2012 PERIODIC REVIEW REPORT
DELPHI HARRISON THERMAL SYSTEMS SITE
SITE NUMBER 932113
LOCKPORT, NEW YORK

PREPARED FOR:
New York State Department of Environmental Conservation
Division of Environmental Remediation
Mr. Glenn May

PREPARED BY:
GZA GeoEnvironmental of New York
Buffalo, New York

January 2013
21.0056546.00

January 14, 2013
File No. 21.0056546.0

Mr. Glenn May
New York State Department of Environmental Conservation
Division of Environmental Remediation
270 Michigan Avenue
Buffalo, New York 14203

Re: Periodic Review Report Number 2 – January 2012
Delphi Harrison Thermal Systems Site
Lockport, New York
Registry Site No. 932113

Dear Mr. May:

GZA GeoEnvironmental of New York (GZA) prepared this 2012 Periodic Review Report (PRR) for the Delphi Harrison Thermal Systems Site (Site) as required by the Site Management Plan[1] (SMP) that was approved by the New York State Department of Environmental Conservation (NYSDEC) on October 13, 2011. The implementation of the SMP is a requirement of the Remedial Program Order on Consent and Administrative Settlement (Index #B9-0553-99-06) between GM Components Holdings, LLC (GMCH) and NYSDEC dated November 8, 2011.

GMCH is the current owner and operator of an automotive components manufacturing facility at 200 Upper Mountain Road, Lockport, New York. Delphi Automotive Systems LLC conveyed the facility to GMCH by deed dated October 6, 2009 and recorded in the Niagara County Clerk's Office on October 14, 2009. The Site, as defined by the environmental easement (Instrument # 2011-17072) recorded in the Niagara County Clerk's Office in October 2011, comprises approximately 22.7 acres located in the eastern portion of the facility as shown on Figure 1.

BACKGROUND

The following is a summary of the regulatory actions at the Site.

- Building 8, located in the northern central portion of the facility, formerly housed degreasing operations that utilized trichloroethylene (TCE). An aboveground storage tank (AST) was formerly located outside the southeastern corner of Building 8 until it was decommissioned in May 1994. NYSDEC became involved in 1994 when Delphi Thermal Systems (Delphi) notified them of TCE detected in soil during an excavation to repair fire protection lines in the vicinity of the former TCE AST. NYSDEC assigned the incident Spill Number 9410972.

[1] "Delphi Harrison Thermal Systems Site, Niagara County, New York, Site Management Plan, NYSDEC Site Number: 9-32-113" dated October 13, 2011

Delphi removed the TCE-impacted soil from the excavation down to the top of bedrock and provided NYSDEC with a report of this removal action in a letter dated December 22, 1994.

- In March 1999, the Site was added to the NYSDEC Inactive Hazardous Waste Registry, Site Number 932113, and it currently has a Class 3 listing (does not present a significant threat to the public health or the environment – action may be deferred).

- Delphi entered into a Remedial Investigation/Feasibility Study Order on Consent, Index #B9-0553-99-06 (RI/FS Order) in 2001 to determine the extent of TCE contamination and complete a Focused Feasibility Study.

- In March 2005, NYSDEC, in consultation with the New York State Department of Health (NYSDOH), issued a Record of Decision (ROD) based on the results of the Focused Remedial Investigation (FRI) and Focused Feasibility Study (FFS). The components of the selected remedy, as defined in the ROD, are as follows.

    - Monitored natural attenuation (MNA) with groundwater monitoring and sampling to ensure the continued effectiveness of the remedy.

    - Development of a contingency plan for groundwater control/treatment if natural attenuation processes can no longer be demonstrated as effective or if significant off-site groundwater contamination is observed.

    - Development of a site management plan to: (a) address residual contaminated soils that may be excavated from the site during future redevelopment, (b) evaluate the potential for vapor intrusion for all current site buildings and any developed on the site in the future, including provision for mitigation of any impacts identified; (c) provide for the operation and maintenance of the components of the remedy; (d) monitor site groundwater; and (e) identify any use restrictions on site development or groundwater use.

    - Imposition of an environmental easement to restrict groundwater use and ensure compliance with the approved site management plan.

    - Certification of the institutional and engineering controls.

- Annual MNA groundwater sampling has been completed voluntarily at the Site since October 2006.

- In October 2011, an environmental easement (Instrument # 2011-17072) for the Site was recorded in the Niagara County Clerk's Office.

- In November 2011, a Remedial Program Order on Consent and Administrative Settlement (Index #B9-0553-99-06) was executed between GMCH and NYSDEC.

- No other pertinent records were generated for the Site during the reporting period.

2012 PERIODIC REVIEW REPORTING PERIOD

In accordance with Section 5.3 of the SMP, the following constitutes the Calendar Year 2012 PRR.

1. Results of the required Site inspections and severe weather condition inspections, if applicable

A Site inspection was completed on October 15, 2012, by Christopher Boron of GZA. The site inspection form was completed and a copy is included as Appendix A.

No severe weather condition inspections occurred during the reporting period.

2. All applicable inspection forms and other records generated for the Site during the reporting period in electronic format

A copy of the completed site inspection form from the October 15, 2012 site inspection is included in Appendix A and will be included as part of the electronic format of the PRR to be submitted to NYSDEC's Glenn May and Brian Sadowski (see page 40 of SMP).

3. A summary of any monitoring data and/or information generated during the Reporting Period with comments and conclusions

(a) Annual MNA groundwater sampling has been completed voluntarily at the Site since October 2006. The most recent MNA groundwater sampling was completed in April 2012. A copy of the report is included with this PRR as Appendix B.

The conclusions of the April 2012 report were as follows:

Based on the results of the April 2012 sampling round, natural attenuation of contaminants of concern (COCs) is occurring via reductive dechlorination.

- The COC concentrations of the parent compounds are decreasing from the source area (MW-7) downgradient to the mid-point of the

plume (MW-4 and MW-10) and towards the downgradient portions of the Site (MW-11 through MW-15).

- There is an increase in daughter compound concentrations from the source area to the mid-point of the plume, with an overall decrease in total COC concentrations.
- The COC concentrations at the downgradient property line do not exceed the NYSDEC Class GA criteria.

It should be noted that there is a decreasing temporal trend in total organic compound (TOC) concentrations. TOC represents a surrogate measurement of the "fuel" that drives reductive dechlorination and should be monitored. GZA recommends continuing the annual groundwater sampling event utilizing eight (8) monitoring wells (MW-4, -7, -10, -11, -12, -13, -14 and -15), as stated in the SMP, in the Spring of 2013. The natural attenuation analytical parameter list used during the 2012 sample round should also be used for the 2013 sample round.

4. Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends.

Data summary tables are provided in the copy of the MNA groundwater sampling report attached in Appendix B.

5. Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted electronically in a NYSDEC-approved format.

The electronic submission of the PRR will include the results of analyses, copies of laboratory data sheets, and the required laboratory data deliverables for samples collected during the reporting period for the MNA groundwater sampling event of April 2012.

6. A Site evaluation, which includes the following:

- **Compliance with the requirements of the ROD Site-selected remedy;**
- **Any new conclusions or observations regarding site contamination based on inspections or data generated by the Site Monitoring Plan for the media being monitored;**
- **Recommendations regarding any necessary changes to the remedy and/or Site Monitoring Plan; and**
- **The overall performance and effectiveness of the remedy.**

As discussed in 3(a) above, there appears to be a decreasing temporal trend in TOC concentrations, but the indicator parameters provide evidence that anaerobic biodegradation of the COCs is controlling migration of impacted groundwater downgradient.

At this time, there are no recommendations to change the Site remedy or the Site Monitoring Plan. The Site is in compliance with the ROD, and MNA is still an effective remedy.

7. Identification, assessment and certification of all ECs/ICs [Engineering Controls/Institutional Controls[2]] required by the Record of Decision Site-selected remedy

There are no Engineering Controls (ECs) required under the ROD and the Institutional Controls (ICs) that apply to the Site are set forth in the recorded Environmental Easement. The ICs for the Site restrict the use of groundwater and require compliance with the SMP. There have been no changes to the SMP since it was approved by NYSDEC on October 13, 2011.

Certification of the Institutional and Engineering Controls[3]

For each institutional or engineering control identified for the Site, I certify[4] that all of the following statements are true:

- The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;
- The institutional control and/or engineering controls employed at this Site is unchanged from the date the control was put in place, or last approved by the Department;
- Nothing has occurred that would impair the ability of the control to protect the public health and environment;
- Nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this control;
- Access to the Site will continue to be provided to the Department (with valid Safety Protocol Program Card) to evaluate the remedy, including

[2] See definition for *Engineering Control* at 6 NYCRR § 375-1.2 (o) and for *Institutional Control* at 6 NYCRR § 375-1.2 (aa).

[3] The required Certification of the Institutional and Engineering Controls is set forth in Section 5.2 of the NYSDEC-approved SMP. It is to be used for the Periodic Review Report in lieu of the certifications noted in DER-10 at section 6.3 (d).

[4] Certify is defined as a statement or declaration of a professional opinion based on the information, data and/or facts known at the time such certification is made.

access to evaluate the continued maintenance of this control;

- If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document[5];
- Use of the Site is compliant with the Environmental Easement;
- Any engineering control systems that have been installed as part of the remedial programs for the Site are performing as designed and are effective;
- To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the ROD Site's selected remedy and generally accepted engineering practices; and
- The information presented in this report is accurate and complete.
- I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Bart A. Klettke, P.E. of GZA GeoEnvironmental of New York, am certifying as Owner's Designated Site Representative for the Site.

Bart A. Klettke, P.E.
Associate Principal
GZA GeoEnvironmental of New York

Date: January 14, 2013

Figure 1: Site Plan
Appendix A: Site Inspection Form
Appendix B: April 2012 MNA Groundwater Sampling Report

cc: Brian Sadowski (electronic only)

[5] Note that no financial assurance mechanism is in place for the Site remedial program.

FIGURE

DRAWN BY: DEW

DATE: DECEMBER 2011

GZA GeoEnvironmental of New York

NOTE:

BASE MAP ADAPTED FROM U.S.G.S. TOPOGRAPHIC MAPS DOWNLOADED FROM TERRASERVER.MICROSOFT.COM

GM COMPONENTS HOLDINGS, LLC

PERIODIC REVIEW REPORT

DELPHI HARRISON THERMAL SYSTEMS SITE

200 UPPER MOUNTAIN ROAD

LOCKPORT, NEW YORK

SITE NUMBER 9-32-113

SITE PLAN

PROJECT No.

21.0056546.00

FIGURE No.

1

GZA–T:\PROJECTS\56500s\56546 GM Component LLC\Periodic Review Report\Figure 1 Site Plan.dwg [FIGURE 1] December 13, 2011 – 1:17pm daniel.wulf

APPENDIX A

SITE DETAILS

Site No.:	9-32-113
Site Name:	Delphi Harrison Thermal Systems Site
Site Address:	200 Upper Mountain Road, Lockport NY

PERSON PERFORMING INSPECTION

NAME: Chris Baron EMAIL: _____

OTHERS PRESENT: _____ PHONE NUMBER: _____

COMPANY: _____

INSPECTION DATE AND SITE CONDITIONS

INSPECTION DATE: 10/15/2012 INSPECTION TIME: 1500

WEATHER CONDITIONS: Overcast 50°F

REASON FOR SITE INSPECTION

Scheduled Annual Inspection: (YES) NO

Inspection after a Severe Condition that could effect site controls: YES (NO)

describe severe conditions triggering inspection:

VERIFICATION OF SITE DETAILS

Current Site Owner: GM Components Holdings (GMCH)

Current Site Operators: GMCH

Describe Current Site Use (check all that apply):

(Industrial) Commercial Residential Other

briefly describe observed site uses: Green space, parking lot and material storage

Has some or all of the Site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last inspection? YES (NO)

If YES, is documentation or evidence of documentation submittal to NYSDEC attached? YES

Have any federal, state and/or local permits (e.g., building or discharge) been issued for the property since the initial/last inspection? YES (NO)

If YES, is documentation or evidence of documentation submittal to NYSDEC attached? YES

Has a change in Site usage per NYCRR 375-1.11(d) occurred since the last inspection? YES (NO)

If YES, is documentation or evidence of documentation submittal to NYSDEC attached? YES

Has any new information come to your attention to indicate that assumptions made in the qualitative exposure assessment for off-site contamination are no longer valid? YES (NO)

If YES, is this information or evidence of submittal to NYSDEC attached? YES

Note any additional pertinent information to Verification of Site Details (use additional pages if necessary):

DESCRIPTION OF INSTITUTIONAL/ENGINEERING CONTROLS

Is Environmental Easement still in place? (YES) NO

If no, explain:

Is the Site Management Plan in place? (YES) NO

If no, explain:

AREAS IN NEED OF REPAIR OR MAINTENANCE

Area discussed in this section must be shown on a figure and have photographic documentation.

No areas in need of repair were observed.

INTRUSIVE ACTIVITIES PERFORMED AT SITE DURING INSPECTION PERIOD	DATE	LOCATION
No intrusive activities were performed during this period.		

REVIEW OF SITE RECORDS

Are site records being properly generated and maintained? (YES) NO

Provide summary of recordkeeping review and adequacy:

GMCH Environmental Manager, Roy Knapp, maintains both hardcopies and electronic copies of the site records. Hardcopies are kept in a file cabinet within the Engineering office. Electronic copies are kept in the GMCH Corrective Action & Remediation Project Record File (ENV010)

ADDITIONAL NOTES & COMMENTS

INSPECTION CERTIFICATION

I hereby certfy that the information included in this report is complete and accurate to the best of my knowledge.

Inspector Signature: Chuck Barron Date: 10/15/2012

APPENDIX B

GZA GeoEnvironmental

Engineers and Scientists

July 25, 2012
File No. 21.0056546.00

Mr. Glenn May
NYSDEC Region 9
270 Michigan Avenue
Buffalo, New York 14203

Re: Results of April 2012 Monitored Natural Attenuation Groundwater Sampling
Delphi Harrison Thermal Systems Site (Site)
Lockport, New York
Registry Site No. 932113

Dear Mr. May:

535 Washington Street
11th Floor
Buffalo, New York
14203
716-685-2300
FAX 716-685-3629
www.gza.com

GZA GeoEnvironmental of New York (GZA) prepared this letter report to summarize the results of the April 2012 groundwater sampling and monitored natural attenuation (MNA) parameter monitoring event at the above-referenced Site. The groundwater sampling event conducted from April 18th through April 20nd, 2012 included eight (8) monitoring wells (MW-4, -7, -10, -11, -12, -13, -14 and -15) that were sampled for the five (5) compounds of concern (COCs)[1] and MNA parameters as identified in the Site Management Plan[2] (SMP). Note that as recommended in our Revised April 2011 Natural Attenuation Groundwater Sampling Report dated November 28, 2011, carbon dioxide, hydrogen, volatile fatty acids (VFAs), ethene and ethane were added to the sampling parameter list.

BACKGROUND

In March 2005, NYSDEC issued a Record of Decision (ROD) for the Site, which selected MNA as the remedial alternative to address the COCs detected at the Site. Annual MNA groundwater sampling has been completed voluntarily since October 2006.

Six (6) monitoring wells (MW-7, MW-11, MW-12, MW-13, MW-14 and MW-15) were monitored in October 2006, November 2007 and November 2008 (see Figure 1 for locations). MW-7 is located in the vicinity of the Area of Concern (AOC) and the other five wells, MW-11 through MW-15, are the downgradient monitoring locations.

Based on the results of the groundwater sampling program through March 2009, the sampling program was expanded to include ten (10) monitoring well locations: MW-4, -7, -8, -9, -10, -11, -12, -13, -14 and -15. This expanded sampling event was completed in July 2009 and indicated that site conditions continue to be favorable for natural attenuation of the COCs via a reductive dechlorination pathway. The data did not indicate a significant change in groundwater conditions and it was recommended to

[1] These five COCs are trichloroethylene, tetrachloroethylene, *cis*-1,2-dichloroethene, *trans*-1,2-dichloroethylene, and vinyl chloride.

[2] "Delphi Harrison Thermal Systems Site, Niagara County, New York, Site Management Plan, NYSDEC Site Number 9-32-113" dated October, 2011. Prepared for the GM Components Holdings, LLC by GZA.

continue the annual MNA sampling using these ten (10) monitoring well locations.

The next groundwater sampling event was completed in April 2010 to address the NYSDEC comment letter dated January 19, 2010. The April 2010 results indicated that natural attenuation is occurring with limited evidence of a decreasing temporal trend in total organic carbon (TOC) concentrations near the source area (MW-7) and midpoint (MW-4 and -10) of the groundwater plume. However, there was adequate to strong evidence for anaerobic biodegradation of COCs at the leading edge of the groundwater plume (MW-11 through -15). Given these conditions, coupled with the lack of evidence of an expanding plume, it appears natural attenuation processes are effectively managing the COC plume migration under current conditions.

Results of the April 2011 sampling round are similar to the April 2010 results, i.e. natural attenuation of COCs is occurring. However, there appeared to be a decreasing TOC concentration trend across the Site indicating that the "fuel" that drives reductive dechlorination may becoming depleted. GZA recommended continuing the annual groundwater sampling event utilizing eight (8) monitoring wells (MW-4, -7, -10, -11, -12, -13, -14 and -15), as stated in the SMP, in the Spring of 2012 and expanding the analyte list to include the following analytes to help evaluate the efficacy of MNA for the site:

- Carbon dioxide;
- Alkalinity;
- Hydrogen;
- VFAs; and
- Ethene/Ethane.

In November 2011, GM Components Holdings, LLC (GMCH) entered into an Order on Consent and Administrative Settlement (Index #B9-0553-99-06) for the Site. The Final Engineering Report for the Site was submitted in March 2012 and a Certificate of Completion was issued by NYSDEC dated March 13, 2012. The Certificate of Completion required the following be completed.

- A record of notice for the Certificate of Completion must be filed with Niagara County within 30 days of issuance of the Certificate of Completion. The record of notice was filed on April 10, 2012.
- A fact sheet must be issued describing the institutional and engineering controls that are required at the Site. The fact sheet was distributed by NYSDEC to their listserv contact list in April 2012.
- The NYSDEC-approved SMP must be implemented. The April 2012 groundwater sampling and natural attenuation parameter monitoring event was completed in accordance with the SMP.

APRIL 2012 GROUNDWATER MONITORING & SAMPLING

The April 2012 groundwater monitoring and sampling event was conducted in accordance with the SMP and included eight (8) monitoring wells (MW-4, -7, and -10 through -15, see Figure 1) from April 18 through 20, 2012.

METHODOLOGY

The groundwater monitoring and sampling was performed using low flow sampling techniques with a peristaltic pump, disposable polyethylene tubing and a water quality meter with a flow-through cell to collect water quality field parameters. The sampling technique and analytical parameters were consistent with the SMP.

The following is the list of the analytical parameters for this sampling event:

Field Measured Parameters: temperature, specific conductance, pH, turbidity, dissolved oxygen (DO) and oxidation reduction potential (ORP).

Compounds of Concerns: tetrachloroethylene (PCE), trichloroethylene (TCE), *cis*-1,2-dichloroethylene (*cis*-DCE), *trans*-1,2-dichloroethylene (*trans*-DCE) and vinyl chloride (VC).

Natural Attenuation Parameters: methane, iron, magnesium, manganese, potassium, sodium, alkalinity, total organic carbon, chloride, nitrate, nitrite, sulfate, sulfide, carbon dioxide, hydrogen, VFAs, ethene, and ethane.

Groundwater pumping rates used during monitoring/sampling varied at the monitoring locations in order to establish a relatively stable water level. Once a stable water level was established within the monitoring well, flow rates were maintained during the monitoring/sampling period. Samples were collected for analysis after field-measured parameters stabilized, and a minimum of one (1) well volume was purged. It should be noted that a stable water level could not be established at well MW-7 (similar to previous rounds). Therefore, this location was purged to dry-like conditions and allowed to recharge until the recharge volume was sufficient to collect the sample parameters. Also, due to the lack of a stable water level, the hydrogen sample could not be collected. The Monitoring Well Observations & Groundwater Sampling Logs are included in Appendix A.

It should be noted that the DO readings for the eight (8) monitoring wells during 2012 were generally the same value (0.00 mg/L), which is not consistent with historical values. It was GZA's opinion that the DO sensor may not have been functioning properly and the data were not used as part of the evaluation. GZA obtained another water quality meter, purged and collected additional water quality data at three locations (MW-4, -10, and -15) on May 4, 2012. These data were more consistent with previous sampling events and

were substituted for the earlier data collected as part of this evaluation. See Table 1 for monitored field parameters.

ANALYTICAL RESULTS & DISCUSSION

Analytical results for the COCs for the current sampling event along with the data from previous sample rounds are shown on Figure 1. A contour map of the Total COC concentrations is presented on Figure 2 and a groundwater elevation contour map of the groundwater elevation data collected is shown on Figure 3. It should be noted that the concentrations of *cis*-DCE and *trans*-DCE have been combined for presentation purposes as total 1,2-DCE in Figure 1. The analytical results for the COCs (current and historic) shown on Figure 1 have been graphically depicted and are included in Appendix B.

Analytical results for the MNA parameters are shown on Table 1, along with the data from previous sample rounds. The TestAmerica Laboratories, Inc. laboratory report is provided in Appendix C.

Compounds of Concern

Source Area Monitoring Well

MW-7: The TCE concentrations at MW-7 are generally in the range of 500 to 800 mg/L from October 1996 through April 2012 with the exception of four contiguous sample rounds from April 2003 through November 2008, where the results ranged from 1.1 to 430 mg/L. The TCE concentration graph in Appendix B indicates a downward temporal trend in concentrations from April 1996 to October 1999, which is consistent with natural attenuation. The concentrations from November 2007 to April 2012 fluctuated with a slight upward trend which may be attributed to the decrease in TOC concentrations.

The concentrations of the PCE, 1,2-DCE and VC appear to generally be consistent since the start of the sampling in 1996, with some minor fluctuation.

Mid Plume Monitoring Wells

MW-4: The concentrations of the TCE, PCE, and VC appear to generally be consistent since the start of the sampling in 1996, with some minor fluctuations.

It appears there is a consistent downward temporal trend of 1,2-DCE concentrations at MW-4 since the start of the sampling in 1996, which is consistent with natural attenuation.

MW-10: It appears that there is a downward temporal trend of TCE and 1,2-DCE concentrations at MW-10 since 1996, which is consistent with natural attenuation with some minor fluctuations. The VC and PCE concentrations generally appear to be in a downward temporal trend since 1999, also consistent with natural attenuation, with some fluctuation.

Downgradient Monitoring Wells

MW-11: The detected concentrations of PCE and TCE have been below method detection limits since the start of MW-11 sampling in 1997.

The concentrations of 1,2-DCE have fluctuated from below method detection limits (multiple sample rounds) to 0.013 ppm (December 1998) with the majority of the detected concentrations (12 of 14 samples rounds) being below the NYSDEC Class GA criteria (0.005 ppm), including for the 2012 sampling event.

The concentrations of VC have fluctuated from below method detection limits (multiple sample rounds) to 0.008 ppm (August 2001) with just over half of the detected concentrations (8 of 14 samples rounds) being slightly above the NYSDEC Class GA criteria (0.002 ppm). The VC concentration for the 2012 sampling event was 0.0026 ppm, which is below the average VC concentrations detected above method detection limits.

MW-12: The detected concentrations of PCE and TCE have been below method detection limits or below their respective Class GA criteria (0.005 ppm) since the start of MW-12 sampling in 1997.

The concentrations of 1,2-DCE have fluctuated from 0.011 ppm (November 2007) to 0.272 ppm (April 2010). The 1,2-DCE concentration for the 2012 sampling event was 0.150 ppm, which is above the average 1,2-DCE concentration detected at this location to date.

The concentrations of VC have fluctuated from 0.011 ppm (October 2001) to 0.190 ppm (August 1997). The VC concentration for the 2012 sampling event was 0.120 ppm, which is above the average VC concentration detected above method detection limits.

MW-13: The detected concentrations of PCE, TCE, 1,2-DCE and VC have been below method detection limits in all but one sample round since the start of MW-13 sampling in 2001. TCE was detected in October 2006 at a concentration of 0.002 ppm.

MW-14: The detected concentrations of TCE have been below method detection limits in eight (8) of the ten (10) sample rounds conducted since the start of MW-14 sampling in 2001.

The detected concentrations of PCE have been below method detection limits since the start of MW-14 sampling in 2001.

The detected concentrations of 1,2-DCE have been below method detection limits or below its respective NYSDEC Class GA criteria in eight (8) of the ten (10) sample rounds conducted since the start of MW-14 sampling in 2001. The two rounds where 1,2-DCE did exceeded 0.005 ppm its respective NYSDEC Class GA criteria were in November 2007 and July 2009. The detected concentration of 1,2-DCE during this round was 0.001 ppm.

The detected concentrations of VC have been below method detection limits in eight (8) of the ten (10) sample rounds conducted since the start of MW-14 sampling in 2001. The one round where VC (0.003 ppm) did slightly exceed its respective NYSDEC Class GA criteria was in November 2008. The detected concentration of VC for this round was 0.001 ppm.

MW-15: The detected concentrations of TCE have been below method detection limits in the first seven (7) of the ten (10) sample rounds conducted since the start of MW-15 sampling in 2001. The three rounds (April 2010, April 2011, and April 2012) where TCE was detected above method detection limits had concentrations of 0.0007 ppm, below the NYSDEC Class GA criteria.

The detected concentrations of PCE have been above its NYSDEC Class GA criteria in the ten sample rounds conducted since the start of MW-15 sampling in 2001 ranging from 0.02 ppm (October 2001) to 0.0059 ppm (November 2008). There appears to be a general decreasing temporal trend in the concentrations of PCE detected since 2001. The detected concentration of PCE in the 2012 sample round was 0.0081, which is slightly above the NYSDEC Class GA criteria but below the average concentration detected above method detection limits.

The detected concentrations of 1,2-DCE and VC have been below their method detection limits in the ten (10) sampling rounds conducted since the start of MW-15 sampling in 2001.

Natural Attenuation Performance

In 2011, GZA performed an analysis of the historical water quality data collected to date to evaluate performance. The substantive conclusions of that work were as follows:

- Based on GZA's analysis of the historical data, there is limited evidence for natural attenuation near the source area (MW-7) and midpoint (MW-4) of the groundwater plume, but adequate to strong evidence for anaerobic biodegradation of COCs at the leading edge of the groundwater plume; and
- There is a general decreasing temporal concentration trend for TOC at each monitoring well over the period of record, indicating that while MNA has had some effectiveness to date in managing COC migration, the "fuel" that drives reductive dechlorination (*i.e.,* ultimately hydrogen, a fermentation product of the organic carbon) is becoming depleted.

GZA reviewed the April 2012 groundwater quality data and the data are generally consistent with the substantive conclusions and trends noted in last year's summary report with the exception that the strength of the evidence supporting natural attenuation via reductive dechlorination at downgradient locations has weakened from strong to limited based on the anaerobic biodegradation screening tables completed from EPA Document EPA/600/R-98/128, Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water, 1998 (see tables in Appendix D).

CONCLUSIONS & RECOMMENDATIONS

Based on the results of the April 2012 sampling round, natural attenuation of COCs is occurring via reductive dechlorination.

- The COC concentrations of the parent compounds are decreasing from the source area (MW-7) downgradient to the mid-point of the plume (MW-4 and MW-10) and on to the downgradient portions of the Site (MW-11 through MW-15).
- There is an increase in daughter compounds concentrations from the source area to the mid-point of the plume, with an overall decrease in total COC concentrations.
- The COC concentrations at the downgradient property line do not exceed the NYSDEC Class GA criteria.

It should be noted that there is a temporal decreasing trend in TOC concentrations. TOC represents a surrogate measurement of the "fuel" that drives reductive dechlorination and should be monitored. GZA recommends continuing the annual groundwater sampling event utilizing eight (8) monitoring wells (MW-4, -7, -10, -11, -12, -13, -14 and -15), as stated in the SMP, in the Spring of 2013. The natural attenuation analytical parameter list used during the 2012 sample round should also be used in the 2013 sample round.

Please do not hesitate to contact the undersigned if you have any questions or require any additional information.

Sincerely,

GZA GEOENVIRONMENTAL OF NEW YORK

Christopher Boron
Senior Project Manager

Bart A. Klettke, P.E.
Associate Principal

for

I. Richard Schaffner, Jr., C.G.W.P.
Consultant Reviewer

Table 1 – Natural Attenuation Parameter Results
Figure 1 – Site Plan & Compound of Concern Analytical Data
Figure 2 – Total COC Contour Plan
Figure 3 – Groundwater Contour Plan
Appendix A: Monitoring Well Observations & Groundwater Sampling Logs
Appendix B: COC Data Graphs
Appendix C: Test America Analytical Laboratory Report
Appendix D: Anaerobic Biodegradation Screening Tables

TABLE

Table 1
Summary of Groundwater Field Measurements and Analytical Test Results for Natural Attenuation Parameters
April 2012 Groundwater Sampling
Delphi Thermal Systems
West Lockport Complex
Lockport, New York

		Field Parameters					Analytical Test Results - Inorganic and Miscellaneous Water Quality Parameters																							
Location	Sample Date	Temp. (Deg. C)	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mv)	pH (Std Units)	Methane (mg/L)	Ethane (mg/L)	Ethene (mg/L)	Carbon Dioxide (mg/L)	Hydrogen (nm)	Organic Carbon (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Nitrate Nitrite (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Calcium (mg/L)	Dissolved Calcium (mg/L)	Iron (mg/L)	Dissolved Iron (mg/L)	Magnesium (mg/L)	Dissolved Magnesium (mg/L)	Manganese (mg/L)	Dissolved Manganese (mg/L)	Sodium (mg/L)	Dissolved Sodium (mg/L)	Potassium (mg/L)	Dissolved Potassium (mg/L)	Volatile Fatty Acids (mg/L)
MW-4	12/2/1998	14.2	2.730	0.23	-56	6.6	2.9					19	354	1.23	986	0.30	<0.05		120	0.2	503	443	0.58	0.51	105	106	0.40	0.32	282	293	13.3	12.8	
MW-4 DUP	12/2/1998	NA	NA	NA	NA	NA	5.5					8	368	1.57	971	0.05	<0.05		120	0.2	431	335	0.59	0.52	107	100	0.39	0.34	282	306	13.2	13.5	
MW-4	10/7/1999	13.8	3.412	0.08	-92.8	6.7	4.2					47	360	1.03	1,010			0.08	110	0.3	269	318	0.42	0.45	98	116	0.23	0.34	240	305	10.4	13.1	
MW-4	8/9/2001	12.6	3.420	0.12	-5.1	6.5	0.12					20.2	366	1.20	1,300	0.11	<0.05		190	0.2	371		1.01		107		0.54		384		12.7		
MW-4	10/31/2001	13.8	3.444	0.10	-128.0	6.6	3.3					10.8	366	1.17	1,100	<0.05	<0.05		160	1.2			0.77		102		0.46		358		12.3		
MW-4	7/20/2009	17.7	1.263	0.28	35.1	6.41	5.28					13	330	3.83	5,320	<0.6	<0.6		295	2.0				3.21		193		2.64		2,100		50.5	
MW-4	4/29/2010	15.0	9.664	0.96	-2.1	6.5	1.8					4.3	333	NA	3,510	<0.05	<0.05		272	<1.0				3.15		152		1.86		1,700		26.1	
MW-4 DUP	4/22/2011	11.85	7.391	0.73	-349.0	6.77	2					0.6	343	1.9	3,260	<0.05	<0.05		370	<0.1	493		3.1		139		1.6		1420		17.8		
MW-4	4/20/2012 [9]	14.5	10.130	6.00	40.5	6.09	3.8	0.65	2.3	9.5	28	3.1	320	2.6	3,580	<0.05	<0.05		282	<0.1			2.7		138		1.5		1400		15.6		ND
MW-6	12/2/1998	19.5	3740.000	0.30	-67	6.8	0.84					9	319	0.45	897	0.22	<0.05		160	0.2	161	156	7.98	1.13	35.6	28.8	0.48	0.29	619	638	9.64	9.51	
MW-6	10/7/1999	21.9	3283.000	0.12	-145.8	7.1	0.34					30	260	0.32	476			0.09	140	0.4	86.4	108	3.62	0.55	24	30.2	0.24	0.19	300	311	7.4	8.8	
MW-7	12/3/1998	17.3	3.130	0.33	-35	7.0	0.06					36	376	1.43	944	0.29	<0.05		200	0.4	382	375	0.14	0.02	118	136	<0.01	<0.01	288	351	20.5	23.0	
MW-7 [3]	10/7/1999	19.4	3.049	0.69	-52	7.1	0.02					58	420	1.10	1,180			0.11	180	0.4	286	255	0.86	0.05	138	145	0.05	0.02	292	306	21.4	24.0	
MW-7	10/25/2006	17.4	2.620	1.08	-92	7.1	0.06					28	376	1.33	600	<0.05	<0.05		470	<0.01			0.23		112		0.02		237		19.4		
MW-7	11/29/2007	15.5	2.162	0.83	-195	7.2	0.13					14	322	1.14	430	<0.05	<0.05		519	0.8			0.58		98.5		0.05		278		20.7		
MW-7	11/4/2008	16.2	3.152	0.33	-80	6.8	0.11					4.4	348	0.08	980	<0.05	<0.05		23	<0.1	327		6.06		74		2.28		277		4.39		
MW-7	2/24/2009	13.1	1.718	1.22	-68	7.3	0.04					NM	270	0.98	410	<0.05	<0.05		430	<0.1	193		0.09		86.7		0.04		213		14.2		
MW-7	7/20/2009	16.4	2.558	0.88	32	7.1	0.07					28	310	1.28	452	<0.6	<0.6		460	2.4				0.03		84.9		0.03		230		24.1	
MW-7	4/29/2010	15.0	1.540	3.14	-13.4	7.24	0.057					10.9	239	NA	280	<0.05	<0.05		479	<1.0				0.41		70.2		0.02		204		13.9	
MW-7	4/22/2011	10.4	1.241	3.75	-334	7.68	0.015					9.2	223	0.53	267	<0.05	<0.05		463	<0.1	121		0.20		60.1		0.025		3290		13.8		
MW-7	4/20/2012	15.4	1.830	0	-34	7.49	0.046	0.017	0.098	1.6		8.7	240	0.77	416	<0.05	<0.05		332	<0.1			0.06		67.1		0.024		193		13.2		Note 8.
MW-8	12/2/1998	16.7	3.210	0.90	-68	6.9	0.09					12	300	0.40	138	<0.05	<0.05		550	0.2	215	227	0.33	0.17	76	78	0.31	0.32	102	114	6.31	6.67	
MW-8	10/7/1999	19.7	1.640	0.08	-116.1	7.1	0.04					19	280	0.33	144			0.10	570	0.3	174	188	0.22	0.15	82.4	97.5	0.30	0.31	112	110	7.6	8.1	
MW-8	7/15/2009	16.3	2.408	0.20	-48.6	6.9	2.0					22	300	0.76	457	<0.6	<0.6		588	2				0.03		102		0.40		246		15.7	
MW-8	4/30/2010	12.84	2.206	0.36	-58.6	6.9	0.015					1.8	243	NA	486	<0.05	<0.05		500	<1.0				0.21		99.2		0.46		248		7.99	
MW-8	4/22/2011	9.39	2.327	4.56	-334	7.26	0.018					<1	244	0.30	683	<0.05	<0.05		562	<0.1	220		0.12		102		0.53		355		7.9		
MW-9	12/2/1998	16.2	7.150	1.6	120	6.9	0.04					3	309	0.23	640	0.25	<0.05		680	<0.1	330	300	0.33	<0.01	89	84.5	1.74	0.93	444	445	5.52	5.91	
MW-9	10/5/1999	18.7	4.042	0.08	103.5	6.9	0.02					24	330	0.20	963	0.46	<0.05		520	<0.1	250	283	0.20	0.02	63.8	89	1.36	0.99	476	535	4.6	26.5	
MW-9 DUP	10/5/1999	NA	NA	NA	NA	NA	0.02					27	340	0.14	833	0.63	<0.05		490	<0.1	252	284	0.20	0.02	72	86	1.46	0.94	478	560	5.0	5.6	
MW-9	7/20/2009	17.8	8.381	0.41	109.1	6.7	0.03					17	290	0.26	3,100	<0.6	0.9		379	1.2				<0.01		117		0.31		1,600		19.0	
MW-9	4/30/2010	12.0	8.042	0.79	86.4	6.7	0.015					2.1	247	NA	3,040	0.555	<0.05		263	<1.0				<0.05		102		0.15		1,680		8.72	
MW-9	4/22/2011	9.49	7.263	0.24	-345	7.08	0.0069					<1	233	0.11	3,410	0.39	<0.05		362	<0.1	392		0.03		94.9		0.11		1,710		6.9		
MW-10	12/1/1998	14.5	4.100	0.40	-13.7	6.7	0.23					11	320	0.32	1,220	0.19	<0.05		270	0.2	310	305	1.95	0.76	54.6	85.5	2.30	2.07	584	645	13.4	13.2	
MW-10	10/5/1999	14.2	4.775	0.07	-2.0	6.8	0.14					24	280	0.29	1,010	0.15	0.10		240	<0.1	39.8	254	0.73	0.04	9.94	102	0.99	1.12	33.2	635	18.8	10.1	
MW-10	8/9/2001	12.2	5.033	0.17	249.1	6.6	0.018					10.0	334	0.16	1,700	0.08	<0.05		330	0.1	330		0.14		98.9	99.6	1.66		857	845	9.2		
MW-10	10/31/2001	14.4	3.990	0.15	90.9	6.7	0.20					3.6	336	0.12	2,800	0.17	<0.05		280	1.6			0.05		92.1		0.91		720		7.6		
MW-10	7/15/2009	13.2	9.579	0.76	79.6	6.6	0.36					33.0	330	0.27	4,260	<0.6	<0.6		276	0.8				0.08		103		2.63		1,950		21.1	
MW-10 (DUP)	4/28/2010	11.0	3.741	0.35	16.2	6.88	0.14					4.3	263	NA	1,460	0.053	<1.0		168	<1.0				10.5		35.0		1.31		890		4.57	
MW-10	4/21/2011	10.29	6.218	0.42	-337.0	6.98	0.064					4.1	277	0.11	3,230	<0.05	<0.05		175	<0.1	281		0.75		77.3		2.10		1760		6.9		
MW-10	4/19/2012 [9]	12.71	7.974	5.16	129.1	6.1	0.170	0.009	0.009	5.6	1	2.3	280	0.11	3,790	<0.05	<0.05		210	<0.1			0.32		95.5		2.40		2110		7		ND
MW-11	12/1/1998	11.9	4.360	0.22	-271	7.6	0.01					17	275	0.58	188	0.17	<0.05		110	0.2	122	97.3	1.00	0.26	39.0	36.4	0.11	0.08	116	129	8.88	10.1	
MW-11	10/5/1999	11.9	5.228	2.34	-231	7.7	0.05					20	270	0.76	192	0.05	<0.05		210	0.5	93.4	150	0.34	0.30	46.4	103	0.08	0.08	180	695	10.9	27	
MW-11	8/8/2001	10.4	3.576	0.12	-73.6	7.4	<0.002					12.0	285	0.46	250	<0.05	<0.05		140	0.1	111		0.14		43.2		0.12		130		8.0		
MW-11	10/30/2001	12.0	4.126	0.04	-248.8	7.5	<0.002					3.1	265	0.46	230	<0.05	<0.05		110	2.8			0.02		38.7		0.41		120		9.1		
MW-11	10/24/2006	13.1	8.000	1.61	-106	7.3	0.008					1.9	341	0.12	108	0.16	<0.05		66	<0.1			0.80		30.7		0.08		85		7.6		
MW-11	11/28/2007	10.7	1.390	0.38	-309	7.2	0.008					3.0	233	0.38	410	0.18	<0.05		144	1.0			0.74		42.1		0.08		235		12.3		
MW-11	11/4/2008	14.4	1.377	0.56	-200	7.3	0.005					2.38	249	0.28	200	<0.05	<0.05		101	0.2	95.6		0.38		38.8		0.08		134		8.4		
MW-11	7/16/2009	13.7	1.143	0.33	-15.2	7.3	0.019					16.00	260	0.45	246	<0.6	<0.6		112	2.0				0.11		41.3		0.11		138		11.4	
MW-11	4/28/2010	9.2	1.145	0.46	-126.3	7.3	0.013					2.1	245	NA	325	0.109	<0.05		93.6	<1.0				2.55		44.3		0.220		152		8.94	
MW-11	4/21/2011	7.5	0.807	1.72	-325	7.56	0.0071					2.8	294	0.038	170	0.32	<0.05		53.5	<0.1	92.5		0.14		30.8		0.09		119		5.7		
MW-11	4/18/2012	10.9	1.450	0	-75	7.6	0.014	0.00099	0.0013	2.1	12	1.3	248	0.27	360	0.095	<0.05		98.9	0.053			0.20		48.5		0.14		143		8.3		ND

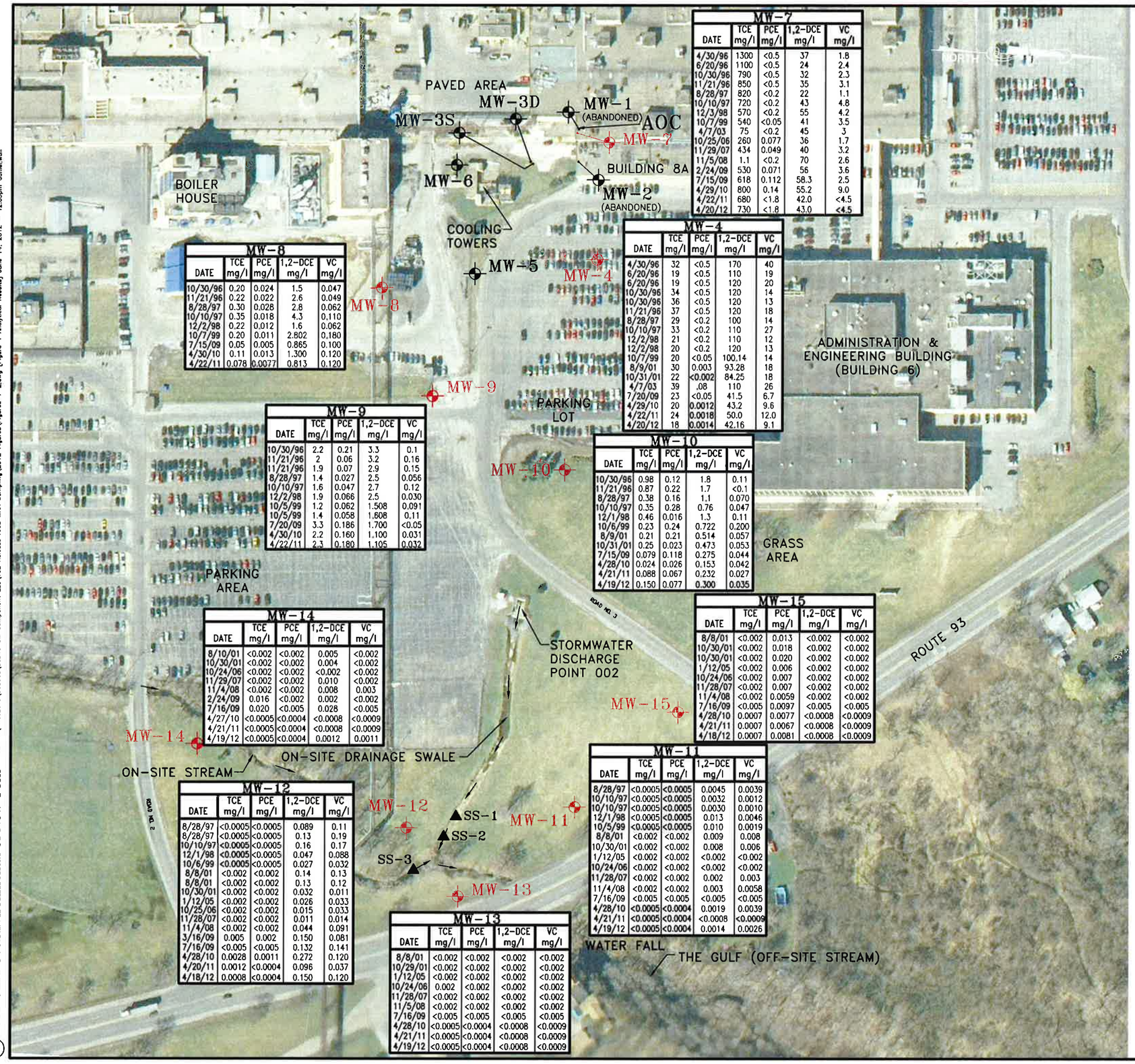
Notes:
1. In general the field parameters were stable with very little variation. However, as noted, some readings varied.
2. Readings were collected using a low flow peristalic pump and water quailty meter with flow through cell..
3. Analytical Testing completed by TestAmerica Laboratories, Inc.
3. Results shown for MW-4 are the higher of the results from the sample designated MW-4 or its duplicate sample (DUP).
4. < - Indicates compound not detected above the specified detection limit.
5. Blank = Not tested.
6. NM = not measured
7. ND = non-detect for tested volatile fatty acids: acetic acid, formic acid, lactic acid, n-Butyric acid, propionic acid, and pyruvic acid.
8. All tested volatile fatty acids = ND; except acetic acid (4.2 ppm) and n-Butyric acid (0.62 ppm).
9. Water quality readings were recollected on 5/4/2012 due to lack of DO readings collected with initial water quality meter.

Table 1
Summary of Groundwater Field Measurements and Analytical Test Results for Natural Attenuation Parameters
April 2012 Groundwater Sampling
Delphi Thermal Systems
West Lockport Complex
Lockport, New York

		Field Parameters					Analytical Test Results - Inorganic and Miscellaneous Water Quality Parameters																								
Location	Sample Date	Temp. (Deg. C)	Specific Cond. (mS/cm)	DO (mg/L)	ORP (mv)	pH (Std Units)	Methane (mg/L)	Ethane (mg/L)	Ethene (mg/L)	Carbon Dioxide (mg/L)	Hydrogen (nm)	Organic Carbon (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Nitrate Nitrite (mg/L)	Sulfate (mg/L)	Sulfide (mg/L)	Calcium (mg/L)	Dissolved Calcium (mg/L)	Iron (mg/L)	Dissolved Iron (mg/L)	Magnesium (mg/L)	Dissolved Magnesium (mg/L)	Manganese (mg/L)	Dissolved Manganese (mg/L)	Sodium (mg/L)	Dissolved Sodium (mg/L)	Potassium (mg/L)	Dissolved Potassium (mg/L)	Volatile Fatty Acids (mg/L)
MW-12	12/1/1998	13.4	2.006	0.39	-41	6.9	0.5					7	284	0.94	294	0.48	<0.05		73	0.2	119	104	7.48	4.01	26.8	25.3	4.41	4.40	183	197	4.1	3.81	3.81
MW-12	10/5/1999	15.8	1.849	0.10	-105.2	7.0	0.36					30	300	0.90	342	0.27	<0.05		66	0.2	104	126	<0.01	3.66	27.8	31.6	<0.01	4.90	166	226	4.9	5.3	5.3
MW-12	8/8/2001	13.5	3.300	0.24	-38.5	6.6	0.50					13.9	336	1.77	920	<0.05	<0.05		160	<0.1	217		16.9		57.5		8.41		427		6.3		
MW-12 DUP	8/8/2001	NA	NA	NA	NA	NA	0.74					14.9	338	1.85	930	<0.05	<0.05		160	<0.1	217		14.8		56.2		8.14		433		6.0		
MW-12	10/30/2001	14.2	2.850	0.14	-127.1	6.8	0.57					5.7	309	1.35	590	0.18	<0.05		110	3.5			4.73		37.0		4.69		342		5.0		
MW-12	10/25/2006	13.7	3.500	1.26	-127.1	6.9	0.024					6.5	333	1.55	1,300	<0.05	<0.05		110	<0.1			7.50		44.8		6.02		684		4.5		
MW-12	11/28/2007	11.2	3.307	0.18	-302	7.0	0.012					4.0	274	1.47	1,300	<0.05	<0.05		79	<0.04			6.68		46.0		4.44		666		3.9		
MW-12	11/4/2008	14.3	6.319	0.02	-88	6.7	0.12					2.74	332	2.08	2,000	<0.05	<0.05		138	<0.1	259		13.70		69.7		7.82		1110		5.6		
MW-12	3/16/2009	6.1	4.516	1.08	-48	6.6	0.87					NM	270	1.89	2,300	<0.05	<0.05		140	<0.1	269		11.50		81.7		8.60		1060		5.1		
MW-12	7/16/2009	14.5	6.493	0.64	-39.3	6.7	0.9					14	360	2.57	2,480	<0.6	<0.6		148	0.8				15.10		79.1		9.07		1,170		10.9	10.9
MW-12	4/28/2010	8.8	6.562	0.32	-46.1	6.6	0.46					5.0	315	NA	2,630	<0.05	0.039		153	<1.0				14.0		98.0		10.40		1,470		5.22	5.22
MW-12	4/20/2011	8.83	6.320	0.00	-65	6.9	0.042					3.3	272	1.1	1,880	<0.05	<0.05		108	<1.0	227		6.6		65.1		7.1		958		3.7		
MW-12	4/18/2012	10.02	7.920	0.59	-74	7.0	0.3	0.011	0.011	15	0.76	3.7	280	1.8	2,900	<0.05	<0.05		133	<1.0			12.7		84.3		9.1		1250		3.7		ND
MW-13	8/8/2001	15.4	5.742	0.23	-118.5	7.8	0.08					15.2	255	1.45	1,900	0.05	<0.05		160	<0.1	209		2.59		49.6		2.67		1,200		12.1		
MW-13	10/29/2001	15.5	6.625	0.20	-136	7.4	0.07					9.9	426	1.29	1,700	0.61	0.08		120	2.2			3.75		40.9		2.96		1,160		8.2		
MW-13	10/24/2006	15.2	6.090	2.67	-146	7.3	0.16					8.4	431	1.35	2,200	<0.05	<0.05		98	<0.1			9.21		53.7		6.03		1,210		9.1		
MW-13	11/28/2007	12.7	5.696	0.08	-274	7.3	0.003					7.0	420	1.74	2,200	0.05	<0.05		95	0.4			7.83		50.8		4.95		1,250		9.6		
MW-13	11/5/2008	7.08	6.782	0.12	-97	7.1	0.021					3.8	410	1.57	2,000	<0.05	<0.5		91	<0.1	196		7.60		52.3		5.40		1,430		11.0		
MW-13	7/16/2009	16.0	6.476	0.60	-113.4	7.2	6.15					15	400	2.10	2,290	<0.6	<0.6		112	<0.5				1.75		53.9		6.51		1,390		18.9	18.9
MW-13	4/28/2010	9.4	5.783	0.28	-133.5	7.2	0.17					6.1	382	NA	2,280	0.069	<0.05		102	<1.0				9.12		59.9		7.18		1,380		11.2	11.2
MW-13	4/21/2011	7.64	5.023	0.34	-336	7.4	0.058					5.8	368	0.94	2,090	0.069	<0.05		105	<0.1	210		7.4		53.2		6.30		1,320		8.3		
MW-13 DUP	4/19/2012	10.7	5.480	0.00	-120	7.4	0.093	0.0086	0.008	4.5	0.79	4	360	0.96	1,490	0.081	<0.05		71.3	<0.1			5.8		38.5		4.40		940		5.4		ND
MW-14	8/9/2001	11.5	2.064	3.66	330.7	7.2	<0.002					14.1	328	0.19	680	0.08	<0.05		130	<0.1	144		0.18		64.1		0.04		394		6.4		
MW-14	10/30/2001	13.2	2.478	0.80	-39.1	7.2	0.013					4.3	334	0.31	770	<0.05	<0.05		120	2.5			0.06		64.8		0.06		466		7.3		
MW-14	10/24/2006	12.9	4.310	3.11	-60.6	7.2	0.31					3.3	336	0.25	1,700	<0.05	<0.05		88	<0.1			0.15		94.9		0.20		831		8.0		
MW-14	11/29/2007	10.3	4.402	1.27	-110	7.1	0.16					4.0	371	0.53	1,800	<0.05	<0.05		87	0.12			0.44		111		0.25		777		10.5		
MW-14	11/4/2008	14.5	6.397	0.13	11.2	6.8	0.14					2.4	340	0.39	2,100	<0.05	<0.05		80	<0.1	320		0.39		138		0.28		1010		13.5		
MW-14	2/24/2009	5.3	3.534	0.73	-34	7.2	0.15					NM	299	0.23	1,500	0.07	<0.05		68	<0.1	165		0.06		79.8		0.18		833		7.3		
MW-14	7/16/2009	11.6	5.970	1.87	72.6	6.8	0.465					51	380	0.69	2,430	<0.6	<0.6		81.4	1.2				0.11		132		0.53		931		21.1	21.1
MW-14	4/27/2010	9.8	3.726	0.32	16.8	7.1	0.055					2.7	354	NA	1,450	0.03	<0.05		65.7	<1.0				0.06		70.2		0.194		870		6.22	6.22
MW-14	4/21/2011	7.72	3.779	2.45	-335	7.5	0.016					2.8	339	0.14	1,750	0.093	<0.05		78.2	<0.1	149		0.052		68		0.19		875		5.4		
MW-14	4/19/2012	10.85	5.460	0.00	-9	7.3	0.071	0.0086	0.0083	2.9	6.7	1.5	328	0.25	1,720	<0.05	<0.05		88.2	<0.1			0.140		86.7		0.29		916		6.2		ND
MW-15	8/8/2001	13.0	2011.000	0.20	289.1	6.7	<0.002					11.7	410	0.08	600	1.34	<0.05		160	0.1	281		2.33		70.4		0.46		204		4.9		
MW-15	10/30/2001	14.6	1656.000	0.16	83.9	6.8	<0.002					4.1	395	0.07	410	0.85	<0.05		110	1.4			0.02		47.5		0.40		196		3.8		
MW-15 DUP	10/30/2001	NA	NA	NA	NA	NA	<0.002					3.7	386	0.05	450	0.91	<0.05		110	1.5			0.03		47.6		0.39		198		4.0		
MW-15	10/24/2006	13.9	2.180	1.14	64.2	6.8	<0.002					3.6	434	0.09	660	1.89	<0.05		84	<0.1			<0.02		62.3		0.27		311		4.7		
MW-15	11/28/2007	11.7	3.085	3.16	-128	7.1	<0.002					2.0	346	1.03	1100	<0.05	<0.05		74	<0.04			0.14		71.7		0.39		455		4.9		
MW-15 DUP	11/4/2008	14.3	4.719	2.42	75	6.8	<0.002					1.77	345	0.07	1,900	0.34	<0.05		110	<0.1	327		<0.02		82.3		0.82		594		6.1		
MW-15	7/16/2009	14.6	3.349	1.49	135.7	6.8	<0.004					12	400	<0.1	1,130	1.7	<0.6		88.7	1.6				0.02		65.0		0.14		475		7.94	7.94
MW-15	4/28/2010	9.5	1.998	0.35	41.1	6.8	<0.0022					3.3	419	NA	627	1.03	<0.02		66.0	<0.7				<0.019		48.2		0.13		318		3.14	3.14
MW-15	4/21/2011	7.71	2.294	2.43	-328	6.8	<0.0022					3.5	394	<0.02	895	0.95	<0.02		86.7	<0.1	217		0.02		55.5		0.24		390		3.7		
MW-15	4/18/2012	10.95	3.537	4.77	385.1	7.1	0.00047	0.00078	0.00064	11	0.82	2	384	<0.02	962	0.73	<0.02		111	<0.1			<0.05		54.4		0.24		424		3.3		ND
TK-2	10/6/1999	13.3	7.02	0.19	66.9	7.5							380		20.2																		

Notes:
1. In general the field parameters were stable with very little variation. However, as noted, some readings varied.
2. Readings were collected using a low flow peristalic pump and water quailty meter with flow through cell..
3. Analytical Testing completed by TestAmerica Laboratories, Inc.
3. Results shown for MW-13 are the higher of the results from the sample designated MW-13 or its duplicate sample (DUP).
4. < - Indicates compound not detected above the specified detection limit.
5. Blank = Not tested.
6. NM = not measured
7. ND = non-detect for tested volatile fatty acids: acetic acid, formic acid, lactic acid, n-Butyric acid, propionic acid, and pyruvic acid.
8. All tested volatile fatty acids = ND; except acetic acid (4.2 ppm) and n-Butyric acid (0.62 ppm).
9. Water quality readings were recollected on 5/4/2012 due to lack of DO readings collected with initial water quality meter.

FIGURES



MW-7

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
4/30/96	1300	<0.5	37	1.8
6/20/96	1100	<0.5	24	2.4
10/30/96	790	<0.5	32	2.3
11/21/96	850	<0.5	35	3.1
8/28/97	820	<0.2	22	1.1
10/10/97	720	<0.2	43	4.8
12/3/98	570	<0.2	55	4.2
10/7/99	540	<0.05	41	3.5
4/7/03	75	<0.2	45	3
10/25/06	260	0.077	36	1.7
11/29/07	434	0.049	40	3.2
11/5/08	1.1	<0.2	70	2.6
2/24/09	530	0.071	56	3.6
7/15/09	618	0.112	58.3	2.5
4/29/10	800	0.14	55.2	9.0
4/22/11	680	<1.8	42.0	<4.5
4/20/12	730	<1.8	43.0	<4.5

MW-8

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
10/30/96	0.20	0.024	1.5	0.047
11/21/96	0.22	0.022	2.6	0.049
8/28/97	0.30	0.028	2.8	0.062
10/10/97	0.35	0.018	4.3	0.110
12/2/98	0.22	0.012	1.6	0.062
10/7/99	0.20	0.011	2.802	0.180
7/15/09	0.05	0.005	0.865	0.100
4/30/10	0.11	0.013	1.300	0.120
4/22/11	0.078	0.0077	0.813	0.120

MW-4

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
4/30/96	32	<0.5	170	40
6/20/96	19	<0.5	110	19
6/20/96	19	<0.5	120	20
10/30/96	34	<0.5	120	14
10/30/96	36	<0.5	120	13
11/21/96	37	<0.5	120	18
8/28/97	29	<0.2	100	14
10/10/97	33	<0.2	110	27
12/2/98	21	<0.2	110	12
12/2/98	20	<0.2	120	13
10/7/99	20	<0.05	100.14	14
8/9/01	30	0.003	93.28	18
10/31/01	22	<0.002	84.25	18
4/7/03	39	.08	110	26
7/20/09	23	<0.05	41.5	6.7
4/29/10	20	0.0012	43.2	9.6
4/22/11	24	0.0018	50.0	12.0
4/20/12	18	0.0014	42.16	9.1

MW-9

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
10/30/96	2.2	0.21	3.3	0.1
11/21/96	2	0.06	3.2	0.16
11/21/96	1.9	0.07	2.9	0.15
8/28/97	1.4	0.027	2.5	0.056
10/10/97	1.6	0.047	2.7	0.12
12/2/98	1.9	0.066	2.5	0.030
10/5/99	1.2	0.062	1.508	0.091
10/5/99	1.4	0.058	1.608	0.11
7/20/09	3.3	0.186	1.700	<0.05
4/30/10	2.2	0.160	1.100	0.031
4/22/11	2.3	0.180	1.105	0.032

MW-10

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
10/30/96	0.98	0.12	1.8	0.11
11/21/96	0.87	0.22	1.7	<0.1
8/28/97	0.38	0.16	1.1	0.070
10/10/97	0.35	0.28	0.76	0.047
12/1/98	0.46	0.016	1.3	0.11
10/6/99	0.23	0.24	0.722	0.200
8/9/01	0.21	0.21	0.514	0.057
10/31/01	0.25	0.023	0.473	0.053
7/15/09	0.079	0.118	0.275	0.044
4/28/10	0.024	0.026	0.153	0.042
4/21/11	0.088	0.067	0.232	0.027
4/19/12	0.150	0.077	0.300	0.035

MW-14

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/10/01	<0.002	<0.002	0.005	<0.002
10/30/01	<0.002	<0.002	0.004	<0.002
10/24/06	<0.002	<0.002	<0.002	<0.002
11/29/07	<0.002	<0.002	0.010	<0.002
11/4/08	<0.002	<0.002	0.008	0.003
2/24/09	0.016	<0.002	0.002	<0.002
7/16/09	0.020	<0.005	0.028	<0.005
4/27/10	<0.0005	<0.0004	<0.0008	<0.0009
4/21/11	<0.0005	<0.0004	<0.0008	<0.0009
4/19/12	<0.0005	<0.0004	0.0012	0.0011

MW-15

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/8/01	<0.002	0.013	<0.002	<0.002
10/30/01	<0.002	0.018	<0.002	<0.002
10/30/01	<0.002	0.020	<0.002	<0.002
1/12/05	<0.002	0.006	<0.002	<0.002
10/24/06	<0.002	0.007	<0.002	<0.002
11/28/07	<0.002	0.007	<0.002	<0.002
11/4/08	<0.002	0.0059	<0.002	<0.002
7/16/09	<0.005	0.0097	<0.005	<0.005
4/28/10	0.0007	0.0077	<0.0008	<0.0009
4/21/11	0.0007	0.0067	<0.0008	<0.0009
4/18/12	0.0007	0.0081	<0.0008	<0.0009

MW-12

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/28/97	<0.0005	<0.0005	0.089	0.11
8/28/97	<0.0005	<0.0005	0.13	0.19
10/10/97	<0.0005	<0.0005	0.16	0.17
12/1/98	<0.0005	<0.0005	0.047	0.088
10/6/99	<0.0005	<0.0005	0.027	0.032
8/8/01	<0.002	<0.002	0.14	0.13
8/8/01	<0.002	<0.002	0.13	0.12
10/30/01	<0.002	<0.002	0.032	0.011
1/12/05	<0.002	<0.002	0.026	0.033
10/25/06	<0.002	<0.002	0.015	0.033
11/28/07	<0.002	<0.002	0.011	0.014
11/4/08	<0.002	<0.002	0.044	0.091
3/16/09	0.005	0.002	0.150	0.081
7/16/09	<0.005	<0.005	0.132	0.141
4/28/10	0.0028	0.0011	0.272	0.120
4/20/11	0.0012	<0.0004	0.096	0.037
4/18/12	0.0008	<0.0004	0.150	0.120

MW-11

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/28/97	<0.0005	<0.0005	0.0045	0.0039
10/10/97	<0.0005	<0.0005	0.0032	0.0012
10/10/97	<0.0005	<0.0005	0.0030	0.0010
12/1/98	<0.0005	<0.0005	0.013	0.0046
10/5/99	<0.0005	<0.0005	0.010	0.0019
8/8/01	<0.002	<0.002	0.009	0.008
10/30/01	<0.002	<0.002	0.008	0.006
1/12/05	<0.002	<0.002	<0.002	<0.002
10/24/06	<0.002	<0.002	<0.002	<0.002
11/28/07	<0.002	<0.002	0.002	0.003
11/4/08	<0.002	<0.002	0.003	0.0058
7/16/09	<0.005	<0.005	<0.005	<0.005
4/28/10	<0.0005	<0.0004	0.0019	0.0039
4/21/11	<0.0005	<0.0004	<0.0008	<0.0009
4/19/12	<0.0005	<0.0004	0.0014	0.0026

MW-13

DATE	TCE mg/l	PCE mg/l	1,2-DCE mg/l	VC mg/l
8/8/01	<0.002	<0.002	<0.002	<0.002
10/29/01	<0.002	<0.002	<0.002	<0.002
1/12/05	<0.002	<0.002	<0.002	<0.002
10/24/06	0.002	<0.002	<0.002	<0.002
11/28/07	<0.002	<0.002	<0.002	<0.002
11/5/08	<0.002	<0.002	<0.002	<0.002
7/16/09	<0.005	<0.005	<0.005	<0.005
4/28/10	<0.0005	<0.0004	<0.0008	<0.0009
4/21/11	<0.0005	<0.0004	<0.0008	<0.0009
4/19/12	<0.0005	<0.0004	<0.0008	<0.0009

NOTES:

1. BASE MAP ADAPTED FROM A 2005 AERIAL PHOTOGRAPH DOWNLOADED FROM http://www.nysgis.state.ny.us/gateway/mg/interactive_main.html AND SITE OBSERVATIONS.

2. ANALYTICAL TESTING WAS COMPLETED BY FREE-COL LABORATORIES, INC.

3. UNITS ARE LISTED IN MILLIGRAMS PER LITER (mg/l). (< - INDICATES COMPOUND NOT DETECTED ABOVE THE SPECIFIED DETECTION LIMIT)

4. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

LEGEND:

MW-8 — APPROXIMATE LOCATION AND DESIGNATION OF MONITORING WELL INSTALLED BY GZA

▲SS-1 — APPROXIMATE LOCATION AND DESIGNATION OF STREAM WATER SAMPLE

AOC — DENOTES AREA OF CONCERN

TCE = TRICHLOROETHENE

PCE = TETRACHLOROETHENE

1,2-DCE = TRANS & CIS 1,2-DICHLOROETHENE

VC = VINYL CHLORIDE

DRAWN BY: DEW

DATE: MAY 2012

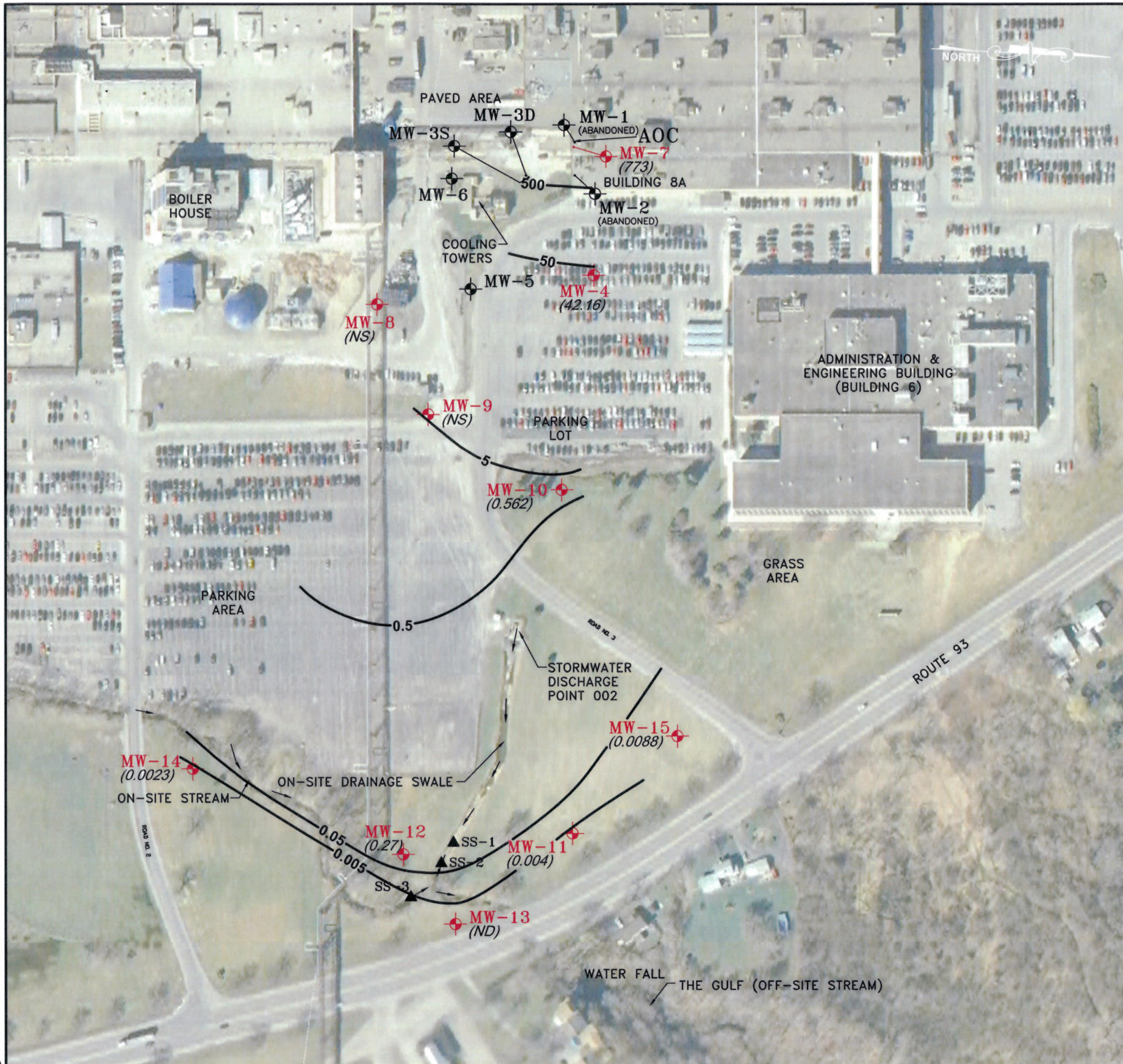
GZA GeoEnvironmental of New York

APPROXIMATE SCALE IN FEET
0 90 180 360

GM COMPONENTS HOLDINGS, LLC
DELPHI HARRISON THERMAL SYSTEMS SITE
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK
APRIL 2012 SAMPLING
GROUNDWATER ANALYTICAL TEST RESULTS FOR TARGET CHLORINATED COMPOUNDS

PROJECT No.
21.0056546.00

FIGURE No.
1



NOTES:

1. BASE MAP ADAPTED FROM A 2005 AERIAL PHOTOGRAPH DOWNLOADED FROM http://www.nysgis.state.ny.us/gateway/mg/interactive_main.html AND SITE OBSERVATIONS.

2. ANALYTICAL TESTING WAS COMPLETED BY FREE-COL LABORATORIES, INC.

3. UNITS ARE LISTED IN MILLIGRAMS PER LITER (mg/l). (< - INDICATES COMPOUND NOT DETECTED ABOVE THE SPECIFIED DETECTION LIMIT)

4. THE SIZE AND LOCATION OF EXISTING SITE FEATURES SHOULD BE CONSIDERED APPROXIMATE.

LEGEND:

- 50 — APPROXIMATE LOCATION AND CONCENTRATION OF TOTAL VOC CONTOUR
- MW-4 (42.16) — APPROXIMATE LOCATION AND DESIGNATION OF MONITORING WELL INSTALLED BY GZA SHOWN WITH TOTAL VOC CONCENTRATION
- ▲SS-1 — APPROXIMATE LOCATION AND DESIGNATION OF STREAM WATER SAMPLE
- AOC — DENOTES AREA OF CONCERN
- NS = NOT SAMPLED

DRAWN BY: DEW

DATE: MAY 2012

GZA GeoEnvironmental of New York

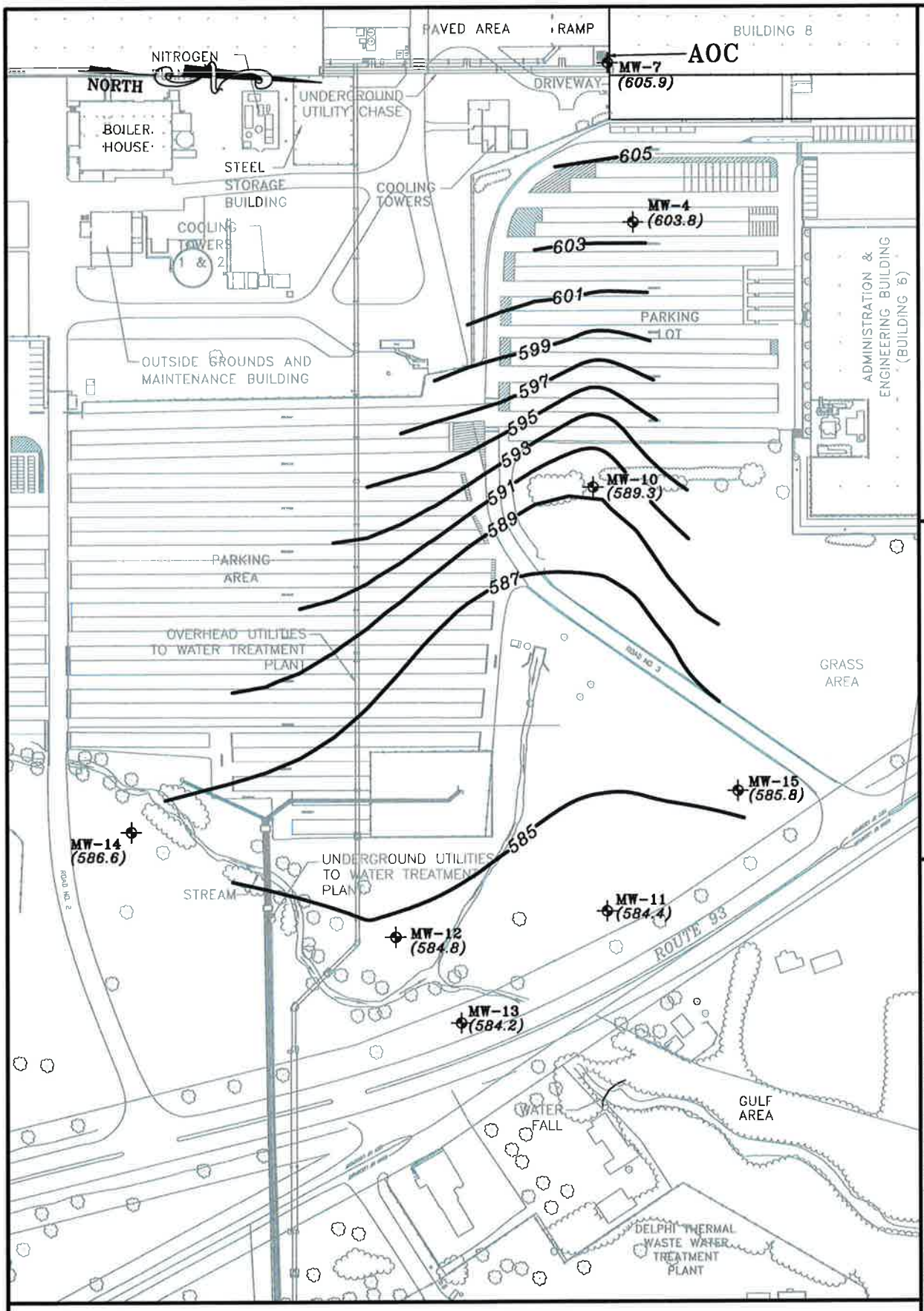
APPROXIMATE SCALE IN FEET: 0 90 180 360

GM COMPONENTS HOLDINGS, LLC
DELPHI HARRISON THERMAL SYSTEMS SITE
200 UPPER MOUNTAIN ROAD
LOCKPORT, NEW YORK
APRIL 2012 SAMPLING

TOTAL VOC CONTOUR MAP

PROJECT No. 21.0056546.00

FIGURE No. 2



LEGEND:

MW-4 (603.8) ⌖ APPROXIMATE LOCATION AND DESIGNATION OF EXISTING MONITORING WELL INSTALLED BY GZA

APPROXIMATE GROUNDWATER ELEVATION MEASURED ON DATE SHOWN IN TITLE BLOCK

AOC DENOTES AREA OF CONCERN

NOTES:

1. BASE MAP ADAPTED FROM AN AUTOCAD FILE PROVIDED BY DELPHI HARRISON THERMAL SYSTEMS.

2. WATER LEVEL READINGS HAVE BEEN MADE IN WELLS AT TIMES AND UNDER CONDITIONS PRESENTED IN THE REPORT. FLUCTUATIONS IN GROUNDWATER ELEVATIONS MAY occur DUE TO VARIATIONS IN RAINFALL, BAROMETRIC PRESSURE, AND OTHER FACTORS.

DRAWN BY: DEW

DATE: MAY 2012

GZA GeoEnvironmental of New York

SCALE IN FEET

0 100 200 400

GM COMPONENTS HOLDINGS, LLC

DELPHI HARRISON THERMAL SYSTEMS SITE

200 UPPER MOUNTAIN ROAD

LOCKPORT, NEW YORK

APRIL 2012 SAMPLING

GROUNDWATER CONTOUR PLAN (APRIL 18-20, 2012)

PROJECT No.

21.0056546.00

FIGURE No.

3

GZA-T:\PROJECTS\56500s\56546 GM Component LLC\TCE Release Area MNA Sampling\2012 Figures\FIGURE 3 GW CONTOURS.dwg [FIGURE 3] June 14, 2012 - 12:03pm daniel.wulf

APPENDIX A

MONITORING WELL OBSERVATION & GROUNDWATER SAMPLING LOGS

SAMPLE COLLECTION DATA SHEET - GROUNDWATER SAMPLING PROGRAM

PROJECT NAME: Delphi Harrison Thermal Systems Site

PROJECT NO.: 56546

SAMPLING CREW MEMBERS: T. Bohler

SUPERVISOR: C. Boron

DATE OF SAMPLE COLLECTION: 4/18/12 - 4/20/12

[Note: For 2" dia. well, 1 ft. = 0.14 gal (imp) or 0.16 gal (us)]

Sample I.D. Number	Well No.	Measuring Point Elev. (ft. AMSL)	Bottom Depth (ft. btoc)	Water Depth (ft. btoc)	Water Elevation (ft. AMSL)	Well Volume (gallons)	Bailer Volume No. Bails	Volume Purged (gallons)	Field pH	Field Temp.	Field Cond.	Time	Sample Description & Analysis
MW-15-041812-0900	MW-15	594.04	16.83	8.23	585.81	8.60' / 1.4	/	8.0	7.07	9.84	3.34	4/18 930	MW-15 GW
MW-11-041812-1245	MW-11	590.10	25.10	5.66	584.44	19.44' / 3.2	/	5.2	7.60	10.86	1.45	4/18 1245	MW-11 GW
MW-12-041812-1530	MW-12	590.70	16.40	5.92	584.78	10.48' / 1.7	/	7.0	6.98	10.22	7.92	4/18 1530	MW-12 GW
MW-13-041912-0845	MW-13	589.02	14.06	4.80	584.22	9.26' / 1.5	/	11.0	7.36	10.70	5.48	4/19 845	MW-13 GW
MW-14-041912-1315	MW-14	592.77	21.36	6.21	586.56	15.15' / 2.5	/	10.0	7.34	10.85	5.46	4/19 1345	MW-14 GW
MW-10-041912-1520	MW-10	604.70	23.68	15.43	589.27	8.25 / 1.3	/	6.0	6.96	15.35	11.1	4/19 1520	MW-10 GW
DUP-041912-0001	MW-13	589.02	14.06	4.80	584.22	9.26' / 1.5	/	11.0	7.36	10.70	5.48	845	DUP GW
MW-4-042012-1300	MW-4	613.07	34.88	9.29	603.78	25.59' / 4.2	/	12.0	6.67	17.64	9.26	1300	MW-4 GW

Additional Comments:

Copies to:

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

SAMPLE COLLECTION DATA SHEET - GROUNDWATER SAMPLING PROGRAM

PROJECT NAME Delphi Harrison Thermal Systems Site - GMCH PROJECT NO. 56546

SAMPLING CREW MEMBERS Thomas Bohlen SUPERVISOR C. Boron

DATE OF SAMPLE COLLECTION 4/18/12 - 4/20/12

[Note: For 2" dia. well, 1 ft. = 0.14 gal (imp) or 0.16 gal (us)]

Sample I.D. Number	Well No.	Measuring Point Elev. (ft. AMSL)	Bottom Depth (ft. btoc)	Water Depth (ft. btoc)	Water Elevation (ft. AMSL)	Well Volume (gallons)	Bailer Volume No. Bails	Volume Purged (gallons)	Field pH	Field Temp.	Field Cond.	Time	Sample Description & Analysis
MW-7-042012-1630	MW-7	613.86	28.93	7.99'	605.87	28.94' / 3.4		5.0	7.49	15.42	1.83	1516	MW-7 GW

Additional Comments:

Copies to:

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

Revision 2 October 29, 2002

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site

Ref. No.: 56546

Date: 4/20/12

Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-4 page 1 of 2

Measurement Point: TOR

Constructed Well Depth (ft): 32.5'

Measured Well Depth (ft): 34.88' (32.61' bgs)

Depth of Sediment (ft): NA

Screen Length (ft): 17.5 - 32.5 = (15')

Depth to Pump Intake (ft)(1): 20'

Well Diameter, D (in): 2"

Well Screen Volume, V_s (mL)(2): 4.2 gal

Initial Depth to Water (ft): 9.29' (TOR)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level(3) (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp ~~(mL)~~ gal	No. of Well Screen Volumes Purged(4)
759	118 *	10.65	1.36	6.57	13.27	9.48	231	0.00	42.1	0.1	
804			10.74	1.45	6.71	13.31	9.46	169	0.00	14.0	0.2	
810			10.78	1.49	6.72	13.32	9.45	127	0.00	10.4	0.4	
829			11.09	1.80	6.72	13.39	9.50	75	0.00	10.7	1	
833			11.13	1.84	6.72	13.42	9.51	57	0.00	9.9	1.2	
842			11.29	2.00	6.72	13.71	9.55	17	0.00	5.1	1.5	
852			11.44	2.15	6.72	13.96	9.57	8	0.00	4.8	2	
915			11.73	2.44	6.72	14.24	9.57	-3	0.00	1.6	2.8	
932			11.89	2.60	6.72	14.52	9.56	-5	0.00	0.0	3.4	
948			11.99	2.70	6.72	14.92	9.54	-7	0.00	0.0	4	
1014			12.19	2.90	6.71	15.48	9.50	-8	0.00	0.0	5	1
1039			12.25	2.96	6.72	15.76	9.52	-10	0.00	0.0	5.9	
1049			12.25	2.96	6.72	16.10	9.47	-9	0.00	0.0	6.1	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p^*(D/2)^{2*}(5^*12)^*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

* calculated using 2L Bottle & stopwatch

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site

Ref. No.: 56546

Date: 4/20/12

Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-4 page 2 of 2

Measurement Point: TOR

Constructed Well Depth (ft): 32.5'

Measured Well Depth (ft): 34.88 (32.61' bgs)

Depth of Sediment (ft): NA

Screen Length (ft): 17.5 - 32.5 (15')

Depth to Pump Intake (ft)(1): 20'

Well Diameter, D (in): 2"

Well Screen Volume, V_s (mL)(2): 4.2 gal

Initial Depth to Water (ft): 9.29' (TOR)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level(3) (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged(4)
1056	118	12.25	2.96	6.72	16.80	9.34	-10	0.00	0.0	6.4	
1113	↓	12.25	2.96	6.71	17.83	9.18	-11	0.00	0.0	7.0	
1130	↓	12.25	2.96	6.71	18.02	9.18	-10	0.00	0.0	7.6	
1158	↓	12.25	2.96	6.70	19.40	8.88	-11	0.00	0.0	8.7	2
1210	↓	12.25	2.96	6.70	17.28	9.36	-10	0.00	0.0	9.1	
1225	↓	12.25	2.96	6.68	16.87	9.42	-10	0.00	0.0	9.3	
1242	↓	12.25	2.96	6.67	17.64	9.26	-8	0.00	0.0	10.2	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = pi*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

WELL PURGING FIELD INFORMATION FORM

JOB# 5 6 5 4 6 -

SITE/PROJECT NAME: Delphi Harrison Thermal Systems Site

WELL# M W - 4

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WATER VOL IN CASING (LITRES/GALLONS)	ACTUAL VOLUME PURGED (LITRES/GALLONS)
04/20/12	04/20/12	42	125

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	B	A - SUBMERSIBLE PUMP B - PERISTALTIC PUMP	D - GAS LIFT PUMP E - PURGE PUMP	G - BAILER H - WATERRA®	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	B	B - BLADDER PUMP	F - DIPPER BOTTLE		X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E	C - POLYPROPYLENE			X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	F - SILICONE G - COMBINATION TEFLON/POLYPROPYLENE	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E	C - ROPE	X- (SPECIFY)		X- SAMPLING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

WELL ELEVATION	613.07 (m/ft)	GROUNDWATER ELEVATION	603.78 (m/ft)
DEPTH TO WATER	9.20 (m/ft)	WELL DEPTH	34.88 (m/ft)

pH	TURBIDITY	CONDUCTIVITY	ORP	DO	SAMPLE TEMPERATURE
(std)	(ntu)	(µmho/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmho/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmho/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmho/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmho/cm) AT 25°C	(mV)	(mg/L)	(°C)

FIELD COMMENTS

SAMPLE APPEARANCE: Good ODOR: None COLOR: Clear TURBIDITY: Clear

WEATHER CONDITIONS: WIND SPEED 0-5 DIRECTION SW PRECIPITATION Y/N OUTLOOK Sunny ~60°F

SPECIFIC COMMENTS

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE PROTOCOLS

DATE	PRINT	SIGNATURE
4/20/12	Thomas Bohlen	Thomas Bohlen

EMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems SNE
Ref. No.: 56546.24

Date: 5/4/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-4 1 of 2
Measurement Point: TOR
Constructed Well Depth (ft): 32.5'
Measured Well Depth (ft): ~~32.40~~ 34.88' (TOR)
Depth of Sediment (ft):

Screen Length (ft): 17.5' - 32.5' = 15'
Depth to Pump Intake (ft)[1]: 20'
Well Diameter, D (in): 2"
Well ~~Screen~~ Volume, V_s ~~(mL)~~ (gal)[2]: 3.1 4.2
Initial Depth to Water (ft): 9.14

Emptied Flow-Through Cell

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged[4]
1023	151	10.05	0.91	6.51	14.81	9.984	173.6	8.07	8.6	0	
1028		10.38	1.24	6.20	14.59	10.01	197.4	5.38	27.5	0.1	
1033		10.63	1.49	6.02	14.30	10.01	219.6	5.65	48.8	0.2	
1038		10.79	1.65	6.09	14.01	10.02	238.7	5.60	40.6	0.3	
1043		10.91	1.77	6.04	13.91	10.02	257.2	6.03	29.6	0.7	
1048		11.04	1.90	6.04	13.96	10.02	248.4	6.03	30.3	1.0	
1053		11.14	2.00	6.04	13.98	10.01	235.0	6.04	23.4	1.2	
1058		11.30	2.16	6.06	14.16	10.00	210.0	5.87	4.9	1.3	
1103		11.43	2.29	6.06	14.10	10.02	192.0	5.80	19.0	1.6	
1108		11.52	2.38	6.06	13.98	10.05	91.0	5.77	14.1	1.8	
1113		11.59	2.45	6.07	14.13	10.06	62.7	5.71	6.7	2.1	
1123		12.02	2.88	6.14	13.91	10.12	39.4	6.18	4.2	2.5	
1128	↓	11.95	2.81	6.08	14.40	10.09	41.4	6.08	0.0	2.8	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Sys. Site
Ref. No.: 56546.24

Date: 5/4/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-4- 2 of 2
Measurement Point: TOR
Constructed Well Depth (ft): 32.5
Measured Well Depth (ft): 34.88' TOR
Depth of Sediment (ft):

Screen Length (ft): 15'
Depth to Pump Intake (ft)[1]: 20'
Well Diameter, D (in): 2"
Well ~~Screen~~ Volume, V_s ~~(gal.)~~ (gal)[2]: 4.2
Initial Depth to Water (ft): 9.14'

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged[4]
11:33	151	11.95	2.81	6.09	14.45	10.10	40.4	6.08	0.0	3.0	
11:38	↓	11.95	2.81	6.09	14.50	10.13	40.5	6.00	0.0		

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged= Vp/Vs

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site
Ref. No.: 56546
Date: 4/20/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-7
Measurement Point: TOR
Constructed Well Depth (ft): 27.20
Measured Well Depth (ft): 28.93 (27.37 bgs)
Depth of Sediment (ft): NA

Screen Length (ft): 12.2 - 27.2 = 15'
Depth to Pump Intake (ft)(1): 22'
Well Diameter, D (in): 2"
Well Screen Volume, V_s (~~mL~~)(2): 3.4 gal
Initial Depth to Water (ft): 7.99 (TOR)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level(3) (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (~~mL~~) gal	No. of Well Screen Volumes Purged(4)
1431	118 *	8.97	1.01	7.59	17.17	1.83	130	1.12	7.1	0.1	
1436	↓	9.81	1.82	7.56	16.57	1.84	117	0.00	6.1	0.2	
1441		10.94	2.95	7.53	16.18	1.82	104	0.00	4.8	0.4	
1446	↓	11.51	3.52	7.52	16.15	1.81	94	0.00	3.8	0.6	
1451	303	12.31	4.32	7.50	16.22	1.82	47	0.00	2.3	1	
1456	↓	14.06	6.07	7.45	15.32	1.87	-7	0.00	2.4	1.4	
1501	454	16.10	8.11	7.41	15.00	1.90	-32	0.00	1.9	2	
1506	530	18.35	10.36	7.40	14.99	1.92	-37	0.00	38.0	2.7	
1511	↓	20.35	12.36	7.41	15.07	1.91	-36	0.00	86.3	3.3	
1516	↓	22.26	14.27	7.49	15.42	1.83	-34	0.00	82.1	4.0	~1 - DRY
1620		18.76	10.77								✶

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

*: calculated w/ 2L bottle & stopwatch
✶: well went dry, then allowed to recharge & sample

WELL PURGING FIELD INFORMATION FORM

JOB# 56546 -

SITE/PROJECT NAME: Delphi Harrison Thermal Sys. Site

WELL# MW-7

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WATER VOL IN CASING (LITRES/GALLONS)	ACTUAL VOLUME PURGED (LITRES/GALLONS)
04/20/12	04/20/12	3.4	50

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	B	A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP	D - GAS LIFT PUMP; E - PURGE PUMP	G - BAILER; H - WATERRAS	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	D	C - BLADDER PUMP	F - DIPPER BOTTLE		X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON; B - STAINLESS STEEL	D - PVC; E - POLYETHYLENE		X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E	C - POLYPROPYLENE			X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON; B - TYGON	D - POLYPROPYLENE; E - POLYETHYLENE	F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E	C - PUMP X- (SPECIFY)			X- SAMPLING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

WELL ELEVATION	613.86 (m/ft)	GROUNDWATER ELEVATION	605.87 (m/ft)
DEPTH TO WATER	7.99 (m/ft)	WELL DEPTH	21.93 (m/ft)

pH	TURBIDITY	CONDUCTIVITY	ORP	DO	SAMPLE TEMPERATURE
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)

FIELD COMMENTS

SAMPLE APPEARANCE: Good ODOR: none COLOR: Clear TURBIDITY: Clear

WEATHER CONDITIONS: WIND SPEED: 10-15 DIRECTION: SW PRECIPITATION Y/N OUTLOOK: Sunny ~ 65°F

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE GM PROTOCOLS

DATE	PRINT	SIGNATURE
4/20/12	Thomas Bohlen	Thomas Bohlen

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site

Ref. No.: 56546

Date: 4/19/12

Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-10

Measurement Point: TOR

Constructed Well Depth (ft): 21.3

Measured Well Depth (ft): 23.68

Depth of Sediment (ft): NA

Screen Length (ft): 12.5-21.3 = 8.8'

Depth to Pump Intake (ft)[1]: 19'

Well Diameter, D (in): 2

Well Screen Volume, Vs (mL)[2]: 1.3 gal

Initial Depth to Water (ft): 15.43 (TOR)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged[4]
236	277*	16.31	0.88	7.08	13.69	7.02	49	0.00	44.2	0.4	
243	↓	16.31	↓	6.99	13.64	9.25	43	0.00	12.8	1.2	
252		16.31		6.98	13.69	10.30	40	0.00	4.8	2	1
258		16.31		6.98	14.63	10.5	41	0.00	3.4	2.5	
304		16.31		6.98	14.96	10.8	39	0.00	1.8	2.7	2
310		16.31		6.97	15.01	11.0	39	0.00	1.5	3.1	
316		16.31		6.96	15.35	11.1	40	0.00	1.4	3.6	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

*- calculated w/ 2L bottle & stopwatch

WELL PURGING FIELD INFORMATION FORM

JOB# 5 6 5 4 6 - [ ]

SITE/PROJECT NAME: Delphi Harrison Thermal Systems Site WELL# MW-10 [ ]

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WATER VOL IN CASING (LITRES/GALLONS)	ACTUAL VOLUME PURGED (LITRES/GALLONS)
04/19/12	04/19/12	13	60

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT ... DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT ... DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	B	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X- PURGING OTHER (SPECIFY)
		B - PERISTALTIC PUMP	E - PURGE PUMP	H - WATERRA®	
SAMPLING DEVICE	B	C - BLADDER PUMP	F - DIPPER BOTTLE		X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON	D - PVC		X- PURGING OTHER (SPECIFY)
		B - STAINLESS STEEL	E - POLYETHYLENE		
SAMPLING DEVICE	E	C - POLYPROPYLENE			X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON	D - POLYPROPYLENE	F - SILICONE	X- PURGING OTHER (SPECIFY)
		B - TYGON	E - POLYETHYLENE	G - COMBINATION TEFLON/POLYPROPYLENE	
SAMPLING DEVICE	E	C - ROPE	X- (SPECIFY)		X- SAMPLING OTHER (SPECIFY)

FILTERING DEVICES 0.45 [ ] A - IN-LINE DISPOSABLE B - PRESSURE C - VACUUM

FIELD MEASUREMENTS

WELL ELEVATION	604.70 (m/ft)	GROUNDWATER ELEVATION	589.27 (m/ft)
DEPTH TO WATER	15.43 (m/ft)	WELL DEPTH	23.68 (m/ft)

pH	TURBIDITY	CONDUCTIVITY	ORP	DO	SAMPLE TEMPERATURE
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos/cm) AT 25°C	(mV)	(mg/L)	(°C)

FIELD COMMENTS

SAMPLE APPEARANCE: Good ODOR: None COLOR: Yellow → Clear TURBIDITY: Cloudy → Clear

WEATHER CONDITIONS: WIND SPEED: 10-15 DIRECTION: SW PRECIPITATION Y/N OUTLOOK: Sunny ~ 63°F

SPECIFIC COMMENTS

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE SOP PROTOCOLS

DATE	PRINT	SIGNATURE
4/19/12	Thomas Bohlen	Thomas Bohlen

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Sys. Site
Ref. No.: 56546.24

Date: 5/4/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-10
Measurement Point: TOR
Constructed Well Depth (ft): 21.3
Measured Well Depth (ft): 23.69
Depth of Sediment (ft):

Screen Length (ft): 8.8'
Depth to Pump Intake (ft)[1]: 19'
Well Diameter, D (in): 2
Well ~~Screen~~ Volume, V_s ~~(Vol.)~~[2]: 1.5 gal
Initial Depth to Water (ft): 14.65

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged[4]
1356	151	15.39	0.74	6.44	13.99	3.380	126.1	6.61	1.02	0	
1401	↓	15.37	0.72	6.17	12.93	5.106	133.5	4.87	1.5	0.2	
1406	454	15.37		6.14	12.84	6.126	132.1	4.93	0.0	0.4	
1411	↓	15.37		6.16	12.75	6.951	131.8	5.07	3.6	1.0	
1416	303	15.37		6.06	12.74	7.424	131.0	5.08	3.3	1.3	
1421		15.37		6.06	12.66	7.977	128.0	5.13	2.0	1.7	1
1426		15.37		6.05	12.68	7.981	127.4	5.15	1.8	2.1	
1431		15.37		6.06	12.70	7.984	128.3	5.17	1.9	2.5	
1436	↓	15.37	↓	6.07	12.71	7.974	129.1	5.16	1.6	2.9	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = \pi * (D/2)^2 * (5*12) * (2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site
Ref. No.: 210056546

Date: 4/18/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-11
Measurement Point: TOR
Constructed Well Depth (ft): 24.10
Measured Well Depth (ft): 25.10 (23.70' bgs)
Depth of Sediment (ft): ~~NA~~ (0.4')

Screen Length (ft): 9-21.4 (15.1')
Depth to Pump Intake (ft)(1): 15'
Well Diameter, D (in): 2
Well Screen Volume, V_s (mL)(2): 3.17 gal
Initial Depth to Water (ft): 5.66 (TOR)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level(3) (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp ~~(mL)~~ gal	No. of Well Screen Volumes Purged(4)
1135		6.99	1.33	7.71	10.43	1.19	135	0.00	18.7	0.2	
1141		7.28	1.62	7.65	10.43	1.19	16	0.00	15.0	0.5	
1145		7.39	1.73	7.65	10.48	1.20	-27	0.00	6.7	0.8	
1151		7.46	1.80	7.65	10.57	1.21	-49	0.00	3.4	1.2	
1159		7.50	1.84	7.64	10.62	1.33	-60	0.00	1.8	1.8	
1205		7.51	1.85	7.65	10.67	1.36	-64	0.00	1.7	2.0	
1215	170 *	7.51	↓	7.64	10.74	1.39	-68	0.00	1.0	2.4	
1222	↓	7.51		7.62	10.75	1.40	-71	0.00	0.2	3.0	
1240	↓	7.51	↓	7.60	10.86	1.45	-75	0.00	0.0	4.0	1

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

* calculated using 2L bottle & stopwatch

WELL PURGING FIELD INFORMATION FORM

JOB# 56546

SITE/PROJECT NAME: Delphi Harrison Thermal Systems Site

WELL# MW-11

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WATER VOL IN CASING (LITRES / GALLONS)	ACTUAL VOLUME PURGED (LITRES / GALLONS)
04/18/12	04/18/12	32	52

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	B	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	B	B - PERISTALTIC PUMP C - BLADDER PUMP	F - PURGE PUMP F - DIPPER BOTTLE	H - WATERRAS	X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E	C - POLYPROPYLENE			X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	F - SILICONE G - COMBINATION TEFLON/POLYPROPYLENE	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E	C - ROPE	X- (SPECIFY)		X- SAMPLING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

WELL ELEVATION	591.10 (m/ft)	GROUNDWATER ELEVATION	584.44 (m/ft)
DEPTH TO WATER	5.66 (m/ft)	WELL DEPTH	21.10 (m/ft)

pH	TURBIDITY	CONDUCTIVITY	ORP	DO	SAMPLE TEMPERATURE
(std)	(ntu)	(µmhos) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µmhos) AT 25°C	(mV)	(mg/L)	(°C)

FIELD COMMENTS

SAMPLE APPEARANCE: Good ODOR: none COLOR: clear TURBIDITY: clear

WEATHER CONDITIONS: WIND SPEED: 0-5 DIRECTION: SW PRECIPITATION Y/N OUTLOOK: Sunny ~50°F

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE GM PROTOCOLS

DATE	PRINT	SIGNATURE
4/18/12	Thomas Bohlen	Thomas Bohlen

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal System Site
Ref. No.: 21.0056546

Date: 4/18/11
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-12
Measurement Point: TOR
Constructed Well Depth (ft): 15.1
Measured Well Depth (ft): 16.40 (14.8' bgs)
Depth of Sediment (ft): 0.3'

Screen Length (ft): 8-15.1 = 7.1'
Depth to Pump Intake (ft)[1]: 14.4
Well Diameter, D (in): 2
Well Screen Volume, V_s (mL)[2]: 1.7 gal
Initial Depth to Water (ft): 5.92

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, V_p ~~(mL)~~ gal	No. of Well Screen Volumes Purged[4]
225	333 *	6.24	0.32	7.07	10.64	7.09	47	8.56	66.2	0.2	
232		6.25	0.33	6.99	10.34	7.65	-50	6.88	72.0	1	
237		6.25		6.99	10.36	7.81	-60	6.10	93.1	1.2	
244		6.25		6.98	10.25	7.92	-67	4.70	89.6	2	1
252		6.25		6.97	10.19	7.98	-71	3.40	48.4	2.8	
300		6.25		6.97	10.11	7.98	-72	2.51	28.0	3.2	
305		6.25		6.98	10.11	7.96	-73	1.95	18.5	3.9	2
312		6.25		6.98	10.05	7.94	-73	1.22	10.4	4.5	
320	↓	6.25	↓	6.98	10.02	7.92	-74	0.59	3.7	5.0	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

* - calculated using 1L bottle & stopwatch

WELL PURGING FIELD INFORMATION FORM

JOB# 56546 -

SITE/PROJECT NAME: Delphi Harrison Thermal System Site

WELL# MW-12

WELL PURGING INFORMATION

04/18/12	04/18/12	11.7	70
PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WATER VOL. IN CASING (LITRES/GALLONS)	ACTUAL VOLUME PURGED (LITRES/GALLONS)

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	B	A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP	D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE	G - BAILER; H - WATERRA®	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	B				X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE	D - PVC; E - POLYETHYLENE		X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E				X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON; B - TYGON; C - ROPE; X- (SPECIFY)	D - POLYPROPYLENE; E - POLYETHYLENE	F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E				X- SAMPLING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

WELL ELEVATION	590.71	(m/ft)	GROUNDWATER ELEVATION	584.79	(m/ft)
DEPTH TO WATER	5.92	(m/ft)	WELL DEPTH	16.40	(m/ft)

pH (std)	TURBIDITY (ntu)	CONDUCTIVITY (µm/cm) AT 25°C	ORP (mV)	DO (mg/L)	SAMPLE TEMPERATURE (°C)

FIELD COMMENTS

SAMPLE APPEARANCE: Good ODOR: None COLOR: Yellow→Clear TURBIDITY: Cloudy→Clear

WEATHER CONDITIONS: WIND SPEED: 5-10 DIRECTION: SW PRECIPITATION Y/N OUTLOOK: Sunny ~50°F

SPECIFIC COMMENTS

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

4/18/12	Thomas Bohlen	Thomas Bohlen
DATE	PRINT	SIGNATURE

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site
Ref. No.: 56546

Date: 4/19/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-13
Measurement Point: TOR
Constructed Well Depth (ft): 15'
Measured Well Depth (ft): 14.06 (14.54' bgs)
Depth of Sediment (ft): 0.46'

Screen Length (ft): 8'-15' = 7'
Depth to Pump Intake (ft)(1): 12'
Well Diameter, D (in): 2
Well Screen Volume, V_s (mL)(2): 1.5
Initial Depth to Water (ft): 4.80

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level(3) (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp ~~(mL)~~ gal	No. of Well Screen Volumes Purged(4)
802	571 *	5.05	0.25	7.19	10.59	6.10	-10	0.00	75.4	0.25	
807	↓	5.05	↓	7.32	10.56	5.82	-82	0.00	13.1	1	
811		5.05		7.34	10.57	5.97	-101	0.00	3.8	1.5	1
816		5.05		7.36	10.59	5.83	-111	0.00	1.4	2.1	
822		5.05		7.34	10.60	5.68	-116	0.00	0.6	3.0	2
834		5.05		7.36	10.70	5.48	-120	0.00	0.0	4.8	3

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p^*(D/2)^{2*}(5^*12)^*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

* - calculated using 2L bottle & stopwatch

WELL PURGING FIELD INFORMATION FORM

JOB# 56546.

SITE/PROJECT NAME: Delphi Thermal Systems Site WELL# MW-13

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WATER VOL. IN CASING (LITRES/GALLONS)	ACTUAL VOLUME PURGED (LITRES/GALLONS)
04/19/12	04/19/12	1.5	11.0

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT ... DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQIPMENT ... DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: B — A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA; X- ______ PURGING OTHER (SPECIFY)

SAMPLING DEVICE: B — X- ______ SAMPLING OTHER (SPECIFY)

PURGING DEVICE: E — A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE; X- ______ PURGING OTHER (SPECIFY)

SAMPLING DEVICE: E — X- ______ SAMPLING OTHER (SPECIFY)

PURGING DEVICE: E — A - TEFLON; B - TYGON; C - ROPE; D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE; X- ______ (SPECIFY); X- ______ PURGING OTHER (SPECIFY)

SAMPLING DEVICE: E — X- ______ SAMPLING OTHER (SPECIFY)

FILTERING DEVICES 0.45 ______ A - IN-LINE DISPOSABLE; B - PRESSURE; C - VACUUM

FIELD MEASUREMENTS

WELL ELEVATION	589.02 (m/ft)		GROUNDWATER ELEVATION	584.22 (m/ft)
DEPTH TO WATER	4.80 (m/ft)		WELL DEPTH	15.00 (m/ft)

pH (std)	TURBIDITY (ntu)	CONDUCTIVITY (µmhos/cm) AT 25°C	ORP (mV)	DO (mg/L)	SAMPLE TEMPERATURE (°C)

FIELD COMMENTS

SAMPLE APPEARANCE: Good ODOR: none COLOR: Yellow - Clear TURBIDITY: Cloudy - Clear

WEATHER CONDITIONS: WIND SPEED: 5-10 DIRECTION: SW PRECIPITATION Y/N OUTLOOK: Sunny ~50°F

SPECIFIC COMMENTS

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE CRA PROTOCOLS

DATE	PRINT	SIGNATURE
4/19/12	Thomas Bohlen	Thomas Bohlen

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

Stopped pump - lengthened intake to 17' bgs

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site
Ref. No.: 56546

Date: 4/19/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-14
Measurement Point: TOR
Constructed Well Depth (ft): 19.1
Measured Well Depth (ft): 21.36 (18.99' bgs)
Depth of Sediment (ft): 0.11'

Screen Length (ft): 9.1-19.1 = 10'
Depth to Pump Intake (ft)(1): 12' / 17'
Well Diameter, D (in): 2"
Well Screen Volume, V_s (~~mL~~)(2): 2.5 gal
Initial Depth to Water (ft): 6.21' (TOR)

Time	Pumping Rate (ml/min)	Depth to Water (ft)	Drawdown from Initial Water Level(3) (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (~~mL~~ gal)	No. of Well Screen Volumes Purged(4)
1043	186 *	8.14	1.93	7.45	11.37	4.60	93	0.00	3.6	0.1	
1048		8.96	2.75	7.42	11.39	4.59	80	0.00	0.1	0.3	
1052		9.46	3.25	7.40	11.39	4.59	67	0.00	0.0	0.6	
1102		10.16	3.95	7.40	11.48	4.60	47	0.00	0.0	1	
1107		10.41	4.20	7.41	11.55	4.60	43	0.00	0.5	1.2	
1121		10.84	4.63	7.39	11.59	4.89	19	0.00	0.0	1.9	
1132		10.98	4.77	7.38	11.65	5.27	7	0.00	0.0	2.9	1
1142		11.05	4.84	7.38	11.65	5.35	4	0.00	0.6	3.2	
1154		11.16	4.95	7.37	11.71	5.42	3	0.00	0.0	4	
1206		10.29	4.08	7.24	11.71	6.69	-47	0.00	1.5	4.2	
1211		10.77	4.56	7.28	11.96	6.37	-44	0.00	1.2	4.6	
1217		10.89	4.68	7.31	12.01	6.12	-23	0.00	0.9	5.0	2
1227	↓	11.01	4.80	7.32	12.27	5.92	-11	0.00	0.6	5.2	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

* - calculated using a 1L bottle & stopwatch

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site
Ref. No.: 56546

Date: 4/19/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-14
Measurement Point: TOR
Constructed Well Depth (ft): 19.1
Measured Well Depth (ft): 21.36 (18.99' bgs)
Depth of Sediment (ft): 0.11'

Screen Length (ft): 9.1' - 19.1' = 10'
Depth to Pump Intake (ft)[1]: 12' / 17' (see note page 1)
Well Diameter, D (in): 2"
Well Screen Volume, V_s (mL)[2]: 1.5 gal
Initial Depth to Water (ft): 6.21' (TOR)

Time	Pumping Rate (ml/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp ~~(ml)~~ gal	No. of Well Screen Volumes Purged[4]
1237	380	11.03	4.82	7.32	12.01	5.83	-7	0.00	0.3	6	
1242	380	11.91	5.70	7.35	10.86	5.83	-9	0.00	0.2	6.5	
1248	186	12.78	6.57	7.37	11.05	5.21	-7	0.00	0.2	7	
1300	186	12.80	6.59	7.34	10.85	5.46	-9	0.00	0.6	7.6	3

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length. $V_s = \pi * (D/2)^2 * (5 * 12) * (2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged = Vp / Vs

WELL PURGING FIELD INFORMATION FORM

JOB# 56546 . __

SITE/PROJECT NAME: Delphi Thermal Systems Site WELL# MW-14

WELL PURGING INFORMATION

04/19/12	04/19/12	2.5	100
PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WATER VOL. IN CASING (LITRES/GALLONS)	ACTUAL VOLUME PURGED (LITRES/GALLONS)

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT DEDICATED Y (N) (CIRCLE ONE) SAMPLING EQUIPMENT DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE: B SAMPLING DEVICE: B
A - SUBMERSIBLE PUMP; B - PERISTALTIC PUMP; C - BLADDER PUMP; D - GAS LIFT PUMP; E - PURGE PUMP; F - DIPPER BOTTLE; G - BAILER; H - WATERRA®
X- ______ PURGING OTHER (SPECIFY) X- ______ SAMPLING OTHER (SPECIFY)

PURGING DEVICE: E SAMPLING DEVICE: E
A - TEFLON; B - STAINLESS STEEL; C - POLYPROPYLENE; D - PVC; E - POLYETHYLENE
X- ______ PURGING OTHER (SPECIFY) X- ______ SAMPLING OTHER (SPECIFY)

PURGING DEVICE: E SAMPLING DEVICE: E
A - TEFLON; B - TYGON; C - ROPE X- ______ (SPECIFY); D - POLYPROPYLENE; E - POLYETHYLENE; F - SILICONE; G - COMBINATION TEFLON/POLYPROPYLENE
X- ______ PURGING OTHER (SPECIFY) X- ______ SAMPLING OTHER (SPECIFY)

FILTERING DEVICES 0.45 ____ A - IN-LINE DISPOSABLE B - PRESSURE C - VACUUM

FIELD MEASUREMENTS

WELL ELEVATION: 592.77 (m/ft) GROUNDWATER ELEVATION: 586.56 (m/ft)
DEPTH TO WATER: 6.21 (m/ft) WELL DEPTH: 21.36 (m/ft)

pH (std)	TURBIDITY (ntu)	CONDUCTIVITY (µmhos/cm) AT 25°C	ORP (mV)	DO (mg/L)	SAMPLE TEMPERATURE (°C)

FIELD COMMENTS

SAMPLE APPEARANCE: Good ODOR: None COLOR: Clear TURBIDITY: Clear
WEATHER CONDITIONS: WIND SPEED: 5-10 DIRECTION: SW PRECIPITATION Y/N OUTLOOK: Sunny-55°F
SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE GM PROTOCOLS

4/19/12	Thomas Bohlen	Thomas Bohlen
DATE	PRINT	SIGNATURE

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Systems Site

Ref. No.: 21.0056546

Date: 4/18/12

Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-15

Measurement Point: TOR

Constructed Well Depth (ft): 17.90

Measured Well Depth (ft): 16.81 (14.67' bgs)

Depth of Sediment (ft): 3.23'

Screen Length (ft): 8-15 = 7'

Depth to Pump Intake (ft)(1): 13'

Well Diameter, D (in): 2"

Well Screen Volume, V_s (mL)(2): 1.56 gal

Initial Depth to Water (ft): 8.60" (TOR)

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level(3) (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (~~mL~~) gal	No. of Well Screen Volumes Purged(4)
811		8.23	0.37								
812		8.84	0.24	6.65	9.03	3.17	250	0.00	6.0	0.2	
817		9.15	0.55	7.00	9.31	3.17	231	0.00	6.1	0.5	
823		9.15	0.55	7.04	9.46	3.25	222	0.00	5.1	1.0	
842	266*	9.17	0.57	7.07	9.65	3.34	203	0.00	0.0	3.0	2
846	↓	9.17	↓	7.06	9.71	3.35	200	0.00	0.0	3.2	
851	↓	9.17	↓	7.06	9.75	3.34	198	0.00	0.0	3.8	
904	↓	9.17	↓	7.07	9.84	3.34	193	0.00	0.0	5.0	3.2

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length, $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs.

* measured w/ 2L Bottle & stopwatch

WELL PURGING FIELD INFORMATION FORM

JOB# 5 6 5 4 6 -

SITE/PROJECT NAME: Delphi Harrison Thermal Systems Site

WELL# M W - 1 5

WELL PURGING INFORMATION

PURGE DATE (MM DD YY)	SAMPLE DATE (MM DD YY)	WATER VOL IN CASING (LITRES/GALLONS)	ACTUAL VOLUME PURGED (LITRES/GALLONS)
04 18 12	04 18 12	14	80

PURGING AND SAMPLING EQUIPMENT

PURGING EQUIPMENT DEDICATED Y (N) (CIRCLE ONE)

SAMPLING EQUIPMENT DEDICATED (Y) N (CIRCLE ONE)

PURGING DEVICE	B	A - SUBMERSIBLE PUMP	D - GAS LIFT PUMP	G - BAILER	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	B	B - PERISTALTIC PUMP C - BLADDER PUMP	E - PURGE PUMP F - DIPPER BOTTLE	H - WATERRA®	X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON B - STAINLESS STEEL	D - PVC E - POLYETHYLENE		X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E	C - POLYPROPYLENE			X- SAMPLING OTHER (SPECIFY)
PURGING DEVICE	E	A - TEFLON B - TYGON	D - POLYPROPYLENE E - POLYETHYLENE	F - SILICONE G - COMBINATION TEFLON/POLYPROPYLENE	X- PURGING OTHER (SPECIFY)
SAMPLING DEVICE	E	C - ROPE X- (SPECIFY)			X- SAMPLING OTHER (SPECIFY)
FILTERING DEVICES 0.45		A - IN-LINE DISPOSABLE	B - PRESSURE	C - VACUUM	

FIELD MEASUREMENTS

WELL ELEVATION	594.04 (m/ft)	GROUNDWATER ELEVATION	585.44 (m/ft)
DEPTH TO WATER	8.60 (m/ft)	WELL DEPTH	17.90 (m/ft)

pH	TURBIDITY	CONDUCTIVITY	ORP	DO	SAMPLE TEMPERATURE
(std)	(ntu)	(µs/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µs/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µs/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µs/cm) AT 25°C	(mV)	(mg/L)	(°C)
(std)	(ntu)	(µs/cm) AT 25°C	(mV)	(mg/L)	(°C)

FIELD COMMENTS

SAMPLE APPEARANCE: Good ODOR: None COLOR: Clear TURBIDITY: Clear

WEATHER CONDITIONS: WIND SPEED: 0-5 DIRECTION: SW PRECIPITATION Y/N QUALITY: Sunny ~ 45°F

SPECIFIC COMMENTS:

I CERTIFY THAT SAMPLING PROCEDURES WERE IN ACCORDANCE WITH APPLICABLE SAMPLING PROTOCOLS

4/18/12 DATE | Thomas Bohlen PRINT | Thomas Bohlen SIGNATURE

EMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

[illegible]
Revised: January 25, 2010

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: Delphi Harrison Thermal Sys. Site
Ref. No.: 56546.04

Date: 5/4/12
Personnel: T. Bohlen

Monitoring Well Data:

Well No.: MW-15
Measurement Point: TOR
Constructed Well Depth (ft): 17.90
Measured Well Depth (ft): 18.91
Depth of Sediment (ft):

Screen Length (ft): 8-15' = 7'
Depth to Pump Intake (ft)[1]: 13'
Well Diameter, D (in): 2"
Well ~~Screen~~ Volume, V_s ~~(Vol.)~~ gal[2]: 3.1
Initial Depth to Water (ft): 7.73

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged[4]
1507	151	8.21	0.48	6.40	12.07	3.373	183.0	8.00	0.0	0	
1512	↓	8.35	0.62	5.96	11.09	3.314	273.4	5.43	0.0	0.2	
1517	303	8.35	0.62	5.80	11.00	3.372	301.9	4.93	0.0	0.6	
1522	↓	8.35		5.71	10.81	3.465	337.0	4.76	0.0	1.1	
1527	151	8.35		5.62	10.76	3.492	357.7	4.74	0.0	1.3	
1532	379	8.35		5.58	10.91	3.530	377.1	4.78	0.0	1.8	
1537	227	8.35		5.59	10.90	3.531	382.4	4.76	0.0	2.1	
1542	↓	8.35		5.60	10.93	3.535	386.2	4.73	0.0	2.4	
1547	↓	8.35	↓	5.58	10.95	3.537	385.1	4.77	0.0	2.8	

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length: $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing). No. of Well Screen Volumes Purged= Vp/Vs

Form FMG 8.0-01

INSTRUMENT CALIBRATION RECORD

PROJECT	Delphi Harrison Thermal Systems Site	PROJECT MANAGER	C. Boron
LOCATION	Lockport, NY	FIELD REP.	T. Bohlen
CLIENT	GMCH	DATE	April 2012

Instrument	Date Calibrated	By	Standard Used	Decontamination, Maintenance, or Repair Performed	Remarks
Horiba U-22	4/18/12	TB	Cal Solution	Calibration	OK
OVM	"	"	Cal Gas Tank	"	OK
Horiba U-22	4/19/12	TB	Cal Solution	Cleaning & Calibration	OK
OVM	"	"	Cal Gas Tank	Calibration	OK
Horiba U-22	4/20/12	TB	Cal Solution	Cleaning & Calibration	OK
OVM	"	"	Cal Gas Tank	Calibration	OK
YSI	5/4/12	TB	Cal Solutions	Cleaning & Cal.	OK

Other Remarks:

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.

1900 Brewerton Road
Mattydale, NY 13211
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 5781
Description YSI 6920
Calibrated 4/25/2012

Manufacturer YSI
Model Number 6920
Serial Number/ Lot Number 04E8620AA
Location New York
Department

State Certified
Status Pass
Temp °C 19.3
Humidity % 41

Calibration Specifications

Group # 1
Group Name PH
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
7.00 / 7.00	PH	7.00	PH	7.00	7.00	0.00%	Pass
4.00 / 4.00	PH	4.00	PH	4.00	4.00	0.00%	Pass
10.00 / 10.00	PH	10.00	PH	9.94	9.98	-0.20%	Pass

Group # 2
Group Name Turbidity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
0.00 / 0.00	NTU	0.00	NTU	0.00	0.00	0.00%	Pass
126.00 / 126.00	NTU	126.00	NTU	126.00	126.00	0.00%	Pass

Group # 3
Group Name Conductivity
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.000

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
1.413 / 1.413	ms/cm	1.413	ms/cm	1.413	1.413	0.00%	Pass

Group # 4
Group Name Redox (ORP)
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
240.00 / 240.00	mv	240.00	mv	240.00	240.00	0.00%	Pass

Group # 5
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.

1900 Brewerton Road
Mattydale, NY 13211
Toll-free: (877) 903-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 5781
Description YSI 6920
Calibrated 4/25/2012

Group # 5
Group Name Disolved Oxygen Span
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	%	100.00	%	100.00	100.00	0.00%	Pass

Group # 6
Group Name Disolved Oxygen Zero
Test Performed: No **As Found Result: Not Entered** **As Left Result: Not Entered**

Test Instruments Used During the Calibration **(As Of Cal Entry Date)**

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NY COND 1.413 9084	NY COND 1.413	Aurical	SL20014-5G	9084		7/12/2012
NY ORP 240 MV 2981	NY ORP 240 mV	Hanna	SL50005-500	2981		1/31/2016
NY PH 10 2101326	NY PH 10	VWR	SL10010-5G	2101326		7/31/2012
NY PH 4	NY PH 4	VWR	SL10004-5G	2010169		9/30/2012
NY PH 7	NY PH 7	VWR	SL1007-5G	2011038		10/31/2012

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Joe Filippi

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, Inc.

2225 Tomlynn Street
Richmond, Va. 23230
Toll-free: (866) 801-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 15020
Description MiniRae 3000
Calibrated 4/23/2012

Manufacturer Rae Systems
Model Number PGM-7320
Serial Number/ Lot Number 592-902204
Location Virginia
Department

State Certified
Status Pass
Temp °C 18
Humidity % 34

Calibration Specifications

Group # 1
Group Name Isobutylene
Stated Accy Pct of Reading
Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.00

Nom In Val / In Val	In Type	Out Val	Out Type	Fnd As	Lft As	Dev%	Pass/Fail
100.00 / 100.00	PPM	100.00	PPM	100.00	100.00	0.00%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
NY ISO 100 LOT# 0319FD12	NY ISO 100	American Gas Group	GP11015	0319FD12		4/30/2016

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Timothy Walsh

All instruments are calibrated by Pine Environmental Services, Inc. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, Inc. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance

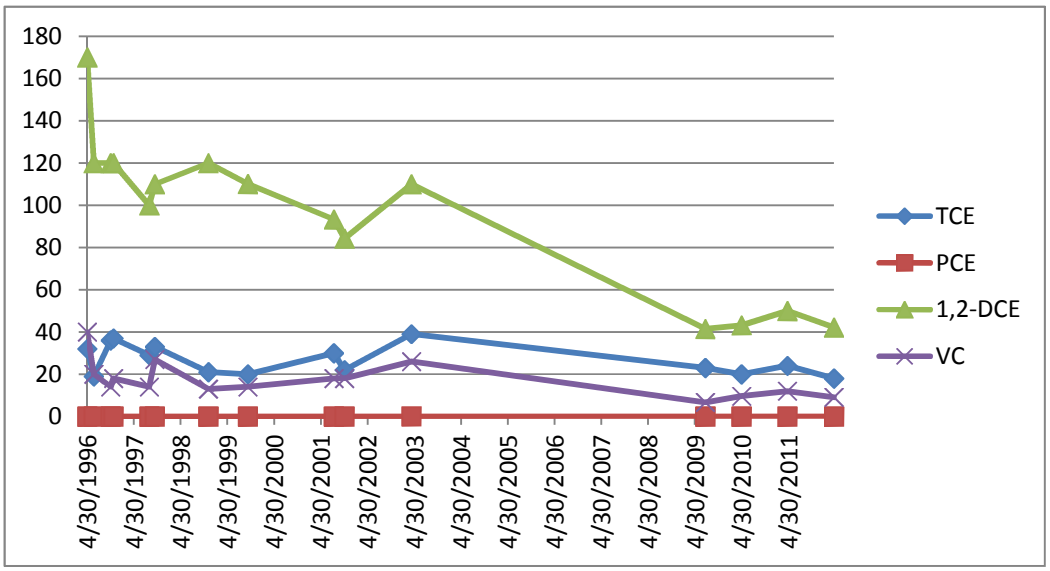
APPENDIX B

GRAPHS OF MONITORING WELL ANALYTICAL DATA FOR THE COCs

MW-4 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
4/30/1996	32	<0.5	170	40
6/20/1996	19	<0.5	120	20
10/30/1996	36	<0.5	120	14
11/21/1996	37	<0.5	120	18
8/28/1997	29	<0.5	100	14
10/10/1997	33	<0.2	110	27
12/2/1998	21	<0.2	120	13
10/7/1999	20	<0.05	110.14	14
8/9/2001	30	0.003	93.28	18
10/31/2001	22	<0.002	84.25	18
4/7/2003	39	0.08	110	26
7/20/2009	23	<0.05	41.5	6.7
4/29/2010	20	0.0012	43.2	9.6
4/22/2011	24	0.0018	50	12
4/20/2012	18	0.0014	42.16	9.1

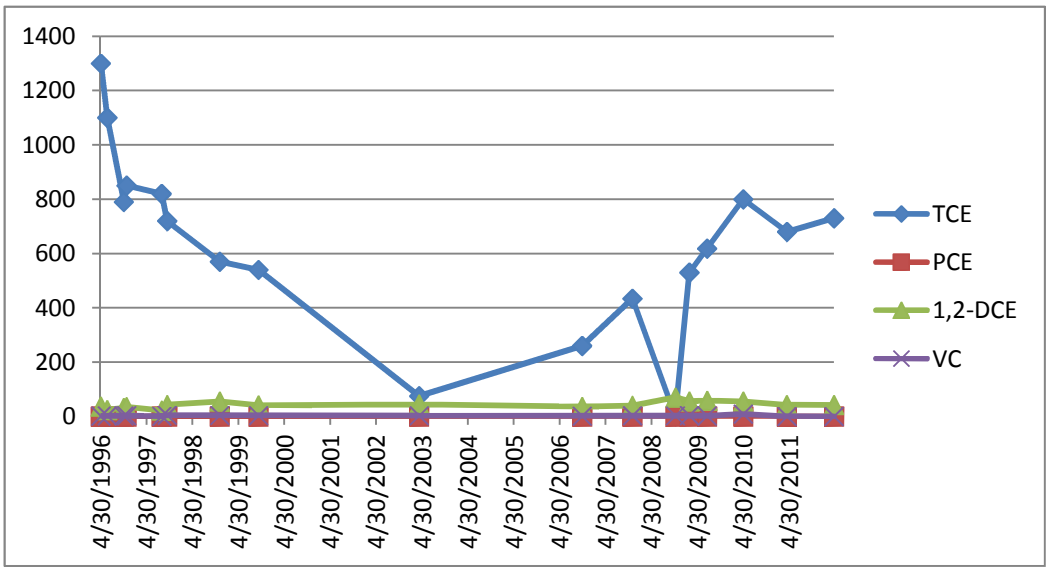
Notes:
Results are provided in parts per million (ppm)
Duplicate samples were collected from this location on 6/20/96, 10/30/96 and 12/2/98.
The higher of the two concentrations were recorded in this graph.



MW-7 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
4/30/1996	1300	<0.5	37	1.8
6/20/1996	1100	<0.5	24	2.4
10/30/1996	790	<0.5	32	2.3
11/21/1996	850	<0.5	35	3.1
8/28/1997	820	<0.2	22	1.1
10/10/1997	720	<0.2	43	4.8
12/3/1998	570	<0.2	55	4.2
10/7/1999	540	<0.5	41	3.5
4/7/2003	75	<0.2	45	3
10/25/2006	260	0.077	36	1.7
11/29/2007	434	0.049	40	3.2
11/5/2008	1.1	<0.2	70	2.6
2/24/2009	530	0.071	56	3.6
7/15/2009	618	0.112	58.3	2.5
4/29/2010	800	0.14	55.2	9
4/11/2011	680	<1.8	42	<4.5
4/20/2012	730	<1.8	43	<4.5

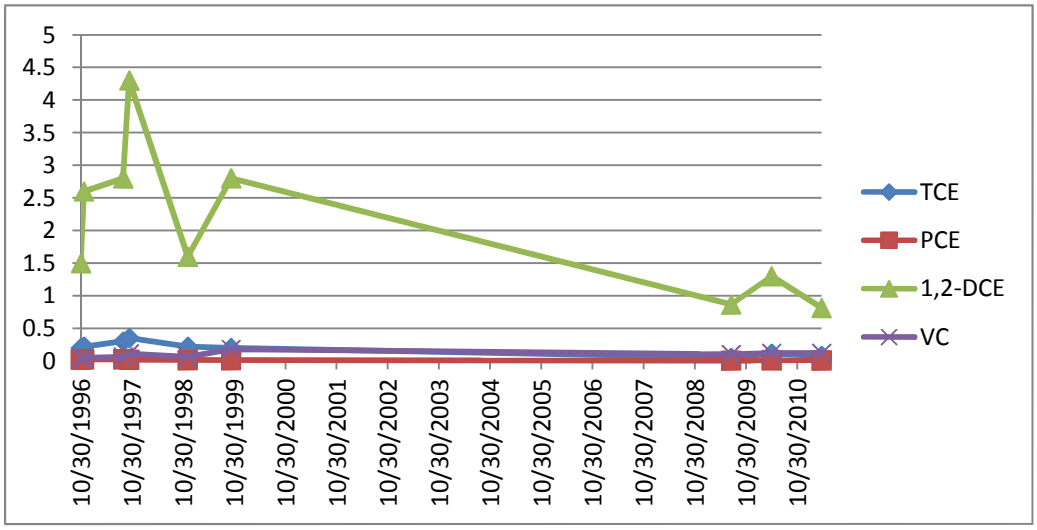
Notes:
Results are provided in parts per million (ppm)



MW-8 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
10/30/1996	0.2	0.024	1.5	0.047
11/21/1996	0.22	0.022	2.6	0.049
8/28/1997	0.3	0.028	2.8	0.062
10/10/1997	0.35	0.018	4.3	0.11
12/2/1998	0.22	0.012	1.6	0.062
10/7/1999	0.2	0.011	2.802	0.18
7/15/2009	0.05	0.005	0.865	0.1
4/30/2010	0.11	0.013	1.3	0.12
4/22/2011	0.078	0.008	0.813	0.12

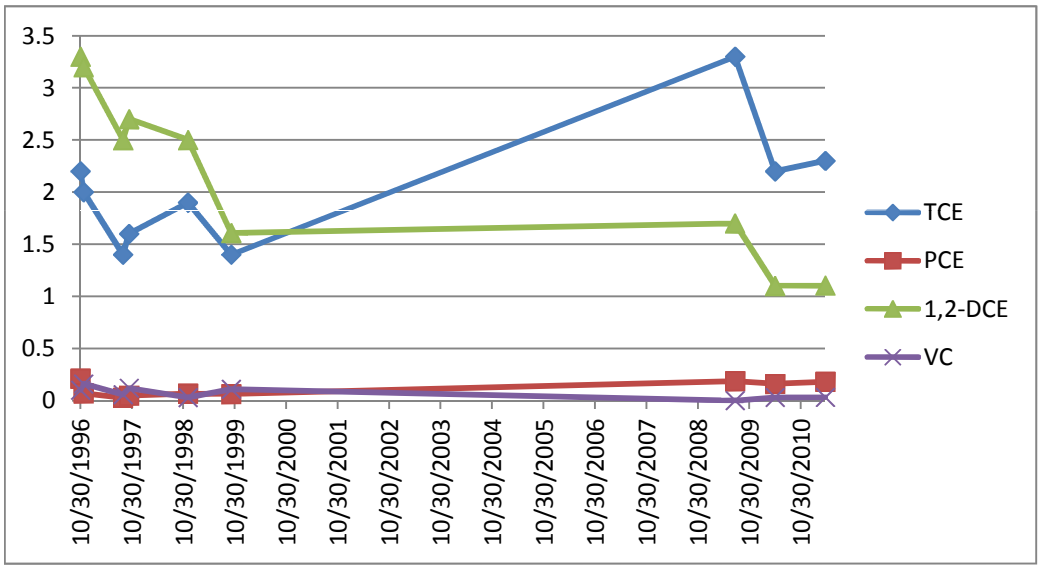
Notes:
Results are provided in parts per million (ppm)



MW-9 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
10/30/1996	2.2	0.21	3.3	0.1
11/21/1996	2	0.07	3.2	0.16
8/28/1997	1.4	0.027	2.5	0.056
10/10/1997	1.6	0.047	2.7	0.12
12/2/1998	1.9	0.066	2.5	0.03
10/5/1999	1.4	0.062	1.608	0.11
7/20/2009	3.3	0.186	1.7	<0.05
4/30/2010	2.2	0.16	1.1	0.031
4/22/2011	2.3	0.18	1.105	0.032

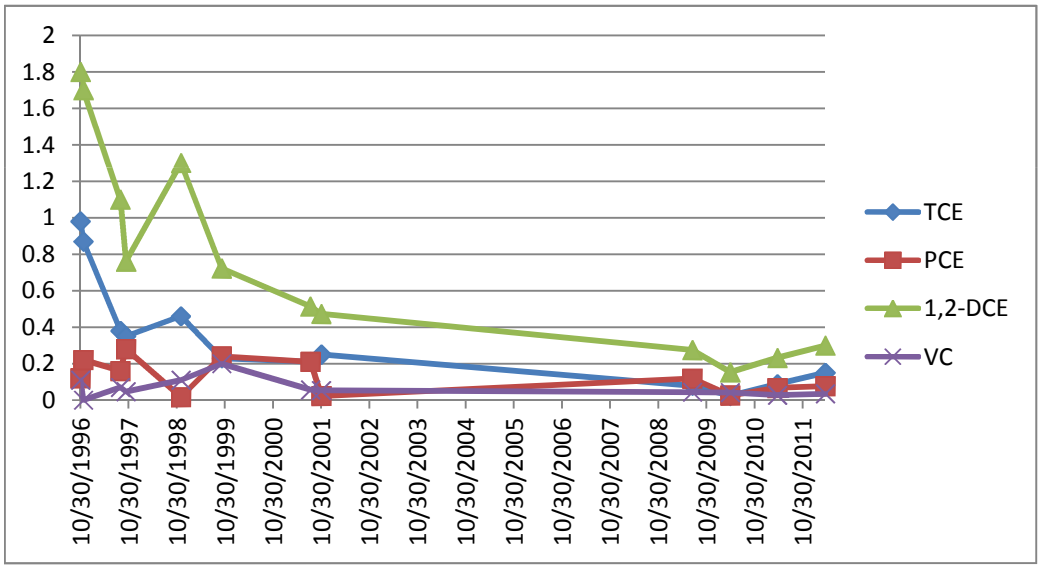
Notes:
Results are provided in parts per million (ppm)
Duplicate samples were collected from this location on 11/21/96 and 10/5/99. The higher of the two concentrations were recorded in this graph.



MW-10 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
10/30/1996	0.98	0.12	1.8	0.11
11/21/1996	0.87	0.22	1.7	<0.1
8/28/1997	0.38	0.16	1.1	0.07
10/10/1997	0.35	0.28	0.76	0.047
12/1/1998	0.46	0.016	1.3	0.11
10/6/1999	0.23	0.24	0.722	0.2
8/9/2001	0.21	0.21	0.514	0.057
10/31/2001	0.25	0.023	0.473	0.053
7/15/2009	0.079	0.118	0.275	0.044
4/28/2010	0.024	0.026	0.153	0.042
4/21/2011	0.088	0.067	0.232	0.027
4/19/2012	0.15	0.077	0.3	0.035

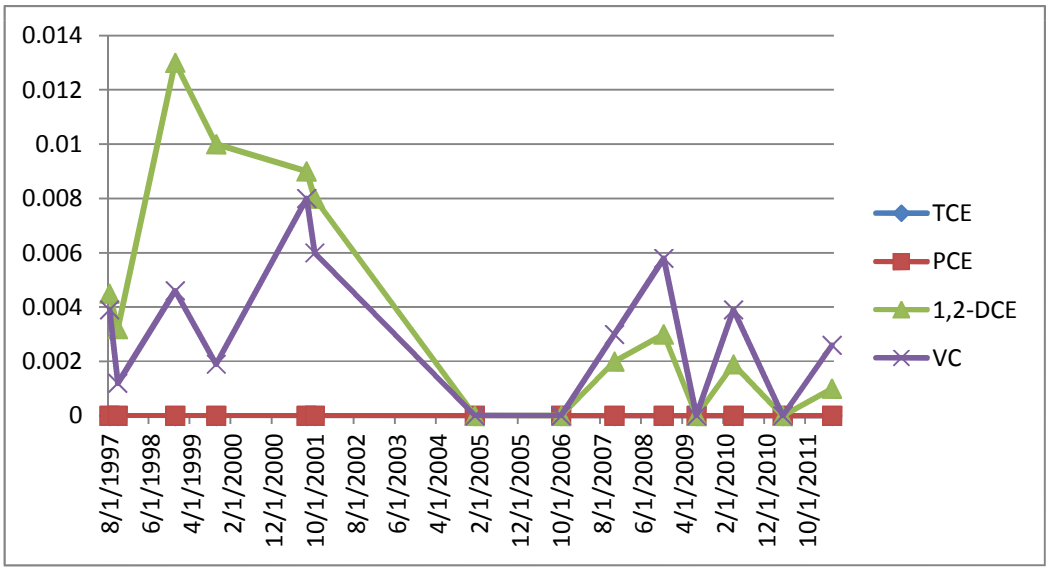
Notes:
Results are provided in parts per million (ppm)



MW-11 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
8/28/1997	<0.0005	<0.0005	0.0045	0.0039
10/10/1997	<0.0005	<0.0005	0.0032	0.0012
12/1/1998	<0.0005	<0.0005	0.013	0.0046
10/5/1999	<0.0005	<0.0005	0.01	0.0019
8/8/2001	<0.002	<0.002	0.009	0.008
10/30/2001	<0.002	<0.002	0.008	0.006
1/12/2005	<0.002	<0.002	<0.002	<0.002
10/24/2006	<0.002	<0.002	<0.002	<0.002
11/28/2007	<0.002	<0.002	0.002	0.003
11/4/2008	<0.002	<0.002	0.003	0.0058
7/16/2009	<0.005	<0.005	<0.005	<0.005
4/28/2010	<0.0005	<0.0004	0.0019	0.0039
4/21/2011	<0.0005	<0.0004	<0.0008	<0.0009
4/19/2012	<0.0005	<0.0004	0.001	0.0026

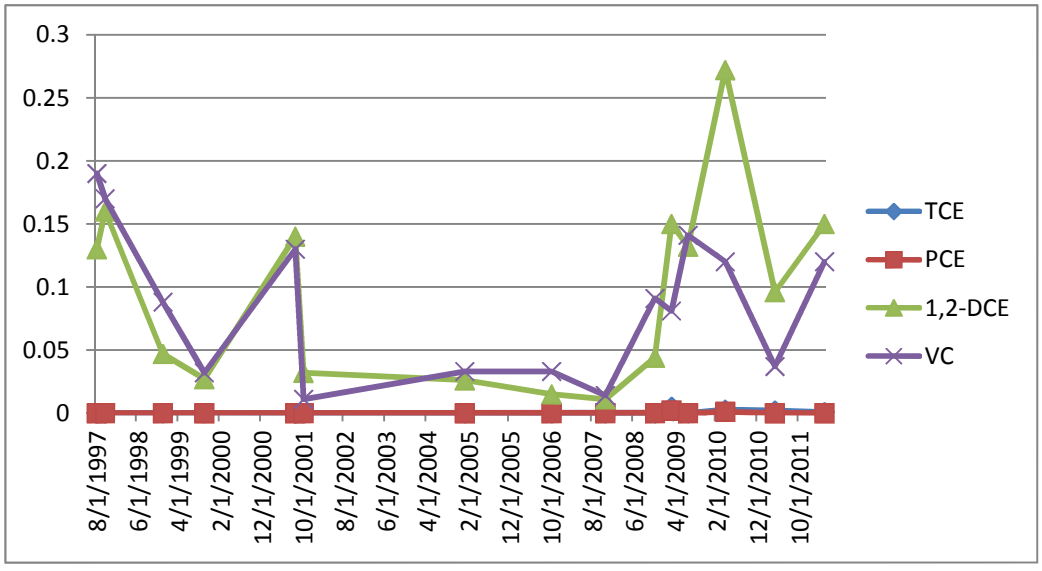
Notes:
Results are provided in parts per million (ppm)
Duplicate samples were collected from this location on 10/10/97. The higher of the two concentrations were recorded in this graph.



MW-12 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
8/28/1997	<0.0005	<0.0005	0.13	0.19
10/10/1997	<0.0005	<0.0005	0.16	0.17
12/1/1998	<0.0005	<0.0005	0.047	0.088
10/6/1999	<0.0005	<0.0005	0.027	0.032
8/8/2001	<0.002	<0.002	0.14	0.13
10/30/2001	<0.002	<0.002	0.032	0.011
1/12/2005	<0.002	<0.002	0.026	0.033
10/25/2006	<0.002	<0.002	0.015	0.033
11/28/2007	<0.002	<0.002	0.011	0.014
11/14/2008	<0.002	<0.002	0.044	0.091
3/16/2009	0.005	0.002	0.15	0.081
7/16/2009	<0.005	<0.005	0.132	0.141
4/28/2010	0.0028	0.0011	0.272	0.12
4/20/2011	0.0021	<0.0004	0.096	0.037
4/18/2012	0.00083	<0.0004	0.15	0.12

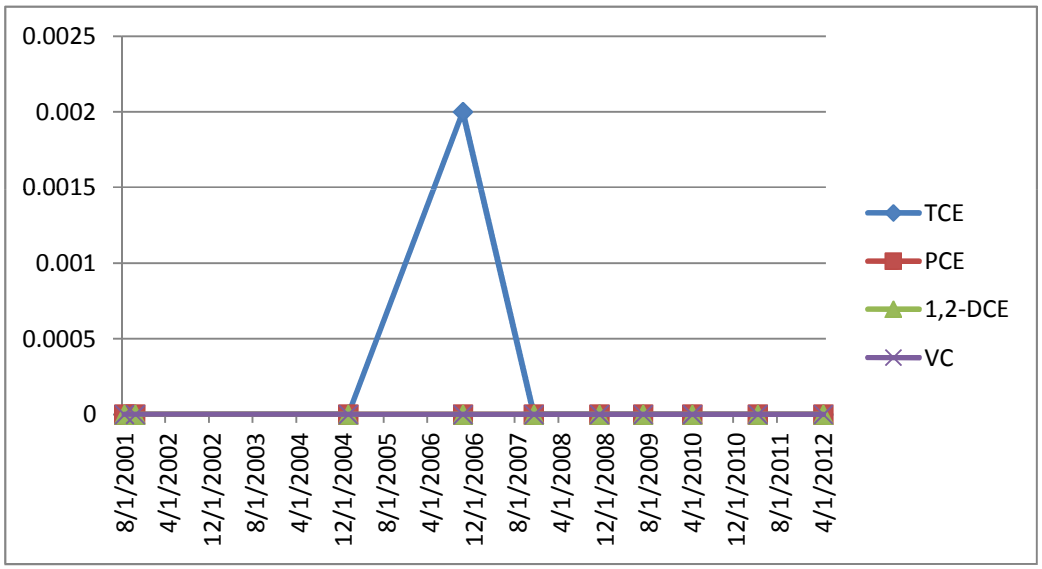
Notes:
Results are provided in parts per million (ppm)
Duplicate samples were collected from this location on 8/28/97 and 8/8/01. The higher of the two concentrations were recorded in this graph.



MW-13 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
8/8/2001	<0.002	<0.002	<0.002	<0.002
10/29/2001	<0.002	<0.002	<0.002	<0.002
1/12/2005	<0.002	<0.002	<0.002	<0.002
10/24/2006	0.002	<0.002	<0.002	<0.002
11/28/2007	<0.002	<0.002	<0.002	<0.002
11/5/2008	<0.002	<0.002	<0.002	<0.002
7/16/2009	<0.005	<0.005	<0.005	<0.005
4/28/2010	<0.0005	<0.0004	<0.0008	<0.0009
4/21/2011	<0.0005	<0.0004	<0.0008	<0.0009
4/19/2012	<0.0005	<0.0004	<0.0008	<0.0009

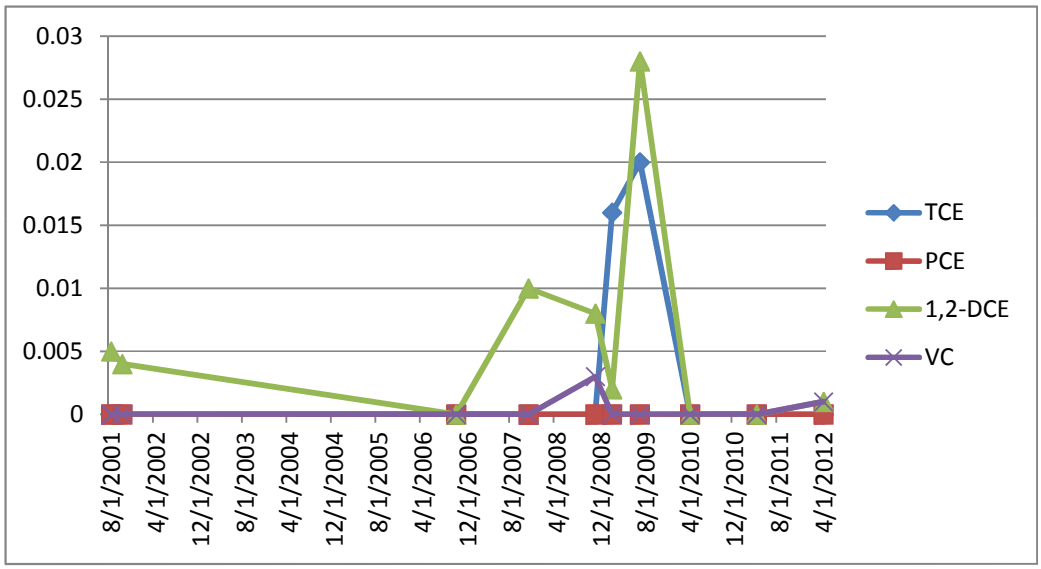
Notes:
Results are provided in parts per million (ppm)
A duplicate sample was collected from this location on 4/19/2012.
The higher of the two concentrations were recorded in this graph.



MW-14 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
8/10/2001	<0.002	<0.002	0.005	<0.002
10/30/2001	<0.002	<0.002	0.004	<0.002
10/24/2006	<0.002	<0.002	<0.002	<0.002
11/29/2007	<0.002	<0.002	0.01	<0.002
11/4/2008	<0.002	<0.002	0.008	0.003
2/24/2009	0.016	<0.002	0.002	<0.002
7/19/2009	0.02	<0.005	0.028	<0.005
4/27/2010	<0.005	<0.0004	<0.0008	<0.0009
4/21/2011	<0.005	<0.0004	<0.0008	<0.0009
4/19/2012	<0.005	<0.0004	0.001	0.001

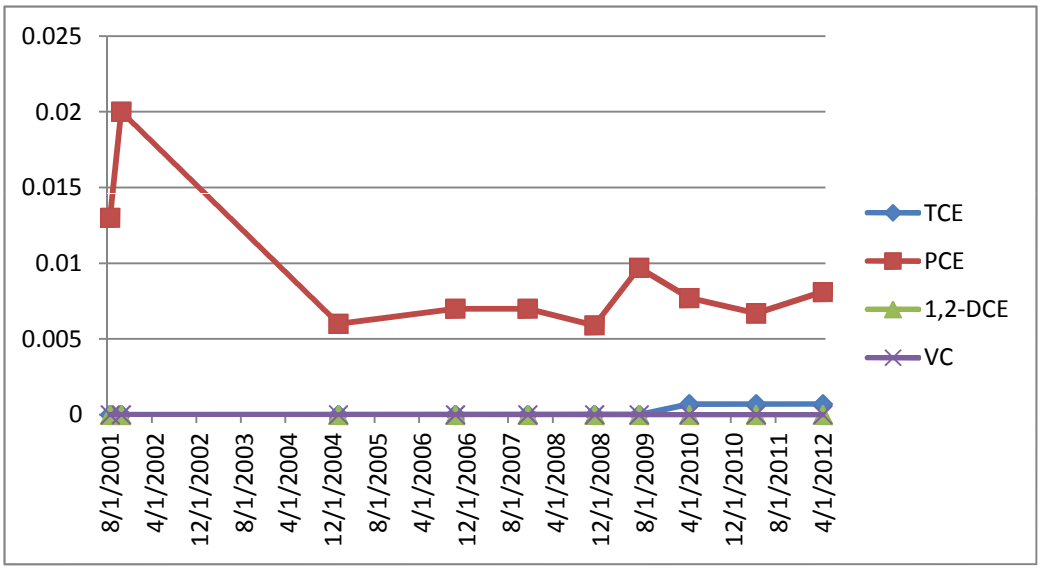
Notes:
Results are provided in parts per million (ppm)



MW-15 Groundwater Data
Delphi Harrison Thermal Systems Site
GM Components Holdings, LLC
Lockport, New York

Date	TCE	PCE	1,2-DCE	VC
8/8/2001	<0.002	0.013	<0.002	<0.002
10/30/2001	<0.002	0.02	<0.002	<0.002
1/12/2005	<0.002	0.006	<0.002	<0.002
10/24/2006	<0.002	0.007	<0.002	<0.002
11/28/2007	<0.002	0.007	<0.002	<0.002
11/4/2008	<0.002	0.0059	<0.002	<0.002
7/16/2009	<0.005	0.0097	<0.005	<0.005
4/28/2010	0.0007	0.0077	<0.0008	<0.0009
4/21/2011	0.0007	0.0067	<0.0008	<0.0009
4/18/2012	0.0007	0.0081	<0.0008	<0.0009

Notes:
Results are provided in parts per million (ppm)
Duplicate samples were collected from this location on 10/30/01. The higher of the two concentrations were recorded in this graph.



APPENDIX C

TEST AMERICA ANALYTICAL LABORATORY REPORT

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

TestAmerica Job ID: 480-18764-1
Client Project/Site: 058507, GM-Lockport Groundwater Sampling
Revision: 1

For:
Conestoga-Rovers & Associates, Inc.
2055 Niagara Falls Blvd., Suite 3
Niagara Falls, New York 14304

Attn: Kathleen Willy

Melissa Deyo

Authorized for release by:
5/16/2012 1:57:31 PM

Melissa Deyo
Project Manager I
melissa.deyo@testamericainc.com

Table of Contents

Qualifiers

GC/MS VOA

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.
E	Result exceeded calibration range.
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.

GC VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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.
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.

Metals

Qualifier	Qualifier Description
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.
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.

General Chemistry

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

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)

Job ID: 480-18764-1

Laboratory: TestAmerica Buffalo

Narrative

Job Narrative
480-18764-1

Receipt
The samples were received on 4/18/2012 5:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.8º C.

GC/MS VOA
Method 8260B: The following sample was diluted due to the abundance of target analytes: MW-12-048112-1530 (480-18764-3 DL). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

IC
No analytical or quality issues were noted.

GC VOA
Method RSK-175: The following samples were diluted due to the abundance of target analytes: MW-12-048112-1530 (480-18764-3). Elevated reporting limits (RLs) are provided.

Method RSK-175: The method blank for batch 60876 contained Ethane, Ethene and Methane above the method detection limit. These target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
Method 9038: The method blank for batch 61992 contained Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

Method SM 4500 S2 D: The matrix spike (MS) recovery for batch 60531 was outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria. (480-18764-3 MS)

No other analytical or quality issues were noted.

Job Narrative
480-18852-1

Receipt
The samples were received on 4/19/2012 4:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7º C.

GC/MS VOA
Method 8260B: The following samples was diluted due to the abundance of target analytes: MW-10-041912-1520 (480-18852-3). Elevated reporting limits (RLs) are provided.

Method 8260B: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: DUP-041912-0001 (480-18852-4). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

IC

Job ID: 480-18764-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

No analytical or quality issues were noted.

GC VOA
Method RSK-175: The following samples were diluted due to the abundance of target analytes: MW-13-041912-0845 (480-18852-1), MW-14-041912-1315 (480-18852-2), MW-10-041912-1520 (480-18852-3) and DUP-041912-0001 (480-18852-4). Elevated reporting limits (RLs) are provided.

Method RSK-175: The method blank for batch 60876 contained Ethane, Ethene and Methane above the method detection limit. These target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
Method 9038: The method blanks for batch 61648 contained Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method SM 4500 Cl- E: The method blanks for batch 61649 contained Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

Job Narrative
480-18943-1

Receipt
The samples were received on 4/20/2012 5:27 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.6º C.

GC/MS VOA
Method 8260B: The analyte trans-1,2-Dichloroethene was detected in the following sample at a concentration above the linear range of the initial calibration curve: MW-4-042012-1300 (480-18943-1). Due to the high dilution dictated by other target compounds, this analyte was diluted out in the re-analysis of the sample. Therefore, the value being reported is from the original analysis and is qualified with an "E" qualifier.

Method 8260B: The following samples were diluted due to the abundance of target analytes: MW-4-042012-1300 (480-18943-1 DL) and MW-7-042012-1630 (480-18943-2). Elevated reporting limits (RLs) are provided.

Method 8260B: The method blank for batch 61974 contained Trichloroethene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

IC
No analytical or quality issues were noted.

GC VOA
Method RSK-175: The following sample was diluted due to the abundance of target analytes: MW-4-042012-1300 (480-18943-1). Elevated reporting limits (RLs) are provided.

Method RSK-175: The method blank for batch 60876 contained Ethane, Ethene and Methane above the method detection limit. These target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not

Job ID: 480-18764-1 (Continued)

Laboratory: TestAmerica Buffalo (Continued)

performed.

No other analytical or quality issues were noted.

Metals

Method 6010B: The method blank for preparation batch 60930 contained Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

General Chemistry

Method 9038: The matrix spike (MS) recoveries for batch 61946 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria. (480-18943-1 MS)

Method 9038: The method blanks for batch 61946 contained Sulfate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No other analytical or quality issues were noted.

Detection Summary

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Client Sample ID: MW-15-041812-0900 — Lab Sample ID: 480-18764-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Hydrogen	0.82		0.60		nm	1		AM20GAX	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	8.1		1.0	0.36	ug/L	1		8260B	Total/NA
Trichloroethene	0.65	J	1.0	0.46	ug/L	1		8260B	Total/NA
Ethane	0.78	J B	1.5	0.49	ug/L	1		RSK-175	Total/NA
Ethene	0.64	J B	1.5	0.52	ug/L	1		RSK-175	Total/NA
Methane	0.47	J B	1.0	0.22	ug/L	1		RSK-175	Total/NA
Magnesium	54.4		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	0.24		0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	3.3		0.50	0.10	mg/L	1		6010B	Total/NA
Sodium	424		1.0	0.32	mg/L	1		6010B	Total/NA
Nitrate	0.73		0.050	0.011	mg/L	1		353.2	Total/NA
Sulfate	111		20.0	6.0	mg/L	4		9038	Total/NA
Total Organic Carbon	2.0		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	384		5.0	0.79	mg/L	1		SM 2320B	Total/NA
Chloride	962		25.0	11.5	mg/L	25		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	11000		2000	2000	ug/L	2		RSK-175	Total/NA

Client Sample ID: MW-11-041812-1245 — Lab Sample ID: 480-18764-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Hydrogen	12		0.60		nm	1		AM20GAX	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.4		1.0	0.81	ug/L	1		8260B	Total/NA
Vinyl chloride	2.6		1.0	0.90	ug/L	1		8260B	Total/NA
Ethane	0.99	J B	1.5	0.49	ug/L	1		RSK-175	Total/NA
Ethene	1.3	J B	1.5	0.52	ug/L	1		RSK-175	Total/NA
Methane	14	B	1.0	0.22	ug/L	1		RSK-175	Total/NA
Iron	0.20		0.050	0.019	mg/L	1		6010B	Total/NA
Magnesium	48.5		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	0.14		0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	8.3		0.50	0.10	mg/L	1		6010B	Total/NA
Sodium	143		1.0	0.32	mg/L	1		6010B	Total/NA
Ammonia	0.27		0.020	0.0090	mg/L	1		350.1	Total/NA
Nitrate	0.095		0.050	0.011	mg/L	1		353.2	Total/NA
Sulfate	98.9	B	25.0	7.5	mg/L	5		9038	Total/NA
Total Organic Carbon	1.3		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	248		5.0	0.79	mg/L	1		SM 2320B	Total/NA
Chloride	360		10.0	4.6	mg/L	10		SM 4500 Cl- E	Total/NA
Sulfide	0.053	J	0.10	0.052	mg/L	1		SM 4500 S2 D	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	2100		1000	1000	ug/L	1		RSK-175	Total/NA

Client Sample ID: MW-12-048112-1530 — Lab Sample ID: 480-18764-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Hydrogen	0.76		0.60		nm	1		AM20GAX	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.83	J	1.0	0.46	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene - DL	150		2.0	1.6	ug/L	2		8260B	Total/NA
Vinyl chloride - DL	120		2.0	1.8	ug/L	2		8260B	Total/NA

Client Sample ID: MW-12-048112-1530 (Continued)

Lab Sample ID: 480-18764-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethane	11	J B	15	4.9	ug/L	10		RSK-175	Total/NA
Ethene	11	J B	15	5.2	ug/L	10		RSK-175	Total/NA
Methane	300	B	10	2.2	ug/L	10		RSK-175	Total/NA
Iron	12.7		0.050	0.019	mg/L	1		6010B	Total/NA
Magnesium	84.3		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	9.1		0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	3.7		0.50	0.10	mg/L	1		6010B	Total/NA
Sodium	1250		1.0	0.32	mg/L	1		6010B	Total/NA
Ammonia	1.8		0.020	0.0090	mg/L	1		350.1	Total/NA
Sulfate	133		50.0	15.0	mg/L	10		9038	Total/NA
Total Organic Carbon	3.7		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	280		5.0	0.79	mg/L	1		SM 2320B	Total/NA
Chloride	2900		100	46.0	mg/L	100		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	15000		2000	2000	ug/L	2		RSK-175	Total/NA

Client Sample ID: MW-13-041912-0845

Lab Sample ID: 480-18852-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Hydrogen	0.50		0.60	0.25	nm	1		AM20GAX	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethane	8.2	J B	15	4.9	ug/L	10		RSK-175	Total/NA
Ethene	6.9	J B	15	5.2	ug/L	10		RSK-175	Total/NA
Methane	93	B	10	2.2	ug/L	10		RSK-175	Total/NA
Iron	5.8		0.050	0.019	mg/L	1		6010B	Total/NA
Magnesium	38.5		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	4.4		0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	5.3		0.50	0.10	mg/L	1		6010B	Total/NA
Sodium	940		1.0	0.32	mg/L	1		6010B	Total/NA
Ammonia	0.96		0.020	0.0090	mg/L	1		350.1	Total/NA
Nitrate	0.081		0.050	0.011	mg/L	1		353.2	Total/NA
Sulfate	71.3	B	25.0	7.5	mg/L	5		9038	Total/NA
Total Organic Carbon	4.0		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	360		5.0	0.79	mg/L	1		SM 2320B	Total/NA
Chloride	1490	B	30.0	13.8	mg/L	30		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	3700		1000	1000	ug/L	1		RSK-175	Total/NA

Client Sample ID: MW-14-041912-1315

Lab Sample ID: 480-18852-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Hydrogen	6.7		0.60	0.25	nm	1		AM20GAX	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.2		1.0	0.81	ug/L	1		8260B	Total/NA
Vinyl chloride	1.1		1.0	0.90	ug/L	1		8260B	Total/NA
Ethane	8.6	J B	15	4.9	ug/L	10		RSK-175	Total/NA
Ethene	8.3	J B	15	5.2	ug/L	10		RSK-175	Total/NA
Methane	71	B	10	2.2	ug/L	10		RSK-175	Total/NA
Iron	0.14		0.050	0.019	mg/L	1		6010B	Total/NA
Magnesium	86.7		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	0.29		0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	6.2		0.50	0.10	mg/L	1		6010B	Total/NA

Client Sample ID: MW-14-041912-1315 (Continued)

Lab Sample ID: 480-18852-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sodium	916		1.0	0.32	mg/L	1		6010B	Total/NA
Ammonia	0.25		0.020	0.0090	mg/L	1		350.1	Total/NA
Sulfate	88.2	B	25.0	7.5	mg/L	5		9038	Total/NA
Total Organic Carbon	1.5		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	328		5.0	0.79	mg/L	1		SM 2320B	Total/NA
Chloride	1720	B	50.0	23.0	mg/L	50		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	2900		1000	1000	ug/L	1		RSK-175	Total/NA

Client Sample ID: MW-10-041912-1520

Lab Sample ID: 480-18852-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Hydrogen	1.0		0.60	0.25	nm	1		AM20GAX	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	300		4.0	3.2	ug/L	4		8260B	Total/NA
Tetrachloroethene	77		4.0	1.4	ug/L	4		8260B	Total/NA
Trichloroethene	150		4.0	1.8	ug/L	4		8260B	Total/NA
Vinyl chloride	35		4.0	3.6	ug/L	4		8260B	Total/NA
Ethane	9.1	J B	15	4.9	ug/L	10		RSK-175	Total/NA
Ethene	9.2	J B	15	5.2	ug/L	10		RSK-175	Total/NA
Methane	170	B	10	2.2	ug/L	10		RSK-175	Total/NA
Iron	0.32		0.050	0.019	mg/L	1		6010B	Total/NA
Magnesium	95.5		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	2.4		0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	7.0		0.50	0.10	mg/L	1		6010B	Total/NA
Sodium	2110		1.0	0.32	mg/L	1		6010B	Total/NA
Ammonia	0.11		0.020	0.0090	mg/L	1		350.1	Total/NA
Sulfate	210	B	75.0	22.5	mg/L	15		9038	Total/NA
Total Organic Carbon	2.3		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	280		5.0	0.79	mg/L	1		SM 2320B	Total/NA
Chloride	3790	B	100	46.0	mg/L	100		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	5600		1000	1000	ug/L	1		RSK-175	Total/NA

Client Sample ID: DUP-041912-0001

Lab Sample ID: 480-18852-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Hydrogen	0.79		0.60	0.25	nm	1		AM20GAX	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethane	8.6	J B	15	4.9	ug/L	10		RSK-175	Total/NA
Ethene	8.0	J B	15	5.2	ug/L	10		RSK-175	Total/NA
Methane	89	B	10	2.2	ug/L	10		RSK-175	Total/NA
Iron	5.7		0.050	0.019	mg/L	1		6010B	Total/NA
Magnesium	36.3		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	4.1		0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	5.4		0.50	0.10	mg/L	1		6010B	Total/NA
Sodium	925		1.0	0.32	mg/L	1		6010B	Total/NA
Ammonia	0.90		0.020	0.0090	mg/L	1		350.1	Total/NA
Nitrate	0.068		0.050	0.011	mg/L	1		353.2	Total/NA
Sulfate	66.3	B	25.0	7.5	mg/L	5		9038	Total/NA
Total Organic Carbon	4.0		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	352		5.0	0.79	mg/L	1		SM 2320B	Total/NA

Client Sample ID: DUP-041912-0001 (Continued)

Lab Sample ID: 480-18852-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1490	B	30.0	13.8	mg/L	30		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	4500		1000	1000	ug/L	1		RSK-175	Total/NA

Client Sample ID: MW-4-042012-1300

Lab Sample ID: 480-18943-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Hydrogen	28		0.60	0.25	nm	1		AM20GAX	Total/NA

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	1.4		1.0	0.36	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	160	E	1.0	0.90	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene - DL	42000		500	410	ug/L	500		8260B	Total/NA
Trichloroethene - DL	18000		500	230	ug/L	500		8260B	Total/NA
Vinyl chloride - DL	9100		500	450	ug/L	500		8260B	Total/NA
Ethane	650	J B	750	250	ug/L	500		RSK-175	Total/NA
Ethene	2300	B	750	260	ug/L	500		RSK-175	Total/NA
Methane	3800	B	500	110	ug/L	500		RSK-175	Total/NA
Iron	2.7		0.050	0.019	mg/L	1		6010B	Total/NA
Magnesium	138		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	1.5	B	0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	15.6		0.50	0.10	mg/L	1		6010B	Total/NA
Sodium	1400		1.0	0.32	mg/L	1		6010B	Total/NA
Ammonia	2.6		0.040	0.018	mg/L	2		350.1	Total/NA
Sulfate	282	B	150	45.0	mg/L	30		9038	Total/NA
Total Organic Carbon	3.1		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	320		5.0	0.79	mg/L	1		SM 2320B	Total/NA
Chloride	3580		121	55.7	mg/L	121		SM 4500 Cl- E	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	9500		2000	2000	ug/L	2		RSK-175	Total/NA

Client Sample ID: MW-7-042012-1630

Lab Sample ID: 480-18943-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	43000		10000	8100	ug/L	10000		8260B	Total/NA
Trichloroethene	730000	B	10000	4600	ug/L	10000		8260B	Total/NA
Ethane	17		1.5	0.49	ug/L	1		RSK-175	Total/NA
Ethene	98		1.5	0.52	ug/L	1		RSK-175	Total/NA
Methane	46		1.0	0.22	ug/L	1		RSK-175	Total/NA
Iron	0.061		0.050	0.019	mg/L	1		6010B	Total/NA
Magnesium	67.1		0.20	0.043	mg/L	1		6010B	Total/NA
Manganese	0.024	B	0.0030	0.00040	mg/L	1		6010B	Total/NA
Potassium	13.2		0.50	0.10	mg/L	1		6010B	Total/NA
Sodium	193		1.0	0.32	mg/L	1		6010B	Total/NA
Ammonia	0.77		0.020	0.0090	mg/L	1		350.1	Total/NA
Sulfate	332	B	100	30.0	mg/L	20		9038	Total/NA
Total Organic Carbon	8.7		1.0	0.43	mg/L	1		9060	Total/NA
Total Alkalinity	240		5.0	0.79	mg/L	1		SM 2320B	Total/NA
Chloride	416		20.0	9.2	mg/L	20		SM 4500 Cl- E	Total/NA
Acetic acid	4.2		1.0	0.15	mg/L	1		VFA-IC	Total/NA
n-Butyric Acid	0.62	J	1.0	0.16	mg/L	1		VFA-IC	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Carbon dioxide	1600		1000	1000	ug/L	1		RSK-175	Total/NA

Client Sample ID: MW-15-041812-0900

Date Collected: 04/18/12 09:00
Date Received: 04/18/12 17:15

Lab Sample ID: 480-18764-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/23/12 14:39	1
Tetrachloroethene	**8.1**		1.0	0.36	ug/L			04/23/12 14:39	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/23/12 14:39	1
Trichloroethene	**0.65**	**J**	1.0	0.46	ug/L			04/23/12 14:39	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/23/12 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*66 - 137*		*04/23/12 14:39*	*1*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/23/12 14:39*	*1*
Toluene-d8 (Surr)	*120*		*71 - 126*		*04/23/12 14:39*	*1*

Method: AM20GAX - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hydrogen	**0.82**		0.60		nm			04/22/12 16:41	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**0.78**	**J B**	1.5	0.49	ug/L			04/22/12 10:36	1
Ethene	**0.64**	**J B**	1.5	0.52	ug/L			04/22/12 10:36	1
Methane	**0.47**	**J B**	1.0	0.22	ug/L			04/22/12 10:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**11000**		2000	2000	ug/L			04/25/12 12:50	2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.050	0.019	mg/L		04/19/12 12:00	04/19/12 22:37	1
Magnesium	**54.4**		0.20	0.043	mg/L		04/19/12 12:00	04/19/12 22:37	1
Manganese	**0.24**		0.0030	0.00040	mg/L		04/19/12 12:00	04/19/12 22:37	1
Potassium	**3.3**		0.50	0.10	mg/L		04/19/12 12:00	04/19/12 22:37	1
Sodium	**424**		1.0	0.32	mg/L		04/19/12 12:00	04/19/12 22:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.020	0.0090	mg/L			04/19/12 15:41	1
Nitrate	**0.73**		0.050	0.011	mg/L			04/19/12 02:26	1
Nitrite	ND		0.050	0.020	mg/L			04/19/12 02:26	1
Sulfate	**111**		20.0	6.0	mg/L			04/24/12 13:26	4
Total Organic Carbon	**2.0**		1.0	0.43	mg/L			04/24/12 09:07	1
Total Alkalinity	**384**		5.0	0.79	mg/L			04/20/12 11:15	1
Chloride	**962**		25.0	11.5	mg/L			04/24/12 14:41	25
Sulfide	ND		0.10	0.052	mg/L			04/19/12 13:10	1
Acetic acid	ND		1.0	0.15	mg/L			04/20/12 02:21	1
Formic-acid	ND		1.0	0.11	mg/L			04/20/12 02:21	1
Lactic acid	ND		1.0	0.14	mg/L			04/20/12 02:21	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/20/12 02:21	1
Propionic acid	ND		1.0	0.17	mg/L			04/20/12 02:21	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/20/12 02:21	1

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Client Sample ID: MW-11-041812-1245
Date Collected: 04/18/12 12:45
Date Received: 04/18/12 17:15

Lab Sample ID: 480-18764-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.4		1.0	0.81	ug/L			04/23/12 15:01	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/23/12 15:01	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/23/12 15:01	1
Trichloroethene	ND		1.0	0.46	ug/L			04/23/12 15:01	1
Vinyl chloride	2.6		1.0	0.90	ug/L			04/23/12 15:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*66 - 137*		*04/23/12 15:01*	*1*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/23/12 15:01*	*1*
Toluene-d8 (Surr)	*120*		*71 - 126*		*04/23/12 15:01*	*1*

Method: AM20GAX - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hydrogen	12		0.60		nm			04/22/12 16:41	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	0.99	J B	1.5	0.49	ug/L			04/22/12 10:53	1
Ethene	1.3	J B	1.5	0.52	ug/L			04/22/12 10:53	1
Methane	14	B	1.0	0.22	ug/L			04/22/12 10:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	2100		1000	1000	ug/L			04/25/12 11:41	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.20		0.050	0.019	mg/L		04/19/12 12:00	04/19/12 22:39	1
Magnesium	48.5		0.20	0.043	mg/L		04/19/12 12:00	04/19/12 22:39	1
Manganese	0.14		0.0030	0.00040	mg/L		04/19/12 12:00	04/19/12 22:39	1
Potassium	8.3		0.50	0.10	mg/L		04/19/12 12:00	04/19/12 22:39	1
Sodium	143		1.0	0.32	mg/L		04/19/12 12:00	04/19/12 22:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.27		0.020	0.0090	mg/L			04/19/12 15:42	1
Nitrate	0.095		0.050	0.011	mg/L			04/19/12 02:31	1
Nitrite	ND		0.050	0.020	mg/L			04/19/12 02:31	1
Sulfate	98.9	B	25.0	7.5	mg/L			04/27/12 15:36	5
Total Organic Carbon	1.3		1.0	0.43	mg/L			04/24/12 09:37	1
Total Alkalinity	248		5.0	0.79	mg/L			04/20/12 11:15	1
Chloride	360		10.0	4.6	mg/L			04/24/12 14:41	10
Sulfide	0.053	J	0.10	0.052	mg/L			04/19/12 13:10	1
Acetic acid	ND		1.0	0.15	mg/L			04/20/12 02:50	1
Formic-acid	ND		1.0	0.11	mg/L			04/20/12 02:50	1
Lactic acid	ND		1.0	0.14	mg/L			04/20/12 02:50	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/20/12 02:50	1
Propionic acid	ND		1.0	0.17	mg/L			04/20/12 02:50	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/20/12 02:50	1

Client Sample ID: MW-12-048112-1530

Date Collected: 04/18/12 15:30
Date Received: 04/18/12 17:15

Lab Sample ID: 480-18764-3

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		1.0	0.36	ug/L			04/23/12 15:22	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/23/12 15:22	1
Trichloroethene	**0.83**	**J**	1.0	0.46	ug/L			04/23/12 15:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*66 - 137*		*04/23/12 15:22*	*1*
4-Bromofluorobenzene (Surr)	*118*		*73 - 120*		*04/23/12 15:22*	*1*
Toluene-d8 (Surr)	*120*		*71 - 126*		*04/23/12 15:22*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**150**		2.0	1.6	ug/L			04/24/12 13:36	2
Vinyl chloride	**120**		2.0	1.8	ug/L			04/24/12 13:36	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*66 - 137*		*04/24/12 13:36*	*2*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/24/12 13:36*	*2*
Toluene-d8 (Surr)	*117*		*71 - 126*		*04/24/12 13:36*	*2*

Method: AM20GAX - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hydrogen	**0.76**		0.60		nm			04/22/12 16:41	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**11**	**J B**	15	4.9	ug/L			04/22/12 11:10	10
Ethene	**11**	**J B**	15	5.2	ug/L			04/22/12 11:10	10
Methane	**300**	**B**	10	2.2	ug/L			04/22/12 11:10	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**15000**		2000	2000	ug/L			04/25/12 12:55	2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**12.7**		0.050	0.019	mg/L		04/19/12 12:00	04/19/12 22:42	1
Magnesium	**84.3**		0.20	0.043	mg/L		04/19/12 12:00	04/19/12 22:42	1
Manganese	**9.1**		0.0030	0.00040	mg/L		04/19/12 12:00	04/19/12 22:42	1
Potassium	**3.7**		0.50	0.10	mg/L		04/19/12 12:00	04/19/12 22:42	1
Sodium	**1250**		1.0	0.32	mg/L		04/19/12 12:00	04/19/12 22:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**1.8**		0.020	0.0090	mg/L			04/19/12 15:43	1
Nitrate	ND		0.050	0.011	mg/L			04/19/12 01:08	1
Nitrite	ND		0.050	0.020	mg/L			04/19/12 01:08	1
Sulfate	**133**		50.0	15.0	mg/L			04/24/12 13:26	10
Total Organic Carbon	**3.7**		1.0	0.43	mg/L			04/24/12 10:37	1
Total Alkalinity	**280**		5.0	0.79	mg/L			04/20/12 11:15	1
Chloride	**2900**		100	46.0	mg/L			04/24/12 14:50	100
Sulfide	ND		0.10	0.052	mg/L			04/19/12 13:10	1
Acetic acid	ND		1.0	0.15	mg/L			04/20/12 03:19	1
Formic-acid	ND		1.0	0.11	mg/L			04/20/12 03:19	1
Lactic acid	ND		1.0	0.14	mg/L			04/20/12 03:19	1

Client Sample ID: MW-12-048112-1530

Lab Sample ID: 480-18764-3

Date Collected: 04/18/12 15:30

Matrix: Water

Date Received: 04/18/12 17:15

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butyric Acid	ND		1.0	0.16	mg/L			04/20/12 03:19	1
Propionic acid	ND		1.0	0.17	mg/L			04/20/12 03:19	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/20/12 03:19	1

Client Sample ID: MW-13-041912-0845

Lab Sample ID: 480-18852-1

Date Collected: 04/19/12 08:45

Matrix: Water

Date Received: 04/19/12 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/25/12 12:35	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/25/12 12:35	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/25/12 12:35	1
Trichloroethene	ND		1.0	0.46	ug/L			04/25/12 12:35	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/25/12 12:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*66 - 137*		*04/25/12 12:35*	*1*
4-Bromofluorobenzene (Surr)	*119*		*73 - 120*		*04/25/12 12:35*	*1*
Toluene-d8 (Surr)	*121*		*71 - 126*		*04/25/12 12:35*	*1*

Method: AM20GAX - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hydrogen	**0.50**		0.60	0.25	nm			04/22/12 17:18	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**8.2**	**J B**	15	4.9	ug/L			04/22/12 12:43	10
Ethene	**6.9**	**J B**	15	5.2	ug/L			04/22/12 12:43	10
Methane	**93**	**B**	10	2.2	ug/L			04/22/12 12:43	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**3700**		1000	1000	ug/L			04/27/12 07:41	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**5.8**		0.050	0.019	mg/L		04/23/12 08:15	04/23/12 16:27	1
Magnesium	**38.5**		0.20	0.043	mg/L		04/23/12 08:15	04/23/12 16:27	1
Manganese	**4.4**		0.0030	0.00040	mg/L		04/23/12 08:15	04/23/12 16:27	1
Potassium	**5.3**		0.50	0.10	mg/L		04/23/12 08:15	04/23/12 16:27	1
Sodium	**940**		1.0	0.32	mg/L		04/23/12 08:15	04/23/12 16:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**0.96**		0.020	0.0090	mg/L			04/21/12 13:14	1
Nitrate	**0.081**		0.050	0.011	mg/L			04/20/12 10:14	1
Nitrite	ND		0.050	0.020	mg/L			04/20/12 12:07	1
Sulfate	**71.3**	**B**	25.0	7.5	mg/L			04/25/12 18:01	5
Total Organic Carbon	**4.0**		1.0	0.43	mg/L			04/24/12 16:32	1
Total Alkalinity	**360**		5.0	0.79	mg/L			04/23/12 12:09	1
Chloride	**1490**	**B**	30.0	13.8	mg/L			04/25/12 20:01	30
Sulfide	ND		0.10	0.052	mg/L			04/24/12 13:00	1
Acetic acid	ND		1.0	0.15	mg/L			04/29/12 11:52	1

Client Sample ID: MW-13-041912-0845

Lab Sample ID: 480-18852-1

Date Collected: 04/19/12 08:45
Matrix: Water
Date Received: 04/19/12 16:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formic-acid	ND		1.0	0.11	mg/L			04/29/12 11:52	1
Lactic acid	ND		1.0	0.14	mg/L			04/29/12 11:52	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/29/12 11:52	1
Propionic acid	ND		1.0	0.17	mg/L			04/29/12 11:52	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/29/12 11:52	1

Client Sample ID: MW-14-041912-1315

Lab Sample ID: 480-18852-2

Date Collected: 04/19/12 13:15
Matrix: Water
Date Received: 04/19/12 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**1.2**		1.0	0.81	ug/L			04/25/12 12:57	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/25/12 12:57	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/25/12 12:57	1
Trichloroethene	ND		1.0	0.46	ug/L			04/25/12 12:57	1
Vinyl chloride	**1.1**		1.0	0.90	ug/L			04/25/12 12:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*66 - 137*		*04/25/12 12:57*	*1*
4-Bromofluorobenzene (Surr)	*114*		*73 - 120*		*04/25/12 12:57*	*1*
Toluene-d8 (Surr)	*117*		*71 - 126*		*04/25/12 12:57*	*1*

Method: AM20GAX - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hydrogen	**6.7**		0.60	0.25	nm			04/22/12 17:18	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**8.6**	**J B**	15	4.9	ug/L			04/22/12 13:00	10
Ethene	**8.3**	**J B**	15	5.2	ug/L			04/22/12 13:00	10
Methane	**71**	**B**	10	2.2	ug/L			04/22/12 13:00	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**2900**		1000	1000	ug/L			04/27/12 07:47	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.14**		0.050	0.019	mg/L		04/23/12 08:15	04/23/12 16:29	1
Magnesium	**86.7**		0.20	0.043	mg/L		04/23/12 08:15	04/23/12 16:29	1
Manganese	**0.29**		0.0030	0.00040	mg/L		04/23/12 08:15	04/23/12 16:29	1
Potassium	**6.2**		0.50	0.10	mg/L		04/23/12 08:15	04/23/12 16:29	1
Sodium	**916**		1.0	0.32	mg/L		04/23/12 08:15	04/23/12 16:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**0.25**		0.020	0.0090	mg/L			04/21/12 13:15	1
Nitrate	ND		0.050	0.011	mg/L			04/20/12 10:15	1
Nitrite	ND		0.050	0.020	mg/L			04/20/12 10:15	1
Sulfate	**88.2**	**B**	25.0	7.5	mg/L			04/25/12 18:01	5
Total Organic Carbon	**1.5**		1.0	0.43	mg/L			04/25/12 16:37	1
Total Alkalinity	**328**		5.0	0.79	mg/L			04/23/12 12:09	1
Chloride	**1720**	**B**	50.0	23.0	mg/L			04/25/12 20:18	50

Client Sample ID: MW-14-041912-1315

Lab Sample ID: 480-18852-2

Date Collected: 04/19/12 13:15

Matrix: Water

Date Received: 04/19/12 16:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.10	0.052	mg/L			04/24/12 13:00	1
Acetic acid	ND		1.0	0.15	mg/L			04/29/12 12:21	1
Formic-acid	ND		1.0	0.11	mg/L			04/29/12 12:21	1
Lactic acid	ND		1.0	0.14	mg/L			04/29/12 12:21	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/29/12 12:21	1
Propionic acid	ND		1.0	0.17	mg/L			04/29/12 12:21	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/29/12 12:21	1

Client Sample ID: MW-10-041912-1520

Lab Sample ID: 480-18852-3

Date Collected: 04/19/12 15:20

Matrix: Water

Date Received: 04/19/12 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	**300**		4.0	3.2	ug/L			04/25/12 13:18	4
Tetrachloroethene	**77**		4.0	1.4	ug/L			04/25/12 13:18	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			04/25/12 13:18	4
Trichloroethene	**150**		4.0	1.8	ug/L			04/25/12 13:18	4
Vinyl chloride	**35**		4.0	3.6	ug/L			04/25/12 13:18	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*66 - 137*		*04/25/12 13:18*	*4*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/25/12 13:18*	*4*
Toluene-d8 (Surr)	*120*		*71 - 126*		*04/25/12 13:18*	*4*

Method: AM20GAX - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hydrogen	**1.0**		0.60	0.25	nm			04/22/12 17:18	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**9.1**	**J B**	15	4.9	ug/L			04/22/12 13:17	10
Ethene	**9.2**	**J B**	15	5.2	ug/L			04/22/12 13:17	10
Methane	**170**	**B**	10	2.2	ug/L			04/22/12 13:17	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	**5600**		1000	1000	ug/L			04/27/12 07:53	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.32**		0.050	0.019	mg/L		04/23/12 08:15	04/23/12 16:36	1
Magnesium	**95.5**		0.20	0.043	mg/L		04/23/12 08:15	04/23/12 16:36	1
Manganese	**2.4**		0.0030	0.00040	mg/L		04/23/12 08:15	04/23/12 16:36	1
Potassium	**7.0**		0.50	0.10	mg/L		04/23/12 08:15	04/23/12 16:36	1
Sodium	**2110**		1.0	0.32	mg/L		04/23/12 08:15	04/23/12 16:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**0.11**		0.020	0.0090	mg/L			04/21/12 13:16	1
Nitrate	ND		0.050	0.011	mg/L			04/20/12 10:16	1
Nitrite	ND		0.050	0.020	mg/L			04/20/12 10:16	1
Sulfate	**210**	**B**	75.0	22.5	mg/L			04/25/12 19:51	15
Total Organic Carbon	**2.3**		1.0	0.43	mg/L			04/24/12 19:31	1

Client Sample ID: MW-10-041912-1520

Lab Sample ID: 480-18852-3

Date Collected: 04/19/12 15:20

Matrix: Water

Date Received: 04/19/12 16:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	280		5.0	0.79	mg/L			04/23/12 12:09	1
Chloride	3790	B	100	46.0	mg/L			04/25/12 20:24	100
Sulfide	ND		0.10	0.052	mg/L			04/24/12 13:00	1
Acetic acid	ND		1.0	0.15	mg/L			04/29/12 12:50	1
Formic-acid	ND		1.0	0.11	mg/L			04/29/12 12:50	1
Lactic acid	ND		1.0	0.14	mg/L			04/29/12 12:50	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/29/12 12:50	1
Propionic acid	ND		1.0	0.17	mg/L			04/29/12 12:50	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/29/12 12:50	1

Client Sample ID: DUP-041912-0001

Lab Sample ID: 480-18852-4

Date Collected: 04/19/12 00:00

Matrix: Water

Date Received: 04/19/12 16:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		4.0	3.2	ug/L			04/25/12 13:40	4
Tetrachloroethene	ND		4.0	1.4	ug/L			04/25/12 13:40	4
trans-1,2-Dichloroethene	ND		4.0	3.6	ug/L			04/25/12 13:40	4
Trichloroethene	ND		4.0	1.8	ug/L			04/25/12 13:40	4
Vinyl chloride	ND		4.0	3.6	ug/L			04/25/12 13:40	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*66 - 137*		*04/25/12 13:40*	*4*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/25/12 13:40*	*4*
Toluene-d8 (Surr)	*119*		*71 - 126*		*04/25/12 13:40*	*4*

Method: AM20GAX - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hydrogen	0.79		0.60	0.25	nm			04/22/12 17:18	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	8.6	J B	15	4.9	ug/L			04/22/12 14:17	10
Ethene	8.0	J B	15	5.2	ug/L			04/22/12 14:17	10
Methane	89	B	10	2.2	ug/L			04/22/12 14:17	10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	4500		1000	1000	ug/L			04/27/12 08:03	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	5.7		0.050	0.019	mg/L		04/23/12 08:15	04/23/12 16:49	1
Magnesium	36.3		0.20	0.043	mg/L		04/23/12 08:15	04/23/12 16:49	1
Manganese	4.1		0.0030	0.00040	mg/L		04/23/12 08:15	04/23/12 16:49	1
Potassium	5.4		0.50	0.10	mg/L		04/23/12 08:15	04/23/12 16:49	1
Sodium	925		1.0	0.32	mg/L		04/23/12 08:15	04/23/12 16:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.90		0.020	0.0090	mg/L			04/21/12 13:17	1
Nitrate	0.068		0.050	0.011	mg/L			04/20/12 10:12	1
Nitrite	ND		0.050	0.020	mg/L			04/20/12 12:08	1

Client Sample ID: DUP-041912-0001 — Lab Sample ID: 480-18852-4

Date Collected: 04/19/12 00:00 — **Matrix: Water**
Date Received: 04/19/12 16:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	66.3	B	25.0	7.5	mg/L			04/25/12 18:01	5
Total Organic Carbon	4.0		1.0	0.43	mg/L			04/24/12 20:01	1
Total Alkalinity	352		5.0	0.79	mg/L			04/23/12 12:09	1
Chloride	1490	B	30.0	13.8	mg/L			04/25/12 19:55	30
Sulfide	ND		0.10	0.052	mg/L			04/24/12 13:00	1
Acetic acid	ND		1.0	0.15	mg/L			04/29/12 13:20	1
Formic-acid	ND		1.0	0.11	mg/L			04/29/12 13:20	1
Lactic acid	ND		1.0	0.14	mg/L			04/29/12 13:20	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/29/12 13:20	1
Propionic acid	ND		1.0	0.17	mg/L			04/29/12 13:20	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/29/12 13:20	1

Client Sample ID: MW-4-042012-1300 — Lab Sample ID: 480-18943-1

Date Collected: 04/20/12 13:00 — **Matrix: Water**
Date Received: 04/20/12 17:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	1.4		1.0	0.36	ug/L			04/27/12 13:57	1
trans-1,2-Dichloroethene	160	E	1.0	0.90	ug/L			04/27/12 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*66 - 137*		*04/27/12 13:57*	*1*
4-Bromofluorobenzene (Surr)	*100*		*73 - 120*		*04/27/12 13:57*	*1*
Toluene-d8 (Surr)	*106*		*71 - 126*		*04/27/12 13:57*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	42000		500	410	ug/L			04/28/12 14:18	500
Trichloroethene	18000		500	230	ug/L			04/28/12 14:18	500
Vinyl chloride	9100		500	450	ug/L			04/28/12 14:18	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*66 - 137*		*04/28/12 14:18*	*500*
4-Bromofluorobenzene (Surr)	*104*		*73 - 120*		*04/28/12 14:18*	*500*
Toluene-d8 (Surr)	*100*		*71 - 126*		*04/28/12 14:18*	*500*

Method: AM20GAX - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hydrogen	28		0.60	0.25	nm			05/04/12 09:36	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	650	J B	750	250	ug/L			04/22/12 11:37	500
Ethene	2300	B	750	260	ug/L			04/22/12 11:37	500
Methane	3800	B	500	110	ug/L			04/22/12 11:37	500

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	9500		2000	2000	ug/L			04/27/12 09:13	2

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2.7		0.050	0.019	mg/L		04/23/12 08:15	04/23/12 14:23	1

Client Sample ID: MW-4-042012-1300

Lab Sample ID: 480-18943-1

Date Collected: 04/20/12 13:00

Matrix: Water

Date Received: 04/20/12 17:27

Method: 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	138		0.20	0.043	mg/L		04/23/12 08:15	04/23/12 14:23	1
Manganese	1.5	B	0.0030	0.00040	mg/L		04/23/12 08:15	04/23/12 14:23	1
Potassium	15.6		0.50	0.10	mg/L		04/23/12 08:15	04/23/12 14:23	1
Sodium	1400		1.0	0.32	mg/L		04/23/12 08:15	04/23/12 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	2.6		0.040	0.018	mg/L			04/24/12 16:00	2
Nitrate	ND		0.050	0.011	mg/L			04/20/12 21:01	1
Nitrite	ND		0.050	0.020	mg/L			04/20/12 21:01	1
Sulfate	282	B	150	45.0	mg/L			04/27/12 06:05	30
Total Organic Carbon	3.1		1.0	0.43	mg/L			04/24/12 21:29	1
Total Alkalinity	320		5.0	0.79	mg/L			04/23/12 12:09	1
Chloride	3580		121	55.7	mg/L			04/27/12 15:09	121
Sulfide	ND		0.10	0.052	mg/L			04/24/12 13:00	1
Acetic acid	ND		1.0	0.15	mg/L			04/29/12 16:44	1
Formic-acid	ND		1.0	0.11	mg/L			04/29/12 16:44	1
Lactic acid	ND		1.0	0.14	mg/L			04/29/12 16:44	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/29/12 16:44	1
Propionic acid	ND		1.0	0.17	mg/L			04/29/12 16:44	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/29/12 16:44	1

Client Sample ID: MW-7-042012-1630

Lab Sample ID: 480-18943-2

Date Collected: 04/20/12 16:30

Matrix: Water

Date Received: 04/20/12 17:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	43000		10000	8100	ug/L			04/28/12 01:00	10000
Tetrachloroethene	ND		10000	3600	ug/L			04/28/12 01:00	10000
trans-1,2-Dichloroethene	ND		10000	9000	ug/L			04/28/12 01:00	10000
Trichloroethene	730000	B	10000	4600	ug/L			04/28/12 01:00	10000
Vinyl chloride	ND		10000	9000	ug/L			04/28/12 01:00	10000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*66 - 137*		*04/28/12 01:00*	*10000*
4-Bromofluorobenzene (Surr)	*106*		*73 - 120*		*04/28/12 01:00*	*10000*
Toluene-d8 (Surr)	*104*		*71 - 126*		*04/28/12 01:00*	*10000*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	17		1.5	0.49	ug/L			04/22/12 11:54	1
Ethene	98		1.5	0.52	ug/L			04/22/12 11:54	1
Methane	46		1.0	0.22	ug/L			04/22/12 11:54	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	1600		1000	1000	ug/L			04/27/12 08:31	1

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.061		0.050	0.019	mg/L		04/23/12 08:15	04/23/12 14:26	1
Magnesium	67.1		0.20	0.043	mg/L		04/23/12 08:15	04/23/12 14:26	1
Manganese	0.024	B	0.0030	0.00040	mg/L		04/23/12 08:15	04/23/12 14:26	1

Client Sample ID: MW-7-042012-1630
Lab Sample ID: 480-18943-2
Date Collected: 04/20/12 16:30
Matrix: Water
Date Received: 04/20/12 17:27

Method: 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	**13.2**		0.50	0.10	mg/L		04/23/12 08:15	04/23/12 14:26	1
Sodium	**193**		1.0	0.32	mg/L		04/23/12 08:15	04/23/12 14:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**0.77**		0.020	0.0090	mg/L			04/24/12 14:11	1
Nitrate	ND		0.050	0.011	mg/L			04/20/12 21:02	1
Nitrite	ND		0.050	0.020	mg/L			04/20/12 21:02	1
Sulfate	**332**	**B**	100	30.0	mg/L			04/27/12 13:32	20
Total Organic Carbon	**8.7**		1.0	0.43	mg/L			04/24/12 22:28	1
Total Alkalinity	**240**		5.0	0.79	mg/L			04/23/12 12:09	1
Chloride	**416**		20.0	9.2	mg/L			04/27/12 15:09	20
Sulfide	ND		0.10	0.052	mg/L			04/24/12 13:00	1
Acetic acid	**4.2**		1.0	0.15	mg/L			04/29/12 17:13	1
Formic-acid	ND		1.0	0.11	mg/L			04/29/12 17:13	1
Lactic acid	ND		1.0	0.14	mg/L			04/29/12 17:13	1
n-Butyric Acid	**0.62**	**J**	1.0	0.16	mg/L			04/29/12 17:13	1
Propionic acid	ND		1.0	0.17	mg/L			04/29/12 17:13	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/29/12 17:13	1

Surrogate Summary

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		12DCE	BFB	TOL
Lab Sample ID	Client Sample ID	(66-137)	(73-120)	(71-126)
480-18764-1	MW-15-041812-0900	110	116	120
480-18764-2	MW-11-041812-1245	110	116	120
480-18764-3	MW-12-048112-1530	112	118	120
480-18764-3 - DL	MW-12-048112-1530	106	116	117
480-18852-1	MW-13-041912-0845	118	119	121
480-18852-2	MW-14-041912-1315	114	114	117
480-18852-3	MW-10-041912-1520	116	116	120
480-18852-4	DUP-041912-0001	116	116	119
480-18943-1	MW-4-042012-1300	99	100	106
480-18943-1 - DL	MW-4-042012-1300	102	104	100
480-18943-2	MW-7-042012-1630	101	106	104
LCS 480-60999/4	Lab Control Sample	106	118	118
LCS 480-61223/4	Lab Control Sample	108	119	118
LCS 480-61436/4	Lab Control Sample	109	119	119
LCS 480-61854/4	Lab Control Sample	102	108	106
LCS 480-61974/4	Lab Control Sample	102	109	105
LCS 480-62084/4	Lab Control Sample	107	110	107
MB 480-60999/5	Method Blank	109	116	118
MB 480-61223/5	Method Blank	111	117	119
MB 480-61436/5	Method Blank	114	116	119
MB 480-61854/5	Method Blank	104	108	107
MB 480-61974/5	Method Blank	104	109	104
MB 480-62084/5	Method Blank	105	109	107

Surrogate Legend

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

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

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

Lab Sample ID: MB 480-60999/5
Matrix: Water
Analysis Batch: 60999

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/23/12 12:15	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/23/12 12:15	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/23/12 12:15	1
Trichloroethene	ND		1.0	0.46	ug/L			04/23/12 12:15	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/23/12 12:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*66 - 137*		*04/23/12 12:15*	*1*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/23/12 12:15*	*1*
Toluene-d8 (Surr)	*118*		*71 - 126*		*04/23/12 12:15*	*1*

Lab Sample ID: LCS 480-60999/4
Matrix: Water
Analysis Batch: 60999

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	25.0	25.1		ug/L		100	74 - 124
Tetrachloroethene	25.0	28.3		ug/L		113	74 - 122
trans-1,2-Dichloroethene	25.0	23.1		ug/L		92	73 - 127
Trichloroethene	25.0	26.4		ug/L		106	74 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*66 - 137*
4-Bromofluorobenzene (Surr)	*118*		*73 - 120*
Toluene-d8 (Surr)	*118*		*71 - 126*

Lab Sample ID: MB 480-61223/5
Matrix: Water
Analysis Batch: 61223

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/24/12 12:22	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/24/12 12:22	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/24/12 12:22	1
Trichloroethene	ND		1.0	0.46	ug/L			04/24/12 12:22	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/24/12 12:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*66 - 137*		*04/24/12 12:22*	*1*
4-Bromofluorobenzene (Surr)	*117*		*73 - 120*		*04/24/12 12:22*	*1*
Toluene-d8 (Surr)	*119*		*71 - 126*		*04/24/12 12:22*	*1*

Lab Sample ID: LCS 480-61223/4
Matrix: Water
Analysis Batch: 61223

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	25.0	25.3		ug/L		101	74 - 124
Tetrachloroethene	25.0	27.5		ug/L		110	74 - 122

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

Lab Sample ID: LCS 480-61223/4
Matrix: Water
Analysis Batch: 61223

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
trans-1,2-Dichloroethene	25.0	23.2		ug/L		93	73 - 127
Trichloroethene	25.0	25.7		ug/L		103	74 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*66 - 137*
4-Bromofluorobenzene (Surr)	*119*		*73 - 120*
Toluene-d8 (Surr)	*118*		*71 - 126*

Lab Sample ID: MB 480-61436/5
Matrix: Water
Analysis Batch: 61436

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/25/12 11:44	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/25/12 11:44	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/25/12 11:44	1
Trichloroethene	ND		1.0	0.46	ug/L			04/25/12 11:44	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/25/12 11:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*66 - 137*		*04/25/12 11:44*	*1*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/25/12 11:44*	*1*
Toluene-d8 (Surr)	*119*		*71 - 126*		*04/25/12 11:44*	*1*

Lab Sample ID: LCS 480-61436/4
Matrix: Water
Analysis Batch: 61436

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	25.0	24.0		ug/L		96	74 - 124
Tetrachloroethene	25.0	28.3		ug/L		113	74 - 122
trans-1,2-Dichloroethene	25.0	22.4		ug/L		90	73 - 127
Trichloroethene	25.0	25.4		ug/L		102	74 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*66 - 137*
4-Bromofluorobenzene (Surr)	*119*		*73 - 120*
Toluene-d8 (Surr)	*119*		*71 - 126*

Lab Sample ID: MB 480-61854/5
Matrix: Water
Analysis Batch: 61854

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/27/12 13:00	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/27/12 13:00	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/27/12 13:00	1
Trichloroethene	ND		1.0	0.46	ug/L			04/27/12 13:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/27/12 13:00	1

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

Lab Sample ID: MB 480-61854/5
Matrix: Water
Analysis Batch: 61854

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 137		04/27/12 13:00	1
4-Bromofluorobenzene (Surr)	108		73 - 120		04/27/12 13:00	1
Toluene-d8 (Surr)	107		71 - 126		04/27/12 13:00	1

Lab Sample ID: LCS 480-61854/4
Matrix: Water
Analysis Batch: 61854

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	25.0	24.7		ug/L		99	74 - 124
Tetrachloroethene	25.0	27.8		ug/L		111	74 - 122
trans-1,2-Dichloroethene	25.0	24.0		ug/L		96	73 - 127
Trichloroethene	25.0	24.3		ug/L		97	74 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
4-Bromofluorobenzene (Surr)	108		73 - 120
Toluene-d8 (Surr)	106		71 - 126

Lab Sample ID: MB 480-61974/5
Matrix: Water
Analysis Batch: 61974

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/28/12 00:00	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/28/12 00:00	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/28/12 00:00	1
Trichloroethene	0.835	J	1.0	0.46	ug/L			04/28/12 00:00	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/28/12 00:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 137		04/28/12 00:00	1
4-Bromofluorobenzene (Surr)	109		73 - 120		04/28/12 00:00	1
Toluene-d8 (Surr)	104		71 - 126		04/28/12 00:00	1

Lab Sample ID: LCS 480-61974/4
Matrix: Water
Analysis Batch: 61974

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	25.0	22.5		ug/L		90	74 - 124
Tetrachloroethene	25.0	25.1		ug/L		100	74 - 122
trans-1,2-Dichloroethene	25.0	22.9		ug/L		92	73 - 127
Trichloroethene	25.0	23.9		ug/L		96	74 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 137
4-Bromofluorobenzene (Surr)	109		73 - 120

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

Lab Sample ID: LCS 480-61974/4
Matrix: Water
Analysis Batch: 61974

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	*105*		*71 - 126*

Lab Sample ID: MB 480-62084/5
Matrix: Water
Analysis Batch: 62084

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		1.0	0.81	ug/L			04/28/12 12:39	1
Tetrachloroethene	ND		1.0	0.36	ug/L			04/28/12 12:39	1
trans-1,2-Dichloroethene	ND		1.0	0.90	ug/L			04/28/12 12:39	1
Trichloroethene	ND		1.0	0.46	ug/L			04/28/12 12:39	1
Vinyl chloride	ND		1.0	0.90	ug/L			04/28/12 12:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*105*		*66 - 137*		*04/28/12 12:39*	*1*
4-Bromofluorobenzene (Surr)	*109*		*73 - 120*		*04/28/12 12:39*	*1*
Toluene-d8 (Surr)	*107*		*71 - 126*		*04/28/12 12:39*	*1*

Lab Sample ID: LCS 480-62084/4
Matrix: Water
Analysis Batch: 62084

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	25.0	23.2		ug/L		93	74 - 124
Tetrachloroethene	25.0	23.7		ug/L		95	74 - 122
trans-1,2-Dichloroethene	25.0	22.9		ug/L		92	73 - 127
Trichloroethene	25.0	23.6		ug/L		94	74 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*107*		*66 - 137*
4-Bromofluorobenzene (Surr)	*110*		*73 - 120*
Toluene-d8 (Surr)	*107*		*71 - 126*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 200-37525/3
Matrix: Water
Analysis Batch: 37525

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	ND		1000	1000	ug/L			04/25/12 09:02	1

Lab Sample ID: LCS 200-37525/2
Matrix: Water
Analysis Batch: 37525

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbon dioxide	5010	4890		ug/L		98	70 - 130

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: MB 200-37685/3
Matrix: Water
Analysis Batch: 37685

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon dioxide	ND		1000	1000	ug/L			04/27/12 07:27	1

Lab Sample ID: LCS 200-37685/2
Matrix: Water
Analysis Batch: 37685

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Carbon dioxide	5010	5190		ug/L		104	70 - 130

Lab Sample ID: MB 480-60876/12
Matrix: Water
Analysis Batch: 60876

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	0.792	J	1.5	0.49	ug/L			04/22/12 07:52	1
Ethene	0.799	J	1.5	0.52	ug/L			04/22/12 07:52	1
Methane	0.317	J	1.0	0.22	ug/L			04/22/12 07:52	1

Lab Sample ID: LCS 480-60876/13
Matrix: Water
Analysis Batch: 60876

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	14.4	16.0		ug/L		111	71 - 147
Ethene	13.5	15.2		ug/L		113	71 - 147
Methane	7.76	8.73		ug/L		113	48 - 174

Lab Sample ID: LCSD 480-60876/23
Matrix: Water
Analysis Batch: 60876

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	14.4	15.0		ug/L		104	71 - 147	6	50
Ethene	13.5	14.1		ug/L		105	71 - 147	8	50
Methane	7.76	8.71		ug/L		112	48 - 174	0	50

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 480-60415/1-A
Matrix: Water
Analysis Batch: 60637

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 60415

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.050	0.019	mg/L		04/19/12 12:00	04/19/12 22:30	1
Magnesium	ND		0.20	0.043	mg/L		04/19/12 12:00	04/19/12 22:30	1
Manganese	ND		0.0030	0.00040	mg/L		04/19/12 12:00	04/19/12 22:30	1
Potassium	ND		0.50	0.10	mg/L		04/19/12 12:00	04/19/12 22:30	1
Sodium	ND		1.0	0.32	mg/L		04/19/12 12:00	04/19/12 22:30	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-60415/2-A
Matrix: Water
Analysis Batch: 60637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 60415

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10.0	9.86		mg/L		99	80 - 120
Magnesium	10.0	10.12		mg/L		101	80 - 120
Manganese	0.200	0.209		mg/L		104	80 - 120
Potassium	10.0	10.05		mg/L		100	80 - 120
Sodium	10.0	10.15		mg/L		101	80 - 120

Lab Sample ID: MB 480-60777/1-A
Matrix: Water
Analysis Batch: 61196

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 60777

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.050	0.019	mg/L		04/23/12 08:15	04/23/12 15:56	1
Magnesium	ND		0.20	0.043	mg/L		04/23/12 08:15	04/23/12 15:56	1
Manganese	ND		0.0030	0.00040	mg/L		04/23/12 08:15	04/23/12 15:56	1
Potassium	ND		0.50	0.10	mg/L		04/23/12 08:15	04/23/12 15:56	1
Sodium	ND		1.0	0.32	mg/L		04/23/12 08:15	04/23/12 15:56	1

Lab Sample ID: LCS 480-60777/2-A
Matrix: Water
Analysis Batch: 61196

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 60777

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10.0	9.93		mg/L		99	80 - 120
Magnesium	10.0	10.05		mg/L		100	80 - 120
Manganese	0.200	0.204		mg/L		102	80 - 120
Potassium	10.0	9.60		mg/L		96	80 - 120
Sodium	10.0	9.70		mg/L		97	80 - 120

Lab Sample ID: 480-18852-3 MS
Matrix: Water
Analysis Batch: 61196

Client Sample ID: MW-10-041912-1520
Prep Type: Total/NA
Prep Batch: 60777

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.32		10.0	9.99		mg/L		97	75 - 125
Magnesium	95.5		10.0	105.3	4	mg/L		98	75 - 125
Manganese	2.4		0.200	2.60	4	mg/L		92	75 - 125
Potassium	7.0		10.0	17.64		mg/L		107	75 - 125
Sodium	2110		10.0	2160	4	mg/L		458	75 - 125

Lab Sample ID: 480-18852-3 MSD
Matrix: Water
Analysis Batch: 61196

Client Sample ID: MW-10-041912-1520
Prep Type: Total/NA
Prep Batch: 60777

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	0.32		10.0	9.99		mg/L		97	75 - 125	0	20
Magnesium	95.5		10.0	104.2	4	mg/L		87	75 - 125	1	20
Manganese	2.4		0.200	2.56	4	mg/L		73	75 - 125	1	20
Potassium	7.0		10.0	17.52		mg/L		105	75 - 125	1	20
Sodium	2110		10.0	2142	4	mg/L		279	75 - 125	1	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 480-60930/1-A
Matrix: Water
Analysis Batch: 61178

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 60930

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.050	0.019	mg/L		04/23/12 08:15	04/23/12 13:34	1
Magnesium	ND		0.20	0.043	mg/L		04/23/12 08:15	04/23/12 13:34	1
Manganese	0.000420	J	0.0030	0.00040	mg/L		04/23/12 08:15	04/23/12 13:34	1
Potassium	ND		0.50	0.10	mg/L		04/23/12 08:15	04/23/12 13:34	1
Sodium	ND		1.0	0.32	mg/L		04/23/12 08:15	04/23/12 13:34	1

Lab Sample ID: LCS 480-60930/2-A
Matrix: Water
Analysis Batch: 61178

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 60930

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	10.0	10.85		mg/L		109	80 - 120
Magnesium	10.0	10.87		mg/L		109	80 - 120
Manganese	0.200	0.207		mg/L		103	80 - 120
Potassium	10.0	10.68		mg/L		107	80 - 120
Sodium	10.0	10.47		mg/L		105	80 - 120

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-60567/147
Matrix: Water
Analysis Batch: 60567

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.020	0.0090	mg/L			04/19/12 15:39	1

Lab Sample ID: LCS 480-60567/148
Matrix: Water
Analysis Batch: 60567

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.02		mg/L		102	90 - 110

Lab Sample ID: MB 480-60915/75
Matrix: Water
Analysis Batch: 60915

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.020	0.0090	mg/L			04/21/12 12:58	1

Lab Sample ID: LCS 480-60915/76
Matrix: Water
Analysis Batch: 60915

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.02		mg/L		102	90 - 110

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: MB 480-61338/147
Matrix: Water
Analysis Batch: 61338

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.020	0.0090	mg/L			04/24/12 13:57	1

Lab Sample ID: MB 480-61338/267
Matrix: Water
Analysis Batch: 61338

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.020	0.0090	mg/L			04/24/12 15:57	1

Lab Sample ID: LCS 480-61338/148
Matrix: Water
Analysis Batch: 61338

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	1.02		mg/L		102	90 - 110

Lab Sample ID: LCS 480-61338/268
Matrix: Water
Analysis Batch: 61338

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.00	0.971		mg/L		97	90 - 110

Method: 353.2 - Nitrogen, Nitrite

Lab Sample ID: MB 480-60344/27
Matrix: Water
Analysis Batch: 60344

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite	ND		0.050	0.020	mg/L			04/19/12 02:04	1

Lab Sample ID: MB 480-60344/51
Matrix: Water
Analysis Batch: 60344

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite	ND		0.050	0.020	mg/L			04/19/12 02:29	1

Lab Sample ID: LCS 480-60344/28
Matrix: Water
Analysis Batch: 60344

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite	1.50	1.60		mg/L		107	90 - 110

Method: 353.2 - Nitrogen, Nitrite (Continued)

Lab Sample ID: LCS 480-60344/52
Matrix: Water
Analysis Batch: 60344

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrite			1.50	1.60		mg/L		107	90 - 110		

Lab Sample ID: 480-18764-2 MS
Matrix: Water
Analysis Batch: 60344

Client Sample ID: MW-11-041812-1245
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrite	ND		1.00	1.10		mg/L		110	61 - 147		

Lab Sample ID: 480-18764-2 DU
Matrix: Water
Analysis Batch: 60344

Client Sample ID: MW-11-041812-1245
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrite	ND			ND		mg/L				NC	20

Lab Sample ID: MB 480-60734/34
Matrix: Water
Analysis Batch: 60734

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite	ND		0.050	0.020	mg/L			04/20/12 12:00	1

Lab Sample ID: LCS 480-60734/35
Matrix: Water
Analysis Batch: 60734

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrite			1.50	1.60		mg/L		106	90 - 110		

Lab Sample ID: 480-18852-4 MS
Matrix: Water
Analysis Batch: 60734

Client Sample ID: DUP-041912-0001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrite	ND		1.00	0.852		mg/L		85	61 - 147		

Lab Sample ID: 480-18852-4 DU
Matrix: Water
Analysis Batch: 60734

Client Sample ID: DUP-041912-0001
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Nitrite	ND			ND		mg/L				NC	20

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 480-61361/9
Matrix: Water
Analysis Batch: 61361

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		5.0	1.5	mg/L			04/24/12 13:23	1

Lab Sample ID: LCS 480-61361/8
Matrix: Water
Analysis Batch: 61361

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	30.0	30.89		mg/L		103	90 - 110

Lab Sample ID: MB 480-61648/17
Matrix: Water
Analysis Batch: 61648

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.52	J	5.0	1.5	mg/L			04/25/12 17:48	1

Lab Sample ID: MB 480-61648/41
Matrix: Water
Analysis Batch: 61648

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.42	J	5.0	1.5	mg/L			04/25/12 19:51	1

Lab Sample ID: LCS 480-61648/16
Matrix: Water
Analysis Batch: 61648

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	30.0	27.15		mg/L		90	90 - 110

Lab Sample ID: LCS 480-61648/40
Matrix: Water
Analysis Batch: 61648

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	30.0	27.19		mg/L		91	90 - 110

Lab Sample ID: MB 480-61946/16
Matrix: Water
Analysis Batch: 61946

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.71	J	5.0	1.5	mg/L			04/26/12 18:14	1

Lab Sample ID: MB 480-61946/39
Matrix: Water
Analysis Batch: 61946

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.56	J	5.0	1.5	mg/L			04/27/12 04:20	1

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: MB 480-61946/54
Matrix: Water
Analysis Batch: 61946

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.53	J	5.0	1.5	mg/L			04/27/12 10:55	1

Lab Sample ID: MB 480-61946/59
Matrix: Water
Analysis Batch: 61946

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.60	J	5.0	1.5	mg/L			04/27/12 13:06	1

Lab Sample ID: LCS 480-61946/38
Matrix: Water
Analysis Batch: 61946

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	30.0	29.37		mg/L		98	90 - 110

Lab Sample ID: LCS 480-61946/58
Matrix: Water
Analysis Batch: 61946

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	30.0	28.69		mg/L		96	90 - 110

Lab Sample ID: 480-18943-1 MS
Matrix: Water
Analysis Batch: 61946

Client Sample ID: MW-4-042012-1300
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	282	B	600	290.3	F	mg/L		1	60 - 128

Lab Sample ID: 480-18943-2 MS
Matrix: Water
Analysis Batch: 61946

Client Sample ID: MW-7-042012-1630
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	332	B	20.0	346.2	4	mg/L		73	60 - 128

Lab Sample ID: 480-18943-1 DU
Matrix: Water
Analysis Batch: 61946

Client Sample ID: MW-4-042012-1300
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	282	B	273.2		mg/L		3	20

Lab Sample ID: 480-18943-2 DU
Matrix: Water
Analysis Batch: 61946

Client Sample ID: MW-7-042012-1630
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	332	B	339.5		mg/L		2	20

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: MB 480-61992/7
Matrix: Water
Analysis Batch: 61992

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.97	J	5.0	1.5	mg/L			04/27/12 15:09	1

Lab Sample ID: LCS 480-61992/6
Matrix: Water
Analysis Batch: 61992

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	30.0	28.19		mg/L		94	90 - 110

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-61484/27
Matrix: Water
Analysis Batch: 61484

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.43	mg/L			04/24/12 06:38	1

Lab Sample ID: MB 480-61484/51
Matrix: Water
Analysis Batch: 61484

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.43	mg/L			04/24/12 18:31	1

Lab Sample ID: LCS 480-61484/28
Matrix: Water
Analysis Batch: 61484

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	60.0	57.46		mg/L		96	90 - 110

Lab Sample ID: LCS 480-61484/52
Matrix: Water
Analysis Batch: 61484

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	60.0	58.05		mg/L		97	90 - 110

Lab Sample ID: 480-18764-3 MS
Matrix: Water
Analysis Batch: 61484

Client Sample ID: MW-12-048112-1530
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	3.7		20.0	20.83		mg/L		86	54 - 131

Method: 9060 - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 480-18852-1 MS
Matrix: Water
Analysis Batch: 61484

Client Sample ID: MW-13-041912-0845
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	4.0		20.0	21.52		mg/L		87	54 - 131

Lab Sample ID: 480-18943-2 MS
Matrix: Water
Analysis Batch: 61484

Client Sample ID: MW-7-042012-1630
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	8.7		20.0	25.94		mg/L		86	54 - 131

Lab Sample ID: 480-18764-2 DU
Matrix: Water
Analysis Batch: 61484

Client Sample ID: MW-11-041812-1245
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	1.3		1.28		mg/L		3	20

Lab Sample ID: 480-18943-1 DU
Matrix: Water
Analysis Batch: 61484

Client Sample ID: MW-4-042012-1300
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	3.1		2.57		mg/L		20	20

Lab Sample ID: MB 480-61892/3
Matrix: Water
Analysis Batch: 61892

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.43	mg/L			04/25/12 15:36	1

Lab Sample ID: LCS 480-61892/4
Matrix: Water
Analysis Batch: 61892

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	60.0	59.71		mg/L		100	90 - 110

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 480-60794/27
Matrix: Water
Analysis Batch: 60794

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		5.0	0.79	mg/L			04/20/12 11:15	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 480-60794/3
Matrix: Water
Analysis Batch: 60794

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		5.0	0.79	mg/L			04/20/12 11:15	1

Lab Sample ID: MB 480-60794/51
Matrix: Water
Analysis Batch: 60794

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		5.0	0.79	mg/L			04/20/12 11:15	1

Lab Sample ID: LCS 480-60794/28
Matrix: Water
Analysis Batch: 60794

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity	1000	940.0		mg/L		94	90 - 110

Lab Sample ID: LCS 480-60794/4
Matrix: Water
Analysis Batch: 60794

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity	1000	940.0		mg/L		94	90 - 110

Lab Sample ID: LCS 480-60794/52
Matrix: Water
Analysis Batch: 60794

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity	1000	928.0		mg/L		93	90 - 110

Lab Sample ID: MB 480-61089/27
Matrix: Water
Analysis Batch: 61089

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity	ND		5.0	0.79	mg/L			04/23/12 12:09	1

Lab Sample ID: LCS 480-61089/28
Matrix: Water
Analysis Batch: 61089

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity	1000	928.0		mg/L		93	90 - 110

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 480-61362/5
Matrix: Water
Analysis Batch: 61362

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.46	mg/L			04/24/12 14:38	1

Lab Sample ID: LCS 480-61362/4
Matrix: Water
Analysis Batch: 61362

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.42		mg/L		106	90 - 110

Lab Sample ID: MB 480-61649/15
Matrix: Water
Analysis Batch: 61649

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.905	J	1.0	0.46	mg/L			04/25/12 19:53	1

Lab Sample ID: MB 480-61649/31
Matrix: Water
Analysis Batch: 61649

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.858	J	1.0	0.46	mg/L			04/25/12 20:16	1

Lab Sample ID: MB 480-61649/43
Matrix: Water
Analysis Batch: 61649

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.641	J	1.0	0.46	mg/L			04/25/12 20:19	1

Lab Sample ID: LCS 480-61649/14
Matrix: Water
Analysis Batch: 61649

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.21		mg/L		105	90 - 110

Lab Sample ID: LCS 480-61649/30
Matrix: Water
Analysis Batch: 61649

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	25.90		mg/L		104	90 - 110

Lab Sample ID: LCS 480-61649/42
Matrix: Water
Analysis Batch: 61649

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	25.0	26.34		mg/L		105	90 - 110

Method: SM 4500 Cl- E - Chloride, Total (Continued)

Lab Sample ID: MB 480-61931/61
Matrix: Water
Analysis Batch: 61931

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.46	mg/L			04/26/12 11:05	1

Lab Sample ID: MB 480-61931/82
Matrix: Water
Analysis Batch: 61931

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.46	mg/L			04/27/12 15:09	1

Lab Sample ID: LCS 480-61931/81
Matrix: Water
Analysis Batch: 61931

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			25.0	25.43		mg/L		102	90 - 110		

Lab Sample ID: 480-18943-1 MS
Matrix: Water
Analysis Batch: 61931

Client Sample ID: MW-4-042012-1300
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	3580		20.0	3394	4	mg/L		-946	74 - 131		

Lab Sample ID: 480-18943-2 MS
Matrix: Water
Analysis Batch: 61931

Client Sample ID: MW-7-042012-1630
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	416		20.0	404.7	4	mg/L		-54	74 - 131		

Lab Sample ID: 480-18943-1 DU
Matrix: Water
Analysis Batch: 61931

Client Sample ID: MW-4-042012-1300
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloride	3580			3570		mg/L				0.4	20

Lab Sample ID: 480-18943-2 DU
Matrix: Water
Analysis Batch: 61931

Client Sample ID: MW-7-042012-1630
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Chloride	416			411.0		mg/L				1	20

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 480-60531/3
Matrix: Water
Analysis Batch: 60531

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.10	0.052	mg/L			04/19/12 13:10	1

Lab Sample ID: LCS 480-60531/4
Matrix: Water
Analysis Batch: 60531

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.750	0.771		mg/L		103	90 - 110

Lab Sample ID: 480-18764-3 MS
Matrix: Water
Analysis Batch: 60531

Client Sample ID: MW-12-048112-1530
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND		0.500	0.397	F	mg/L		79	90 - 110

Lab Sample ID: 480-18764-2 DU
Matrix: Water
Analysis Batch: 60531

Client Sample ID: MW-11-041812-1245
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	0.053	J	0.0561	J	mg/L		6.00	20

Lab Sample ID: MB 480-61337/3
Matrix: Water
Analysis Batch: 61337

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.10	0.052	mg/L			04/24/12 13:00	1

Lab Sample ID: LCS 480-61337/4
Matrix: Water
Analysis Batch: 61337

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.750	0.755		mg/L		101	90 - 110

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography

Lab Sample ID: MB 480-60570/4
Matrix: Water
Analysis Batch: 60570

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		1.0	0.15	mg/L			04/19/12 20:02	1
Formic-acid	ND		1.0	0.11	mg/L			04/19/12 20:02	1
Lactic acid	ND		1.0	0.14	mg/L			04/19/12 20:02	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/19/12 20:02	1
Propionic acid	ND		1.0	0.17	mg/L			04/19/12 20:02	1
Pyruvic Acid	ND		1.0	0.080	mg/L			04/19/12 20:02	1

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-60570/3
Matrix: Water
Analysis Batch: 60570

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetic acid	10.0	10.20		mg/L		102	80 - 120
Formic-acid	10.0	10.10		mg/L		101	80 - 120
Lactic acid	10.0	10.20		mg/L		102	80 - 120
n-Butyric Acid	10.0	10.20		mg/L		102	80 - 120
Propionic acid	10.0	10.40		mg/L		104	80 - 120
Pyruvic Acid	10.0	10.30		mg/L		103	80 - 120

Lab Sample ID: MB 480-61975/4
Matrix: Water
Analysis Batch: 61975

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		1.0	0.15	mg/L			04/29/12 11:23	1
Formic-acid	ND		1.0	0.11	mg/L			04/29/12 11:23	1
Lactic acid	ND		1.0	0.14	mg/L			04/29/12 11:23	1
n-Butyric Acid	ND		1.0	0.16	mg/L			04/29/12 11:23	1
Propionic acid	ND		1.0	0.17	mg/L			04/29/12 11:23	1
Pyruvic Acid	0.121	J	1.0	0.080	mg/L			04/29/12 11:23	1

Lab Sample ID: LCS 480-61975/3
Matrix: Water
Analysis Batch: 61975

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetic acid	10.0	9.43		mg/L		94	80 - 120
Formic-acid	10.0	9.47		mg/L		95	80 - 120
Lactic acid	10.0	9.69		mg/L		97	80 - 120
n-Butyric Acid	10.0	9.70		mg/L		97	80 - 120
Propionic acid	10.0	9.67		mg/L		97	80 - 120
Pyruvic Acid	10.0	10.10		mg/L		101	80 - 120

GC/MS VOA

Analysis Batch: 60999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	8260B	
480-18764-2	MW-11-041812-1245	Total/NA	Water	8260B	
480-18764-3	MW-12-048112-1530	Total/NA	Water	8260B	
LCS 480-60999/4	Lab Control Sample	Total/NA	Water	8260B	
MB 480-60999/5	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 61223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-3 - DL	MW-12-048112-1530	Total/NA	Water	8260B	
LCS 480-61223/4	Lab Control Sample	Total/NA	Water	8260B	
MB 480-61223/5	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 61436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	8260B	
480-18852-2	MW-14-041912-1315	Total/NA	Water	8260B	
480-18852-3	MW-10-041912-1520	Total/NA	Water	8260B	
480-18852-4	DUP-041912-0001	Total/NA	Water	8260B	
LCS 480-61436/4	Lab Control Sample	Total/NA	Water	8260B	
MB 480-61436/5	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 61854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	8260B	
LCS 480-61854/4	Lab Control Sample	Total/NA	Water	8260B	
MB 480-61854/5	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 61974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-2	MW-7-042012-1630	Total/NA	Water	8260B	
LCS 480-61974/4	Lab Control Sample	Total/NA	Water	8260B	
MB 480-61974/5	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 62084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1 - DL	MW-4-042012-1300	Total/NA	Water	8260B	
LCS 480-62084/4	Lab Control Sample	Total/NA	Water	8260B	
MB 480-62084/5	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 37525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	RSK-175	
480-18764-2	MW-11-041812-1245	Total/NA	Water	RSK-175	
480-18764-3	MW-12-048112-1530	Total/NA	Water	RSK-175	
LCS 200-37525/2	Lab Control Sample	Total/NA	Water	RSK-175	
MB 200-37525/3	Method Blank	Total/NA	Water	RSK-175	

Analysis Batch: 37685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	RSK-175	

GC VOA (Continued)

Analysis Batch: 37685 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-2	MW-14-041912-1315	Total/NA	Water	RSK-175	
480-18852-3	MW-10-041912-1520	Total/NA	Water	RSK-175	
480-18852-4	DUP-041912-0001	Total/NA	Water	RSK-175	
480-18943-1	MW-4-042012-1300	Total/NA	Water	RSK-175	
480-18943-2	MW-7-042012-1630	Total/NA	Water	RSK-175	
LCS 200-37685/2	Lab Control Sample	Total/NA	Water	RSK-175	
MB 200-37685/3	Method Blank	Total/NA	Water	RSK-175	

Analysis Batch: 60876

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	RSK-175	
480-18764-2	MW-11-041812-1245	Total/NA	Water	RSK-175	
480-18764-3	MW-12-048112-1530	Total/NA	Water	RSK-175	
480-18852-1	MW-13-041912-0845	Total/NA	Water	RSK-175	
480-18852-2	MW-14-041912-1315	Total/NA	Water	RSK-175	
480-18852-3	MW-10-041912-1520	Total/NA	Water	RSK-175	
480-18852-4	DUP-041912-0001	Total/NA	Water	RSK-175	
480-18943-1	MW-4-042012-1300	Total/NA	Water	RSK-175	
480-18943-2	MW-7-042012-1630	Total/NA	Water	RSK-175	
LCS 480-60876/13	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 480-60876/23	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 480-60876/12	Method Blank	Total/NA	Water	RSK-175	

Analysis Batch: 62742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	AM20GAX	
480-18764-2	MW-11-041812-1245	Total/NA	Water	AM20GAX	
480-18764-3	MW-12-048112-1530	Total/NA	Water	AM20GAX	

Analysis Batch: 63130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	AM20GAX	
480-18852-2	MW-14-041912-1315	Total/NA	Water	AM20GAX	
480-18852-3	MW-10-041912-1520	Total/NA	Water	AM20GAX	
480-18852-4	DUP-041912-0001	Total/NA	Water	AM20GAX	

Analysis Batch: 64101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	AM20GAX	

Metals

Prep Batch: 60415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	3005A	
480-18764-2	MW-11-041812-1245	Total/NA	Water	3005A	
480-18764-3	MW-12-048112-1530	Total/NA	Water	3005A	
LCS 480-60415/2-A	Lab Control Sample	Total/NA	Water	3005A	
MB 480-60415/1-A	Method Blank	Total/NA	Water	3005A	

Metals (Continued)

Analysis Batch: 60637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	6010B	60415
480-18764-2	MW-11-041812-1245	Total/NA	Water	6010B	60415
480-18764-3	MW-12-048112-1530	Total/NA	Water	6010B	60415
LCS 480-60415/2-A	Lab Control Sample	Total/NA	Water	6010B	60415
MB 480-60415/1-A	Method Blank	Total/NA	Water	6010B	60415

Prep Batch: 60777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	3005A	
480-18852-2	MW-14-041912-1315	Total/NA	Water	3005A	
480-18852-3	MW-10-041912-1520	Total/NA	Water	3005A	
480-18852-3 MS	MW-10-041912-1520	Total/NA	Water	3005A	
480-18852-3 MSD	MW-10-041912-1520	Total/NA	Water	3005A	
480-18852-4	DUP-041912-0001	Total/NA	Water	3005A	
LCS 480-60777/2-A	Lab Control Sample	Total/NA	Water	3005A	
MB 480-60777/1-A	Method Blank	Total/NA	Water	3005A	

Prep Batch: 60930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	3005A	
480-18943-2	MW-7-042012-1630	Total/NA	Water	3005A	
LCS 480-60930/2-A	Lab Control Sample	Total/NA	Water	3005A	
MB 480-60930/1-A	Method Blank	Total/NA	Water	3005A	

Analysis Batch: 61178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	6010B	60930
480-18943-2	MW-7-042012-1630	Total/NA	Water	6010B	60930
LCS 480-60930/2-A	Lab Control Sample	Total/NA	Water	6010B	60930
MB 480-60930/1-A	Method Blank	Total/NA	Water	6010B	60930

Analysis Batch: 61196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	6010B	60777
480-18852-2	MW-14-041912-1315	Total/NA	Water	6010B	60777
480-18852-3	MW-10-041912-1520	Total/NA	Water	6010B	60777
480-18852-3 MS	MW-10-041912-1520	Total/NA	Water	6010B	60777
480-18852-3 MSD	MW-10-041912-1520	Total/NA	Water	6010B	60777
480-18852-4	DUP-041912-0001	Total/NA	Water	6010B	60777
LCS 480-60777/2-A	Lab Control Sample	Total/NA	Water	6010B	60777
MB 480-60777/1-A	Method Blank	Total/NA	Water	6010B	60777

General Chemistry

Analysis Batch: 60344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	353.2	
480-18764-2	MW-11-041812-1245	Total/NA	Water	353.2	
480-18764-2 DU	MW-11-041812-1245	Total/NA	Water	353.2	
480-18764-2 MS	MW-11-041812-1245	Total/NA	Water	353.2	
LCS 480-60344/28	Lab Control Sample	Total/NA	Water	353.2	
LCS 480-60344/52	Lab Control Sample	Total/NA	Water	353.2	

General Chemistry (Continued)

Analysis Batch: 60344 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-60344/27	Method Blank	Total/NA	Water	353.2	
MB 480-60344/51	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 60345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	353.2	
480-18764-2	MW-11-041812-1245	Total/NA	Water	353.2	
480-18764-3	MW-12-048112-1530	Total/NA	Water	353.2	

Analysis Batch: 60346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-3	MW-12-048112-1530	Total/NA	Water	353.2	

Analysis Batch: 60531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	SM 4500 S2 D	
480-18764-2	MW-11-041812-1245	Total/NA	Water	SM 4500 S2 D	
480-18764-2 DU	MW-11-041812-1245	Total/NA	Water	SM 4500 S2 D	
480-18764-3	MW-12-048112-1530	Total/NA	Water	SM 4500 S2 D	
480-18764-3 MS	MW-12-048112-1530	Total/NA	Water	SM 4500 S2 D	
LCS 480-60531/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
MB 480-60531/3	Method Blank	Total/NA	Water	SM 4500 S2 D	

Analysis Batch: 60567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	350.1	
480-18764-2	MW-11-041812-1245	Total/NA	Water	350.1	
480-18764-3	MW-12-048112-1530	Total/NA	Water	350.1	
LCS 480-60567/148	Lab Control Sample	Total/NA	Water	350.1	
MB 480-60567/147	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 60570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	VFA-IC	
480-18764-2	MW-11-041812-1245	Total/NA	Water	VFA-IC	
480-18764-3	MW-12-048112-1530	Total/NA	Water	VFA-IC	
LCS 480-60570/3	Lab Control Sample	Total/NA	Water	VFA-IC	
MB 480-60570/4	Method Blank	Total/NA	Water	VFA-IC	

Analysis Batch: 60734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	353.2	
480-18852-4	DUP-041912-0001	Total/NA	Water	353.2	
480-18852-4 DU	DUP-041912-0001	Total/NA	Water	353.2	
480-18852-4 MS	DUP-041912-0001	Total/NA	Water	353.2	
LCS 480-60734/35	Lab Control Sample	Total/NA	Water	353.2	
MB 480-60734/34	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 60751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	353.2	
480-18852-2	MW-14-041912-1315	Total/NA	Water	353.2	

General Chemistry (Continued)

Analysis Batch: 60751 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-3	MW-10-041912-1520	Total/NA	Water	353.2	
480-18852-4	DUP-041912-0001	Total/NA	Water	353.2	

Analysis Batch: 60757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-2	MW-14-041912-1315	Total/NA	Water	353.2	
480-18852-3	MW-10-041912-1520	Total/NA	Water	353.2	

Analysis Batch: 60794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	SM 2320B	
480-18764-2	MW-11-041812-1245	Total/NA	Water	SM 2320B	
480-18764-3	MW-12-048112-1530	Total/NA	Water	SM 2320B	
LCS 480-60794/28	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-60794/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 480-60794/52	Lab Control Sample	Total/NA	Water	SM 2320B	
MB 480-60794/27	Method Blank	Total/NA	Water	SM 2320B	
MB 480-60794/3	Method Blank	Total/NA	Water	SM 2320B	
MB 480-60794/51	Method Blank	Total/NA	Water	SM 2320B	

Analysis Batch: 60845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	353.2	
480-18943-2	MW-7-042012-1630	Total/NA	Water	353.2	

Analysis Batch: 60846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	353.2	
480-18943-2	MW-7-042012-1630	Total/NA	Water	353.2	

Analysis Batch: 60915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	350.1	
480-18852-2	MW-14-041912-1315	Total/NA	Water	350.1	
480-18852-3	MW-10-041912-1520	Total/NA	Water	350.1	
480-18852-4	DUP-041912-0001	Total/NA	Water	350.1	
LCS 480-60915/76	Lab Control Sample	Total/NA	Water	350.1	
MB 480-60915/75	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 61089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	SM 2320B	
480-18852-2	MW-14-041912-1315	Total/NA	Water	SM 2320B	
480-18852-3	MW-10-041912-1520	Total/NA	Water	SM 2320B	
480-18852-4	DUP-041912-0001	Total/NA	Water	SM 2320B	
480-18943-1	MW-4-042012-1300	Total/NA	Water	SM 2320B	
480-18943-2	MW-7-042012-1630	Total/NA	Water	SM 2320B	
LCS 480-61089/28	Lab Control Sample	Total/NA	Water	SM 2320B	
MB 480-61089/27	Method Blank	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 61337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	SM 4500 S2 D	
480-18852-2	MW-14-041912-1315	Total/NA	Water	SM 4500 S2 D	
480-18852-3	MW-10-041912-1520	Total/NA	Water	SM 4500 S2 D	
480-18852-4	DUP-041912-0001	Total/NA	Water	SM 4500 S2 D	
480-18943-1	MW-4-042012-1300	Total/NA	Water	SM 4500 S2 D	
480-18943-2	MW-7-042012-1630	Total/NA	Water	SM 4500 S2 D	
LCS 480-61337/4	Lab Control Sample	Total/NA	Water	SM 4500 S2 D	
MB 480-61337/3	Method Blank	Total/NA	Water	SM 4500 S2 D	

Analysis Batch: 61338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	350.1	
480-18943-2	MW-7-042012-1630	Total/NA	Water	350.1	
LCS 480-61338/148	Lab Control Sample	Total/NA	Water	350.1	
LCS 480-61338/268	Lab Control Sample	Total/NA	Water	350.1	
MB 480-61338/147	Method Blank	Total/NA	Water	350.1	
MB 480-61338/267	Method Blank	Total/NA	Water	350.1	

Analysis Batch: 61361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	9038	
480-18764-3	MW-12-048112-1530	Total/NA	Water	9038	
LCS 480-61361/8	Lab Control Sample	Total/NA	Water	9038	
MB 480-61361/9	Method Blank	Total/NA	Water	9038	

Analysis Batch: 61362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	SM 4500 Cl- E	
480-18764-2	MW-11-041812-1245	Total/NA	Water	SM 4500 Cl- E	
480-18764-3	MW-12-048112-1530	Total/NA	Water	SM 4500 Cl- E	
LCS 480-61362/4	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MB 480-61362/5	Method Blank	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 61484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-1	MW-15-041812-0900	Total/NA	Water	9060	
480-18764-2	MW-11-041812-1245	Total/NA	Water	9060	
480-18764-2 DU	MW-11-041812-1245	Total/NA	Water	9060	
480-18764-3	MW-12-048112-1530	Total/NA	Water	9060	
480-18764-3 MS	MW-12-048112-1530	Total/NA	Water	9060	
480-18852-1	MW-13-041912-0845	Total/NA	Water	9060	
480-18852-1 MS	MW-13-041912-0845	Total/NA	Water	9060	
480-18852-3	MW-10-041912-1520	Total/NA	Water	9060	
480-18852-4	DUP-041912-0001	Total/NA	Water	9060	
480-18943-1	MW-4-042012-1300	Total/NA	Water	9060	
480-18943-1 DU	MW-4-042012-1300	Total/NA	Water	9060	
480-18943-2	MW-7-042012-1630	Total/NA	Water	9060	
480-18943-2 MS	MW-7-042012-1630	Total/NA	Water	9060	
LCS 480-61484/28	Lab Control Sample	Total/NA	Water	9060	
LCS 480-61484/52	Lab Control Sample	Total/NA	Water	9060	
MB 480-61484/27	Method Blank	Total/NA	Water	9060	
MB 480-61484/51	Method Blank	Total/NA	Water	9060	

General Chemistry (Continued)

Analysis Batch: 61648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	9038	
480-18852-2	MW-14-041912-1315	Total/NA	Water	9038	
480-18852-3	MW-10-041912-1520	Total/NA	Water	9038	
480-18852-4	DUP-041912-0001	Total/NA	Water	9038	
LCS 480-61648/16	Lab Control Sample	Total/NA	Water	9038	
LCS 480-61648/40	Lab Control Sample	Total/NA	Water	9038	
MB 480-61648/17	Method Blank	Total/NA	Water	9038	
MB 480-61648/41	Method Blank	Total/NA	Water	9038	

Analysis Batch: 61649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	SM 4500 Cl- E	
480-18852-2	MW-14-041912-1315	Total/NA	Water	SM 4500 Cl- E	
480-18852-3	MW-10-041912-1520	Total/NA	Water	SM 4500 Cl- E	
480-18852-4	DUP-041912-0001	Total/NA	Water	SM 4500 Cl- E	
LCS 480-61649/14	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
LCS 480-61649/30	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
LCS 480-61649/42	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MB 480-61649/15	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 480-61649/31	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 480-61649/43	Method Blank	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 61892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-2	MW-14-041912-1315	Total/NA	Water	9060	
LCS 480-61892/4	Lab Control Sample	Total/NA	Water	9060	
MB 480-61892/3	Method Blank	Total/NA	Water	9060	

Analysis Batch: 61931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	SM 4500 Cl- E	
480-18943-1 DU	MW-4-042012-1300	Total/NA	Water	SM 4500 Cl- E	
480-18943-1 MS	MW-4-042012-1300	Total/NA	Water	SM 4500 Cl- E	
480-18943-2	MW-7-042012-1630	Total/NA	Water	SM 4500 Cl- E	
480-18943-2 DU	MW-7-042012-1630	Total/NA	Water	SM 4500 Cl- E	
480-18943-2 MS	MW-7-042012-1630	Total/NA	Water	SM 4500 Cl- E	
LCS 480-61931/81	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MB 480-61931/61	Method Blank	Total/NA	Water	SM 4500 Cl- E	
MB 480-61931/82	Method Blank	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 61946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18943-1	MW-4-042012-1300	Total/NA	Water	9038	
480-18943-1 DU	MW-4-042012-1300	Total/NA	Water	9038	
480-18943-1 MS	MW-4-042012-1300	Total/NA	Water	9038	
480-18943-2	MW-7-042012-1630	Total/NA	Water	9038	
480-18943-2 DU	MW-7-042012-1630	Total/NA	Water	9038	
480-18943-2 MS	MW-7-042012-1630	Total/NA	Water	9038	
LCS 480-61946/38	Lab Control Sample	Total/NA	Water	9038	
LCS 480-61946/58	Lab Control Sample	Total/NA	Water	9038	
MB 480-61946/16	Method Blank	Total/NA	Water	9038	
MB 480-61946/39	Method Blank	Total/NA	Water	9038	

General Chemistry (Continued)

Analysis Batch: 61946 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-61946/54	Method Blank	Total/NA	Water	9038	
MB 480-61946/59	Method Blank	Total/NA	Water	9038	

Analysis Batch: 61975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18852-1	MW-13-041912-0845	Total/NA	Water	VFA-IC	
480-18852-2	MW-14-041912-1315	Total/NA	Water	VFA-IC	
480-18852-3	MW-10-041912-1520	Total/NA	Water	VFA-IC	
480-18852-4	DUP-041912-0001	Total/NA	Water	VFA-IC	
480-18943-1	MW-4-042012-1300	Total/NA	Water	VFA-IC	
480-18943-2	MW-7-042012-1630	Total/NA	Water	VFA-IC	
LCS 480-61975/3	Lab Control Sample	Total/NA	Water	VFA-IC	
MB 480-61975/4	Method Blank	Total/NA	Water	VFA-IC	

Analysis Batch: 61992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-18764-2	MW-11-041812-1245	Total/NA	Water	9038	
LCS 480-61992/6	Lab Control Sample	Total/NA	Water	9038	
MB 480-61992/7	Method Blank	Total/NA	Water	9038	

Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Client Sample ID: MW-15-041812-0900

Lab Sample ID: 480-18764-1

Date Collected: 04/18/12 09:00

Matrix: Water

Date Received: 04/18/12 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60999	04/23/12 14:39	DC	TAL BUF
Total/NA	Analysis	RSK-175		2	37525	04/25/12 12:50	MRV	TAL BUR
Total/NA	Analysis	RSK-175		1	60876	04/22/12 10:36	JM	TAL BUF
Total/NA	Analysis	AM20GAX		1	62742	04/22/12 16:41	CTB	SC0015
Total/NA	Prep	3005A			60415	04/19/12 12:00	SS	TAL BUF
Total/NA	Analysis	6010B		1	60637	04/19/12 22:37	LH	TAL BUF
Total/NA	Analysis	353.2		1	60344	04/19/12 02:26	KS	TAL BUF
Total/NA	Analysis	353.2		1	60345	04/19/12 02:26	KS	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	60531	04/19/12 13:10	EGN	TAL BUF
Total/NA	Analysis	350.1		1	60567	04/19/12 15:41	KS	TAL BUF
Total/NA	Analysis	VFA-IC		1	60570	04/20/12 02:21	KAC	TAL BUF
Total/NA	Analysis	SM 2320B		1	60794	04/20/12 11:15	LYW	TAL BUF
Total/NA	Analysis	9038		4	61361	04/24/12 13:26	JR	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		25	61362	04/24/12 14:41	JR	TAL BUF
Total/NA	Analysis	9060		1	61484	04/24/12 09:07	KAC	TAL BUF

Client Sample ID: MW-11-041812-1245

Lab Sample ID: 480-18764-2

Date Collected: 04/18/12 12:45

Matrix: Water

Date Received: 04/18/12 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60999	04/23/12 15:01	DC	TAL BUF
Total/NA	Analysis	RSK-175		1	37525	04/25/12 11:41	MRV	TAL BUR
Total/NA	Analysis	RSK-175		1	60876	04/22/12 10:53	JM	TAL BUF
Total/NA	Analysis	AM20GAX		1	62742	04/22/12 16:41	CTB	SC0015
Total/NA	Prep	3005A			60415	04/19/12 12:00	SS	TAL BUF
Total/NA	Analysis	6010B		1	60637	04/19/12 22:39	LH	TAL BUF
Total/NA	Analysis	353.2		1	60344	04/19/12 02:31	KS	TAL BUF
Total/NA	Analysis	353.2		1	60345	04/19/12 02:31	KS	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	60531	04/19/12 13:10	EGN	TAL BUF
Total/NA	Analysis	350.1		1	60567	04/19/12 15:42	KS	TAL BUF
Total/NA	Analysis	VFA-IC		1	60570	04/20/12 02:50	KAC	TAL BUF
Total/NA	Analysis	SM 2320B		1	60794	04/20/12 11:15	LYW	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		10	61362	04/24/12 14:41	JR	TAL BUF
Total/NA	Analysis	9060		1	61484	04/24/12 09:37	KAC	TAL BUF
Total/NA	Analysis	9038		5	61992	04/27/12 15:36	PJQ	TAL BUF

Client Sample ID: MW-12-048112-1530

Lab Sample ID: 480-18764-3

Date Collected: 04/18/12 15:30

Matrix: Water

Date Received: 04/18/12 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	60999	04/23/12 15:22	DC	TAL BUF
Total/NA	Analysis	8260B	DL	2	61223	04/24/12 13:36	DC	TAL BUF
Total/NA	Analysis	RSK-175		2	37525	04/25/12 12:55	MRV	TAL BUR
Total/NA	Analysis	RSK-175		10	60876	04/22/12 11:10	JM	TAL BUF
Total/NA	Analysis	AM20GAX		1	62742	04/22/12 16:41	CTB	SC0015
Total/NA	Prep	3005A			60415	04/19/12 12:00	SS	TAL BUF
Total/NA	Analysis	6010B		1	60637	04/19/12 22:42	LH	TAL BUF
Total/NA	Analysis	353.2		1	60345	04/19/12 01:08	KS	TAL BUF
Total/NA	Analysis	353.2		1	60346	04/19/12 01:08	KS	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	60531	04/19/12 13:10	EGN	TAL BUF
Total/NA	Analysis	350.1		1	60567	04/19/12 15:43	KS	TAL BUF
Total/NA	Analysis	VFA-IC		1	60570	04/20/12 03:19	KAC	TAL BUF
Total/NA	Analysis	SM 2320B		1	60794	04/20/12 11:15	LYW	TAL BUF
Total/NA	Analysis	9038		10	61361	04/24/12 13:26	JR	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		100	61362	04/24/12 14:50	JR	TAL BUF
Total/NA	Analysis	9060		1	61484	04/24/12 10:37	KAC	TAL BUF

Client Sample ID: MW-13-041912-0845

Lab Sample ID: 480-18852-1

Date Collected: 04/19/12 08:45

Matrix: Water

Date Received: 04/19/12 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	61436	04/25/12 12:35	RL	TAL BUF
Total/NA	Analysis	RSK-175		1	37685	04/27/12 07:41	MRV	TAL BUR
Total/NA	Analysis	RSK-175		10	60876	04/22/12 12:43	JM	TAL BUF
Total/NA	Analysis	AM20GAX		1	63130	04/22/12 17:18	CTB	SC0015
Total/NA	Prep	3005A			60777	04/23/12 08:15	SS	TAL BUF
Total/NA	Analysis	6010B		1	61196	04/23/12 16:27	MM	TAL BUF
Total/NA	Analysis	353.2		1	60734	04/20/12 12:07	KS	TAL BUF
Total/NA	Analysis	353.2		1	60751	04/20/12 10:14	KS	TAL BUF
Total/NA	Analysis	350.1		1	60915	04/21/12 13:14	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	61089	04/23/12 12:09	LYW	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	61337	04/24/12 13:00	EGN	TAL BUF
Total/NA	Analysis	9060		1	61484	04/24/12 16:32	KAC	TAL BUF
Total/NA	Analysis	9038		5	61648	04/25/12 18:01	PJQ	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		30	61649	04/25/12 20:01	PJQ	TAL BUF
Total/NA	Analysis	VFA-IC		1	61975	04/29/12 11:52	RMM	TAL BUF

Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Client Sample ID: MW-14-041912-1315

Lab Sample ID: 480-18852-2

Date Collected: 04/19/12 13:15
Matrix: Water
Date Received: 04/19/12 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	61436	04/25/12 12:57	RL	TAL BUF
Total/NA	Analysis	RSK-175		1	37685	04/27/12 07:47	MRV	TAL BUR
Total/NA	Analysis	RSK-175		10	60876	04/22/12 13:00	JM	TAL BUF
Total/NA	Analysis	AM20GAX		1	63130	04/22/12 17:18	CTB	SC0015
Total/NA	Prep	3005A			60777	04/23/12 08:15	SS	TAL BUF
Total/NA	Analysis	6010B		1	61196	04/23/12 16:29	MM	TAL BUF
Total/NA	Analysis	353.2		1	60751	04/20/12 10:15	KS	TAL BUF
Total/NA	Analysis	353.2		1	60757	04/20/12 10:15	KS	TAL BUF
Total/NA	Analysis	350.1		1	60915	04/21/12 13:15	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	61089	04/23/12 12:09	LYW	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	61337	04/24/12 13:00	EGN	TAL BUF
Total/NA	Analysis	9038		5	61648	04/25/12 18:01	PJQ	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		50	61649	04/25/12 20:18	PJQ	TAL BUF
Total/NA	Analysis	9060		1	61892	04/25/12 16:37	KAC	TAL BUF
Total/NA	Analysis	VFA-IC		1	61975	04/29/12 12:21	RMM	TAL BUF

Client Sample ID: MW-10-041912-1520

Lab Sample ID: 480-18852-3

Date Collected: 04/19/12 15:20
Matrix: Water
Date Received: 04/19/12 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	61436	04/25/12 13:18	RL	TAL BUF
Total/NA	Analysis	RSK-175		1	37685	04/27/12 07:53	MRV	TAL BUR
Total/NA	Analysis	RSK-175		10	60876	04/22/12 13:17	JM	TAL BUF
Total/NA	Analysis	AM20GAX		1	63130	04/22/12 17:18	CTB	SC0015
Total/NA	Prep	3005A			60777	04/23/12 08:15	SS	TAL BUF
Total/NA	Analysis	6010B		1	61196	04/23/12 16:36	MM	TAL BUF
Total/NA	Analysis	353.2		1	60751	04/20/12 10:16	KS	TAL BUF
Total/NA	Analysis	353.2		1	60757	04/20/12 10:16	KS	TAL BUF
Total/NA	Analysis	350.1		1	60915	04/21/12 13:16	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	61089	04/23/12 12:09	LYW	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	61337	04/24/12 13:00	EGN	TAL BUF
Total/NA	Analysis	9060		1	61484	04/24/12 19:31	KAC	TAL BUF
Total/NA	Analysis	9038		15	61648	04/25/12 19:51	PJQ	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		100	61649	04/25/12 20:24	PJQ	TAL BUF
Total/NA	Analysis	VFA-IC		1	61975	04/29/12 12:50	RMM	TAL BUF

Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Client Sample ID: DUP-041912-0001

Lab Sample ID: 480-18852-4

Date Collected: 04/19/12 00:00
Matrix: Water
Date Received: 04/19/12 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	61436	04/25/12 13:40	RL	TAL BUF
Total/NA	Analysis	RSK-175		1	37685	04/27/12 08:03	MRV	TAL BUR
Total/NA	Analysis	RSK-175		10	60876	04/22/12 14:17	JM	TAL BUF
Total/NA	Analysis	AM20GAX		1	63130	04/22/12 17:18	CTB	SC0015
Total/NA	Prep	3005A			60777	04/23/12 08:15	SS	TAL BUF
Total/NA	Analysis	6010B		1	61196	04/23/12 16:49	MM	TAL BUF
Total/NA	Analysis	353.2		1	60734	04/20/12 12:08	KS	TAL BUF
Total/NA	Analysis	353.2		1	60751	04/20/12 10:12	KS	TAL BUF
Total/NA	Analysis	350.1		1	60915	04/21/12 13:17	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	61089	04/23/12 12:09	LYW	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	61337	04/24/12 13:00	EGN	TAL BUF
Total/NA	Analysis	9060		1	61484	04/24/12 20:01	KAC	TAL BUF
Total/NA	Analysis	9038		5	61648	04/25/12 18:01	PJQ	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		30	61649	04/25/12 19:55	PJQ	TAL BUF
Total/NA	Analysis	VFA-IC		1	61975	04/29/12 13:20	RMM	TAL BUF

Client Sample ID: MW-4-042012-1300

Lab Sample ID: 480-18943-1

Date Collected: 04/20/12 13:00
Matrix: Water
Date Received: 04/20/12 17:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	61854	04/27/12 13:57	RL	TAL BUF
Total/NA	Analysis	8260B	DL	500	62084	04/28/12 14:18	RL	TAL BUF
Total/NA	Analysis	RSK-175		2	37685	04/27/12 09:13	MRV	TAL BUR
Total/NA	Analysis	RSK-175		500	60876	04/22/12 11:37	JM	TAL BUF
Total/NA	Analysis	AM20GAX		1	64101	05/04/12 09:36	CTB	SC0015
Total/NA	Prep	3005A			60930	04/23/12 08:15	SS	TAL BUF
Total/NA	Analysis	6010B		1	61178	04/23/12 14:23	LH	TAL BUF
Total/NA	Analysis	353.2		1	60845	04/20/12 21:01	KS	TAL BUF
Total/NA	Analysis	353.2		1	60846	04/20/12 21:01	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	61089	04/23/12 12:09	LYW	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	61337	04/24/12 13:00	EGN	TAL BUF
Total/NA	Analysis	350.1		2	61338	04/24/12 16:00	KS	TAL BUF
Total/NA	Analysis	9060		1	61484	04/24/12 21:29	KAC	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		121	61931	04/27/12 15:09	PJQ	TAL BUF
Total/NA	Analysis	9038		30	61946	04/27/12 06:05	PJQ	TAL BUF
Total/NA	Analysis	VFA-IC		1	61975	04/29/12 16:44	RMM	TAL BUF

Lab Chronicle

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Client Sample ID: MW-7-042012-1630
Date Collected: 04/20/12 16:30
Date Received: 04/20/12 17:27

Lab Sample ID: 480-18943-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10000	61974	04/28/12 01:00	DC	TAL BUF
Total/NA	Analysis	RSK-175		1	37685	04/27/12 08:31	MRV	TAL BUR
Total/NA	Analysis	RSK-175		1	60876	04/22/12 11:54	JM	TAL BUF
Total/NA	Prep	3005A			60930	04/23/12 08:15	SS	TAL BUF
Total/NA	Analysis	6010B		1	61178	04/23/12 14:26	LH	TAL BUF
Total/NA	Analysis	353.2		1	60845	04/20/12 21:02	KS	TAL BUF
Total/NA	Analysis	353.2		1	60846	04/20/12 21:02	KS	TAL BUF
Total/NA	Analysis	SM 2320B		1	61089	04/23/12 12:09	LYW	TAL BUF
Total/NA	Analysis	SM 4500 S2 D		1	61337	04/24/12 13:00	EGN	TAL BUF
Total/NA	Analysis	350.1		1	61338	04/24/12 14:11	KS	TAL BUF
Total/NA	Analysis	9060		1	61484	04/24/12 22:28	KAC	TAL BUF
Total/NA	Analysis	SM 4500 Cl- E		20	61931	04/27/12 15:09	PJQ	TAL BUF
Total/NA	Analysis	9038		20	61946	04/27/12 13:32	PJQ	TAL BUF
Total/NA	Analysis	VFA-IC		1	61975	04/29/12 17:13	RMM	TAL BUF

Laboratory References:

SC0015 = Pittsburgh, PA, 220 William Pitt Way, Pittsburgh, PA 15238, TEL (412)826-5245

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Certification Summary

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Buffalo	Arkansas DEQ	State Program	6	88-0686
TestAmerica Buffalo	California	NELAC	9	1169CA
TestAmerica Buffalo	Connecticut	State Program	1	PH-0568
TestAmerica Buffalo	Florida	NELAC	4	E87672
TestAmerica Buffalo	Georgia	State Program	4	956
TestAmerica Buffalo	Georgia	State Program	4	N/A
TestAmerica Buffalo	Illinois	NELAC	5	100325 / 200003
TestAmerica Buffalo	Iowa	State Program	7	374
TestAmerica Buffalo	Kansas	NELAC	7	E-10187
TestAmerica Buffalo	Kentucky	State Program	4	90029
TestAmerica Buffalo	Kentucky (UST)	State Program	4	30
TestAmerica Buffalo	Louisiana	NELAC	6	02031
TestAmerica Buffalo	Maine	State Program	1	NY0044
TestAmerica Buffalo	Maryland	State Program	3	294
TestAmerica Buffalo	Massachusetts	State Program	1	M-NY044
TestAmerica Buffalo	Michigan	State Program	5	9937
TestAmerica Buffalo	Minnesota	NELAC	5	036-999-337
TestAmerica Buffalo	New Hampshire	NELAC	1	2337
TestAmerica Buffalo	New Hampshire	NELAC	1	68-00281
TestAmerica Buffalo	New Jersey	NELAC	2	NY455
TestAmerica Buffalo	New York	NELAC	2	10026
TestAmerica Buffalo	North Dakota	State Program	8	R-176
TestAmerica Buffalo	Oklahoma	State Program	6	9421
TestAmerica Buffalo	Oregon	NELAC	10	NY200003
TestAmerica Buffalo	Pennsylvania	NELAC	3	68-00281
TestAmerica Buffalo	Tennessee	State Program	4	TN02970
TestAmerica Buffalo	Texas	NELAC	6	T104704412-08-TX
TestAmerica Buffalo	USDA	Federal		P330-08-00242
TestAmerica Buffalo	Virginia	NELAC	3	460185
TestAmerica Buffalo	Virginia	State Program	3	278
TestAmerica Buffalo	Washington	State Program	10	C1677
TestAmerica Buffalo	West Virginia DEP	State Program	3	252
TestAmerica Buffalo	Wisconsin	State Program	5	998310390
TestAmerica Burlington	ACLASS	DoD ELAP		ADE-1492
TestAmerica Burlington	Connecticut	State Program	1	PH-0751
TestAmerica Burlington	DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	NA
TestAmerica Burlington	Florida	NELAC	4	E87467
TestAmerica Burlington	Louisiana	NELAC	6	176292
TestAmerica Burlington	Maine	State Program	1	VT00008
TestAmerica Burlington	Minnesota	NELAC	5	050-999-436
TestAmerica Burlington	New Hampshire	NELAC	1	200610
TestAmerica Burlington	New Jersey	NELAC	2	VT972
TestAmerica Burlington	New York	NELAC	2	10391
TestAmerica Burlington	Pennsylvania	NELAC	3	68-00489
TestAmerica Burlington	Rhode Island	State Program	1	LAO00298
TestAmerica Burlington	USDA	Federal		P330-11-00093
TestAmerica Burlington	Vermont	State Program	1	VT-4000
TestAmerica Burlington	Virginia	NELAC	3	460209

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL BUF
AM20GAX	Dissolved Gases (GC)	NONE	SC0015
RSK-175	Dissolved Gases (GC)	RSK	TAL BUR
RSK-175	Dissolved Gases (GC)	RSK	TAL BUF
6010B	Metals (ICP)	SW846	TAL BUF
350.1	Nitrogen, Ammonia	MCAWW	TAL BUF
353.2	Nitrogen, Nitrite	MCAWW	TAL BUF
353.2	Nitrate	EPA	TAL BUF
9038	Sulfate, Turbidimetric	SW846	TAL BUF
9060	Organic Carbon, Total (TOC)	SW846	TAL BUF
SM 2320B	Alkalinity	SM	TAL BUF
SM 4500 Cl- E	Chloride, Total	SM	TAL BUF
SM 4500 S2 D	Sulfide, Total	SM	TAL BUF
VFA-IC	Volatile Fatty Acids, Ion Chromatography	TestAmerica SOP	TAL BUF

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.

NONE = NONE

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

TestAmerica SOP = TestAmerica, Inc., Standard Operating Procedure

Laboratory References:

SC0015 = Pittsburgh, PA, 220 William Pitt Way, Pittsburgh, PA 15238, TEL (412)826-5245

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Sample Summary

Client: Conestoga-Rovers & Associates, Inc.
Project/Site: 058507, GM-Lockport Groundwater Sampling

TestAmerica Job ID: 480-18764-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-18764-1	MW-15-041812-0900	Water	04/18/12 09:00	04/18/12 17:15
480-18764-2	MW-11-041812-1245	Water	04/18/12 12:45	04/18/12 17:15
480-18764-3	MW-12-048112-1530	Water	04/18/12 15:30	04/18/12 17:15
480-18852-1	MW-13-041912-0845	Water	04/19/12 08:45	04/19/12 16:45
480-18852-2	MW-14-041912-1315	Water	04/19/12 13:15	04/19/12 16:45
480-18852-3	MW-10-041912-1520	Water	04/19/12 15:20	04/19/12 16:45
480-18852-4	DUP-041912-0001	Water	04/19/12 00:00	04/19/12 16:45
480-18943-1	MW-4-042012-1300	Water	04/20/12 13:00	04/20/12 17:27
480-18943-2	MW-7-042012-1630	Water	04/20/12 16:30	04/20/12 17:27

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

April 30, 2012

Melissa Deyo
Test America
10 Hazelwood Drive
Buffalo, NY 14228

RE: **GM-LOCKPORT / 480-18764-1**

Microseeps Workorder: 4950

Dear Melissa Deyo:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, April 19, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Julianne C. Sproull

Julianne Sproull 04/30/2012
jsproull@microseeps.com

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 8

CERTIFICATE OF ANALYSIS

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories
Accreditation ID:	E87832
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality
Accreditation ID:	04104
Scope:	Solid and Chemical Materials; Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 4950 GM-LOCKPORT / 480-18764-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received
49500001	MW-15(480-18764-1)	Bubble Strip	4/18/2012 09:00	4/19/2012 12:30
49500002	MW-11(480-18764-2)	Bubble Strip	4/18/2012 12:45	4/19/2012 12:30
49500003	MW-12(480-18764-3)	Bubble Strip	4/18/2012 15:30	4/19/2012 12:30

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 4950 GM-LOCKPORT / 480-18764-1

Lab ID: **49500001** Date Received: 4/19/2012 12:30 Matrix: Bubble Strip

Sample ID: **MW-15(480-18764-1)** Date Collected: 4/18/2012 09:00

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX		Analytical Method: AM20GAX								
Hydrogen	**0.82**	nM	0.60	0.25	1			4/22/2012 16:41	GT	

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 4950 GM-LOCKPORT / 480-18764-1

Lab ID: **49500002**
Sample ID: **MW-11(480-18764-2)**

Date Received: 4/19/2012 12:30 Matrix: Bubble Strip
Date Collected: 4/18/2012 12:45

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX		Analytical Method: AM20GAX								
Hydrogen	**12**	nM	0.60	0.25	1			4/22/2012 16:53	GT	

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 4950 GM-LOCKPORT / 480-18764-1

Lab ID: **49500003** Date Received: 4/19/2012 12:30 Matrix: Bubble Strip

Sample ID: **MW-12(480-18764-3)** Date Collected: 4/18/2012 15:30

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX		Analytical Method: AM20GAX								
Hydrogen	**0.76**	nM	0.60	0.25	1			4/22/2012 17:05	GT	

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 4950 GM-LOCKPORT / 480-18764-1

PARAMETER QUALIFIERS

U	Indicates the compound was analyzed for, but not detected.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (RDL).

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

4950

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Deyo, Melissa L	Carrier Tracking No(s):	COC No: 480-3596.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: melissa.deyo@testamericainc.com		Page: Page 1 of 1
Company: Microseeps		Analysis Requested		Job #: 480-18764-1
Address: 220 William Pitt Way, ,	Due Date Requested: 4/30/2012			Preservation Codes:
City: Pittsburgh	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			Other:
Email:	WO #:			
Project Name: 058507, GM-Lockport Groundwater Sampling	Project #: 48004014			
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	AM20GAX/ (MOD) Hydrogen	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-15 (480-18764-1)	4/18/12	09:00 Eastern		Water			X		
MW-11 (480-18764-2)	4/18/12	12:45 Eastern		Water			X		
MW-12 (480-18764-3)	4/18/12	15:30 Eastern		Water			X		

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 4/18/12 1700	Company	Received by:	Date/Time: 4-19-12 1230	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

5/16/2012

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

May 1, 2012

Melissa Deyo
Test America
10 Hazelwood Drive
Buffalo, NY 14228

RE: **480-18852**

Microseeps Workorder: 4956

Dear Melissa Deyo:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, April 20, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Julianne C. Sproull

Julianne Sproull 05/01/2012
jsproull@microseeps.com

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 9

CERTIFICATE OF ANALYSIS

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories
Accreditation ID:	E87832
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality
Accreditation ID:	04104
Scope:	Solid and Chemical Materials; Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 4956 480-18852

Lab ID	Sample ID	Matrix	Date Collected	Date Received
49560001	MW-13(480-18852-1)	Bubble Strip	4/19/2012 08:45	4/20/2012 15:23
49560002	MW-14(480-18852-2)	Bubble Strip	4/19/2012 13:15	4/20/2012 15:23
49560003	MW-10(480-18852-3)	Bubble Strip	4/19/2012 15:20	4/20/2012 15:23
49560004	DUP(480-18852-4)	Bubble Strip	4/19/2012 00:00	4/20/2012 15:23

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 4956 480-18852

Lab ID: **49560001** Date Received: 4/20/2012 15:23 Matrix: Bubble Strip

Sample ID: **MW-13(480-18852-1)** Date Collected: 4/19/2012 08:45

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX			Analytical Method: AM20GAX							
Hydrogen	**0.50J**	nM	0.60	0.25	1			4/22/2012 17:18	GT	

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 4956 480-18852

Lab ID: **49560002** Date Received: 4/20/2012 15:23 Matrix: Bubble Strip

Sample ID: **MW-14(480-18852-2)** Date Collected: 4/19/2012 13:15

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX		Analytical Method: AM20GAX								
Hydrogen	**6.7**	nM	0.60	0.25	1			4/22/2012 17:30	GT	

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 4956 480-18852

Lab ID: **49560003** Date Received: 4/20/2012 15:23 Matrix: Bubble Strip
Sample ID: **MW-10(480-18852-3)** Date Collected: 4/19/2012 15:20

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX		Analytical Method: AM20GAX								
Hydrogen	**1.0**	nM	0.60	0.25	1			4/22/2012 17:42	GT	

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 4956 480-18852

Lab ID: **49560004** Date Received: 4/20/2012 15:23 Matrix: Bubble Strip

Sample ID: **DUP(480-18852-4)** Date Collected: 4/19/2012 00:00

Parameters	Results	Units	RDL	MDL	DF Prepared	By	Analyzed	By	Qual
RISK - MICR									
Analysis Desc: AM20GAX			Analytical Method: AM20GAX						
Hydrogen	**0.79**	nM	0.60	0.25	1		4/22/2012 17:56	GT	

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 4956 480-18852

PARAMETER QUALIFIERS

U	Indicates the compound was analyzed for, but not detected.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (RDL).

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

4956

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Deyo, Melissa L	Carrier Tracking No(s):	COC No: 480-3618.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: melissa.deyo@testamericainc.com		Page: Page 1 of 1
Company: Microseeps				Job #: 480-18852-1

Address: 220 William Pitt Way, ,	Due Date Requested: 5/1/2012	
City: Pittsburgh	TAT Requested (days):	
State, Zip: PA, 15238	PO #:	
Phone: 412-826-5245(Tel)	WO #:	
Email:	Project #: 48004014	
Project Name: 058507, GM-Lockport Groundwater Sampling	SSOW#:	
Site:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	AM20GAX/ (MOD) Hydrogen	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-13 (480-18852-1)	4/19/12	08:45 Eastern		Water			X	1	
MW-14 (480-18852-2)	4/19/12	13:15 Eastern		Water			X	1	
MW-10 (480-18852-3)	4/19/12	15:20 Eastern		Water			X	1	
DUP (480-18852-4)	4/19/12	Eastern		Water			X	1	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 4/19/12 1700	Company TAL	Received by:	Date/Time: 4/20/12	Company MS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Page 72 of 85

5/16/2012

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

May 7, 2012

Melissa Deyo
Test America
10 Hazelwood Drive
Buffalo, NY 14228

RE: **480-18943**

Microseeps Workorder: 5021

Dear Melissa Deyo:

Enclosed are the analytical results for sample(s) received by the laboratory on Tuesday, April 24, 2012. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Julianne C. Sproull

Julianne Sproull 05/07/2012
jsproull@microseeps.com

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 8

Report ID: 5021 - 221709

CERTIFICATE OF ANALYSIS

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	NELAP: State of Florida, Department of Health, Bureau of Laboratories
Accreditation ID:	E87832
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: State of Louisiana, Department of Environmental Quality
Accreditation ID:	04104
Scope:	Solid and Chemical Materials; Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, Microseeps is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 5021 480-18943

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50210001	MW-4(480-18943-1)	Bubble Strip	4/20/2012 13:00	4/24/2012 17:00

Report ID: 5021 - 221709

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 5021 480-18943

Lab ID: **50210001**
Sample ID: **MW-4(480-18943-1)**

Date Received: 4/24/2012 17:00 Matrix: Bubble Strip
Date Collected: 4/20/2012 13:00

Parameters	Results	Units	RDL	MDL	DF	Prepared	By	Analyzed	By	Qual
RISK - MICR										
Analysis Desc: AM20GAX		Analytical Method: AM20GAX								
Hydrogen	**28**	nM	0.60	0.25	1			5/4/2012 09:36	GT	

Report ID: 5021 - 221709

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 5021 480-18943

PARAMETER QUALIFIERS

U	Indicates the compound was analyzed for, but not detected.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (RDL).

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 5021 480-18943

QC Batch: DISG/2116 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 50210001

METHOD BLANK: 10963

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Hydrogen	nM	0.60 U	0.60	

LABORATORY CONTROL SAMPLE & LCSD: 10966 10969

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Hydrogen	nM	49	56	55	115	113	80-120	1.8	20	

Microseeps, Inc
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 5021 480-18943

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
50210001	MW-4(480-18943-1)			AM20GAX	DISG/2116

5021

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Deyo, Melissa L	Carrier Tracking No(s):	COC No: 480-3639.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: melissa.deyo@testamericainc.com		Page: Page 1 of 1
Company: Microseeps				Job #: 480-18943-1
Address: 220 William Pitt Way, ,	Due Date Requested: 5/2/2012			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238	PO #:			
Phone: 412-826-5245(Tel)	WO #:			
Email:	Project #: 48004014			
Project Name: 058507, GM-Lockport Groundwater Sampling	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2SO3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	AM20GAX/ (MOD) Hydrogen	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-4 (480-18943-1)	4/20/12	13:00 Eastern		Water			X	1	

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Courtney J Robinson	4/23/12 1540	BUF	HLawson	4-24-12 1100	MS
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☒ Yes ☐ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 1.2°C

Page 80 of 85

5/16/2012

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Temperature on Receipt ______

Drinking Water? Yes ☐ No ☐

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
GZA GeoEnvironmental	Christopher Boron	4/18/12	229339
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page ___ of ___**
535 Washington St 11th Flr	716 844-7046		

City	State	Zip Code	Site Contact	Lab Contact
Buffalo	NY	14203	T. Bohlen	

Project Name and Location (State): Delphi Harrison Thermal Sys /GMCH

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed): 6010B TAL Metals; 2320B Alkalinity; 8260B TCL; RSK_175_CO2; VFA_IC; SM4500_S2_D; 350.1 Ammonia; SM4500_Cl_E 353 [illegible]; Nitrate; [illegible]

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	6010B TAL Metals	2320B Alkalinity	8260B TCL	RSK_175_CO2	VFA_IC	SM4500_S2_D	350.1 Ammonia	SM4500_Cl_E 353 [illegible]	Nitrate	[illegible]			Special Instructions/ Conditions of Receipt
MW-15-041812-0900	4/18/12	9:00	✱	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	*20 containers/ sample - labeled w/ pre-printed Test America Labels
MW-11-041812-1245	4/18/12	12:45	✱	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
MW-12-041812-1530	4/18/12	1530	✱	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	✱Dissolved H2 Sample for each location included also (Microseeps)

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other ______

QC Requirements (Specify):

1. Relinquished By	Date	Time	1. Received By	Date	Time
Thomas Bohlen	4/18/12	5:15	[illegible signature]	4-[illegible]	[illegible]
2. Relinquished By	**Date**	**Time**	**2. Received By**	**Date**	**Time**
3. Relinquished By	**Date**	**Time**	**3. Received By**	**Date**	**Time**

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

5/16/2012

[redacted]

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes☐ No☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
GZA GeoEnvironmental	Christopher Boron	4/19/12	229340
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
535 Washington St 11th Flr	716 844 7046		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Buffalo / NY / 14203	T. Bohlen		
Project Name and Location (State)	**Carrier/Waybill Number**		
Delphi Harrison Thermal Sys./GMCH			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis (Attach list if more space is needed)	Special Instructions/ Conditions of Receipt
MW-13-041912-0845	4/19/12	8:45	*	X			X	X	X	X	X	X		•20 containers per sample - labeled w/ pre-printed TestAmer Labels * Dissolved H2 Sample included for each location (Microseeps)
MW-14-041912-1315	"	1315	*	X			X	X	X	X	X	X		
MW-10-041912-1520	"	1520	*	X			X	X	X	X	X	X		
DUP-041912-0001	"		*	X			X	X	X	X	X	X		

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Thomas Bohlen	4/19/12	1645	1. Received By	4/19/12	1647
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

5/16/2012

Chain of Custody Record

Temperature on Receipt ______

Drinking Water? Yes ☐ No ☐

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
GZA GeoEnvironmental	Christopher Boron	4/20/12	229337

Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page
535 Washington St.	716 844 7046		Page 1 of 1

City	State	Zip Code	Site Contact	Lab Contact
Buffalo	NY	14203	T. Bohlen	

Project Name and Location (State): Delphi Harrison Thermal Sys./GMCH

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed): 6010B TAL Metals; 2320B Alkalinity; 8260B TCL; RSK 175 (DG); VFA IC; SM4500 S.D.; 350.1 Ammonia; SM4500 Cl.E; 353.2 Nitrate/Nitrite; RSK-175; 9060 Total/Org. Carbon

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH
MW-4-042012-1300	4/20/12	1300	☆	X			X	X	X	X	X	X
MW-7-042012-1630	4/20/12	1630		X			X	X	X	X	X	X

Special Instructions/ Conditions of Receipt:
• 20 containers per sample labeled w/ pre-printed TestAmerica labels

☆ Dissolved H_2 sample for MW-4 only (Microseeps)

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other ______

QC Requirements (Specify):

1. Relinquished By	Date	Time	1. Received By	Date	Time
Thomas Bohlen	4/20/12	1715	[signature]	4/20/12	1715
2. Relinquished By	**Date**	**Time**	**2. Received By**	**Date**	**Time**
3. Relinquished By	**Date**	**Time**	**3. Received By**	**Date**	**Time**

Comments:

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

5/16/2012

Login Sample Receipt Checklist

Client: Conestoga-Rovers & Associates, Inc.

Job Number: 480-18764-1

Login Number: 18764

List Source: TestAmerica Buffalo

List Number: 1

Creator: Janish, Carl

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	gza
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: Conestoga-Rovers & Associates, Inc.

Job Number: 480-18764-1

Login Number: 18764
List Number: 1
Creator: Kirchner, Benjamin

List Source: TestAmerica Burlington
List Creation: 04/19/12 02:09 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	792597
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.0ºC, IR GUN ID 154, CF 0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

APPENDIX D

ANAEROBIC BIODEGRADATION SCREENING TABLES

TABLE D-1
ANAEROBIC BIODEGRADATION SCREENING
MW-4 MNA Scorecard
Delphi Harrison Thermal Systems Site
GM Component Holdings, LLC
Lockport, New York

Analysis	Concentration in Most Contaminated Zone	Value	Laboratory or Field Analysis Value (mg/L)	Score
DO	<0.5 mg/L	3	EM	
DO	>5 mg/l	-3		
Nitrate	<1 mg/L	2	<0.05	2
Iron II	>1 mg/l	2	NT	
Sulfate	<20 mg/L	2	282	
Sulfide	>1 mg/L	3	<0.1	
Methane	<0.5 mg/L	0		
Methane	>0.5 mg/L	3	3.8	3
ORP	<50 mV	1	40.5	1
ORP	<-100 mV	2		
pH	5< pH <9	0	6.1	0
pH	5> pH >9	-2		
TOC	>20 mg/L	2	3.1	
Temp	> 20^{o}C	1	14.5	
Carbon Dioxide	>2 times background (4.5)	1	9.5	1
Alkalinity	>2 times background (368)	1	320	
Chloride	>2 times background (2090)	2	3580	
Hydrogen	>1 nM	3	28	3
Hydrogen	<1nM	0		
Volatile Fatty Acids	>0.1 mg/L	2	ND	
BTEX	>0.1 mg/L	2	ND	
PCE		0	0.0014	0
TCE	If Daughter Product	2	18	
DCE	If Daughter Product	2	42.16	2
VC	If Daughter Product	2	9.1	2
1,1,1-TCA		0	ND	
DCA	If Daughter Product	2	ND	
Carbon Tetrachloride		0	ND	
Chloroethane	If Daughter Product	2	ND	
Ethene/Ethane	>0.01 mg/L or	2		
	>0.1 mg/L	3	2.95	3
Chloroform	If Daughter Product	2	ND	
Dichloromethane	If Daughter Product	2	ND	
			Total Score	17

Scoring Interpretation	
0 to 5	Inadequate evidence for anaerobic biodegradation* of chlorinated organics
6 to 14	Limited evidence for anaerobic biodegradation* of chlorinated organics
15 to 20	Adequate evidence for anaerobic biodegradation* of chlorinated organics
>20	Strong evidence for anaerobic biodegradation* of chlorinated organics
*reductive dechlorination	

Values Taken from EPA Document **EPA/600/R-98/128,** *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* , 1998, Table 2.3 and Table 2.4

Notes:
1. MW-13 is assumed to be background given COCs have generally not been detected above method detection limits.
2. ND=not detected
3. NT=not tested
4. EM=Equipment malfunction

TABLE D-2
ANAEROBIC BIODEGRADATION SCREENING
MW-7 MNA Scorecard
Delphi Harrison Thermal Systems Site
GM Component Holdings, LLC
Lockport, New York

Analysis	Concentration in Most Contaminated Zone	Value	Laboratory or Field Analysis Value (mg/L)	Score
DO	<0.5 mg/L	3	EM	
DO	>5 mg/l	-3		
Nitrate	<1 mg/L	2	<0.05	2
Iron II	>1 mg/l	2	0.06	
Sulfate	<20 mg/L	2	332	
Sulfide	>1 mg/L	3	<0.1	
Methane	<0.5 mg/L	0	0.046	0
Methane	>0.5 mg/L	3		
ORP	<50 mV	1	-34	1
ORP	<-100 mV	2		
pH	5< pH <9	0	7.49	0
pH	5> pH >9	-2		
TOC	>20 mg/L	2	8.7	
Temp	> 20^{o}C	1	15.4	
Carbon Dioxide	>2 times background (4.5)	1	1.6	
Alkalinity	>2 times background (368)	1	240	
Chloride	>2 times background (2090)	2	416	
Hydrogen	>1 nM	3	NT	
Hydrogen	<1nM	0		
Volatile Fatty Acids	>0.1 mg/L	2	4.82	2
BTEX	>0.1 mg/L	2	ND	
PCE		0	<1.8	0
TCE	If Daughter Product	2	730	
DCE	If Daughter Product	2	43	2
VC	If Daughter Product	2	<4.5	2
1,1,1-TCA		0	ND	
DCA	If Daughter Product	2	ND	
Carbon Tetrachloride		0	ND	
Chloroethane	If Daughter Product	2	ND	
Ethene/Ethane	>0.01 mg/L or	2		
	>0.1 mg/L	3	0.115	3
Chloroform	If Daughter Product	2	ND	
Dichloromethane	If Daughter Product	2	ND	
			Total Score	12

Scoring Interpretation	
0 to 5	Inadequate evidence for anaerobic biodegradation* of chlorinated organics
6 to 14	Limited evidence for anaerobic biodegradation* of chlorinated organics
15 to 20	Adequate evidence for anaerobic biodegradation* of chlorinated organics
>20	Strong evidence for anaerobic biodegradation* of chlorinated organics
*reductive dechlorination	

Values Taken from EPA Document **EPA/600/R-98/128,** *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* , 1998, Table 2.3 and Table 2.4

Notes:
1. MW-13 is assumed to be background given COCs have generally not been detected above method detection limits.
2. ND=not detected
3. NT=not tested

TABLE D-3
ANAEROBIC BIODEGRADATION SCREENING
MW-11 MNA Scorecard
Delphi Harrison Thermal Systems Site
GM Component Holdings, LLC
Lockport, New York

Analysis	Concentration in Most Contaminated Zone	Value	Laboratory or Field Analysis Value (mg/L)	Score
DO	<0.5 mg/L	3	EM	
DO	>5 mg/l	-3		
Nitrate	<1 mg/L	2	0.095	2
Iron II	>1 mg/l	2	0.2	
Sulfate	<20 mg/L	2	98.9	
Sulfide	>1 mg/L	3	0.053	
Methane	<0.5 mg/L	0	0.014	0
Methane	>0.5 mg/L	3		
ORP	<50 mV	1		
ORP	<-100 mV	2	-75	2
pH	5< pH <9	0	7.6	0
pH	5> pH >10	-2		
TOC	>20 mg/L	2	1.3	
Temp	> 20°C	1	10.9	
Carbon Dioxide	>2 times background (4.5)	1	2.1	
Alkalinity	>2 times background (368)	1	248	
Chloride	>2 times background (2090)	2	360	
Hydrogen	>1 nM	3	12	3
Hydrogen	<1nM	0		
Volatile Fatty Acids	>0.1 mg/L	2	ND	
BTEX	>0.1 mg/L	2	ND	
PCE		0	<0.0004	0
TCE	If Daughter Product	2	<0.0005	
DCE	If Daughter Product	2	0.0014	2
VC	If Daughter Product	2	0.0026	2
1,1,1-TCA		0	ND	
DCA	If Daughter Product	2	ND	
Carbon Tetrachloride		0	ND	
Chloroethane	If Daughter Product	2	ND	
Ethene/Ethane	>0.01 mg/L or	2	0.00229	
	>0.1 mg/L	3		
Chloroform	If Daughter Product	2	ND	
Dichloromethane	If Daughter Product	2	ND	
			Total Score	11

Scoring Interpretation	
0 to 5	Inadequate evidence for anaerobic biodegradation* of chlorinated organics
6 to 14	Limited evidence for anaerobic biodegradation* of chlorinated organics
15 to 20	Adequate evidence for anaerobic biodegradation* of chlorinated organics
>20	Strong evidence for anaerobic biodegradation* of chlorinated organics
*reductive dechlorination	

Values Taken from EPA Document **EPA/600/R-98/128,** *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* , 1998, Table 2.3 and Table 2.4

Notes:
1. MW-13 is assumed to be background given COCs have generally not been detected above method detection limits.
2. ND=not detected
3. NT=not tested
4. EM=Equipment malfunction

TABLE D-4
ANAEROBIC BIODEGRADATION SCREENING
MW-12 MNA Scorecard
Delphi Harrison Thermal Systems Site
GM Component Holdings, LLC
Lockport, New York

Analysis	Concentration in Most Contaminated Zone	Value	Laboratory or Field Analysis Value (mg/L)	Score
DO	<0.5 mg/L	3	0.59	
DO	>5 mg/l	-3		
Nitrate	<1 mg/L	2	<0.05	2
Iron II	>1 mg/l	2	12.7	2
Sulfate	<20 mg/L	2	133	
Sulfide	>1 mg/L	3	<1.0	
Methane	<0.5 mg/L	0	0.3	0
Methane	>0.5 mg/L	3		
ORP	<50 mV	1		
ORP	<-100 mV	2	-74	2
pH	5< pH <9	0	7.0	0
pH	5> pH >10	-2		
TOC	>20 mg/L	2	3.7	
Temp	> 20^{o}C	1	10.02	
Carbon Dioxide	>2 times background (4.5)	1	15	1
Alkalinity	>2 times background (368)	1	280	
Chloride	>2 times background (2090)	2	2900	
Hydrogen	>1 nM	3		
Hydrogen	<1nM	0	0.76	0
Volatile Fatty Acids	>0.1 mg/L	2	ND	
BTEX	>0.1 mg/L	2	ND	
PCE		0	<0.0004	0
TCE	If Daughter Product	2	0.0008	
DCE	If Daughter Product	2	0.150	2
VC	If Daughter Product	2	0.120	2
1,1,1-TCA		0	ND	
DCA	If Daughter Product	2	ND	
Carbon Tetrachloride		0	ND	
Chloroethane	If Daughter Product	2	ND	
Ethene/Ethane	>0.01 mg/L or	2		
	>0.1 mg/L	3	0.022	
Chloroform	If Daughter Product	2	ND	
Dichloromethane	If Daughter Product	2	ND	
			Total Score	11

Scoring Interpretation	
0 to 5	Inadequate evidence for anaerobic biodegradation* of chlorinated organics
6 to 14	Limited evidence for anaerobic biodegradation* of chlorinated organics
15 to 20	Adequate evidence for anaerobic biodegradation* of chlorinated organics
>20	Strong evidence for anaerobic biodegradation* of chlorinated organics
*reductive dechlorination	

Values Taken from EPA Document **EPA/600/R-98/128,** *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* , 1998, Table 2.3 and Table 2.4

Notes:
1. MW-13 is assumed to be background given COCs have generally not been detected above method detection limits.
2. ND=not detected
3. NT=not tested
4. EM=Equipment malfunction