (R) Hazardous substance may exhibit the characteristic of reactivity as defined in 40 C.F.R. §261.23 (revised as of July 1, 2001)
- (S) Criterion defaults to the hazardous substance-specific water solubility limit.
- (W) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 ug/L. Concentrations of trihalomethanes in soil shall be added together to determine compliance with the drinking water protection criterion of 1,600 ug/kg.
- (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. For a groundwater discharge to the Great Lakes and their connecting waters or discharge in close proximity to a water supply intake in inland surface waters, the generic GSI criterion shall be the surface water human drinking water value (HDV) listed in the table in this footnote, except for those HDV indicated with an asterisk. For HDV with an asterisk, the generic GSI criterion shall be the lowest of the HDV, the WV, and the calculated FCV. see formulas in footnote (G). Soil protection criteria based on the HDV shall be as listed in the table in this footnote, except for those values with an asterisk. Soil GSI protection criteria based on the HDV shall be as listed in the table in this footnote, except for those values with an asterisk. Soil GSI protection criteria for compounds with an asterisk shall be the greater of 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.

Table 8. Notes For Groundwater Analytical Data Tables, 2012 Annual Report, RACER Trust, Green Point Landfill, Saginaw, Michigan

Hazardous Substance	Chemical Abstract Service Number	Surface Water Human Drinking Water Values (HDV) (ug/L)	Soil GSI Protection Criteria (HDV) (ug/L)
Acrylonitrile	107131	2.0 (M); 0.87	100 (M); 17
Alachlor	15972608	3.5	91
Antimony	7440360	2	1,400
Arsenic	7440382	50	23,000
Atrazine	1912249	4.3	86
Barium	7440393	1,900*	*
Benzene	71432	12	240
bis(2-Chloroethyl)ether	111444	1 (M); 0.79	100 (M); 20
Bromate	15541454	10 (M); 0.5	200 (M); 10
Butyl benzyl phthalate	85687	6.9	13,000
Cadmium	7440439	2.5*	*
Carbon tetrachloride	56235	5.6	110
Chloride	16887006	50,000	1.00E+06
Chloroform	67663	77	1,500
Chromium (III)	16065831	120*	*
Cyanazine	21725462	2 (M); 0.93	200 (M); 40
3,3'-Dichlorobenzidine	91941	0.3 (M); 0.14	2,000 (M); 7.7
1,2-Dichloroethane	107062	6	120
1,1-Dichloroethylene	75354	24	480
1,2-Dichloropropane	78875	9.1	180
N,N-Dimethylacetamide	127195	700	14,000
1,4-Dioxane	123911	34	680
Ethylene dibromide	106934	0.05 (M); 0.006	20 (M); 1.0
Ethylene glycol	107211	56,000	1.10E+06
Heptachlor	76448	0.01 (M); 0.0017	NLL
beta-Hexachlorocyclohexane	319857	0.024	20 (M)
Hexachloroethane	67721	5.3	310
Isophorone	78591	310	6,200
Isopropyl alcohol	67630	28,000	5.60E+05
Lead	7439921	14*	*
Manganese	7439965	3600	72,000
Methyl-tert-butyl ether (MTBE)	1634044	100	2,000
Methylene chloride	75092	47	940
Mirex	2385855	0.02 (M); 1.6E-5	NLL
Molybdenum	7439987	120	2,400
Nitrobenzene	98953	4.7	330 (M); 94
Pentachlorophenol	87865	1.8*	*
1,2,4,5-Tetrachlorobenzene	95943	2.8	3,300
1,1,1,2-Tetrachloroethane	630206	19	380
1,1,2,2-Tetrachloroethane	79345	3.2	64
Tetrachloroethylene	127184	11	220
Tetrahydrofuran	109999	350	7,000
Thallium	7440280	2.0 (M); 1.2	2,300
1,1,2-Trichloroethane	79005	12	240
Trichloroethylene	79016	29	580

{AA} = Comparison to these criteria may take into account an evaluation of whether the hazardous substances are adsorbed to particulates rather than dissolved in water and whether filtered groundwater samples were used to evaluate groundwater.

{CC} = Please refer to complete footnotes for MDEQ for Part 201 and 213 Risk-Based Screening Levels dated September 28, 2012.

The estimated unionized ammonia (NH₃) concentrations calculated for the monitoring wells located adjacent to the Saginaw River are based on the MDEQ default value of 7.2% of total ammonia nitrogen for warm water surface water.

{EE} = The following is an applicable generic GSI criterion as required by Section 210120a(15) of the NREPA: total dissolved solids (TDS), GSI criteria = 500 mg/L.

{FF} = The chloride GSI criterion shall be 125 mg/L when the discharge is to surface waters of the state designated as public water supply sources or 50 mg/L when the discharge is to the Great Lakes or connecting waters. Chloride GSI criteria shall not apply for surface waters of the state that are not designated as a public water supply source, however, the TDS criterion is applicable.



Appendix B

Saginaw Malleable Iron Plant Data
Tables

**Table 1. Monitoring Well Construction Summary, 2012 Annual Report
RACER Trust, Saginaw Malleable Iron Plant, Saginaw, Michigan**

Well ID	Screen Interval (ft) ¹	Screened Unit/Zone	Well Construction	Date Installed	TIC ² Elevation (ft) ³
MW-107WT	4-9	Water table	2" PVC	12/23/94	590.65
MW-107S1	12.5-17.5	Upper sand	2" PVC	5/3/95	590.74
MW-108WT	2.5-7.5	Water table	2" PVC	12/21/94	590.53
MW-108S2	22-27	Upper sand	2" PVC	12/21/94	590.26
MW-110WTR	3-8	Water table	2" PVC	11/9/2001	591.52
MW-111WT	5.5-10.5	Water table	2" PVC	1/6/95	590.95
MW-114WT	3.5-8.56	Water table	2" PVC	7/24/07	591.12
MW-114S2	22.5-27.5	Upper sand	2" PVC	7/23/07	591.2
MW-149WT	7-17	Water table	2" PVC	9/21/95	592.27
MW-185WT	3-8	Water table	2" PVC	11/8/2001	588.67
MW-186WT	8-18	Water table	2" PVC	NA	NA

Notes:

¹ Depths are in feet below ground surface (bgs). Note that the screened intervals of the MW-128 and X-1 well clusters have been adjusted due to the addition of riser to the wells during landfill capping.

² TIC = Top of inner casing.

³ Elevations are in feet above mean sea level (AMSL).

NA = not applicable/not available.

Table 2. Site-Wide Water Level Measurements, September 11, 2012, 2012 Annual Report
RACER Trust, Saginaw Malleable Iron Plant, Saginaw, Michigan

Location	Reference Elevation (feet, AMSL)	Depth to Water (feet)	Groundwater Elevation (feet, AMSL)	Site Area GPL vs SMI
Sampled Monitoring Wells (Green Point Landfill)				
MW-117WT	582.37	2.42	579.95	GPL
MW-117S1	583.7	2.86	580.84	GPL
MW-118WT	582.98	3.21	579.77	GPL
MW-118S1	583.28	2.53	580.75	GPL
MW-183WT	588.77	11.19	577.58	GPL
X-4AR	NA	dry	NA	GPL
X-4CAUGR	NA	8.66	NA	GPL
X-4D	NA	4.11	NA	GPL
X-9AR	586.95	10.03	576.92	GPL
X-9BR	586.85	10.27	576.58	GPL
X-9CAUG	586.62	10.48	576.14	GPL
X-9D	NA	5.15	NA	GPL
X-10BR	592.67	11.82	580.85	GPL
TWW-1	587.31	5.79	581.52	GPL
Sampled Monitoring Wells (Saginaw Malleable Iron Plant Area)				
MW-107WT	590.65	10.12	580.53	SMI
MW-107S1	590.74	13.94	576.8	SMI
MW-108WT	590.53	dry	dry	SMI
MW-108S1	590.24	13.31	576.93	SMI
MW-110WTR	591.52	dry	dry	SMI
MW-111WT	590.95	11.48	579.47	SMI
MW-114WT	591.12	10.58	580.54	SMI
MW-114S2	591.2	13.61	577.59	SMI
MW-149WT	592.27	15.08	577.19	SMI
MW-185WT	588.67	7.31	581.36	SMI
MW-186WT	NA	11.91	NA	SMI
Nearby Monitoring Wells				
B-3R	609.51	8.45	601.06	SMI
B-3BAUG	596.54	13.98	582.56	SMI
B-5BAUG	594.17	13.19	580.98	SMI
B-5CAUG	594.23	13.25	580.98	SMI
B-5R	594.54	7.34	587.2	SMI
B-7R	591.76	11.92	579.84	SMI
MW-103S1	595.75	12.91	582.84	SMI
MW-103S2	596.34	15.66	580.68	SMI
MW-103WT	591.21	14.98	576.23	SMI
MW-105S1	593.67	12.65	581.02	SMI
MW-105S2	593.27	12.25	581.02	SMI
MW-105WT	593.35	7.79	585.56	SMI
MW-108S2	590.26	13.75	576.51	SMI
MW-108S3	589.98	9.04	580.94	SMI
MW-108S4	590.11	9.02	581.09	SMI
MW-111S1	591.14	13.51	577.63	SMI
MW-111S2	591.5	14.19	577.31	SMI
MW-111S3	591.35	9.76	581.59	SMI
MW-111S4	591.66	10.61	581.05	SMI
MW-114S1	591.13	10.96	580.17	SMI
MW-114S3	591.02	9.76	581.26	SMI
MW-114S4	591.14	NA-NF	NA	SMI
MW-122WT	584.97	NA-NF	NA	GPL
MW-122S1	584.97	NA-NF	NA	GPL
MW-122S2	585.13	NA-NF	NA	GPL
MW-123WT	584.53	NA-NF	NA	GPL
MW-124WT	585.94	NA-NF	NA	GPL
MW-124S1	586.41	NA-NF	NA	GPL
MW-125WT	586.98	NA-NF	NA	GPL
MW-128S1	594.99	NA - WASPS	NA	GPL
MW-128WT	594.96	NA - WASPS	NA	GPL
MW-129WT	587.38	NA - NF	NA	GPL
MW-131WT	592.56	6.28	586.28	SMI
MW-131S1	592.75	11.51	581.24	SMI
MW-131S2	592.39	11.18	581.21	SMI

See Notes on Page 2.

Table 2. Site-Wide Water Level Measurements, September 11, 2012, 2012 Annual Report
RACER Trust, Saginaw Malleable Iron Plant, Saginaw, Michigan

Location	Reference Elevation (feet, AMSL)	Depth to Water (feet)	Groundwater Elevation (feet, AMSL)	Site Area GPL vs SMI
MW-134WT	594.02	6.89	587.13	SMI
MW-137WT	595.91	5.34	590.57	SMI
MW-138WT	602.39	4.28	598.11	SMI
MW-140WT	595.9	10.13	585.77	SMI
MW-140S1	595.33	14.43	580.9	SMI
MW-143WT	596.52	4.25	592.27	SMI
MW-144WT	593.25	7.87	585.38	SMI
MW-147WT	592.07	3.18	588.89	SMI
MW-158WT	591.78	3.39	588.39	SMI
MW-160WT	591.53	NA-NF	NA	SMI
MW-168WT	592.11	NA-NF	NA	SMI
MW-169WT	591.82	3.83	587.99	SMI
MW-172WT	591.51	NA-NF	NA	SMI
MW-178WT	590.35	2.71	587.64	SMI
MW-180WT	590.67	2.66	588.01	SMI
MW-2A	584.56	NA-NF	NA	GPL
MW-2B	584.56	NA-NF	NA	GPL
MW-2CAUG	585.15	NA-NF	NA	GPL
QPTW-01	591.95	4.12	587.83	SMI
QPTW-02	592.35	2.90	589.45	SMI
QPTW-03	592.13	NA-NF	NA	SMI
QPTW-04	592	4.89	587.11	SMI
QPTW-05	592.13	4.26	587.87	SMI
QPTW-10	592.15	NA-NF	NA	SMI
QPTW-13	592.36	NA-NF	NA	SMI
RG1	NA	NA-NF	NA	SMI
RW-1	NA	Vault Flooded	NA	SMI
RW-2	588.09	Vault Flooded	NA	SMI
RW-3	588.4	Vault Flooded	NA	SMI
SG1	NA	NA-NF	NA	SMI
TP-2	592.12	3.79	588.33	SMI
TW-241	NA	5.07	NA	GPL
TW-242	NA	6.29	NA	GPL
X-10AR2	594.67	4.97	589.7	GPL
X-15AR	584.61	NA-NF	NA	GPL
X-15BR	585.13	NA-NF	NA	GPL
X-16A	587.44	4.43	583.01	GPL
X-16B	587.2	4.47	582.73	GPL
X-1A	597.72	12.20	585.52	GPL
X-1B	597.69	13.39	584.3	GPL
X-1CR2	598.41	12.61	585.8	GPL
X-2A	593.12	4.95	588.17	GPL

Notes:

SMI = Saginaw Malleable Iron Plant

GPL = Green Point Landfill

Elevations are shown in feet above mean sea level (AMSL) relative to the NGVD datum of 1929.

Monitoring wells in the MW-128 and X-1 well clusters were extended during landfill capping activities. Reference elevations shown above are from August 2000 when the wells were resurveyed.

NA = not available.

NF= not found.

Table 3. Laboratory Analytical Plan, 2012 Annual Report, Saginaw Malleable Iron Plant, Saginaw, Michigan

Monitoring Well ID	Summary from RAP (2008)	Ultra Low Flow Location ¹	Phosphorus	Total Arsenic	Total Manganese	Total Thallium	SVOCs	Total PCBs	Dissolved PCBs	TDS
MW-107WT ²	Ammonia nitrogen, phosphorus, DO, total arsenic, total manganese, and total thallium	X	X	X	X	X				
MW-107S1	Ammonia nitrogen									
MW-108WT ⁴	TCL SVOCs, DO, ammonia, phosphorus, and total manganese	X	X		X		X			
MW-108S2	Ammonia nitrogen									
MW-110WTR ⁴	PCBs (total and dissolved,) ammonia nitrogen, phosphorus, DO, TDS, total manganese, and thallium	X	X		X	X		X	X	X
MW-111WT ²	PCBs (total and dissolved), DO, ammonia, phosphorus, total thallium, and total manganese	X	X		X	X		X	X	
MW-114WT ³	PCBs (total and dissolved), ammonia, phosphorus, DO total thallium, and total manganese	X	X		X	X		X	X	
MW-114S2	Ammonia nitrogen									
MW-149WT	Ammonia, phosphorus, total arsenic, and total thallium	X	X	X		X				
MW-185WT ²	PCBs (total and dissolved), ammonia, phosphorus, DO, total manganese, and total thallium.	X	X		X	X		X	X	
MW-186WT	PCBs (total and dissolved), ammonia, phosphorus, DO total thallium, and total manganese	X	X		X	X		X	X	

Notes:

¹Ultra Low Flow sampling refers to the use of a purge and sampling rate of approximately 1 liter per hour, implemented to minimize sample turbidity.

²Monitoring well purged dry upon sampling. Well was allowed to recharge until the following morning and then a sample was collected.

³Monitoring well purged dry upon sampling and did not recharge. Therefore, a sample was not collected.

⁴Monitoring well was dry upon gauging; therefore, a sample was not collected.

Table 4. Field Parameters, 2012 Annual Report, RACER Trust Saginaw Malleable Iron Plant, Saginaw, Michigan

Well ID	Date Sampled	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Temperature (°C)	Turbidity (NTUs)
MW-107S1	09/30/10	1.258	0.4	-104.2	7.54	22.9	0.35
MW-107S1	09/21/11	1.26	0.90	-111.7	7.11	14.93	0.6
MW-107S1	09/17/12	1.109	. ²	-83.0	7.19	15.3	1.02
MW-107WT	DRY 2010 and 2011	NA	NA	NA	NA	NA	NA
MW-107WT ¹	09/18/12	NA	NA	NA	NA	NA	11.0
MW-108S2	09/28/10	1.142	0.12	-116.6	7.52	13.87	0.4
MW-108S2	09/21/11	0.808	0.63	-96.9	7.51	13.87	3.8
MW-108S2	09/17/12	0.901	0.28	-238.8	7.38	13.23	0.83
MW-108WT	DRY 2010, 2011 and 2012	NA	NA	NA	NA	NA	NA
MW-110WTR	DRY 2010, 2011 and 2012	NA	NA	NA	NA	NA	NA
MW-111WT	DRY 2010 and 2011	NA	NA	NA	NA	NA	NA
MW-111WT ¹	09/18/12	NA	NA	NA	NA	NA	5.36
MW-114S2	09/29/10	0.69	0.10	-118.5	8.40	16.43	1.0
MW-114S2	09/22/11	0.929	1.83	-109.6	7.20	16.3	1.1
MW-114S2	09/18/12	0.809	7.67	-21.1	7.25	14.25	3.47
MW-114WT	DRY 2010, 2011 and 2012	NA	NA	NA	NA	NA	NA
MW-149WT	09/30/10	1.395	0.53	-133.4	6.91	12.79	1.6
MW-149WT	09/28/11	1.441	0.43	-136.6	6.77	13.79	1.7
MW-149WT	09/18/12	1.161	. ²	-75.0	6.73	14.03	0.72
MW-185WT	DRY 2010 and 2011	NA	NA	NA	NA	NA	NA
MW-185WT ¹	09/18/12	NA	NA	NA	NA	NA	27.7
MW-186WT	09/29/10	0.53	0.39	-130.1	7.88	14.52	0.6
MW-186WT	09/28/11	0.94	1.68	-136	8.04	14.18	0.5
MW-186WT	09/18/12	0.748	4.43	-222.8	7.43	15.07	0.60

Notes:

°C = Celsius.

mg/L = milligrams per liter.

mV = millivolts.

NTUs = Nephelometric Turbidity Units.

SU = Standard Units.

mS/cm = milliSiemens per centimeter.

NA = not applicable/not available.

1. Monitoring well purged dry upon sampling. Well was allowed to recharge until the following morning and then a sample was collected. Only turbidity was measured prior to sampling.
2. No reading due to faulty dissolved oxygen sensor.

Table 5. PCBs in Groundwater, 2012 Annual Report, Saginaw Malleable Iron Plant, Saginaw, Michigan

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-111WT 09/18/12	MW-185WT 09/18/12	MW-186WT 09/30/10	MW-186WT 09/23/11
PCBs						
Aroclor-1016	--	ug/L	ND(0.098)*	ND(0.096)*	ND(0.10)	ND(0.095)
Aroclor-1221	--	ug/L	ND(0.098)	ND(0.096)	ND(0.10)	ND(0.095)
Aroclor-1232	--	ug/L	ND(0.098)	ND(0.096)	ND(0.10)	ND(0.095)
Aroclor-1242	--	ug/L	ND(0.098)	ND(0.096)	ND(0.10)	ND(0.095)
Aroclor-1248	--	ug/L	ND(0.098)	ND(0.096)	ND(0.10)	ND(0.095)
Aroclor-1254	--	ug/L	ND(0.098)	ND(0.096)	ND(0.10)	ND(0.095)
Aroclor-1260	--	ug/L	ND(0.098)*	ND(0.096)*	ND(0.10)	ND(0.095)
Total PCBs	0.2(M)	ug/L	ND(0.098)	ND(0.096)	ND(0.10)	ND(0.095)
PCBs-Dissolved						
Aroclor-1016 (Dissolved)	--	ug/L	ND(0.096)*	ND(0.095)*	ND(0.1)	ND(0.095)
Aroclor-1221 (Dissolved)	--	ug/L	ND(0.096)	ND(0.095)	ND(0.1)	ND(0.095)
Aroclor-1232 (Dissolved)	--	ug/L	ND(0.096)	ND(0.095)	ND(0.1)	ND(0.095)
Aroclor-1242 (Dissolved)	--	ug/L	ND(0.096)	ND(0.095)	ND(0.1)	ND(0.095)
Aroclor-1248 (Dissolved)	--	ug/L	0.082 J	ND(0.095)	ND(0.1)	ND(0.095)
Aroclor-1254 (Dissolved)	--	ug/L	ND(0.096)	ND(0.095)	ND(0.1)	ND(0.095)
Aroclor-1260 (Dissolved)	--	ug/L	ND(0.096)*	0.041 J*	ND(0.1)	ND(0.095)
Total PCBs (Dissolved)	0.2(M)	ug/L	0.082 J	0.041 J	ND(0.1)	ND(0.095)

Table 6. TAL Inorganic Constituents in Groundwater, 2012 Annual Report, Saginaw Malleable Iron Plant, Saginaw, Michigan

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-107WT 09/18/12	MW-111WT 09/18/12	MW-149WT 09/30/10	MW-149WT 09/28/11
Inorganics						
Arsenic	0.01	mg/L	0.0011 J	NA	0.126 [0.122]	0.190 [0.180]
Manganese	4.7 (G,X)	mg/L	0.170	3.6	NA	NA
Thallium	0.0037(X)	mg/L	0.00046 J,B	0.00024 J,B	ND(0.00100) [ND(0.00100)]	0.000840 [0.000170]

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-149WT 09/18/12	MW-185WT 09/18/12	MW-186WT 09/30/10	MW-186WT 09/23/11
Inorganics						
Arsenic	0.01	mg/L	0.160 [0.160]	NA	NA	NA
Manganese	4.7 (G,X)	mg/L	NA	0.700	0.252	0.450
Thallium	0.0037(X)	mg/L	0.00065 J [0.00032 J,B]	0.00015 J,B	ND(0.00100)	ND(0.00100)

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-186WT 09/18/12
Inorganics			
Arsenic	0.01	mg/L	NA
Manganese	4.7 (G,X)	mg/L	0.400
Thallium	0.0037(X)	mg/L	ND(0.0010)

Table 7. Indicator Parameters in Groundwater, 2012 Annual Report, Saginaw Malleable Iron Plant, Saginaw, Michigan

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-107WT 09/18/12	MW-107S1 09/30/10	MW-107S1 09/21/11	MW-107S1 09/17/12	MW-108S2 09/29/10	MW-108S2 09/21/11	MW-108S2 09/17/12	MW-111WT 09/18/12	MW-114S2 09/29/10	MW-114S2 09/22/11
Miscellaneous												
Phosphorus (Total)	1.0	mg/L	ND(0.10)	NA	NA	NA	NA	NA	NA	0.000087 J	NA	NA
Ammonia Nitrogen	(CC)	mg/L	0.062 J	1.2	1.4	1.4	4.6	4.9	6.2	1.6	2.3 [2.2]	3.0 [3.0]

Location ID: Date Collected:	MDEQ (2012) GSI	Units	MW-114S2 09/18/12	MW-149WT 09/30/10	MW-149WT 09/28/11	MW-149WT 09/18/12	MW-185WT 09/18/12	MW-186WT 09/30/10	MW-186WT 09/23/11	MW-186WT 09/18/12
Miscellaneous										
Phosphorus (Total)	1.0	mg/L	NA	2.2 [1.8]	1.6 [1.6]	2.0 [2.1]	ND(0.10)	0.3	0.36	0.25
Ammonia Nitrogen	(CC)	mg/L	2.9 [2.8]	3.6	4.7	5.0	0.38	1.5	2.1	2.1

Table 8. Notes For Groundwater Analytical Data Tables, 2012 Annual Report, RACER Trust, Saginaw Malleable Iron Plant, Saginaw, Michigan

General Notes:

Samples were collected by ARCADIS, and submitted to TestAmerica Laboratories in North Canton, Ohio for analysis.
 Duplicate results are presented in brackets.
 Groundwater concentrations are presented in milligrams per liter (mg/L), except where noted.
 Monitoring well data compared to Groundwater/Surface water Interface (GSI) criteria for locations adjacent to the Saginaw River (MW-183WT, X-4A, X-4CAUGR, X-9AR, X-9BR, X-9CAUG, X-9D).
 The estimated unionized ammonia (NH₃) concentrations calculated for the monitoring wells located adjacent to the Saginaw River are based on the MDEQ default value of 7.2% of total ammonia nitrogen for warm water surface water.
 Shaded cells represent constituent concentrations that exceed Groundwater/Surface Water (GSI) Michigan Part 201 Criteria updated September 28, 2012.
 Bolded values represent a detection.

Data Qualifiers:

ND = Not detected. The value in parentheses represents the associated detection limit.
 NA = Not analyzed for this constituent.
 B = Inorganics: the detected analyte is an estimated value between the instrument detection limit (IDL) and the reporting limit (RL).
 B = Organics: the compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
 BJ = The detected analyte is an estimated concentration between the IDL and the RL.
 U = The constituent was analyzed for but not detected. The associated value is the constituent quantitation limit.
 UJ = The constituent was not detected above the reported sample quantitation limit.
 However, the reported limit is approximate and may or may not represent the actual result.
 D = Concentration is based on a diluted sample analysis.
 J = The compound/constituent was positively identified; however, the associated numerical value is an estimated concentration only.
 R = Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data shall not be used for any qualitative or quantitative purposes.
 * = LCS or LCSD exceeds the control limits.

MDEQ Criteria Qualifiers:

ID = *Inadequate data* to develop criterion.
 NA = Criterion or value is *not available* or, as is the case for Csat, *not applicable*.
 NLV = Hazardous substance is *not likely to volatilize* under most conditions.

- (A) Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 pa 399, mcl 325.1005.
 (B) Background, as defined in R 299.5701(b), may be substituted if higher than the calculated cleanup criterion.
 (C) Value presented is a screening level based on the chemical-specific generic soil saturation concentration since the calculated risk-based criterion is greater than Csat. Concentrations greater than Csat are acceptable cleanup criteria for this pathway where a site-specific demonstration indicates that free-phase material containing a hazardous substance is not present.
 (D) Calculated criterion exceeds 100 percent, hence it is reduced to 100 percent or 1.0E+9 parts per billion (ppb).
 (E) Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). A notice of aesthetic impact may be employed as an institutional control mechanism if groundwater concentrations exceed the aesthetic drinking water criterion, but do not exceed the applicable health-based drinking water value provided in the following table:

Hazardous Substance	Chemical Abstract Service Number	Residential Health-Based Drinking Water Value (ug/L)	Industrial-Commercial Health-Based Drinking Water Value (ug/L)
Aluminum	7429905	300	4,100
tertiary Amyl methyl ether	994058	910	2,600
Copper	7440508	1,400	4,000
Diethyl ether	60297	3,700	10,000
Ethylbenzene	100414	700	700
Iron	7439896	2,000	5,600
Manganese	7439965	860	2,500
Methyl-tert-butyl ether (MTBE)	1634044	240	690
Toluene	108883	1,000	1,000
1,2,4-Trimethylbenzene	95636	1,000	2,900
1,3,5-Trimethylbenzene	108678	1,000	2,900
Xylenes	1330207	10,000	10,000

MDEQ Criteria Qualifiers (continued):

- (F) Criterion is based on adverse impacts to plant life and phytotoxicity.
 (G) Groundwater surface water interface (GSI) criterion depends on the pH or water hardness, or both, of the receiving surface water.
 The final chronic value (FCV) for the protection of aquatic life shall be calculated based on the pH or hardness of the receiving surface water. Where water hardness exceeds 400 mg CaCO₃/L, use 400 mg CaCO₃/L for the FCV calculation. The FCV formula provides values in units of ug/L or ppb. The generic GSI criterion is the lesser of the calculated FCV, the wildlife value (WV), and the surface water human non-drinking water value (HNDV). The soil GSI protection criteria for these hazardous substances are the greater of the 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.

Table 8. Notes For Groundwater Analytical Data Tables, 2012 Annual Report, RACER Trust, Saginaw Malleable Iron Plant, Saginaw, Michigan

Hazardous Substance	FCV Formula (ug/L)	FCV Conversion Factor	WV (ug/L)	HNDV (ug/L)
Acetate	7.0362)	NA	NA	1.30E+06
Barium ^x	EXP(1.0629*(LnH)+1.1869)	NA	NA	1.60E+05
Beryllium	EXP(2.5279*(LnH)-10.7689)	NA	NA	1,200
Cadmium ^x	(EXP(0.7852*(LnH)-2.715))*CF	1.101672-((LnH)*(0.041838))	NA	130
Chromium (III) ^x	(EXP(0.819*(LnH)+0.6848))*CF	0.86	NA	9,400
Copper	(EXP(0.8545*(LnH)-1.702)) *CF	0.96	NA	64,000
Lead ^x	(EXP(0.9859*(LnH)-1.270))*CF	1.46203-((LnH)*(0.14571))	NA	190
Manganese	EXP(0.8784*(LnH)+3.5385)	NA	NA	59,000
Nickel	(EXP(0.846*(LnH)+0.0584))*CF	0.997	NA	2.10E+05
Pentachlorophenol ^x	EXP(1.005*(pH)-5.134)	NA	NA	2.8
Zinc	(EXP(0.8473*(LnH)+0.884))*CF	0.986	NA	22,000

where,

^x =The GSI criterion developed here may not be protective for surface water that is used as a drinking water source.

- (H) Valence-specific chromium data (Cr III and Cr VI) shall be compared to the corresponding valence-specific cleanup criteria. If both Cr III and Cr VI are present in groundwater, the total concentration of both cannot exceed the drinking water criterion of 100 ug/l. If analytical data are provided for total chromium only, they shall be compared to the cleanup criteria for Cr VI. Cr III soil cleanup criterion for protection of drinking water can only be used at sites where groundwater is prevented from being used as a public water supply, currently and in the future, through an approved land or resource use restriction.
- (I) Hazardous substance may exhibit the characteristic of ignitability as defined in 40 C.F.R. §261.21 (revised as of July 1, 2001),
- (J) Hazardous substance may be present in several isomer forms. Isomer-specific concentrations shall be added together for comparison to criteria.
- (K) Hazardous substance may be flammable or explosive, or both.
- (L) Criteria for lead are derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and are not calculated using the algorithms and assumptions specified in pathway-specific rules. The generic residential drinking water criterion of 4 ug/L is linked to the generic residential soil direct contact criterion of 400 mg/kg. A higher concentration in the drinking water, up to the state action level of 15 ug/L, may be allowed as a site-specific remedy and still allow for drinking water use, under Section 20120a(2) of the NREPA if soil concentrations are appropriately lower than 400 mg/kg. If a site-specific criterion is approved based on this subdivision, a notice shall be filed on the deed for all property where the groundwater concentrations will exceed 4 ug/L to provide notice of the potential for unacceptable risk if soil or groundwater concentrations increase. Acceptable combinations of site-specific soil and drinking water concentrations are presented in the following table:

Acceptable Combinations of Lead in Drinking Water and Soil

Drinking Water Concentration (ug/L)	Soil Concentration (mg/kg)
5	386-395
6	376-385
7	376-385
8	366-375
9	356-365
10	346-355
11	336-345
12	336-345
13	326-335
14	316-325
15	306-315

MDEQ Criteria Qualifiers (continued):

- (M) Calculated criterion is below the analytical target detection limit, therefore, the criterion defaults to the target detection limit
- (P) Amenable cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with all groundwater criteria. Total cyanide methods or method OIA-1677 shall be used to quantify cyanide concentrations for compliance with soil criteria. Industrial-commercial direct contact criteria may not be protective of the potential for release of hydrogen cyanide gas. Additional land or resource use restrictions may be necessary to protect for the acute inhalation concerns associated with hydrogen cyanide gas.
- (Q) Criteria for carcinogenic polycyclic aromatic hydrocarbons were developed using relative potential potencies to benzo(a)pyrene.
- (R) Hazardous substance may exhibit the characteristic of reactivity as defined in 40 C.F.R. §261.23 (revised as of July 1, 2001)
- (S) Criterion defaults to the hazardous substance-specific water solubility limit.
- (V) Concentrations of trihalomethanes in groundwater shall be added together to determine compliance with the Michigan drinking water standard of 80 ug/L. Concentrations of trihalomethanes in soil shall be added together to determine compliance with the drinking water protection criterion of 1,600 ug/kg.
- (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. For a groundwater discharge to the Great Lakes and their connecting waters or discharge in close proximity to a water supply intake in inland surface waters, the generic GSI criterion shall be the surface water human drinking water value (HDV) listed in the table in this footnote, except for those HDV indicated with an asterisk. For HDV with an asterisk, the generic GSI criterion shall be the lowest of the HDV, the WV, and the calculated FCV. see formulas in footnote (G). Soil protection criteria based on the HDV shall be as listed in the table in this footnote, except for those

Table 8. Notes For Groundwater Analytical Data Tables, 2012 Annual Report, RACER Trust, Saginaw Malleable Iron Plant, Saginaw, Michigan

values with an asterisk. Soil GSI protection criteria based on the HDV shall be as listed in the table in this footnote, except for those values with an asterisk. Soil GSI protection criteria for compounds with an asterisk shall be the greater of 20 times the GSI criterion or the GSI soil-water partition values using the GSI criteria developed with the procedure described in this footnote.

Hazardous Substance	Chemical Abstract Service Number	Surface Water Human Drinking Water Values (HDV) (ug/L)	Soil GSI Protection Criteria (HDV) (ug/L)
Acrylonitrile	107131	2.0 (M); 0.87	100 (M); 17
Alachlor	15972608	3.5	91
Antimony	7440360	2	1,400
Arsenic	7440382	50	23,000
Atrazine	1912249	4.3	86
Barium	7440393	1,900*	*
Benzene	71432	12	240
bis(2-Chloroethyl)ether	111444	1 (M); 0.79	100 (M); 20
Bromate	15541454	10 (M); 0.5	200 (M); 10
Butyl benzyl phthalate	85687	6.9	13,000
Cadmium	7440439	2.5*	*
Carbon tetrachloride	56235	5.6	110
Chloride	16887006	50,000	1.00E+06
Chloroform	67663	77	1,500
Chromium (III)	16065831	120*	*
Cyanazine	21725462	2 (M); 0.93	200 (M); 40
3,3'-Dichlorobenzidine	91941	0.3 (M); 0.14	2,000 (M); 7.7
1,2-Dichloroethane	107062	6	120
1,1-Dichloroethylene	75354	24	480
1,2-Dichloropropane	78875	9.1	180
N,N-Dimethylacetamide	127195	700	14,000
1,4-Dioxane	123911	34	680
Ethylene dibromide	106934	0.05 (M); 0.006	20 (M); 1.0
Ethylene glycol	107211	56,000	1.10E+06
Heptachlor	76448	0.01 (M); 0.0017	NLL
beta-Hexachlorocyclohexane	319857	0.024	20 (M)
Hexachloroethane	67721	5.3	310
Isophorone	78591	310	6,200
Isopropyl alcohol	67630	28,000	5.60E+05
Lead	7439921	14*	*
Manganese	7439965	3600	72,000
Methyl-tert-butyl ether (MTBE)	1634044	100	2,000
Methylene chloride	75092	47	940
Mirex	2385855	0.02 (M); 1.6E-5	NLL
Molybdenum	7439987	120	2,400
Nitrobenzene	98953	4.7	330 (M); 94
Pentachlorophenol	87865	1.8*	*
1,2,4,5-Tetrachlorobenzene	95943	2.8	3,300
1,1,1,2-Tetrachloroethane	630206	19	380
1,1,2,2-Tetrachloroethane	79345	3.2	64
Tetrachloroethylene	127184	11	220
Tetrahydrofuran	109999	350	7,000
Thallium	7440280	2.0 (M); 1.2	2,300
1,1,2-Trichloroethane	79005	12	240
Trichloroethylene	79016	29	580

{AA} = Comparison to these criteria may take into account an evaluation of whether the hazardous substances are adsorbed to particulates rather than dissolved in water and whether filtered groundwater samples were used to evaluate groundwater.

{CC} = Please refer to complete footnotes for MDEQ for Part 201 and 213 Risk-Based Screening Levels dated September 28, 2012.

The estimated unionized ammonia (NH₃) concentrations calculated for the monitoring wells located adjacent to the Saginaw River are based on the MDEQ default value of 7.2% of total ammonia nitrogen for warm water surface water.

{EE} = The following is an applicable generic GSI criterion as required by Section 210120a(15) of the NREPA: total dissolved solids (TDS), GSI criteria = 500 mg/L. Phosphorus = 1.0 mg/L, the criteria is applicable unless receiving water is a surface water that has a phosphorus waste load application or is an inland lake. In those cases, contact the department for applicable values.

{FF} = The chloride GSI criterion shall be 125 mg/L when the discharge is to surface waters of the state designated as public water supply sources or 50 mg/L when the discharge is to the Great Lakes or connecting waters. Chloride GSI criteria shall not apply for surface waters of the state that are not designated as a public water supply source, however, the TDS criterion is applicable.



Appendix C

Groundwater Sampling Logs &
Analytical Data



Water Level Measurements

TABLE 1
WATER LEVEL TRACKING TABLE

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT
SAGINAW, MICHIGAN

SAMPLE
NEEDED
Possible NAPL

Monitoring Well ID	Depth to Water (feet)	Depth to Bottom (feet)	Depth to Product (feet)
MW-107WT Ultra Low Flow	10.12	11.51	—
MW-107S1	13.94	20.04	—
MW-108WT Ultra Low Flow	Dry	10.15	—
MW-108S2	13.75	30.35	—
MW-110WTR Ultra Low Flow	Dry	14.06	—
MW-111WT Ultra Low Flow	11.48	12.67	—
MW-114WT Ultra Low Flow	10.58	10.74	—
MW-114S2	13.61	30.65	—
MW-149WT Ultra Low Flow	15.08	20.09	—
MW-185WT Ultra Low Flow	7.31	10.24	—
MW-186WT Ultra Low Flow	11.91	21.02	—
X-4AR Ultra Low Flow	Dry	7.55	—
MW-147WT	3.18	13.50	—
MW-158WT	3.39	15.22	—
MW-160WT	—	—	—
MW-168WT	—	—	—
MW-169WT	3.83	14.22	—
MW-172WT	—	—	—
MW-178WT	2.71	16.15	—
MW-180WT	2.66	14.26	—
RW-1	—	—	—
RW-2	—	—	—
RW-3	—	—	—

Roots growing in screen, no lock

Roots growing in screen

Could not find

Could not find

Could not find

Vault flooded

Vault flooded

Vault flooded

TABLE 1
WATER LEVEL TRACKING TABLE

GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT
SAGINAW, MICHIGAN

Monitoring Well ID	Depth to Water (feet)	Depth to Bottom (feet)	Depth to Product (feet)
TP-2	3.79	12.42	—
QPTW-01	~~2.83~~ ^{aw} 4.12	~~4.12~~ ^{aw}	~~4.~~ ^{aw} 2.83
QPTW-02	2.90	9.64	—
QPTW-03	—	—	—
QPTW-04	4.89	—	2.64
QPTW-05	~~3.55~~ ^{aw} 4.26	—	~~4.26~~ ^{aw} 3.55
QPTW-10	—	—	—
QPTW-13	—	—	—
MW-117WT	2.42	15.06	—
MW-117S1	2.86	32.65	—
MW-118WT	3.21	14.02	—
MW-118S1	2.53	31.56	—
MW-183WT Ultra Low Flow	11.19	18.16	—
X-1AR			
X-4CAUGR Ultra Low Flow	8.66	21.91	—
X-4D Ultra Low Flow	4.11	47.19	—
X-9AR Ultra Low Flow	10.03	28.15	—
X-9BR Ultra Low Flow	10.27	34.01	—
X-9CAUG Ultra Low Flow	10.48	15.85	—
X-9D Ultra Low Flow	5.15	50.07	—
X-10BR	11.82	33.82	—
TWW-1	5.79	10.58	—
MW-128WT	—	—	—

Could not find

Could not find

Could not find

No lock

Large wasp nest

**TABLE 1
WATER LEVEL TRACKING TABLE**

**GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT
SAGINAW, MICHIGAN**

Monitoring Well ID	Depth to Water (feet)	Depth to Bottom (feet)	Depth to Product (feet)
MW-128S1	—	—	—
X-1A	12.20	15.55	—
X-1B	13.39	30.37	—
X-1CR2	12.61	57.31	—
X-2A	4.95	11.31	—
X-10AR2	4.97	18.38	—
X-16A	4.43	5.65	—
X-16B	4.47	25.65	—
MW-2A			
MW-2B			
MW-2CAUG			
MW-122S1			
MW-122S2			
MW-123WT			
MW-123S1			
MW-124WT			
MW-124S1			
MW-125WT			
MW-144WT	7.87	14.86	—
TW-241	5.07	9.66	—
TW-242	6.29	9.95	—
X-15AR			
X-15BR			

Large Wasp nest

No J-plug

Casing cap broken

Casing cap broken

Could not find. Vegetation thick and tall.

Could not find. Vegetation too thick and tall.

**TABLE 1
WATER LEVEL TRACKING TABLE**

**GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT
SAGINAW, MICHIGAN**

Monitoring Well ID	Depth to Water (feet)	Depth to Bottom (feet)	Depth to Product (feet)
B-3R	8.45	18.41	—
B-3BAUG	13.98	30.06	—
B-7R	11.92	17.89	—
B-5R	7.34	17.98	—
B-5BAUG	13.19	42.67	—
B-5CAUG	13.25	50.08	—
MW-103S1	12.91	20.88	—
MW-103S2	15.66	56.98	—
MW-103WT	14.98	40.09	—
MW-105S1	12.65	43.91	—
MW-105S2	12.25	50.58	—
MW-105WT	7.79	17.58	—
MW-108S1	13.31	16.97	—
MW-108S3	9.64	47.31	—
MW-108S4	9.02	50.05	—
MW-111S1	13.51	18.84	—
MW-111S2	14.19	31.89	—
MW-111S3	9.76	43.07	—
MW-111S4	10.61	53.37	—
MW-114S1	10.96	18.54	—
MW-114S3	9.76	43.07	—
MW-114S4	—	—	—
MW-129WT	—	—	—

No J-plug

No lock

Could not find

Could not find

**TABLE 1
WATER LEVEL TRACKING TABLE**

**GENERAL MOTORS CORPORATION
SAGINAW MALLEABLE IRON PLANT
SAGINAW, MICHIGAN**

Monitoring Well ID	Depth to Water (feet)	Depth to Bottom (feet)	Depth to Product (feet)
MW-131S1	11.51	47.52	—
MW-131S2	~~12.04~~ ^{11.18} _{aw}	~~52.70~~ ^{54.05} _{aw}	—
MW-131WT	6.28	14.30	—
MW-134S1	12.16	23.37	—
MW-134S2	12.04	53.70	—
MW-134WT	6.89	14.94	—
MW-137WT	5.34	17.02	—
MW-138WT	4.28	26.58	—
MW-140S1	14.43	35.12	—
MW-140S2	14.99	53.90	—
MW-140WT	10.13	21.15	—
MW-143WT	21.25	29.03	—
~~MW-143WT~~	<del>~~~~~</del>	<del>~~~~~</del>	<del>~~~~~</del>

No J-plug, Casing cap broken

No J-plug

No lock

Casing cap broken



Green Point Landfill Sampling
Logs

GROUND-WATER SAMPLING LOG

JN

Sampling Personnel: James Ness

Well ID: ~~44444444~~ X-40

Job Number:

Date: 9/14/12

Weather: Cloudy 58°F

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		4.04	
Total Depth (feet)	JN	~~47.19~~	47.19
Screened Interval (feet)			
Pump Intake ~	20.5'		

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other:

WELL WATER INFORMATION

Length of Water Column: (feet)	JN ~~15.0~~ 43.15
Volume of Water in Well: (gal)	JN ~~250~~ 7.03
Pumping Rate of Pump: (mL/min)	150
Pump Start: 805	Pump Stop:
Minutes of Pumping: 80	
Total Volume Removed: (mL)	~ 3.5 gal

Conversion Factors

gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.499

1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.

Unit Stability

pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Tubing Used: Teflon ☐ Polyethylene ☒
 Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: _____

SAMPLING INFORMATION

Analytes: metals ☒
 Dissolved TAL Inorganics (Metals) ☒
 Total TAL Inorganics (Metals) ☒
 Cyanide (Metals) ☒
 Chloride (Metals) ☒
 Sulfate ☒
 Nitrate as N and Nitrite as N ☒
 Ammonia Nitrogen ☒
 pH ☒
 TDS ☒
 VOCs, PCBs, SVOCs ☒
 Sample ID: X-40AW
 Sample Time: 0920
 MS/MSD: Yes ☐ No ☒
 Duplicate: Yes ☐ No ☒
 Duplicate ID: NA
 Total Bottles: 6

X-40AW

Time	0820	0825	0830	0835	0840	0845	0850	0855	0900
Parameter	Initial								
Rate (m/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TIC)	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04
Temperature (°C)	12.31	12.17	12.09	12.05	12.02	12.05	12.05	12.00	11.95
pH	7.02	7.10	7.15	7.16	7.16	7.17	7.17	7.18	7.19
Conductance (mS/cm)	4.725	4.750	4.820	4.847	4.876	4.883	4.889	4.890	4.889
Dissolved Oxygen (mg/L)	15.0	1.35	0.91	0.88	0.81	0.64	0.62	0.59	0.63
Turbidity (NTU)	7.84	3.02	2.03	1.35	1.25	1.63	1.14	1.05	1.04
ORP (mV)	-242.4	-241.7	-235.8	-251.3	-210.1	-174.0	-193.0	-202.7	-203.4

Time	0905	0910	0915
Parameter			
Rate (m/min)	150	150	150
Depth to Water (ft. TIC)	4.04	4.04	4.04
Temperature (°C)	11.94	11.92	11.92
pH	7.20	7.20	7.20
Conductance (mS/cm)	4.885	4.886	4.884
Dissolved Oxygen (mg/L)	0.59	0.54	0.50
Turbidity (NTU)	0.75	0.40	0.40
ORP (mV)	-206.2	-206.8	-208.1

MISCELLANEOUS OBSERVATIONS/PROBLEMS

0920 - Began sampling
 0940 - Finished sampling

SAMPLE DESTINATION

Laboratory: _____ Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____
 Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: _____ ☐ sent on _____ KPM

Site: SMUGPL

Event: September 2011

GROUND-WATER SAMPLING LOG

Sampling Personnel: James Ness

Well ID: X-4C AUGR

Job Number:

Date: 9/14/12

Weather: Sunny 60s

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		8.27	
Total Depth (feet)		21.91	
Screened Interval (feet)			
Pump Intake -			

check where appropriate

Well Type:

Flushmount ☐Stick-Up ☒

Well Locked:

Yes ☒No ☐

Measuring Point Marked:

Yes ☒No ☐

Well Diameter:

1" ☐2" ☒Other: ☐

WELL WATER INFORMATION

Length of Water Column: (feet)	13.64
Volume of Water in Well: (gal)	2.22
Pumping Rate of Pump: (mL/min)	100
Pump Start: 0820	Pump Stop:
Minutes of Pumping: 165	
Total Volume Removed: (m)	~6 gal

Conversion Factors				
gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.553	1.456

1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.

Use Specialty			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analyses:

Dissolved TAL, Inorganics (filtered)

Total TAL, Inorganics (filtered)

Cyanide (Filtered)

Chloride (Filtered)

Sulfate

Nitrate as N and Nitrite as N

Ammonia Nitrogen

pH

TDS

VOCs, PCBs, SVOCs

Sample ID: X-4C AUGR

Sample Time: 1055

MS/MSD: Yes ☐ No ☒Duplicate: Yes ☐ No ☒

Duplicate ID: NA

Total Bottles: 6

EVACUATION INFORMATION

Evacuation Method:

Bailer ☐Peristaltic ☒Bladder ☐Other Pump ☐

Tubing Used:

Teflon ☐Polyethylene ☒

Sampling Method:

Bailer ☐Peristaltic ☒Bladder ☐Other Pump ☐

Did well go dry?

Yes ☐No ☒Water Quality Meter Type: ☐

Time	1 930	2 935	3 940	4 945	5 950	6 955	7 1000	8 1005	9 1010
Parameter	Initial								
Rate (mL/min)	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TIC)	8.27	8.29	8.29	8.29	8.31	8.31	8.31	8.31	8.31
Temperature (°C)	12.08	11.90	11.83	11.99	11.82	11.76	11.67	11.65	11.67
pH	7.03	6.99	6.97	6.98	6.95	6.94	6.93	6.93	6.93
Conductance (mS/cm)	1.105	1.096	1.092	1.062	1.059	1.058	1.056	1.055	1.054
Dissolved Oxygen (mg/L)	1.07	0.43	0.74	0.75	0.39	0.37	0.30	0.26	0.26
Turbidity (NTU)	1.83	2.71	2.12	1.63	1.79	1.21	0.77	1.28	1.87
ORP (mV)	-188.9	-208.7	-203.7	-196.5	-183.6	-187.1	-194.9	-282.0	-211.3

Time	10 1015	11 1020	12 1025
Parameter			
Rate (mL/min)	100	100	100
Depth to Water (ft. TIC)	8.27	8.27	8.27
Temperature (°C)	11.70	11.74	11.73
pH	6.93	6.93	6.93
Conductance (mS/cm)	1.054	1.053	1.053
Dissolved Oxygen (mg/L)	0.25	0.23	0.21
Turbidity (NTU)	2.37	3.58	4.29
ORP (mV)	-298.2	-282.3	-269.1

MISCELLANEOUS OBSERVATIONS/PROBLEMS

Geopump # 2851 continues to shut off, switched out for Geopump # 3302 at 943

SAMPLE DESTINATION

Laboratory:

Sample was

☐

shipped day of sampling

Chain of Custody Signed By:

Shipped Via:

☐

Federal Express

☐

UPS

Other:

☐

sent on

KPM

Site: SM/GPL

Event: September 2011

GROUND-WATER SAMPLING LOG

Sampling Personnel: James Ness

Well ID: X-4C AUGR

Job Number:

Date: 9/14/12

Weather: Sunny 60s

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		8.27	
Total Depth (feet)		21.91	
Screened Interval (feet)			
Pump Intake -			

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other:

WELL WATER INFORMATION

Length of Water Column: (feet)	13.64
Volume of Water in Well: (gal)	2.22
Pumping Rate of Pump: (mL/min)	100
Pump Start: 8:20	Pump Stop:
Minutes of Pumping: 165	
Total Volume Removed: (mL)	~6 gal

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.653	1.469
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft				

Unit Stability	pH	DO	Cond	ORP
	±0.1	±10%	±3.0%	±10 mV

SAMPLING INFORMATION

Analyses: *metals*

Disached TAL Inorganic (Metals) ☒

Total TAL Inorganic (Metals) ☒

Cyanide (Measured) ☐

Chloride (Measured) ☐

Sulfate ☐

Nitrate as N and Nitrite as N ☐

Ammonia Nitrogen ☐

pH ☐

TDS ☐

VOCs, PCBs, SVOCs ☐

Sample ID: X-4C AUGR

Sample Time: 10:55

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Duplicate ID: NA

Total Bottles: 6

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Tubing Used: Teflon ☐ Polyethylene ☒
 Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: _____

Time	1030	1035	1040	1045	1050	1055	1110		
Parameter	Initial								
Rate (mL/min)	100	100	100	100	100				
Depth to Water (ft. TIC)	8.27	8.28	8.28	8.28	8.28				
Temperature (°C)	11.79	11.80	11.83	11.88	11.87				
pH	6.92	6.92	6.93	6.93	6.93				
Conductance (mS/cm)	1.052	1.052	1.052	1.050	1.050				
Dissolved Oxygen (mg/L)	0.22	0.21	0.22	0.20	0.19				
Turbidity (NTU)	4.61	2.55	1.07	0.35	0.48				
ORP (mV)	-296.0	-288.5	-288.6	-287.6	-293.7				

Time	10	11	12
Parameter			
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory: _____ Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____
 Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: _____ ☐ sent on _____ KPM

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. Westhuis
 Job Number: 80050896
 Weather: Sunny, 1 85°F

Well ID: X-9AR
 Date: 9/12/12
 Time In: _____ Time Out: _____

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>10.03</u>	
Total Depth (feet)		<u>28.15</u>	
Screened Interval (feet)			
Pump Intake - <u>27.15</u>			

check where appropriate

Well Type: ☐ Flushmount ☐ Slick-Up ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>18.12</u>
Volume of Water in Well: (gal)	<u>2.90</u>
Pumping Rate of Pump: (mL/min)	
Pump Start: <u>1050</u> Pump Stop: <u>1240</u>	
Minutes of Pumping: <u>110</u>	
Total Volume Removed: (mL)	<u>22,000</u>

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.653	1.459
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability	pH	DO	Cond	ORP
	±0.1	±10%	±3.0%	±10 mV

EVACUATION INFORMATION

Evacuation Method: ☐ Baker ☒ Peristaltic ☐ Bladder ☐ Other Pump ☐
 Tubing Used: ☐ Teflon ☒ Polyethylene
 Sampling Method: ☐ Baker ☒ Peristaltic ☐ Bladder ☐ Other Pump ☐

Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: YSI 650

SAMPLING INFORMATION

Analyses:	☒
Dissolved TAL:	☒
Total TAL:	☒
Cyanide (Mercuric):	☒
Chloride (Mercuric):	☒
Sulfate:	☒
Nitrate as N and Nitrite as N:	☒
Ammonia Nitrogen:	☒
pH:	☒
TDS:	☒
VOCs, PCBs, SVOCs:	☒
Sample ID: <u>X-9AR</u>	
Sample Time: <u>1210</u>	
MS/ASD: Yes ☐ No ☒	
Duplicate: Yes ☐ No ☒	
Duplicate ID: <u>6</u>	
Total Bottles: <u>6</u>	

Time	1125	1130	1135	1140	1145	1150	1155	1200	1205
Parameter	Initial								
Rate (mL/min)	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>
Depth to Water (ft. TIC)	<u>10.09</u>	<u>10.09</u>	<u>10.09</u>	<u>10.09</u>	<u>10.09</u>	<u>10.09</u>	<u>10.09</u>	<u>10.09</u>	<u>10.09</u>
Temperature (°C)	<u>14.77</u>	<u>13.24</u>	<u>13.51</u>	<u>13.72</u>	<u>13.89</u>	<u>13.79</u>	<u>13.92</u>	<u>14.00</u>	<u>14.03</u>
pH	<u>6.88</u>	<u>6.88</u>	<u>6.88</u>	<u>6.88</u>	<u>6.88</u>	<u>6.88</u>	<u>6.88</u>	<u>6.88</u>	<u>6.88</u>
Conductance (mS/cm)	<u>1.80</u>	<u>1.104</u>	<u>1.086</u>	<u>1.080</u>	<u>1.080</u>	<u>1.076</u>	<u>1.071</u>	<u>1.068</u>	<u>1.056</u>
Dissolved Oxygen (mg/L)	<u>35.6</u>	<u>20.3</u>	<u>23.4</u>	<u>27.2</u>	<u>27.9</u>	<u>24.7</u>	<u>17.1</u>	<u>17.6</u>	<u>18.2</u>
Turbidity (NTU)	<u>1.61</u>	<u>1.32</u>	<u>1.14</u>	<u>0.85</u>	<u>0.79</u>	<u>0.61</u>	<u>0.52</u>	<u>0.47</u>	<u>0.45</u>
ORP (mV)	<u>-94.1</u>	<u>-94.0</u>	<u>-95.7</u>	<u>-96.8</u>	<u>-96.9</u>	<u>-96.2</u>	<u>-94.0</u>	<u>-93.8</u>	<u>-92.7</u>

Time	10	11	12
Parameter			
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- Unable to achieve a lower pump setting / flow rate

SAMPLE DESTINATION

Laboratory: Test America Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____
 Shipped Via: ☐ Federal Express ☐ UPS ☒ Other: Lab pickup sent on _____ KPM

Site: SMVGPL

GROUND-WATER SAMPLING LOG

Event: September 2011

Sampling Personnel: James Ness
 Job Number: 800 50096
 Weather: sunny 70s

Well ID: X-9BR
 Date: 9/12/12
 Time In: _____ Time Out: _____

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>10.27</u>	
Total Depth (feet)		<u>34.01</u>	
Screened Interval (feet)			
Pump Intake ~ <u>32.0'</u> by <u>s</u>			

check where appropriate

Well Type:	Flushmount	☐	Sock-Up	☒
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Diameter:	1"	☐	2"	☒
			Other:	

WELL WATER INFORMATION

Length of Water Column (feet)	<u>23.74</u>
Volume of Water in Well (gal)	<u>3.80</u>
Pumping Rate of Pump (mL/min)	<u>150</u>
Pump Start: <u>1034</u>	Pump Stop: <u>1200</u>
Minutes of Pumping:	<u>80</u>
Total Volume Removed (mL)	<u>12000</u>

Conversion Factors				
gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.153	0.653	1.489
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				
Unit Stability				
pH	DO	Cond	ORP	
± 0.1	± 10%	± 3.0%	± 10 mV	

SAMPLING INFORMATION

Analyses:	<u>Metals</u>
Dissolved Trace Metals (Yes/No)	☒
Total Trace Metals (Yes/No)	☒
Cyanide (Yes/No)	☒
Chloride (Yes/No)	☒
Sulfate (Yes/No)	☒
Nitrate as N and Nitrite as N (Yes/No)	☒
Ammonia Nitrogen (Yes/No)	☒
pH (Yes/No)	☒
TDS (Yes/No)	☒
VOCs, PCNs, SVOCs (Yes/No)	☒
Sample ID:	<u>X-9BR</u>
Sample Time:	<u>1130</u>
MS/MSD: Yes ☐ No ☒	
Duplicate: Yes ☐ No ☒	
Duplicate ID:	<u>10</u>
Total Bottles:	<u>10</u>

EVACUATION INFORMATION

Evacuation Method:	Baker ☐	Peristaltic ☒	Bladder ☐	Other Pump ☐
Tubing Used:	Teflon ☐	Polyethylene ☒		
Sampling Method:	Baker ☐	Peristaltic ☒	Bladder ☐	Other Pump ☐
Did well go dry?	Yes ☐	No ☒		
Water Quality Meter Type:	<u>YSI 556</u>			

Time	1 1040	2 1045	3 1050	4 1055	5 1100	6 1105	7 1110	8 1115	9 1120
Parameter	Initial								
Rate (mL/min)	<u>150</u>	<u>150</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>
Depth to Water (ft. TIC)	<u>10.27</u>	<u>10.34</u>	<u>10.51</u>	<u>10.52</u>	<u>10.54</u>	<u>10.54</u>	<u>10.55</u>	<u>10.55</u>	<u>10.55</u>
Temperature (°C)	<u>16.47</u>	<u>14.71</u>	<u>15.30</u>	<u>13.46</u>	<u>13.02</u>	<u>12.92</u>	<u>12.98</u>	<u>13.10</u>	<u>13.15</u>
pH	<u>6.71</u>	<u>6.67</u>	<u>6.71</u>	<u>6.70</u>	<u>6.74</u>	<u>6.74</u>	<u>6.73</u>	<u>6.71</u>	<u>6.70</u>
Conductance (mS/cm)	<u>0.888</u>	<u>1.580</u>	<u>1.573</u>	<u>1.488</u>	<u>1.437</u>	<u>1.407</u>	<u>1.365</u>	<u>1.357</u>	<u>1.354</u>
Dissolved Oxygen (mg/L)	<u>14.11</u>	<u>1.49</u>	<u>0.83</u>	<u>0.64</u>	<u>0.45</u>	<u>0.38</u>	<u>0.35</u>	<u>0.32</u>	<u>0.20</u>
Turbidity (NTU)	<u>2.44</u>	<u>2.24</u>	<u>1.84</u>	<u>1.07</u>	<u>0.98</u>	<u>1.17</u>	<u>1.35</u>	<u>0.65</u>	<u>0.31</u>
ORP (mV)	<u>-32.2</u>	<u>-197.5</u>	<u>-214.4</u>	<u>-211.3</u>	<u>-215.3</u>	<u>-217.0</u>	<u>-217.2</u>	<u>-218.9</u>	<u>-219.3</u>

Time	10 1125	11 1130	12 1200
Parameter			
Rate (mL/min)	<u>200</u>		
Depth to Water (ft. TIC)	<u>10.48</u>		
Temperature (°C)	<u>14.02</u>		
pH	<u>6.69</u>		
Conductance (mS/cm)	<u>1.358</u>		
Dissolved Oxygen (mg/L)	<u>0.21</u>		
Turbidity (NTU)	<u>0.97</u>		
ORP (mV)	<u>-217.9</u>		

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- unable to achieve a lower pump setting / flow rate

SAMPLE DESTINATION

Laboratory:	_____	Sample was ☐ shipped day of sampling	Chain of Custody Signed By: _____
Shipped Via: ☐ Federal Express ☐ UPS	Other: <u>Lab pickup</u>	sent on _____	KPM _____

Page 1 of 1

Site: SMUGPL

Event: September 2011

GROUND-WATER SAMPLING LOG

Sampling Personnel: James NESS

Well ID: X-9 AUG

Job Number: ADD 500 916

Date: 4/12/12

Weather: Sunny 82°

Time In: Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		12.34	
Total Depth (feet)		16.85	
Screened Interval (feet)			
Pump Intake - 14.0' bgs			

check where appropriate

Well Type: Flushmount ☐ Suck-Up ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐
 Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	3.51
Volume of Water in Well: (gal)	0.57
Pumping Rate of Pump: (mL/min)	100
Pump Start: 1135	Pump Stop: 1230
Minutes of Pumping:	
Total Volume Removed: (mL)	

Conversion Factors				
gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.499
1 gal = 3.785 L = 2785 mL = 0.1337 cubic ft.				

Unit Stability			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analysis: metals ☒
 Dissolved TAL (except for metals) ☒
 Total TAL (except for metals) ☒
 Cyanide (filtered) ☒
 Chloride (filtered) ☒
 Sulfate ☒
 Nitrate as N and Nitrite as N ☒
 Ammonia Nitrogen ☒
 pH ☒
 TDS ☒
 VOCs, PCBs, SVOCs ☒
 Sample ID: X-9 AUG
 Sample Time: 1315
 MS/MSD: Yes ☐ No ☒
 Duplicate: Yes ☐ No ☒
 Duplicate ID: _____
 Total Bottles: 6

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Tubing Used: Teflon ☐ Polyethylene ☒
 Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: _____

Time	1 1225	2 1230	3 1235	4 1240	5 1245	6 1250	7 1255	8 1300	9 1315
Parameter	Initial								
Rate (m/min)	100	100	100	100	100	100	100	100	
Depth to Water (ft. TIC)	12.39	12.20	12.09	12.02	11.99	11.94	11.84	11.85	
Temperature (°C)	15.89	19.45	20.06	20.13	20.18	20.39	21.00	21.04	
pH	6.61	6.63	6.63	6.62	6.61	6.62	6.62	6.65	
Conductance (mS/cm)	1.007	1.095	1.108	1.110	1.110	1.116	1.151	1.132	
Dissolved Oxygen (mL)	7.6	3.65	2.27	3.32	2.07	2.07	2.03	1.98	
Turbidity (NTU)	1.09	1.16	1.24	1.37	1.39	1.79	1.80	0.76	
ORP (mV)	-212.0	-168.5	-153.3	-150.8	-148.6	-145.5	-141.3	-137.1	

Time	10 1330	11	12
Parameter			
Rate (m/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mL)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory: _____ Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____
 Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: Lab pick-up ☐ sent on _____ KPM _____

Site: SMWGPI

Event: September 2011

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. Westhus Well ID: X-90
Job Number: 800500910 Date: 9/12/12
Weather: Sunny, 285°F Time In: _____ Time Out: _____

WELL INFORMATION		TIC	TOC	BGS
Depth to Water	(feet)		<u>5.15</u>	
Total Depth	(feet)		<u>50.07</u>	
Screened Interval	(feet)			
Pump Intake				

check where appropriate

Well Type: ☐ Flushmount ☐ Stick-Up

Well Locked: Yes ☒ No ☐

Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION	
Length of Water Column:	(feet) <u>44.92</u>
Volume of Water in Well:	(gal) <u>7.19</u>
Pumping Rate of Pump:	(ml/min)
Pump Start:	<u>1335</u>
Minutes of Pumping:	
Total Volume Removed:	(ml)

Conversion Factors				
gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.499
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability			
pH	DO	Cond	ORP
±0.1	±10%	±3.0%	±10 mV

SAMPLING INFORMATION	
Analyses:	
Dissolved TAL (Metals)	☒
Total TAL (Metals)	☒
Cyanide (Merced)	☐
Chloride (Merced)	☐
Sulfate	☐
Nitrate as N and Nitrite as N	☐
Ammonia Nitrogen	☐
pH	☐
TDS	☐
VOCs, PCBs, SVOCs	☐
Sample ID:	<u>X-90</u>
Sample Time:	<u>1445</u>
MS/MSD:	Yes ☒ No ☐
Duplicate:	Yes ☐ No ☒
Duplicate ID:	<u>14</u>
Total Batches:	<u>14</u>

EVACUATION INFORMATION	
Evacuation Method:	☐ Baller ☒ Peristaltic ☐ Bladder ☐ Other Pump _____ ☐ Teflon ☒ Polyethylene ☐ Baller ☒ Peristaltic ☐ Bladder ☐ Other Pump _____
Did well go dry?	Yes ☐ No ☒ Water Quality Meter Type: <u>XSI 650</u>

Time	1350	1355	1400	1405	1410	1415	1420	1425	1430
Parameter	Initial								
Rate (ml/min)	200	200	200	200	200	200	200	200	200
Depth to Water (ft. TIC)	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15
Temperature (°C)	13.84	14.50	14.09	13.86	13.75	14.20	14.76	15.24	14.48
pH	7.12	7.13	7.13	7.13	7.13	7.13	7.12	7.12	7.11
Conductance (mS/cm)	3.462	3.554	3.531	3.510	3.496	3.510	3.582	3.609	3.550
Dissolved Oxygen (mg/L)	81.2	79.8	69.9	69.9	69.8	70.2	75.3	74.0	67.9
Turbidity (NTU)	1.51	1.89	1.14	0.92	0.78	0.69	0.51	0.42	0.31
ORP (mV)	-60.1	-68.3	-72.2	-74.1	-76.5	-81.1	-82.3	-84.2	-83.6

Time	1435	1440	1445
Parameter			
Rate (ml/min)	200	200	
Depth to Water (ft. TIC)	5.15	5.15	
Temperature (°C)	14.26	14.20	
pH	7.13	7.13	
Conductance (mS/cm)	3.530	3.510	
Dissolved Oxygen (mg/L)	71.3	70.2	
Turbidity (NTU)	0.13	0.10	
ORP (mV)	-82.8	-83.1	

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION	
Laboratory:	_____
Shipped Via:	☐ Federal Express ☐ UPS ☐ Other: <u>lab pickup</u>
Sample was	☐ shipped day of sampling ☐ sent on _____
Chain of Custody Signed By:	_____

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. Wasthuis Well ID: X-10BR
 Job Number: B00500916 Date: 9/14/12
 Weather: Clear Skies, 75°F Time In: _____ Time Out: _____

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>11.91</u>	
Total Depth (feet)		<u>33.82</u>	
Screened Interval (feet)			
Pump Intake -			

check where appropriate

Well Type: ☐ Flushmount ☐ Sack-Up ☒
 Well Locked: Yes ☐ No ☒
 Measuring Point Marked: Yes ☒ No ☐
 Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>21.91</u>
Volume of Water in Well: (gal)	<u>3.51</u>
Pumping Rate of Pump: (mL/min)	<u>150</u>
Pump Start: <u>1035</u>	Pump Stop: <u>1145</u>
Minutes of Pumping: <u>70</u>	
Total Volume Removed: (mL)	<u>10,500</u>

Conversion Factors				
gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.499
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

EVACUATION INFORMATION

Evacuation Method: ☐ Baller ☒ Peristaltic ☐ Bladder ☐ Other Pump ☐
 Tubing Used: ☐ Teflon ☒ Polyethylene
 Sampling Method: ☐ Baller ☒ Peristaltic ☐ Bladder ☐ Other Pump ☐
 Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: YSI 556

SAMPLING INFORMATION

Analysis: Metals
 Dissolved TAL (metals) ☒
 Total TAL (metals) ☒
 Cyanide (Merced) ☐
 Chloride (Merced) ☐
 Sulfate ☐
 Nitrate as N and Nitrite as N ☐
 Ammonia Nitrogen ☐
 pH ☐
 TDS ☐
 VOCs, PCBs, SVOCs ☐
 Sample ID: X-10BR
 Sample Time: 1130
 MS/MSD: Yes ☐ No ☒
 Duplicate: Yes ☐ No ☒
 Duplicate ID: _____
 Total Bottles: 5

Dup -4

Time	1045	1050	1055	1100	1105	1110	1115	1120	1125
Parameter	Initial								
Rate (m/min)	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>
Depth to Water (ft. TIC)	<u>11.91</u>	<u>11.91</u>	<u>11.91</u>	<u>11.91</u>	<u>11.91</u>	<u>11.91</u>	<u>11.91</u>	<u>11.91</u>	<u>11.91</u>
Temperature (°C)	<u>14.54</u>	<u>14.34</u>	<u>14.51</u>	<u>14.41</u>	<u>14.32</u>	<u>14.47</u>	<u>14.47</u>	<u>14.56</u>	<u>14.58</u>
pH	<u>6.59</u>	<u>6.57</u>	<u>6.59</u>	<u>6.59</u>	<u>6.59</u>	<u>6.59</u>	<u>6.59</u>	<u>6.59</u>	<u>6.59</u>
Conductance (mS/cm)	<u>2.037</u>	<u>2.018</u>	<u>2.016</u>	<u>1.989</u>	<u>1.977</u>	<u>1.966</u>	<u>1.959</u>	<u>1.954</u>	<u>1.953</u>
Dissolved Oxygen (mg/L)	<u>16.01</u>	<u>16.94</u>	<u>17.09</u>	<u>16.62</u>	<u>17.54</u>	<u>17.38</u>	<u>16.38</u>	<u>16.82</u>	<u>16.60</u>
Turbidity (NTU)	<u>2.66</u>	<u>2.31</u>	<u>2.12</u>	<u>1.83</u>	<u>1.42</u>	<u>1.29</u>	<u>0.97</u>	<u>0.69</u>	<u>0.42</u>
ORP (mV)	<u>-86.1</u>	<u>-91.4</u>	<u>-91.1</u>	<u>-93.6</u>	<u>-94.9</u>	<u>-94.6</u>	<u>-93.2</u>	<u>-92.1</u>	<u>-91.6</u>

Time	10	11	12
Parameter			
Rate (m/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory: _____ Sample was ☒ shipped day of sampling Chain of Custody Signed By: _____
 Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: _____ sent on _____ KPL

Site: SM/GPL

Event: September 2011

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. Westhuis Well ID: MW-117WT
 Job Number: B0030096 Date: 9/13/12
 Weather: Cloudy, 28.8°F Time In: _____ Time Out: _____

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>2.48</u>	
Total Depth (feet)		<u>15.06</u>	
Screened Interval (feet)			
Pump Intake -			

check where appropriate

Well Type: ☐ Flushmount ☐ Stick-Up
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐
 Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>12.58</u>
Volume of Water in Well: (gal)	<u>2.01</u>
Pumping Rate of Pump: (mL/min)	<u>150</u>
Pump Start: <u>1035</u>	Pump Stop: <u>1155</u>
Minutes of Pumping: <u>80</u>	
Total Volume Removed: (ml)	<u>12000</u>

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.853	1.459
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft				

Unit Stability	pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV	

EVACUATION INFORMATION

Evacuation Method: ☐ Baller ☒ Peristaltic ☐ Bladder ☐ Other Pump _____
 Tubing Used: ☐ Teflon ☒ Polyethylene
 Sampling Method: ☐ Baller ☒ Peristaltic ☐ Bladder ☐ Other Pump _____
 Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: YSI 650

SAMPLING INFORMATION

Analyses: Metals
 Dissolved TAL (inorganic) ☒
 Total TAL (inorganic) ☒
 Cyanide (filtered) ☒
 Chloride (filtered) ☒
 Sulfate ☒
 Nitrate as N and Nitrite as N ☒
 Ammonia Nitrogen ☒
 pH ☒
 TDS ☒
 VOCs, PCBs, SVOCs ☒
 Sample ID: MW-117WT
 Sample Time: 1135
 MS/MSD: Yes ☐ No ☒
 Duplicate: Yes ☐ No ☒
 Duplicate ID: _____
 Total Bottles: 5

Time	1 1045	2 1050	3 1055	4 1100	5 1105	6 1110	7 1115	8 1120	9 1125
Parameter	Initial								
Rate (mL/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TIC)	2.53	2.55	2.55	2.55	2.55	2.55	2.55	2.55	2.55
Temperature (°C)	16.05	16.07	16.03	16.29	16.01	15.91	15.74	15.92	16.06
pH	6.18	6.19	6.21	6.22	6.22	6.23	6.23	6.24	6.23
Conductance (mS/cm)	11.51	11.41	11.34	11.18	11.08	10.91	10.73	10.56	10.41
Dissolved Oxygen (mg/L)	136.2	136.4	147.6	145.7	147.4	159.1	168.5	164.2	162.1
Turbidity (NTU)	4.52	4.74	4.12	2.61	1.20	1.11	0.88	0.81	0.73
ORP (mV)	-51.0	-63.7	-70.8	-72.6	-72.3	-72.5	-73.1	-76.7	-76.4

Specific

Time	10 1136	11 1135	12 1155
Parameter			
Rate (mL/min)	150		
Depth to Water (ft. TIC)	2.55		
Temperature (°C)	16.32		
pH	6.23		
Conductance (mS/cm)	10.33		
Dissolved Oxygen (mg/L)	161.2		
Turbidity (NTU)	0.68		
ORP (mV)	-77.2		

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory: Test America Sample was ☐ shipped day of sampling ☐ Chain of Custody Signed By: _____
 Shipped Via: ☐ Federal Express ☐ UPS ☐ Other lab pickup ☐ sent on _____ KPM

Site: SMV/GPL

Event: September 2011

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. WesthuisWell ID: MW-11751Job Number: 8050096Date: 9/13/12Weather: Cloudy = 80°F

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>2.86</u>	
Total Depth (feet)		<u>32.65</u>	
Screened Interval (feet)			
Pump Intake ~			

check where appropriate

Well Type:

Flushmount ☐Sick-Up ☒

Well Locked:

Yes ☒No ☐

Measuring Point Marked:

Yes ☒No ☐

Well Diameter:

1" ☐2" ☒

Other:

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>27.79</u>
Volume of Water in Well: (gal)	<u>4.77</u>
Pumping Rate of Pump: (mL/min)	<u>150</u>
Pump Start: <u>1030</u>	Pump Stop: <u>1235</u>
Minutes of Pumping:	<u>145</u>
Total Volume Removed: (mL)	<u>21,750</u>

Conversion Factors				
gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.652	1.469
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analysis: Metals

Dissolved TAL (aqueous phase): Metals

Total TAL (aqueous phase): Metals

Cyanide (Mercuric): ☐

Chloride (Mercuric): ☐

Sulfate: ☐

Mercuric as H and Nitrite as H: ☐

Ammonia Nitrogen: ☐

pH: ☐

TDS: ☐

VOCs, PCBs, SVOCs: ☐

Sample ID: MW-11751

Sample Time: 1230

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Duplicate ID: 5

Total Bottles: 5

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Tubing Used: Teflon ☐ Polyethylene ☒

Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry?

Yes ☐No ☒

Water Quality Meter Type:

YSI 650

Time	1150	1155	1200	1205	1210	1215	1220	1225	1230
Parameter	Initial								
Rate (mL/min)	150	150	150	150	150	150	150	150	
Depth to Water (ft. TIC)	2.96	2.96	2.96	2.96	2.96	2.96	2.96	2.96	
Temperature (°C)	16.80	16.24	15.75	15.64	15.83	15.49	15.58	15.61	
pH	6.64	6.77	6.81	6.79	6.78	6.77	6.77	6.77	
Conductance (mS/cm)	4.443	2.416	1.795	1.504	1.423	1.330	1.317	1.310	
Dissolved Oxygen (mg/L)	203.1	137.3	126.3	73.0	80.3	77.9	81.0	78.2	
Turbidity (NTU)	2.15	1.79	1.47	1.02	0.60	0.57	0.50	0.42	
ORP (mV)	-96.2	-101.6	-97.2	-93.3	-92.8	-91.5	-90.3		

Time	10	11	12
Parameter	1235		
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory: Test America

Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: Lab Pick up

Sample was ☐ shipped day of sampling ☐ sent on

Chain of Custody Signed By:

KPM

[Handwritten signature]

Site: SMVGPL

Event: September 2011

GROUND-WATER SAMPLING LOG

Sampling Personnel: James Ness

Job Number: 80050016.0001

Weather: Cloudy 75°F

Well ID: MW-118WT

Date: 9/13/12

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>3.51</u>	
Total Depth (feet)		<u>14.02</u>	
Screened Interval (feet)			
Pump Intake -	<u>12.5'</u>		

check where appropriate

Well Type: ☐ Flushmount ☐ Stick-Up

Well Locked: Yes ☒ No ☐

Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other:

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>10.51</u>
Volume of Water in Well: (gal)	<u>1.71</u>
Pumping Rate of Pump: (mL/min)	<u>150</u>
Pump Start: <u>1105</u>	Pump Stop: <u>1335</u>
Minutes of Pumping: <u>145</u>	
Total Volume Removed: (mL)	<u>~5.5 gal</u>

Conversion Factors				
gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.663	1.469
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analysis: metals

Dissolved TAL Inorganics (tested) ☒

Total TAL Inorganics (tested) ☒

Cyanide (tested) ☒

Chloride (tested) ☒

Sulfate ☒

Nitrate as N and Nitrite as N ☒

Ammonia Nitrogen ☒

pH ☒

TDS ☒

VOCs, PCBs, SVOCs ☒

Sample ID: MW-118WT

Sample Time: 1305

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Duplicate ID: NA

Total Bore: 5

EVALUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Tubing Used: Teflon ☐ Polyethylene ☒

Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: _____

Time	1 1230	2 1235	3 1240	4 1245	5 1250	6 1255	7 1300	8 1305	9 1335
Parameter	Initial								
Rate (mL/min)	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>		
Depth to Water (ft. TIC)	<u>3.51</u>	<u>3.51</u>	<u>3.51</u>	<u>3.52</u>	<u>3.51</u>	<u>3.51</u>	<u>3.51</u>		
Temperature (°C)	<u>15.92</u>	<u>16.68</u>	<u>16.90</u>	<u>16.90</u>	<u>16.83</u>	<u>16.90</u>	<u>16.99</u>		
pH	<u>6.73</u>	<u>6.73</u>	<u>6.73</u>	<u>6.74</u>	<u>6.75</u>	<u>6.74</u>	<u>6.74</u>		
Conductance (mS/cm)	<u>2.457</u>	<u>2.453</u>	<u>2.457</u>	<u>2.458</u>	<u>2.448</u>	<u>2.449</u>	<u>2.451</u>		
Dissolved Oxygen (mg/L)	<u>32.10</u>	<u>1.66</u>	<u>6.18</u>	<u>4.09</u>	<u>2.23</u>	<u>1.43</u>	<u>1.37</u>		
Turbidity (NTU)	<u>1.68</u>	<u>0.66</u>	<u>0.59</u>	<u>0.54</u>	<u>0.48</u>	<u>0.55</u>	<u>0.66</u>		
ORP (mV)	<u>-204.5</u>	<u>-173.5</u>	<u>-180.7</u>	<u>-209.5</u>	<u>-217.6</u>	<u>-207.6</u>	<u>-201.4</u>		

Time	10	11	12
Parameter			
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

Pump could not be turned to any lower flow rate without shutting off.

SAMPLE DESTINATION

Laboratory: _____ Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____

Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: _____ ☐ sent on _____ KPM

GROUND-WATER SAMPLING LOG

Sampling Personnel: J. Ness
 Job Number: R0050096.0001
 Weather: Cloudy 75°F

Well ID: NEW PUMP MW-11851
 Date: 9/13/12
 Time In: _____ Time Out: _____

WELL INFORMATION

	TC	TOC	BGS
Depth to Water (feet)		2.61	
Typical Depth (feet)		21.56	
Screened Interval (feet)			
Pump Intake -	29.0		

check where appropriate

Well Type: ☐ Flushmount ☐ Stick-Up
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	28.95
Volume of Water in Well: (gal)	4.72
Pumping Rate of Pump: (mL/min)	100
Pump Start: 1100	Pump Stop: 1230
Minutes of Pumping: 75	
Total Volume Removed: (ml)	~ 2.5 gal

Conversion Factors

gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.853	1.499

1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.

Unit Stability			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analyses:	<u>metals</u>
Dissolved TAL, Inorganics (BGS)	☒
Total TAL, Inorganics (BGS)	☒
Cyanide (Filtered)	☒
Chloride (Filtered)	☒
Sulfate	☒
Nitrate as N and Nitrite as N	☒
Ammonia Nitrogen	☒
pH	☒
TDS	☒
VOCs, PCBs, SVOCs	☒
Sample ID:	<u>MW-11851</u>
Sample Time:	<u>1200</u>
MS/MSD:	Yes ☐ No ☒
Duplicate:	Yes ☐ No ☒
Duplicate ID:	<u>NA</u>
Total Bottles:	<u>5</u>

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Tubing Used: Teflon ☐ Polyethylene ☒
 Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: YSI 550

Time	1 1115	2 1120	3 1125	4 1130	5 1135	6 1140	7 1145	8 1150	9 1155
Parameter	Initial								
Rate (mL/min)	100	100	100	100	100	100	100	100	100
Depth to Water (ft. TIC)	2.64	2.64	2.64	2.65	2.65	2.65	2.65	2.65	2.65
Temperature (°C)	15.79	15.63	15.65	15.60	15.82	15.94	15.88	15.79	15.83
pH	6.77	6.79	6.82	6.81	6.82	6.81	6.84	6.83	6.83
Conductance (mS/cm)	1.822	1.813	1.807	1.806	1.802	1.804	1.802	1.803	1.803
Dissolved Oxygen (mg/L)	16.08	13.89	10.23	8.39	5.51	5.38	5.43	4.11	3.82
Turbidity (NTU)	10.8	3.09	3.44	3.70	2.43	1.24	1.01	1.15	1.03
ORP (mV)	-157.0	-183.2	-202.0	-211.9	-225.7	-224.9	-230.8	-231.3	-230.3

MISCELLANEOUS OBSERVATIONS/PROBLEMS

Time	10 1200	11 1230	12
Parameter			
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

SAMPLE DESTINATION

Laboratory: _____ Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____
 Shipped Via: ☐ Federal Express ☐ UPS ☒ Other: Leip pickup ☐ sent on _____ KPM

Site: SM/GPL

Event: September 2011

GROUND-WATER SAMPLING LOG

Sampling Personnel: J. Ness

Well ID: MW-183WT

Job Number:

Date: 9/14/12

Weather: Sunny 70s

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		11.11	
Total Depth (feet)		18.11	
Screened Interval (feet)			
Pump Intake ~	17.0'		

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other:

WELL WATER INFORMATION

Length of Water Column: (feet)	7.05
Volume of Water in Well: (gal)	1.15
Pumping Rate of Pump: (mL/min)	100
Pump Start: 1130	Pump Stop:
Minutes of Pumping: 135	
Total Volume Removed: (m)	~ 2.5 gal

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.653	1.689
1 gal = 3.785 L = 3.785 mL = 0.1337 cubic ft.				

Unit Stability	pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV	

EVACUATION INFORMATION

Evacuation Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Tubing Used: Teflon ☐ Polyethylene ☒
 Sampling Method: Bailer ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry?

Yes ☐No ☒

Water Quality Meter Type:

SAMPLING INFORMATION

Analysis: metals ☒
 Dissolved TAL Inorganics (Pilot) ☒
 Total TAL Inorganics (Pilot) ☒
 Cyanide (Revised) ☒
 Chloride (Revised) ☒
 Sulfate ☒
 Nitrate as N and Nitrite as N ☒
 Ammonia Nitrogen ☒
 pH ☒
 TDS ☒
 VOCs, PCBs, SVOCs ☒
 Sample ID: MW-183WT
 Sample Time: 1215
 MS/MSD: Yes ☒ No ☐
 Duplicate: Yes ☒ No ☐
 Duplicate ID: DUP-4-(09/14/2012)
 Total Bottles: 21

Time	1 1135	2 1140	3 1145	4 1150	5 1155	6 1200	7 1205	8 1210	9 1215
Parameter	Initial								
Rate (m/min)	100	100	100	100	100	100	100	100	
Depth to Water (ft. TIC)	11.24	11.29	11.39	11.45	11.46	11.47	11.49	11.51	
Temperature (°C)	14.98	15.02	15.06	15.19	15.19	15.26	15.34	15.30	
pH	7.23	7.18	7.17	7.16	7.15	7.14	7.13	7.11	
Conductance (mS/cm)	1.002	0.994	0.986	0.975	0.973	0.971	0.969	0.962	
Dissolved Oxygen (mg/L)	1.94	0.57	0.43	0.32	0.32	0.30	0.26	0.25	
Turbidity (NTU)	1.53	0.63	0.70	0.48	0.46	0.42	0.41	0.43	
ORP (mV)	-293.5	-229.6	-236.8	-225.5	-223.7	-217.4	-206.6	-207.6	

Time	10 145	11	12
Parameter			
Rate (m/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory:

Sample was ☐ shipped day of sampling

Chain of Custody Signed By:

Shipped Via:

☐ Federal Express☐ UPS

Other:

☐ sent on

KPM

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. Wedhams

Job Number: B00500916

Weather: Partly cloudy, ~75°F

Well ID: TWW-1

Date: 9/14/12

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		5.79	
Total Depth (feet)		10.58	
Screened Interval (feet)			
Pump Intake -			

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒
 Well Locked: Yes ☐ No ☒
 Measuring Point Marked: Yes ☐ No ☒

Well Diameter: 1" ☐ 2" ☒ Other:

WELL WATER INFORMATION

Length of Water Column: (feet)	4.79
Volume of Water in Well: (gal)	0.77
Pumping Rate of Pump: (ml/min)	150
Pump Start: 0825	Pump Stop: 0935
Minutes of Pumping:	70
Total Volume Removed: (ml)	10,500

Conversion Factors

gallons per foot of water column:	1" ID	2" ID	4" ID	6" ID
	0.041	0.163	0.653	1.469

1 gal = 3.785 L = 3.785 mL = 0.1337 cubic ft.

Use Stability			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analyses: *AW*
 Dissolved TAL Inorganics (Filtered) ☒
 Total TAL Inorganics ☐
 Cyanide (Filtered) ☐
 Chloride (Filtered) ☐
 Sulfate ☐
 Nitrate as N and Nitrite as N ☐
 Ammonia Nitrogen ☐
 pH ☐
 TDS ☐
 VOCs, PCBs, SVOCs ☒
 Sample ID: TWW-1
 Sample Time: 0925
 MS/MSD: Yes ☐ No ☒
 Duplicate: Yes ☒ No ☐
 Duplicate ID: Dup-1
 Total Bottles: 6

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Tubing Used: Teflon ☐ Polyethylene ☒
 Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry?

Yes ☐No ☒

Water Quality Meter Type:

YSI 556

Time	0835	0840	0845	0850	0855	0900	0905	0910	0915
Parameter	Initial								
Rate (ml/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TIC)	5.79	5.79	5.79	5.78	5.76	5.79	5.80	5.80	5.80
Temperature (°C)	18.76	19.21	18.99	19.02	19.11	19.16	19.18	19.24	19.30
pH	6.86	6.88	6.88	6.88	6.88	6.88	6.87	6.87	6.87
Conductance (mS/cm)	2.728	2.486	2.363	2.326	2.313	2.367	2.298	2.294	2.284
Dissolved Oxygen (mg/L)	26.27	25.26	22.65	22.38	21.84	22.00	20.91	21.54	21.34
Turbidity (NTU)	11.9	6.32	1.87	1.42	1.10	0.96	0.80	0.72	0.63
ORP (mV)	-4.5	-0.6	4.6	8.8	13.6	16.6	17.8	18.6	18.7

Time	0920	0925	0935
Parameter			
Rate (ml/min)	150		
Depth to Water (ft. TIC)	5.80		
Temperature (°C)	5.80		
pH	6.87		
Conductance (mS/cm)	2.289		
Dissolved Oxygen (mg/L)	21.01		
Turbidity (NTU)	0.59		
ORP (mV)	19.0		

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory: Test America

Sample was ☒ shipped day of sampling

Chain of Custody Signed By:

Shipped Via: ☐ Federal Express☐ UPS

Other:

☐ sent on

KPM



Green Point Landfill
Analytical Data

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: 240-15219-1

Client Project/Site: 11060-TO2, RACER GPL

For:

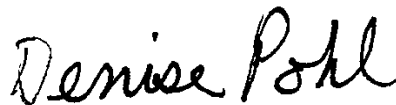
ARCADIS U.S. Inc

10559 Citation Drive

Suite 100

Brighton, Michigan 48116

Attn: Renee Pionk



Authorized for release by:

10/8/2012 4:22:31 PM

Denise Pohl

Project Manager II

denise.pohl@testamericainc.com

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www.testamericainc.com

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

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

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Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Qualifiers

GC/MS VOA

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

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Job ID: 240-15219-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: 11060-TO2, RACER GPL

Report Number: 240-15219-1

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 North 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 09/15/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.6 and 1.1 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples TWW-1-(09142012) (240-15219-1), DUP-1-(09142012) (240-15219-6) and TRIP BLANK (240-15219-8) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/20/2012.

Samples TWW-1-(09142012) (240-15219-1)[4X] and DUP-1-(09142012) (240-15219-6)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the VOCs analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED METALS (ICPMS)

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4) and MW-183WT-(09142012) (240-15219-5) were analyzed for dissolved metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/25/2012 and analyzed on 09/26/2012 and 09/27/2012.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Job ID: 240-15219-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICPMS)

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/25/2012 and analyzed on 09/26/2012 and 09/27/2012.

Barium, Manganese and Sodium were detected in method blank MB 240-58920/1-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 "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Sodium failed the recovery criteria low for the MS of sample MW-183WT-(09142012)MS (240-15219-5) in batch 240-59217.

Refer to the QC report for details.

Sample X-4D-(09142012) (240-15219-2)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

DISSOLVED MERCURY (CVAA)

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4) and MW-183WT-(09142012) (240-15219-5) were analyzed for dissolved mercury (CVAA) in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 09/26/2012 and analyzed on 09/27/2012.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 09/25/2012 and 09/26/2012 and analyzed on 09/26/2012 and 09/27/2012.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

PH

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 09/15/2012.

For the duplicate of sample MW-183WT-(09142012)DU (240-15219-5).

Refer to the QC report for details.

No other difficulties were encountered during the pH analyses.

All other quality control parameters were within the acceptance limits.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Job ID: 240-15219-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

TOTAL DISSOLVED SOLIDS

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 09/20/2012.

For the duplicate of sample MW-183WT-(09142012)DU (240-15219-5).

Refer to the QC report for details.

Samples X-4D-(09142012) (240-15219-2)[5X] and X-10BR-(09142012) (240-15219-4)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method 160.1: Reanalysis of the following sample was performed outside of the analytical holding time due to analyst oversight: MW-183WT-(09142012) (240-15219-5), MW-183WT-(09142012) (240-15219-5 DU). Data is reported.

Method 160.1: The associated samples were inside an oven that spiked above criteria for temperature for a short period of time: (LCS 240-59013/2), (MB 240-59013/1), MW-183WT-(09142012) (240-15219-5), MW-183WT-(09142012) (240-15219-5 DU). Data is reported.

No other difficulties were encountered during the TDS analyses.

All other quality control parameters were within the acceptance limits.

ANIONS

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/15/2012.

Sample X-4D-(09142012) (240-15219-2)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method 300.0: The following sample was diluted due to interference from a neighboring chloride peak: X-4D-(09142012) (240-15219-2). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the anions analyses.

All quality control parameters were within the acceptance limits.

ANIONS

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/15/2012 and 09/17/2012.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples X-4D-(09142012) (240-15219-2)[10X], X-10BR-(09142012) (240-15219-4)[5X], MW-183WT-(09142012) (240-15219-5)[5X] and DUP-4-(09142012) (240-15219-7)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the anions analyses.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Job ID: 240-15219-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for ammonia in accordance with EPA Method 350.3. The samples were analyzed on 09/27/2012.

Samples X-4D-(09142012) (240-15219-2)[5X], X-4CAUGR-(09142012) (240-15219-3)[5X] and X-10BR-(09142012) (240-15219-4)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED CYANIDE

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for dissolved cyanide in accordance with EPA SW-846 Method 9012A. The samples were prepared and analyzed on 09/24/2012.

No difficulties were encountered during the cyanide analyses.

All quality control parameters were within the acceptance limits.

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NC
6020	Metals (ICP/MS)	SW846	TAL NC
7470A	Mercury (CVAA)	SW846	TAL NC
150.1	pH (Electrometric)	MCAWW	TAL NC
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL NC
300.0	Anions, Ion Chromatography	MCAWW	TAL NC
350.3	Nitrogen, Ammonia	MCAWW	TAL NC
9012A	Cyanide, Total and/or Amenable	SW846	TAL NC

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-15219-1	TWW-1-(09142012)	Water	09/14/12 09:25	09/15/12 09:45
240-15219-2	X-4D-(09142012)	Water	09/14/12 09:20	09/15/12 09:45
240-15219-3	X-4CAUGR-(09142012)	Water	09/14/12 10:55	09/15/12 09:45
240-15219-4	X-10BR-(09142012)	Water	09/14/12 11:30	09/15/12 09:45
240-15219-5	MW-183WT-(09142012)	Water	09/14/12 12:15	09/15/12 09:45
240-15219-6	DUP-1-(09142012)	Water	09/14/12 00:00	09/15/12 09:45
240-15219-7	DUP-4-(09142012)	Water	09/14/12 00:00	09/15/12 09:45
240-15219-8	TRIP BLANK	Water	09/14/12 00:00	09/15/12 09:45

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TWW-1-(09142012)

Lab Sample ID: 240-15219-1

Date Collected: 09/14/12 09:25

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	40	U	40	4.4	ug/L			09/20/12 23:02	4
Benzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Dichlorobromomethane	4.0	U	4.0	0.60	ug/L			09/20/12 23:02	4
Bromoform	4.0	U	4.0	2.6	ug/L			09/20/12 23:02	4
Bromomethane	4.0	U	4.0	1.6	ug/L			09/20/12 23:02	4
2-Butanone (MEK)	40	U	40	2.3	ug/L			09/20/12 23:02	4
Carbon disulfide	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Carbon tetrachloride	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Chlorobenzene	4.0	U	4.0	0.60	ug/L			09/20/12 23:02	4
Chloroethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:02	4
Chloroform	4.0	U	4.0	0.64	ug/L			09/20/12 23:02	4
Chloromethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:02	4
1,1-Dichloroethane	1.7	J	4.0	0.60	ug/L			09/20/12 23:02	4
1,2-Dichloroethane	4.0	U	4.0	0.88	ug/L			09/20/12 23:02	4
1,1-Dichloroethene	4.0	U	4.0	0.76	ug/L			09/20/12 23:02	4
1,2-Dichloropropane	4.0	U	4.0	0.72	ug/L			09/20/12 23:02	4
cis-1,3-Dichloropropene	4.0	U	4.0	0.56	ug/L			09/20/12 23:02	4
trans-1,3-Dichloropropene	4.0	U	4.0	0.76	ug/L			09/20/12 23:02	4
Ethylbenzene	4.0	U	4.0	0.68	ug/L			09/20/12 23:02	4
2-Hexanone	40	U	40	1.6	ug/L			09/20/12 23:02	4
Methylene Chloride	4.0	U	4.0	1.3	ug/L			09/20/12 23:02	4
4-Methyl-2-pentanone (MIBK)	40	U	40	1.3	ug/L			09/20/12 23:02	4
Styrene	4.0	U	4.0	0.44	ug/L			09/20/12 23:02	4
1,1,2,2-Tetrachloroethane	4.0	U	4.0	0.72	ug/L			09/20/12 23:02	4
Tetrachloroethene	4.0	U	4.0	1.2	ug/L			09/20/12 23:02	4
Toluene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Trichloroethene	0.89	J	4.0	0.68	ug/L			09/20/12 23:02	4
Vinyl chloride	40		4.0	0.88	ug/L			09/20/12 23:02	4
Xylenes, Total	8.0	U	8.0	1.1	ug/L			09/20/12 23:02	4
1,1,1-Trichloroethane	4.0	U	4.0	0.88	ug/L			09/20/12 23:02	4
1,1,2-Trichloroethane	4.0	U	4.0	1.1	ug/L			09/20/12 23:02	4
Cyclohexane	4.0	U	4.0	0.48	ug/L			09/20/12 23:02	4
1,2-Dibromo-3-Chloropropane	8.0	U	8.0	2.7	ug/L			09/20/12 23:02	4
Ethylene Dibromide	4.0	U	4.0	0.96	ug/L			09/20/12 23:02	4
Dichlorodifluoromethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:02	4
cis-1,2-Dichloroethene	190		4.0	0.68	ug/L			09/20/12 23:02	4
trans-1,2-Dichloroethene	2.2	J	4.0	0.76	ug/L			09/20/12 23:02	4
Isopropylbenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Methyl acetate	40	U	40	1.5	ug/L			09/20/12 23:02	4
Methyl tert-butyl ether	20	U	20	0.68	ug/L			09/20/12 23:02	4
1,1,2-Trichloro-1,2,2-trifluoroethane	4.0	U	4.0	1.1	ug/L			09/20/12 23:02	4
1,2,4-Trichlorobenzene	4.0	U	4.0	0.60	ug/L			09/20/12 23:02	4
1,2-Dichlorobenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
1,3-Dichlorobenzene	4.0	U	4.0	0.56	ug/L			09/20/12 23:02	4
1,4-Dichlorobenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Trichlorofluoromethane	4.0	U	4.0	0.84	ug/L			09/20/12 23:02	4
Chlorodibromomethane	4.0	U	4.0	0.72	ug/L			09/20/12 23:02	4
Methylcyclohexane	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		63 - 129		09/20/12 23:02	4

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TWW-1-(09142012)

Lab Sample ID: 240-15219-1

Date Collected: 09/14/12 09:25

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		66 - 117		09/20/12 23:02	4
Toluene-d8 (Surr)	89		74 - 115		09/20/12 23:02	4
Dibromofluoromethane (Surr)	97		75 - 121		09/20/12 23:02	4

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: X-4D-(09142012)

Lab Sample ID: 240-15219-2

Date Collected: 09/14/12 09:20

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:08	1
Barium	86	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:08	1
Iron	980		50	26	ug/L		09/25/12 07:43	09/26/12 13:08	1
Manganese	180	B	2.0	0.83	ug/L		09/25/12 07:43	09/26/12 13:08	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:08	1
Sodium	690000	B	10000	69	ug/L		09/25/12 07:43	09/26/12 15:46	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.89	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:32	1
Barium	87	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:32	1
Iron	1000		50	26	ug/L		09/25/12 07:43	09/26/12 13:32	1
Manganese	190	B ^	10	4.2	ug/L		09/25/12 07:43	09/27/12 15:14	5
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:32	1
Sodium	690000	B	10000	69	ug/L		09/25/12 07:43	09/26/12 15:57	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/26/12 14:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.51	HF	0.100	0.100	SU			09/15/12 11:02	1
Total Dissolved Solids	2400		50	37	mg/L			09/20/12 14:32	5
Chloride	1500		10	1.0	mg/L			09/17/12 18:02	10
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 14:52	1
Nitrate as N	0.50	U	0.50	0.12	mg/L			09/15/12 15:09	5
Sulfate	190		1.0	0.12	mg/L			09/15/12 14:52	1
Ammonia (as N)	8.3		1.0	0.18	mg/L			09/27/12 11:44	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:55	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: X-4CAUGR-(09142012)

Lab Sample ID: 240-15219-3

Date Collected: 09/14/12 10:55

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.42	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:37	1
Barium	120	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:37	1
Iron	4500		50	26	ug/L		09/25/12 07:43	09/26/12 13:37	1
Manganese	560	B ^	2.0	0.83	ug/L		09/25/12 07:43	09/27/12 15:19	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:37	1
Sodium	53000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.40	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:43	1
Barium	120	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:43	1
Iron	4400		50	26	ug/L		09/25/12 07:43	09/26/12 13:43	1
Manganese	570	B ^	2.0	0.83	ug/L		09/25/12 07:43	09/27/12 15:25	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:43	1
Sodium	54000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:46	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.23	HF	0.100	0.100	SU			09/15/12 11:14	1
Total Dissolved Solids	630		10	7.4	mg/L			09/20/12 14:32	1
Chloride	140		1.0	0.10	mg/L			09/15/12 15:26	1
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 15:26	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 15:26	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/15/12 15:26	1
Ammonia (as N)	1.9		1.0	0.18	mg/L			09/27/12 11:47	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:55	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: X-10BR-(09142012)

Lab Sample ID: 240-15219-4

Date Collected: 09/14/12 11:30

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	27		2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:48	1
Barium	570	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:48	1
Iron	30000		50	26	ug/L		09/25/12 07:43	09/26/12 13:48	1
Manganese	730	B ^	10	4.2	ug/L		09/25/12 07:43	09/27/12 15:30	5
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:48	1
Sodium	200000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:48	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.84	HF	0.100	0.100	SU			09/15/12 11:25	1
Total Dissolved Solids	1500		20	15	mg/L			09/20/12 14:32	2
Chloride	620		5.0	0.50	mg/L			09/17/12 18:19	5
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 15:44	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 15:44	1
Sulfate	0.59	J	1.0	0.12	mg/L			09/15/12 15:44	1
Ammonia (as N)	7.9		1.0	0.18	mg/L			09/27/12 11:49	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:55	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: MW-183WT-(09142012)

Lab Sample ID: 240-15219-5

Date Collected: 09/14/12 12:15

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 12:41	1
Barium	79	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 12:41	1
Iron	2200		50	26	ug/L		09/25/12 07:43	09/26/12 12:41	1
Manganese	400	B	2.0	0.83	ug/L		09/25/12 07:43	09/26/12 12:41	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 12:41	1
Sodium	96000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 12:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.4	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:01	1
Barium	78	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:01	1
Iron	2100		50	26	ug/L		09/25/12 07:43	09/26/12 13:01	1
Manganese	400	B	2.0	0.83	ug/L		09/25/12 07:43	09/26/12 13:01	1
Selenium	0.78	J	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:01	1
Sodium	93000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.42	HF	0.100	0.100	SU			09/15/12 11:37	1
Total Dissolved Solids	600		10	7.4	mg/L			09/20/12 14:32	1
Chloride	36		5.0	0.50	mg/L			09/17/12 18:35	5
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 16:01	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 16:01	1
Sulfate	200		5.0	0.60	mg/L			09/17/12 18:35	5
Ammonia (as N)	0.92		0.20	0.035	mg/L			09/27/12 12:40	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:55	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: DUP-1-(09142012)

Lab Sample ID: 240-15219-6

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	40	U	40	4.4	ug/L			09/20/12 23:26	4
Benzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Dichlorobromomethane	4.0	U	4.0	0.60	ug/L			09/20/12 23:26	4
Bromoform	4.0	U	4.0	2.6	ug/L			09/20/12 23:26	4
Bromomethane	4.0	U	4.0	1.6	ug/L			09/20/12 23:26	4
2-Butanone (MEK)	40	U	40	2.3	ug/L			09/20/12 23:26	4
Carbon disulfide	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Carbon tetrachloride	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Chlorobenzene	4.0	U	4.0	0.60	ug/L			09/20/12 23:26	4
Chloroethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:26	4
Chloroform	4.0	U	4.0	0.64	ug/L			09/20/12 23:26	4
Chloromethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:26	4
1,1-Dichloroethane	1.6	J	4.0	0.60	ug/L			09/20/12 23:26	4
1,2-Dichloroethane	4.0	U	4.0	0.88	ug/L			09/20/12 23:26	4
1,1-Dichloroethene	4.0	U	4.0	0.76	ug/L			09/20/12 23:26	4
1,2-Dichloropropane	4.0	U	4.0	0.72	ug/L			09/20/12 23:26	4
cis-1,3-Dichloropropene	4.0	U	4.0	0.56	ug/L			09/20/12 23:26	4
trans-1,3-Dichloropropene	4.0	U	4.0	0.76	ug/L			09/20/12 23:26	4
Ethylbenzene	4.0	U	4.0	0.68	ug/L			09/20/12 23:26	4
2-Hexanone	40	U	40	1.6	ug/L			09/20/12 23:26	4
Methylene Chloride	4.0	U	4.0	1.3	ug/L			09/20/12 23:26	4
4-Methyl-2-pentanone (MIBK)	40	U	40	1.3	ug/L			09/20/12 23:26	4
Styrene	4.0	U	4.0	0.44	ug/L			09/20/12 23:26	4
1,1,2,2-Tetrachloroethane	4.0	U	4.0	0.72	ug/L			09/20/12 23:26	4
Tetrachloroethene	4.0	U	4.0	1.2	ug/L			09/20/12 23:26	4
Toluene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Trichloroethene	4.0	U	4.0	0.68	ug/L			09/20/12 23:26	4
Vinyl chloride	48		4.0	0.88	ug/L			09/20/12 23:26	4
Xylenes, Total	8.0	U	8.0	1.1	ug/L			09/20/12 23:26	4
1,1,1-Trichloroethane	4.0	U	4.0	0.88	ug/L			09/20/12 23:26	4
1,1,2-Trichloroethane	4.0	U	4.0	1.1	ug/L			09/20/12 23:26	4
Cyclohexane	4.0	U	4.0	0.48	ug/L			09/20/12 23:26	4
1,2-Dibromo-3-Chloropropane	8.0	U	8.0	2.7	ug/L			09/20/12 23:26	4
Ethylene Dibromide	4.0	U	4.0	0.96	ug/L			09/20/12 23:26	4
Dichlorodifluoromethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:26	4
cis-1,2-Dichloroethene	200		4.0	0.68	ug/L			09/20/12 23:26	4
trans-1,2-Dichloroethene	1.3	J	4.0	0.76	ug/L			09/20/12 23:26	4
Isopropylbenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Methyl acetate	40	U	40	1.5	ug/L			09/20/12 23:26	4
Methyl tert-butyl ether	20	U	20	0.68	ug/L			09/20/12 23:26	4
1,1,2-Trichloro-1,2,2-trifluoroethane	4.0	U	4.0	1.1	ug/L			09/20/12 23:26	4
1,2,4-Trichlorobenzene	4.0	U	4.0	0.60	ug/L			09/20/12 23:26	4
1,2-Dichlorobenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
1,3-Dichlorobenzene	4.0	U	4.0	0.56	ug/L			09/20/12 23:26	4
1,4-Dichlorobenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Trichlorofluoromethane	4.0	U	4.0	0.84	ug/L			09/20/12 23:26	4
Chlorodibromomethane	4.0	U	4.0	0.72	ug/L			09/20/12 23:26	4
Methylcyclohexane	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 129		09/20/12 23:26	4

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: DUP-1-(09142012)

Lab Sample ID: 240-15219-6

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		66 - 117		09/20/12 23:26	4
Toluene-d8 (Surr)	90		74 - 115		09/20/12 23:26	4
Dibromofluoromethane (Surr)	96		75 - 121		09/20/12 23:26	4

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: DUP-4-(09142012)

Lab Sample ID: 240-15219-7

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.73	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:54	1
Barium	85	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:54	1
Iron	2100		50	26	ug/L		09/25/12 07:43	09/26/12 13:54	1
Manganese	440	B ^	2.0	0.83	ug/L		09/25/12 07:43	09/27/12 15:35	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:54	1
Sodium	96000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.33	HF	0.100	0.100	SU			09/15/12 11:59	1
Total Dissolved Solids	600		10	7.4	mg/L			09/20/12 14:32	1
Chloride	46		1.0	0.10	mg/L			09/15/12 17:28	1
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 17:28	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 17:28	1
Sulfate	200		5.0	0.60	mg/L			09/17/12 19:24	5
Ammonia (as N)	1.1		0.20	0.035	mg/L			09/27/12 12:47	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:59	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-15219-8

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1.3	J	10	1.1	ug/L			09/20/12 23:50	1
Benzene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			09/20/12 23:50	1
Bromoform	1.0	U	1.0	0.64	ug/L			09/20/12 23:50	1
Bromomethane	1.0	U	1.0	0.41	ug/L			09/20/12 23:50	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			09/20/12 23:50	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			09/20/12 23:50	1
Chloroethane	1.0	U	1.0	0.29	ug/L			09/20/12 23:50	1
Chloroform	1.0	U	1.0	0.16	ug/L			09/20/12 23:50	1
Chloromethane	1.0	U	1.0	0.30	ug/L			09/20/12 23:50	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			09/20/12 23:50	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			09/20/12 23:50	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/20/12 23:50	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			09/20/12 23:50	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			09/20/12 23:50	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			09/20/12 23:50	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			09/20/12 23:50	1
2-Hexanone	10	U	10	0.41	ug/L			09/20/12 23:50	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			09/20/12 23:50	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			09/20/12 23:50	1
Styrene	1.0	U	1.0	0.11	ug/L			09/20/12 23:50	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			09/20/12 23:50	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			09/20/12 23:50	1
Toluene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			09/20/12 23:50	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			09/20/12 23:50	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			09/20/12 23:50	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			09/20/12 23:50	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			09/20/12 23:50	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			09/20/12 23:50	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			09/20/12 23:50	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			09/20/12 23:50	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			09/20/12 23:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			09/20/12 23:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/20/12 23:50	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Methyl acetate	10	U	10	0.38	ug/L			09/20/12 23:50	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			09/20/12 23:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			09/20/12 23:50	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			09/20/12 23:50	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			09/20/12 23:50	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			09/20/12 23:50	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			09/20/12 23:50	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 129		09/20/12 23:50	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-15219-8

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		66 - 117		09/20/12 23:50	1
Toluene-d8 (Surr)	89		74 - 115		09/20/12 23:50	1
Dibromofluoromethane (Surr)	96		75 - 121		09/20/12 23:50	1

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		12DCE (63-129)	BFB (66-117)	TOL (74-115)	DBFM (75-121)
240-15219-1	TWW-1-(09142012)	92	90	89	97
240-15219-6	DUP-1-(09142012)	93	88	90	96
240-15219-8	TRIP BLANK	94	88	89	96
LCS 240-58594/5	Lab Control Sample	97	93	91	98
MB 240-58594/4	Method Blank	91	88	88	94

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-58594/4

Matrix: Water

Analysis Batch: 58594

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			09/20/12 19:03	1
Benzene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			09/20/12 19:03	1
Bromoform	1.0	U	1.0	0.64	ug/L			09/20/12 19:03	1
Bromomethane	1.0	U	1.0	0.41	ug/L			09/20/12 19:03	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			09/20/12 19:03	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			09/20/12 19:03	1
Chloroethane	1.0	U	1.0	0.29	ug/L			09/20/12 19:03	1
Chloroform	1.0	U	1.0	0.16	ug/L			09/20/12 19:03	1
Chloromethane	1.0	U	1.0	0.30	ug/L			09/20/12 19:03	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			09/20/12 19:03	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			09/20/12 19:03	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/20/12 19:03	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			09/20/12 19:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			09/20/12 19:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			09/20/12 19:03	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			09/20/12 19:03	1
2-Hexanone	10	U	10	0.41	ug/L			09/20/12 19:03	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			09/20/12 19:03	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			09/20/12 19:03	1
Styrene	1.0	U	1.0	0.11	ug/L			09/20/12 19:03	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			09/20/12 19:03	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			09/20/12 19:03	1
Toluene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			09/20/12 19:03	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			09/20/12 19:03	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			09/20/12 19:03	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			09/20/12 19:03	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			09/20/12 19:03	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			09/20/12 19:03	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			09/20/12 19:03	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			09/20/12 19:03	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			09/20/12 19:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			09/20/12 19:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/20/12 19:03	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Methyl acetate	10	U	10	0.38	ug/L			09/20/12 19:03	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			09/20/12 19:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			09/20/12 19:03	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			09/20/12 19:03	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			09/20/12 19:03	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			09/20/12 19:03	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			09/20/12 19:03	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-58594/4

Matrix: Water

Analysis Batch: 58594

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		63 - 129		09/20/12 19:03	1
4-Bromofluorobenzene (Surr)	88		66 - 117		09/20/12 19:03	1
Toluene-d8 (Surr)	88		74 - 115		09/20/12 19:03	1
Dibromofluoromethane (Surr)	94		75 - 121		09/20/12 19:03	1

Lab Sample ID: LCS 240-58594/5

Matrix: Water

Analysis Batch: 58594

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	40.0	37.5		ug/L		94	43 - 136
Benzene	20.0	19.6		ug/L		98	83 - 112
Dichlorobromomethane	20.0	18.7		ug/L		93	72 - 121
Bromoform	20.0	20.9		ug/L		105	40 - 131
Bromomethane	20.0	17.6		ug/L		88	11 - 185
2-Butanone (MEK)	40.0	42.3		ug/L		106	60 - 126
Carbon disulfide	20.0	19.8		ug/L		99	62 - 142
Carbon tetrachloride	20.0	22.3		ug/L		112	66 - 128
Chlorobenzene	20.0	19.7		ug/L		98	85 - 110
Chloroethane	20.0	16.1		ug/L		81	25 - 153
Chloroform	20.0	18.3		ug/L		92	79 - 117
Chloromethane	20.0	16.9		ug/L		84	44 - 126
1,1-Dichloroethane	20.0	19.8		ug/L		99	82 - 115
1,2-Dichloroethane	20.0	18.7		ug/L		93	71 - 127
1,1-Dichloroethene	20.0	18.9		ug/L		94	78 - 131
1,2-Dichloropropane	20.0	18.8		ug/L		94	81 - 115
cis-1,3-Dichloropropene	20.0	16.7		ug/L		84	61 - 115
trans-1,3-Dichloropropene	20.0	15.7		ug/L		78	58 - 117
Ethylbenzene	20.0	19.2		ug/L		96	83 - 112
2-Hexanone	40.0	43.9		ug/L		110	55 - 133
Methylene Chloride	20.0	16.9		ug/L		85	66 - 131
4-Methyl-2-pentanone (MIBK)	40.0	43.0		ug/L		107	63 - 128
Styrene	20.0	19.5		ug/L		98	79 - 114
1,1,2,2-Tetrachloroethane	20.0	19.9		ug/L		99	68 - 118
Tetrachloroethene	20.0	21.7		ug/L		108	79 - 114
Toluene	20.0	19.0		ug/L		95	84 - 111
Trichloroethene	20.0	21.6		ug/L		108	76 - 117
Vinyl chloride	20.0	18.4		ug/L		92	53 - 127
Xylenes, Total	60.0	57.5		ug/L		96	83 - 112
1,1,1-Trichloroethane	20.0	19.9		ug/L		99	74 - 118
1,1,2-Trichloroethane	20.0	21.3		ug/L		107	80 - 112
Cyclohexane	20.0	16.8		ug/L		84	54 - 121
1,2-Dibromo-3-Chloropropane	20.0	20.1		ug/L		101	42 - 136
Ethylene Dibromide	20.0	20.1		ug/L		100	79 - 113
Dichlorodifluoromethane	20.0	15.3		ug/L		77	19 - 129
cis-1,2-Dichloroethene	20.0	17.8		ug/L		89	80 - 113
trans-1,2-Dichloroethene	20.0	19.9		ug/L		99	83 - 117
Isopropylbenzene	20.0	19.1		ug/L		96	75 - 114
Methyl acetate	20.0	22.4		ug/L		112	58 - 131

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-58594/5

Matrix: Water

Analysis Batch: 58594

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	20.0	18.8		ug/L		94	52 - 144
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	21.5		ug/L		107	74 - 151
1,2,4-Trichlorobenzene	20.0	21.4		ug/L		107	48 - 135
1,2-Dichlorobenzene	20.0	19.5		ug/L		97	81 - 110
1,3-Dichlorobenzene	20.0	19.1		ug/L		95	80 - 110
1,4-Dichlorobenzene	20.0	19.0		ug/L		95	82 - 110
Trichlorofluoromethane	20.0	19.1		ug/L		96	49 - 157
Chlorodibromomethane	20.0	19.3		ug/L		97	64 - 119
Methylcyclohexane	20.0	17.3		ug/L		86	56 - 127
m-Xylene & p-Xylene	40.0	38.5		ug/L		96	83 - 113
o-Xylene	20.0	19.0		ug/L		95	83 - 113

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		63 - 129
4-Bromofluorobenzene (Surr)	93		66 - 117
Toluene-d8 (Surr)	91		74 - 115
Dibromofluoromethane (Surr)	98		75 - 121

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-58920/1-A

Matrix: Water

Analysis Batch: 59217

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 58920

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 12:28	1
Barium	0.737	J	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 12:28	1
Iron	50	U	50	26	ug/L		09/25/12 07:43	09/26/12 12:28	1
Manganese	1.02	J	2.0	0.83	ug/L		09/25/12 07:43	09/26/12 12:28	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 12:28	1
Sodium	67.2	J	1000	6.9	ug/L		09/25/12 07:43	09/26/12 12:28	1

Lab Sample ID: LCS 240-58920/2-A

Matrix: Water

Analysis Batch: 59217

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 58920

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	930		ug/L		93	80 - 120
Barium	1000	920		ug/L		92	80 - 120
Iron	10000	8610		ug/L		86	80 - 120
Manganese	1000	1020		ug/L		102	80 - 120
Selenium	1000	938		ug/L		94	80 - 120
Sodium	10000	9060		ug/L		91	80 - 120

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

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

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 59217

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total Recoverable

Prep Batch: 58920

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.0	J	1000	939		ug/L		94	82 - 123
Barium	79	B	1000	995		ug/L		92	45 - 144
Iron	2200		10000	11000		ug/L		88	22 - 169
Manganese	400	B	1000	1380		ug/L		98	10 - 172
Selenium	5.0	U	1000	919		ug/L		92	72 - 148
Sodium	96000	B	10000	97600	4	ug/L		21	80 - 120

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 59217

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total Recoverable

Prep Batch: 58920

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.0	J	1000	995		ug/L		99	82 - 123	6	20
Barium	79	B	1000	1060		ug/L		98	45 - 144	7	20
Iron	2200		10000	11700		ug/L		95	22 - 169	6	20
Manganese	400	B	1000	1450		ug/L		105	10 - 172	5	20
Selenium	5.0	U	1000	972		ug/L		97	72 - 148	6	20
Sodium	96000	B	10000	104000	4	ug/L		82	80 - 120	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-58845/1-A

Matrix: Water

Analysis Batch: 59184

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58845

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/26/12 13:53	1

Lab Sample ID: LCS 240-58845/2-A

Matrix: Water

Analysis Batch: 59184

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58845

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.37		ug/L		87	81 - 123

Lab Sample ID: MB 240-59155/1-A

Matrix: Water

Analysis Batch: 59366

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 59155

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:36	1

Lab Sample ID: LCS 240-59155/2-A

Matrix: Water

Analysis Batch: 59366

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 59155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.54		ug/L		91	81 - 123

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 59366

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Prep Batch: 59155

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.20	U	1.00	0.874		ug/L		87	69 - 134

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 59366

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Prep Batch: 59155

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.20	U	1.00	0.827		ug/L		83	69 - 134	6	20

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 240-57940/2

Matrix: Water

Analysis Batch: 57940

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.49	7.500		SU		100	97 - 103

Lab Sample ID: 240-15219-5DU

Matrix: Water

Analysis Batch: 57940

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.42	HF	7.420	HF	SU		0	20

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-58567/1

Matrix: Water

Analysis Batch: 58567

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	7.4	mg/L			09/20/12 14:32	1

Lab Sample ID: LCS 240-58567/2

Matrix: Water

Analysis Batch: 58567

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	406	392		mg/L		97	88 - 110

Lab Sample ID: MB 240-59013/1

Matrix: Water

Analysis Batch: 59013

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	7.4	mg/L			09/25/12 13:23	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 160.1 - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 240-59013/2

Matrix: Water

Analysis Batch: 59013

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	406	394		mg/L		97	88 - 110

Lab Sample ID: 240-15219-5DU

Matrix: Water

Analysis Batch: 59013

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	640		638	H	mg/L		0.5	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-58073/5

Matrix: Water

Analysis Batch: 58073

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/15/12 14:17	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/15/12 14:17	1

Lab Sample ID: LCS 240-58073/6

Matrix: Water

Analysis Batch: 58073

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.9		mg/L		106	90 - 110
Sulfate	50.0	50.4		mg/L		101	90 - 110

Lab Sample ID: MB 240-58074/5

Matrix: Water

Analysis Batch: 58074

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 14:17	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 14:17	1

Lab Sample ID: LCS 240-58074/6

Matrix: Water

Analysis Batch: 58074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	2.50	2.45		mg/L		98	90 - 110
Nitrate as N	2.50	2.54		mg/L		102	90 - 110

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 58074

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.10	U	2.50	2.54		mg/L		102	80 - 120
Nitrate as N	0.10	U	2.50	2.53		mg/L		101	80 - 120

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 58074

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrite as N	0.10	U	2.50	2.49		mg/L		100	80 - 120	2	20
Nitrate as N	0.10	U	2.50	2.72		mg/L		109	80 - 120	7	20

Lab Sample ID: MB 240-58080/5

Matrix: Water

Analysis Batch: 58080

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/17/12 17:29	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/17/12 17:29	1

Lab Sample ID: LCS 240-58080/6

Matrix: Water

Analysis Batch: 58080

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.3		mg/L		105	90 - 110
Sulfate	50.0	51.3		mg/L		103	90 - 110

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 58080

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	36		50.0	83.3		mg/L		95	80 - 120
Sulfate	200		50.0	249	4	mg/L		94	80 - 120

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 58080

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	36		50.0	82.5		mg/L		93	80 - 120	1	20
Sulfate	200		50.0	247	4	mg/L		90	80 - 120	1	20

Method: 350.3 - Nitrogen, Ammonia

Lab Sample ID: MB 240-59337/7

Matrix: Water

Analysis Batch: 59337

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			09/27/12 09:48	1

Lab Sample ID: LCS 240-59337/8

Matrix: Water

Analysis Batch: 59337

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	9.05		mg/L		101	85 - 114

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 350.3 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 59337

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.92		2.50	3.54		mg/L		105	75 - 125

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 59337

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.92		2.50	3.35		mg/L		97	75 - 125	5	20

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-58848/1-A

Matrix: Water

Analysis Batch: 58889

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58848

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:50	1

Lab Sample ID: LCS 240-58848/2-A

Matrix: Water

Analysis Batch: 58889

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58848

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0449	0.0448		mg/L		100	69 - 120

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 58889

Client Sample ID: MW-183WT-(09142012)

Prep Type: Dissolved

Prep Batch: 58848

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.010	U	0.0400	0.0365		mg/L		91	42 - 140

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 58889

Client Sample ID: MW-183WT-(09142012)

Prep Type: Dissolved

Prep Batch: 58848

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.010	U	0.0400	0.0404		mg/L		101	42 - 140	10	20

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

GC/MS VOA

Analysis Batch: 58594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-1	TWW-1-(09142012)	Total/NA	Water	8260B	
240-15219-6	DUP-1-(09142012)	Total/NA	Water	8260B	
240-15219-8	TRIP BLANK	Total/NA	Water	8260B	
LCS 240-58594/5	Lab Control Sample	Total/NA	Water	8260B	
MB 240-58594/4	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 58845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	7470A	
LCS 240-58845/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-58845/1-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 58920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total Recoverable	Water	3005A	
240-15219-2	X-4D-(09142012)	Dissolved	Water	3005A	
240-15219-3	X-4CAUGR-(09142012)	Total Recoverable	Water	3005A	
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	3005A	
240-15219-4	X-10BR-(09142012)	Dissolved	Water	3005A	
240-15219-5	MW-183WT-(09142012)	Total Recoverable	Water	3005A	
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	3005A	
240-15219-5 MS	MW-183WT-(09142012)	Total Recoverable	Water	3005A	
240-15219-5 MSD	MW-183WT-(09142012)	Total Recoverable	Water	3005A	
240-15219-7	DUP-4-(09142012)	Total Recoverable	Water	3005A	
LCS 240-58920/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-58920/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 59155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	7470A	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	7470A	
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	7470A	
240-15219-4	X-10BR-(09142012)	Dissolved	Water	7470A	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	7470A	
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	7470A	
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	7470A	
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	7470A	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	7470A	
LCS 240-59155/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-59155/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 59184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	7470A	58845
LCS 240-58845/2-A	Lab Control Sample	Total/NA	Water	7470A	58845
MB 240-58845/1-A	Method Blank	Total/NA	Water	7470A	58845

Analysis Batch: 59217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total Recoverable	Water	6020	58920

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Metals (Continued)

Analysis Batch: 59217 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	6020	58920
240-15219-2	X-4D-(09142012)	Total Recoverable	Water	6020	58920
240-15219-2	X-4D-(09142012)	Dissolved	Water	6020	58920
240-15219-3	X-4CAUGR-(09142012)	Total Recoverable	Water	6020	58920
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	6020	58920
240-15219-4	X-10BR-(09142012)	Dissolved	Water	6020	58920
240-15219-5	MW-183WT-(09142012)	Total Recoverable	Water	6020	58920
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	6020	58920
240-15219-5 MS	MW-183WT-(09142012)	Total Recoverable	Water	6020	58920
240-15219-5 MSD	MW-183WT-(09142012)	Total Recoverable	Water	6020	58920
240-15219-7	DUP-4-(09142012)	Total Recoverable	Water	6020	58920
LCS 240-58920/2-A	Lab Control Sample	Total Recoverable	Water	6020	58920
MB 240-58920/1-A	Method Blank	Total Recoverable	Water	6020	58920

Analysis Batch: 59366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	7470A	59155
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	7470A	59155
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	7470A	59155
240-15219-4	X-10BR-(09142012)	Dissolved	Water	7470A	59155
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	7470A	59155
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	7470A	59155
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	7470A	59155
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	7470A	59155
240-15219-7	DUP-4-(09142012)	Total/NA	Water	7470A	59155
LCS 240-59155/2-A	Lab Control Sample	Total/NA	Water	7470A	59155
MB 240-59155/1-A	Method Blank	Total/NA	Water	7470A	59155

Analysis Batch: 59397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	6020	58920
240-15219-3	X-4CAUGR-(09142012)	Total Recoverable	Water	6020	58920
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	6020	58920
240-15219-4	X-10BR-(09142012)	Dissolved	Water	6020	58920
240-15219-7	DUP-4-(09142012)	Total Recoverable	Water	6020	58920

General Chemistry

Analysis Batch: 57940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	150.1	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	150.1	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	150.1	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	150.1	
240-15219-5DU	MW-183WT-(09142012)	Total/NA	Water	150.1	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	150.1	
LCS 240-57940/2	Lab Control Sample	Total/NA	Water	150.1	

Analysis Batch: 58073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	300.0	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	300.0	

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

General Chemistry (Continued)

Analysis Batch: 58073 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-4	X-10BR-(09142012)	Total/NA	Water	300.0	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	300.0	
LCS 240-58073/6	Lab Control Sample	Total/NA	Water	300.0	
MB 240-58073/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	300.0	
240-15219-2	X-4D-(09142012)	Total/NA	Water	300.0	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	300.0	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	300.0	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	300.0	
LCS 240-58074/6	Lab Control Sample	Total/NA	Water	300.0	
MB 240-58074/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	300.0	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	300.0	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	300.0	
LCS 240-58080/6	Lab Control Sample	Total/NA	Water	300.0	
MB 240-58080/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	160.1	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	160.1	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	160.1	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	160.1	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	160.1	
LCS 240-58567/2	Lab Control Sample	Total/NA	Water	160.1	
MB 240-58567/1	Method Blank	Total/NA	Water	160.1	

Prep Batch: 58848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	9012A	
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	9012A	
240-15219-4	X-10BR-(09142012)	Dissolved	Water	9012A	
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	9012A	
240-15219-5 MS	MW-183WT-(09142012)	Dissolved	Water	9012A	
240-15219-5 MSD	MW-183WT-(09142012)	Dissolved	Water	9012A	
240-15219-7	DUP-4-(09142012)	Dissolved	Water	9012A	
LCS 240-58848/2-A	Lab Control Sample	Total/NA	Water	9012A	
MB 240-58848/1-A	Method Blank	Total/NA	Water	9012A	

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

General Chemistry (Continued)

Analysis Batch: 58889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	9012A	58848
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	9012A	58848
240-15219-4	X-10BR-(09142012)	Dissolved	Water	9012A	58848
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	9012A	58848
240-15219-5 MS	MW-183WT-(09142012)	Dissolved	Water	9012A	58848
240-15219-5 MSD	MW-183WT-(09142012)	Dissolved	Water	9012A	58848
240-15219-7	DUP-4-(09142012)	Dissolved	Water	9012A	58848
LCS 240-58848/2-A	Lab Control Sample	Total/NA	Water	9012A	58848
MB 240-58848/1-A	Method Blank	Total/NA	Water	9012A	58848

Analysis Batch: 59013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-5DU	MW-183WT-(09142012)	Total/NA	Water	160.1	
LCS 240-59013/2	Lab Control Sample	Total/NA	Water	160.1	
MB 240-59013/1	Method Blank	Total/NA	Water	160.1	

Analysis Batch: 59337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	350.3	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	350.3	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	350.3	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	350.3	
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	350.3	
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	350.3	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	350.3	
LCS 240-59337/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-59337/7	Method Blank	Total/NA	Water	350.3	

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TWW-1-(09142012)

Date Collected: 09/14/12 09:25

Date Received: 09/15/12 09:45

Lab Sample ID: 240-15219-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	58594	09/20/12 23:02	TL	TAL NC

Client Sample ID: X-4D-(09142012)

Date Collected: 09/14/12 09:20

Date Received: 09/15/12 09:45

Lab Sample ID: 240-15219-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			58845	09/25/12 14:10	SG	TAL NC
Total/NA	Analysis	7470A		1	59184	09/26/12 14:47	SG	TAL NC
Total Recoverable	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 13:08	KC	TAL NC
Dissolved	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 13:32	KC	TAL NC
Total Recoverable	Analysis	6020		10	59217	09/26/12 15:46	KC	TAL NC
Dissolved	Analysis	6020		10	59217	09/26/12 15:57	KC	TAL NC
Dissolved	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Dissolved	Analysis	7470A		1	59366	09/27/12 12:44	SG	TAL NC
Dissolved	Analysis	6020		5	59397	09/27/12 15:14	KC	TAL NC
Total/NA	Analysis	150.1		1	57940	09/15/12 11:02	CN	TAL NC
Total/NA	Analysis	300.0		1	58073	09/15/12 14:52	LG	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 14:52	LG	TAL NC
Total/NA	Analysis	300.0		5	58074	09/15/12 15:09	LG	TAL NC
Total/NA	Analysis	300.0		10	58080	09/17/12 18:02	LG	TAL NC
Total/NA	Analysis	160.1		5	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:55	CN	TAL NC
Total/NA	Analysis	350.3		5	59337	09/27/12 11:44	LG	TAL NC

Client Sample ID: X-4CAUGR-(09142012)

Date Collected: 09/14/12 10:55

Date Received: 09/15/12 09:45

Lab Sample ID: 240-15219-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 13:37	KC	TAL NC
Dissolved	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 13:43	KC	TAL NC
Total/NA	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Total/NA	Analysis	7470A		1	59366	09/27/12 12:46	SG	TAL NC
Dissolved	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Dissolved	Analysis	7470A		1	59366	09/27/12 12:47	SG	TAL NC
Total Recoverable	Analysis	6020		1	59397	09/27/12 15:19	KC	TAL NC
Dissolved	Analysis	6020		1	59397	09/27/12 15:25	KC	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: X-4CAUGR-(09142012)

Lab Sample ID: 240-15219-3

Date Collected: 09/14/12 10:55

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	150.1		1	57940	09/15/12 11:14	CN	TAL NC
Total/NA	Analysis	300.0		1	58073	09/15/12 15:26	LG	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 15:26	LG	TAL NC
Total/NA	Analysis	160.1		1	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:55	CN	TAL NC
Total/NA	Analysis	350.3		5	59337	09/27/12 11:47	LG	TAL NC

Client Sample ID: X-10BR-(09142012)

Lab Sample ID: 240-15219-4

Date Collected: 09/14/12 11:30

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 13:48	KC	TAL NC
Dissolved	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Dissolved	Analysis	7470A		1	59366	09/27/12 12:48	SG	TAL NC
Dissolved	Analysis	6020		5	59397	09/27/12 15:30	KC	TAL NC
Total/NA	Analysis	150.1		1	57940	09/15/12 11:25	CN	TAL NC
Total/NA	Analysis	300.0		1	58073	09/15/12 15:44	LG	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 15:44	LG	TAL NC
Total/NA	Analysis	300.0		5	58080	09/17/12 18:19	LG	TAL NC
Total/NA	Analysis	160.1		2	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:55	CN	TAL NC
Total/NA	Analysis	350.3		5	59337	09/27/12 11:49	LG	TAL NC

Client Sample ID: MW-183WT-(09142012)

Lab Sample ID: 240-15219-5

Date Collected: 09/14/12 12:15

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 12:41	KC	TAL NC
Dissolved	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 13:01	KC	TAL NC
Total/NA	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Total/NA	Analysis	7470A		1	59366	09/27/12 12:39	SG	TAL NC
Dissolved	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Dissolved	Analysis	7470A		1	59366	09/27/12 12:43	SG	TAL NC
Total/NA	Analysis	150.1		1	57940	09/15/12 11:37	CN	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 16:01	LG	TAL NC
Total/NA	Analysis	300.0		5	58080	09/17/12 18:35	LG	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: MW-183WT-(09142012)

Lab Sample ID: 240-15219-5

Date Collected: 09/14/12 12:15

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	160.1		1	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:55	CN	TAL NC
Total/NA	Analysis	350.3		1	59337	09/27/12 12:40	LG	TAL NC

Client Sample ID: DUP-1-(09142012)

Lab Sample ID: 240-15219-6

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	58594	09/20/12 23:26	TL	TAL NC

Client Sample ID: DUP-4-(09142012)

Lab Sample ID: 240-15219-7

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 13:54	KC	TAL NC
Total/NA	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Total/NA	Analysis	7470A		1	59366	09/27/12 12:54	SG	TAL NC
Total Recoverable	Analysis	6020		1	59397	09/27/12 15:35	KC	TAL NC
Total/NA	Analysis	150.1		1	57940	09/15/12 11:59	CN	TAL NC
Total/NA	Analysis	300.0		1	58073	09/15/12 17:28	LG	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 17:28	LG	TAL NC
Total/NA	Analysis	300.0		5	58080	09/17/12 19:24	LG	TAL NC
Total/NA	Analysis	160.1		1	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:59	CN	TAL NC
Total/NA	Analysis	350.3		1	59337	09/27/12 12:47	LG	TAL NC

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-15219-8

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	58594	09/20/12 23:50	TL	TAL NC

Laboratory References:

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

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

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	NELAC	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAC	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAC	5	200004	07-31-13
Kansas	NELAC	7	E-10336	01-31-13
Kentucky	State Program	4	58	11-16-12
L-A-B	DoD ELAP		L2315	02-28-13
Minnesota	NELAC	5	039-999-348	12-31-12
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAC	2	OH001	06-30-13
New York	NELAC	2	10975	04-01-13
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAC	3	68-00340	08-31-13
Texas	NELAC Secondary AB	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAC	3	460175	09-14-13
Washington	State Program	10	C971	01-12-13
West Virginia DEP	State Program	3	210	12-31-12
Wisconsin	State Program	5	999518190	08-31-13

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 15219

Client ARCADIS Site Name _____ By: [Signature]
Cooler Received on 9.15.12 Opened on 9.15.12 (Signature)
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# 1 (CF 0°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C
IR GUN# 4G (CF -1°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C
IR GUN# 5G (CF -1°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C
IR GUN# 8 (CF 0°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C

☐ Multiple on Back

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
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 MSL Date 9/17/12 by AM via ☒ Verbal ☐ Voice Mail ☐ Other
Concerning #14

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Rec'd 240 TB not on COC will log.

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)

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

4101 Shuffel Street NW

North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-15146-1

Client Project/Site: 11060-TO2, RACER GPL

For:

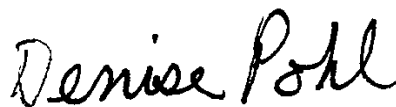
ARCADIS U.S. Inc

10559 Citation Drive

Suite 100

Brighton, Michigan 48116

Attn: Renee Pionk



Authorized for release by:

10/8/2012 4:39:01 PM

Denise Pohl

Project Manager II

denise.pohl@testamericainc.com

LINKS

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results through

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

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

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Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

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.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes
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.
F	MS or MSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Job ID: 240-15146-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: 11060-TO2, RACER GPL

Report Number: 240-15146-1

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 North 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 09/14/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 0.6 C.

DISSOLVED METALS (ICPMS)

Samples MW-117WT-(09132012) (240-15146-1), MW-118S1-(09132012) (240-15146-2), MW-117S1-(09132012) (240-15146-3) and MW-118WT-(09132012) (240-15146-4) were analyzed for dissolved metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/24/2012 and analyzed on 09/26/2012.

Barium and Sodium were detected in method blank MB 240-58784/1-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 "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Iron and Sodium failed the recovery criteria high for the MS/MSD of sample MW-117WT-(09132012)MS/MSD (240-15146-1) in batch 240-59217.

Refer to the QC report for details.

No other difficulties were encountered during the metals analyses.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Job ID: 240-15146-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

All other quality control parameters were within the acceptance limits.

DISSOLVED MERCURY (CVAA)

Samples MW-117WT-(09132012) (240-15146-1), MW-118S1-(09132012) (240-15146-2), MW-117S1-(09132012) (240-15146-3) and MW-118WT-(09132012) (240-15146-4) were analyzed for dissolved mercury (CVAA) in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 09/25/2012.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

PH

Samples MW-117WT-(09132012) (240-15146-1), MW-118S1-(09132012) (240-15146-2), MW-117S1-(09132012) (240-15146-3) and MW-118WT-(09132012) (240-15146-4) were analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 09/14/2012.

No difficulties were encountered during the pH analyses.

All quality control parameters were within the acceptance limits.

TOTAL DISSOLVED SOLIDS

Samples MW-117WT-(09132012) (240-15146-1), MW-118S1-(09132012) (240-15146-2), MW-117S1-(09132012) (240-15146-3) and MW-118WT-(09132012) (240-15146-4) were analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 09/19/2012.

Samples MW-117WT-(09132012) (240-15146-1)[10X] and MW-118WT-(09132012) (240-15146-4)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the TDS analyses.

All quality control parameters were within the acceptance limits.

ANIONS

Samples MW-117WT-(09132012) (240-15146-1), MW-118S1-(09132012) (240-15146-2), MW-117S1-(09132012) (240-15146-3) and MW-118WT-(09132012) (240-15146-4) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/14/2012.

Nitrite as N failed the recovery criteria high for the MS of sample MW-117S1-(09132012)MS (240-15146-3) in batch 240-57929.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Sample MW-117WT-(09132012) (240-15146-1)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method 300.0: The following sample was diluted due to interference from a neighboring chloride peak: MW-117WT-(09132012) (240-15146-1). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the anions analyses.

All other quality control parameters were within the acceptance limits.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Job ID: 240-15146-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

ANIONS

Samples MW-117WT-(09132012) (240-15146-1), MW-118S1-(09132012) (240-15146-2), MW-117S1-(09132012) (240-15146-3) and MW-118WT-(09132012) (240-15146-4) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/14/2012.

Samples MW-117WT-(09132012) (240-15146-1)[50X], MW-118S1-(09132012) (240-15146-2)[10X], MW-117S1-(09132012) (240-15146-3) [5X] and MW-118WT-(09132012) (240-15146-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the anions analyses.

All quality control parameters were within the acceptance limits.

AMMONIA

Samples MW-117WT-(09132012) (240-15146-1), MW-118S1-(09132012) (240-15146-2), MW-117S1-(09132012) (240-15146-3) and MW-118WT-(09132012) (240-15146-4) were analyzed for ammonia in accordance with EPA Method 350.3. The samples were analyzed on 09/27/2012.

Samples MW-117WT-(09132012) (240-15146-1)[25X], MW-118S1-(09132012) (240-15146-2)[5X], MW-117S1-(09132012) (240-15146-3) [5X] and MW-118WT-(09132012) (240-15146-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED CYANIDE

Samples MW-117WT-(09132012) (240-15146-1), MW-118S1-(09132012) (240-15146-2), MW-117S1-(09132012) (240-15146-3) and MW-118WT-(09132012) (240-15146-4) were analyzed for dissolved cyanide in accordance with EPA SW-846 Method 9012A. The samples were prepared and analyzed on 09/24/2012.

No difficulties were encountered during the cyanide analyses.

All quality control parameters were within the acceptance limits.

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL NC
7470A	Mercury (CVAA)	SW846	TAL NC
150.1	pH (Electrometric)	MCAWW	TAL NC
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL NC
300.0	Anions, Ion Chromatography	MCAWW	TAL NC
350.3	Nitrogen, Ammonia	MCAWW	TAL NC
9012A	Cyanide, Total and/or Amenable	SW846	TAL NC

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-15146-1	MW-117WT-(09132012)	Water	09/13/12 11:35	09/14/12 09:00
240-15146-2	MW-118S1-(09132012)	Water	09/13/12 12:00	09/14/12 09:00
240-15146-3	MW-117S1-(09132012)	Water	09/13/12 12:30	09/14/12 09:00
240-15146-4	MW-118WT-(09132012)	Water	09/13/12 13:05	09/14/12 09:00

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Client Sample ID: MW-117WT-(09132012)

Lab Sample ID: 240-15146-1

Date Collected: 09/13/12 11:35

Matrix: Water

Date Received: 09/14/12 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.7		2.0	0.40	ug/L		09/24/12 07:18	09/26/12 07:43	1
Barium	3000	B	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 07:43	1
Iron	110000		50	26	ug/L		09/24/12 07:18	09/26/12 07:43	1
Manganese	4100		2.0	0.83	ug/L		09/24/12 07:18	09/26/12 07:43	1
Selenium	0.78	J	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 07:43	1
Sodium	560000	B	10000	69	ug/L		09/24/12 07:18	09/26/12 11:12	10

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.14	J	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.43	HF	0.100	0.100	SU			09/14/12 13:25	1
Total Dissolved Solids	9900		100	74	mg/L			09/19/12 18:10	10
Chloride	4600		50	5.0	mg/L			09/14/12 18:34	50
Nitrite as N	5.0	U	5.0	0.60	mg/L			09/14/12 18:34	50
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/14/12 18:18	1
Sulfate	0.35	J	1.0	0.12	mg/L			09/14/12 18:18	1
Ammonia (as N)	78		5.0	0.88	mg/L			09/27/12 10:19	25

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:19	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Client Sample ID: MW-118S1-(09132012)

Lab Sample ID: 240-15146-2

Date Collected: 09/13/12 12:00

Matrix: Water

Date Received: 09/14/12 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.74	J	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 08:44	1
Barium	710	B	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 08:44	1
Iron	5900		50	26	ug/L		09/24/12 07:18	09/26/12 08:44	1
Manganese	400		2.0	0.83	ug/L		09/24/12 07:18	09/26/12 08:44	1
Selenium	5.0	U	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 08:44	1
Sodium	130000	B	1000	6.9	ug/L		09/24/12 07:18	09/26/12 08:44	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.10	HF	0.100	0.100	SU			09/14/12 13:27	1
Total Dissolved Solids	960		10	7.4	mg/L			09/19/12 18:10	1
Chloride	290		10	1.0	mg/L			09/14/12 19:07	10
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/14/12 18:50	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/14/12 18:50	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/14/12 18:50	1
Ammonia (as N)	7.2		1.0	0.18	mg/L			09/27/12 10:22	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.011		0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 12:30	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Client Sample ID: MW-117S1-(09132012)

Lab Sample ID: 240-15146-3

Date Collected: 09/13/12 12:30

Matrix: Water

Date Received: 09/14/12 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.6	J	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 08:51	1
Barium	1800	B	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 08:51	1
Iron	8600		50	26	ug/L		09/24/12 07:18	09/26/12 08:51	1
Manganese	300		2.0	0.83	ug/L		09/24/12 07:18	09/26/12 08:51	1
Selenium	5.0	U	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 08:51	1
Sodium	110000	B	1000	6.9	ug/L		09/24/12 07:18	09/26/12 08:51	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.99	HF	0.100	0.100	SU			09/14/12 13:28	1
Total Dissolved Solids	930		10	7.4	mg/L			09/19/12 18:10	1
Chloride	270		5.0	0.50	mg/L			09/14/12 19:56	5
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/14/12 19:23	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/14/12 19:23	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/14/12 19:23	1
Ammonia (as N)	7.8		1.0	0.18	mg/L			09/27/12 10:27	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:19	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Client Sample ID: MW-118WT-(09132012)

Lab Sample ID: 240-15146-4

Date Collected: 09/13/12 13:05

Matrix: Water

Date Received: 09/14/12 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.80	J	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 08:58	1
Barium	390	B	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 08:58	1
Iron	11000		50	26	ug/L		09/24/12 07:18	09/26/12 08:58	1
Manganese	340		2.0	0.83	ug/L		09/24/12 07:18	09/26/12 08:58	1
Selenium	5.0	U	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 08:58	1
Sodium	140000	B	1000	6.9	ug/L		09/24/12 07:18	09/26/12 08:58	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.17	J	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.95	HF	0.100	0.100	SU			09/14/12 13:30	1
Total Dissolved Solids	1300		20	15	mg/L			09/19/12 18:10	2
Chloride	410		10	1.0	mg/L			09/14/12 21:35	10
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/14/12 21:18	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/14/12 21:18	1
Sulfate	2.3		1.0	0.12	mg/L			09/14/12 21:18	1
Ammonia (as N)	35		2.0	0.35	mg/L			09/27/12 10:29	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:19	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-58784/1-A

Matrix: Water

Analysis Batch: 59217

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 58784

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 07:31	1
Barium	0.760	J	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 07:31	1
Iron	50	U	50	26	ug/L		09/24/12 07:18	09/26/12 07:31	1
Manganese	2.0	U	2.0	0.83	ug/L		09/24/12 07:18	09/26/12 07:31	1
Selenium	5.0	U	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 07:31	1
Sodium	38.3	J	1000	6.9	ug/L		09/24/12 07:18	09/26/12 07:31	1

Lab Sample ID: LCS 240-58784/2-A

Matrix: Water

Analysis Batch: 59217

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 58784

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	994		ug/L		99	80 - 120
Barium	1000	988		ug/L		99	80 - 120
Iron	10000	10100		ug/L		101	80 - 120
Manganese	1000	1060		ug/L		106	80 - 120
Selenium	1000	1010		ug/L		101	80 - 120
Sodium	10000	9510		ug/L		95	80 - 120

Lab Sample ID: 240-15146-1 MS

Matrix: Water

Analysis Batch: 59217

Client Sample ID: MW-117WT-(09132012)

Prep Type: Dissolved

Prep Batch: 58784

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	3.7		1000	990		ug/L		99	82 - 123
Barium	3000	B	1000	4250		ug/L		129	45 - 144
Iron	110000		10000	133000	4	ug/L		189	22 - 169
Manganese	4100		1000	5540	4	ug/L		148	10 - 172
Selenium	0.78	J	1000	960		ug/L		96	72 - 148

Lab Sample ID: 240-15146-1 MS

Matrix: Water

Analysis Batch: 59217

Client Sample ID: MW-117WT-(09132012)

Prep Type: Dissolved

Prep Batch: 58784

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	560000	B	10000	597000	4	ug/L		382	80 - 120

Lab Sample ID: 240-15146-1 MSD

Matrix: Water

Analysis Batch: 59217

Client Sample ID: MW-117WT-(09132012)

Prep Type: Dissolved

Prep Batch: 58784

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	3.7		1000	985		ug/L		98	82 - 123	0	20
Barium	3000	B	1000	4310		ug/L		135	45 - 144	1	20
Iron	110000		10000	134000	4	ug/L		200	22 - 169	1	20
Manganese	4100		1000	5330	4	ug/L		127	10 - 172	4	20
Selenium	0.78	J	1000	954		ug/L		95	72 - 148	1	20

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

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

Lab Sample ID: 240-15146-1 MSD

Matrix: Water

Analysis Batch: 59217

Client Sample ID: MW-117WT-(09132012)

Prep Type: Dissolved

Prep Batch: 58784

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	560000	B	10000	600000	4	ug/L		408	80 - 120	0	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-58785/1-A

Matrix: Water

Analysis Batch: 59067

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58785

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 17:59	1

Lab Sample ID: LCS 240-58785/2-A

Matrix: Water

Analysis Batch: 59067

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58785

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.95		ug/L		99	81 - 123

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 240-57839/2

Matrix: Water

Analysis Batch: 57839

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.49	7.480		SU		100	97 - 103

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-58410/1

Matrix: Water

Analysis Batch: 58410

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	7.4	mg/L			09/19/12 18:10	1

Lab Sample ID: LCS 240-58410/2

Matrix: Water

Analysis Batch: 58410

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	406	378		mg/L		93	88 - 110

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-57928/28

Matrix: Water

Analysis Batch: 57928

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/14/12 20:45	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/14/12 20:45	1

Lab Sample ID: MB 240-57928/3

Matrix: Water

Analysis Batch: 57928

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/14/12 14:28	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/14/12 14:28	1

Lab Sample ID: LCS 240-57928/29

Matrix: Water

Analysis Batch: 57928

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.8		mg/L		104	90 - 110
Sulfate	50.0	50.8		mg/L		102	90 - 110

Lab Sample ID: LCS 240-57928/4

Matrix: Water

Analysis Batch: 57928

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.1		mg/L		102	90 - 110
Sulfate	50.0	50.2		mg/L		100	90 - 110

Lab Sample ID: 240-15146-3 MS

Matrix: Water

Analysis Batch: 57928

Client Sample ID: MW-117S1-(09132012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.0	U	50.0	52.1		mg/L		104	80 - 120

Lab Sample ID: MB 240-57929/28

Matrix: Water

Analysis Batch: 57929

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/14/12 20:45	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/14/12 20:45	1

Lab Sample ID: MB 240-57929/3

Matrix: Water

Analysis Batch: 57929

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/14/12 14:28	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/14/12 14:28	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 240-57929/29

Matrix: Water

Analysis Batch: 57929

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	2.50	2.50		mg/L		100	90 - 110
Nitrate as N	2.50	2.65		mg/L		106	90 - 110

Lab Sample ID: LCS 240-57929/4

Matrix: Water

Analysis Batch: 57929

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	2.50	2.49		mg/L		100	90 - 110
Nitrate as N	2.50	2.61		mg/L		104	90 - 110

Lab Sample ID: 240-15146-3 MS

Matrix: Water

Analysis Batch: 57929

Client Sample ID: MW-117S1-(09132012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.10	U	2.50	3.07	F	mg/L		123	80 - 120
Nitrate as N	0.10	U	2.50	2.65		mg/L		106	80 - 120

Method: 350.3 - Nitrogen, Ammonia

Lab Sample ID: MB 240-59337/7

Matrix: Water

Analysis Batch: 59337

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			09/27/12 09:48	1

Lab Sample ID: LCS 240-59337/8

Matrix: Water

Analysis Batch: 59337

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	9.05		mg/L		101	85 - 114

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-58790/3-A

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58790

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:13	1

Lab Sample ID: LCS 240-58790/4-A

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58790

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0449	0.0445		mg/L		99	69 - 120

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Method: 9012A - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: MRL 240-58864/6 MRL

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0100	0.0103		mg/L		103	70 - 130

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Metals

Prep Batch: 58784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Dissolved	Water	3005A	
240-15146-1 MS	MW-117WT-(09132012)	Dissolved	Water	3005A	
240-15146-1 MSD	MW-117WT-(09132012)	Dissolved	Water	3005A	
240-15146-2	MW-118S1-(09132012)	Dissolved	Water	3005A	
240-15146-3	MW-117S1-(09132012)	Dissolved	Water	3005A	
240-15146-4	MW-118WT-(09132012)	Dissolved	Water	3005A	
LCS 240-58784/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-58784/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 58785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Dissolved	Water	7470A	
240-15146-2	MW-118S1-(09132012)	Dissolved	Water	7470A	
240-15146-3	MW-117S1-(09132012)	Dissolved	Water	7470A	
240-15146-4	MW-118WT-(09132012)	Dissolved	Water	7470A	
LCS 240-58785/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-58785/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 59067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Dissolved	Water	7470A	58785
240-15146-2	MW-118S1-(09132012)	Dissolved	Water	7470A	58785
240-15146-3	MW-117S1-(09132012)	Dissolved	Water	7470A	58785
240-15146-4	MW-118WT-(09132012)	Dissolved	Water	7470A	58785
LCS 240-58785/2-A	Lab Control Sample	Total/NA	Water	7470A	58785
MB 240-58785/1-A	Method Blank	Total/NA	Water	7470A	58785

Analysis Batch: 59217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Dissolved	Water	6020	58784
240-15146-1	MW-117WT-(09132012)	Dissolved	Water	6020	58784
240-15146-1 MS	MW-117WT-(09132012)	Dissolved	Water	6020	58784
240-15146-1 MS	MW-117WT-(09132012)	Dissolved	Water	6020	58784
240-15146-1 MSD	MW-117WT-(09132012)	Dissolved	Water	6020	58784
240-15146-1 MSD	MW-117WT-(09132012)	Dissolved	Water	6020	58784
240-15146-2	MW-118S1-(09132012)	Dissolved	Water	6020	58784
240-15146-3	MW-117S1-(09132012)	Dissolved	Water	6020	58784
240-15146-4	MW-118WT-(09132012)	Dissolved	Water	6020	58784
LCS 240-58784/2-A	Lab Control Sample	Total Recoverable	Water	6020	58784
MB 240-58784/1-A	Method Blank	Total Recoverable	Water	6020	58784

General Chemistry

Analysis Batch: 57839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Total/NA	Water	150.1	
240-15146-2	MW-118S1-(09132012)	Total/NA	Water	150.1	
240-15146-3	MW-117S1-(09132012)	Total/NA	Water	150.1	
240-15146-4	MW-118WT-(09132012)	Total/NA	Water	150.1	
LCS 240-57839/2	Lab Control Sample	Total/NA	Water	150.1	

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

General Chemistry (Continued)

Analysis Batch: 57928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Total/NA	Water	300.0	
240-15146-1	MW-117WT-(09132012)	Total/NA	Water	300.0	
240-15146-2	MW-118S1-(09132012)	Total/NA	Water	300.0	
240-15146-2	MW-118S1-(09132012)	Total/NA	Water	300.0	
240-15146-3	MW-117S1-(09132012)	Total/NA	Water	300.0	
240-15146-3	MW-117S1-(09132012)	Total/NA	Water	300.0	
240-15146-3 MS	MW-117S1-(09132012)	Total/NA	Water	300.0	
240-15146-4	MW-118WT-(09132012)	Total/NA	Water	300.0	
240-15146-4	MW-118WT-(09132012)	Total/NA	Water	300.0	
LCS 240-57928/29	Lab Control Sample	Total/NA	Water	300.0	
LCS 240-57928/4	Lab Control Sample	Total/NA	Water	300.0	
MB 240-57928/28	Method Blank	Total/NA	Water	300.0	
MB 240-57928/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 57929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Total/NA	Water	300.0	
240-15146-1	MW-117WT-(09132012)	Total/NA	Water	300.0	
240-15146-2	MW-118S1-(09132012)	Total/NA	Water	300.0	
240-15146-3	MW-117S1-(09132012)	Total/NA	Water	300.0	
240-15146-3 MS	MW-117S1-(09132012)	Total/NA	Water	300.0	
240-15146-4	MW-118WT-(09132012)	Total/NA	Water	300.0	
LCS 240-57929/29	Lab Control Sample	Total/NA	Water	300.0	
LCS 240-57929/4	Lab Control Sample	Total/NA	Water	300.0	
MB 240-57929/28	Method Blank	Total/NA	Water	300.0	
MB 240-57929/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Total/NA	Water	160.1	
240-15146-2	MW-118S1-(09132012)	Total/NA	Water	160.1	
240-15146-3	MW-117S1-(09132012)	Total/NA	Water	160.1	
240-15146-4	MW-118WT-(09132012)	Total/NA	Water	160.1	
LCS 240-58410/2	Lab Control Sample	Total/NA	Water	160.1	
MB 240-58410/1	Method Blank	Total/NA	Water	160.1	

Prep Batch: 58790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Dissolved	Water	9012A	
240-15146-2	MW-118S1-(09132012)	Dissolved	Water	9012A	
240-15146-3	MW-117S1-(09132012)	Dissolved	Water	9012A	
240-15146-4	MW-118WT-(09132012)	Dissolved	Water	9012A	
LCS 240-58790/4-A	Lab Control Sample	Total/NA	Water	9012A	
MB 240-58790/3-A	Method Blank	Total/NA	Water	9012A	

Analysis Batch: 58864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Dissolved	Water	9012A	58790
240-15146-2	MW-118S1-(09132012)	Dissolved	Water	9012A	58790
240-15146-3	MW-117S1-(09132012)	Dissolved	Water	9012A	58790
240-15146-4	MW-118WT-(09132012)	Dissolved	Water	9012A	58790
LCS 240-58790/4-A	Lab Control Sample	Total/NA	Water	9012A	58790

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

General Chemistry (Continued)

Analysis Batch: 58864 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-58790/3-A	Method Blank	Total/NA	Water	9012A	58790
MRL 240-58864/6 MRL	Lab Control Sample	Total/NA	Water	9012A	

Analysis Batch: 59337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15146-1	MW-117WT-(09132012)	Total/NA	Water	350.3	
240-15146-2	MW-118S1-(09132012)	Total/NA	Water	350.3	
240-15146-3	MW-117S1-(09132012)	Total/NA	Water	350.3	
240-15146-4	MW-118WT-(09132012)	Total/NA	Water	350.3	
LCS 240-59337/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-59337/7	Method Blank	Total/NA	Water	350.3	

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Client Sample ID: MW-117WT-(09132012)

Lab Sample ID: 240-15146-1

Date Collected: 09/13/12 11:35

Matrix: Water

Date Received: 09/14/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Dissolved	Analysis	7470A		1	59067	09/25/12 18:25	SG	TAL NC
Dissolved	Prep	3005A			58784	09/24/12 07:18	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 07:43	KC	TAL NC
Dissolved	Analysis	6020		10	59217	09/26/12 11:12	KC	TAL NC
Total/NA	Analysis	150.1		1	57839	09/14/12 13:25	BW	TAL NC
Total/NA	Analysis	300.0		1	57928	09/14/12 18:18	LG	TAL NC
Total/NA	Analysis	300.0		50	57928	09/14/12 18:34	LG	TAL NC
Total/NA	Analysis	300.0		1	57929	09/14/12 18:18	LG	TAL NC
Total/NA	Analysis	300.0		50	57929	09/14/12 18:34	LG	TAL NC
Total/NA	Analysis	160.1		10	58410	09/19/12 18:10	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 11:19	CN	TAL NC
Total/NA	Analysis	350.3		25	59337	09/27/12 10:19	LG	TAL NC

Client Sample ID: MW-118S1-(09132012)

Lab Sample ID: 240-15146-2

Date Collected: 09/13/12 12:00

Matrix: Water

Date Received: 09/14/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Dissolved	Analysis	7470A		1	59067	09/25/12 18:26	SG	TAL NC
Dissolved	Prep	3005A			58784	09/24/12 07:18	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 08:44	KC	TAL NC
Total/NA	Analysis	150.1		1	57839	09/14/12 13:27	BW	TAL NC
Total/NA	Analysis	300.0		1	57928	09/14/12 18:50	LG	TAL NC
Total/NA	Analysis	300.0		10	57928	09/14/12 19:07	LG	TAL NC
Total/NA	Analysis	300.0		1	57929	09/14/12 18:50	LG	TAL NC
Total/NA	Analysis	160.1		1	58410	09/19/12 18:10	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 12:30	CN	TAL NC
Total/NA	Analysis	350.3		5	59337	09/27/12 10:22	LG	TAL NC

Client Sample ID: MW-117S1-(09132012)

Lab Sample ID: 240-15146-3

Date Collected: 09/13/12 12:30

Matrix: Water

Date Received: 09/14/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Dissolved	Analysis	7470A		1	59067	09/25/12 18:28	SG	TAL NC
Dissolved	Prep	3005A			58784	09/24/12 07:18	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 08:51	KC	TAL NC
Total/NA	Analysis	150.1		1	57839	09/14/12 13:28	BW	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

Client Sample ID: MW-117S1-(09132012)

Lab Sample ID: 240-15146-3

Date Collected: 09/13/12 12:30

Matrix: Water

Date Received: 09/14/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	57928	09/14/12 19:23	LG	TAL NC
Total/NA	Analysis	300.0		5	57928	09/14/12 19:56	LG	TAL NC
Total/NA	Analysis	300.0		1	57929	09/14/12 19:23	LG	TAL NC
Total/NA	Analysis	160.1		1	58410	09/19/12 18:10	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 11:19	CN	TAL NC
Total/NA	Analysis	350.3		5	59337	09/27/12 10:27	LG	TAL NC

Client Sample ID: MW-118WT-(09132012)

Lab Sample ID: 240-15146-4

Date Collected: 09/13/12 13:05

Matrix: Water

Date Received: 09/14/12 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Dissolved	Analysis	7470A		1	59067	09/25/12 18:29	SG	TAL NC
Dissolved	Prep	3005A			58784	09/24/12 07:18	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 08:58	KC	TAL NC
Total/NA	Analysis	150.1		1	57839	09/14/12 13:30	BW	TAL NC
Total/NA	Analysis	300.0		1	57928	09/14/12 21:18	LG	TAL NC
Total/NA	Analysis	300.0		10	57928	09/14/12 21:35	LG	TAL NC
Total/NA	Analysis	300.0		1	57929	09/14/12 21:18	LG	TAL NC
Total/NA	Analysis	160.1		2	58410	09/19/12 18:10	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 11:19	CN	TAL NC
Total/NA	Analysis	350.3		10	59337	09/27/12 10:29	LG	TAL NC

Laboratory References:

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

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15146-1

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	NELAC	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAC	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAC	5	200004	07-31-13
Kansas	NELAC	7	E-10336	01-31-13
Kentucky	State Program	4	58	11-16-12
L-A-B	DoD ELAP		L2315	02-28-13
Minnesota	NELAC	5	039-999-348	12-31-12
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAC	2	OH001	06-30-13
New York	NELAC	2	10975	04-01-13
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAC	3	68-00340	08-31-13
Texas	NELAC Secondary AB	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAC	3	460175	09-14-13
Washington	State Program	10	C971	01-12-13
West Virginia DEP	State Program	3	210	12-31-12
Wisconsin	State Program	5	999518190	08-31-13

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 15746

Client ARCADIS Site Name _____ By: [Signature]
(Signature)Cooler Received on 9-14-12 Opened on 9-14-12
FedEx: 1st Grd Exp. UPS FAS Stetson Client Drop Off TestAmerica Courier Other _____TestAmerica Cooler # 260-88 Foam Box Client Cooler Box Other _____Packing material used: Bubble Wrap Foam Plastic Bag None Other _____COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt

IR GUN# 1 (CF 0°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C

IR GUN# 4G (CF -1°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C

IR GUN# 5G (CF -1°C) Observed Sample Temp. 1.6 °C Corrected Sample Temp. 0.6 °C

IR GUN# 8 (CF 0°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C

☐ Multiple
on Back2. 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 No3. Shippers' packing slip attached to the cooler(s)? Yes No4. Did custody papers accompany the sample(s)? Yes No5. Were the custody papers relinquished & signed in the appropriate place? Yes No6. Did all bottles arrive in good condition (Unbroken)? Yes No7. Could all bottle labels be reconciled with the COC? Yes No8. Were correct bottle(s) used for the test(s) indicated? Yes No9. Sufficient quantity received to perform indicated analyses? Yes No10. Were sample(s) at the correct pH upon receipt? Yes No NA11. Were VOAs on the COC? Yes No12. Were air bubbles >6 mm in any VOA vials? Yes No NA13. Was a trip blank present in the cooler(s)? Yes NoContacted PM _____ Date _____ by _____ via Verbal Voice Mail Other
Concerning _____

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

15. SAMPLE CONDITION

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

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

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

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: 240-15120-1

Client Project/Site: 11060-TO2, RACER GPL

For:

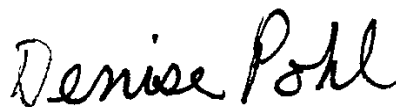
ARCADIS U.S. Inc

10559 Citation Drive

Suite 100

Brighton, Michigan 48116

Attn: Renee Pionk



Authorized for release by:

10/8/2012 4:31:28 PM

Denise Pohl

Project Manager II

denise.pohl@testamericainc.com

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

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

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Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

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.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
B	Compound was found in the blank and sample.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
HF	Field parameter with a holding time of 15 minutes
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
F	MS or MSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Job ID: 240-15120-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: 11060-TO2, RACER GPL

Report Number: 240-15120-1

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 North 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 09/13/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.9 and 3.2 C.

Method 150.1: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following samples has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3), X-9D-(09122012) (240-15120-4), X-9D-(09122012) (240-15120-4 DU), X-9D-(09122012) (240-15120-4 MS), X-9D-(09122012) (240-15120-4 MSD)

DISSOLVED METALS (ICPMS)

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for dissolved metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/21/2012 and 09/24/2012 and analyzed on 09/24/2012 and 09/26/2012.

Iron and Sodium failed the recovery criteria high for the MS/MSD of sample 240-15146-1 in batch 240-59217.

Refer to the QC report for details.

No other difficulties were encountered during the metals analyses.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Job ID: 240-15120-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

All other quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICPMS)

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/21/2012 and 09/24/2012 and analyzed on 09/24/2012 and 09/26/2012.

Manganese was detected in method blank MB 240-58654/1-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 "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Barium and Sodium were detected in method blank MB 240-58784/1-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 "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Refer to the QC report for details.

Sample X-9D-(09122012) (240-15120-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

DISSOLVED MERCURY (CVAA)

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for dissolved mercury (CVAA) in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 09/25/2012.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared and analyzed on 09/25/2012.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

PH

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 09/17/2012.

For the duplicate of sample X-9D-(09122012)DU (240-15120-4).

Refer to the QC report for details.

No other difficulties were encountered during the pH analyses.

All other quality control parameters were within the acceptance limits.

TOTAL DISSOLVED SOLIDS

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Job ID: 240-15120-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 09/19/2012.

Sample X-9D-(09122012) (240-15120-4)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the TDS analyses.

All quality control parameters were within the acceptance limits.

ANIONS

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/13/2012 and 09/14/2012.

Nitrite as N failed the recovery criteria high for the MS/MSD of sample X-9D-(09122012)MS/MSD (240-15120-4) in batch 240-57786.

Refer to the QC report for details.

Sample X-9D-(09122012) (240-15120-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method 300.0: There were greater than 10 samples analyzed for nitrate and nitrite between CCV/CCB's. Because the bracketing CCV/CCB's met criteria, results are reported.

Method 300.0: The following sample analyzed for nitrite was diluted due to an interfering chloride peak: X-9D-(09122012) (240-15120-4). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the anions analyses.

All other quality control parameters were within the acceptance limits.

ANIONS

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/13/2012 and 09/14/2012.

Chloride and Sulfate failed the recovery criteria low for the MS/MSD of sample X-9D-(09122012)MS/MSD (240-15120-4) in batch 240-57785.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples X-9AR-(09122012) (240-15120-1)[5X], X-9BR-(09122012) (240-15120-2)[5X] and X-9D-(09122012) (240-15120-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method 300.0: There were greater than 10 samples analyzed for chloride and sulfate between CCV/CCB's. Because the bracketing CCV/CCB's met criteria, results are reported.

No other difficulties were encountered during the anions analyses.

All other quality control parameters were within the acceptance limits.

AMMONIA

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Job ID: 240-15120-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for ammonia in accordance with EPA Method 350.3. The samples were analyzed on 09/26/2012 and 09/27/2012.

Samples X-9BR-(09122012) (240-15120-2)[5X] and X-9D-(09122012) (240-15120-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED CYANIDE

Samples X-9AR-(09122012) (240-15120-1), X-9BR-(09122012) (240-15120-2), X-9CAUG-(09122012) (240-15120-3) and X-9D-(09122012) (240-15120-4) were analyzed for dissolved cyanide in accordance with EPA SW-846 Method 9012A. The samples were prepared and analyzed on 09/24/2012.

No difficulties were encountered during the cyanide analyses.

All quality control parameters were within the acceptance limits.

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Method	Method Description	Protocol	Laboratory
6020	Metals (ICP/MS)	SW846	TAL NC
7470A	Mercury (CVAA)	SW846	TAL NC
150.1	pH (Electrometric)	MCAWW	TAL NC
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL NC
300.0	Anions, Ion Chromatography	MCAWW	TAL NC
350.3	Nitrogen, Ammonia	MCAWW	TAL NC
9012A	Cyanide, Total and/or Amenable	SW846	TAL NC

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-15120-1	X-9AR-(09122012)	Water	09/12/12 12:10	09/13/12 09:40
240-15120-2	X-9BR-(09122012)	Water	09/12/12 11:30	09/13/12 09:40
240-15120-3	X-9CAUG-(09122012)	Water	09/12/12 13:15	09/13/12 09:40
240-15120-4	X-9D-(09122012)	Water	09/12/12 14:45	09/13/12 09:40

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Client Sample ID: X-9AR-(09122012)

Lab Sample ID: 240-15120-1

Date Collected: 09/12/12 12:10

Matrix: Water

Date Received: 09/13/12 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.43	J	2.0	0.40	ug/L		09/21/12 10:13	09/24/12 16:36	1
Barium	190		5.0	0.19	ug/L		09/21/12 10:13	09/24/12 16:36	1
Iron	5400		50	26	ug/L		09/21/12 10:13	09/24/12 16:36	1
Manganese	790	^ B	2.0	0.83	ug/L		09/21/12 10:13	09/24/12 16:36	1
Selenium	5.0	U	5.0	0.57	ug/L		09/21/12 10:13	09/24/12 16:36	1
Sodium	120000		1000	6.9	ug/L		09/21/12 10:13	09/24/12 16:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/21/12 10:13	09/24/12 16:42	1
Barium	190		5.0	0.19	ug/L		09/21/12 10:13	09/24/12 16:42	1
Iron	5500		50	26	ug/L		09/21/12 10:13	09/24/12 16:42	1
Manganese	780	^ B	2.0	0.83	ug/L		09/21/12 10:13	09/24/12 16:42	1
Selenium	5.0	U	5.0	0.57	ug/L		09/21/12 10:13	09/24/12 16:42	1
Sodium	120000		1000	6.9	ug/L		09/21/12 10:13	09/24/12 16:42	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:02	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.15	HF	0.100	0.100	SU			09/17/12 17:10	1
Total Dissolved Solids	820		10	7.4	mg/L			09/19/12 18:10	1
Chloride	180		5.0	0.50	mg/L			09/13/12 21:45	5
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/13/12 21:29	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/13/12 21:29	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/13/12 21:29	1
Ammonia (as N)	5.0		0.20	0.035	mg/L			09/26/12 11:01	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:13	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Client Sample ID: X-9BR-(09122012)

Lab Sample ID: 240-15120-2

Date Collected: 09/12/12 11:30

Matrix: Water

Date Received: 09/13/12 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.94	J	2.0	0.40	ug/L		09/21/12 10:13	09/24/12 16:47	1
Barium	170		5.0	0.19	ug/L		09/21/12 10:13	09/24/12 16:47	1
Iron	5100		50	26	ug/L		09/21/12 10:13	09/24/12 16:47	1
Manganese	900	^ B	2.0	0.83	ug/L		09/21/12 10:13	09/24/12 16:47	1
Selenium	5.0	U	5.0	0.57	ug/L		09/21/12 10:13	09/24/12 16:47	1
Sodium	190000		1000	6.9	ug/L		09/21/12 10:13	09/24/12 16:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.91	J	2.0	0.40	ug/L		09/21/12 10:13	09/24/12 16:52	1
Barium	160		5.0	0.19	ug/L		09/21/12 10:13	09/24/12 16:52	1
Iron	5300		50	26	ug/L		09/21/12 10:13	09/24/12 16:52	1
Manganese	850	^ B	2.0	0.83	ug/L		09/21/12 10:13	09/24/12 16:52	1
Selenium	5.0	U	5.0	0.57	ug/L		09/21/12 10:13	09/24/12 16:52	1
Sodium	190000		1000	6.9	ug/L		09/21/12 10:13	09/24/12 16:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:09	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.14	HF	0.100	0.100	SU			09/17/12 17:14	1
Total Dissolved Solids	980		10	7.4	mg/L			09/19/12 18:10	1
Chloride	280		5.0	0.50	mg/L			09/13/12 22:18	5
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/13/12 22:02	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/13/12 22:02	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/13/12 22:02	1
Ammonia (as N)	7.3		1.0	0.18	mg/L			09/26/12 11:04	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:13	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Client Sample ID: X-9CAUG-(09122012)

Lab Sample ID: 240-15120-3

Date Collected: 09/12/12 13:15

Matrix: Water

Date Received: 09/13/12 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.9	J	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 08:16	1
Barium	110	B	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 08:16	1
Iron	4700		50	26	ug/L		09/24/12 07:18	09/26/12 08:16	1
Manganese	340		2.0	0.83	ug/L		09/24/12 07:18	09/26/12 08:16	1
Selenium	0.68	J	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 08:16	1
Sodium	47000	B	1000	6.9	ug/L		09/24/12 07:18	09/26/12 08:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.2	J	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 08:21	1
Barium	100	B	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 08:21	1
Iron	5200		50	26	ug/L		09/24/12 07:18	09/26/12 08:21	1
Manganese	340		2.0	0.83	ug/L		09/24/12 07:18	09/26/12 08:21	1
Selenium	5.0	U	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 08:21	1
Sodium	48000	B	1000	6.9	ug/L		09/24/12 07:18	09/26/12 08:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:19	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.12	J	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.15	HF	0.100	0.100	SU			09/17/12 17:17	1
Total Dissolved Solids	680		10	7.4	mg/L			09/19/12 18:10	1
Chloride	34		1.0	0.10	mg/L			09/13/12 22:34	1
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/13/12 22:34	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/13/12 22:34	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/13/12 22:34	1
Ammonia (as N)	0.69		0.20	0.035	mg/L			09/27/12 10:04	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:13	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Client Sample ID: X-9D-(09122012)

Lab Sample ID: 240-15120-4

Date Collected: 09/12/12 14:45

Matrix: Water

Date Received: 09/13/12 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.67	J	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 08:27	1
Barium	84	B	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 08:27	1
Iron	2500		50	26	ug/L		09/24/12 07:18	09/26/12 08:27	1
Manganese	110		2.0	0.83	ug/L		09/24/12 07:18	09/26/12 08:27	1
Selenium	5.0	U	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 08:27	1
Sodium	650000	B	10000	69	ug/L		09/24/12 07:18	09/26/12 11:53	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.83	J	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 08:33	1
Barium	88	B	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 08:33	1
Iron	2700		50	26	ug/L		09/24/12 07:18	09/26/12 08:33	1
Manganese	120		2.0	0.83	ug/L		09/24/12 07:18	09/26/12 08:33	1
Selenium	5.0	U	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 08:33	1
Sodium	680000		10000	69	ug/L		09/24/12 07:18	09/26/12 11:59	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:22	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 18:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.45	HF	0.100	0.100	SU			09/17/12 17:18	1
Total Dissolved Solids	2600		40	30	mg/L			09/19/12 18:10	4
Chloride	1400		10	1.0	mg/L			09/14/12 00:29	10
Nitrite as N	1.0	U	1.0	0.12	mg/L			09/14/12 00:29	10
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/13/12 23:07	1
Sulfate	200		10	1.2	mg/L			09/14/12 00:29	10
Ammonia (as N)	7.7		2.0	0.35	mg/L			09/27/12 10:06	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:13	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-58654/1-A

Matrix: Water

Analysis Batch: 58908

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 58654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/21/12 10:13	09/24/12 15:05	1
Barium	5.0	U	5.0	0.19	ug/L		09/21/12 10:13	09/24/12 15:05	1
Iron	50	U	50	26	ug/L		09/21/12 10:13	09/24/12 15:05	1
Manganese	0.914	J ^	2.0	0.83	ug/L		09/21/12 10:13	09/24/12 15:05	1
Selenium	5.0	U	5.0	0.57	ug/L		09/21/12 10:13	09/24/12 15:05	1
Sodium	1000	U	1000	6.9	ug/L		09/21/12 10:13	09/24/12 15:05	1

Lab Sample ID: LCS 240-58654/2-A

Matrix: Water

Analysis Batch: 58908

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 58654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	1030		ug/L		103	80 - 120
Barium	1000	1050		ug/L		105	80 - 120
Iron	10000	10700		ug/L		107	80 - 120
Manganese	1000	1200	^	ug/L		120	80 - 120
Selenium	1000	1050		ug/L		105	80 - 120
Sodium	10000	10600		ug/L		106	80 - 120

Lab Sample ID: MB 240-58784/1-A

Matrix: Water

Analysis Batch: 59217

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 58784

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/24/12 07:18	09/26/12 07:31	1
Barium	0.760	J	5.0	0.19	ug/L		09/24/12 07:18	09/26/12 07:31	1
Iron	50	U	50	26	ug/L		09/24/12 07:18	09/26/12 07:31	1
Manganese	2.0	U	2.0	0.83	ug/L		09/24/12 07:18	09/26/12 07:31	1
Selenium	5.0	U	5.0	0.57	ug/L		09/24/12 07:18	09/26/12 07:31	1
Sodium	38.3	J	1000	6.9	ug/L		09/24/12 07:18	09/26/12 07:31	1

Lab Sample ID: LCS 240-58784/2-A

Matrix: Water

Analysis Batch: 59217

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 58784

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	994		ug/L		99	80 - 120
Barium	1000	988		ug/L		99	80 - 120
Iron	10000	10100		ug/L		101	80 - 120
Manganese	1000	1060		ug/L		106	80 - 120
Selenium	1000	1010		ug/L		101	80 - 120
Sodium	10000	9510		ug/L		95	80 - 120

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-58785/1-A

Matrix: Water

Analysis Batch: 59067

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58785

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/25/12 17:59	1

Lab Sample ID: LCS 240-58785/2-A

Matrix: Water

Analysis Batch: 59067

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58785

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.95		ug/L		99	81 - 123

Lab Sample ID: 240-15120-1 MS

Matrix: Water

Analysis Batch: 59067

Client Sample ID: X-9AR-(09122012)

Prep Type: Total/NA

Prep Batch: 58785

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.20	U	1.00	1.02		ug/L		102	69 - 134

Lab Sample ID: 240-15120-1 MSD

Matrix: Water

Analysis Batch: 59067

Client Sample ID: X-9AR-(09122012)

Prep Type: Total/NA

Prep Batch: 58785

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.20	U	1.00	0.964		ug/L		96	69 - 134	6	20

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 240-58084/2

Matrix: Water

Analysis Batch: 58084

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.49	7.510		SU		100	97 - 103

Lab Sample ID: 240-15120-4 DU

Matrix: Water

Analysis Batch: 58084

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.45	HF	7.600	HF	SU		2	20

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-58410/1

Matrix: Water

Analysis Batch: 58410

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	7.4	mg/L			09/19/12 18:10	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Method: 160.1 - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 240-58410/2

Matrix: Water

Analysis Batch: 58410

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	406	378		mg/L		93	88 - 110

Lab Sample ID: 240-15120-4 DU

Matrix: Water

Analysis Batch: 58410

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2600		2700		mg/L		5	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-57785/3

Matrix: Water

Analysis Batch: 57785

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/13/12 20:56	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/13/12 20:56	1

Lab Sample ID: LCS 240-57785/4

Matrix: Water

Analysis Batch: 57785

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.5		mg/L		103	90 - 110
Sulfate	50.0	50.4		mg/L		101	90 - 110

Lab Sample ID: 240-15120-4 MS

Matrix: Water

Analysis Batch: 57785

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1400		50.0	1410	4	mg/L		-72	80 - 120
Sulfate	200		50.0	236	F	mg/L		75	80 - 120

Lab Sample ID: 240-15120-4 MSD

Matrix: Water

Analysis Batch: 57785

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1400		50.0	1420	4	mg/L		-61	80 - 120	0	20
Sulfate	200		50.0	237	F	mg/L		77	80 - 120	0	20

Lab Sample ID: MB 240-57786/3

Matrix: Water

Analysis Batch: 57786

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/13/12 20:56	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/13/12 20:56	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 240-57786/4

Matrix: Water

Analysis Batch: 57786

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	2.50	2.61		mg/L		104	90 - 110
Nitrate as N	2.50	2.70		mg/L		108	90 - 110

Lab Sample ID: 240-15120-4 MS

Matrix: Water

Analysis Batch: 57786

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.10	U	2.50	2.73		mg/L		109	80 - 120

Lab Sample ID: 240-15120-4 MS

Matrix: Water

Analysis Batch: 57786

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	1.0	U	2.50	3.99	F	mg/L		160	80 - 120

Lab Sample ID: 240-15120-4 MSD

Matrix: Water

Analysis Batch: 57786

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.10	U	2.50	2.76		mg/L		110	80 - 120	1	20

Lab Sample ID: 240-15120-4 MSD

Matrix: Water

Analysis Batch: 57786

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrite as N	1.0	U	2.50	3.96	F	mg/L		159	80 - 120	1	20

Method: 350.3 - Nitrogen, Ammonia

Lab Sample ID: MB 240-59163/7

Matrix: Water

Analysis Batch: 59163

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			09/26/12 09:37	1

Lab Sample ID: LCS 240-59163/8

Matrix: Water

Analysis Batch: 59163

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	8.84		mg/L		99	85 - 114

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Method: 350.3 - Nitrogen, Ammonia (Continued)

Lab Sample ID: MB 240-59337/7

Matrix: Water

Analysis Batch: 59337

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			09/27/12 09:48	1

Lab Sample ID: LCS 240-59337/8

Matrix: Water

Analysis Batch: 59337

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	9.05		mg/L		101	85 - 114

Lab Sample ID: 240-15120-4 MS

Matrix: Water

Analysis Batch: 59337

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	7.7		25.0	33.6		mg/L		104	75 - 125

Lab Sample ID: 240-15120-4 MSD

Matrix: Water

Analysis Batch: 59337

Client Sample ID: X-9D-(09122012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	7.7		25.0	34.7		mg/L		108	75 - 125	3	20

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-58790/3-A

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58790

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:13	1

Lab Sample ID: LCS 240-58790/4-A

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58790

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0449	0.0445		mg/L		99	69 - 120

Lab Sample ID: MRL 240-58864/6 MRL

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0100	0.0103		mg/L		103	70 - 130

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Method: 9012A - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: 240-15120-4 MS

Matrix: Water

Analysis Batch: 58864

Client Sample ID: X-9D-(09122012)

Prep Type: Dissolved

Prep Batch: 58790

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.010	U	0.0400	0.0385		mg/L		96	42 - 140

Lab Sample ID: 240-15120-4 MSD

Matrix: Water

Analysis Batch: 58864

Client Sample ID: X-9D-(09122012)

Prep Type: Dissolved

Prep Batch: 58790

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.010	U	0.0400	0.0352		mg/L		88	42 - 140	9	20

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Metals

Prep Batch: 58654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total Recoverable	Water	3005A	
240-15120-1	X-9AR-(09122012)	Dissolved	Water	3005A	
240-15120-2	X-9BR-(09122012)	Total Recoverable	Water	3005A	
240-15120-2	X-9BR-(09122012)	Dissolved	Water	3005A	
LCS 240-58654/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-58654/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 58784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-3	X-9CAUG-(09122012)	Total Recoverable	Water	3005A	
240-15120-3	X-9CAUG-(09122012)	Dissolved	Water	3005A	
240-15120-4	X-9D-(09122012)	Total Recoverable	Water	3005A	
240-15120-4	X-9D-(09122012)	Dissolved	Water	3005A	
LCS 240-58784/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-58784/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 58785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total/NA	Water	7470A	
240-15120-1	X-9AR-(09122012)	Dissolved	Water	7470A	
240-15120-1 MS	X-9AR-(09122012)	Total/NA	Water	7470A	
240-15120-1 MSD	X-9AR-(09122012)	Total/NA	Water	7470A	
240-15120-2	X-9BR-(09122012)	Total/NA	Water	7470A	
240-15120-2	X-9BR-(09122012)	Dissolved	Water	7470A	
240-15120-3	X-9CAUG-(09122012)	Total/NA	Water	7470A	
240-15120-3	X-9CAUG-(09122012)	Dissolved	Water	7470A	
240-15120-4	X-9D-(09122012)	Total/NA	Water	7470A	
240-15120-4	X-9D-(09122012)	Dissolved	Water	7470A	
LCS 240-58785/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-58785/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 58908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total Recoverable	Water	6020	58654
240-15120-1	X-9AR-(09122012)	Dissolved	Water	6020	58654
240-15120-2	X-9BR-(09122012)	Total Recoverable	Water	6020	58654
240-15120-2	X-9BR-(09122012)	Dissolved	Water	6020	58654
LCS 240-58654/2-A	Lab Control Sample	Total Recoverable	Water	6020	58654
MB 240-58654/1-A	Method Blank	Total Recoverable	Water	6020	58654

Analysis Batch: 59067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total/NA	Water	7470A	58785
240-15120-1	X-9AR-(09122012)	Dissolved	Water	7470A	58785
240-15120-1 MS	X-9AR-(09122012)	Total/NA	Water	7470A	58785
240-15120-1 MSD	X-9AR-(09122012)	Total/NA	Water	7470A	58785
240-15120-2	X-9BR-(09122012)	Total/NA	Water	7470A	58785
240-15120-2	X-9BR-(09122012)	Dissolved	Water	7470A	58785
240-15120-3	X-9CAUG-(09122012)	Total/NA	Water	7470A	58785
240-15120-3	X-9CAUG-(09122012)	Dissolved	Water	7470A	58785
240-15120-4	X-9D-(09122012)	Total/NA	Water	7470A	58785
240-15120-4	X-9D-(09122012)	Dissolved	Water	7470A	58785

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Metals (Continued)

Analysis Batch: 59067 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-58785/2-A	Lab Control Sample	Total/NA	Water	7470A	58785
MB 240-58785/1-A	Method Blank	Total/NA	Water	7470A	58785

Analysis Batch: 59217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-3	X-9CAUG-(09122012)	Total Recoverable	Water	6020	58784
240-15120-3	X-9CAUG-(09122012)	Dissolved	Water	6020	58784
240-15120-4	X-9D-(09122012)	Total Recoverable	Water	6020	58784
240-15120-4	X-9D-(09122012)	Dissolved	Water	6020	58784
240-15120-4	X-9D-(09122012)	Total Recoverable	Water	6020	58784
240-15120-4	X-9D-(09122012)	Dissolved	Water	6020	58784
LCS 240-58784/2-A	Lab Control Sample	Total Recoverable	Water	6020	58784
MB 240-58784/1-A	Method Blank	Total Recoverable	Water	6020	58784

General Chemistry

Analysis Batch: 57785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total/NA	Water	300.0	
240-15120-1	X-9AR-(09122012)	Total/NA	Water	300.0	
240-15120-2	X-9BR-(09122012)	Total/NA	Water	300.0	
240-15120-2	X-9BR-(09122012)	Total/NA	Water	300.0	
240-15120-3	X-9CAUG-(09122012)	Total/NA	Water	300.0	
240-15120-4	X-9D-(09122012)	Total/NA	Water	300.0	
240-15120-4 MS	X-9D-(09122012)	Total/NA	Water	300.0	
240-15120-4 MSD	X-9D-(09122012)	Total/NA	Water	300.0	
LCS 240-57785/4	Lab Control Sample	Total/NA	Water	300.0	
MB 240-57785/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 57786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total/NA	Water	300.0	
240-15120-2	X-9BR-(09122012)	Total/NA	Water	300.0	
240-15120-3	X-9CAUG-(09122012)	Total/NA	Water	300.0	
240-15120-4	X-9D-(09122012)	Total/NA	Water	300.0	
240-15120-4	X-9D-(09122012)	Total/NA	Water	300.0	
240-15120-4 MS	X-9D-(09122012)	Total/NA	Water	300.0	
240-15120-4 MS	X-9D-(09122012)	Total/NA	Water	300.0	
240-15120-4 MSD	X-9D-(09122012)	Total/NA	Water	300.0	
240-15120-4 MSD	X-9D-(09122012)	Total/NA	Water	300.0	
LCS 240-57786/4	Lab Control Sample	Total/NA	Water	300.0	
MB 240-57786/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total/NA	Water	150.1	
240-15120-2	X-9BR-(09122012)	Total/NA	Water	150.1	
240-15120-3	X-9CAUG-(09122012)	Total/NA	Water	150.1	
240-15120-4	X-9D-(09122012)	Total/NA	Water	150.1	
240-15120-4 DU	X-9D-(09122012)	Total/NA	Water	150.1	
LCS 240-58084/2	Lab Control Sample	Total/NA	Water	150.1	

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

General Chemistry (Continued)

Analysis Batch: 58410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total/NA	Water	160.1	
240-15120-2	X-9BR-(09122012)	Total/NA	Water	160.1	
240-15120-3	X-9CAUG-(09122012)	Total/NA	Water	160.1	
240-15120-4	X-9D-(09122012)	Total/NA	Water	160.1	
240-15120-4 DU	X-9D-(09122012)	Total/NA	Water	160.1	
LCS 240-58410/2	Lab Control Sample	Total/NA	Water	160.1	
MB 240-58410/1	Method Blank	Total/NA	Water	160.1	

Prep Batch: 58790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Dissolved	Water	9012A	
240-15120-2	X-9BR-(09122012)	Dissolved	Water	9012A	
240-15120-3	X-9CAUG-(09122012)	Dissolved	Water	9012A	
240-15120-4	X-9D-(09122012)	Dissolved	Water	9012A	
240-15120-4 MS	X-9D-(09122012)	Dissolved	Water	9012A	
240-15120-4 MSD	X-9D-(09122012)	Dissolved	Water	9012A	
LCS 240-58790/4-A	Lab Control Sample	Total/NA	Water	9012A	
MB 240-58790/3-A	Method Blank	Total/NA	Water	9012A	

Analysis Batch: 58864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Dissolved	Water	9012A	58790
240-15120-2	X-9BR-(09122012)	Dissolved	Water	9012A	58790
240-15120-3	X-9CAUG-(09122012)	Dissolved	Water	9012A	58790
240-15120-4	X-9D-(09122012)	Dissolved	Water	9012A	58790
240-15120-4 MS	X-9D-(09122012)	Dissolved	Water	9012A	58790
240-15120-4 MSD	X-9D-(09122012)	Dissolved	Water	9012A	58790
LCS 240-58790/4-A	Lab Control Sample	Total/NA	Water	9012A	58790
MB 240-58790/3-A	Method Blank	Total/NA	Water	9012A	58790
MRL 240-58864/6 MRL	Lab Control Sample	Total/NA	Water	9012A	

Analysis Batch: 59163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-1	X-9AR-(09122012)	Total/NA	Water	350.3	
240-15120-2	X-9BR-(09122012)	Total/NA	Water	350.3	
LCS 240-59163/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-59163/7	Method Blank	Total/NA	Water	350.3	

Analysis Batch: 59337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15120-3	X-9CAUG-(09122012)	Total/NA	Water	350.3	
240-15120-4	X-9D-(09122012)	Total/NA	Water	350.3	
240-15120-4 MS	X-9D-(09122012)	Total/NA	Water	350.3	
240-15120-4 MSD	X-9D-(09122012)	Total/NA	Water	350.3	
LCS 240-59337/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-59337/7	Method Blank	Total/NA	Water	350.3	

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Client Sample ID: X-9AR-(09122012)

Lab Sample ID: 240-15120-1

Date Collected: 09/12/12 12:10

Matrix: Water

Date Received: 09/13/12 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			58654	09/21/12 10:13	LM	TAL NC
Total Recoverable	Analysis	6020		1	58908	09/24/12 16:36	KC	TAL NC
Dissolved	Prep	3005A			58654	09/21/12 10:13	LM	TAL NC
Dissolved	Analysis	6020		1	58908	09/24/12 16:42	KC	TAL NC
Total/NA	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Total/NA	Analysis	7470A		1	59067	09/25/12 18:02	SG	TAL NC
Dissolved	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Dissolved	Analysis	7470A		1	59067	09/25/12 18:06	SG	TAL NC
Total/NA	Analysis	300.0		1	57785	09/13/12 21:29	JB	TAL NC
Total/NA	Analysis	300.0		5	57785	09/13/12 21:45	JB	TAL NC
Total/NA	Analysis	300.0		1	57786	09/13/12 21:29	JB	TAL NC
Total/NA	Analysis	150.1		1	58084	09/17/12 17:10	LG	TAL NC
Total/NA	Analysis	160.1		1	58410	09/19/12 18:10	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 11:13	CN	TAL NC
Total/NA	Analysis	350.3		1	59163	09/26/12 11:01	LG	TAL NC

Client Sample ID: X-9BR-(09122012)

Lab Sample ID: 240-15120-2

Date Collected: 09/12/12 11:30

Matrix: Water

Date Received: 09/13/12 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			58654	09/21/12 10:13	LM	TAL NC
Total Recoverable	Analysis	6020		1	58908	09/24/12 16:47	KC	TAL NC
Dissolved	Prep	3005A			58654	09/21/12 10:13	LM	TAL NC
Dissolved	Analysis	6020		1	58908	09/24/12 16:52	KC	TAL NC
Total/NA	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Total/NA	Analysis	7470A		1	59067	09/25/12 18:09	SG	TAL NC
Dissolved	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Dissolved	Analysis	7470A		1	59067	09/25/12 18:10	SG	TAL NC
Total/NA	Analysis	300.0		1	57785	09/13/12 22:02	JB	TAL NC
Total/NA	Analysis	300.0		5	57785	09/13/12 22:18	JB	TAL NC
Total/NA	Analysis	300.0		1	57786	09/13/12 22:02	JB	TAL NC
Total/NA	Analysis	150.1		1	58084	09/17/12 17:14	LG	TAL NC
Total/NA	Analysis	160.1		1	58410	09/19/12 18:10	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 11:13	CN	TAL NC
Total/NA	Analysis	350.3		5	59163	09/26/12 11:04	LG	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

Client Sample ID: X-9CAUG-(09122012)

Lab Sample ID: 240-15120-3

Date Collected: 09/12/12 13:15

Matrix: Water

Date Received: 09/13/12 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Total/NA	Analysis	7470A		1	59067	09/25/12 18:19	SG	TAL NC
Dissolved	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Dissolved	Analysis	7470A		1	59067	09/25/12 18:21	SG	TAL NC
Total Recoverable	Prep	3005A			58784	09/24/12 07:18	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 08:16	KC	TAL NC
Dissolved	Prep	3005A			58784	09/24/12 07:18	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 08:21	KC	TAL NC
Total/NA	Analysis	300.0		1	57785	09/13/12 22:34	JB	TAL NC
Total/NA	Analysis	300.0		1	57786	09/13/12 22:34	JB	TAL NC
Total/NA	Analysis	150.1		1	58084	09/17/12 17:17	LG	TAL NC
Total/NA	Analysis	160.1		1	58410	09/19/12 18:10	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 11:13	CN	TAL NC
Total/NA	Analysis	350.3		1	59337	09/27/12 10:04	LG	TAL NC

Client Sample ID: X-9D-(09122012)

Lab Sample ID: 240-15120-4

Date Collected: 09/12/12 14:45

Matrix: Water

Date Received: 09/13/12 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Total/NA	Analysis	7470A		1	59067	09/25/12 18:22	SG	TAL NC
Dissolved	Prep	7470A			58785	09/25/12 14:10	LM	TAL NC
Dissolved	Analysis	7470A		1	59067	09/25/12 18:23	SG	TAL NC
Total Recoverable	Prep	3005A			58784	09/24/12 07:18	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 08:27	KC	TAL NC
Dissolved	Prep	3005A			58784	09/24/12 07:18	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 08:33	KC	TAL NC
Total Recoverable	Analysis	6020		10	59217	09/26/12 11:53	KC	TAL NC
Dissolved	Analysis	6020		10	59217	09/26/12 11:59	KC	TAL NC
Total/NA	Analysis	300.0		10	57785	09/14/12 00:29	JB	TAL NC
Total/NA	Analysis	300.0		1	57786	09/13/12 23:07	JB	TAL NC
Total/NA	Analysis	300.0		10	57786	09/14/12 00:29	JB	TAL NC
Total/NA	Analysis	150.1		1	58084	09/17/12 17:18	LG	TAL NC
Total/NA	Analysis	160.1		4	58410	09/19/12 18:10	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 11:13	CN	TAL NC
Total/NA	Analysis	350.3		10	59337	09/27/12 10:06	LG	TAL NC

Laboratory References:

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

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15120-1

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	NELAC	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAC	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAC	5	200004	07-31-13
Kansas	NELAC	7	E-10336	01-31-13
Kentucky	State Program	4	58	11-16-12
L-A-B	DoD ELAP		L2315	02-28-13
Minnesota	NELAC	5	039-999-348	12-31-12
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAC	2	OH001	06-30-13
New York	NELAC	2	10975	04-01-13
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAC	3	68-00340	08-31-13
Texas	NELAC Secondary AB	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAC	3	460175	09-14-13
Washington	State Program	10	C971	01-12-13
West Virginia DEP	State Program	3	210	12-31-12
Wisconsin	State Program	5	999518190	08-31-13

Chain of Custody Record

TestAmerica Laboratory location:
Regulatory program:

☐ DW ☐ NPDES ☐ RCRA ☐ Other

Company Name: ARCADIS		Client Project Manager: Renee Pionk		Site Contact: Austin Westhuis		Lab Contact:		COC No: 043771		TestAmerica Laboratories, Inc.	
Address: 10559 Citation Dr., Suite 100		Telephone: 517-648-8027		Telephone: 517-719-0214		Telephone:		1 of 1 COCs			
City/State/Zip: Brighton, MI 48116		Email: Renee.Pionk@arcadis-usa.com		Analysis Turnaround Time (in BUS days):		Analyses:					
Phone: 517-648-8027		TAT in different from below:		☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Ammonia Nitrogen Dissolved Cyanide Chloride, pH, Sulfate Nitrate, and Nitrite TDS					
Project Name: SME / GPL		Method of Shipment/Carrier:		Containers & Preservatives:		Filtered Sample (Y/N)		Composition (Grav-G)			
Project Number: 800644342012.0005 (SME)		Shipping/Tracking No:		Matrix:		Sample Date		Sample Time			
PO #				Air		H2SO4		HNO3		HCl	
				Aqueous		12		12		12	
				Solid		12		12		12	
				Other:		12		12		12	
				Other:		12		12		12	
				Sample Date		9/12/12		1210			
				Sample Time		9/12/12		1130			
				Sample Date		9/12/12		1315			
				Sample Time		9/12/12		1445			
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TestAmerica Canton Sample Receipt Form/Narrative

Login # : 15120

Client ARCADIS Site Name _____ By: [Signature]
Cooler Received on 9-13-12 Opened on 9-13-12 (Signature)
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# 1	(CF 0°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C
IR GUN# 4G	(CF -1°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C
IR GUN# 5G	(CF -1°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C
IR GUN# 8	(CF 0°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C

☒ Multiple on Back2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 2514☒ Yes ☐ No

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

☒ Yes ☐ No ☐ NA

-Were custody seals on the bottle(s)?

☒ Yes ☐ No

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

☒ Yes ☐ No

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

☒ Yes ☐ No

5. Were the custody papers relinquished & signed in the appropriate place?

☒ Yes ☐ No

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

☒ Yes ☐ No

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

☒ Yes ☐ No

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

☒ Yes ☐ No

9. Sufficient quantity received to perform indicated analyses?

☒ Yes ☐ No

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

☒ Yes ☐ No ☐ NA

11. Were VOAs on the COC?

☒ Yes ☐ No

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

☒ Yes ☐ No ☐ NA

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

☒ Yes ☐ No

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

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

15. SAMPLE CONDITION

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

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

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



Saginaw Malleable Iron Plant
Sampling Logs

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: 240-15219-1

Client Project/Site: 11060-TO2, RACER GPL

For:

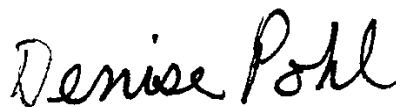
ARCADIS U.S. Inc

10559 Citation Drive

Suite 100

Brighton, Michigan 48116

Attn: Renee Pionk



Authorized for release by:

10/8/2012 4:22:31 PM

Denise Pohl

Project Manager II

denise.pohl@testamericainc.com

LINKS

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results through

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Have a Question?



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www.testamericainc.com

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

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

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Definitions/Glossary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Qualifiers

GC/MS VOA

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

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Job ID: 240-15219-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: 11060-TO2, RACER GPL

Report Number: 240-15219-1

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 North 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 09/15/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.6 and 1.1 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples TWW-1-(09142012) (240-15219-1), DUP-1-(09142012) (240-15219-6) and TRIP BLANK (240-15219-8) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/20/2012.

Samples TWW-1-(09142012) (240-15219-1)[4X] and DUP-1-(09142012) (240-15219-6)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the VOCs analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED METALS (ICPMS)

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4) and MW-183WT-(09142012) (240-15219-5) were analyzed for dissolved metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/25/2012 and analyzed on 09/26/2012 and 09/27/2012.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Job ID: 240-15219-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICPMS)

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/25/2012 and analyzed on 09/26/2012 and 09/27/2012.

Barium, Manganese and Sodium were detected in method blank MB 240-58920/1-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 "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Sodium failed the recovery criteria low for the MS of sample MW-183WT-(09142012)MS (240-15219-5) in batch 240-59217.

Refer to the QC report for details.

Sample X-4D-(09142012) (240-15219-2)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

DISSOLVED MERCURY (CVAA)

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4) and MW-183WT-(09142012) (240-15219-5) were analyzed for dissolved mercury (CVAA) in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 09/26/2012 and analyzed on 09/27/2012.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

TOTAL MERCURY

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for total mercury in accordance with EPA SW-846 Methods 7470A. The samples were prepared on 09/25/2012 and 09/26/2012 and analyzed on 09/26/2012 and 09/27/2012.

No difficulties were encountered during the mercury analyses.

All quality control parameters were within the acceptance limits.

PH

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 09/15/2012.

For the duplicate of sample MW-183WT-(09142012)DU (240-15219-5).

Refer to the QC report for details.

No other difficulties were encountered during the pH analyses.

All other quality control parameters were within the acceptance limits.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Job ID: 240-15219-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

TOTAL DISSOLVED SOLIDS

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 09/20/2012.

For the duplicate of sample MW-183WT-(09142012)DU (240-15219-5).

Refer to the QC report for details.

Samples X-4D-(09142012) (240-15219-2)[5X] and X-10BR-(09142012) (240-15219-4)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method 160.1: Reanalysis of the following sample was performed outside of the analytical holding time due to analyst oversight: MW-183WT-(09142012) (240-15219-5), MW-183WT-(09142012) (240-15219-5 DU). Data is reported.

Method 160.1: The associated samples were inside an oven that spiked above criteria for temperature for a short period of time: (LCS 240-59013/2), (MB 240-59013/1), MW-183WT-(09142012) (240-15219-5), MW-183WT-(09142012) (240-15219-5 DU). Data is reported.

No other difficulties were encountered during the TDS analyses.

All other quality control parameters were within the acceptance limits.

ANIONS

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/15/2012.

Sample X-4D-(09142012) (240-15219-2)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Method 300.0: The following sample was diluted due to interference from a neighboring chloride peak: X-4D-(09142012) (240-15219-2). Elevated reporting limits (RLs) are provided.

No other difficulties were encountered during the anions analyses.

All quality control parameters were within the acceptance limits.

ANIONS

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/15/2012 and 09/17/2012.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples X-4D-(09142012) (240-15219-2)[10X], X-10BR-(09142012) (240-15219-4)[5X], MW-183WT-(09142012) (240-15219-5)[5X] and DUP-4-(09142012) (240-15219-7)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the anions analyses.

All other quality control parameters were within the acceptance limits.

AMMONIA

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Job ID: 240-15219-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for ammonia in accordance with EPA Method 350.3. The samples were analyzed on 09/27/2012.

Samples X-4D-(09142012) (240-15219-2)[5X], X-4CAUGR-(09142012) (240-15219-3)[5X] and X-10BR-(09142012) (240-15219-4)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED CYANIDE

Samples X-4D-(09142012) (240-15219-2), X-4CAUGR-(09142012) (240-15219-3), X-10BR-(09142012) (240-15219-4), MW-183WT-(09142012) (240-15219-5) and DUP-4-(09142012) (240-15219-7) were analyzed for dissolved cyanide in accordance with EPA SW-846 Method 9012A. The samples were prepared and analyzed on 09/24/2012.

No difficulties were encountered during the cyanide analyses.

All quality control parameters were within the acceptance limits.

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NC
6020	Metals (ICP/MS)	SW846	TAL NC
7470A	Mercury (CVAA)	SW846	TAL NC
150.1	pH (Electrometric)	MCAWW	TAL NC
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL NC
300.0	Anions, Ion Chromatography	MCAWW	TAL NC
350.3	Nitrogen, Ammonia	MCAWW	TAL NC
9012A	Cyanide, Total and/or Amenable	SW846	TAL NC

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-15219-1	TWW-1-(09142012)	Water	09/14/12 09:25	09/15/12 09:45
240-15219-2	X-4D-(09142012)	Water	09/14/12 09:20	09/15/12 09:45
240-15219-3	X-4CAUGR-(09142012)	Water	09/14/12 10:55	09/15/12 09:45
240-15219-4	X-10BR-(09142012)	Water	09/14/12 11:30	09/15/12 09:45
240-15219-5	MW-183WT-(09142012)	Water	09/14/12 12:15	09/15/12 09:45
240-15219-6	DUP-1-(09142012)	Water	09/14/12 00:00	09/15/12 09:45
240-15219-7	DUP-4-(09142012)	Water	09/14/12 00:00	09/15/12 09:45
240-15219-8	TRIP BLANK	Water	09/14/12 00:00	09/15/12 09:45

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TWW-1-(09142012)

Lab Sample ID: 240-15219-1

Date Collected: 09/14/12 09:25

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	40	U	40	4.4	ug/L			09/20/12 23:02	4
Benzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Dichlorobromomethane	4.0	U	4.0	0.60	ug/L			09/20/12 23:02	4
Bromoform	4.0	U	4.0	2.6	ug/L			09/20/12 23:02	4
Bromomethane	4.0	U	4.0	1.6	ug/L			09/20/12 23:02	4
2-Butanone (MEK)	40	U	40	2.3	ug/L			09/20/12 23:02	4
Carbon disulfide	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Carbon tetrachloride	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Chlorobenzene	4.0	U	4.0	0.60	ug/L			09/20/12 23:02	4
Chloroethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:02	4
Chloroform	4.0	U	4.0	0.64	ug/L			09/20/12 23:02	4
Chloromethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:02	4
1,1-Dichloroethane	1.7	J	4.0	0.60	ug/L			09/20/12 23:02	4
1,2-Dichloroethane	4.0	U	4.0	0.88	ug/L			09/20/12 23:02	4
1,1-Dichloroethene	4.0	U	4.0	0.76	ug/L			09/20/12 23:02	4
1,2-Dichloropropane	4.0	U	4.0	0.72	ug/L			09/20/12 23:02	4
cis-1,3-Dichloropropene	4.0	U	4.0	0.56	ug/L			09/20/12 23:02	4
trans-1,3-Dichloropropene	4.0	U	4.0	0.76	ug/L			09/20/12 23:02	4
Ethylbenzene	4.0	U	4.0	0.68	ug/L			09/20/12 23:02	4
2-Hexanone	40	U	40	1.6	ug/L			09/20/12 23:02	4
Methylene Chloride	4.0	U	4.0	1.3	ug/L			09/20/12 23:02	4
4-Methyl-2-pentanone (MIBK)	40	U	40	1.3	ug/L			09/20/12 23:02	4
Styrene	4.0	U	4.0	0.44	ug/L			09/20/12 23:02	4
1,1,2,2-Tetrachloroethane	4.0	U	4.0	0.72	ug/L			09/20/12 23:02	4
Tetrachloroethene	4.0	U	4.0	1.2	ug/L			09/20/12 23:02	4
Toluene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Trichloroethene	0.89	J	4.0	0.68	ug/L			09/20/12 23:02	4
Vinyl chloride	40		4.0	0.88	ug/L			09/20/12 23:02	4
Xylenes, Total	8.0	U	8.0	1.1	ug/L			09/20/12 23:02	4
1,1,1-Trichloroethane	4.0	U	4.0	0.88	ug/L			09/20/12 23:02	4
1,1,2-Trichloroethane	4.0	U	4.0	1.1	ug/L			09/20/12 23:02	4
Cyclohexane	4.0	U	4.0	0.48	ug/L			09/20/12 23:02	4
1,2-Dibromo-3-Chloropropane	8.0	U	8.0	2.7	ug/L			09/20/12 23:02	4
Ethylene Dibromide	4.0	U	4.0	0.96	ug/L			09/20/12 23:02	4
Dichlorodifluoromethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:02	4
cis-1,2-Dichloroethene	190		4.0	0.68	ug/L			09/20/12 23:02	4
trans-1,2-Dichloroethene	2.2	J	4.0	0.76	ug/L			09/20/12 23:02	4
Isopropylbenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Methyl acetate	40	U	40	1.5	ug/L			09/20/12 23:02	4
Methyl tert-butyl ether	20	U	20	0.68	ug/L			09/20/12 23:02	4
1,1,2-Trichloro-1,2,2-trifluoroethane	4.0	U	4.0	1.1	ug/L			09/20/12 23:02	4
1,2,4-Trichlorobenzene	4.0	U	4.0	0.60	ug/L			09/20/12 23:02	4
1,2-Dichlorobenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
1,3-Dichlorobenzene	4.0	U	4.0	0.56	ug/L			09/20/12 23:02	4
1,4-Dichlorobenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4
Trichlorofluoromethane	4.0	U	4.0	0.84	ug/L			09/20/12 23:02	4
Chlorodibromomethane	4.0	U	4.0	0.72	ug/L			09/20/12 23:02	4
Methylcyclohexane	4.0	U	4.0	0.52	ug/L			09/20/12 23:02	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		63 - 129		09/20/12 23:02	4

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TWW-1-(09142012)

Lab Sample ID: 240-15219-1

Date Collected: 09/14/12 09:25

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		66 - 117		09/20/12 23:02	4
Toluene-d8 (Surr)	89		74 - 115		09/20/12 23:02	4
Dibromofluoromethane (Surr)	97		75 - 121		09/20/12 23:02	4

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: X-4D-(09142012)

Lab Sample ID: 240-15219-2

Date Collected: 09/14/12 09:20

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:08	1
Barium	86	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:08	1
Iron	980		50	26	ug/L		09/25/12 07:43	09/26/12 13:08	1
Manganese	180	B	2.0	0.83	ug/L		09/25/12 07:43	09/26/12 13:08	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:08	1
Sodium	690000	B	10000	69	ug/L		09/25/12 07:43	09/26/12 15:46	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.89	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:32	1
Barium	87	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:32	1
Iron	1000		50	26	ug/L		09/25/12 07:43	09/26/12 13:32	1
Manganese	190	B ^	10	4.2	ug/L		09/25/12 07:43	09/27/12 15:14	5
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:32	1
Sodium	690000	B	10000	69	ug/L		09/25/12 07:43	09/26/12 15:57	10

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/26/12 14:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.51	HF	0.100	0.100	SU			09/15/12 11:02	1
Total Dissolved Solids	2400		50	37	mg/L			09/20/12 14:32	5
Chloride	1500		10	1.0	mg/L			09/17/12 18:02	10
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 14:52	1
Nitrate as N	0.50	U	0.50	0.12	mg/L			09/15/12 15:09	5
Sulfate	190		1.0	0.12	mg/L			09/15/12 14:52	1
Ammonia (as N)	8.3		1.0	0.18	mg/L			09/27/12 11:44	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:55	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: X-4CAUGR-(09142012)

Lab Sample ID: 240-15219-3

Date Collected: 09/14/12 10:55

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.42	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:37	1
Barium	120	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:37	1
Iron	4500		50	26	ug/L		09/25/12 07:43	09/26/12 13:37	1
Manganese	560	B ^	2.0	0.83	ug/L		09/25/12 07:43	09/27/12 15:19	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:37	1
Sodium	53000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.40	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:43	1
Barium	120	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:43	1
Iron	4400		50	26	ug/L		09/25/12 07:43	09/26/12 13:43	1
Manganese	570	B ^	2.0	0.83	ug/L		09/25/12 07:43	09/27/12 15:25	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:43	1
Sodium	54000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:43	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:46	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.23	HF	0.100	0.100	SU			09/15/12 11:14	1
Total Dissolved Solids	630		10	7.4	mg/L			09/20/12 14:32	1
Chloride	140		1.0	0.10	mg/L			09/15/12 15:26	1
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 15:26	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 15:26	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/15/12 15:26	1
Ammonia (as N)	1.9		1.0	0.18	mg/L			09/27/12 11:47	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:55	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: X-10BR-(09142012)

Lab Sample ID: 240-15219-4

Date Collected: 09/14/12 11:30

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	27		2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:48	1
Barium	570	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:48	1
Iron	30000		50	26	ug/L		09/25/12 07:43	09/26/12 13:48	1
Manganese	730	B ^	10	4.2	ug/L		09/25/12 07:43	09/27/12 15:30	5
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:48	1
Sodium	200000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:48	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.84	HF	0.100	0.100	SU			09/15/12 11:25	1
Total Dissolved Solids	1500		20	15	mg/L			09/20/12 14:32	2
Chloride	620		5.0	0.50	mg/L			09/17/12 18:19	5
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 15:44	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 15:44	1
Sulfate	0.59	J	1.0	0.12	mg/L			09/15/12 15:44	1
Ammonia (as N)	7.9		1.0	0.18	mg/L			09/27/12 11:49	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:55	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: MW-183WT-(09142012)

Lab Sample ID: 240-15219-5

Date Collected: 09/14/12 12:15

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.0	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 12:41	1
Barium	79	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 12:41	1
Iron	2200		50	26	ug/L		09/25/12 07:43	09/26/12 12:41	1
Manganese	400	B	2.0	0.83	ug/L		09/25/12 07:43	09/26/12 12:41	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 12:41	1
Sodium	96000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 12:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.4	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:01	1
Barium	78	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:01	1
Iron	2100		50	26	ug/L		09/25/12 07:43	09/26/12 13:01	1
Manganese	400	B	2.0	0.83	ug/L		09/25/12 07:43	09/26/12 13:01	1
Selenium	0.78	J	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:01	1
Sodium	93000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.42	HF	0.100	0.100	SU			09/15/12 11:37	1
Total Dissolved Solids	600		10	7.4	mg/L			09/20/12 14:32	1
Chloride	36		5.0	0.50	mg/L			09/17/12 18:35	5
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 16:01	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 16:01	1
Sulfate	200		5.0	0.60	mg/L			09/17/12 18:35	5
Ammonia (as N)	0.92		0.20	0.035	mg/L			09/27/12 12:40	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:55	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: DUP-1-(09142012)

Lab Sample ID: 240-15219-6

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	40	U	40	4.4	ug/L			09/20/12 23:26	4
Benzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Dichlorobromomethane	4.0	U	4.0	0.60	ug/L			09/20/12 23:26	4
Bromoform	4.0	U	4.0	2.6	ug/L			09/20/12 23:26	4
Bromomethane	4.0	U	4.0	1.6	ug/L			09/20/12 23:26	4
2-Butanone (MEK)	40	U	40	2.3	ug/L			09/20/12 23:26	4
Carbon disulfide	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Carbon tetrachloride	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Chlorobenzene	4.0	U	4.0	0.60	ug/L			09/20/12 23:26	4
Chloroethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:26	4
Chloroform	4.0	U	4.0	0.64	ug/L			09/20/12 23:26	4
Chloromethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:26	4
1,1-Dichloroethane	1.6	J	4.0	0.60	ug/L			09/20/12 23:26	4
1,2-Dichloroethane	4.0	U	4.0	0.88	ug/L			09/20/12 23:26	4
1,1-Dichloroethene	4.0	U	4.0	0.76	ug/L			09/20/12 23:26	4
1,2-Dichloropropane	4.0	U	4.0	0.72	ug/L			09/20/12 23:26	4
cis-1,3-Dichloropropene	4.0	U	4.0	0.56	ug/L			09/20/12 23:26	4
trans-1,3-Dichloropropene	4.0	U	4.0	0.76	ug/L			09/20/12 23:26	4
Ethylbenzene	4.0	U	4.0	0.68	ug/L			09/20/12 23:26	4
2-Hexanone	40	U	40	1.6	ug/L			09/20/12 23:26	4
Methylene Chloride	4.0	U	4.0	1.3	ug/L			09/20/12 23:26	4
4-Methyl-2-pentanone (MIBK)	40	U	40	1.3	ug/L			09/20/12 23:26	4
Styrene	4.0	U	4.0	0.44	ug/L			09/20/12 23:26	4
1,1,2,2-Tetrachloroethane	4.0	U	4.0	0.72	ug/L			09/20/12 23:26	4
Tetrachloroethene	4.0	U	4.0	1.2	ug/L			09/20/12 23:26	4
Toluene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Trichloroethene	4.0	U	4.0	0.68	ug/L			09/20/12 23:26	4
Vinyl chloride	48		4.0	0.88	ug/L			09/20/12 23:26	4
Xylenes, Total	8.0	U	8.0	1.1	ug/L			09/20/12 23:26	4
1,1,1-Trichloroethane	4.0	U	4.0	0.88	ug/L			09/20/12 23:26	4
1,1,2-Trichloroethane	4.0	U	4.0	1.1	ug/L			09/20/12 23:26	4
Cyclohexane	4.0	U	4.0	0.48	ug/L			09/20/12 23:26	4
1,2-Dibromo-3-Chloropropane	8.0	U	8.0	2.7	ug/L			09/20/12 23:26	4
Ethylene Dibromide	4.0	U	4.0	0.96	ug/L			09/20/12 23:26	4
Dichlorodifluoromethane	4.0	U	4.0	1.2	ug/L			09/20/12 23:26	4
cis-1,2-Dichloroethene	200		4.0	0.68	ug/L			09/20/12 23:26	4
trans-1,2-Dichloroethene	1.3	J	4.0	0.76	ug/L			09/20/12 23:26	4
Isopropylbenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Methyl acetate	40	U	40	1.5	ug/L			09/20/12 23:26	4
Methyl tert-butyl ether	20	U	20	0.68	ug/L			09/20/12 23:26	4
1,1,2-Trichloro-1,2,2-trifluoroethane	4.0	U	4.0	1.1	ug/L			09/20/12 23:26	4
1,2,4-Trichlorobenzene	4.0	U	4.0	0.60	ug/L			09/20/12 23:26	4
1,2-Dichlorobenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
1,3-Dichlorobenzene	4.0	U	4.0	0.56	ug/L			09/20/12 23:26	4
1,4-Dichlorobenzene	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4
Trichlorofluoromethane	4.0	U	4.0	0.84	ug/L			09/20/12 23:26	4
Chlorodibromomethane	4.0	U	4.0	0.72	ug/L			09/20/12 23:26	4
Methylcyclohexane	4.0	U	4.0	0.52	ug/L			09/20/12 23:26	4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 129		09/20/12 23:26	4

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: DUP-1-(09142012)

Lab Sample ID: 240-15219-6

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		66 - 117		09/20/12 23:26	4
Toluene-d8 (Surr)	90		74 - 115		09/20/12 23:26	4
Dibromofluoromethane (Surr)	96		75 - 121		09/20/12 23:26	4

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: DUP-4-(09142012)

Lab Sample ID: 240-15219-7

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.73	J	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 13:54	1
Barium	85	B	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 13:54	1
Iron	2100		50	26	ug/L		09/25/12 07:43	09/26/12 13:54	1
Manganese	440	B ^	2.0	0.83	ug/L		09/25/12 07:43	09/27/12 15:35	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 13:54	1
Sodium	96000	B	1000	6.9	ug/L		09/25/12 07:43	09/26/12 13:54	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.33	HF	0.100	0.100	SU			09/15/12 11:59	1
Total Dissolved Solids	600		10	7.4	mg/L			09/20/12 14:32	1
Chloride	46		1.0	0.10	mg/L			09/15/12 17:28	1
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 17:28	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 17:28	1
Sulfate	200		5.0	0.60	mg/L			09/17/12 19:24	5
Ammonia (as N)	1.1		0.20	0.035	mg/L			09/27/12 12:47	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:59	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-15219-8

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1.3	J	10	1.1	ug/L			09/20/12 23:50	1
Benzene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			09/20/12 23:50	1
Bromoform	1.0	U	1.0	0.64	ug/L			09/20/12 23:50	1
Bromomethane	1.0	U	1.0	0.41	ug/L			09/20/12 23:50	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			09/20/12 23:50	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			09/20/12 23:50	1
Chloroethane	1.0	U	1.0	0.29	ug/L			09/20/12 23:50	1
Chloroform	1.0	U	1.0	0.16	ug/L			09/20/12 23:50	1
Chloromethane	1.0	U	1.0	0.30	ug/L			09/20/12 23:50	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			09/20/12 23:50	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			09/20/12 23:50	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/20/12 23:50	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			09/20/12 23:50	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			09/20/12 23:50	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			09/20/12 23:50	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			09/20/12 23:50	1
2-Hexanone	10	U	10	0.41	ug/L			09/20/12 23:50	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			09/20/12 23:50	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			09/20/12 23:50	1
Styrene	1.0	U	1.0	0.11	ug/L			09/20/12 23:50	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			09/20/12 23:50	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			09/20/12 23:50	1
Toluene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			09/20/12 23:50	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			09/20/12 23:50	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			09/20/12 23:50	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			09/20/12 23:50	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			09/20/12 23:50	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			09/20/12 23:50	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			09/20/12 23:50	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			09/20/12 23:50	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			09/20/12 23:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			09/20/12 23:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/20/12 23:50	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Methyl acetate	10	U	10	0.38	ug/L			09/20/12 23:50	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			09/20/12 23:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			09/20/12 23:50	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			09/20/12 23:50	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			09/20/12 23:50	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			09/20/12 23:50	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			09/20/12 23:50	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			09/20/12 23:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		63 - 129		09/20/12 23:50	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-15219-8

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		66 - 117		09/20/12 23:50	1
Toluene-d8 (Surr)	89		74 - 115		09/20/12 23:50	1
Dibromofluoromethane (Surr)	96		75 - 121		09/20/12 23:50	1

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		12DCE (63-129)	BFB (66-117)	TOL (74-115)	DBFM (75-121)
240-15219-1	TWW-1-(09142012)	92	90	89	97
240-15219-6	DUP-1-(09142012)	93	88	90	96
240-15219-8	TRIP BLANK	94	88	89	96
LCS 240-58594/5	Lab Control Sample	97	93	91	98
MB 240-58594/4	Method Blank	91	88	88	94

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-58594/4

Matrix: Water

Analysis Batch: 58594

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			09/20/12 19:03	1
Benzene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			09/20/12 19:03	1
Bromoform	1.0	U	1.0	0.64	ug/L			09/20/12 19:03	1
Bromomethane	1.0	U	1.0	0.41	ug/L			09/20/12 19:03	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			09/20/12 19:03	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			09/20/12 19:03	1
Chloroethane	1.0	U	1.0	0.29	ug/L			09/20/12 19:03	1
Chloroform	1.0	U	1.0	0.16	ug/L			09/20/12 19:03	1
Chloromethane	1.0	U	1.0	0.30	ug/L			09/20/12 19:03	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			09/20/12 19:03	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			09/20/12 19:03	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/20/12 19:03	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			09/20/12 19:03	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			09/20/12 19:03	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			09/20/12 19:03	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			09/20/12 19:03	1
2-Hexanone	10	U	10	0.41	ug/L			09/20/12 19:03	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			09/20/12 19:03	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			09/20/12 19:03	1
Styrene	1.0	U	1.0	0.11	ug/L			09/20/12 19:03	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			09/20/12 19:03	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			09/20/12 19:03	1
Toluene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			09/20/12 19:03	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			09/20/12 19:03	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			09/20/12 19:03	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			09/20/12 19:03	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			09/20/12 19:03	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			09/20/12 19:03	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			09/20/12 19:03	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			09/20/12 19:03	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			09/20/12 19:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			09/20/12 19:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/20/12 19:03	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Methyl acetate	10	U	10	0.38	ug/L			09/20/12 19:03	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			09/20/12 19:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			09/20/12 19:03	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			09/20/12 19:03	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			09/20/12 19:03	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			09/20/12 19:03	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			09/20/12 19:03	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			09/20/12 19:03	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-58594/4

Matrix: Water

Analysis Batch: 58594

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		63 - 129		09/20/12 19:03	1
4-Bromofluorobenzene (Surr)	88		66 - 117		09/20/12 19:03	1
Toluene-d8 (Surr)	88		74 - 115		09/20/12 19:03	1
Dibromofluoromethane (Surr)	94		75 - 121		09/20/12 19:03	1

Lab Sample ID: LCS 240-58594/5

Matrix: Water

Analysis Batch: 58594

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	40.0	37.5		ug/L		94	43 - 136
Benzene	20.0	19.6		ug/L		98	83 - 112
Dichlorobromomethane	20.0	18.7		ug/L		93	72 - 121
Bromoform	20.0	20.9		ug/L		105	40 - 131
Bromomethane	20.0	17.6		ug/L		88	11 - 185
2-Butanone (MEK)	40.0	42.3		ug/L		106	60 - 126
Carbon disulfide	20.0	19.8		ug/L		99	62 - 142
Carbon tetrachloride	20.0	22.3		ug/L		112	66 - 128
Chlorobenzene	20.0	19.7		ug/L		98	85 - 110
Chloroethane	20.0	16.1		ug/L		81	25 - 153
Chloroform	20.0	18.3		ug/L		92	79 - 117
Chloromethane	20.0	16.9		ug/L		84	44 - 126
1,1-Dichloroethane	20.0	19.8		ug/L		99	82 - 115
1,2-Dichloroethane	20.0	18.7		ug/L		93	71 - 127
1,1-Dichloroethene	20.0	18.9		ug/L		94	78 - 131
1,2-Dichloropropane	20.0	18.8		ug/L		94	81 - 115
cis-1,3-Dichloropropene	20.0	16.7		ug/L		84	61 - 115
trans-1,3-Dichloropropene	20.0	15.7		ug/L		78	58 - 117
Ethylbenzene	20.0	19.2		ug/L		96	83 - 112
2-Hexanone	40.0	43.9		ug/L		110	55 - 133
Methylene Chloride	20.0	16.9		ug/L		85	66 - 131
4-Methyl-2-pentanone (MIBK)	40.0	43.0		ug/L		107	63 - 128
Styrene	20.0	19.5		ug/L		98	79 - 114
1,1,2,2-Tetrachloroethane	20.0	19.9		ug/L		99	68 - 118
Tetrachloroethene	20.0	21.7		ug/L		108	79 - 114
Toluene	20.0	19.0		ug/L		95	84 - 111
Trichloroethene	20.0	21.6		ug/L		108	76 - 117
Vinyl chloride	20.0	18.4		ug/L		92	53 - 127
Xylenes, Total	60.0	57.5		ug/L		96	83 - 112
1,1,1-Trichloroethane	20.0	19.9		ug/L		99	74 - 118
1,1,2-Trichloroethane	20.0	21.3		ug/L		107	80 - 112
Cyclohexane	20.0	16.8		ug/L		84	54 - 121
1,2-Dibromo-3-Chloropropane	20.0	20.1		ug/L		101	42 - 136
Ethylene Dibromide	20.0	20.1		ug/L		100	79 - 113
Dichlorodifluoromethane	20.0	15.3		ug/L		77	19 - 129
cis-1,2-Dichloroethene	20.0	17.8		ug/L		89	80 - 113
trans-1,2-Dichloroethene	20.0	19.9		ug/L		99	83 - 117
Isopropylbenzene	20.0	19.1		ug/L		96	75 - 114
Methyl acetate	20.0	22.4		ug/L		112	58 - 131

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-58594/5

Matrix: Water

Analysis Batch: 58594

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	20.0	18.8		ug/L		94	52 - 144
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	21.5		ug/L		107	74 - 151
1,2,4-Trichlorobenzene	20.0	21.4		ug/L		107	48 - 135
1,2-Dichlorobenzene	20.0	19.5		ug/L		97	81 - 110
1,3-Dichlorobenzene	20.0	19.1		ug/L		95	80 - 110
1,4-Dichlorobenzene	20.0	19.0		ug/L		95	82 - 110
Trichlorofluoromethane	20.0	19.1		ug/L		96	49 - 157
Chlorodibromomethane	20.0	19.3		ug/L		97	64 - 119
Methylcyclohexane	20.0	17.3		ug/L		86	56 - 127
m-Xylene & p-Xylene	40.0	38.5		ug/L		96	83 - 113
o-Xylene	20.0	19.0		ug/L		95	83 - 113

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		63 - 129
4-Bromofluorobenzene (Surr)	93		66 - 117
Toluene-d8 (Surr)	91		74 - 115
Dibromofluoromethane (Surr)	98		75 - 121

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-58920/1-A

Matrix: Water

Analysis Batch: 59217

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 58920

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/25/12 07:43	09/26/12 12:28	1
Barium	0.737	J	5.0	0.19	ug/L		09/25/12 07:43	09/26/12 12:28	1
Iron	50	U	50	26	ug/L		09/25/12 07:43	09/26/12 12:28	1
Manganese	1.02	J	2.0	0.83	ug/L		09/25/12 07:43	09/26/12 12:28	1
Selenium	5.0	U	5.0	0.57	ug/L		09/25/12 07:43	09/26/12 12:28	1
Sodium	67.2	J	1000	6.9	ug/L		09/25/12 07:43	09/26/12 12:28	1

Lab Sample ID: LCS 240-58920/2-A

Matrix: Water

Analysis Batch: 59217

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 58920

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	930		ug/L		93	80 - 120
Barium	1000	920		ug/L		92	80 - 120
Iron	10000	8610		ug/L		86	80 - 120
Manganese	1000	1020		ug/L		102	80 - 120
Selenium	1000	938		ug/L		94	80 - 120
Sodium	10000	9060		ug/L		91	80 - 120

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

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

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 59217

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total Recoverable

Prep Batch: 58920

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.0	J	1000	939		ug/L		94	82 - 123
Barium	79	B	1000	995		ug/L		92	45 - 144
Iron	2200		10000	11000		ug/L		88	22 - 169
Manganese	400	B	1000	1380		ug/L		98	10 - 172
Selenium	5.0	U	1000	919		ug/L		92	72 - 148
Sodium	96000	B	10000	97600	4	ug/L		21	80 - 120

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 59217

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total Recoverable

Prep Batch: 58920

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.0	J	1000	995		ug/L		99	82 - 123	6	20
Barium	79	B	1000	1060		ug/L		98	45 - 144	7	20
Iron	2200		10000	11700		ug/L		95	22 - 169	6	20
Manganese	400	B	1000	1450		ug/L		105	10 - 172	5	20
Selenium	5.0	U	1000	972		ug/L		97	72 - 148	6	20
Sodium	96000	B	10000	104000	4	ug/L		82	80 - 120	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 240-58845/1-A

Matrix: Water

Analysis Batch: 59184

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58845

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/25/12 14:10	09/26/12 13:53	1

Lab Sample ID: LCS 240-58845/2-A

Matrix: Water

Analysis Batch: 59184

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58845

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.37		ug/L		87	81 - 123

Lab Sample ID: MB 240-59155/1-A

Matrix: Water

Analysis Batch: 59366

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 59155

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.12	ug/L		09/26/12 15:35	09/27/12 12:36	1

Lab Sample ID: LCS 240-59155/2-A

Matrix: Water

Analysis Batch: 59366

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 59155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	4.54		ug/L		91	81 - 123

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 59366

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Prep Batch: 59155

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.20	U	1.00	0.874		ug/L		87	69 - 134

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 59366

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Prep Batch: 59155

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.20	U	1.00	0.827		ug/L		83	69 - 134	6	20

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 240-57940/2

Matrix: Water

Analysis Batch: 57940

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.49	7.500		SU		100	97 - 103

Lab Sample ID: 240-15219-5DU

Matrix: Water

Analysis Batch: 57940

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.42	HF	7.420	HF	SU		0	20

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-58567/1

Matrix: Water

Analysis Batch: 58567

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	7.4	mg/L			09/20/12 14:32	1

Lab Sample ID: LCS 240-58567/2

Matrix: Water

Analysis Batch: 58567

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	406	392		mg/L		97	88 - 110

Lab Sample ID: MB 240-59013/1

Matrix: Water

Analysis Batch: 59013

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	7.4	mg/L			09/25/12 13:23	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 160.1 - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 240-59013/2

Matrix: Water

Analysis Batch: 59013

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	406	394		mg/L		97	88 - 110

Lab Sample ID: 240-15219-5DU

Matrix: Water

Analysis Batch: 59013

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	640		638	H	mg/L		0.5	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-58073/5

Matrix: Water

Analysis Batch: 58073

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/15/12 14:17	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/15/12 14:17	1

Lab Sample ID: LCS 240-58073/6

Matrix: Water

Analysis Batch: 58073

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.9		mg/L		106	90 - 110
Sulfate	50.0	50.4		mg/L		101	90 - 110

Lab Sample ID: MB 240-58074/5

Matrix: Water

Analysis Batch: 58074

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/15/12 14:17	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/15/12 14:17	1

Lab Sample ID: LCS 240-58074/6

Matrix: Water

Analysis Batch: 58074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	2.50	2.45		mg/L		98	90 - 110
Nitrate as N	2.50	2.54		mg/L		102	90 - 110

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 58074

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.10	U	2.50	2.54		mg/L		102	80 - 120
Nitrate as N	0.10	U	2.50	2.53		mg/L		101	80 - 120

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 58074

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrite as N	0.10	U	2.50	2.49		mg/L		100	80 - 120	2	20
Nitrate as N	0.10	U	2.50	2.72		mg/L		109	80 - 120	7	20

Lab Sample ID: MB 240-58080/5

Matrix: Water

Analysis Batch: 58080

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/17/12 17:29	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/17/12 17:29	1

Lab Sample ID: LCS 240-58080/6

Matrix: Water

Analysis Batch: 58080

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	52.3		mg/L		105	90 - 110
Sulfate	50.0	51.3		mg/L		103	90 - 110

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 58080

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	36		50.0	83.3		mg/L		95	80 - 120
Sulfate	200		50.0	249	4	mg/L		94	80 - 120

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 58080

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	36		50.0	82.5		mg/L		93	80 - 120	1	20
Sulfate	200		50.0	247	4	mg/L		90	80 - 120	1	20

Method: 350.3 - Nitrogen, Ammonia

Lab Sample ID: MB 240-59337/7

Matrix: Water

Analysis Batch: 59337

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			09/27/12 09:48	1

Lab Sample ID: LCS 240-59337/8

Matrix: Water

Analysis Batch: 59337

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	9.05		mg/L		101	85 - 114

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Method: 350.3 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 59337

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.92		2.50	3.54		mg/L		105	75 - 125

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 59337

Client Sample ID: MW-183WT-(09142012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.92		2.50	3.35		mg/L		97	75 - 125	5	20

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-58848/1-A

Matrix: Water

Analysis Batch: 58889

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58848

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 11:44	09/24/12 14:50	1

Lab Sample ID: LCS 240-58848/2-A

Matrix: Water

Analysis Batch: 58889

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58848

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0449	0.0448		mg/L		100	69 - 120

Lab Sample ID: 240-15219-5 MS

Matrix: Water

Analysis Batch: 58889

Client Sample ID: MW-183WT-(09142012)

Prep Type: Dissolved

Prep Batch: 58848

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.010	U	0.0400	0.0365		mg/L		91	42 - 140

Lab Sample ID: 240-15219-5 MSD

Matrix: Water

Analysis Batch: 58889

Client Sample ID: MW-183WT-(09142012)

Prep Type: Dissolved

Prep Batch: 58848

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	0.010	U	0.0400	0.0404		mg/L		101	42 - 140	10	20

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

GC/MS VOA

Analysis Batch: 58594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-1	TWW-1-(09142012)	Total/NA	Water	8260B	
240-15219-6	DUP-1-(09142012)	Total/NA	Water	8260B	
240-15219-8	TRIP BLANK	Total/NA	Water	8260B	
LCS 240-58594/5	Lab Control Sample	Total/NA	Water	8260B	
MB 240-58594/4	Method Blank	Total/NA	Water	8260B	

Metals

Prep Batch: 58845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	7470A	
LCS 240-58845/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-58845/1-A	Method Blank	Total/NA	Water	7470A	

Prep Batch: 58920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total Recoverable	Water	3005A	
240-15219-2	X-4D-(09142012)	Dissolved	Water	3005A	
240-15219-3	X-4CAUGR-(09142012)	Total Recoverable	Water	3005A	
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	3005A	
240-15219-4	X-10BR-(09142012)	Dissolved	Water	3005A	
240-15219-5	MW-183WT-(09142012)	Total Recoverable	Water	3005A	
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	3005A	
240-15219-5 MS	MW-183WT-(09142012)	Total Recoverable	Water	3005A	
240-15219-5 MSD	MW-183WT-(09142012)	Total Recoverable	Water	3005A	
240-15219-7	DUP-4-(09142012)	Total Recoverable	Water	3005A	
LCS 240-58920/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-58920/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 59155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	7470A	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	7470A	
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	7470A	
240-15219-4	X-10BR-(09142012)	Dissolved	Water	7470A	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	7470A	
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	7470A	
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	7470A	
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	7470A	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	7470A	
LCS 240-59155/2-A	Lab Control Sample	Total/NA	Water	7470A	
MB 240-59155/1-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 59184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	7470A	58845
LCS 240-58845/2-A	Lab Control Sample	Total/NA	Water	7470A	58845
MB 240-58845/1-A	Method Blank	Total/NA	Water	7470A	58845

Analysis Batch: 59217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total Recoverable	Water	6020	58920

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Metals (Continued)

Analysis Batch: 59217 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	6020	58920
240-15219-2	X-4D-(09142012)	Total Recoverable	Water	6020	58920
240-15219-2	X-4D-(09142012)	Dissolved	Water	6020	58920
240-15219-3	X-4CAUGR-(09142012)	Total Recoverable	Water	6020	58920
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	6020	58920
240-15219-4	X-10BR-(09142012)	Dissolved	Water	6020	58920
240-15219-5	MW-183WT-(09142012)	Total Recoverable	Water	6020	58920
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	6020	58920
240-15219-5 MS	MW-183WT-(09142012)	Total Recoverable	Water	6020	58920
240-15219-5 MSD	MW-183WT-(09142012)	Total Recoverable	Water	6020	58920
240-15219-7	DUP-4-(09142012)	Total Recoverable	Water	6020	58920
LCS 240-58920/2-A	Lab Control Sample	Total Recoverable	Water	6020	58920
MB 240-58920/1-A	Method Blank	Total Recoverable	Water	6020	58920

Analysis Batch: 59366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	7470A	59155
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	7470A	59155
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	7470A	59155
240-15219-4	X-10BR-(09142012)	Dissolved	Water	7470A	59155
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	7470A	59155
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	7470A	59155
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	7470A	59155
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	7470A	59155
240-15219-7	DUP-4-(09142012)	Total/NA	Water	7470A	59155
LCS 240-59155/2-A	Lab Control Sample	Total/NA	Water	7470A	59155
MB 240-59155/1-A	Method Blank	Total/NA	Water	7470A	59155

Analysis Batch: 59397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	6020	58920
240-15219-3	X-4CAUGR-(09142012)	Total Recoverable	Water	6020	58920
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	6020	58920
240-15219-4	X-10BR-(09142012)	Dissolved	Water	6020	58920
240-15219-7	DUP-4-(09142012)	Total Recoverable	Water	6020	58920

General Chemistry

Analysis Batch: 57940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	150.1	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	150.1	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	150.1	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	150.1	
240-15219-5DU	MW-183WT-(09142012)	Total/NA	Water	150.1	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	150.1	
LCS 240-57940/2	Lab Control Sample	Total/NA	Water	150.1	

Analysis Batch: 58073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	300.0	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	300.0	

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

General Chemistry (Continued)

Analysis Batch: 58073 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-4	X-10BR-(09142012)	Total/NA	Water	300.0	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	300.0	
LCS 240-58073/6	Lab Control Sample	Total/NA	Water	300.0	
MB 240-58073/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	300.0	
240-15219-2	X-4D-(09142012)	Total/NA	Water	300.0	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	300.0	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	300.0	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	300.0	
LCS 240-58074/6	Lab Control Sample	Total/NA	Water	300.0	
MB 240-58074/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	300.0	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	300.0	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	300.0	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	300.0	
LCS 240-58080/6	Lab Control Sample	Total/NA	Water	300.0	
MB 240-58080/5	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	160.1	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	160.1	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	160.1	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	160.1	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	160.1	
LCS 240-58567/2	Lab Control Sample	Total/NA	Water	160.1	
MB 240-58567/1	Method Blank	Total/NA	Water	160.1	

Prep Batch: 58848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	9012A	
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	9012A	
240-15219-4	X-10BR-(09142012)	Dissolved	Water	9012A	
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	9012A	
240-15219-5 MS	MW-183WT-(09142012)	Dissolved	Water	9012A	
240-15219-5 MSD	MW-183WT-(09142012)	Dissolved	Water	9012A	
240-15219-7	DUP-4-(09142012)	Dissolved	Water	9012A	
LCS 240-58848/2-A	Lab Control Sample	Total/NA	Water	9012A	
MB 240-58848/1-A	Method Blank	Total/NA	Water	9012A	

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

General Chemistry (Continued)

Analysis Batch: 58889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Dissolved	Water	9012A	58848
240-15219-3	X-4CAUGR-(09142012)	Dissolved	Water	9012A	58848
240-15219-4	X-10BR-(09142012)	Dissolved	Water	9012A	58848
240-15219-5	MW-183WT-(09142012)	Dissolved	Water	9012A	58848
240-15219-5 MS	MW-183WT-(09142012)	Dissolved	Water	9012A	58848
240-15219-5 MSD	MW-183WT-(09142012)	Dissolved	Water	9012A	58848
240-15219-7	DUP-4-(09142012)	Dissolved	Water	9012A	58848
LCS 240-58848/2-A	Lab Control Sample	Total/NA	Water	9012A	58848
MB 240-58848/1-A	Method Blank	Total/NA	Water	9012A	58848

Analysis Batch: 59013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-5DU	MW-183WT-(09142012)	Total/NA	Water	160.1	
LCS 240-59013/2	Lab Control Sample	Total/NA	Water	160.1	
MB 240-59013/1	Method Blank	Total/NA	Water	160.1	

Analysis Batch: 59337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15219-2	X-4D-(09142012)	Total/NA	Water	350.3	
240-15219-3	X-4CAUGR-(09142012)	Total/NA	Water	350.3	
240-15219-4	X-10BR-(09142012)	Total/NA	Water	350.3	
240-15219-5	MW-183WT-(09142012)	Total/NA	Water	350.3	
240-15219-5 MS	MW-183WT-(09142012)	Total/NA	Water	350.3	
240-15219-5 MSD	MW-183WT-(09142012)	Total/NA	Water	350.3	
240-15219-7	DUP-4-(09142012)	Total/NA	Water	350.3	
LCS 240-59337/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-59337/7	Method Blank	Total/NA	Water	350.3	

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: TWW-1-(09142012)

Date Collected: 09/14/12 09:25

Date Received: 09/15/12 09:45

Lab Sample ID: 240-15219-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	58594	09/20/12 23:02	TL	TAL NC

Client Sample ID: X-4D-(09142012)

Date Collected: 09/14/12 09:20

Date Received: 09/15/12 09:45

Lab Sample ID: 240-15219-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			58845	09/25/12 14:10	SG	TAL NC
Total/NA	Analysis	7470A		1	59184	09/26/12 14:47	SG	TAL NC
Total Recoverable	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 13:08	KC	TAL NC
Dissolved	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 13:32	KC	TAL NC
Total Recoverable	Analysis	6020		10	59217	09/26/12 15:46	KC	TAL NC
Dissolved	Analysis	6020		10	59217	09/26/12 15:57	KC	TAL NC
Dissolved	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Dissolved	Analysis	7470A		1	59366	09/27/12 12:44	SG	TAL NC
Dissolved	Analysis	6020		5	59397	09/27/12 15:14	KC	TAL NC
Total/NA	Analysis	150.1		1	57940	09/15/12 11:02	CN	TAL NC
Total/NA	Analysis	300.0		1	58073	09/15/12 14:52	LG	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 14:52	LG	TAL NC
Total/NA	Analysis	300.0		5	58074	09/15/12 15:09	LG	TAL NC
Total/NA	Analysis	300.0		10	58080	09/17/12 18:02	LG	TAL NC
Total/NA	Analysis	160.1		5	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:55	CN	TAL NC
Total/NA	Analysis	350.3		5	59337	09/27/12 11:44	LG	TAL NC

Client Sample ID: X-4CAUGR-(09142012)

Date Collected: 09/14/12 10:55

Date Received: 09/15/12 09:45

Lab Sample ID: 240-15219-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 13:37	KC	TAL NC
Dissolved	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 13:43	KC	TAL NC
Total/NA	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Total/NA	Analysis	7470A		1	59366	09/27/12 12:46	SG	TAL NC
Dissolved	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Dissolved	Analysis	7470A		1	59366	09/27/12 12:47	SG	TAL NC
Total Recoverable	Analysis	6020		1	59397	09/27/12 15:19	KC	TAL NC
Dissolved	Analysis	6020		1	59397	09/27/12 15:25	KC	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: X-4CAUGR-(09142012)

Lab Sample ID: 240-15219-3

Date Collected: 09/14/12 10:55

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	150.1		1	57940	09/15/12 11:14	CN	TAL NC
Total/NA	Analysis	300.0		1	58073	09/15/12 15:26	LG	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 15:26	LG	TAL NC
Total/NA	Analysis	160.1		1	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:55	CN	TAL NC
Total/NA	Analysis	350.3		5	59337	09/27/12 11:47	LG	TAL NC

Client Sample ID: X-10BR-(09142012)

Lab Sample ID: 240-15219-4

Date Collected: 09/14/12 11:30

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 13:48	KC	TAL NC
Dissolved	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Dissolved	Analysis	7470A		1	59366	09/27/12 12:48	SG	TAL NC
Dissolved	Analysis	6020		5	59397	09/27/12 15:30	KC	TAL NC
Total/NA	Analysis	150.1		1	57940	09/15/12 11:25	CN	TAL NC
Total/NA	Analysis	300.0		1	58073	09/15/12 15:44	LG	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 15:44	LG	TAL NC
Total/NA	Analysis	300.0		5	58080	09/17/12 18:19	LG	TAL NC
Total/NA	Analysis	160.1		2	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:55	CN	TAL NC
Total/NA	Analysis	350.3		5	59337	09/27/12 11:49	LG	TAL NC

Client Sample ID: MW-183WT-(09142012)

Lab Sample ID: 240-15219-5

Date Collected: 09/14/12 12:15

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 12:41	KC	TAL NC
Dissolved	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Dissolved	Analysis	6020		1	59217	09/26/12 13:01	KC	TAL NC
Total/NA	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Total/NA	Analysis	7470A		1	59366	09/27/12 12:39	SG	TAL NC
Dissolved	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Dissolved	Analysis	7470A		1	59366	09/27/12 12:43	SG	TAL NC
Total/NA	Analysis	150.1		1	57940	09/15/12 11:37	CN	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 16:01	LG	TAL NC
Total/NA	Analysis	300.0		5	58080	09/17/12 18:35	LG	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

Client Sample ID: MW-183WT-(09142012)

Lab Sample ID: 240-15219-5

Date Collected: 09/14/12 12:15

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	160.1		1	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:55	CN	TAL NC
Total/NA	Analysis	350.3		1	59337	09/27/12 12:40	LG	TAL NC

Client Sample ID: DUP-1-(09142012)

Lab Sample ID: 240-15219-6

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	58594	09/20/12 23:26	TL	TAL NC

Client Sample ID: DUP-4-(09142012)

Lab Sample ID: 240-15219-7

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			58920	09/25/12 07:43	LM	TAL NC
Total Recoverable	Analysis	6020		1	59217	09/26/12 13:54	KC	TAL NC
Total/NA	Prep	7470A			59155	09/26/12 15:35	LM	TAL NC
Total/NA	Analysis	7470A		1	59366	09/27/12 12:54	SG	TAL NC
Total Recoverable	Analysis	6020		1	59397	09/27/12 15:35	KC	TAL NC
Total/NA	Analysis	150.1		1	57940	09/15/12 11:59	CN	TAL NC
Total/NA	Analysis	300.0		1	58073	09/15/12 17:28	LG	TAL NC
Total/NA	Analysis	300.0		1	58074	09/15/12 17:28	LG	TAL NC
Total/NA	Analysis	300.0		5	58080	09/17/12 19:24	LG	TAL NC
Total/NA	Analysis	160.1		1	58567	09/20/12 14:32	CN	TAL NC
Dissolved	Prep	9012A			58848	09/24/12 11:44	CN	TAL NC
Dissolved	Analysis	9012A		1	58889	09/24/12 14:59	CN	TAL NC
Total/NA	Analysis	350.3		1	59337	09/27/12 12:47	LG	TAL NC

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-15219-8

Date Collected: 09/14/12 00:00

Matrix: Water

Date Received: 09/15/12 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	58594	09/20/12 23:50	TL	TAL NC

Laboratory References:

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

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: 11060-TO2, RACER GPL

TestAmerica Job ID: 240-15219-1

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	NELAC	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAC	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAC	5	200004	07-31-13
Kansas	NELAC	7	E-10336	01-31-13
Kentucky	State Program	4	58	11-16-12
L-A-B	DoD ELAP		L2315	02-28-13
Minnesota	NELAC	5	039-999-348	12-31-12
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAC	2	OH001	06-30-13
New York	NELAC	2	10975	04-01-13
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAC	3	68-00340	08-31-13
Texas	NELAC Secondary AB	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAC	3	460175	09-14-13
Washington	State Program	10	C971	01-12-13
West Virginia DEP	State Program	3	210	12-31-12
Wisconsin	State Program	5	999518190	08-31-13

Chain of Custody Record

TestAmerica Laboratory location: _____
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

Client Contact Company Name: ARCADIS Address: 10559 Citation Dr., Suite 100 City/State/Zip: Brighton, MI Phone: 517-648-8027 Project Name: 800500946.2012.00002 Project Number: _____		Client Project Manager: Name: Renee Pionk Telephone: 517-648-8027 Email: _____		Site Contact: Name: Austin Westhuis Telephone: 517-719-0214		Lab Contact: Name: _____ Telephone: _____		COC No: 043799 of _____ COCs			
Analysis Turnaround Time: TAT if different from below: _____ ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Containers & Preservatives: HCl ☐ NaOH ☐ LiOH ☐ Other: _____ HNO3 ☐ H2SO4 ☐ Other: _____		Matrix: Air ☐ Solid ☐ Liquid ☐ Other: _____		Sample Identification Sample Date Sample Time		Analyses VOC's Dissolved Metals Total Metals Dissolved Copper Dissolved Lead Dissolved Nickel Dissolved Zinc Dissolved Cadmium Dissolved Chromium Dissolved Manganese Dissolved Selenium Dissolved Iron Dissolved Barium Dissolved Strontium Dissolved Molybdenum Dissolved Vanadium Dissolved Cobalt Dissolved Silver Dissolved Antimony Dissolved Arsenic Dissolved Bismuth Dissolved Tellurium Dissolved Tin Dissolved Tungsten Dissolved Zirconium Dissolved Niobium Dissolved Molybdenum Dissolved Vanadium Dissolved Cobalt Dissolved Silver Dissolved Antimony Dissolved Arsenic Dissolved Bismuth Dissolved Tellurium Dissolved Tin Dissolved Tungsten Dissolved Zirconium Dissolved Niobium		Sample Specific Notes / Special Instructions: Chloride Method 300A pH method 150.1 Nitrate / Nitrite Method 300A Sulfate Method 300A	
PO # TWW-1-(09142012) X-4D-(09142012) X-4CAUGR-(09142012) X-10BR-(09142012) MW-183WT-(09142012) MW-183WT-(09142012)MS MW-183WT-(09142012)MSD Dup-1-(09142012) Dup-4-(09142012)		Sample Date Sample Time 9/14/12 0925 9/14/12 0920 9/14/12 1055 9/14/12 1130 9/14/12 1215 9/14/12 1215 9/14/12 1215 9/14/12 — 9/14/12 —		Containers & Preservatives HCl 3 NaOH 1 LiOH 1 Other: 2 HNO3 1 H2SO4 1 Other: 2 Matrix Air X Solid X Liquid X Other: X		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months		Date/Time: 9/14/12 1408 Date/Time: 9/14/12 1530 Date/Time: 9/14/12 1538			
Relinquished by: Signature: _____ Date/Time: 9/14/12 1400		Relinquished by: Signature: _____ Date/Time: 9/14/12 1530		Relinquished by: Signature: _____ Date/Time: 9/14/12 1538		Company: ARCADIS ARCADIS TESTAMERICA		Company: ARCADIS TESTAMERICA TA			

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 15219

Client ARCADIS Site Name _____ By: [Signature]
 Cooler Received on 9.15.12 Opened on 9.15.12 (Signature)
 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# 1 (CF 0°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C
 IR GUN# 4G (CF -1°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C
 IR GUN# 5G (CF -1°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C
 IR GUN# 8 (CF 0°C) Observed Sample Temp. _____ °C Corrected Sample Temp. _____ °C

☐ Multiple
on Back

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
 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 MSL Date 9/17/12 by AM via ☒ Verbal ☐ Voice Mail ☐ Other
 Concerning #14

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

Rec'd 240 TB not on COC will log.

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)



Saginaw Malleable Iron Plant
Sampling Logs

Site: SMUGPL

GROUND-WATER SAMPLING LOG

Event: September 2011

Sampling Personnel: A. Westhuis
 Job Number: B0064434
 Weather: Partly Cloudy, 57.0°F

Well ID: MW-107WT
 Date: 9/17/12
 Time In: _____ Time Out: _____

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>10.14</u>	
Total Depth (feet)		<u>11.51</u>	
Screened Interval (feet)			

check where appropriate

Well Type: ☐ Flushmount ☐ Slick-Up
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐
 Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>1.37</u>
Volume of Water in Well: (gal)	<u>0.22</u>
Pump Rate of Pump: (mL/min)	
Pump Start: <u>11:21:00</u>	Pump Stop: <u>11:50:00</u>
Minutes of Pumping: <u>29</u>	
Total Volume Removed: (mL)	<u>2400</u>

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.653	1.469

Unit Stability	pH	DO	Cond	ORP
± 0.1	± 0.1	± 0.1	± 0.1	± 10 mV

SAMPLING INFORMATION

Analyses:	
Dissolved TAL Inorganics (Filtered)	☐
Total TAL Inorganics	☐
Cyanide (Filtered)	☐
Chloride (Filtered)	☐
Sulfate	☐
Nitrate as N and Nitrite as N	☐
Ammonia Nitrogen	☐
pH	☐
TDS	☐
VOCs, PCBs, SVOCs	☐
Sample ID: <u>MW-107WT</u>	
Sample Time: <u>1240</u>	
MS/MSD: Yes ☐ No ☒	
Duplicate: Yes ☐ No ☒	
Duplicate ID: <u>3</u>	
Total Bottles: <u>3</u>	

- Sampling for:
 - Phosphorus
 - Ammonia Nitrogen
 - Total Arsenic
 - Total Manganese
 - Total Thallium

EVACUATION INFORMATION

Evacuation Method: ☐ Baller ☒ Peristaltic ☐ Bladder ☐ Other Pump ☐
 Tubing Used: ☐ Teflon ☒ Polyethylene
 Sampling Method: ☐ Baller ☒ Peristaltic ☐ Bladder ☐ Other Pump ☐
 Did well go dry? Yes ☒ No ☐ Water Quality Meter Type: YSI 650

Time	11:40	11:45	11:50	5	6	7	8	9
Parameter	Initial							
Rate (mL/min)	<u>100</u>	<u>100</u>						
Depth to Water (ft. TIC)	<u>10.99</u>	<u>11.29</u>						
Temperature (°C)	<u>18.76</u>	<u>18.00</u>						
pH	<u>7.10</u>	<u>6.96</u>						
Conductance (mS/cm)	<u>0.933</u>	<u>0.924</u>						
Dissolved Oxygen (mg/L)	<u>39.44</u>	<u>33.0</u>						
Turbidity (NTU)	<u>18.0</u>	<u>7.11</u>						
ORP (mV)	<u>20.1</u>	<u>33.5</u>						

Time	10	11	12
Parameter			
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- 1650 MW-107WT purges dry. Wait for recharge, if any.
- 1700 MW-107WT recharge @ 11.38'
- 1710 MW-107WT recharge @ 11.33'
- Gauge 9/18/12 @ 0820 recharge @ 10.20'

SAMPLE DESTINATION

Laboratory: Test America Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____
 Shipped Via: ☐ Federal Express ☐ UPS Other: Lab pickup sent on _____ KPM

- 1240, 9/18/12, start sampling MW-107WT as directed by Renee PionK per conversation with the DEQ.
 Turbidity (NTU) = 11.0

Site: SMVGPL

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. Westhuis
Job Number: 80064434
Weather: Partly cloudy, 70°F

Well ID: MW-10751
Date: 9/17/12
Time In: _____ Time Out: _____

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>13.93</u>	
Total Depth (feet)		<u>20.04</u>	
Screened Interval (feet)			
Pump Intake -			

check where appropriate

Well Type: ☐ Flushmount ☐ Stick-Up
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>6.11</u>
Volume of Water in Well: (gal)	<u>0.98</u>
Pumping Rate of Pump: (mL/min)	<u>150</u>
Pump Start: <u>1546</u>	Pump Stop: <u>1625</u>
Minutes of Pumping: <u>45</u>	
Total Volume Removed: (ml)	<u>6750</u>

Conversion Factors			
gallons per foot	1" ID	2" ID	4" ID
of water column:	0.041	0.163	0.853
	1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.		

Unit Stability			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analyses:

Disolved TAL Inorganics (Filtered) ☐

Total TAL Inorganics ☐

Cyanide (Filtered) ☐

Chloride (Filtered) ☐

Sulfate ☐

Ammonia Nitrogen ☐

pH ☐

TDS ☐

VOCs, PCBs, SVOCs ☐

Sample ID: MW-10751

Sample Time: 1620

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Duplicate ID: _____

Total Bottles: 1

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
Tubing Used: Teflon ☐ Polyethylene ☒
Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: KFI 650

Time	1545	1550	1555	1600	1605	1610	1615	1620	1625
Parameter	Initial								
Rate (mL/min)	150	150	150	150	150	150	150		
Depth to Water (ft. TIC)	14.01	14.02	14.02	14.02	14.02	14.02	14.02		
Temperature (°C)	15.60	15.37	15.52	15.20	14.95	15.22	15.30		
pH	7.16	7.17	7.19	7.19	7.18	7.19	7.19		
Conductance (mS/cm)	1.159	1.147	1.142	1.122	1.104	1.107	1.109		
Dissolved Oxygen (mg/L)	60.55	60.71	60.75	43.03	44.83	41.54	43.02		
Turbidity (NTU)	2.18	2.02	1.85	1.09	1.26	1.10	1.02		
ORP (mV)	-43.2	-62.0	-71.6	-77.3	-81.7	-82.3	-83.0		

Time	10	11	12
Parameter			
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory: Test America Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____
Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: Lab pickup sent on _____ KPM

GROUND-WATER SAMPLING LOG

Sampling Personnel: James NessWell ID: MW-10852

Job Number:

Date: 9/17/12Weather: Sunny 77°F

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>13.77</u>	
Total Depth (feet)		<u>30.75</u>	
Screened Interval (feet)			
Pump Intake -	<u>28.5'</u>		

check where appropriate

Well Type:	Flushmount	☐	Stick-Up	☒
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Diameter:	1"	☐	2"	☒
			Other:	☐

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>16.58</u>
Volume of Water in Well: (gal)	<u>2.70</u>
Pumping Rate of Pump: (mL/min)	<u>200</u>
Pump Start: <u>1530</u>	Pump Stop: <u>1625</u>
Minutes of Pumping: <u>55</u>	
Total Volume Removed: (ml)	<u>~4.0 gal</u>

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.853	1.459
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Use Stability

pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analysis:

Dissolved TAL Inorganics (liters) 13.81

Total TAL Inorganics

Cyanide (liters)

Chloride (liters)

Sulfate

Nitrate as N and Nitrite as N

Ammonia Nitrogen 13.81

pH

TDS

VOCs, PCBs, SVOCs

Sample ID: MW-10852

Sample Time: 1620

MS/MSO: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Duplicate ID: NA

Total Bottles: 1

EVACUATION INFORMATION

Evacuation Method: Baker ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Tubing Used: Teflon ☐ Polyethylene ☒

Sampling Method: Baker ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry? Yes ☐ No ☒

Water Quality Meter Type: _____

Time	1535	1540	1545	1550	1555	1600	1605	1610	1615
Parameter	Initial								
Rate (ml/min)	200	200	200	200	200	200	200	200	200
Depth to Water (ft. TIC)	13.77	13.77	13.78	13.79	13.79	13.79	13.79	13.81	13.81
Temperature (°C)	13.84	13.18	13.34	12.96	13.18	13.08	12.89	13.15	13.23
pH	7.19	7.27	7.35	7.34	7.39	7.39	7.36	7.37	7.38
Conductance (mS/cm)	1.349	1.129	1.012	0.937	0.937	0.919	0.913	0.907	0.901
Dissolved Oxygen (mg/L)	3.06	4.10	4.02	1.10	0.48	0.38	0.35	0.30	0.28
Turbidity (NTU)	38.5	10.2	4.06	3.38	3.27	1.36	1.92	1.06	0.83
ORP (mV)	-168.7	-256.5	-255.2	-251.2	-246.2	-241.3	-237.9	-238.4	-238.8

Time	10 1620	11 1625	12
Parameter			
Rate (ml/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- well sampled for only Ammonia Nitrogen

SAMPLE DESTINATION

Laboratory: _____ Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____

Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: _____ ☐ sent on _____ KPM

Site: SMWGPL

GROUND-WATER SAMPLING LOG

Event: September 2011

Sampling Personnel: A. Westhus
 Job Number: 80064434
 Weather: Partly cloudy, 270°F

Well ID: MW-111WT
 Date: 9/17/12
 Time In: _____ Time Out: _____

	TIC	TOC	BGS
Depth to Water (feet)		<u>11.57</u>	
Total Depth (feet)		<u>12.67</u>	
Screened Interval (feet)			
Pump Intake -			

check where appropriate
 Well Type: Flushmount ☐ Slick-Up ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐
 Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION	
Length of Water Column (feet)	<u>1.05</u>
Volume of Water in Well (gal)	<u>0.17</u>
Pumping Rate of Pump (ml/min)	<u>160</u>
Pump Start: <u>15:35</u>	Pump Stop: _____
Minutes of Pumping: <u>15</u>	
Total Volume Removed (ml)	<u>1500</u>

Conversion Factors			
gallons per foot of water column:	1" ID	2" ID	4" ID
	0.041	0.163	0.853
1 gal = 3.785 L = 3785 ml = 0.1337 cubic ft.			
Unit Stability			
pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION	
Analysis:	
Dissolved TAL Inorganics (Filtered)	☐
Total TAL Inorganics	☐
Cyanide (Filtered)	☐
Chloride (Filtered)	☐
Sulfate	☐
Nitrate as N and Nitrite as N	☐
Ammonia Nitrogen	☐
pH	☐
TDS	☐
VOCs, PCBs, SVOCs	☐
Sample ID: <u>MW-111WT</u>	
Sample Time: <u>1315</u>	
MS/MSD: Yes ☐ No ☒	
Duplicate: Yes ☐ No ☒	
Duplicate ID: _____	
Total Bottles: <u>5</u>	

-Sampling for:
 -Ammonia Nitrogen
 -Phosphorus
 -Total Manganese
 -Total Thallium
 -Dissolved PCBs
 -Total PCBs

EVACUATION INFORMATION	
Evacuation Method:	Baker ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
Tubing Used:	Teflon ☐ Polyethylene ☒
Sampling Method:	Baker ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
Did well go dry?	Yes ☒ No ☐
Water Quality Meter Type:	<u>XSI 650</u>

Time	1540	1545	1550	1555	6	7	8	9
Parameter	Initial							
Rate (ml/min)	100	100	100					
Depth to Water (ft. TIC)	11.87	12.00	12.25					
Temperature (°C)	17.98	17.62	17.04					
pH	6.78	6.75	6.73					
Conductance (mS/cm)	1.81	1.710	1.741					
Dissolved Oxygen (mg/L)	51.12	55.30	55.00					
Turbidity (NTU)	7.30	4.27	2.54					
ORP (mV)	-84.9	-85.8	-83.10					

Time	10	11	12
Parameter			
Rate (ml/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- 1605 MW-111WT recharge @ 12.06'
- 1615 MW-111WT recharge @ 11.96'
- Gauge 9/18/12 @ 0825 recharge @ 11.57'

SAMPLE DESTINATION	
Laboratory: <u>Test America</u>	Sample was ☐ shipped day of sampling
Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: _____	Chain of Custody Signed By: _____
	KPM

- 1315, 9/18/12, start sampling MW-111WT as directed by Renee Pionk per conversation with the DEQ.
 Turbidity (NTU) = 5.36

Site: SMWGPL

GROUND-WATER SAMPLING LOG

Event: September 2011

Sampling Personnel: James Ness

Well ID: MW-114WT

Job Number:

Date: 9/17/12

Weather: Sunny 70s

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		10.59	
Total Depth (feet)		10.92	
Screened Interval (feet)			
Pump Intake -	10.7'		

check where appropriate

Well Type:

Flushmount

Yes

No

Yes

No

Well Locked:

Measuring Point Marked:

Well Diameter:

1"

2"

Other:

WELL WATER INFORMATION

Length of Water Column: (feet)	0.13
Volume of Water in Well: (gal)	0.02
Pumping Rate of Pump: (mL/min)	100
Pump Start: 1755	Pump Stop: 1800
Minutes of Pumping: 5	
Total Volume Removed: (mL)	

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.653	1.489
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft				

Unit Specific

pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

EVACUATION INFORMATION

Evacuation Method:	Bailer	Peristaltic	Bladder	Other Pump
Tubing Used:	Teflon	Polyethylene	Bladder	Other Pump
Sampling Method:	Bailer	Peristaltic	Bladder	Other Pump

Did well go dry?

Yes

No

Water Quality Meter Type:

SAMPLING INFORMATION

Analyses:

Disinfectant TAL (organic chlorine) ☒

Total TAL (inorganic) ☒

Cyanide (filtered) ☒

Chloride (filtered) ☒

Sulfate ☒

Nitrate as N and Nitrite as N ☒

Ammonia Nitrogen ☒

pH ☒

TDS ☒

VOCs, PCBs, SVOCs ☒

Sample ID: MW-114WT

Sample Time: ☒ Yes ☒ No

MS/MSD: ☒ Yes ☒ No

Duplicate: ☒ Yes ☒ No

Duplicate ID: NA

Total Bottles: 4

Time	1	2	3	4	5	6	7	8	9
Parameter	1755 initial	~~1755~~	1807	1817					
Rate (mL/min)	NA		DRY	DRY					
Depth to Water (ft. TIC)									
Temperature (°C)									
pH									
Conductance (mS/cm)									
Dissolved Oxygen (mg/L)									
Turbidity (NTU)									
ORP (mV)									

Time	10	11	12
Parameter			
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- well went dry at 1757, will allow to ^{UN}recharge for ten minutes.
- well gaged at 1807, found to still be dry
- well gaged at 1817, found to still be dry
- Gauge 9/18/12 @ 0830 recharge still dry.

SAMPLE DESTINATION

Laboratory: _____

Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: _____

Sample was ☐ shipped day of sampling ☐ sent on _____

Chain of Custody Signed By: _____

KPM

Site: SMUGPL

Page 1 of 1

Event: September 2012

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. Westhuis
 Job Number: B00044.34.2012.00005
 Weather: Partly cloudy, ~60°F

Well ID: MW-11452Date: 9/18/12

Time In: _____ Time Out: _____

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>12.86</u>	
Total Depth (feet)		<u>30.65</u>	
Screened Interval (feet)			
Pump Intake ~			

check where appropriate

Well Type: _____ Flushmount ☐ Slick-Up ☒Well Locked: Yes ☒ No ☐Measuring Point Marked: Yes ☒ No ☐Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>17.79</u>
Volume of Water in Well: (gal)	<u>2.85</u>
Pumping Rate of Pump: (ml/min)	<u>150</u>
Pump Start: <u>1445</u>	Pump Stop: <u>1355</u>
Minutes of Pumping:	
Total Volume Removed: (ml)	

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.553	1.408
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability	pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV	

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐Tubing Used: Teflon ☐ Polyethylene ☒Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐Did well go dry? Yes ☐ No ☒ Water Quality Meter Type: VSE 650

SAMPLING INFORMATION

Analysis:	
Dissolved TAL inorganics (filtered)	☐
Total TAL inorganics	☐
Cyanide (filtered)	☐
Chloride (filtered)	☐
Sulfate	☐
Nitrate as N and Nitrite as N	☐
Ammonia Nitrogen	☐
pH	☐
TDS	☐
VOCs, PCBs, SVOCs	☐
Sample ID: <u>MW-11452</u>	
Sample Time: <u>1535</u>	
MS/MSD: Yes ☒ No ☐	
Duplicate: Yes ☒ No ☐	
Duplicate ID: <u>Dup-2</u>	
Total Bottles: <u>4</u>	

MS/MSD collected

Time	1455	1500	1505	1510	1515	1520	1525	1530	1535
Parameter	Initial								
Rate (ml/min)	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	<u>150</u>	
Depth to Water (ft. TIC)	<u>12.89</u>	<u>12.89</u>	<u>12.89</u>	<u>12.89</u>	<u>12.89</u>	<u>12.89</u>	<u>12.89</u>	<u>12.89</u>	
Temperature (°C)	<u>15.23</u>	<u>15.13</u>	<u>14.96</u>	<u>14.66</u>	<u>14.46</u>	<u>14.35</u>	<u>14.25</u>	<u>14.25</u>	
pH	<u>7.56</u>	<u>7.63</u>	<u>7.47</u>	<u>7.36</u>	<u>7.28</u>	<u>7.27</u>	<u>7.24</u>	<u>7.25</u>	
Conductance (mS/cm)	<u>0.674</u>	<u>0.676</u>	<u>0.681</u>	<u>0.732</u>	<u>0.764</u>	<u>0.792</u>	<u>0.805</u>	<u>0.809</u>	
Dissolved Oxygen (mg/L)	<u>6.82</u>	<u>6.22</u>	<u>5.69</u>	<u>6.16</u>	<u>6.65</u>	<u>7.45</u>	<u>7.72</u>	<u>7.67</u>	
Turbidity (NTU)	<u>4.72</u>	<u>3.61</u>	<u>3.89</u>	<u>4.20</u>	<u>4.63</u>	<u>4.88</u>	<u>4.02</u>	<u>3.47</u>	
ORP (mV)	<u>15.2</u>	<u>-3.4</u>	<u>-13.6</u>	<u>-15.8</u>	<u>-17.0</u>	<u>-19.7</u>	<u>-20.4</u>	<u>-21.1</u>	

Time	10	11	12
Parameter			
Rate (ml/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory: Test America Sample via ☐ shipped day of sampling
 Shipped Via: ☐ Federal Express ☐ UPS Other: _____ ☐ sent on _____

Chain of Custody Signed By: _____
 KPL

Site: SMIGPL

Page 1 of 1

Event: September 2012

GROUND-WATER SAMPLING LOG

Sampling Personnel: A. Westhuis
 Job Number: 80624434, 2012.00005
 Weather: Partly cloudy, 2.100°F

Well ID: MW-149WT
 Date: 9/18/12
 Time In: _____ Time Out: _____

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		<u>14.00</u>	
Total Depth (feet)		<u>20.09</u>	
Screened Interval (feet)			
Pump Intake -			

check where appropriate

Well Type: Pushmount ☐ Stick-Up ☒
 Well Locked: Yes ☒ No ☐
 Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	<u>5.49</u>
Volume of Water in Well: (gal)	<u>0.89</u>
Pumping Rate of Pump: (ml/min)	<u>150</u>
Pump Start: <u>0915</u>	Pump Stop: <u>1030</u>
Minutes of Pumping: <u>75</u>	
Total Volume Removed: (ml)	<u>11,250</u>

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.663	1.469
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability	pH	DO	Cond	ORP
	± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analytes: Metals
 Dissolved TALL Metals
 Total TALL Metals
 Cyanide (Merced)
 Chloride (Merced)
 Sulfate
 Nitrate as N and Nitrite as N
 Ammonia Nitrogen
 pH
 TDS
 VOCs, PCBs, SVOCs
 Sample ID: MW-149WT
 Sample Time: 1020
 MS/MSD: Yes ☒ No ☐
 Duplicate: Yes ☒ No ☐
 Duplicate ID: Dup-3
 Total Bottles: 9

Sampling for :
 - Ammonia Nitrogen
 - Phosphorous
 - Total Thallium
 - Total Arsenic

EVACUATION INFORMATION

Evacuation Method: Baker ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐
 Tubing Used: Teflon ☐ Polyethylene ☒
 Sampling Method: Baker ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry?

Yes ☐No ☒

Water Quality Meter Type:

YSI 650

Time	0925	0930	0935	0940	0945	0950	0955	1000	1005
Parameter	Initial								
Rate (ml/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TIC)	15.21	15.39	15.56	15.70	15.79	15.89	15.97	16.02	16.07
Temperature (°C)	12.93	13.08	13.46	13.99	14.26	14.56	14.62	14.57	14.43
pH	6.59	6.64	6.68	6.70	6.71	6.71	6.72	6.73	6.73
Conductance (mS/cm)	1.111	1.117	1.128	1.146	1.171	1.179	1.181	1.177	1.178
Dissolved Oxygen (mg/L)	21.83	22.26	21.14	22.12	22.602	22.66	23.20	22.89	22.77
Turbidity (NTU)	1.35	1.20	1.27	1.46	1.07	0.92	0.71	0.65	0.70
ORP (mV)	-50.5	-66.2	-74.7	-71.4	-74.1	-72.1	-73.1	-73.3	-72.1

Time	1010	1015	1020
Parameter			
Rate (ml/min)	150	150	
Depth to Water (ft. TIC)	16.00	16.05	
Temperature (°C)	13.99	14.03	
pH	6.73	6.73	
Conductance (mS/cm)	1.161	1.163	
Dissolved Oxygen (mg/L)	22.80	22.81	
Turbidity (NTU)	0.74	0.72	
ORP (mV)	-74.2	-75.0	

MISCELLANEOUS OBSERVATIONS/PROBLEMS

Sampled

SAMPLE DESTINATION

Laboratory: Test America
 Shipped Via: ☐ Federal Express ☐ UPS ☒ Other: Lab Pickup
 Sample was ☐ shipped day of sampling ☒ sent on _____

Chain of Custody Signed By:

KPM

Site: SMWGPL

GROUND-WATER SAMPLING LOG

Event: September 2011

Sampling Personnel: James Ness

Well ID: MW-185 WT

Job Number:

Date: 9/17/12

Weather: Sunny 70s

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		7.42	
Total Depth (feet)		10.22	
Screened Interval (feet)			
Pump Intake - 8.5'			

check where appropriate

Well Type: Flushmount ☐ Suck-Up ☒
 Well Locked: Yes ☐ No ☐
 Measuring Point Marked: Yes ☒ No ☐

Well Diameter: 1" ☐ 2" ☒ Other: _____

WELL WATER INFORMATION

Length of Water Column: (feet)	2.8
Volume of Water in Well: (gal)	0.46
Pumping Rate of Pump: (mL/min)	100
Pump Start: 1700	Pump Stop:
Minutes of Pumping: 29	
Total Volume Removed: (mL)	~2.0 gal

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.653	1.489
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Use Caution	pH	DO	Cond	ORP
	± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analysis:

Dissolved TAL Inorganics (Mixed) ☐

Total TAL Inorganics ☐

Cyanide (Mixed) ☐

Chloride (Mixed) ☐

Sulfate ☐

Nitrate as N and Nitrite as N ☐

Ammonia Nitrogen ☐

pH ☐

TDS ☐

VOCs, PCBs, SVOCs ☐

Sample ID: MW-185 WT

Sample Time: 1400

MS/MSD: Yes ☐ No ☒

Duplicate: Yes ☐ No ☒

Duplicate ID: _____

Total Bottles: 5

- Sampling for:
- Ammonia Nitrogen
- Phosphorus
- Total Manganese
- Total Thallium
- Dissolved PCBs
- Total PCBs

EVACUATION INFORMATION

Evacuation Method: Sailer ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Tubing Used: Teflon ☐ Polyethylene ☒

Sampling Method: Sailer ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry? Yes ☒ No ☐ Water Quality Meter Type: _____

Time	1 1705	2 1710	3 1715	4 1720	5 1725	6 1730	7	8	9
Parameter	Initial								
Rate (mL/min)	100	100	100	100	100				
Depth to Water (ft. TIC)	8.21	8.92	9.37	9.93	10.20				
Temperature (°C)	17.89	17.73	17.67	17.40	17.58				
pH	7.78	7.71	7.64	7.56	7.54				
Conductance (mS/cm)	0.745	0.743	0.740	0.741	0.732				
Dissolved Oxygen (mg/L)	1.49	1.02	1.79	4.32	3.49				
Turbidity (NTU)	22.6	133	65.7	77.6	35.4				
ORP (mV)	-188.9	-161.2	-156.3	-147.3	-152.7				

Time	10	11	12
Parameter			
Rate (mL/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- Well went dry at 1729
- 1825 MW-185WT recharge @ 7.43
- Gauge 9/18/12 @ 0830 recharge @ 7.41

SAMPLE DESTINATION

Laboratory: _____ Sample was ☐ shipped day of sampling Chain of Custody Signed By: _____

Shipped Via: ☐ Federal Express ☐ UPS ☐ Other: _____ ☐ sent on _____ KPL

- 1400, 9/18/12, start sampling MW-185 WT as directed by Renee Pionk per conversation with the DEQ.
- Turbidity (NTU) = 27.7

Site: SMVGPL

Event: September 2011 2012

GROUND-WATER SAMPLING LOG

Sampling Personnel: James Ness

Well ID: MW-186WT

Job Number:

Date: 9/18/12

Weather: Cloudy 50s

Time In:

Time Out:

WELL INFORMATION

	TIC	JN TOC	BGS
Depth to Water (feet)		18.43	
Total Depth (feet)		21.02	
Screened Interval (feet)			
Pump Intake - 20.5'			

check where appropriate

Well Type:	Flushmount	☐	Stick-Up	☒
Well Locked:	Yes	☒	No	☐
Measuring Point Marked:	Yes	☒	No	☐
Well Diameter:	1"	☐	2"	☒
			Other:	

WELL WATER INFORMATION

Length of Water Column: (feet)	9.59
Volume of Water in Well: (gal)	1.56
Pumping Rate of Pump: (mL/min)	150
Pump Start: 0910	Pump Stop:
Minutes of Pumping:	
Total Volume Removed: (ml)	~11 gal

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.183	0.653	1.499
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability	pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV	

SAMPLING INFORMATION

Analysis:	metals
Dissolved TAL (inorganics metals)	☒
Total TAL (inorganics metals)	☒
Cyanide (filtered)	☐
Chloride (filtered)	☐
Sulfate	☐
Nitrate as N and Nitrite as N	☐
Ammonia Nitrogen	☐
pH	☒
TDS	☐
VOCs, PCBs, dioxins	☐
Sample ID: MW-186WT	
Sample Time: 1215	
MS/MSD: Yes ☒ No ☐	
Duplicate: Yes ☒ No ☐	
Duplicate ID: DUP-5	
Total Bottles: JN 17	

EVACUATION INFORMATION

Evacuation Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other Pump ☐
Tubing Used:	Teflon ☐	Polyethylene ☒		
Sampling Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other Pump ☐
Did well go dry?	Yes ☐	No ☒	Water Quality Meter Type: _____	

Time	1 0915	2 0920	3 0925	4 0930	5 0935	6 0940	7 0945	8 0950	9 0955
Parameter	Initial								
Rate (m/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TIC)	11.88	12.09	12.24	12.36	12.41	12.45	12.53	12.54	12.56
Temperature (°C)	13.13	13.52	13.61	13.67	13.76	13.62	13.69	14.02	13.89
pH	7.03	7.13	7.22	7.19	7.23	7.31	7.32	7.28	7.30
Conductance (mS/cm)	0.739	0.739	0.738	0.734	0.731	0.724	0.726	0.729	0.730
Dissolved Oxygen (mg/L)	10.65	4.85	4.27	3.58	3.37	3.62	3.08	2.47	2.19
Turbidity (NTU)	21.7	11.1	7.40	2.21	10.6	6.17	3.96	3.31	2.04
ORP (mV)	-116.5	-147.2	-154.6	-168.6	-173.9	-178.9	-181.7	-189.5	-195.4

Time	10 1000	11 1005	12 1010
Parameter			
Rate (m/min)	150	150	150
Depth to Water (ft. TIC)	12.57	12.58	12.59
Temperature (°C)	14.08	13.69	13.88
pH	7.33	7.31	7.33
Conductance (mS/cm)	0.731	0.724	0.725
Dissolved Oxygen (mg/L)	1.87	1.72	1.63
Turbidity (NTU)	2.02	1.57	1.31
ORP (mV)	-202.3	-208.2	-212.3

MISCELLANEOUS OBSERVATIONS/PROBLEMS

SAMPLE DESTINATION

Laboratory:		Sample was ☐ shipped day of sampling	Chain of Custody Signed By:
Shipped Via: ☐ Federal Express ☐ UPS ☐ Other:		☐ sent on _____	KRM

Site: SMVGPL

GROUND-WATER SAMPLING LOG

Event: September 20th 2012

Sampling Personnel: James Ness

Well ID: MW-186 WT

Job Number:

Date: 9/18/12

Weather: Cloudy 50s

Time In:

Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		11.43	
Total Depth (feet)		21.02	
Screened Interval (feet)			
Pump Intake - 20.5'			

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒Well Locked: Yes ☐ No ☐Measuring Point Marked: Yes ☒ No ☐Well Diameter: 1' ☐ 2' ☒ Other:

WELL WATER INFORMATION

Length of Water Column (feet)	9.59
Volume of Water in Well (gal)	1.56
Pumping Rate of Pump (mL/min)	150
Pump Start: 0910	Pump Stop:
Minutes of Pumping:	
Total Volume Removed (mL)	~11821

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.653	1.489
1 gal = 3.785 L = 3785 mL = 0.1337 cubic ft.				

Unit Stability	pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV	

SAMPLING INFORMATION

Analysis:

Dissolved TAL, Inorganics (filtered) ☒

Total TAL Inorganics ☒

Cyanide (filtered) ☐

Chloride (filtered) ☐

Sulfate ☐

Nitrate as N and Nitrite as N ☐

Ammonia Nitrogen ☐

pH ☐

TDS ☐

VOCs, PCBs, Sydnor ☐

Sample ID: MW-186 WT

Sample Time: 1215

MS/MSD: Yes ☒ No ☐

Duplicate: Yes ☒ No ☐

Duplicate ID: DUP-5

Total Bottles: 17

EVACUATION INFORMATION

Evacuation Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Tubing Used: Teflon ☐ Polyethylene ☒

Sampling Method: Baller ☐ Peristaltic ☒ Bladder ☐ Other Pump ☐

Did well go dry?

Yes ☐No ☒

Water Quality Meter Type:

Time	1 1015	2 1020	3 1025	4 1030	5 1035	6 1040	7 1045	8 1050	9 1055
Parameter	Initial								
Rate (mL/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TIC)	12.57	12.57	12.25	12.60	12.51	12.62	12.62	12.62	12.16
Temperature (°C)	13.87	14.50	14.25	14.20	14.41	13.82	13.56	14.17	14.39
pH	7.31	7.33	7.34	7.29	7.27	7.26	7.39	7.37	7.38
Conductance (mS/cm)	0.725	0.736	0.734	0.732	0.730	0.726	0.719	0.727	0.732
Dissolved Oxygen (mg/L)	1.67	1.49	1.23	1.20	1.40	1.55	1.64	1.30	1.06
Turbidity (NTU)	1.37	1.48	3.69	4.07	6.23	3.37	1.56	1.00	0.92
ORP (mV)	-215.1	-219.1	-210.9	-214.0	-218.9	-221.6	-227.7	-227.7	-232.9

Time	10 1100	11 1110	12 1115
Parameter			
Rate (mL/min)	150	150	150
Depth to Water (ft. TIC)	12.42	12.31	12.36
Temperature (°C)	14.21	14.04	14.06
pH	7.41	7.41	7.41
Conductance (mS/cm)	0.728	0.725	0.727
Dissolved Oxygen (mg/L)	2.30	1.31	0.98
Turbidity (NTU)	0.65	0.39	0.97
ORP (mV)	-226.0	-226.6	-227.2

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- at 1223 pump malfunction resulted in lower flow rate, rate increased to resume at 150 mL/min
- continuing pump difficulties from 1030 and on
- replaced battery, pump stabilized

SAMPLE DESTINATION

Laboratory:

Sample was ☐ shipped day of sampling

Chain of Custody Signed By:

Shipped Via:

☐ Federal Express☐ UPS

Other:

☐ sent on

KPM

Site: SMUGPL

GROUND-WATER SAMPLING LOG

Event: September 2011 2012

Sampling Personnel: James Ness

Well ID: MW-186WT

Job Number:

Date: 9/18/12

Weather: cloudy 52°F

Time In: Time Out:

WELL INFORMATION

	TIC	TOC	BGS
Depth to Water (feet)		11.43	
Total Depth (feet)		21.02	
Screened Interval (feet)			
Pump Intake - 20.5'			

check where appropriate

Well Type: Flushmount ☐ Stick-Up ☒Well Locked: Yes ☒ No ☐Measuring Point Marked: Yes ☒ No ☐Well Diameter: 1" ☐ 2" ☒ Other:

WELL WATER INFORMATION

Length of Water Column: (feet)	9.59
Volume of Water in Well: (gal)	1.56
Pumping Rate of Pump: (ml/min)	150
Pump Start: 0910	Pump Stop: 1445
Minutes of Pumping: 335	
Total Volume Removed: (ml)	~11 gal

Conversion Factors	1" ID	2" ID	4" ID	6" ID
gallons per foot of water column:	0.041	0.163	0.553	1.469
1 gal = 3.785 L = 3785 ml = 0.1237 cubic ft.				

Use Specificity

pH	DO	Cond	ORP
± 0.1	± 10%	± 3.0%	± 10 mV

SAMPLING INFORMATION

Analyses:	
Dissolved TAL Inorganics (Filtered)	☒
Total TAL Inorganics	☐
Cyanide (Filtered)	☐
Cyanide (Filtered)	☐
Sulfate	☐
Nitrate as N and Nitrite as N	☐
Ammonia Nitrogen	☐
pH	☐
TDS	☐
VOCs, PCBs, SVOCs	☐
Sample ID: MW-186WT	
Sample Time: 1215	
MS/MSD: Yes ☒ No ☐	
Duplicate: Yes ☒ No ☐	
Duplicate ID: DUP-5	
Total Bottles: 13	

EVACUATION INFORMATION

Evacuation Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other Pump ☐
Tubing Used:	Teflon ☐	Polyethylene ☒		
Sampling Method:	Bailer ☐	Peristaltic ☒	Bladder ☐	Other Pump ☐

Did well go dry?

Yes ☐No ☒

Water Quality Meter Type:

Time	1 1120	2 1125	3 1130	4 1135	5 1140	6 1145	7 1150	8 1200	9 1205
Parameter	Initial								
Rate (ml/min)	150	150	150	150	150	150	150	150	150
Depth to Water (ft. TIC)	12.37	12.51	12.61	12.67	12.70	12.71	12.71	12.47	12.51
Temperature (°C)	13.90	13.98	13.89	14.00	14.00	14.46	14.52	14.57	15.07
pH	7.42	7.39	7.39	7.39	7.37	7.38	7.39	7.44	7.43
Conductance (mS/cm)	0.726	0.724	0.725	0.727	0.726	0.730	0.734	0.740	0.748
Dissolved Oxygen (mg/L)	1.71	2.59	2.51	2.77	2.66	2.61	5.19	4.48	4.43
Turbidity (NTU)	0.58	1.03	0.98	1.03	0.56	0.48	1.29	0.53	0.60
ORP (mV)	-221.6	-214.2	-212.4	-214.6	-213.3	-211.2	-211.9	-225.3	-222.8

Time	10 1215	11 1245	12
Parameter			
Rate (ml/min)			
Depth to Water (ft. TIC)			
Temperature (°C)			
pH			
Conductance (mS/cm)			
Dissolved Oxygen (mg/L)			
Turbidity (NTU)			
ORP (mV)			

MISCELLANEOUS OBSERVATIONS/PROBLEMS

- 2nd battery began to die resulting in a lower flow rate, Peristaltic pump hooked-up to car battery at 1200.

SAMPLE DESTINATION

Laboratory:		Sample was ☐ shipped day of sampling	Chain of Custody Signed By:
Shipped Via: ☐ Federal Express ☐ UPS ☐ Other:		☐ sent on	KPM



Saginaw Malleable Iron Plant
Analytical Data

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: 240-15374-1

Client Project/Site: 10030-TO5, RACER SMI

For:

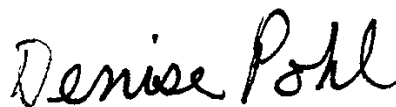
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Attn: Renee Pionk



Authorized for release by:

10/8/2012 4:50:41 PM

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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: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
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.
E	Result exceeded calibration range.

GC Semi VOA

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

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.
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.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
H	Sample was prepped or analyzed beyond the specified holding time
HF	Field parameter with a holding time of 15 minutes
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Job ID: 240-15374-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: 10030-TO5, RACER SMI

Report Number: 240-15374-1

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 North 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 09/20/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.9, 2.0, 2.3 and 2.6 C.

Method 150.1: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following sample has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: RINSE BLANK-(09182012) (240-15374-13)

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample RINSE BLANK-(09182012) (240-15374-13) was analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/25/2012.

1,2,4-Trichlorobenzene was detected in method blank MB 240-58886/5 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 "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Refer to the QC report for details.

No other difficulties were encountered during the VOCs analysis.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Job ID: 240-15374-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

All other quality control parameters were within the acceptance limits.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample RINSE BLANK-(09182012) (240-15374-13) was analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 09/21/2012 and analyzed on 09/24/2012.

Surrogates are added during the extraction process prior to dilution. When the sample is diluted, surrogate recoveries are diluted out and no corrective action is required.

Bis(2-ethylhexyl) phthalate was detected in method blank MB 240-58661/20-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 "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Refer to the QC report for details.

Method 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 58661, 8270.

Method 8270C: The method blank for preparation batch 58661 contained bis(2-ethylhexyl) phthalate at a concentration more than 5x the reporting limit (RL). There was insufficient sample to perform a re-extraction and/or re-analysis; therefore, the data have been reported.

No other difficulties were encountered during the SVOCs analysis.

All other quality control parameters were within the acceptance limits.

DISSOLVED POLYCHLORINATED BIPHENYLS (PCBS)

Samples MW-186WT-(09182012)-DISSOLVED (240-15374-11), MW-111WT-(09182012)-DISSOLVED (240-15374-14) and MW-185WT-(09182012)-DISSOLVED (240-15374-15) were analyzed for dissolved polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were prepared on 09/21/2012 and 09/25/2012 and analyzed on 09/25/2012 and 09/26/2012.

Surrogates are added during the extraction process prior to dilution. When the sample dilution is 5X or greater, surrogate recoveries are diluted out and no corrective action is required.

Method 8082: The opening continuing calibration verification (CCV) for these samples recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. MW-186WT-(09182012)-DISSOLVED (240-15374-11)

No other difficulties were encountered during the PCBs analyses.

All quality control parameters were within the acceptance limits.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples MW-111WT-(09182012) (240-15374-6), MW-185WT-(09182012) (240-15374-7), MW-186WT-(09182012) (240-15374-10), DUP-5-(09182012) (240-15374-12) and RINSE BLANK-(09182012) (240-15374-13) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082. The samples were prepared on 09/21/2012 and analyzed on 09/25/2012.

Aroclor-1016 and Aroclor-1260 failed the recovery criteria high for LCS 240-58696/14-A. Refer to the QC report for details.

Method 8082: The laboratory control sample (LCS) for batch 58696 failed high. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

Method 8082: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for batch 58696 exceeded control limits. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data has been reported.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Job ID: 240-15374-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

No other difficulties were encountered during the PCBs analyses.

All other quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICPMS)

Samples MW-149WT-(09182012) (240-15374-3), DUP-03-(09182012) (240-15374-4), MW-107WT-(09182012) (240-15374-5), MW-111WT-(09182012) (240-15374-6), MW-185WT-(09182012) (240-15374-7), MW-186WT-(09182012) (240-15374-10) and RINSE BLANK-(09182012) (240-15374-13) were analyzed for total recoverable metals (ICPMS) in accordance with EPA SW-846 Method 6020. The samples were prepared on 09/27/2012 and 09/28/2012 and analyzed on 09/28/2012 and 10/01/2012.

Thallium was detected in method blank MB 240-59456/1-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 "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Refer to the QC report for details.

Method 6020: The continuing calibration verification (CCV) for manganese (MN) associated with batch 59740 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. RINSE BLANK-(09182012) (240-15374-13)

No other difficulties were encountered during the metals analyses.

All other quality control parameters were within the acceptance limits.

PH

Sample RINSE BLANK-(09182012) (240-15374-13) was analyzed for pH in accordance with EPA Method 150.1. The samples were analyzed on 09/20/2012.

No difficulties were encountered during the pH analysis.

All quality control parameters were within the acceptance limits.

TOTAL DISSOLVED SOLIDS

Sample RINSE BLANK-(09182012) (240-15374-13) was analyzed for total dissolved solids in accordance with EPA Method 160.1. The samples were analyzed on 09/25/2012.

Method 160.1: Reanalysis of the following sample was performed outside of the analytical holding time due to analyst oversight: MW-183WT-(09142012) (240-15219-5), MW-183WT-(09142012) (240-15219-5 DU). Data is reported.

Method 160.1: The associated samples were inside an oven that spiked above criteria for temperature for a short period of time: (LCS 240-59013/2), (MB 240-59013/1), MW-183WT-(09142012) (240-15219-5), MW-183WT-(09142012) (240-15219-5 DU), RINSE BLANK-(09182012) (240-15374-13). Data is reported.

No other difficulties were encountered during the TDS analysis.

All quality control parameters were within the acceptance limits.

ANIONS

Sample RINSE BLANK-(09182012) (240-15374-13) was analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/21/2012.

Method 300.0: The following sample was received with greater than 50% of holding time expired: RINSE BLANK-(09182012) (240-15374-13). As such, the laboratory had insufficient time remaining to perform the analysis within holding time.

Case Narrative

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Job ID: 240-15374-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

No other difficulties were encountered during the anions analysis.

All quality control parameters were within the acceptance limits.

ANIONS

Sample RINSE BLANK-(09182012) (240-15374-13) was analyzed for anions in accordance with EPA Method 300.0. The samples were analyzed on 09/21/2012.

No difficulties were encountered during the anions analysis.

All quality control parameters were within the acceptance limits.

AMMONIA

Samples MW-107S1-(09172012) (240-15374-1), MW-108S2-(09172012) (240-15374-2), MW-149WT-(09182012) (240-15374-3), MW-107WT-(09182012) (240-15374-5), MW-111WT-(09182012) (240-15374-6), MW-185WT-(09182012) (240-15374-7), MW-114S2-(09182012) (240-15374-8), DUP-2-(09182012) (240-15374-9), MW-186WT-(09182012) (240-15374-10) and RINSE BLANK-(09182012) (240-15374-13) were analyzed for ammonia in accordance with EPA Method 350.3. The samples were analyzed on 09/28/2012, 10/02/2012 and 10/04/2012.

Samples MW-108S2-(09172012) (240-15374-2)[5X] and MW-149WT-(09182012) (240-15374-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the ammonia analyses.

All quality control parameters were within the acceptance limits.

TOTAL PHOSPHORUS

Samples MW-149WT-(09182012) (240-15374-3), DUP-03-(09182012) (240-15374-4), MW-107WT-(09182012) (240-15374-5), MW-111WT-(09182012) (240-15374-6), MW-185WT-(09182012) (240-15374-7), MW-186WT-(09182012) (240-15374-10) and RINSE BLANK-(09182012) (240-15374-13) were analyzed for total phosphorus in accordance with EPA Method 365.1. The samples were prepared and analyzed on 10/03/2012.

The presence of the '4' qualifier in the data indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount.

Refer to the QC report for details.

Samples MW-149WT-(09182012) (240-15374-3)[5X] and DUP-03-(09182012) (240-15374-4)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the total phosphorus analyses.

All other quality control parameters were within the acceptance limits.

DISSOLVED CYANIDE

Sample RINSE BLANK-(09182012) (240-15374-13) was analyzed for dissolved cyanide in accordance with EPA SW-846 Method 9012A. The samples were prepared and analyzed on 09/24/2012.

No difficulties were encountered during the cyanide analysis.

All quality control parameters were within the acceptance limits.

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NC
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL NC
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL NC
6020	Metals (ICP/MS)	SW846	TAL NC
150.1	pH (Electrometric)	MCAWW	TAL NC
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL NC
300.0	Anions, Ion Chromatography	MCAWW	TAL NC
350.3	Nitrogen, Ammonia	MCAWW	TAL NC
365.1	Phosphorus, Total	EPA	TAL NC
9012A	Cyanide, Total and/or Amenable	SW846	TAL NC

Protocol References:

EPA = US Environmental Protection Agency

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

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

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-15374-1	MW-107S1-(09172012)	Water	09/17/12 16:20	09/20/12 15:54
240-15374-2	MW-108S2-(09172012)	Water	09/17/12 16:20	09/20/12 15:54
240-15374-3	MW-149WT-(09182012)	Water	09/18/12 10:20	09/20/12 15:54
240-15374-4	DUP-03-(09182012)	Water	09/18/12 00:00	09/20/12 15:54
240-15374-5	MW-107WT-(09182012)	Water	09/18/12 12:40	09/20/12 15:54
240-15374-6	MW-111WT-(09182012)	Water	09/18/12 13:15	09/20/12 15:54
240-15374-7	MW-185WT-(09182012)	Water	09/18/12 14:00	09/20/12 15:54
240-15374-8	MW-114S2-(09182012)	Water	09/18/12 15:35	09/20/12 15:54
240-15374-9	DUP-2-(09182012)	Water	09/18/12 00:00	09/20/12 15:54
240-15374-10	MW-186WT-(09182012)	Water	09/18/12 12:15	09/20/12 15:54
240-15374-11	MW-186WT-(09182012)-DISSOLVED	Water	09/18/12 12:15	09/20/12 15:54
240-15374-12	DUP-5-(09182012)	Water	09/18/12 00:00	09/20/12 15:54
240-15374-13	RINSE BLANK-(09182012)	Water	09/18/12 16:40	09/20/12 15:54
240-15374-14	MW-111WT-(09182012)-DISSOLVED	Water	09/18/12 13:15	09/20/12 15:54
240-15374-15	MW-185WT-(09182012)-DISSOLVED	Water	09/18/12 14:00	09/20/12 15:54

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-107S1-(09172012)

Lab Sample ID: 240-15374-1

Date Collected: 09/17/12 16:20

Matrix: Water

Date Received: 09/20/12 15:54

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	1.4		0.20	0.035	mg/L			09/28/12 11:22	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-108S2-(09172012)

Lab Sample ID: 240-15374-2

Date Collected: 09/17/12 16:20

Matrix: Water

Date Received: 09/20/12 15:54

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	6.2		1.0	0.18	mg/L			09/28/12 11:26	5

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-149WT-(09182012)

Lab Sample ID: 240-15374-3

Date Collected: 09/18/12 10:20

Matrix: Water

Date Received: 09/20/12 15:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	160		2.0	0.40	ug/L		09/27/12 08:56	09/28/12 12:09	1
Thallium	0.65	J	1.0	0.14	ug/L		09/27/12 08:56	09/28/12 12:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	5.0		1.0	0.18	mg/L			09/28/12 11:29	5
Total Phosphorus as PO4	2.0		0.50	0.17	mg/L		10/03/12 07:49	10/03/12 12:07	5

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: DUP-03-(09182012)

Lab Sample ID: 240-15374-4

Date Collected: 09/18/12 00:00

Matrix: Water

Date Received: 09/20/12 15:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	160		2.0	0.40	ug/L		09/28/12 11:01	10/01/12 11:56	1
Thallium	0.32	J B	1.0	0.14	ug/L		09/28/12 11:01	10/01/12 11:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as PO4	2.1		0.50	0.17	mg/L		10/03/12 08:03	10/03/12 12:34	5

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-107WT-(09182012)

Lab Sample ID: 240-15374-5

Date Collected: 09/18/12 12:40

Matrix: Water

Date Received: 09/20/12 15:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.1	J	2.0	0.40	ug/L		09/28/12 11:01	10/01/12 14:49	1
Manganese	170		1.0	0.83	ug/L		09/28/12 11:01	10/01/12 14:49	1
Thallium	0.46	J B	1.0	0.14	ug/L		09/28/12 11:01	10/01/12 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.062	J	0.20	0.035	mg/L			09/28/12 11:34	1
Total Phosphorus as PO4	0.10	U	0.10	0.033	mg/L		10/03/12 08:05	10/03/12 12:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-111WT-(09182012)

Lab Sample ID: 240-15374-6

Date Collected: 09/18/12 13:15

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.098	U *	0.098	0.043	ug/L		09/21/12 12:25	09/25/12 04:04	1
Aroclor-1221	0.098	U	0.098	0.044	ug/L		09/21/12 12:25	09/25/12 04:04	1
Aroclor-1232	0.098	U	0.098	0.072	ug/L		09/21/12 12:25	09/25/12 04:04	1
Aroclor-1242	0.098	U	0.098	0.059	ug/L		09/21/12 12:25	09/25/12 04:04	1
Aroclor-1248	0.098	U	0.098	0.060	ug/L		09/21/12 12:25	09/25/12 04:04	1
Aroclor-1254	0.098	U	0.098	0.031	ug/L		09/21/12 12:25	09/25/12 04:04	1
Aroclor-1260	0.098	U *	0.098	0.037	ug/L		09/21/12 12:25	09/25/12 04:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	76		35 - 137	09/21/12 12:25	09/25/12 04:04	1
DCB Decachlorobiphenyl	62		10 - 140	09/21/12 12:25	09/25/12 04:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	3600		1.0	0.83	ug/L		09/28/12 11:01	10/01/12 14:55	1
Thallium	0.24	J B	1.0	0.14	ug/L		09/28/12 11:01	10/01/12 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	1.6		0.20	0.035	mg/L			09/28/12 13:25	1
Total Phosphorus as PO4	0.087	J	0.10	0.033	mg/L		10/03/12 08:07	10/03/12 12:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-185WT-(09182012)

Lab Sample ID: 240-15374-7

Date Collected: 09/18/12 14:00

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.096	U *	0.096	0.042	ug/L		09/21/12 12:25	09/25/12 04:17	1
Aroclor-1221	0.096	U	0.096	0.043	ug/L		09/21/12 12:25	09/25/12 04:17	1
Aroclor-1232	0.096	U	0.096	0.070	ug/L		09/21/12 12:25	09/25/12 04:17	1
Aroclor-1242	0.096	U	0.096	0.058	ug/L		09/21/12 12:25	09/25/12 04:17	1
Aroclor-1248	0.096	U	0.096	0.059	ug/L		09/21/12 12:25	09/25/12 04:17	1
Aroclor-1254	0.096	U	0.096	0.031	ug/L		09/21/12 12:25	09/25/12 04:17	1
Aroclor-1260	0.096	U *	0.096	0.037	ug/L		09/21/12 12:25	09/25/12 04:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	64		35 - 137	09/21/12 12:25	09/25/12 04:17	1
DCB Decachlorobiphenyl	43		10 - 140	09/21/12 12:25	09/25/12 04:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	700		1.0	0.83	ug/L		09/28/12 11:01	10/01/12 15:00	1
Thallium	0.15	J B	1.0	0.14	ug/L		09/28/12 11:01	10/01/12 15:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.38		0.20	0.035	mg/L			09/28/12 13:28	1
Total Phosphorus as PO4	0.10	U	0.10	0.033	mg/L		10/03/12 08:09	10/03/12 12:23	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-114S2-(09182012)

Lab Sample ID: 240-15374-8

Date Collected: 09/18/12 15:35

Matrix: Water

Date Received: 09/20/12 15:54

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	2.9		0.20	0.035	mg/L			09/28/12 13:31	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: DUP-2-(09182012)

Lab Sample ID: 240-15374-9

Date Collected: 09/18/12 00:00

Matrix: Water

Date Received: 09/20/12 15:54

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	2.8		0.20	0.035	mg/L			10/02/12 15:09	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-186WT-(09182012)

Lab Sample ID: 240-15374-10

Date Collected: 09/18/12 12:15

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U *	0.095	0.042	ug/L		09/21/12 12:25	09/25/12 04:31	1
Aroclor-1221	0.095	U	0.095	0.043	ug/L		09/21/12 12:25	09/25/12 04:31	1
Aroclor-1232	0.095	U	0.095	0.070	ug/L		09/21/12 12:25	09/25/12 04:31	1
Aroclor-1242	0.095	U	0.095	0.057	ug/L		09/21/12 12:25	09/25/12 04:31	1
Aroclor-1248	0.095	U	0.095	0.058	ug/L		09/21/12 12:25	09/25/12 04:31	1
Aroclor-1254	0.095	U	0.095	0.030	ug/L		09/21/12 12:25	09/25/12 04:31	1
Aroclor-1260	0.095	U *	0.095	0.036	ug/L		09/21/12 12:25	09/25/12 04:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	74		35 - 137	09/21/12 12:25	09/25/12 04:31	1
DCB Decachlorobiphenyl	44		10 - 140	09/21/12 12:25	09/25/12 04:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	400		1.0	0.83	ug/L		09/28/12 11:01	10/01/12 15:06	1
Thallium	1.0	U	1.0	0.14	ug/L		09/28/12 11:01	10/01/12 15:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	2.1		0.20	0.035	mg/L			10/02/12 15:11	1
Total Phosphorus as PO4	0.25		0.10	0.033	mg/L		10/03/12 08:11	10/03/12 12:26	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-186WT-(09182012)-DISSOLVED

Lab Sample ID: 240-15374-11

Date Collected: 09/18/12 12:15

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U	0.095	0.042	ug/L		09/25/12 12:27	09/26/12 10:37	1
Aroclor-1221	0.095	U	0.095	0.043	ug/L		09/25/12 12:27	09/26/12 10:37	1
Aroclor-1232	0.095	U	0.095	0.070	ug/L		09/25/12 12:27	09/26/12 10:37	1
Aroclor-1242	0.095	U	0.095	0.057	ug/L		09/25/12 12:27	09/26/12 10:37	1
Aroclor-1248	0.095	U	0.095	0.058	ug/L		09/25/12 12:27	09/26/12 10:37	1
Aroclor-1254	0.095	U	0.095	0.030	ug/L		09/25/12 12:27	09/26/12 10:37	1
Aroclor-1260	0.095	U	0.095	0.036	ug/L		09/25/12 12:27	09/26/12 10:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	77		35 - 137				09/25/12 12:27	09/26/12 10:37	1
DCB Decachlorobiphenyl	47		10 - 140				09/25/12 12:27	09/26/12 10:37	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: DUP-5-(09182012)

Lab Sample ID: 240-15374-12

Date Collected: 09/18/12 00:00

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U *	0.095	0.042	ug/L		09/21/12 12:25	09/25/12 05:51	1
Aroclor-1221	0.095	U	0.095	0.043	ug/L		09/21/12 12:25	09/25/12 05:51	1
Aroclor-1232	0.095	U	0.095	0.070	ug/L		09/21/12 12:25	09/25/12 05:51	1
Aroclor-1242	0.095	U	0.095	0.057	ug/L		09/21/12 12:25	09/25/12 05:51	1
Aroclor-1248	0.095	U	0.095	0.058	ug/L		09/21/12 12:25	09/25/12 05:51	1
Aroclor-1254	0.095	U	0.095	0.030	ug/L		09/21/12 12:25	09/25/12 05:51	1
Aroclor-1260	0.095	U *	0.095	0.036	ug/L		09/21/12 12:25	09/25/12 05:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	69		35 - 137	09/21/12 12:25	09/25/12 05:51	1
DCB Decachlorobiphenyl	48		10 - 140	09/21/12 12:25	09/25/12 05:51	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: RINSE BLANK-(09182012)

Lab Sample ID: 240-15374-13

Date Collected: 09/18/12 16:40

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			09/25/12 06:53	1
Benzene	1.0	U	1.0	0.13	ug/L			09/25/12 06:53	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			09/25/12 06:53	1
Bromoform	1.0	U	1.0	0.64	ug/L			09/25/12 06:53	1
Bromomethane	1.0	U	1.0	0.41	ug/L			09/25/12 06:53	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			09/25/12 06:53	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			09/25/12 06:53	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			09/25/12 06:53	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			09/25/12 06:53	1
Chloroethane	1.0	U	1.0	0.29	ug/L			09/25/12 06:53	1
Chloroform	0.69	J	1.0	0.16	ug/L			09/25/12 06:53	1
Chloromethane	1.0	U	1.0	0.30	ug/L			09/25/12 06:53	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			09/25/12 06:53	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			09/25/12 06:53	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/25/12 06:53	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			09/25/12 06:53	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			09/25/12 06:53	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			09/25/12 06:53	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			09/25/12 06:53	1
2-Hexanone	10	U	10	0.41	ug/L			09/25/12 06:53	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			09/25/12 06:53	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			09/25/12 06:53	1
Styrene	1.0	U	1.0	0.11	ug/L			09/25/12 06:53	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			09/25/12 06:53	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			09/25/12 06:53	1
Toluene	1.0	U	1.0	0.13	ug/L			09/25/12 06:53	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			09/25/12 06:53	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			09/25/12 06:53	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			09/25/12 06:53	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			09/25/12 06:53	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			09/25/12 06:53	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			09/25/12 06:53	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			09/25/12 06:53	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			09/25/12 06:53	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			09/25/12 06:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			09/25/12 06:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/25/12 06:53	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			09/25/12 06:53	1
Methyl acetate	10	U	10	0.38	ug/L			09/25/12 06:53	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			09/25/12 06:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			09/25/12 06:53	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.15	ug/L			09/25/12 06:53	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/25/12 06:53	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			09/25/12 06:53	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/25/12 06:53	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			09/25/12 06:53	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			09/25/12 06:53	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			09/25/12 06:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		63 - 129					09/25/12 06:53	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: RINSE BLANK-(09182012)

Lab Sample ID: 240-15374-13

Date Collected: 09/18/12 16:40

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		66 - 117		09/25/12 06:53	1
Toluene-d8 (Surr)	86		74 - 115		09/25/12 06:53	1
Dibromofluoromethane (Surr)	99		75 - 121		09/25/12 06:53	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	0.95	U	0.95	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
2,2'-oxybis[1-chloropropane]	0.95	U	0.95	0.38	ug/L		09/21/12 10:28	09/24/12 18:01	1
2,4,5-Trichlorophenol	4.8	U	4.8	0.29	ug/L		09/21/12 10:28	09/24/12 18:01	1
2,4,6-Trichlorophenol	3.8	U	3.8	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
2,4-Dichlorophenol	1.9	U	1.9	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
2,4-Dimethylphenol	1.9	U	1.9	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
2,4-Dinitrophenol	4.8	U	4.8	2.3	ug/L		09/21/12 10:28	09/24/12 18:01	1
2,4-Dinitrotoluene	4.8	U	4.8	0.26	ug/L		09/21/12 10:28	09/24/12 18:01	1
2,6-Dinitrotoluene	4.8	U	4.8	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
2-Chloronaphthalene	0.95	U	0.95	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
2-Chlorophenol	0.95	U	0.95	0.28	ug/L		09/21/12 10:28	09/24/12 18:01	1
2-Methylnaphthalene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
2-Methylphenol	0.95	U	0.95	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
2-Nitroaniline	1.9	U	1.9	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
2-Nitrophenol	1.9	U	1.9	0.27	ug/L		09/21/12 10:28	09/24/12 18:01	1
3,3'-Dichlorobenzidine	3.8	U	3.8	0.35	ug/L		09/21/12 10:28	09/24/12 18:01	1
3-Nitroaniline	1.9	U	1.9	0.27	ug/L		09/21/12 10:28	09/24/12 18:01	1
4,6-Dinitro-2-methylphenol	4.8	U	4.8	2.3	ug/L		09/21/12 10:28	09/24/12 18:01	1
4-Bromophenyl phenyl ether	1.9	U	1.9	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
4-Chloro-3-methylphenol	1.9	U	1.9	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
4-Chloroaniline	1.9	U	1.9	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
4-Chlorophenyl phenyl ether	1.9	U	1.9	0.29	ug/L		09/21/12 10:28	09/24/12 18:01	1
4-Nitroaniline	1.9	U	1.9	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
4-Nitrophenol	4.8	U	4.8	2.3	ug/L		09/21/12 10:28	09/24/12 18:01	1
Acenaphthene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Acenaphthylene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Acetophenone	0.95	U	0.95	0.32	ug/L		09/21/12 10:28	09/24/12 18:01	1
Anthracene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Atrazine	0.95	U	0.95	0.32	ug/L		09/21/12 10:28	09/24/12 18:01	1
Benzaldehyde	0.95	U	0.95	0.37	ug/L		09/21/12 10:28	09/24/12 18:01	1
Benzo[a]anthracene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Benzo[a]pyrene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Benzo[b]fluoranthene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Benzo[g,h,i]perylene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Benzo[k]fluoranthene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Bis(2-chloroethoxy)methane	0.95	U	0.95	0.30	ug/L		09/21/12 10:28	09/24/12 18:01	1
Bis(2-chloroethyl)ether	0.95	U	0.95	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Bis(2-ethylhexyl) phthalate	0.76	J B	1.9	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
Butyl benzyl phthalate	0.95	U	0.95	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
Caprolactam	4.8	U	4.8	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
Carbazole	0.95	U	0.95	0.27	ug/L		09/21/12 10:28	09/24/12 18:01	1
Chrysene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Dibenz(a,h)anthracene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Dibenzofuran	0.95	U	0.95	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Diethyl phthalate	0.95	U	0.95	0.57	ug/L		09/21/12 10:28	09/24/12 18:01	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: RINSE BLANK-(09182012)

Lab Sample ID: 240-15374-13

Date Collected: 09/18/12 16:40

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dimethyl phthalate	0.95	U	0.95	0.28	ug/L		09/21/12 10:28	09/24/12 18:01	1
Di-n-butyl phthalate	0.95	U	0.95	0.64	ug/L		09/21/12 10:28	09/24/12 18:01	1
Di-n-octyl phthalate	0.95	U	0.95	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
Fluoranthene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Fluorene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Hexachlorobenzene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Hexachlorobutadiene	0.95	U	0.95	0.26	ug/L		09/21/12 10:28	09/24/12 18:01	1
Hexachlorocyclopentadiene	4.8	U	4.8	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
Hexachloroethane	0.95	U	0.95	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
Indeno[1,2,3-cd]pyrene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Isophorone	0.95	U	0.95	0.26	ug/L		09/21/12 10:28	09/24/12 18:01	1
Naphthalene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Nitrobenzene	0.95	U	0.95	0.038	ug/L		09/21/12 10:28	09/24/12 18:01	1
N-Nitrosodi-n-propylamine	0.95	U	0.95	0.76	ug/L		09/21/12 10:28	09/24/12 18:01	1
N-Nitrosodiphenylamine	0.95	U	0.95	0.30	ug/L		09/21/12 10:28	09/24/12 18:01	1
Pentachlorophenol	4.8	U	4.8	2.3	ug/L		09/21/12 10:28	09/24/12 18:01	1
Phenol	0.95	U	0.95	0.57	ug/L		09/21/12 10:28	09/24/12 18:01	1
Phenanthrene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
Pyrene	0.19	U	0.19	0.095	ug/L		09/21/12 10:28	09/24/12 18:01	1
3 & 4 Methylphenol	1.9	U	1.9	0.71	ug/L		09/21/12 10:28	09/24/12 18:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	42		20 - 110	09/21/12 10:28	09/24/12 18:01	1
2-Fluorophenol (Surr)	49		10 - 110	09/21/12 10:28	09/24/12 18:01	1
2,4,6-Tribromophenol (Surr)	47		21 - 110	09/21/12 10:28	09/24/12 18:01	1
Nitrobenzene-d5 (Surr)	46		21 - 110	09/21/12 10:28	09/24/12 18:01	1
Phenol-d5 (Surr)	50		21 - 110	09/21/12 10:28	09/24/12 18:01	1
Terphenyl-d14 (Surr)	58		24 - 110	09/21/12 10:28	09/24/12 18:01	1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U *	0.095	0.042	ug/L		09/21/12 12:25	09/25/12 06:04	1
Aroclor-1221	0.095	U	0.095	0.043	ug/L		09/21/12 12:25	09/25/12 06:04	1
Aroclor-1232	0.095	U	0.095	0.070	ug/L		09/21/12 12:25	09/25/12 06:04	1
Aroclor-1242	0.095	U	0.095	0.057	ug/L		09/21/12 12:25	09/25/12 06:04	1
Aroclor-1248	0.095	U	0.095	0.058	ug/L		09/21/12 12:25	09/25/12 06:04	1
Aroclor-1254	0.095	U	0.095	0.030	ug/L		09/21/12 12:25	09/25/12 06:04	1
Aroclor-1260	0.11	*	0.095	0.036	ug/L		09/21/12 12:25	09/25/12 06:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	77		35 - 137	09/21/12 12:25	09/25/12 06:04	1
DCB Decachlorobiphenyl	73		10 - 140	09/21/12 12:25	09/25/12 06:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/28/12 11:01	10/01/12 12:56	1
Manganese	1.0	U ^	1.0	0.83	ug/L		09/28/12 11:01	10/01/12 12:56	1
Thallium	1.0	U	1.0	0.14	ug/L		09/28/12 11:01	10/01/12 12:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.75	HF	0.100	0.100	SU			09/20/12 17:50	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: RINSE BLANK-(09182012)

Lab Sample ID: 240-15374-13

Date Collected: 09/18/12 16:40

Matrix: Water

Date Received: 09/20/12 15:54

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	7.4	mg/L			09/25/12 13:23	1
Chloride	1.0	U	1.0	0.10	mg/L			09/21/12 03:33	1
Nitrite as N	0.10	U H	0.10	0.012	mg/L			09/21/12 03:33	1
Nitrate as N	0.10	U H	0.10	0.023	mg/L			09/21/12 03:33	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/21/12 03:33	1
Ammonia (as N)	0.035	J	0.20	0.035	mg/L			10/04/12 10:38	1
Total Phosphorus as PO4	0.10	U	0.10	0.033	mg/L		10/03/12 08:12	10/03/12 12:26	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:19	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-111WT-(09182012)-DISSOLVED

Lab Sample ID: 240-15374-14

Date Collected: 09/18/12 13:15

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.096	U *	0.096	0.042	ug/L		09/21/12 12:25	09/25/12 06:18	1
Aroclor-1221	0.096	U	0.096	0.043	ug/L		09/21/12 12:25	09/25/12 06:18	1
Aroclor-1232	0.096	U	0.096	0.070	ug/L		09/21/12 12:25	09/25/12 06:18	1
Aroclor-1242	0.096	U	0.096	0.058	ug/L		09/21/12 12:25	09/25/12 06:18	1
Aroclor-1248	0.082	J	0.096	0.059	ug/L		09/21/12 12:25	09/25/12 06:18	1
Aroclor-1254	0.096	U	0.096	0.031	ug/L		09/21/12 12:25	09/25/12 06:18	1
Aroclor-1260	0.096	U *	0.096	0.037	ug/L		09/21/12 12:25	09/25/12 06:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	73		35 - 137				09/21/12 12:25	09/25/12 06:18	1
DCB Decachlorobiphenyl	45		10 - 140				09/21/12 12:25	09/25/12 06:18	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-185WT-(09182012)-DISSOLVED

Lab Sample ID: 240-15374-15

Date Collected: 09/18/12 14:00

Matrix: Water

Date Received: 09/20/12 15:54

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.095	U *	0.095	0.042	ug/L		09/21/12 12:25	09/25/12 06:32	1
Aroclor-1221	0.095	U	0.095	0.043	ug/L		09/21/12 12:25	09/25/12 06:32	1
Aroclor-1232	0.095	U	0.095	0.070	ug/L		09/21/12 12:25	09/25/12 06:32	1
Aroclor-1242	0.095	U	0.095	0.057	ug/L		09/21/12 12:25	09/25/12 06:32	1
Aroclor-1248	0.095	U	0.095	0.058	ug/L		09/21/12 12:25	09/25/12 06:32	1
Aroclor-1254	0.095	U	0.095	0.030	ug/L		09/21/12 12:25	09/25/12 06:32	1
Aroclor-1260	0.041	J *	0.095	0.036	ug/L		09/21/12 12:25	09/25/12 06:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	75		35 - 137	09/21/12 12:25	09/25/12 06:32	1
DCB Decachlorobiphenyl	72		10 - 140	09/21/12 12:25	09/25/12 06:32	1

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		12DCE (63-129)	BFB (66-117)	TOL (74-115)	DBFM (75-121)
240-15374-13	RINSE BLANK-(09182012)	103	81	86	99
LCS 240-58886/4	Lab Control Sample	104	103	100	101
MB 240-58886/5	Method Blank	99	89	91	97

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (20-110)	2FP (10-110)	TBP (21-110)	NBZ (21-110)	PHL (21-110)	TPH (24-110)
240-15374-13	RINSE BLANK-(09182012)	42	49	47	46	50	58
LCS 240-58661/21-A	Lab Control Sample	71	79	76	74	78	73
MB 240-58661/20-A	Method Blank	68	77	72	72	79	86

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (35-137)	DCB2 (10-140)
240-15374-6	MW-111WT-(09182012)	76	62
240-15374-7	MW-185WT-(09182012)	64	43
240-15374-10	MW-186WT-(09182012)	74	44
240-15374-10 MS	MW-186WT-(09182012)	74	61
240-15374-10 MSD	MW-186WT-(09182012)	67	34
240-15374-12	DUP-5-(09182012)	69	48
240-15374-13	RINSE BLANK-(09182012)	77	73
LCS 240-58696/14-A	Lab Control Sample	75	74
LCS 240-59004/5-A	Lab Control Sample	80	71
MB 240-58696/13-A	Method Blank	78	83
MB 240-59004/4-A	Method Blank	83	77

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Dissolved

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (35-137)	DCB2 (10-140)
240-15374-11	MW-186WT-(09182012)-DISSOLVE	77	47
240-15374-11 MS	MW-186WT-(09182012)-DISSOLVE	78	43
240-15374-11 MSD	MW-186WT-(09182012)-DISSOLVE	65	35
240-15374-14	MW-111WT-(09182012)-DISSOLVEI	73	45
240-15374-15	MW-185WT-(09182012)-DISSOLVE	75	72

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-58886/5

Matrix: Water

Analysis Batch: 58886

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	1.1	ug/L			09/25/12 00:55	1
Benzene	1.0	U	1.0	0.13	ug/L			09/25/12 00:55	1
Dichlorobromomethane	1.0	U	1.0	0.15	ug/L			09/25/12 00:55	1
Bromoform	1.0	U	1.0	0.64	ug/L			09/25/12 00:55	1
Bromomethane	1.0	U	1.0	0.41	ug/L			09/25/12 00:55	1
2-Butanone (MEK)	10	U	10	0.57	ug/L			09/25/12 00:55	1
Carbon disulfide	1.0	U	1.0	0.13	ug/L			09/25/12 00:55	1
Carbon tetrachloride	1.0	U	1.0	0.13	ug/L			09/25/12 00:55	1
Chlorobenzene	1.0	U	1.0	0.15	ug/L			09/25/12 00:55	1
Chloroethane	1.0	U	1.0	0.29	ug/L			09/25/12 00:55	1
Chloroform	1.0	U	1.0	0.16	ug/L			09/25/12 00:55	1
Chloromethane	1.0	U	1.0	0.30	ug/L			09/25/12 00:55	1
1,1-Dichloroethane	1.0	U	1.0	0.15	ug/L			09/25/12 00:55	1
1,2-Dichloroethane	1.0	U	1.0	0.22	ug/L			09/25/12 00:55	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/25/12 00:55	1
1,2-Dichloropropane	1.0	U	1.0	0.18	ug/L			09/25/12 00:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.14	ug/L			09/25/12 00:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.19	ug/L			09/25/12 00:55	1
Ethylbenzene	1.0	U	1.0	0.17	ug/L			09/25/12 00:55	1
2-Hexanone	10	U	10	0.41	ug/L			09/25/12 00:55	1
Methylene Chloride	1.0	U	1.0	0.33	ug/L			09/25/12 00:55	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.32	ug/L			09/25/12 00:55	1
Styrene	1.0	U	1.0	0.11	ug/L			09/25/12 00:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.18	ug/L			09/25/12 00:55	1
Tetrachloroethene	1.0	U	1.0	0.29	ug/L			09/25/12 00:55	1
Toluene	1.0	U	1.0	0.13	ug/L			09/25/12 00:55	1
Trichloroethene	1.0	U	1.0	0.17	ug/L			09/25/12 00:55	1
Vinyl chloride	1.0	U	1.0	0.22	ug/L			09/25/12 00:55	1
Xylenes, Total	2.0	U	2.0	0.28	ug/L			09/25/12 00:55	1
1,1,1-Trichloroethane	1.0	U	1.0	0.22	ug/L			09/25/12 00:55	1
1,1,2-Trichloroethane	1.0	U	1.0	0.27	ug/L			09/25/12 00:55	1
Cyclohexane	1.0	U	1.0	0.12	ug/L			09/25/12 00:55	1
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	0.67	ug/L			09/25/12 00:55	1
Ethylene Dibromide	1.0	U	1.0	0.24	ug/L			09/25/12 00:55	1
Dichlorodifluoromethane	1.0	U	1.0	0.31	ug/L			09/25/12 00:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.17	ug/L			09/25/12 00:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			09/25/12 00:55	1
Isopropylbenzene	1.0	U	1.0	0.13	ug/L			09/25/12 00:55	1
Methyl acetate	10	U	10	0.38	ug/L			09/25/12 00:55	1
Methyl tert-butyl ether	5.0	U	5.0	0.17	ug/L			09/25/12 00:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.28	ug/L			09/25/12 00:55	1
1,2,4-Trichlorobenzene	0.212	J	1.0	0.15	ug/L			09/25/12 00:55	1
1,2-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/25/12 00:55	1
1,3-Dichlorobenzene	1.0	U	1.0	0.14	ug/L			09/25/12 00:55	1
1,4-Dichlorobenzene	1.0	U	1.0	0.13	ug/L			09/25/12 00:55	1
Trichlorofluoromethane	1.0	U	1.0	0.21	ug/L			09/25/12 00:55	1
Chlorodibromomethane	1.0	U	1.0	0.18	ug/L			09/25/12 00:55	1
Methylcyclohexane	1.0	U	1.0	0.13	ug/L			09/25/12 00:55	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-58886/5

Matrix: Water

Analysis Batch: 58886

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 129		09/25/12 00:55	1
4-Bromofluorobenzene (Surr)	89		66 - 117		09/25/12 00:55	1
Toluene-d8 (Surr)	91		74 - 115		09/25/12 00:55	1
Dibromofluoromethane (Surr)	97		75 - 121		09/25/12 00:55	1

Lab Sample ID: LCS 240-58886/4

Matrix: Water

Analysis Batch: 58886

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	22.6		ug/L		113	43 - 136
Benzene	10.0	10.9		ug/L		109	83 - 112
Dichlorobromomethane	10.0	11.0		ug/L		110	72 - 121
Bromoform	10.0	9.82		ug/L		98	40 - 131
Bromomethane	10.0	10.3		ug/L		103	11 - 185
2-Butanone (MEK)	20.0	19.2		ug/L		96	60 - 126
Carbon disulfide	10.0	10.2		ug/L		102	62 - 142
Carbon tetrachloride	10.0	11.6		ug/L		116	66 - 128
Chlorobenzene	10.0	10.2		ug/L		102	85 - 110
Chloroethane	10.0	10.1		ug/L		101	25 - 153
Chloroform	10.0	11.1		ug/L		111	79 - 117
Chloromethane	10.0	9.23		ug/L		92	44 - 126
1,1-Dichloroethane	10.0	11.1		ug/L		111	82 - 115
1,2-Dichloroethane	10.0	11.5		ug/L		115	71 - 127
1,1-Dichloroethene	10.0	10.3		ug/L		103	78 - 131
1,2-Dichloropropane	10.0	10.9		ug/L		109	81 - 115
cis-1,3-Dichloropropene	10.0	10.0		ug/L		100	61 - 115
trans-1,3-Dichloropropene	10.0	10.3		ug/L		103	58 - 117
Ethylbenzene	10.0	10.5		ug/L		105	83 - 112
2-Hexanone	20.0	18.6		ug/L		93	55 - 133
Methylene Chloride	10.0	10.3		ug/L		103	66 - 131
4-Methyl-2-pentanone (MIBK)	20.0	19.0		ug/L		95	63 - 128
Styrene	10.0	11.1		ug/L		111	79 - 114
1,1,2,2-Tetrachloroethane	10.0	9.33		ug/L		93	68 - 118
Tetrachloroethene	10.0	9.75		ug/L		97	79 - 114
Toluene	10.0	10.4		ug/L		104	84 - 111
Trichloroethene	10.0	10.9		ug/L		109	76 - 117
Vinyl chloride	10.0	9.09		ug/L		91	53 - 127
Xylenes, Total	30.0	31.8		ug/L		106	83 - 112
1,1,1-Trichloroethane	10.0	11.7		ug/L		117	74 - 118
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	80 - 112
Cyclohexane	10.0	9.42		ug/L		94	54 - 121
1,2-Dibromo-3-Chloropropane	10.0	8.62		ug/L		86	42 - 136
Ethylene Dibromide	10.0	10.2		ug/L		102	79 - 113
Dichlorodifluoromethane	10.0	9.35		ug/L		94	19 - 129
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	80 - 113
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	83 - 117
Isopropylbenzene	10.0	10.2		ug/L		102	75 - 114
Methyl acetate	10.0	10.4		ug/L		104	58 - 131

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-58886/4

Matrix: Water

Analysis Batch: 58886

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	10.0	10.2		ug/L		102	52 - 144
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	10.6		ug/L		106	74 - 151
1,2,4-Trichlorobenzene	10.0	8.69		ug/L		87	48 - 135
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	81 - 110
1,3-Dichlorobenzene	10.0	9.94		ug/L		99	80 - 110
1,4-Dichlorobenzene	10.0	9.86		ug/L		99	82 - 110
Trichlorofluoromethane	10.0	11.0		ug/L		110	49 - 157
Chlorodibromomethane	10.0	10.0		ug/L		100	64 - 119
Methylcyclohexane	10.0	8.74		ug/L		87	56 - 127
m-Xylene & p-Xylene	20.0	20.9		ug/L		105	83 - 113
o-Xylene	10.0	10.9		ug/L		109	83 - 113

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		63 - 129
4-Bromofluorobenzene (Surr)	103		66 - 117
Toluene-d8 (Surr)	100		74 - 115
Dibromofluoromethane (Surr)	101		75 - 121

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-58661/20-A

Matrix: Water

Analysis Batch: 58917

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	1.0	U	1.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
2,2'-oxybis[1-chloropropane]	1.0	U	1.0	0.40	ug/L		09/21/12 10:28	09/25/12 08:47	1
2,4,5-Trichlorophenol	5.0	U	5.0	0.30	ug/L		09/21/12 10:28	09/25/12 08:47	1
2,4,6-Trichlorophenol	4.0	U	4.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
2,4-Dichlorophenol	2.0	U	2.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
2,4-Dimethylphenol	2.0	U	2.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
2,4-Dinitrophenol	5.0	U	5.0	2.4	ug/L		09/21/12 10:28	09/25/12 08:47	1
2,4-Dinitrotoluene	5.0	U	5.0	0.27	ug/L		09/21/12 10:28	09/25/12 08:47	1
2,6-Dinitrotoluene	5.0	U	5.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
2-Chloronaphthalene	1.0	U	1.0	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
2-Chlorophenol	1.0	U	1.0	0.29	ug/L		09/21/12 10:28	09/25/12 08:47	1
2-Methylnaphthalene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
2-Methylphenol	1.0	U	1.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
2-Nitroaniline	2.0	U	2.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
2-Nitrophenol	2.0	U	2.0	0.28	ug/L		09/21/12 10:28	09/25/12 08:47	1
3,3'-Dichlorobenzidine	4.0	U	4.0	0.37	ug/L		09/21/12 10:28	09/25/12 08:47	1
3-Nitroaniline	2.0	U	2.0	0.28	ug/L		09/21/12 10:28	09/25/12 08:47	1
4,6-Dinitro-2-methylphenol	5.0	U	5.0	2.4	ug/L		09/21/12 10:28	09/25/12 08:47	1
4-Bromophenyl phenyl ether	2.0	U	2.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
4-Chloro-3-methylphenol	2.0	U	2.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
4-Chloroaniline	2.0	U	2.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
4-Chlorophenyl phenyl ether	2.0	U	2.0	0.30	ug/L		09/21/12 10:28	09/25/12 08:47	1
4-Nitroaniline	2.0	U	2.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-58661/20-A

Matrix: Water

Analysis Batch: 58917

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58661

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	5.0	U	5.0	2.4	ug/L		09/21/12 10:28	09/25/12 08:47	1
Acenaphthene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Acenaphthylene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Acetophenone	1.0	U	1.0	0.34	ug/L		09/21/12 10:28	09/25/12 08:47	1
Anthracene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Atrazine	1.0	U	1.0	0.34	ug/L		09/21/12 10:28	09/25/12 08:47	1
Benzaldehyde	1.0	U	1.0	0.39	ug/L		09/21/12 10:28	09/25/12 08:47	1
Benzo[a]anthracene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Benzo[a]pyrene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Benzo[b]fluoranthene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Benzo[g,h,i]perylene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Benzo[k]fluoranthene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Bis(2-chloroethoxy)methane	1.0	U	1.0	0.32	ug/L		09/21/12 10:28	09/25/12 08:47	1
Bis(2-chloroethyl)ether	1.0	U	1.0	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Bis(2-ethylhexyl) phthalate	140	E	2.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
Butyl benzyl phthalate	1.0	U	1.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
Caprolactam	5.0	U	5.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
Carbazole	1.0	U	1.0	0.28	ug/L		09/21/12 10:28	09/25/12 08:47	1
Chrysene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Dibenz(a,h)anthracene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Dibenzofuran	1.0	U	1.0	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Diethyl phthalate	1.0	U	1.0	0.60	ug/L		09/21/12 10:28	09/25/12 08:47	1
Dimethyl phthalate	1.0	U	1.0	0.29	ug/L		09/21/12 10:28	09/25/12 08:47	1
Di-n-butyl phthalate	1.0	U	1.0	0.67	ug/L		09/21/12 10:28	09/25/12 08:47	1
Di-n-octyl phthalate	1.0	U	1.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
Fluoranthene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Fluorene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Hexachlorobenzene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Hexachlorobutadiene	1.0	U	1.0	0.27	ug/L		09/21/12 10:28	09/25/12 08:47	1
Hexachlorocyclopentadiene	5.0	U	5.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
Hexachloroethane	1.0	U	1.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
Indeno[1,2,3-cd]pyrene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Isophorone	1.0	U	1.0	0.27	ug/L		09/21/12 10:28	09/25/12 08:47	1
Naphthalene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Nitrobenzene	1.0	U	1.0	0.040	ug/L		09/21/12 10:28	09/25/12 08:47	1
N-Nitrosodi-n-propylamine	1.0	U	1.0	0.80	ug/L		09/21/12 10:28	09/25/12 08:47	1
N-Nitrosodiphenylamine	1.0	U	1.0	0.31	ug/L		09/21/12 10:28	09/25/12 08:47	1
Pentachlorophenol	5.0	U	5.0	2.4	ug/L		09/21/12 10:28	09/25/12 08:47	1
Phenol	1.0	U	1.0	0.60	ug/L		09/21/12 10:28	09/25/12 08:47	1
Phenanthrene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
Pyrene	0.20	U	0.20	0.10	ug/L		09/21/12 10:28	09/25/12 08:47	1
3 & 4 Methylphenol	2.0	U	2.0	0.75	ug/L		09/21/12 10:28	09/25/12 08:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	68		20 - 110	09/21/12 10:28	09/25/12 08:47	1
2-Fluorophenol (Surr)	77		10 - 110	09/21/12 10:28	09/25/12 08:47	1
2,4,6-Tribromophenol (Surr)	72		21 - 110	09/21/12 10:28	09/25/12 08:47	1
Nitrobenzene-d5 (Surr)	72		21 - 110	09/21/12 10:28	09/25/12 08:47	1
Phenol-d5 (Surr)	79		21 - 110	09/21/12 10:28	09/25/12 08:47	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 240-58661/20-A

Matrix: Water

Analysis Batch: 58917

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58661

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Terphenyl-d14 (Surr)	86		24 - 110	09/21/12 10:28	09/25/12 08:47	1

Lab Sample ID: LCS 240-58661/21-A

Matrix: Water

Analysis Batch: 58917

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	20.0	14.7		ug/L		74	43 - 110
2,2'-oxybis[1-chloropropane]	20.0	16.5		ug/L		82	37 - 110
2,4,5-Trichlorophenol	20.0	15.9		ug/L		79	48 - 110
2,4,6-Trichlorophenol	20.0	15.6		ug/L		78	45 - 110
2,4-Dichlorophenol	20.0	15.5		ug/L		78	41 - 110
2,4-Dimethylphenol	20.0	12.5		ug/L		63	32 - 110
2,4-Dinitrophenol	20.0	11.7		ug/L		58	10 - 110
2,4-Dinitrotoluene	20.0	16.2		ug/L		81	53 - 110
2,6-Dinitrotoluene	20.0	16.1		ug/L		80	54 - 110
2-Chloronaphthalene	20.0	14.5		ug/L		72	43 - 110
2-Chlorophenol	20.0	15.6		ug/L		78	29 - 110
2-Methylnaphthalene	20.0	14.4		ug/L		72	45 - 110
2-Methylphenol	20.0	15.0		ug/L		75	42 - 110
2-Nitroaniline	20.0	16.4		ug/L		82	54 - 110
2-Nitrophenol	20.0	15.9		ug/L		79	40 - 110
3,3'-Dichlorobenzidine	20.0	9.48		ug/L		47	22 - 110
3-Nitroaniline	20.0	15.6		ug/L		78	53 - 110
4,6-Dinitro-2-methylphenol	20.0	16.0		ug/L		80	31 - 110
4-Bromophenyl phenyl ether	20.0	14.7		ug/L		73	45 - 110
4-Chloro-3-methylphenol	20.0	15.2		ug/L		76	52 - 110
4-Chloroaniline	20.0	13.3		ug/L		66	44 - 110
4-Chlorophenyl phenyl ether	20.0	14.4		ug/L		72	47 - 110
4-Nitroaniline	20.0	16.1		ug/L		81	54 - 110
4-Nitrophenol	20.0	15.1		ug/L		76	33 - 112
Acenaphthene	20.0	14.8		ug/L		74	47 - 110
Acenaphthylene	20.0	15.1		ug/L		76	49 - 110
Acetophenone	20.0	15.0		ug/L		75	46 - 110
Anthracene	20.0	15.0		ug/L		75	52 - 110
Atrazine	20.0	18.9		ug/L		94	66 - 126
Benzaldehyde	20.0	16.0		ug/L		80	38 - 110
Benzo[a]anthracene	20.0	13.9		ug/L		70	52 - 110
Benzo[a]pyrene	20.0	11.1		ug/L		56	44 - 110
Benzo[b]fluoranthene	20.0	13.9		ug/L		69	48 - 110
Benzo[g,h,i]perylene	20.0	11.9		ug/L		60	50 - 110
Benzo[k]fluoranthene	20.0	11.9		ug/L		60	49 - 110
Bis(2-chloroethoxy)methane	20.0	15.3		ug/L		76	43 - 110
Bis(2-chloroethyl)ether	20.0	15.4		ug/L		77	40 - 110
Bis(2-ethylhexyl) phthalate	20.0	9.41		ug/L		47	39 - 116
Butyl benzyl phthalate	20.0	15.2		ug/L		76	55 - 110
Caprolactam	20.0	15.6		ug/L		78	45 - 111
Carbazole	20.0	15.5		ug/L		78	55 - 110
Chrysene	20.0	14.6		ug/L		73	55 - 110

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 240-58661/21-A

Matrix: Water

Analysis Batch: 58917

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58661

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibenz(a,h)anthracene	20.0	11.1		ug/L		56	49 - 110
Dibenzofuran	20.0	15.0		ug/L		75	51 - 110
Diethyl phthalate	20.0	15.7		ug/L		78	58 - 110
Dimethyl phthalate	20.0	15.5		ug/L		78	57 - 110
Di-n-butyl phthalate	20.0	15.7		ug/L		78	57 - 110
Di-n-octyl phthalate	20.0	8.67		ug/L		43	40 - 110
Fluoranthene	20.0	15.2		ug/L		76	54 - 110
Fluorene	20.0	15.0		ug/L		75	52 - 110
Hexachlorobenzene	20.0	14.4		ug/L		72	50 - 110
Hexachlorobutadiene	20.0	12.0		ug/L		60	33 - 110
Hexachlorocyclopentadiene	20.0	6.85		ug/L		34	10 - 110
Hexachloroethane	20.0	12.3		ug/L		61	35 - 110
Indeno[1,2,3-cd]pyrene	20.0	11.3		ug/L		56	50 - 110
Isophorone	20.0	15.6		ug/L		78	49 - 110
Naphthalene	20.0	15.0		ug/L		75	44 - 110
Nitrobenzene	20.0	15.4		ug/L		77	42 - 110
N-Nitrosodi-n-propylamine	20.0	15.6		ug/L		78	47 - 110
N-Nitrosodiphenylamine	20.0	15.0		ug/L		75	50 - 110
Pentachlorophenol	20.0	8.48		ug/L		42	18 - 110
Phenol	20.0	15.8		ug/L		79	33 - 110
Phenanthrene	20.0	15.3		ug/L		76	53 - 110
Pyrene	20.0	14.3		ug/L		72	52 - 110
3 & 4 Methylphenol	40.0	30.3		ug/L		76	44 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	71		20 - 110
2-Fluorophenol (Surr)	79		10 - 110
2,4,6-Tribromophenol (Surr)	76		21 - 110
Nitrobenzene-d5 (Surr)	74		21 - 110
Phenol-d5 (Surr)	78		21 - 110
Terphenyl-d14 (Surr)	73		24 - 110

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 240-58696/13-A

Matrix: Water

Analysis Batch: 58907

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58696

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	0.044	ug/L		09/21/12 12:25	09/25/12 06:45	1
Aroclor-1221	0.10	U	0.10	0.045	ug/L		09/21/12 12:25	09/25/12 06:45	1
Aroclor-1232	0.10	U	0.10	0.073	ug/L		09/21/12 12:25	09/25/12 06:45	1
Aroclor-1242	0.10	U	0.10	0.060	ug/L		09/21/12 12:25	09/25/12 06:45	1
Aroclor-1248	0.10	U	0.10	0.061	ug/L		09/21/12 12:25	09/25/12 06:45	1
Aroclor-1254	0.10	U	0.10	0.032	ug/L		09/21/12 12:25	09/25/12 06:45	1
Aroclor-1260	0.10	U	0.10	0.038	ug/L		09/21/12 12:25	09/25/12 06:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	78		35 - 137	09/21/12 12:25	09/25/12 06:45	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 240-58696/13-A

Matrix: Water

Analysis Batch: 58907

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58696

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	83		10 - 140	09/21/12 12:25	09/25/12 06:45	1

Lab Sample ID: LCS 240-58696/14-A

Matrix: Water

Analysis Batch: 58970

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58696

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	4.16	*	ug/L		167	56 - 130
Aroclor-1260	2.50	3.94	*	ug/L		158	43 - 126

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	75		35 - 137
DCB Decachlorobiphenyl	74		10 - 140

Lab Sample ID: 240-15374-10 MS

Matrix: Water

Analysis Batch: 58907

Client Sample ID: MW-186WT-(09182012)

Prep Type: Total/NA

Prep Batch: 58696

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	0.095	U *	2.38	2.09		ug/L		88	58 - 126
Aroclor-1260	0.095	U *	2.38	1.94		ug/L		82	14 - 141

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	74		35 - 137
DCB Decachlorobiphenyl	61		10 - 140

Lab Sample ID: 240-15374-10 MSD

Matrix: Water

Analysis Batch: 58907

Client Sample ID: MW-186WT-(09182012)

Prep Type: Total/NA

Prep Batch: 58696

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor-1016	0.095	U *	2.38	1.94		ug/L		82	58 - 126	7	30
Aroclor-1260	0.095	U *	2.38	1.70		ug/L		71	14 - 141	14	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Tetrachloro-m-xylene	67		35 - 137
DCB Decachlorobiphenyl	34		10 - 140

Lab Sample ID: MB 240-59004/4-A

Matrix: Water

Analysis Batch: 59070

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 59004

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1016	0.10	U	0.10	0.044	ug/L		09/25/12 12:27	09/26/12 11:17	1
Aroclor-1221	0.10	U	0.10	0.045	ug/L		09/25/12 12:27	09/26/12 11:17	1
Aroclor-1232	0.10	U	0.10	0.073	ug/L		09/25/12 12:27	09/26/12 11:17	1
Aroclor-1242	0.10	U	0.10	0.060	ug/L		09/25/12 12:27	09/26/12 11:17	1
Aroclor-1248	0.10	U	0.10	0.061	ug/L		09/25/12 12:27	09/26/12 11:17	1
Aroclor-1254	0.10	U	0.10	0.032	ug/L		09/25/12 12:27	09/26/12 11:17	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 240-59004/4-A

Matrix: Water

Analysis Batch: 59070

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 59004

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor-1260	0.10	U	0.10	0.038	ug/L		09/25/12 12:27	09/26/12 11:17	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	83		35 - 137				09/25/12 12:27	09/26/12 11:17	1
DCB Decachlorobiphenyl	77		10 - 140				09/25/12 12:27	09/26/12 11:17	1

Lab Sample ID: LCS 240-59004/5-A

Matrix: Water

Analysis Batch: 59070

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 59004

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aroclor-1016	2.50	2.18		ug/L		87	56 - 130
Aroclor-1260	2.50	2.29		ug/L		92	43 - 126
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Tetrachloro-m-xylene	80		35 - 137				
DCB Decachlorobiphenyl	71		10 - 140				

Lab Sample ID: 240-15374-11 MS

Matrix: Water

Analysis Batch: 59070

Client Sample ID: MW-186WT-(09182012)-DISSOLVED

Prep Type: Dissolved

Prep Batch: 59004

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	78		35 - 137
DCB Decachlorobiphenyl	43		10 - 140

Lab Sample ID: 240-15374-11 MSD

Matrix: Water

Analysis Batch: 59070

Client Sample ID: MW-186WT-(09182012)-DISSOLVED

Prep Type: Dissolved

Prep Batch: 59004

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Tetrachloro-m-xylene	65		35 - 137
DCB Decachlorobiphenyl	35		10 - 140

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 240-59244/1-A

Matrix: Water

Analysis Batch: 59547

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 59244

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/27/12 08:56	09/28/12 11:55	1
Thallium	1.0	U	1.0	0.14	ug/L		09/27/12 08:56	09/28/12 11:55	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

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

Lab Sample ID: LCS 240-59244/2-A

Matrix: Water

Analysis Batch: 59547

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 59244

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	899		ug/L		90	80 - 120
Thallium	250	245		ug/L		98	80 - 120

Lab Sample ID: 240-15374-3 MS

Matrix: Water

Analysis Batch: 59547

Client Sample ID: MW-149WT-(09182012)

Prep Type: Total Recoverable

Prep Batch: 59244

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	160		1000	1150		ug/L		99	82 - 123
Thallium	0.65	J	250	256		ug/L		102	69 - 117

Lab Sample ID: 240-15374-3 MSD

Matrix: Water

Analysis Batch: 59547

Client Sample ID: MW-149WT-(09182012)

Prep Type: Total Recoverable

Prep Batch: 59244

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	160		1000	1140		ug/L		98	82 - 123	1	20
Thallium	0.65	J	250	255		ug/L		102	69 - 117	0	20

Lab Sample ID: MB 240-59456/1-A

Matrix: Water

Analysis Batch: 59740

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 59456

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	U	2.0	0.40	ug/L		09/28/12 11:01	10/01/12 14:38	1
Manganese	1.0	U	1.0	0.83	ug/L		09/28/12 11:01	10/01/12 14:38	1
Thallium	0.147	J	1.0	0.14	ug/L		09/28/12 11:01	10/01/12 14:38	1

Lab Sample ID: LCS 240-59456/2-A

Matrix: Water

Analysis Batch: 59740

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 59456

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	971		ug/L		97	80 - 120
Manganese	1000	1090		ug/L		109	80 - 120
Thallium	250	231		ug/L		92	80 - 120

Lab Sample ID: 240-15374-4 MS

Matrix: Water

Analysis Batch: 59740

Client Sample ID: DUP-03-(09182012)

Prep Type: Total Recoverable

Prep Batch: 59456

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	160		1000	1190		ug/L		102	82 - 123
Thallium	0.32	J B	250	252		ug/L		100	69 - 117

Lab Sample ID: 240-15374-4 MSD

Matrix: Water

Analysis Batch: 59740

Client Sample ID: DUP-03-(09182012)

Prep Type: Total Recoverable

Prep Batch: 59456

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	160		1000	1160		ug/L		100	82 - 123	2	20

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

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

Lab Sample ID: 240-15374-4 MSD

Matrix: Water

Analysis Batch: 59740

Client Sample ID: DUP-03-(09182012)

Prep Type: Total Recoverable

Prep Batch: 59456

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Thallium	0.32	J B	250	245		ug/L		98	69 - 117	3	20

Method: 150.1 - pH (Electrometric)

Lab Sample ID: LCS 240-58563/2

Matrix: Water

Analysis Batch: 58563

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.49	7.520		SU		100	97 - 103

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 240-59013/1

Matrix: Water

Analysis Batch: 59013

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10	U	10	7.4	mg/L			09/25/12 13:23	1

Lab Sample ID: LCS 240-59013/2

Matrix: Water

Analysis Batch: 59013

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	406	394		mg/L		97	88 - 110

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-58505/27

Matrix: Water

Analysis Batch: 58505

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/20/12 23:11	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/20/12 23:11	1

Lab Sample ID: MB 240-58505/3

Matrix: Water

Analysis Batch: 58505

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	0.10	mg/L			09/20/12 12:09	1
Sulfate	1.0	U	1.0	0.12	mg/L			09/20/12 12:09	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 240-58505/28

Matrix: Water

Analysis Batch: 58505

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.0		mg/L		102	90 - 110
Sulfate	50.0	51.4		mg/L		103	90 - 110

Lab Sample ID: LCS 240-58505/4

Matrix: Water

Analysis Batch: 58505

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.0		mg/L		102	90 - 110
Sulfate	50.0	51.3		mg/L		103	90 - 110

Lab Sample ID: MB 240-58506/27

Matrix: Water

Analysis Batch: 58506

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/20/12 23:11	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/20/12 23:11	1

Lab Sample ID: MB 240-58506/3

Matrix: Water

Analysis Batch: 58506

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.10	U	0.10	0.012	mg/L			09/20/12 12:09	1
Nitrate as N	0.10	U	0.10	0.023	mg/L			09/20/12 12:09	1

Lab Sample ID: LCS 240-58506/28

Matrix: Water

Analysis Batch: 58506

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	2.50	2.72		mg/L		109	90 - 110
Nitrate as N	2.50	2.52		mg/L		101	90 - 110

Lab Sample ID: LCS 240-58506/4

Matrix: Water

Analysis Batch: 58506

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	2.50	2.71		mg/L		108	90 - 110
Nitrate as N	2.50	2.52		mg/L		101	90 - 110

Method: 350.3 - Nitrogen, Ammonia

Lab Sample ID: MB 240-59478/7

Matrix: Water

Analysis Batch: 59478

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			09/28/12 09:24	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Lab Sample ID: LCS 240-59478/8

Matrix: Water

Analysis Batch: 59478

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	8.73		mg/L		98	85 - 114

Lab Sample ID: MB 240-59523/7

Matrix: Water

Analysis Batch: 59523

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			09/28/12 13:11	1

Lab Sample ID: LCS 240-59523/8

Matrix: Water

Analysis Batch: 59523

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	8.68		mg/L		97	85 - 114

Lab Sample ID: 240-15374-8 MS

Matrix: Water

Analysis Batch: 59523

Client Sample ID: MW-114S2-(09182012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	2.9		12.5	15.7		mg/L		102	75 - 125

Lab Sample ID: 240-15374-8 MSD

Matrix: Water

Analysis Batch: 59523

Client Sample ID: MW-114S2-(09182012)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	2.9		12.5	16.1		mg/L		105	75 - 125	2	20

Lab Sample ID: MB 240-59888/7

Matrix: Water

Analysis Batch: 59888

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			10/02/12 13:43	1

Lab Sample ID: LCS 240-59888/8

Matrix: Water

Analysis Batch: 59888

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	8.59		mg/L		96	85 - 114

Lab Sample ID: MB 240-60228/7

Matrix: Water

Analysis Batch: 60228

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	0.20	U	0.20	0.035	mg/L			10/04/12 09:50	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 350.3 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 240-60228/8

Matrix: Water

Analysis Batch: 60228

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	8.93	9.27		mg/L		104	85 - 114

Method: 365.1 - Phosphorus, Total

Lab Sample ID: MB 240-59921/10-A

Matrix: Water

Analysis Batch: 60010

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 59921

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as PO4	0.10	U	0.10	0.033	mg/L		10/03/12 07:46	10/03/12 11:56	1

Lab Sample ID: LCS 240-59921/11-A

Matrix: Water

Analysis Batch: 60010

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 59921

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Phosphorus as PO4	4.48	4.90		mg/L		109	90 - 110

Lab Sample ID: 240-15374-3 MS

Matrix: Water

Analysis Batch: 60010

Client Sample ID: MW-149WT-(09182012)

Prep Type: Total/NA

Prep Batch: 59921

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Phosphorus as PO4	2.0		0.500	2.49	4	mg/L		96	90 - 110

Lab Sample ID: 240-15374-3 MSD

Matrix: Water

Analysis Batch: 60010

Client Sample ID: MW-149WT-(09182012)

Prep Type: Total/NA

Prep Batch: 59921

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Phosphorus as PO4	2.0		0.500	2.48	4	mg/L		95	90 - 110	0	20

Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 240-58790/3-A

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 58790

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		09/24/12 09:30	09/24/12 11:13	1

Lab Sample ID: LCS 240-58790/4-A

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 58790

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0449	0.0445		mg/L		99	69 - 120

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Method: 9012A - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: MRL 240-58864/6 MRL

Matrix: Water

Analysis Batch: 58864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.0100	0.0103		mg/L		103	70 - 130

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

GC/MS VOA

Analysis Batch: 58886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	8260B	
LCS 240-58886/4	Lab Control Sample	Total/NA	Water	8260B	
MB 240-58886/5	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 58661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	3520C	
LCS 240-58661/21-A	Lab Control Sample	Total/NA	Water	3520C	
MB 240-58661/20-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 58788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	8270C	58661

Analysis Batch: 58917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-58661/21-A	Lab Control Sample	Total/NA	Water	8270C	58661
MB 240-58661/20-A	Method Blank	Total/NA	Water	8270C	58661

GC Semi VOA

Prep Batch: 58696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-6	MW-111WT-(09182012)	Total/NA	Water	3510C	
240-15374-7	MW-185WT-(09182012)	Total/NA	Water	3510C	
240-15374-10	MW-186WT-(09182012)	Total/NA	Water	3510C	
240-15374-10 MS	MW-186WT-(09182012)	Total/NA	Water	3510C	
240-15374-10 MSD	MW-186WT-(09182012)	Total/NA	Water	3510C	
240-15374-12	DUP-5-(09182012)	Total/NA	Water	3510C	
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	3510C	
240-15374-14	MW-111WT-(09182012)-DISSOLVED	Dissolved	Water	3510C	
240-15374-15	MW-185WT-(09182012)-DISSOLVED	Dissolved	Water	3510C	
LCS 240-58696/14-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-58696/13-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 58907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-6	MW-111WT-(09182012)	Total/NA	Water	8082	58696
240-15374-7	MW-185WT-(09182012)	Total/NA	Water	8082	58696
240-15374-10	MW-186WT-(09182012)	Total/NA	Water	8082	58696
240-15374-10 MS	MW-186WT-(09182012)	Total/NA	Water	8082	58696
240-15374-10 MSD	MW-186WT-(09182012)	Total/NA	Water	8082	58696
240-15374-12	DUP-5-(09182012)	Total/NA	Water	8082	58696
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	8082	58696
240-15374-14	MW-111WT-(09182012)-DISSOLVED	Dissolved	Water	8082	58696
240-15374-15	MW-185WT-(09182012)-DISSOLVED	Dissolved	Water	8082	58696
MB 240-58696/13-A	Method Blank	Total/NA	Water	8082	58696

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

GC Semi VOA (Continued)

Analysis Batch: 58970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-58696/14-A	Lab Control Sample	Total/NA	Water	8082	58696

Prep Batch: 59004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-11	MW-186WT-(09182012)-DISSOLVED	Dissolved	Water	3510C	
240-15374-11 MS	MW-186WT-(09182012)-DISSOLVED	Dissolved	Water	3510C	
240-15374-11 MSD	MW-186WT-(09182012)-DISSOLVED	Dissolved	Water	3510C	
LCS 240-59004/5-A	Lab Control Sample	Total/NA	Water	3510C	
MB 240-59004/4-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 59070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-11	MW-186WT-(09182012)-DISSOLVED	Dissolved	Water	8082	59004
240-15374-11 MS	MW-186WT-(09182012)-DISSOLVED	Dissolved	Water	8082	59004
240-15374-11 MSD	MW-186WT-(09182012)-DISSOLVED	Dissolved	Water	8082	59004
LCS 240-59004/5-A	Lab Control Sample	Total/NA	Water	8082	59004
MB 240-59004/4-A	Method Blank	Total/NA	Water	8082	59004

Metals

Prep Batch: 59244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-3	MW-149WT-(09182012)	Total Recoverable	Water	3005A	
240-15374-3 MS	MW-149WT-(09182012)	Total Recoverable	Water	3005A	
240-15374-3 MSD	MW-149WT-(09182012)	Total Recoverable	Water	3005A	
LCS 240-59244/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-59244/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 59456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-4	DUP-03-(09182012)	Total Recoverable	Water	3005A	
240-15374-4 MS	DUP-03-(09182012)	Total Recoverable	Water	3005A	
240-15374-4 MSD	DUP-03-(09182012)	Total Recoverable	Water	3005A	
240-15374-5	MW-107WT-(09182012)	Total Recoverable	Water	3005A	
240-15374-6	MW-111WT-(09182012)	Total Recoverable	Water	3005A	
240-15374-7	MW-185WT-(09182012)	Total Recoverable	Water	3005A	
240-15374-10	MW-186WT-(09182012)	Total Recoverable	Water	3005A	
240-15374-13	RINSE BLANK-(09182012)	Total Recoverable	Water	3005A	
LCS 240-59456/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 240-59456/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 59547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-3	MW-149WT-(09182012)	Total Recoverable	Water	6020	59244
240-15374-3 MS	MW-149WT-(09182012)	Total Recoverable	Water	6020	59244
240-15374-3 MSD	MW-149WT-(09182012)	Total Recoverable	Water	6020	59244
LCS 240-59244/2-A	Lab Control Sample	Total Recoverable	Water	6020	59244
MB 240-59244/1-A	Method Blank	Total Recoverable	Water	6020	59244

Analysis Batch: 59740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-4	DUP-03-(09182012)	Total Recoverable	Water	6020	59456

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Metals (Continued)

Analysis Batch: 59740 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-4 MS	DUP-03-(09182012)	Total Recoverable	Water	6020	59456
240-15374-4 MSD	DUP-03-(09182012)	Total Recoverable	Water	6020	59456
240-15374-5	MW-107WT-(09182012)	Total Recoverable	Water	6020	59456
240-15374-6	MW-111WT-(09182012)	Total Recoverable	Water	6020	59456
240-15374-7	MW-185WT-(09182012)	Total Recoverable	Water	6020	59456
240-15374-10	MW-186WT-(09182012)	Total Recoverable	Water	6020	59456
240-15374-13	RINSE BLANK-(09182012)	Total Recoverable	Water	6020	59456
LCS 240-59456/2-A	Lab Control Sample	Total Recoverable	Water	6020	59456
MB 240-59456/1-A	Method Blank	Total Recoverable	Water	6020	59456

General Chemistry

Analysis Batch: 58505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	300.0	
LCS 240-58505/28	Lab Control Sample	Total/NA	Water	300.0	
LCS 240-58505/4	Lab Control Sample	Total/NA	Water	300.0	
MB 240-58505/27	Method Blank	Total/NA	Water	300.0	
MB 240-58505/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	300.0	
LCS 240-58506/28	Lab Control Sample	Total/NA	Water	300.0	
LCS 240-58506/4	Lab Control Sample	Total/NA	Water	300.0	
MB 240-58506/27	Method Blank	Total/NA	Water	300.0	
MB 240-58506/3	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 58563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	150.1	
LCS 240-58563/2	Lab Control Sample	Total/NA	Water	150.1	

Prep Batch: 58790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Dissolved	Water	9012A	
LCS 240-58790/4-A	Lab Control Sample	Total/NA	Water	9012A	
MB 240-58790/3-A	Method Blank	Total/NA	Water	9012A	

Analysis Batch: 58864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Dissolved	Water	9012A	58790
LCS 240-58790/4-A	Lab Control Sample	Total/NA	Water	9012A	58790
MB 240-58790/3-A	Method Blank	Total/NA	Water	9012A	58790
MRL 240-58864/6 MRL	Lab Control Sample	Total/NA	Water	9012A	

Analysis Batch: 59013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	160.1	
LCS 240-59013/2	Lab Control Sample	Total/NA	Water	160.1	
MB 240-59013/1	Method Blank	Total/NA	Water	160.1	

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

General Chemistry (Continued)

Analysis Batch: 59478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-1	MW-107S1-(09172012)	Total/NA	Water	350.3	
240-15374-2	MW-108S2-(09172012)	Total/NA	Water	350.3	
240-15374-3	MW-149WT-(09182012)	Total/NA	Water	350.3	
240-15374-5	MW-107WT-(09182012)	Total/NA	Water	350.3	
LCS 240-59478/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-59478/7	Method Blank	Total/NA	Water	350.3	

Analysis Batch: 59523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-6	MW-111WT-(09182012)	Total/NA	Water	350.3	
240-15374-7	MW-185WT-(09182012)	Total/NA	Water	350.3	
240-15374-8	MW-114S2-(09182012)	Total/NA	Water	350.3	
240-15374-8 MS	MW-114S2-(09182012)	Total/NA	Water	350.3	
240-15374-8 MSD	MW-114S2-(09182012)	Total/NA	Water	350.3	
LCS 240-59523/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-59523/7	Method Blank	Total/NA	Water	350.3	

Analysis Batch: 59888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-9	DUP-2-(09182012)	Total/NA	Water	350.3	
240-15374-10	MW-186WT-(09182012)	Total/NA	Water	350.3	
LCS 240-59888/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-59888/7	Method Blank	Total/NA	Water	350.3	

Prep Batch: 59921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-3	MW-149WT-(09182012)	Total/NA	Water	365.2/365.3/365	
240-15374-3 MS	MW-149WT-(09182012)	Total/NA	Water	365.2/365.3/365	
240-15374-3 MSD	MW-149WT-(09182012)	Total/NA	Water	365.2/365.3/365	
240-15374-4	DUP-03-(09182012)	Total/NA	Water	365.2/365.3/365	
240-15374-5	MW-107WT-(09182012)	Total/NA	Water	365.2/365.3/365	
240-15374-6	MW-111WT-(09182012)	Total/NA	Water	365.2/365.3/365	
240-15374-7	MW-185WT-(09182012)	Total/NA	Water	365.2/365.3/365	
240-15374-10	MW-186WT-(09182012)	Total/NA	Water	365.2/365.3/365	
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	365.2/365.3/365	
LCS 240-59921/11-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
MB 240-59921/10-A	Method Blank	Total/NA	Water	365.2/365.3/365	

Analysis Batch: 60010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-3	MW-149WT-(09182012)	Total/NA	Water	365.1	59921
240-15374-3 MS	MW-149WT-(09182012)	Total/NA	Water	365.1	59921
240-15374-3 MSD	MW-149WT-(09182012)	Total/NA	Water	365.1	59921
240-15374-4	DUP-03-(09182012)	Total/NA	Water	365.1	59921
240-15374-5	MW-107WT-(09182012)	Total/NA	Water	365.1	59921
240-15374-6	MW-111WT-(09182012)	Total/NA	Water	365.1	59921
240-15374-7	MW-185WT-(09182012)	Total/NA	Water	365.1	59921
240-15374-10	MW-186WT-(09182012)	Total/NA	Water	365.1	59921
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	365.1	59921
LCS 240-59921/11-A	Lab Control Sample	Total/NA	Water	365.1	59921
MB 240-59921/10-A	Method Blank	Total/NA	Water	365.1	59921

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

General Chemistry (Continued)

Analysis Batch: 60228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-15374-13	RINSE BLANK-(09182012)	Total/NA	Water	350.3	
LCS 240-60228/8	Lab Control Sample	Total/NA	Water	350.3	
MB 240-60228/7	Method Blank	Total/NA	Water	350.3	

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-107S1-(09172012)

Date Collected: 09/17/12 16:20

Date Received: 09/20/12 15:54

Lab Sample ID: 240-15374-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.3		1	59478	09/28/12 11:22	LG	TAL NC

Client Sample ID: MW-108S2-(09172012)

Date Collected: 09/17/12 16:20

Date Received: 09/20/12 15:54

Lab Sample ID: 240-15374-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.3		5	59478	09/28/12 11:26	LG	TAL NC

Client Sample ID: MW-149WT-(09182012)

Date Collected: 09/18/12 10:20

Date Received: 09/20/12 15:54

Lab Sample ID: 240-15374-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			59244	09/27/12 08:56	LM	TAL NC
Total Recoverable	Analysis	6020		1	59547	09/28/12 12:09	KC	TAL NC
Total/NA	Analysis	350.3		5	59478	09/28/12 11:29	LG	TAL NC
Total/NA	Prep	365.2/365.3/365			59921	10/03/12 07:49	TH	TAL NC
Total/NA	Analysis	365.1		5	60010	10/03/12 12:07	TH	TAL NC

Client Sample ID: DUP-03-(09182012)

Date Collected: 09/18/12 00:00

Date Received: 09/20/12 15:54

Lab Sample ID: 240-15374-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			59456	09/28/12 11:01	LM	TAL NC
Total Recoverable	Analysis	6020		1	59740	10/01/12 11:56	BD	TAL NC
Total/NA	Prep	365.2/365.3/365			59921	10/03/12 08:03	TH	TAL NC
Total/NA	Analysis	365.1		5	60010	10/03/12 12:34	TH	TAL NC

Client Sample ID: MW-107WT-(09182012)

Date Collected: 09/18/12 12:40

Date Received: 09/20/12 15:54

Lab Sample ID: 240-15374-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			59456	09/28/12 11:01	LM	TAL NC
Total Recoverable	Analysis	6020		1	59740	10/01/12 14:49	BD	TAL NC
Total/NA	Analysis	350.3		1	59478	09/28/12 11:34	LG	TAL NC
Total/NA	Prep	365.2/365.3/365			59921	10/03/12 08:05	TH	TAL NC
Total/NA	Analysis	365.1		1	60010	10/03/12 12:23	TH	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-111WT-(09182012)

Lab Sample ID: 240-15374-6

Date Collected: 09/18/12 13:15

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			58696	09/21/12 12:25	CC	TAL NC
Total/NA	Analysis	8082		1	58907	09/25/12 04:04	LH	TAL NC
Total Recoverable	Prep	3005A			59456	09/28/12 11:01	LM	TAL NC
Total Recoverable	Analysis	6020		1	59740	10/01/12 14:55	BD	TAL NC
Total/NA	Analysis	350.3		1	59523	09/28/12 13:25	LG	TAL NC
Total/NA	Prep	365.2/365.3/365			59921	10/03/12 08:07	TH	TAL NC
Total/NA	Analysis	365.1		1	60010	10/03/12 12:23	TH	TAL NC

Client Sample ID: MW-185WT-(09182012)

Lab Sample ID: 240-15374-7

Date Collected: 09/18/12 14:00

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			58696	09/21/12 12:25	CC	TAL NC
Total/NA	Analysis	8082		1	58907	09/25/12 04:17	LH	TAL NC
Total Recoverable	Prep	3005A			59456	09/28/12 11:01	LM	TAL NC
Total Recoverable	Analysis	6020		1	59740	10/01/12 15:00	BD	TAL NC
Total/NA	Analysis	350.3		1	59523	09/28/12 13:28	LG	TAL NC
Total/NA	Prep	365.2/365.3/365			59921	10/03/12 08:09	TH	TAL NC
Total/NA	Analysis	365.1		1	60010	10/03/12 12:23	TH	TAL NC

Client Sample ID: MW-114S2-(09182012)

Lab Sample ID: 240-15374-8

Date Collected: 09/18/12 15:35

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.3		1	59523	09/28/12 13:31	LG	TAL NC

Client Sample ID: DUP-2-(09182012)

Lab Sample ID: 240-15374-9

Date Collected: 09/18/12 00:00

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.3		1	59888	10/02/12 15:09	LG	TAL NC

Client Sample ID: MW-186WT-(09182012)

Lab Sample ID: 240-15374-10

Date Collected: 09/18/12 12:15

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			58696	09/21/12 12:25	CC	TAL NC
Total/NA	Analysis	8082		1	58907	09/25/12 04:31	LH	TAL NC
Total Recoverable	Prep	3005A			59456	09/28/12 11:01	LM	TAL NC
Total Recoverable	Analysis	6020		1	59740	10/01/12 15:06	BD	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-186WT-(09182012)

Lab Sample ID: 240-15374-10

Date Collected: 09/18/12 12:15

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	350.3		1	59888	10/02/12 15:11	LG	TAL NC
Total/NA	Prep	365.2/365.3/365			59921	10/03/12 08:11	TH	TAL NC
Total/NA	Analysis	365.1		1	60010	10/03/12 12:26	TH	TAL NC

Client Sample ID: MW-186WT-(09182012)-DISSOLVED

Lab Sample ID: 240-15374-11

Date Collected: 09/18/12 12:15

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3510C			59004	09/25/12 12:27	BM	TAL NC
Dissolved	Analysis	8082		1	59070	09/26/12 10:37	LH	TAL NC

Client Sample ID: DUP-5-(09182012)

Lab Sample ID: 240-15374-12

Date Collected: 09/18/12 00:00

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			58696	09/21/12 12:25	CC	TAL NC
Total/NA	Analysis	8082		1	58907	09/25/12 05:51	LH	TAL NC

Client Sample ID: RINSE BLANK-(09182012)

Lab Sample ID: 240-15374-13

Date Collected: 09/18/12 16:40

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	58886	09/25/12 06:53	LW	TAL NC
Total/NA	Prep	3520C			58661	09/21/12 10:28	CC	TAL NC
Total/NA	Analysis	8270C		1	58788	09/24/12 18:01	MU	TAL NC
Total/NA	Prep	3510C			58696	09/21/12 12:25	CC	TAL NC
Total/NA	Analysis	8082		1	58907	09/25/12 06:04	LH	TAL NC
Total Recoverable	Prep	3005A			59456	09/28/12 11:01	LM	TAL NC
Total Recoverable	Analysis	6020		1	59740	10/01/12 12:56	BD	TAL NC
Total/NA	Analysis	300.0		1	58505	09/21/12 03:33	AM	TAL NC
Total/NA	Analysis	300.0		1	58506	09/21/12 03:33	AM	TAL NC
Total/NA	Analysis	150.1		1	58563	09/20/12 17:50	AM	TAL NC
Dissolved	Prep	9012A			58790	09/24/12 09:30	CN	TAL NC
Dissolved	Analysis	9012A		1	58864	09/24/12 11:19	CN	TAL NC
Total/NA	Analysis	160.1		1	59013	09/25/12 13:23	CN	TAL NC
Total/NA	Prep	365.2/365.3/365			59921	10/03/12 08:12	TH	TAL NC
Total/NA	Analysis	365.1		1	60010	10/03/12 12:26	TH	TAL NC
Total/NA	Analysis	350.3		1	60228	10/04/12 10:38	JK	TAL NC

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

Client Sample ID: MW-111WT-(09182012)-DISSOLVED

Lab Sample ID: 240-15374-14

Date Collected: 09/18/12 13:15

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3510C			58696	09/21/12 12:25	CC	TAL NC
Dissolved	Analysis	8082		1	58907	09/25/12 06:18	LH	TAL NC

Client Sample ID: MW-185WT-(09182012)-DISSOLVED

Lab Sample ID: 240-15374-15

Date Collected: 09/18/12 14:00

Matrix: Water

Date Received: 09/20/12 15:54

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3510C			58696	09/21/12 12:25	CC	TAL NC
Dissolved	Analysis	8082		1	58907	09/25/12 06:32	LH	TAL NC

Laboratory References:

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

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: 10030-TO5, RACER SMI

TestAmerica Job ID: 240-15374-1

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	NELAC	9	01144CA	06-30-13
Connecticut	State Program	1	PH-0590	12-31-13
Florida	NELAC	4	E87225	06-30-13
Georgia	State Program	4	N/A	06-30-13
Illinois	NELAC	5	200004	07-31-13
Kansas	NELAC	7	E-10336	01-31-13
Kentucky	State Program	4	58	11-16-12
L-A-B	DoD ELAP		L2315	02-28-13
Minnesota	NELAC	5	039-999-348	12-31-12
Nevada	State Program	9	OH-000482008A	07-31-13
New Jersey	NELAC	2	OH001	06-30-13
New York	NELAC	2	10975	04-01-13
Ohio VAP	State Program	5	CL0024	01-19-14
Pennsylvania	NELAC	3	68-00340	08-31-13
Texas	NELAC Secondary AB	6		08-03-13
USDA	Federal		P330-11-00328	08-26-14
Virginia	NELAC	3	460175	09-14-13
Washington	State Program	10	C971	01-12-13
West Virginia DEP	State Program	3	210	12-31-12
Wisconsin	State Program	5	999518190	08-31-13

Chain of Custody Record

TestAmerica Laboratory location:
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Client Contact Company Name: ARCADIS Address: 10559 Citation Dr., Suite 100 City/State/Zip: Brighton, MI 48116 Phone: 517-648-8027 Project Name: SMT Project Number: 80064434.2012.00005 P.O.#		Site Contact: Client Project Manager: Renee Pionk Telephone: 517-648-8027 Email: Renee.Pionk@arcadis-us.com		Lab Contact: Lab Contact: Austin Westhuis Telephone: 517-719-0214		TestAmerica Laboratories, Inc. COC No: 043797 1 of 2 COCs	
Analysis Turnaround Time (in BUS days) ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Analysis Ammonia Nitrogen Total Manganese Total Thallium Total PCBs Dissolved PCBs		For lab use only Walk-in client Lab pickup Lab sampling JSA/SDG No.		Sample Specific Notes / Special Instructions:	
Matrix Air Aqueous Sediment Solid Other:		Containers & Preservatives H2SO4 HNO3 HCl NaOH ZnAc NaOH Tupper Other:		Filtered Sample (Y/N) Composite / Grab N/A		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months	
Sample Identification MW-107S1-(09172012) MW-108S2-(09172012) MW-149WT-(09182012) MW-149WT-(09182012)MS MW-149WT-(09182012)MSD Dup-03-(09182012) MW-107WT-(09182012) MW-111WT-(09182012) MW-185WT-(09182012) MW-114S2-(09182012)		Sample Date 9/17/12 9/17/12 9/18/12 9/18/12 9/18/12 9/18/12 9/18/12 9/18/12 9/18/12		Sample Time 1620 1620 1020 1020 1020 — 1240 1315 1400 1535		Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown	
Special Instructions/OC Requirements & Comments:							
Relinquished by: Renee Pionk Relinquished by: J. Pionk Relinquished by:		Company: ARCADIS Company: TA Company:		Date/Time: 9/19/12 1625 Date/Time: 9/19/12 1654 Date/Time:		Received by: Justin Pionk Received by: Justin Pionk Received by:	
Date/Time: 9/19/12 1625 Date/Time: 9/19/12 1654 Date/Time:		Company: TEST AMERICA Company: TA Company:		Date/Time: 9/19/12 1625 Date/Time: 9/19/12 1654 Date/Time:		Company: TEST AMERICA Company: TA Company:	

Chain of Custody Record

TestAmerica Laboratory location: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Client Contact Company Name: ARCADIS Address: 10559 Citation Dr., Suite 100 City/State/Zip: Brighton, MI 48116 Phone: 517-648-8027 Project Name: SMT Project Number: B0064434.2012.00005 PO #		Client Project Manager: Renee Pionk Telephone: 517-648-8027 Email: Renee.Pionk@arcadis-us.com		Site Contact: Austin Westhuis Telephone: 517-719-0214		Lab Contact: COC No: 043796 2 of 2 COCs	
Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other		Analysis Turnaround Time (in BUS days): TAT is different from below: ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Analyses: Ammonia Nitrogen Phosphorus Total Manganese Total Thallium Total Arsenic Total PCBs Dissolved PCBs Total Site Analysis List Metals VOC Dissolved Metals TSS, Chloride, Sulfide With NO ₃ -N, NH ₄ -N, PO ₄ -P For lab use only		Sample Specific Notes / Special Instructions:	
Method of Shipment/Carrier:		Containers & Preservatives: HCl NaOH ZnO LiOH Others:		Filtered Sample (Y/N): NO Composite / Grab: Grab		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For	
Shipping/Tracking No:		Matrix: Aqueous Sediment Solid Others:		Months		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For	
Sample Date		Sample Time		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☒ Disposal By Lab ☐ Archive For	
MW-11452-(09182012)MS		9/18/12 1535		X		X	
MW-11452-(09182012)MSD		9/18/12 1535		X		X	
Dup-2-(09182012)		9/18/12		X		X	
MW-186WT-(09182012)		9/18/12 1215		X		X	
MW-186WT-(09182012)MS		9/18/12 1215		X		X	
MW-186WT-(09182012)MSD		9/18/12 1215		X		X	
Dup-5-(09182012)		9/18/12		X		X	
Rinse Blank-(09182012)		9/18/12 1640		X		X	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/OC Requirements & Comments:
 Metals: Arsenic, Barium, Iron, manganese, Mercury, Selenium, Sodium - Methods 6010 and 7470 A

Relinquished by: Renee Pionk	Company: ARCADIS	Date/Time: 9/19/12 1625	Received by: Seni Sathian	Company: TEST AMERICA	Date/Time: 9-19-12 1625
Relinquished by: Seni Sathian	Company: TA	Date/Time: 9-19-12 1634	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Seni Sathian	Company: TEST AMERICA	Date/Time: 9/20/12 915

TestAmerica Canton Sample Receipt Form/Narrative

Login # : 15374

Client ARCADIS Site Name _____ By: [Signature]
Cooler Received on 9-20-12 Opened on 9-20-12 (Signature)
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# 1	(CF 0°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C
IR GUN# 4G	(CF -1°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C
IR GUN# 5G	(CF -1°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C
IR GUN# 8	(CF 0°C)	Observed Sample Temp. _____ °C	Corrected Sample Temp. _____ °C

☐ Multiple on Back

2. Were custody seals on the outside of the cooler(s)? If Yes Quantity 1 EA ☒ Yes ☐ No
-Were custody seals on the outside of the cooler(s) signed & dated? ☒ Yes ☐ No NA
-Were custody seals on the bottle(s)? ☒ Yes ☐ No
3. Shippers' packing slip attached to the cooler(s)? ☒ Yes ☐ No
4. Did custody papers accompany the sample(s)? ☒ Yes ☐ No
5. Were the custody papers relinquished & signed in the appropriate place? ☒ Yes ☐ No
6. Did all bottles arrive in good condition (Unbroken)? ☒ Yes ☐ No
7. Could all bottle labels be reconciled with the COC? ☒ Yes ☐ No
8. Were correct bottle(s) used for the test(s) indicated? ☒ Yes ☐ No
9. Sufficient quantity received to perform indicated analyses? ☒ Yes ☐ No
10. Were sample(s) at the correct pH upon receipt? ☒ Yes ☐ No NA
11. Were VOAs on the COC? ☒ Yes ☐ No
12. Were air bubbles >6 mm in any VOA vials? ☒ Yes ☐ No NA
13. Was a trip blank present in the cooler(s)? ☒ Yes ☐ No

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

14. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES

15. SAMPLE CONDITION

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

